DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

WEST DAVIS ACTIVE ADULT COMMUNITY PROJECT

(SCH: 2017042043)

DECEMBER 2017

Prepared for:

City of Davis
23 Russell Boulevard
Davis, CA 95616
(530) 757-5610

Prepared by:

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De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

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DRAFT EIR

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INTRODUCTION

The City of Davis (City) has determined that a project-level environmental impact report (EIR) is required for the proposed West Davis Active Adult Community Project (proposed project) pursuant to the requirements of the California Environmental Quality Act (CEQA).

This EIR is a Project EIR as defined in Section 15161 of the State CEQA Guidelines. A Project EIR is an EIR which examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction and operation. The Project EIR approach is appropriate for the West Davis Active Adult Community Project because it allows comprehensive consideration of the reasonably anticipated scope of the project, as described in greater detail in Section 2.0.

PROJECT DESCRIPTION

The following provides a brief summary and overview of the proposed project. Section 2.0 of this EIR includes a detailed description of the proposed project, including maps and graphics. The reader is referred to Section 2.0 for a more complete and thorough description of the components of the proposed project.

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. Additionally, the project includes approximately 11.53 acres of offsite improvements. These offsite improvements would include an agricultural buffer along the western and northern boundaries of the project site, improvements along Covell Boulevard and Risling Place, a proposed offsite trail, and proposed drainage channel and drainage basin improvements. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, nine mapped but undeveloped 13- to 23-acre residential lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site is currently undeveloped and has been previously used for agricultural uses.

The project includes development of: 150 affordable, age-restricted apartments; 32 attached, age-restricted cottages; 94 attached, age-restricted units; 129 single-family detached, age-restricted units; 77 single-family detached, non-age-restricted units; an approximately three-acre continuing care retirement community, which would likely consist of 30 assisted living, age-restricted detached units; an approximately 4.3-acre mixed use area, which would likely consist of a health club, restaurant, clubhouse, and up to 48 attached, age-restricted units; dog exercise area and tot lot; associated greenways, drainage, agricultural buffers; and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 560 dwelling units and 4.5 miles of off street biking and walking paths within the project area and an additional 0.22 miles of off street biking and walking paths offsite.

Access to the project site would be provided via Risling Court, which runs along the eastern edge of the site, as well as an entrance on West Covell Boulevard. The proposed internal north-south and east-west roadways would connect to housing and recreation areas. Cul-de-sacs are included in the project plan within the proposed cottages development area and as a termination for some internal streets.

The project site is currently designated Agriculture by the City of Davis General Plan Land Use Map. The proposed project would require a City of Davis General Plan Amendment to the Land Use Element to change land uses on the project site. Changes to the Land Use Element would include changing the entire project site from Agriculture to Residential – Medium Density, Residential – High Density, Neighborhood Mixed Use, Public/Semi-Public, and Urban Agriculture Transition Area. The project site is currently zoned as Agriculture-Intensive by Yolo County. The project would also include a rezone to PD (Planned Development).

Refer to Section 2.0, Project Description, for a more complete description of the details of the proposed project.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the proposed West Davis Active Adult Community Project that are known to the City of Davis, were raised during the Notice of Preparation (NOP) process, or raised during preparation of the Draft EIR. This Draft EIR discusses potentially significant impacts associated with aesthetics, agricultural resources, air quality, biological resources, cultural and tribal resources, geology and soils, greenhouse gases and climate change, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, transportation/circulation, and utilities.

The City received 17 comments (nine written, seven electronic, and one oral) on the NOP for the proposed West Davis Active Adult Community Project Draft EIR. A copy of each letter is provided in Appendix A of this Draft EIR. A public scoping meeting was held on April 26, 2017 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Oral comments received at the NOP scoping meeting are also included in Appendix A.

Aspects of the proposed project that could be of public concern include the following:

- Potential impacts to aesthetics, scenic views, building heights, and lighting;
- Resulting traffic congestion, particularly along Covell Boulevard;
- Increased noise associated with traffic and emergency response;
- Safety concerns for bicyclists and pedestrians due to increased vehicular travel;
- Size of the project;
- Loss or degradation of species and habitats resulting from site conversion;
- Financing mechanisms and land use conflicts;
- Drainage and flooding impacts.

ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the CEQA Guidelines requires an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed project. The alternatives analyzed in this EIR include the following four alternatives in addition to the proposed West Davis Active Adult Community Project:

- No Project (No Build) Alternative
- Conventional (Non-Age Restricted) Alternative
- Higher Density, Less Land Alternative
- Off-Site (Inside Mace Curve) Alternative

Alternatives are described in detail in Section 5.0, Alternatives to the Proposed Project. A comparative analysis of the proposed project and each of the project alternatives is provided in Table ES-1. The table includes a numerical scoring system, which assigns a score of "2," "3," or "4" to the proposed project and each of the alternatives with respect to how each alternative compares to the proposed project in terms of the severity of the environmental topics addressed in this EIR. A score of "2" indicates that the alternative would have a better (or lessened) impact when compared to the proposed project. A score of "3" indicates that the alternative would have the same (or equal) level of impact when compared to the proposed project. A score of "4" indicates that the alternative would have a worse (or greater) impact when compared to the proposed project. The project alternative with the lowest total score is considered the environmentally superior alternative.

TABLE ES-1: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROPOSED PROJECT

Environmental Issue	*Proposed Project*	*No Project (No Build) Alternative*	*Convention-al (Non-Age Restricted) Alternative*	*Higher Density, Less Land Alternative*	*Off-Site (Inside Mace Curve) Alternative*
Aesthetics and Visual Resources	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Agricultural Resources	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Air Quality	3 – Same	2 – Less	4 – Greater	2 – Less	2 – Less
Biological Resources	3 – Same	2 – Less	3 – Same	2 – Less	3 – Same
Cultural and Tribal Resources	3 – Same	2 – Less	3 – Same	2 – Less	3 – Same
Geology and Soils	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Greenhouse Gas, Climate Change, and Energy	3 – Same	2 – Less	4 – Greater	2 – Less	2 – Less
Hazards and Hazardous Materials	3 – Same	2 – Less	3 – Same	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Land Use	3 – Same	4 – Greater	3 – Same	3 – Same	3 – Same
Noise and Vibration	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Population and Housing	3 – Same	3 – Same	4 – Greater	3 – Same	2 – Less
Public Services and Recreation	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Transportation and Circulation	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Utilities	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Summary	**45**	**33**	**53**	**38**	**34**

As shown in Table ES-1, the (No Project (No Build) Alternative is the environmentally superior alternative when looked at in terms of all potentially significant environmental impacts. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. The Conventional (Non-Age Restricted) Alternative would result in 53 points, the (Higher Density, Less Land Alternative would result in 38 points, and the Off-Site (Inside Mace Curve) Alternative would result in 34 points. Therefore, the Off-Site (Inside Mace Curve) Alternative is the next environmentally superior alternative to the proposed project. It is noted that the superior alternative would depend on the City's local priorities (i.e., preservation of agricultural land, traffic impacts to the regional roadway system, maintenance of public services and utilities services, etc.), as well as the ability to meet the proposed project's objectives.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The environmental impacts of the proposed project, the impact level of significance prior to mitigation, the proposed mitigation measures and/or adopted policies and standard measures that are already in place to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-2.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
AESTHETICS AND VISUAL RESOURCES			
Impact 3.1-1: Potential to result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character	PS	None feasible.	SU
Impact 3.1-2: Project implementation may result in light and glare impacts	PS	***Mitigation Measure 3.1-1:*** *In order to reduce the potential for glare from buildings and structures within the project site, the Preliminary and Final Planned Developments for the project shall show that the use of reflective building materials that have the potential to result in glare that would be visible from sensitive receptors located in the vicinity of the project site shall be prohibited. The City of Davis Department of Community Development and Sustainability shall ensure that the approved project uses appropriate building materials with low reflectivity to minimize potential glare nuisance to off-site receptors.*	LS
Impact 3.1-3: Project implementation may substantially damage scenic resources within a State Scenic Highway	LS	None required.	--
AGRICULTURAL RESOURCES			
Impact 3.2-1: Project implementation may result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses	PS	***Mitigation Measure 3.2-1:*** *Prior to initiation of grading activities for each phase of development of the project, the project applicant shall set aside in perpetuity, at a minimum ratio of 2:1 of active agricultural acreage, an amount equal to the current phase. The applicant may choose to set aside in perpetuity an amount equal to the remainder of the project site instead of at each phase. The agricultural land shall be elsewhere in the Davis Planning Area, through the purchase of development rights and execution of an irreversible conservation or agricultural easement, consistent with Section 40A.03.025 of the Davis Municipal Code. The location and amount of active agricultural acreage for the proposed project is subject to the review and approval by the City Council. The amount of agricultural acreage set aside shall account for farmland lost due to the conversion of the project site, as well as some of the off-site improvements,*	SU

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		including but not necessarily limited to the off-site stormwater detention pond and the off-site Risling Court improvements. The amount of agricultural acreage set aside shall not include conversion of the agricultural buffer. The amount of agricultural acreage that needs to be set aside for off-site improvements shall be verified for each phase of the project during improvement plan review. Pursuant to Davis Code Section 40A.03.040, the agricultural mitigation land shall be comparable in soil quality with the agricultural land being changed to nonagricultural use. The easement land must conform with the policies and requirements of LAFCO including a LESA score no more than 10 percent below that of the project site.	
Impact 3.2-2: Project implementation may conflict with existing zoning for agricultural use	LS	None required.	--
Impact 3.2-3: Project implementation may conflict with a Williamson Act Contract	LS	None required.	--
Impact 3.2-4: Project implementation may lead to the indirect conversion of adjacent agricultural lands to non-agricultural uses	PS	***Mitigation Measure 3.2-2:*** *Prior to the issuance of occupancy permits, the applicant shall consult with adjacent agricultural property owners and attempt to purchase a "no aerial spray" easement. The applicant shall submit the written proof of the easement, or a statement indicated an agreement has not been reached to the Department of Community Development and Sustainability.*	SU
AIR QUALITY			
Impact 3.3-1: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation	PS	***Mitigation Measure 3.3-1:*** *Prior to the issuance of each building permit, the project applicant shall ensure that the project incorporates the following mitigation:* • *Require the use Low VOC Cleaning Supplies during project operation* • *Require the use of low VOC Paint (VOC emission factor of below 100 g/L for residential interiors exteriors, and below 150 g/L for non-residential interior, non-residential exterior, parking).* • *Install metal halide post top lights, metal halide cobrahead/cutoff lights, LED lights, or high pressure sodium cutoff lights.* • *Require only the install low-flow appliances (for the bathroom faucet, kitchen*	SU

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		faucet, toilet, and shower). • *Require the use water-efficient irrigation systems.*	
Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation	PS	***Mitigation Measure 3.3-2:*** *The project applicant shall implement the following dust control measures during all construction activities. These measures shall be incorporated as part of the building and grading plans.* • *Water all active construction sites at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure.* • *Apply water or dust palliatives on exposed earth surfaces as necessary to control dust emissions. Construction contracts shall include dust control treatment in late morning and at the end of the day, of all earth surfaces during clearing, grading, earth moving, and other site preparation activities. Non-potable water shall be used, where feasible. Existing wells shall be used for all construction purposes where feasible. Excessive watering will be avoided to minimize tracking of mud from the project onto streets as determined by Public Works.* • *Grading operations on the site shall be suspended during periods of high winds (i.e. winds greater than 15 miles per hour).* • *Outdoor storage of fine particulate matter on construction sites shall be prohibited.* • *Contractors shall cover any stockpiles of soil, sand and similar materials. There shall be no storage of uncovered construction debris for more than one week.* • *Re-vegetation or stabilization of exposed earth surfaces shall be required in all inactive areas in the project.* • *Cover all trucks hauling dirt, sand, or loose materials, or maintain at least two feet of freeboard within haul trucks.* • *Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area (as applicable).* • *Sweep streets if visible soil material is carried out from the construction site.* • *Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel.* • *Reduce speed on unpaved roads to less than 5 miles per hour.*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 3.3-3: Carbon monoxide hotspot impacts	LS	None required.	--
Impact 3.3-4: Potential for public exposure to toxic air contaminants	LS	None required.	--
Impact 3.3-5: Potential for exposure to odors	LS	None required.	--
Biological Resources			
Impact 3.4-1: Project implementation may result in direct or indirect effects on special-status invertebrate species	PS	***Mitigation Measure 3.4-1:*** *The project proponent shall implement the following measures to avoid or minimize impacts on valley elderberry longhorn beetle:* • *All on-site elderberry shrubs shall be avoided and preserved on-site through site design, as feasible.* • *All elderberry shrubs that are located adjacent to construction areas, but can be avoided, shall be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel. Fencing shall be placed at least 20 feet from the dripline of each shrub, unless otherwise approved by USFWS.* • *No insecticides, herbicides, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of the elderberry shrubs.* • *If the shrub(s) cannot be avoided through redesign, as determined by the City of Davis Public Works Department in conjunction with the project applicant, the project applicant shall mitigate for potential impacts to the shrub(s) by either (1) purchasing VELB conservation credits from a USFWS-approved conservation bank, or (2) transplanting the individual shrub(s) that is not avoided to a suitable mitigation site in a manner consistent with the USFWS' 1999 Conservation Guidelines for the VELB. The mitigation shall be overseen by a qualified biologist, approved by the City of Davis Department of Community Development and Sustainability and USFWS.*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.4-2: Project implementation may result in direct or indirect effects on special-status reptile and amphibian species	PS	***Mitigation Measure 3.4-2:*** *The project proponent shall implement the following measures to avoid or minimize impacts on western pond turtle:* • *Ground-disturbing activities in areas of potential pond turtle nesting habitat shall be avoided during the nesting season (April–August), to the extent feasible.* • *A preconstruction survey for western pond turtles within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall be conducted by a qualified biologist. In aquatic habitats which may be dewatered during project construction, surveys shall be conducted immediately after dewatering and before any subsequent disturbance. Elsewhere, surveys shall be conducted within 24 hours before project disturbance.* • *If pond turtles are found during preconstruction surveys, a qualified biologist, with approval from CDFW, shall move the turtles to the nearest suitable habitat outside the area subject to project disturbance. The construction area shall be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.* • *Construction personnel performing activities within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall receive worker environmental awareness training from a qualified biologist to instruct workers to recognize western pond turtle, their habitats, and measures being implemented for its protection.* • *Construction personnel shall observe a 15-miles-per-hour speed limit on unpaved roads.* ***Mitigation Measure 3.4-3:*** *The project proponent shall implement the following measures to avoid or minimize impacts on giant garter snake:* *The project proponent shall consult with USFWS regarding the potential for the project to affect giant garter snake habitat. If USFWS determines that giant garter snake may be potentially affected by project construction, the project proponent shall obtain an*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		incidental take permit from USFWS and implement the minimization guidelines for giant garter snake, as follows: • *Unless authorized by USFWS, construction and other ground-disturbing activities within 200 feet of suitable aquatic habitat for the giant garter snake shall not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance shall be completed by October 1.* • *To the extent possible, construction activities shall be avoided within upland habitat within 200 feet from the banks of giant garter snake aquatic habitat. Movement of heavy equipment in these areas shall be confined to existing roadways, where feasible, to minimize habitat disturbance.* • *Construction personnel shall receive USFWS-approved worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.* • *Within 24 hours before construction activities, the project area shall be surveyed for giant garter snake. The survey shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it is determined by the qualified biologist and City staff, in coordination with USFWS and CDFW, that the giant garter snake shall not be harmed. Any sightings or incidental take shall be reported to USFWS and CDFW immediately.* • *Any aquatic habitat for the snake that is dewatered shall remain dry for at least 15 consecutive days after April 15 and before excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area.* • *Giant garter snake habitat to be avoided within or adjacent to construction areas will be fenced and designated as environmentally sensitive areas. These*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		areas shall be avoided by all construction personnel.	
Impact 3.4-3: Project implementation may result in direct or indirect effects on special-status fish species	LS	None required.	--
Impact 3.4-4: Project implementation may result in direct or indirect effects on special-status bird species	PS	***Mitigation Measure 3.4-4:*** *The project proponent shall implement the following measure to avoid or minimize impacts on western burrowing owl:* • *No less than 14 days before initiating ground disturbance activities, the project proponent shall complete an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Implementation of avoidance and minimization measures (as presented in the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation) would be triggered if the initial take avoidance survey results in positive owl presence on the project site where project activities shall occur. If needed, the development of avoidance and minimization approaches shall be developed in coordination with CDFW.* ***Mitigation Measure 3.4-5:*** *The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:* • *No more than 30 days before the commencement of construction, a qualified biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).* • *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use. • *Before the commencement of construction, the project proponent shall provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat to the Yolo County HCP/NCCP JPA in accordance with its Swainson's Hawk Interim Mitigation Program. If the project is constructed after adoption of the Yolo Natural Heritage Program, the project proponent shall comply with all requirements of the Yolo Natural Heritage Program.* ***Mitigation Measure 3.4-6:*** *The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.* • *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*	
Impact 3.4-5: Project implementation may result in direct or indirect effects on special-	PS	***Mitigation Measure 3.4-7: Prior to any ground disturbance or removal of on-site trees, t****he project proponent shall implement the following measures to avoid or*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
status mammal species		*minimize impacts on special-status bats:* • *If removal of any on-site trees with suitable roost cavities (as determined by a qualified biologist) and/or dense foliage must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts shall be conducted by a qualified biologist in trees designated for removal. The surveys shall be conducted from dusk until dark.* • *If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. No project activity shall commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist conforms the maternity roost is no longer active.*	
Impact 3.4-6: Project implementation may result in direct or indirect effects on candidate, sensitive, or special-status plant species	PS	***Mitigation Measure 3.4-8:*** *Prior to construction, the project proponent shall retain a biologist to perform a focused survey for the following CNPS listed plants: heartscale (April to October), brittlescale (April to October), San Joaquin spearscale (April to October), recurved larkspur (March to June), and saline clover (April to June). The survey shall be performed during the floristic season (shown in parenthesis). While there is a low potential for these species to be found on the project site, there is some limited habitat present within and along the fringe of the irrigation ditches. If any of these plants are found during the focused survey, the project proponent shall contact the CNPS to obtain the appropriate avoidance and minimization measures.* ***Mitigation Measure 3.4-9:*** *Prior to construction, the project proponent shall retain a biologist to perform a focused survey for the federally and state listed palmate-bracted salty bird's-beak (Chloropyron palmatum). The survey shall be performed during the floristic season (generally May through October). This species is generally restricted to seasonally-flooded, saline-alkali soils in lowland plains/basins, which is generally present within and along the fringe of the irrigation ditches. If this plant is found during the focused survey, the project proponent shall contact the USFS and CDFW to obtain the*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		appropriate avoidance and minimization measures.	
Impact 3.4-7: The proposed project has the potential to effect protected wetlands and jurisdictional waters	PS	***Mitigation Measure 3.4-10**: The project proponent shall implement the following measure to avoid or minimize impacts on potentially jurisdictional waters:* • *Before any activities that would result in discharge, fill, removal, or hydrologic interruption of any of the water features within the project site, a wetland delineation and jurisdictional determination shall be conducted by a qualified delineator and the delineation that determines the extent of jurisdictional waters should be approved by USACE.* • *Any impacts on jurisdictional features shall obtain the appropriate CWA Section 404 and or 401 permits. All permit conditions including required avoidance, minimization, and mitigation measures included as conditions of the permit shall be followed.*	LS
Impact 3.4-8: Project implementation may result in direct or indirect adverse effects on riparian habitat or a sensitive natural community	LS	None required	--
Impact 3.4-9: Project implementation may result in interference with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites	LS	None required	--
Impact 3.4-10: Project implementation may result in conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	PS	***Mitigation Measure 3.4-11**: The project proponent shall implement the following measure to avoid or minimize impacts on trees protected by the City of Davis:* • *Before the commencement of construction, the project proponent shall retain a qualified arborist to perform a survey of all trees within the footprint of the proposed off-site detention basin (located north of Sutter Hospital, and east of the City water tank). The tree survey and arborist report shall detail the number, species, size, and relative health and structure of all trees in the*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		aforementioned area. The report will also describe which trees on-site are subject to regulation under the City of Davis Tree Ordinance. • *A tree protection plan shall be prepared that includes measures to avoid or minimize impacts on trees that are to be preserved on-site and well as proposed mitigation for regulated trees subject to impact or removal. Compliance with the tree protection plan shall be required before and during any site disturbance and construction activity and before issuance of building permits. A tree modification permit shall be submitted to the City for any proposed removal of a tree. Fees shall be assessed by the City, and paid by the project proponent, in accordance with Davis Municipal Code Chapter 37, "Tree Planting, Preservation, and Protection."*	
Impact 3.4-11: Project implementation may result in conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	PS	***Mitigation Measure 3.4-12:*** *Should the Yolo Natural Heritage Program (YNHP) be adopted prior to initiation of any ground disturbing activities for any phase of development associated with the project, the project applicant shall comply with the mitigation/conservation requirements of the YNHP, as applicable. The project applicant, the City of Davis Department of Community Development and Sustainability, and a representative from the YNHP JPA shall ensure that all mitigation/conservation requirements of the YNHP are adhered to prior to and during construction. To the extent there is duplication in mitigation for a given species, the requirements of the YNHP shall supersede. If this measure is implemented after adoption of the YNHP, the project proponent shall comply with all requirements of the YNHP.*	LS
CULTURAL AND TRIBAL RESOURCES			
Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074	PS	***Mitigation Measure 3.5-1:*** *All construction workers shall receive a sensitivity training session before they begin site work. The sensitivity training shall inform the workers of their responsibility to identify and protect any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, within the project site. The sensitivity training shall cover laws pertaining to cultural resources, examples of cultural resources that may be discovered in the project site, and what to do if a cultural resource, or anything that may be a cultural resource, is discovered.* *If any subsurface historic remains, prehistoric or historic artifacts, paleontological*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		resources, other indications of archaeological resources, or cultural and/or tribal resources are found during grading and construction activities, all work within 100 feet of the find shall cease, the City of Davis Department of Community Development and Sustainability shall be notified, and the applicant shall retain an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, to evaluate the find(s). If tribal resources are found during grading and construction activities, the applicant shall notify the Yocha Dehe Wintun Nation. If paleontological resources are found during grading and construction activities, a qualified paleontologist shall be retained to determine the significance of the discovery. *The archaeologist and/or paleontologist shall define the physical extent and the nature of any built features or artifact-bearing deposits. The investigation shall proceed immediately into a formal evaluation to determine the eligibility of the feature(s) for inclusion in the California Register of Historical Resources. The formal evaluation shall include, at a minimum, additional exposure of the feature(s), photo-documentation and recordation, and analysis of the artifact assemblage(s). If the evaluation determines that the feature(s) and artifact(s) do not have sufficient data potential to be eligible for the California Register, additional work shall not be required. However, if data potential exists (e.g., an intact feature is identified with a large and varied artifact assemblage), further mitigation would be necessary, which might include avoidance of further disturbance to the resource(s) through project redesign. If avoidance is determined to be infeasible, additional data recovery excavations shall be conducted for the resource(s), to collect enough information to exhaust the data potential of those resources.* *Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Data recovery efforts can range from rapid photographic documentation to extensive excavation depending upon the physical nature of the resource. The degree of effort shall be determined at the discretion of a qualified archaeologist and should be sufficient to recover data considered important to the area's history and/or prehistory. Significance determinations for tribal cultural resources shall be measured in terms of criteria for inclusion on the California Register*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		of Historical Resources (Title 14 CCR, §4852[a]), and the definition of tribal cultural resources set forth in Public Resources Code Section 21074 and 5020.1 (k). The evaluation of the tribal cultural resource(s) shall include culturally appropriate temporary and permanent treatment, which may include avoidance of tribal cultural resources, in-place preservation, and/or re-burial on project property so the resource(s) are not subject to further disturbance in perpetuity. Any re-burial shall occur at a location predetermined between the landowner and the Yocha Dehe Wintun Nation. The landowner shall relinquish ownership of all sacred items, burial goods, and all archaeological artifacts that are found on the project area to the Yocha Dehe Wintun Nation for proper treatment and disposition. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation. *The language of this mitigation measure shall be included on any future grading plans, utility plans, and subdivision improvement drawings approved by the City for the development of the project.*	
Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5	PS	*Implement **Mitigation Measure 3.5-1.***	LS
Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource	PS	*Implement **Mitigation Measure 3.5-1.***	LS
Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries	PS	***Mitigation Measure 3.5-2:** If human remains are discovered during the course of construction during any phase of the project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Yolo County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:* • *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains. • *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:* o *The Native American Heritage Commission is unable to identify a descendent.* o *The descendant identified fails to make a recommendation.* o *The City of Davis or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*	
Geology and Soils			
Impact 3.6-1: The proposed project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure	LS	None required.	--
Impact 3.6-2: Implementation and construction of the proposed project may result in substantial soil erosion or the loss of topsoil	PS	***Mitigation Measure 3.6-1:*** *Prior to any site disturbance, the project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Davis and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB. ***Mitigation Measure 3.6-2:*** *Prior to any site disturbance, the project proponent shall document to the satisfaction of the City of Davis that stormwater runoff from the project site is treated per the standards in the California Stormwater Best Management Practice New Development and Redevelopment Handbook and Section E.12 of the Phase II Small MS4 General Permit. Drainage from all paved surfaces, including streets, parking lots, driveways, and roofs shall be routed either through swales, buffer strips, or sand filters or treated with a filtering system prior to discharge to the storm drain system. Landscaping shall be designed to provide water quality treatment, along with the use of a Stormwater Management filter to permanently sequester hydrocarbons, if necessary. Roofs shall be designed with down spouting into landscaped areas, bubbleups, or trenches. Driveways should be curbed into landscaping so runoff drains first into the landscaping. The aforementioned requirements shall be noted on the Preliminary and Final Planned Developments for the project.*	
Impact 3.6-3: The proposed project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse	PS	***Mitigation Measure 3.6-3:*** *Prior to final design approval and issuance of building permits for each phase of the project, the project applicant shall submit to the City of Davis Building Inspection Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall include the recommendations in the report entitled Preliminary Geotechnical Assessment, Davis Innovation Center, dated October 20, 2014 unless it is determined in the design-level report that one or more recommendations need to be revised. The design-level report shall address, at a minimum, the following:* • *Compaction specifications and subgrade preparation for onsite soils;* • *Structural foundations;* • *Grading practices; and* • *Expansive/unstable soils, including fill.* *The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		a site plan showing exploratory locations and improvement limits. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the Davis Public Works Department prior to issuance of any building permits.	
Impact 3.6-4: The proposed project would be located on expansive soil creating substantial risks to life or property	LS	None required.	--
Greenhouse Gases and Climate Change			
Impact 3.7-1: The proposed project may generate construction-related GHGs, either directly or indirectly, that may have a significant effect on the environment	LS	None required.	--
Impact 3.7-2: The proposed project may generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment	PS	***Mitigation Measure 3.7-1:*** *Prior to issuance of building permits, the applicant shall ensure that all residential units are designed such that they to achieve a minimum of 15% greater energy efficiency than the baseline 2016 Title-24 Energy Efficiency requirements (compliant with Tier 1 of the 2016 CalGreen Code).*	LS
Impact 3.7-3: The proposed project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	LS	None required.	--
Impact 3.7-4: Project implementation may result in the inefficient, wasteful, or unnecessary use of energy resources	LS	None required.	--
Hazards and Hazardous Materials			
Impact 3.8-1: The project may have the potential to create a significant hazard	PS	***Mitigation Measure 3.8-1****: A soil sampling program shall be implemented to assess potential agrichemical (including pesticides, herbicides, diesel, petrochemicals, etc.)*	LS

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment		*impacts to surface soil within the project site, as follows:* *The sampling and analysis plan shall meet the requirements of the Department of Toxic Substances Control Interim Guidance for Sampling Agricultural Properties (2008). If the sampling results indicate the presence of agrichemicals that exceed screening levels, a removal action workplan shall be prepared in coordination with Yolo County Environmental Health Division. The removal action workplan shall include a detailed engineering plan for conducting the removal action, a description of the onsite contamination, the goals to be achieved by the removal action, and any alternative removal options that were considered and rejected and the basis for that rejection. The removal action shall be deemed complete when the confirmation samples exhibit concentrations below the commercial screening levels, which will be established by the agencies.* ***Mitigation Measure 3.8-2:*** *Prior to commencement of grading, the applicant shall submit a Soil Management Plan (SMP) for review and approval by the City. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The city will approve the SMP prior to any earth moving.* ***Mitigation Measure 3.8-3:*** *Prior to bringing hazardous materials (including 55 or more gallons for liquids, 500 or more pounds for solids, and/or 200 or more cubic feet for compressed gases) onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to Yolo County Environmental Health Division (CUPA) for review and approval. If during the construction process the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).* ***Mitigation Measure 3.8-4:*** *If any underground septic tanks, or fuel tanks are uncovered from past site uses during construction, the project proponent shall retain an environmental professional to assist with the removal consistent with the Yolo County Environmental Health Department's Underground Storage Tank Program, and Septic*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Abandonment Permit requirements. ***Mitigation Measure 3.8-5:*** *Project site wells that are no longer operated shall be properly abandoned through permit by the Yolo County Environmental Health Division (YCEH) permit program. The well abandonment work shall be completed by a C-57 State licensed well contractor.* ***Mitigation Measure 3.8-6:*** *If the source of soil onsite soil stockpiles is undocumented, the applicant shall confirm to the City of Davis that soil sampling of the stockpiles was performed to identify potential soil contaminates associated with onsite soil stockpiles. The samples shall be submitted for laboratory analysis of total petroleum hydrocarbons (TPH) (gas, diesel and motor oil) by EPA Method 8015M and volatile organic compounds (VOCs) by EPA Method 8260. The results of the soil sampling shall be provided to the City of Davis. If elevated levels of TPH or VOCs are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*	
Impact 3.8-2: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment	LS	None required.	--
Impact 3.8-3: The project has the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	LS	None required.	--
Impact 3.8-4: The project has the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	LS	None required.	--

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 3.8-5: The project has the potential to expose people or structures to a risk of loss, injury or death from wildland fires	LS	None required.	--
Impact 3.8-6: The project has the potential to result in a safety hazard for people residing or working in the project are due to proximity to a private airstrip or public airport	LS	None required.	--
HYDROLOGY AND WATER QUALITY			
Impact 3.9-1: The project may violate water quality standards or waste discharge requirements during construction	PS	*Implement **Mitigation Measure 3.6-1.*** ***Mitigation Measure 3.9-1:** Prior to the commencement of construction activities, the project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Yolo County Health Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*	LS
Impact 3.9-2: The project may violate water quality standards or waste discharge requirements post-construction	PS	***Mitigation Measure 3.9-2:** Prior to issuance of building or grading permits, the applicant shall submit a final stormwater and drainage plan identifying permanent stormwater control measures to be implemented by the project to the City. The plan shall include measures consistent with the adopted guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013 and shall be subject to review and approval by the Public Works Department.*	LS
Impact 3.9-3: Project implementation could interfere substantially with groundwater recharge	LS	None required.	--

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 3.9-4: Project implementation could alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff	LS	None required.	--
Impact 3.9-5: The proposed project could otherwise substantially degrade water quality	LS	None required.	--
Impact 3.9-6: The project may place housing or structures that would impede/redirect flows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	PS	***Mitigation Measure 3.9-3:*** *Prior to the issuance of grading permits and subsequently prior to the issuance of building permits, the project applicant shall either demonstrate that the developed portions of the project site are outside of the anticipated 100-year flood hazard area, or incorporate measures into the proposed project to achieve a 100-year level of flood protection for any site installations. This may include elevating the proposed building pads above the base flood elevation, installing adequate storm water retention areas, or other measures commonly accepted by the City of Davis.* ***Mitigation Measure 3.9-4:*** *Prior to commencement of grading operations, the project proponent shall prepare and submit an application for Conditional Letter of Map Revision (CLOMR) to FEMA for approval. The CLOMR shall include revised local base flood elevations based on current modeling of the project site. No building permit shall be issued in the area impacted by the CLOMR until a CLOMR has been approved by FEMA.* ***Mitigation Measure 3.9-5:*** *The building pads for all onsite structures shall be set a minimum of 1.0 foot above the maximum 100-year water surface elevations on the project site, as shown on the Conditional Letter of Map Revision (CLOMR) approved by FEMA. No building permit shall be issued until a CLOMR has been approved by FEMA, and it has been demonstrated that no building pads would be placed below 1.0 feet above the calculated local base flood elevations.*	LS
Impact 3.9-7: The project may expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
LAND USE			
Impact 3.10-1: The project may result in the physical division of an established community	LS	None required.	--
Impact 3.10-2: Implementation of the proposed project may conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect	LS	None required.	--
Impact 3.10-3: Implementation of the proposed project may conflict with an applicable habitat conservation plan or natural community conservation plan	LS	None required.	--
NOISE AND VIBRATION			
Impact 3.11-1: Operation of the proposed project may generate unacceptable traffic noise levels at existing sensitive receptors	LS	None required.	--
Impact 3.11-2: Construction of the proposed project may generate unacceptable noise levels at existing sensitive receptors	LS	None required.	--
Impact 3.11-3: Construction of the proposed project may result in excessive groundborne vibration impacts	LS	None required.	--

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 3.11-4: Operation of the proposed project may generate unacceptable noise levels from on-site activities at existing sensitive receptors	LS		--
Impact 3.11-5: The proposed project may expose proposed residences or workers to excessive noise levels due to aircraft noise	LS	None required.	--
Population and Housing			
Impact 3.12-1: Implementation of the proposed project may induce substantial population growth	LS	None required.	--
Impact 3.12-2: Implementation of the proposed project may displace substantial numbers of people or existing housing	LS	None required.	--
Public Services and Recreation			
Impact 3.13-1: Project implementation may result in effects on fire staffing	LS	None required.	--
Impact 3.13-2: Project implementation may result in effects on fire response times or require the construction of new or expanded fire stations	LS	None required.	--
Impact 3.13-3: Project implementation may result in effects on police staffing or require the construction of new or expanded police stations	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.13-4: Project implementation may result in effects on schools	LS	None required.	--
Impact 3.13-5: Project implementation may result in effects on parks	LS	None required.	--
Impact 3.13-6: Project implementation may result in effects on other public facilities	LS	None required.	--
TRANSPORTATION AND CIRCULATION			
Impact 3.14-1: Under existing plus project conditions, project implementation would not cause any significant impacts at study intersections	LS	None required.	--
Impact 3.14-2: Under existing plus project conditions, project implementation would not cause any significant impacts at study freeway facilities	LS	None required.	--
Impact 3.14-3: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study intersections	LS	None required.	--
Impact 3.14-4: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study freeway facilities	LS	None required.	--
Impact 3.14-5: Under cumulative plus project conditions, project	PS	***Mitigation Measure 3.14-1****: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:*	SU

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		a) West Covell Boulevard/SR 113 NB Ramps – widen northbound off-ramp to consist of three lanes (i.e., one left, one shared left/through/right, and one right-turn lane) approaching West Covell Boulevard. The fair share funding shall be submitted to Caltrans. *b) West Covell Boulevard/Sycamore Lane – lengthen eastbound left-turn lane from 150 to 275 feet. The fair share funding shall be submitted to the City of Davis.*	
Impact 3.14-6: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities	PS	*Implement Mitigation Measure 3.14-1(a): Pay fair share to widen northbound SR 113 off-ramp at West Covell Boulevard to consist of three lanes approaching West Covell Boulevard.*	SU
Impact 3.14-7: The project would not conflict with existing / planned transit services, or create a demand for transit above that which is provided or planned	LS	None required.	--
Impact 3.14-8: The project would not conflict with existing / planned bicycle and pedestrian facilities, and would provide connections to existing bicycle and pedestrian facilities	LS	None required.	--
Impact 3.14-9: The proposed site plan would not provide adequate emergency vehicle access	PS	***Mitigation Measure 3.14-2**: By the time the final map is submitted, the final map shall indicate that the project shall dedicate an emergency vehicle access easement from the project site to John Jones Road. Best efforts shall be made by the project applicant to work with Sutter Davis Hospital to obtain the easement.*	SU
Impact 3.14-10: The proposed site plan would not provide adequate project access	PS	***Mitigation Measure 3.14-3**: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:* *a) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the southbound*	SU

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		right-turn lane from 85 to 200 feet. The fair share funding shall be submitted to the City of Davis. *b) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the eastbound left-turn lane from 175 to 250 feet. The fair share funding shall be submitted to the City of Davis.*	
Impact 3.14-11: Construction traffic would not cause any significant intersection impacts	LS	None required.	--
UTILITIES			
Impact 3.15-1: Wastewater generated by the proposed project may exceed the capacity of the wastewater treatment plant, and may exceed the wastewater treatment permit requirements	LS	None required.	--
Impact 3.15-2: The project may not be adequately served by existing water supply sources under existing and cumulative conditions	LS	None required.	--
Impact 3.15-3: The project may not be served by a permitted landfill with sufficient capacity to meet the solid waste disposal needs of the project	LS	None required.	--

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
OTHER CEQA-REQUIRED TOPICS			
Impact 4.1: The project may contribute to the cumulative degradation of the existing visual character of the region	PS	None feasible.	CC and SU
Impact 4.2: The project may contribute to cumulative impacts on agricultural land and uses	PS	None feasible.	CC and SU
Impact 4.3: The project may contribute to cumulative impacts on the region's air quality	PS	None feasible.	CC and SU
Impact 4.4: The project may contribute to the cumulative loss of biological resources including habitats and special status species	LCC	None required.	--
Impact 4.5: The project may contribute to cumulative impacts on known and undiscovered cultural resources	LCC	None required.	--
Impact 4.6: The project may contribute to cumulative impacts on geologic and soils characteristics	LCC	None required.	--
Impact 4.7: The project may contribute to cumulative impacts on greenhouse gases and climate change	LCC	None required.	--
Impact 4.8: The project may contribute to cumulative impacts related to hazards and hazardous materials	LCC	None required.	--

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 4.9: The project may contribute to cumulative increases in peak stormwater runoff flows from the project site	LCC	None required	--
Impact 4.10: The project may contribute to cumulative impacts related to degradation of water quality	LCC	None required.	--
Impact 4.11: The project may contribute to cumulative impacts on communities and local land uses	LCC	None required.	--
Impact 4.12: The project may contribute to the cumulative exposure of existing and future noise- sensitive land uses or to increased noise resulting from cumulative development	LCC	None required.	--
Impact 4.13: The project may contribute to cumulative impacts on population growth and displace substantial numbers of people or existing housing	LCC	None required.	--
Impact 4.14: The project may contribute to cumulative impacts on public services	LCC	None required.	--
Impact 4.15: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections	PS	None feasible.	CC and SU
Impact 4.16: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities	PS	None feasible.	CC and SU

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 4.17: The project may contribute to cumulative impacts on utilities	LCC	None required.	--

This section summarizes the purpose of the Environmental Impact Report (EIR) for the West Davis Active Adult Community Project (the "project"). The following discussion addresses the environmental procedures that are to be followed according to State law, the intended uses of the EIR, the project's relationship to the City's General Plan, the EIR scope and organization, and a summary of the agency and public comments received during the public review period for the Notice of Preparation (NOP).

1.1 PURPOSE AND INTENDED USES OF THE EIR

The City of Davis, as lead agency, determined that the proposed West Davis Active Adult Community Project is a "project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development. CEQA further requires public agencies to balance a variety of public objectives, including economic, environmental, and social factors in making a decision to approve a development project with significant and unavoidable environmental impacts.

The City of Davis, as the lead agency, has prepared this Draft EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from construction and operation of the West Davis Active Adult Community Project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used by the City to determine whether to approve, modify, or deny the West Davis Active Adult Community Project and associated approvals in light of the project's environmental effects. The EIR will be used as the primary environmental document to evaluate full project development, along with all associated infrastructure improvements, and permitting actions associated with the West Davis Active Adult Community Project. All of the actions and components of the proposed project are described in detail in Section 2.0 of this Draft EIR.

1.2 TYPE OF EIR

This EIR is a Project EIR as defined in Section 15161 of the State CEQA Guidelines. A Project EIR is an EIR which examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction and operation. The Project EIR approach is appropriate for the West Davis Active Adult Community Project because it allows comprehensive consideration of the reasonably anticipated scope of the project, as described in greater detail in Section 2.0.

1.3 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

As required by CEQA, this EIR defines lead, responsible, and trustee agencies. The City of Davis is the "Lead Agency" for the project because it holds principal responsibility for approving the project. The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386).

The following agencies are considered Responsible or Trustee Agencies for this project, and may be required to issue permits or approve certain aspects of the proposed project:

- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities;
- Yolo-Solano Air Quality Management District - Approval of construction-related air quality permits; and
- Yolo Local Agency Formation Commission (LAFCO) – Processing and approval of the proposed annexation of the project site into the City of Davis.

1.4 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION AND INITIAL STUDY

The City circulated an Initial Study and NOP of an EIR for the proposed project on April 14, 2017 to trustee agencies, the State Clearinghouse, and the public. A public scoping meeting was held on April 26, 2017 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and responses to the NOP by interested parties are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City has filed the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

The City has provided a public notice of availability for the Draft EIR, and invites comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA, a forty-five (45) day review period would be required for this Draft EIR. However, this Draft EIR will be released for an extended, sixty (60) day review period. Public comment on the Draft EIR will be accepted in written form and orally at a public meeting before the Davis Planning Commission. All comments or questions regarding the Draft EIR should be addressed to:

Katherine Hess, Community Development Administrator
City of Davis
Community Development and Sustainability Department
23 Russell Boulevard, Suite 2
Davis, CA 95616
khess@cityofdavis.org

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments received at a public hearing during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete", the City Council may certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

The level of detail contained throughout this EIR is consistent with Section 15151 of the CEQA Guidelines and recent court decisions, which provide the standard of adequacy on which this document is based. The Guidelines state as follows:

> *An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.*

Following review and consideration of the Final EIR, the City may take action to approve, modify, or reject the project. A Mitigation Monitoring Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.5 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City of Davis, applicable local and regional planning documents, and responses to the NOP.

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

This Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, and identifies the scope and organization of the Draft EIR.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, related infrastructure improvements, and a list of related agency action requirements.

CHAPTER 3.0 – ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact after the incorporation of mitigation measures.

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Resources
- Geology and Soils
- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise and Vibration
- Population and Housing
- Public Services and Recreation
- Transportation and Circulation
- Utilities

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 – ALTERNATIVES TO THE PROJECT

State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project. Chapter 5.0 provides a comparative analysis between the environmental impacts of the project and the selected alternatives.

CHAPTER 6.0 – REPORT PREPARERS

This section lists all authors and agencies that assisted in the preparation of the EIR, by name, title, and company or agency affiliation.

CHAPTER 7.0 – REFERENCES

This section lists all source documents used in the preparation of the EIR.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as technical material prepared to support the analysis. The EIR appendices are available in electronic format. The appendices can be viewed online at:

http://cityofdavis.org/city-hall/community-development-and-sustainability/development-projects/west-davis-active-adult-community

1.6 SIGNIFICANCE CRITERIA

In general, CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial" adverse change in the physical environment. A potential impact is considered significant if a project would substantially degrade the environmental quality of land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance (CEQA Guidelines §§15360, 15382).

Definitions of significance vary with the physical condition affected and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make "mandatory findings of significance" (CEQA Guidelines §15065).

This CEQA document relies on three levels of impact significance:

1. Less-than-significant impact, for which no mitigation measures are warranted;
2. Significant impact that can be mitigated to a level that is less than significant; and
3. Significant impact that cannot be mitigated to a level that is less than significant. Such impacts are significant and unavoidable.

Each resource area uses a distinct set of significance criteria. For example, a proposed project resulting in an exposure of persons to noise levels in excess of standards established in the local general plan or community plan would be considered a significant impact. If existing levels, without the proposed project, already exceed the standards, an increase in noise levels of 3 dB attributable to the proposed would be considered significant. Construction of appropriate sound walls could reduce the impact to a less-than-significant level. If criteria for determining significance relative to a specific environmental resource impact are not identified in the Guidelines, criteria were developed for this Draft EIR consistent with the past pattern and practice of the City of Davis.

The significance criteria are identified at the beginning of the impacts discussion for each resource area. These significance criteria promote consistent evaluation of impacts for all alternatives considered, even though significance criteria are necessarily different for each resource considered.

1.7 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City received 17 comments (nine written, seven electronic, and one oral) on the NOP for the proposed West Davis Active Adult Community Project Draft EIR. A brief summary of each comment letter is provided in the list below. A copy of each letter is provided in Appendix A of this Draft EIR. A public scoping meeting was held on April 26, 2017 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Oral comments received at the NOP scoping meeting are also included in Appendix A.

1. Jaron D. Ross (April 15, 2017):
    - Concern about land use conflicts between the existing neighborhoods and City outskirts;
    - Concern about traffic impacts at the intersection of Shasta Drive and Covell Boulevard;
    - Concern about pedestrian and bicycle safety.
2. Patrick S. Blacklock, County of Yolo (April 18, 2017):
    - Concerns about visual impacts/aesthetics, agricultural resources, growth inducement, air quality/odors, transportation/traffic, climate change/greenhouse gases, hydrology/water quality, and urban decay;
    - Concerns about fiscal impacts;
    - Concerns about direct and indirect infrastructure impacts.
3. Gregor Blackburn, FEMA (April 19, 2017):
    - Proper elevations for building construction within a riverine floodplain;
    - Potential to increase base flood elevation levels as a result of construction;
    - Construction within a coastal high hazard area;
    - Submittal of the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision.
4. Corinne Gee (April 24, 2017):
    - Concerns about the size of the project and the potential to change the character of the community;
    - Concerns about an increase in traffic patterns.

5. Susan Garbini, Yolo Habitat Conservancy (April 24, 2017):
   - Concerns about impacts on species that are covered in the Draft Yolo Habitat Conservation Plan and Natural Community Conservation Plan;
   - Impacts to potential habitat for Swainson's Hawk, white-tailed kite, burrowing owl, giant garter snake, western pond turtle, and tricolored blackbird.
6. Robin Whitmore (April 26, 2017):
   - Concern about creating a senior rental market;
   - Concern about ensuring Davis seniors buy the houses;
   - Concern about whether residents will walk to the nearby marketplace shopping center;
   - Concern that the development would be a retirement community and would not attract non-seniors;
   - Concern over putting seniors on the periphery of town without good transportation options;
   - Concern about the proposed annexation and the resulting time, energy, and money required;
   - Concerns about economic impacts and senior segregation;
   - Concerns about the building heights and the proportion of senior-owned versus senior-occupied homes;
   - Concerns about the financial ability to construct the affordable senior apartment component;
   - Concerns about the loss of views along Covell Boulevard.
7. Toni Terhaar and Russ Kanz (April 26, 2017):
   - Concerns about the feasibility of the low-income portion of the housing development, the heights of the proposed homes, and the ability to restrict the homes to 55 years and older only;
   - Concerns related to traffic on Covell Boulevard, westbound Interstate 80, and the Lake Boulevard / Covell Boulevard intersection;
   - Concerns about emergency response times due to the increase in traffic;
   - Concerns about cumulative traffic impacts resulting from the proposed project and pending and future projects in the City;
   - Concerns about drainage and flooding;
   - Concerns about impacts to schools;
   - Concerns about generation of additional emergency responders (e.g. ambulances), which would increase noise for nearby communities;
   - Concerns about lighting impacts, light pollution, aesthetics impacts, and building heights;
   - Concerns about impacts to Swainson's hawk, red-shouldered hawk, and red-tailed hawk habitat;
   - One alternative should be analyzed as an affordable housing alternative, instead of a senior community.
8. Craighton Chin (April 27, 2017):
   - Concern about increasing the agricultural buffer;

  - o Concern about impacts to burrowing owls;

9. Sharaya Souza, Native American Heritage Commission (April 28, 2017):
    - o Recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area;
    - o Requirements associated with Assembly Bill 52 and Senate Bill 18;
    - o Recommendations for cultural resources assessments, including:
        - ▪ Contacting the appropriate California Historical Research Information System Center for an archeological records search;
        - ▪ Preparing a professional report if an archeological inventory survey is required;
        - ▪ Contacting the Native American Heritage Commission for a Sacred Lands File search and a Native American Tribal Consultation List;
        - ▪ Remembering that the lack of surface evidence of archaeological resources does not preclude their subsurface existence.
10. Toni Terhaar and Russ Kanz (May 4, 2017):
    - o The EIR should define the proposed project and not include what could be developed at a later date;
    - o Concern about impacts to Swanson's hawk and valley elderberry longhorn beetle habitat;
    - o Concerns about safety and increased traffic at West Covell Boulevard;
    - o Concerns about increased run-off from the site and potential flooding;
    - o Concern about providing a safe walking and biking path from the site to the Safeway Marketplace;
    - o Concern about increased noise from emergency response, and helicopter landings at Sutter Davis Hospital;
    - o Concerns about light pollution due to developing a currently undeveloped plot of land with dense housing;
    - o Concern about increased traffic along alternate routes and cumulative traffic impacts;
    - o Concern about impacts to schools;
    - o Suggests considering a range of alternatives to the project, such as a non-age restricted alternative.
11. Stephanie Tadlock, Central Valley Regional Water Quality Control Board (May 8, 2017):
    - o The environmental review document should evaluate potential impacts to both surface and groundwater quality;
    - o The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP);
    - o Potential permitting requirements include:
        - ▪ Construction Storm Water General Permit;
        - ▪ Phase I and II Municipal Separate Storm Sewer System (MS4) Permits;
        - ▪ Industrial Storm Water General Permit;
        - ▪ Clean Water Act Section 404 Permit;
        - ▪ Clean Water Act Section 401 Permit- Water Quality Certification;

        - Waste Discharge Requirements;
        - Dewatering Permit;
        - Regulatory Compliance for Commercially Irrigated Agriculture;
        - Low or Limited Threat General National Pollutant Discharge Elimination System (NPDES) Permit;
        - NPDES Permit;

12. Christine M. Crawford, Yolo Local Agency Formation Commission (May 11, 2017):
    - The Draft EIR should address:
        - Impacts to agricultural resources from developing the project itself, plus the continued productivity and viability of surrounding agricultural lands;
        - Housing need for the project; and
        - Water and water availability.
13. Greg Rowe (May 11, 2017):
    - Suggests that the Draft EIR provides precise details on the mitigation measures that would be implemented to prevent flooding of the site as well as measures that would be implemented to prevent inundation of surrounding areas;
    - The Draft EIR should evaluate the cumulative storm water impacts that would result from development of the project site in combination with development of the hospital's expansion site;
    - Concern about congestion on Covell Boulevard;
    - Suggests that the cumulative transportation and traffic analysis includes:
        - The projected increase in both students and non-students included in the long range development plan;
        - Potential interaction between the increased vehicle traffic on Covell Boulevard and older pedestrians crossing Covell Boulevard to visit the two medical offices on the south side of Covell Boulevard, plus those walking to the Marketplace shopping center.
    - Proposes two alternatives: a Binning Ranch alternative, and a higher density alternative.
14. Jeffrey Morneau, California Department of Transportation (May 12, 2017):
    - The transportation impact study should provide:
        - Analysis of multimodal travel demand expected from the project;
        - Maps, a site plan showing project access in relation to nearby areas, ingress and egress for the project, roads, transit routes, pedestrian and bicycle routes, as well as parking and intersections;
        - Project-related vehicles miles travelled (VMT), including per capita use of transit, rideshare or active transportation modes, and VMT reduction factors;
        - Illustrations of walking, biking and auto traffic conditions at the project site and study area roadways, trip distribution percentages and volumes as well as intersection geometrics, lane configurations, and AM and PM peak periods;
        - State Route 113 mainline, ramps, and ramp intersections.

15. Eileen M. Samitz (May 13, 2017):
    - All important planning documents would be completed before the project is placed on the ballot for the Measure J/R public vote;
    - Concerns about the floodplain, proposed flood control, and cumulative flooding impacts associated with the Sutter Davis Hospital expansion;
    - Concerns about signalization along streets, timing of intervals between traffic light changes, and pedestrian safety.
16. Brad and Cindy Nelson (May 15, 2017):
    - Concern about traffic impacts along West Covell Boulevard.
17. James Corless, Sacramento Area Council of Governments (SACOG) (May 15, 2017):
    - The project area is identified in SACOG's 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (2016 MTP/SCS) as an area not identified for development by the MTP/SCS horizon year of 2036;
    - The project is located in an area identified for future residential mixed use development by the Sacramento Regional Blueprint.

1.8 AREAS OF CONTROVERSY

Aspects of the proposed project that could be of public concern include the following:

- Potential impacts to aesthetics, scenic views, building heights, and lighting;
- Resulting traffic congestion, particularly along Covell Boulevard;
- Increased noise associated with traffic and emergency response;
- Safety concerns for bicyclists and pedestrians due to increased vehicular travel;
- Size of the project;
- Loss or degradation of species and habitats resulting from site conversion;
- Financing mechanisms and land use conflicts;
- Drainage and flooding impacts.

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This chapter provides a comprehensive description of the West Davis Active Adult Community Project (proposed project), including proposed land uses, infrastructure improvements, off-site improvements, requested entitlements, and project objectives.

Figures referenced throughout this section are located at the end of the chapter.

2.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

PROJECT LOCATION

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI), in unincorporated Yolo County. The project's regional location is shown in Figure 2.0-1, the project area and site boundary are shown in Figure 2.0-2, and the APN map is shown in Figure 2.0-3.

Additionally, the project includes approximately 11.53 acres of offsite improvements. These offsite improvements would include an agricultural buffer along the western and northern boundaries of the project site, improvements along Covell Boulevard and Risling Place, a proposed offsite trail, and proposed drainage channel and drainage basin improvements. The proposed offsite improvements are shown on Figure 2.0-2.

The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, nine mapped but undeveloped 13- to 23-acre residential lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

PROJECT SITE AND SURROUNDING LAND USES

The project site is currently undeveloped and has been previously used for agricultural uses. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Figure 2.0-4 shows the U.S. Geological Survey (USGS) topographic map. Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east, north of Covell Boulevard. Existing frontage improvements along Covell Boulevard include a bus shelter, a section of curb, and traffic signs and signals. Figure 2.0-5 shows an aerial view of the project site.

The project site has developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt residential area planned for nine 13- to 23-acre residential lots. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed

General Commercial land uses located west of SR 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

2.2 PROJECT BACKGROUND

The project site is the site of the previously-proposed Davis Innovation Center Project. The City of Davis issued an Innovation Center Request for Expressions of Interest (RFEI) in May 2014 and received responses in June 2014. Subsequently, the City received two planning applications for Innovation Centers: Mace Ranch Innovation Center and Davis Innovation Center. The Davis Innovation Center was proposed on 207 acres, which included the proposed project site (74 acres) and 134 acres north of the proposed project site. The applicant for this previous project proposed approximately four million square feet of building space. The City review process for the Davis Innovation Center Project began in September 2014, which included preparation of an Administrative Draft Environmental Impact Report and other supplemental technical studies. As of May 12, 2015, the application for this project is on hold by request of the developer, and the Draft EIR was never finalized or released for public review and comment. This EIR is prepared under the assumption that the Davis Innovation Center project will not proceed in the future.

2.3 PROJECT GOALS, OBJECTIVES, AND ENTITLEMENT REQUESTS

GOALS AND OBJECTIVES

Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the project shall be discussed. The principal objective of the proposed project is the approval and subsequent implementation of the West Davis Active Adult Community Project (the proposed project). The quantifiable objectives of the proposed project include annexation of approximately 74 acres of land into the Davis City limits, and the subsequent development of land, which would include: a mix of for-sale and rental residential housing units, affordable senior apartments, an Activity and Wellness Center, University Retirement Community expansion, and associated greenways, drainage, agricultural buffers, and off-site stormwater detention facilities.

The proposed project identifies the following objectives:

- Create a community that connects the City's senior population to existing services and facilities in West Davis.
- Design a neighborhood with homes to support an active lifestyle for older adults.

- Create a diverse community that provides housing for multiple generations and lifestyles by including a provision in the single-family neighborhood for 20% non-age restricted housing.
- Provide Davis residents with housing options that meets their long-term needs so they remain local rather than leave the City.
- Provide a community that is not isolated from the rest of the City by providing public gathering spaces for all City residents.

ENTITLEMENT REQUESTS AND OTHER APPROVALS

The City of Davis is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of the CEQA, Section 15050.

Implementation of the proposed project would require the following entitlements and approvals from the City of Davis:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of City of Davis General Plan Amendments (including Measure R voter approval);
- Approval of City of Davis Pre-zoning and Preliminary Planned Development;
- Approval of Annexation;
- Approval of Final Planned Developments and Tentative Subdivision Maps;
- Approval of Grading Plans;
- Approval of Building Permits;
- City review and approval of Project utility plans.

2.4 PROJECT DESCRIPTION

PROJECT OVERVIEW

The project includes development of: 150 affordable, age-restricted apartments; 32 attached, age-restricted cottages; 94 attached, age-restricted units; 129 single-family detached, age-restricted units; 77 single-family detached, non-age-restricted units; an approximately three-acre continuing care retirement community, which would likely consist of 30 assisted living, age-restricted detached units; an approximately 4.3-acre mixed use area, which would likely consist of a health club, restaurant, clubhouse, and up to 48 attached, age-restricted units; dog exercise area and tot lot; associated greenways, drainage, agricultural buffers; and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 560 dwelling units and 4.5 miles of off street biking and walking paths within the project area and an additional 0.22 miles of off street biking and walking paths offsite. The conceptual master plan is shown on Figure 2.0-6. Table 2.0-1 provides a summary of the land uses proposed for the project.

TABLE 2.0-1: LAND USE SUMMARY

LAND USE	*ACREAGE*	*DENSITY*	*UNITS*
Greenway homes, bungalows, and small builder lots	26.70	8.9	238
Single family and cottages	4.91	19.1	94
Mixed Use Area (Activity & Wellness Center and condos)	4.30	11.16	48
Senior Affordable Apartments	4.26	35.21	150
Continuing Care Retirement Community	3.03	9.90	30
Greenway, Urban Agriculture Transition Area, Public ROW	30.19	-	-
Tot Lot, Sycamore Park, Open Space	0.42	-	-
Dog Park	0.68	-	-
Total	**74.49**	**7.5**	**560**

RESIDENTIAL – MEDIUM DENSITY

Approximately 54.81 acres of land within the project site are proposed to be designated Residential-Medium Density by the Davis General Plan. The Conceptual Master Plan for the project reflects 380 medium density units, of which 80% (304 units) would be age-restricted. For age-restricted units, the minimum age of (at least one) residents would typically be either 55 and older or 62 and older.

The three-acre University Retirement Community expansion would be located in the southeastern corner of the project site, as shown on Figure 2.0-6. This expansion area would have up to 30 assisted living, age-restricted detached units. This would provide expansion opportunities for the University Retirement Community which is currently located directly south of the proposed expansion site, on the opposite side of Covell Boulevard. The existing University Retirement Community has remodeled and added onto their facility and is currently evaluating their expansion needs to meet the growing demand for their services.

RESIDENTIAL – HIGH DENSITY

Approximately 4.53 acres of land within the project site are proposed to be designated Residential-High Density by the Davis General Plan. The project includes reservation of land for 150 affordable apartment units for seniors. For the age-restricted units proposed as part of the project, the minimum age of (at least one) residents would typically be either 55 years and up or 62 years and up. The affordable units would be located in the southwestern corner of the project site, west of the proposed University Retirement Community expansion, as shown on Figure 2.0-6.

The proposed project has a total requirement to include 60 affordable units. Fifty-Seven of these affordable units must have rents affordable on average to households whose incomes do not exceed 65 percent of the Yolo County median income. An additional three of these affordable units must have rents affordable to households whose incomes do not exceed 40 percent of the Yolo County median income.

At least 60 of the high-density units would meet the minimum income and rent targets above. However, based on currently available affordable housing subsidy funding, it is anticipated that approximately 35 percent of the units would be affordable to households whose incomes do not exceed 25 percent of the Yolo County median income, 35 percent of the units would be affordable to households whose incomes do not exceed 50 percent of the Yolo County median income, and 30 percent of the units would be affordable to households whose incomes do not exceed 60 percent of the Yolo County median income.

Construction of the 150 affordable senior apartment homes would occur in two 75-unit phases in order to ensure that local Davis residents are the primary market for occupancy. Construction of the affordable senior apartments would be phased in order to reach an aging Davis population over an extended period of time. The senior apartment homes concept drew inspiration from Eleanor Roosevelt Circle, an existing 60-unit affordable senior housing complex in east Davis developed in 2006. The project would include on-site services coordination staff that would facilitate appropriate health, educational and recreational activities, and supportive services for the residents.

MIXED USE

The approximately 4.3-acre mixed use area would be located in the central portion of the project site and would be connected to the remainder of the site by greenway paths. The exact uses and facilities would be finalized through ongoing coordination with the City and the ongoing public outreach process. Current plans for the facility include a health club, restaurant, meeting rooms, and an outdoor swimming pool, all of which would be available for use by residents and the public. Additionally, attached, age-restricted units in this area are being evaluated for purposes of the EIR.

RESIDENTIAL GREENSPACE

The project site would be interconnected via a grid of north-south and east-west neighborhood walking and biking paths. The internal greenways would provide connection between the site access points, the residential housing units and the activity and wellness center. The project also includes a perimeter 1.4-mile bicycle/pedestrian path that connects into the proposed internal greenway system and the existing City bicycle and trail system. Exercise stations and detailed way finding signage with distance markers would be constructed along the path to encourage an active lifestyle.

DOG PARK AND TOT LOT

A 0.68-acre fenced dog park would be included as part of the project. It would be located near the secondary access off of Covell Boulevard. A 0.42-acre tot lot would also be provided near the dog park.

URBAN AGRICULTURE TRANSITION AREA

The project would include an urban agriculture transition area along the northern and western project boundary adjacent to existing agricultural lands. Pursuant to Section 40A.01.050 of the City's Municipal Code, the proposed agricultural buffer along the northern and western boundaries of the project site would be a minimum of 150-feet wide and would be planted with California native plants. Additionally, the transition area would include an approximately 50-foot wide area that includes a multi-use trail, within the agricultural buffer area. The perimeter trail would loop around the north and west edges of the project site, connecting to off street paths proposed within the development and connecting to Risling Court and Covell Boulevard. The remaining 100-foot wide area of the agricultural buffer would also serve as a drainage conveyance for storm water from the development and for regional flood management from the Covell Drain.

PUBLIC /SEMI-PUBLIC AREA

The City anticipates that the off-site stormwater detention area will be designated for Public/Semi-Public use as part of the General Plan Amendment for the project.

CIRCULATION IMPROVEMENTS

The proposed vehicular and alternative transportation (i.e., bicycle, pedestrian, and transit) circulation improvements are discussed in detail below.

Vehicular Circulation

The existing streets providing access around the project site include Covell Boulevard and Risling Court. Covell Boulevard is a major arterial roadway serving the project site and connects the western and eastern limits of the City, continuing as Mace Boulevard in the eastern limits of the City and Country Road 31 west of the City limits.

As shown on Figure 2.0-6, access to the project site would be provided via Risling Court, which runs along the eastern edge of the site, as well as an entrance on West Covell Boulevard. The proposed internal north-south and east-west roadways would connect to housing and recreation areas. Cul-de-sacs are included in the project plan within the proposed cottages development area and as a termination for some internal streets.

In general, Covell Boulevard would be improved to accommodate more traffic from all travel modes. Covell Boulevard would be widened to four lanes with turn lanes. Additional bike lanes with buffers and bike signals would encourage and assist cyclists accessing destinations throughout the City. The footprint of the proposed off-site improvements to Covell Boulevard are shown in Figure 2.0-5.

Along the project frontage, Covell Boulevard is currently a four-lane arterial with Class II bike lanes and dedicated right and left turn lanes west of the intersection with Shasta Drive. Traveling westbound, the road narrows and the road transitions to a two-lane arterial with a two-way left turn (TWLT) lane and Class II bike lanes. The transportation element of the City's General Plan calls for upgrading Covell Boulevard to a four-lane arterial. As part of this project, Covell Boulevard is proposed to be widened along the project frontage to a right of way varying from 176 to 191 feet. The existing eastbound travel lanes (including the bicycle lane) would be re-striped to travel lane widths consistent with the City of Davis Transportation System Design Standards. The eastbound Class II bike lane, left turn lane, and Class I bike trail would remain. The existing channelized right turn lane from eastbound Covell Boulevard to southbound Shasta Drive would be removed. The channelized right from northbound Shasta Drive onto eastbound Covell Boulevard would remain. Westbound Covell Boulevard would be modified to include two travel lanes (in accordance with current City transportation standards), a right turn lane into the proposed project site, and a Class I bike lane. The existing bus stop on the north side of Covell Boulevard would be relocated to align with the new street improvements; the bus turnout would be shared with the new right turn lane into the project site. Westbound Covell Boulevard, east of Shasta Drive, would be modified to include a right turn pocket for the channelized right turn onto northbound Risling Court. The existing channelized right would remain and may be retrofitted with a signal head to regulate vehicular movement across the crosswalk.

Risling Court is an existing street section, which currently serves the Sutter Davis Medical Campus. Risling Court currently extends from Covell Boulevard north to the first entrance of the Medical Campus parking lot. As part of the proposed street circulation improvements, Risling Court would ultimately be widened and extended to provide primary access to the neighborhood at two points. This roadway currently includes an approximately 40-foot paved section. On the east side, adjacent to Sutter Hospital, is a 15-foot parkway strip, a five-foot sidewalk, and a four-foot parkway strip, which provides a buffer between the sidewalk and the parking area. The proposed street section would be widened from Covell Boulevard to the Sutter Davis Medical Campus entrance. The 104-foot right-of-way would include a 56-foot paved section containing two 12-foot travel lanes, two 8-foot Class II bike lanes, and two 8-foot parking lanes. The sidewalk and parkway strips on the west side of the street are proposed with a 6-foot sidewalk and 5-foot planter strip, consistent with the current City Standards.

Risling Court would then be extended from the Sutter Davis Medical Campus entrance to the northern entrance of the proposed neighborhood. This 76-foot right-of-way would include a 52-foot paved section of two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. Six-foot parkway strips with 6-foot sidewalks would be installed on both sides. Bicyclists and pedestrians could continue past the termination of Risling Court in a 25-foot wide area that includes a multipurpose pathway. The extension would connect to the proposed agricultural buffer and the Sutter Davis exercise loop. The footprint of the proposed off-site improvements to Risling Court are shown in Figure 2.0-5.

The entrance to the proposed Activity and Wellness Center off Risling Court would be located opposite the main entrance to the Sutter Davis Medical Campus. Risling Court provides connection to two proposed primary neighborhood entrances. The entrance streets would include an 84-foot right of way and a 52-foot paved section, 8-foot center medians, 6-foot parkway strips, and 6-foot sidewalks. The paved section would include 12-foot travel lanes, 7-foot Class II bike lanes, and 7-foot parking lanes.

The secondary access point via Covell Boulevard would only allow right in, right out movements. The 64-foot right of way would include a 52-foot paved section with two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. The sidewalk would be 6-feet wide on both sides.

Two different internal street sections are proposed by the project, depending on the anticipated usage. The first internal street section would be a 64-foot right-of-way with a 52-foot paved section with two 12-foot travel lanes, 7-foot Class II bike lanes, 7-foot parking lanes, and a 6-foot attached sidewalk. The second internal street section would be a local street with a 46-foot right-of-way and a 34-foot paved section with two 10-foot travel lanes with Class III bike lanes, 7-foot parking lanes, and 6-foot attached sidewalks. With the exception of the 12-foot travel lanes, the internal street sections are consistent with the current City Standards.

In addition to the internal streets described above, 25-foot wide streets for bungalow court with cul-de sacs are proposed.

Non-Vehicular Circulation

The project site is located adjacent to a Class I off-street bike trail located along the south side of Covell Boulevard. There is also a Class I trail on the north side of Covell Boulevard, east of the project site and on-street bike lanes on both sides of Covell Boulevard. This infrastructure provides connections to the system of neighborhood greenways and the designated Davis bicycle loop within the City. For planning purposes, it is assumed that all external bicycle and pedestrian trips would use the intersection of Covell Boulevard, Shasta Drive, and Risling Court.

Figure 2.0-7 shows the proposed bicycle and pedestrian facilities. The project would provide approximately 4.5 miles of biking and walking paths. This includes 2.4 miles of Class I bikeways (off road pathways), 1.4 miles of Class II bikeways (on street bike lanes), Class III bikeways (bicycle routes) throughout the site, and a 0.7-mile decomposed granite path within the agricultural buffer. The compilation of this infrastructure allows for a 1.4-mile walking path around the perimeter of site and allows connections to the Sutter Davis Hospital and the interior concrete walking/biking paths.

The project would include development of all on-site facilities shown in Figure 2.0-7. Additionally, an existing trail is located east of the project site and north of the hospital. This off-site trail would be improved to City standards, as shown in Figure 2.0-5. The proposed bicycle and pedestrian facilities would eventually connect to planned future improvements within the vicinity of the project site, including a future bicycle and pedestrian overcrossing for SR 113 and John Jones Road that is being considered by the City of Davis.

Bicycle lanes in high conflict areas in the vicinity of the site would be restriped with dashed green paint to increase visibility of bicyclists and raise awareness of intersecting travel paths. Additionally, crosswalks would be striped similar to the J Street and Covell Boulevard intersection treatment, with large stripes for pedestrians and solid green lanes for cyclists. Additionally, a signal controlled crossing of Covell Boulevard would be modified for cyclists from John Jones Road southbound onto the existing Class I bike trail, connecting to the future SR 113 overcrossing. The proposed bike signal head would use the existing phase and allow cyclists to cross while all vehicles have a red light.

Additionally, an entrance and exit would be located before and after the westbound merge lanes along Covell Boulevard. The bicycle lane would deviate around the bus shelter with a bike ramp, eliminating the need for the bus to cross a bicycle lane. Further, where feasible, a three-foot striped buffer would be added along the Covell Boulevard corridor bicycle lane.

The project site is directly adjacent to public transit stops for the Yolobus and Unitrans systems, which serve Davis and the surrounding area. Adjacent bus stops are located on the north side of Covell Boulevard, near the intersection with Risling Court (at southeast corner of project site), and near the John Jones Road and Covell Boulevard intersection. On the south side of Covell Boulevard, a stop is located approximately 250 feet east of Risling Court.

These stops serve Yolobus lines 220 (between Vacaville and Winters) and 220C (Winters Express) and Unitrans bus lines 230, 231, 232, P and Q. Additionally, Davis Community Transit provides paratransit service for persons with disabilities via a door-to door demand response system in which users of the system call for transportation service when needed. In addition to public transportation, zip cars or other shared service vehicles would be accommodated with parking and charging stations at the proposed Activity and Wellness Center. The bus stop located adjacent to the site would be improved and relocated to accommodate the additional Covell Boulevard improvements as part of this project.

UTILITY IMPROVEMENTS

The project proposes to connect to existing City utility infrastructure to provide water, sewer, and stormwater drainage.

Water System

The City of Davis currently maintains and operates an above ground water tank and pump station immediately adjacent to the project site (West Area Tank & Pump Station). The City also has two active deep wells within the vicinity of the project site, one immediately east of the Sutter Davis Hospital and one immediately west of the University Retirement Community. The City also operates an intermediate well east of SR 113 near the Davis Waldorf School.

The existing City infrastructure system includes a 14-inch main extending from John Jones Road to the West Area Water Tank and Pump Station; a 12-inch main in John Jones Road and West Covell Boulevard; and a 12-inch main up Risling Court, extending around the hospital and tying into John Jones Road.

The project is not currently planning for a non-potable water source for irrigation of public green spaces. The City of Davis has long term planning goals to provide the City with non-potable water from the waste water treatment plant for irrigation of public green spaces.

Figure 2.0-8 identifies the preliminary water infrastructure layout for the proposed West Davis Active Adult Community. The preliminary water infrastructure for the proposed development is assumed to consist of 8-inch pipes. A future water pressure and flow study would need to be conducted to further refine the proposed pipe sizes throughout the development in order to meet the domestic demands and the fire flow demands. The triggers for the proposed infrastructure would also be defined in this future study to confirm adequate flow can be provided with each phase of the development. The project proposes connection points to the existing system at the existing water tank northeast of the project site, at the existing Risling Court cul-de-sac and in Covell Boulevard at the proposed entrance off Covell Boulevard.

Sewer System

Wastewater treatment for the project area is currently provided by the City of Davis. The City of Davis sewer collection system for the western portion of Davis utilizes pipe under Covell Boulevard ranging from 18-inch diameter on the western end to 36-inch diameter at the eastern edge. The Covell Boulevard trunk main extends to Pole Line Road and ties into a 42-inch diameter sewer heading north and east to the City of Davis Waste Water Treatment Plant, located approximately three miles east of Pole Line Road/CR 102.

Figure 2.0-9 identifies the preliminary sewer infrastructure layout for the proposed project. The proposed sewer infrastructure would utilize 8-inch pipes to serve the development. A future sanitary sewer study would need to be conducted to further refine the proposed pipe sizes throughout the development in order to meet the peak flows. The triggers for the proposed infrastructure would also be defined in this future study to confirm adequate flow can be provided with each phase of the development.

The proposed project would pursue water efficient fixtures and water conservation throughout the development in accordance with the 2016 CAL Green Building Code Standard, as adopted by the City of Davis. The project does not anticipate any high use facilities or functions that would generate a large amount of wastewater.

Storm Drainage System

The project site is located within the Covell Drain Watershed, with approximately 17 square miles of the watershed lying upstream of the site. The project site includes the Covell Drain channel, which conveys stormwater and agricultural runoff from western portions of the City of Davis and from portions of unincorporated Yolo County west of the site. In the vicinity of the project site, the Covell Drain flows east along the north side of Covell Boulevard toward SR 113, turning north along the west edge of SR 113, and then discharging to an existing three- to 10-foot by 5-foot box culvert under the freeway. East of SR 113, the Covell Drain continues to the northeast along the north edge of Davis, through the Wildhorse Golf Course, and eventually discharges to Willow Slough Bypass northeast of the City. Street improvements to Covell Boulevard across the entire frontage of the property would require relocation of the Covell Drain further north, which would be included with this project.

The City of Davis maintains a storm drain pipe network in the project area which discharges to the Covell Drain. This network collects water from the south side of Covell Boulevard and pipes to the north into the existing channel. Storm drain pipes ranging from 15-inches to 42-inches provide collection and conveyance of stormwater throughout the Sutter Hospital Facility and along John Jones Road, tying into the Covell Drain parallel to SR 113.

The City of Davis also maintains a stormwater detention pond adjacent to the West Davis Water Tank site. The pond provides attenuation for the stormwater associated with the water tank site and the Sutter Davis Hospital site.

As shown on Figure 2.0-10, the proposed drainage infrastructure would include greenway swales, a perimeter drainage channel, an offsite detention basin, and relocation of the Covell Drain north to accommodate the widening of Covell Boulevard. The ditch would need to be contained within a culvert under the new entrance from Covell. The footprint of the proposed off-site detention basin is also shown in Figure 2.0-5.

With regard to stormwater quality, the project would be designed to conform with current City of Davis standard requirements, as discussed below. For water quantity, the objective of the project is to identify the basic post-project storage volumes needed onsite in order to limit post-project peak discharges and associated peak water surface elevations (WSEs) to estimated existing levels in the Covell Drain on its approach to the SR 113 box culvert.

As such, the proposed project would provide stormwater storage and conveyance facilities that would likely consist of the following components:

Water Quality Mitigation: The project intends to integrate Low Impact Development (LID) measures throughout the project to provide stormwater quality treatment. These LID measures would likely include both volume-based best management practices (BMPs) (i.e., bioretention, infiltration features, pervious pavement, etc.) and flow-based BMPs (i.e., vegetated swales, stormwater planter, etc.). The use of these features would be dependent upon the location and setting within the project site. These treatment measures would be designed in accordance with the City of Davis Storm Water Quality Control Standards. Sizing and configuration of these treatment measures would be determined with the future development of the tentative map and improvement plans for the project.

Mitigation for Increase in Project Site Discharge Due to Development: In addition to the water quality treatment measures, the project proposes to provide mitigation for the expected increase in the site's post-project peak discharge relative to pre-project conditions. As a result of the project development, the effective impervious area for the site would increase, which in turn would increase the peak rate of runoff from the site.

The project is proposing 13.5 acres of open space/landscaping around the perimeter of and throughout the project site. The resulting 100-year peak discharge from the proposed development was estimated at 53.2 cubic feet per second (cfs).

Proposed mitigation for the pre-to-post increment in peak discharge would be accomplished by integrating an offsite detention storage with the project, with the design goal of limiting the site's post-development peak flow to existing levels. A detention basin approximately 450-feet by 150-feet with a maximum water depth of 3.4 feet (5.75 acre-feet) may be required.

This detention basin would be located offsite to the northeast of the project site adjacent to the existing City of Davis detention basin, as shown on Figure 2.0-10. The proposed detention basin would be located within the footprint of the proposed perimeter drainage channel. The depth of the detention basin would be approximately equivalent to the existing City detention basin.

Electricity and Natural Gas

The project site has nearby access to PG&E service for both natural gas and electric service. The proposed project would provide energy efficient homes. All of the State of California design guidelines for new homes including "tight building envelopes," energy efficient appliances and HVAC, insulation and window efficacy, would be incorporated into the project design. The project development would comply with current City standards, including Tier 1 of the CalGreen codes. Additionally, solar would be incorporated on all of the proposed rooftops. The amount of solar on each home would likely be a ratio of square footage of the home to anticipated electrical usage.

GENERAL PLAN AMENDMENT

The proposed project would require a City of Davis General Plan Amendment to the Land Use Element to change land uses on the project site. Changes to the Land Use Element would include changing the entire project site from Agriculture to Residential – Medium Density, Residential – High Density, Neighborhood Mixed Use, Public/Semi-Public, and Urban Agriculture Transition Area. Figure 2.0-11 illustrates the current County General Plan land uses within the project site. Proposed General Plan land uses are also shown on Figure 2.0-11.

MEASURE R

Because the General Plan Amendment would redesignate the site from Agricultural and Urban Agriculture Transition Area to urban uses, voter approval is required under the Citizens' Right to Vote on Future Use of Open Space and Agricultural Lands Ordinance (Measure R). Measure R requires approval of Baseline Project Features such as recreation facilities, public facilities, and significant project design features, which cannot be eliminated, significantly modified, or reduced without subsequent voter approval. A public vote on the project, under the provisions of Measure R, would occur following completion of the CEQA review process (i.e., after certification of the Final EIR).

PRE-ZONING

The project site is currently within the jurisdiction of Yolo County. Current County zoning for the project site is Agriculture-Intensive (A-N). The Yolo Local Agency Formation Commission (LAFCo) would require the project site to be pre-zoned by the City of Davis in conjunction with the proposed annexation. The City's pre-zoning for the project site would be Planned Development (PD). The pre-zoning would go into effect upon annexation into the City of Davis. The existing and proposed zoning for the project site is shown on Figure 2.0-12.

ANNEXATION

The project site is currently within Yolo County, and within the City of Davis' Sphere of Influence (SOI). Approval of the proposed project would result in the annexation of the approximately 74-acre project site into the City of Davis.

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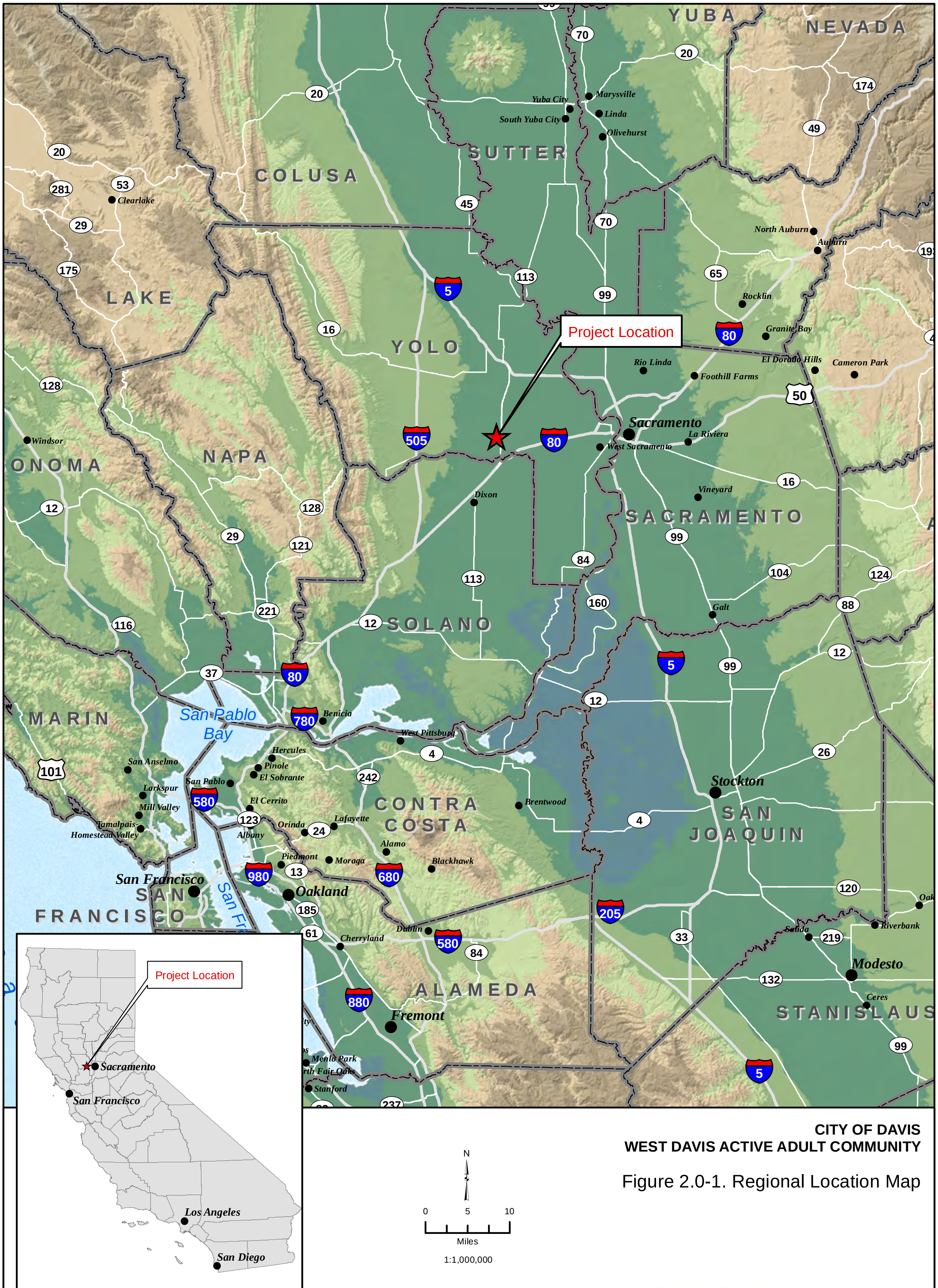

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 2.0-1. Regional Location Map

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Sources: CalAtlas. Map date: April 4, 2016.

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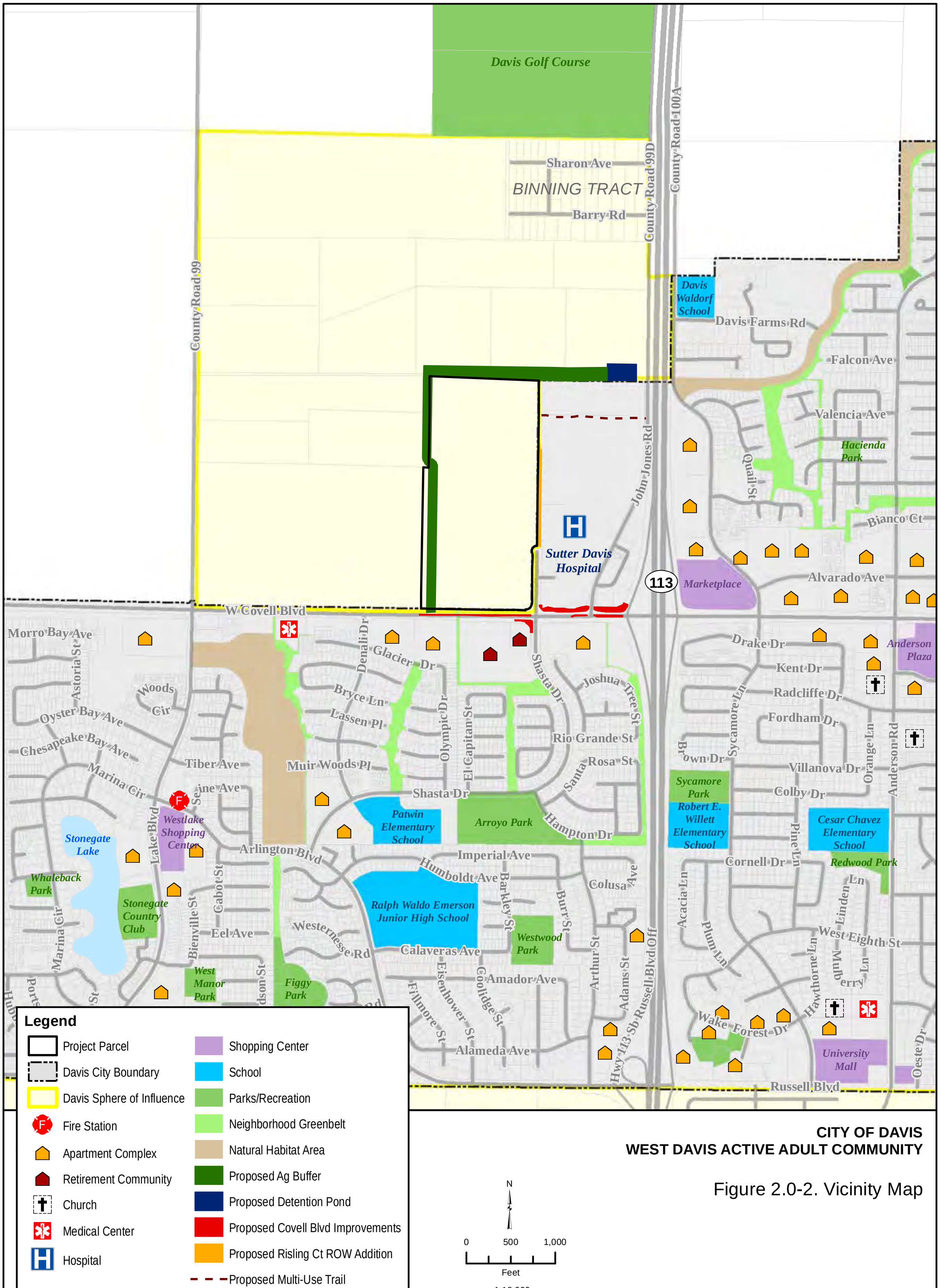

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 2.0-2. Vicinity Map

Source: Cunningham Engineering; Yolo County GIS; City of Davis GIS; Google Maps. Map date: October 10, 2017.

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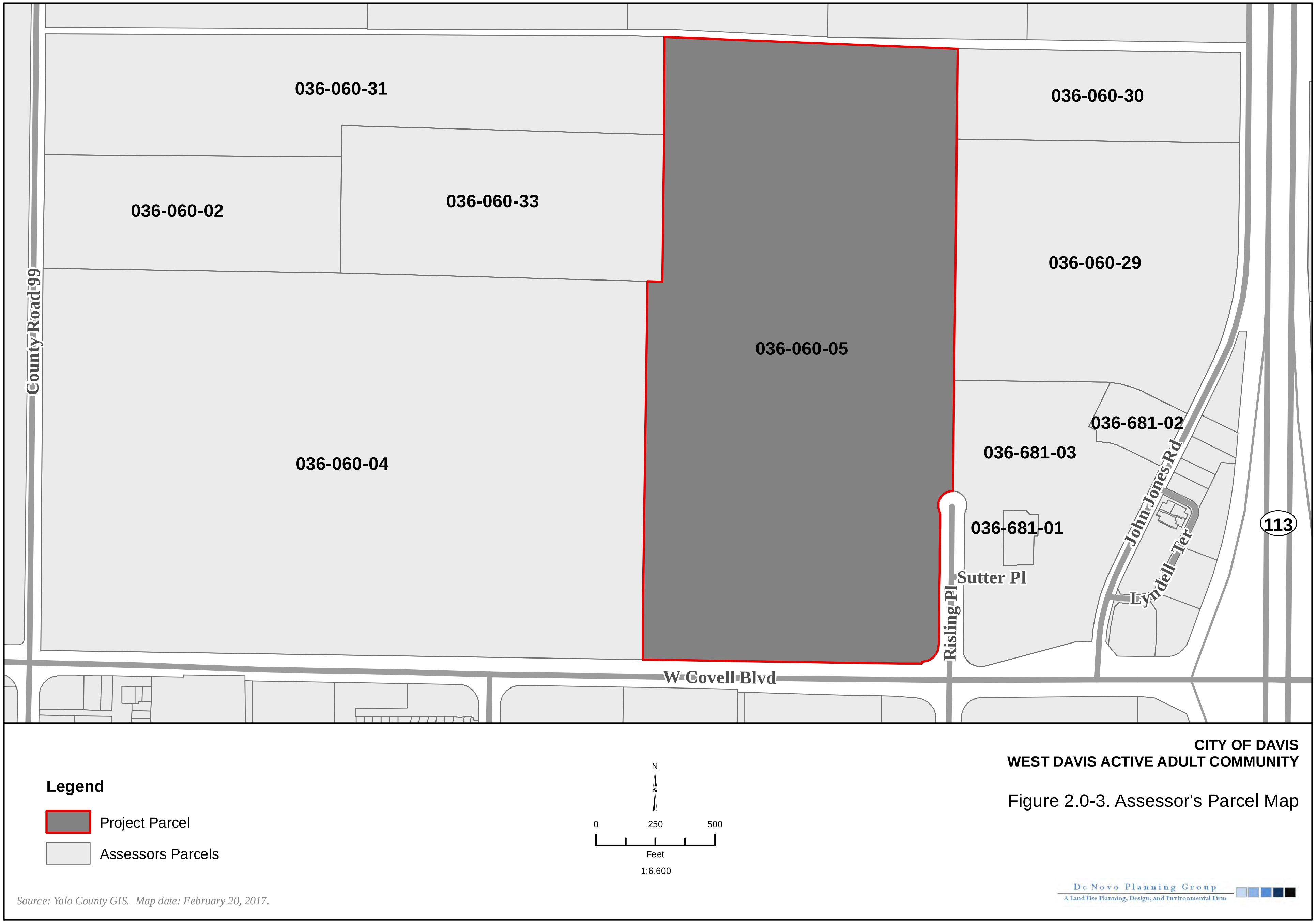

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Figure 2.0-3. Assessor's Parcel Map

Source: Yolo County GIS. Map date: February 20, 2017.

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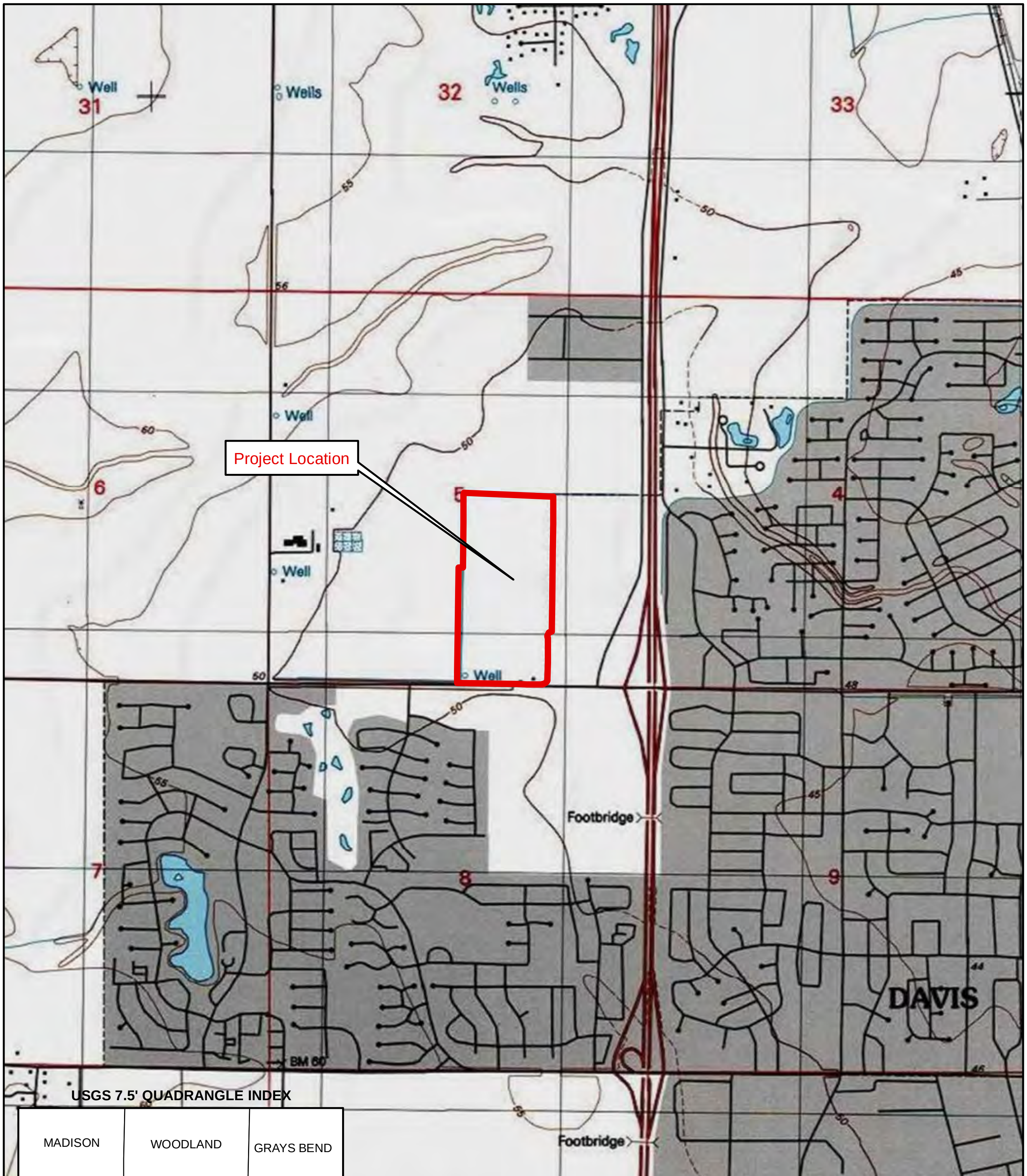
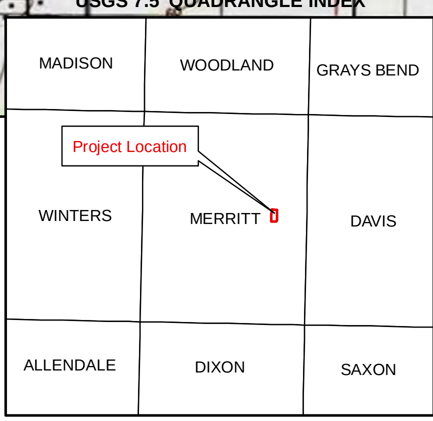


USGS 7.5' QUADRANGLE INDEX



N

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Feet
1:24,000

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Figure 2.0-4: USGS Topographic Map

MERRITT QUADRANGLE

Data sources: Yolo County GIS; ArcGIS Online USGS Topographic Map Service. Map date: February 20, 2017.

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Legend

- Project Parcel
- Proposed Multi-Use Trail
- Proposed Ag Buffer
- Proposed Detention Pond
- Proposed Covell Blvd Improvements
- Proposed Risling Ct ROW Addition

N

0 200 400

Feet

1:8,000

CITY OF DAVIS
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Figure 2.0-5. Aerial View of Project Site

Source: Cunningham Engineering 9/12/2017; Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: October 10, 2017.

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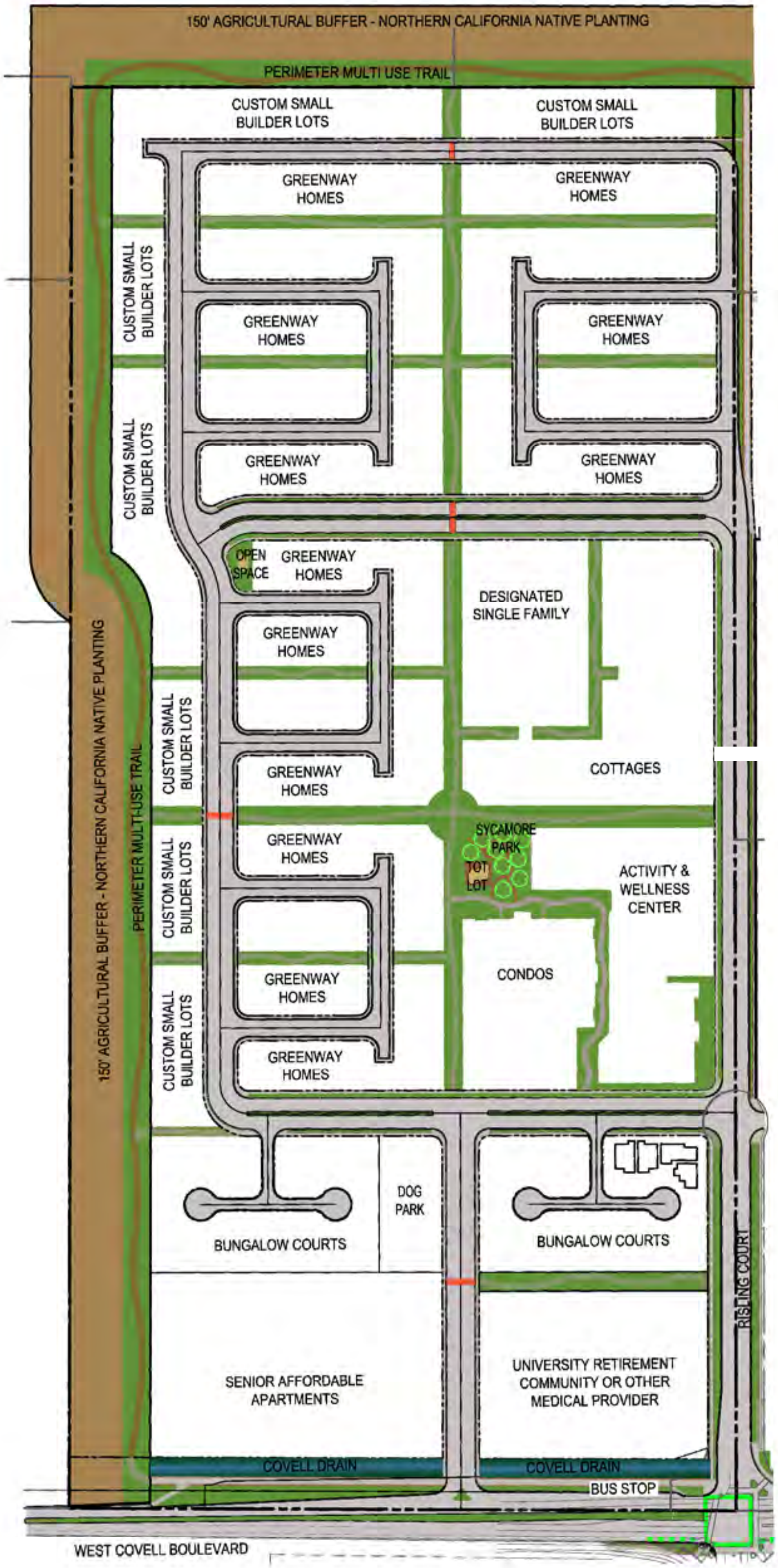

Legend

- Property Line
- Right of Way
- Raised Crosswalk

N

0 100 200

Feet

1:4,200

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Figure 2.0-6. Conceptual Master Plan

Source: Cunningham Engineering, 9/12/2017.
Map date: October 10, 2017.

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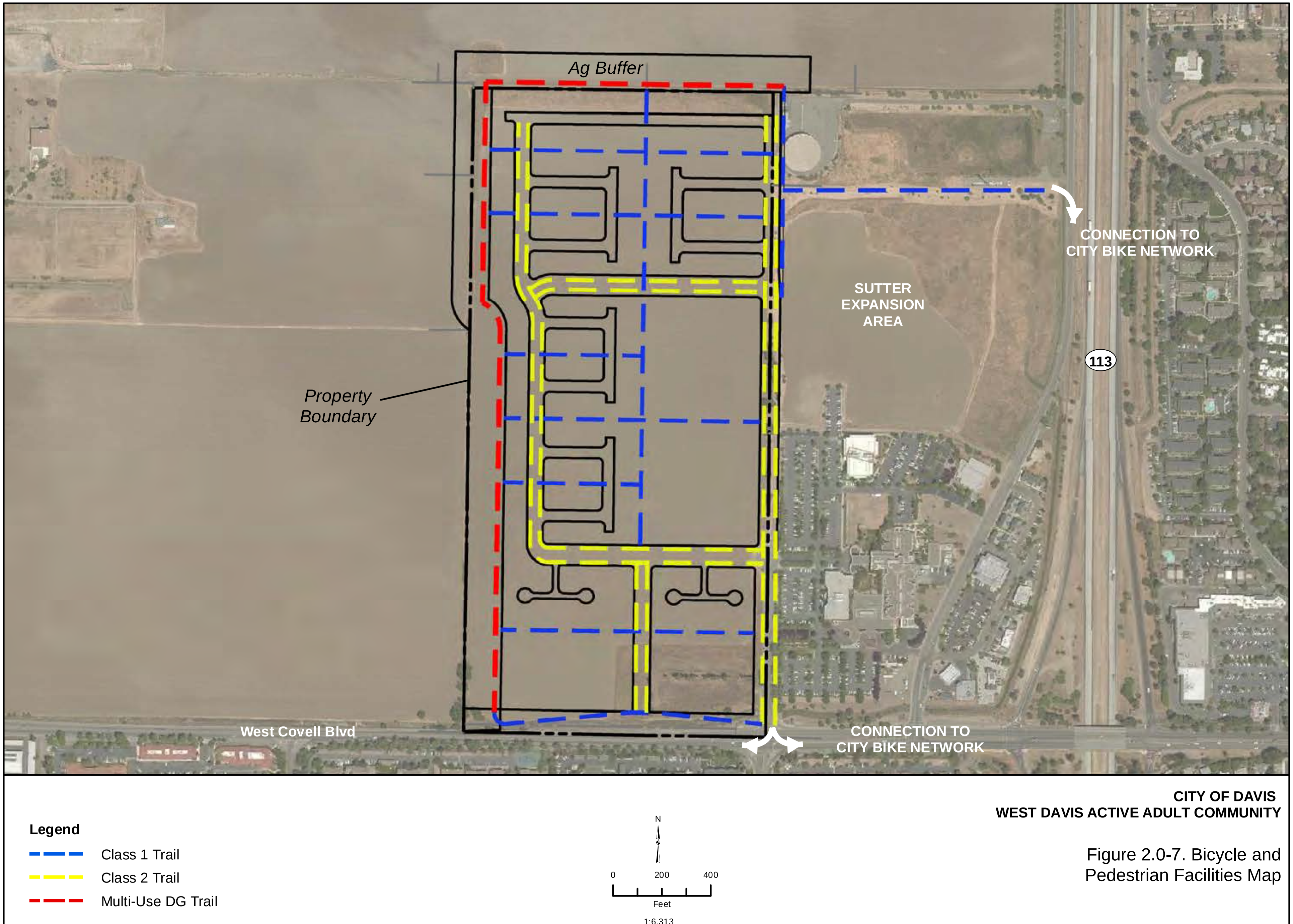

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Figure 2.0-7. Bicycle and Pedestrian Facilities Map

Source: Yolo County; Cunningham Engineering. ArcGIS Online World Imager Map Service. Map date: October 11, 2017.

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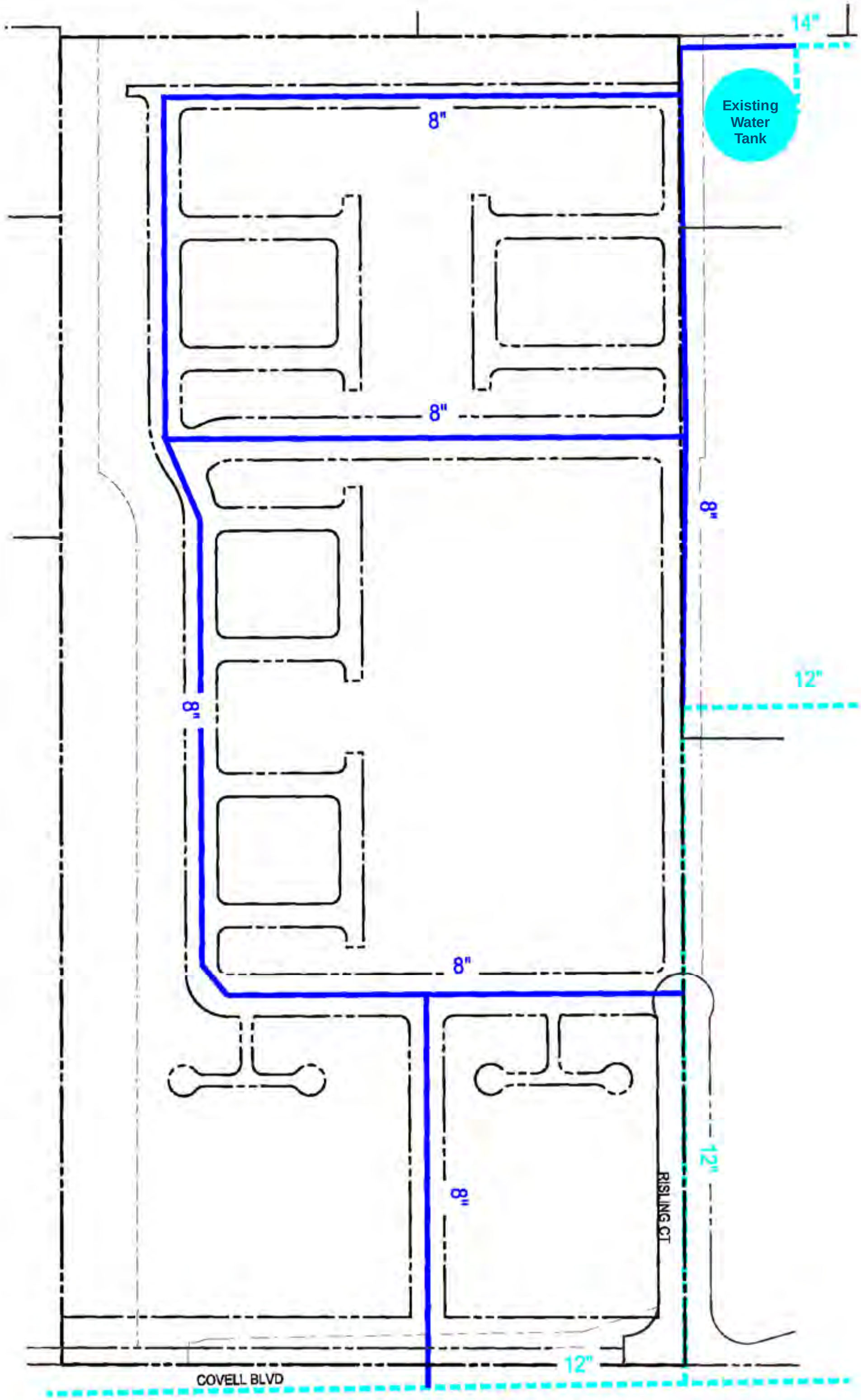

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Figure 2.0-8. Water System Exhibit

Legend

Existing Water Pipeline

Proposed Water Pipeline

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Source: Cunningham Engineering.
Map date: April 11, 2017.

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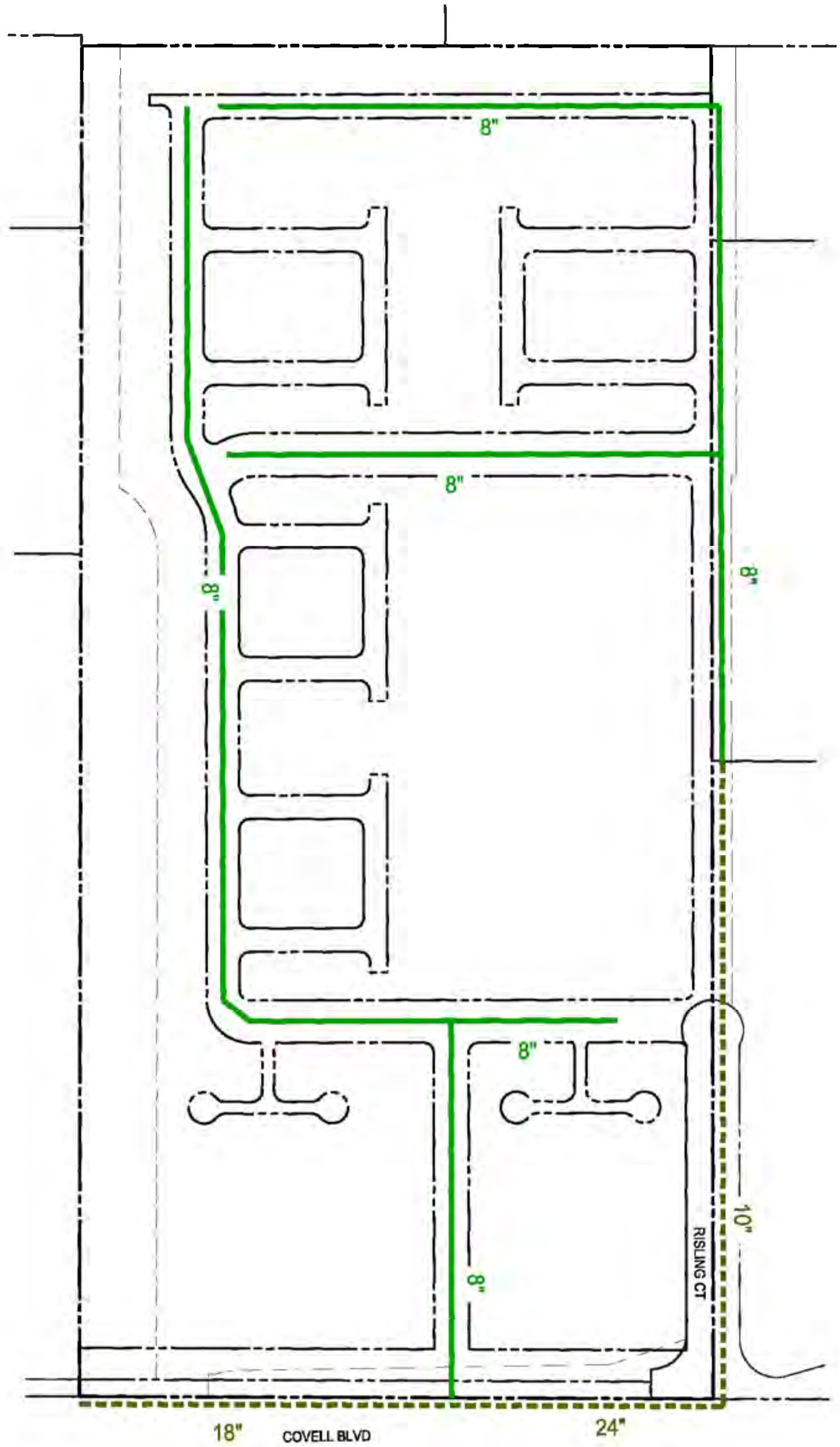

Legend

Existing Sewer Pipeline

Proposed Sewer Pipeline

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Figure 2.0-9. Sanitary Sewer System Exhibit

Source: Cunningham Engineering.
Map date: April 11, 2017.

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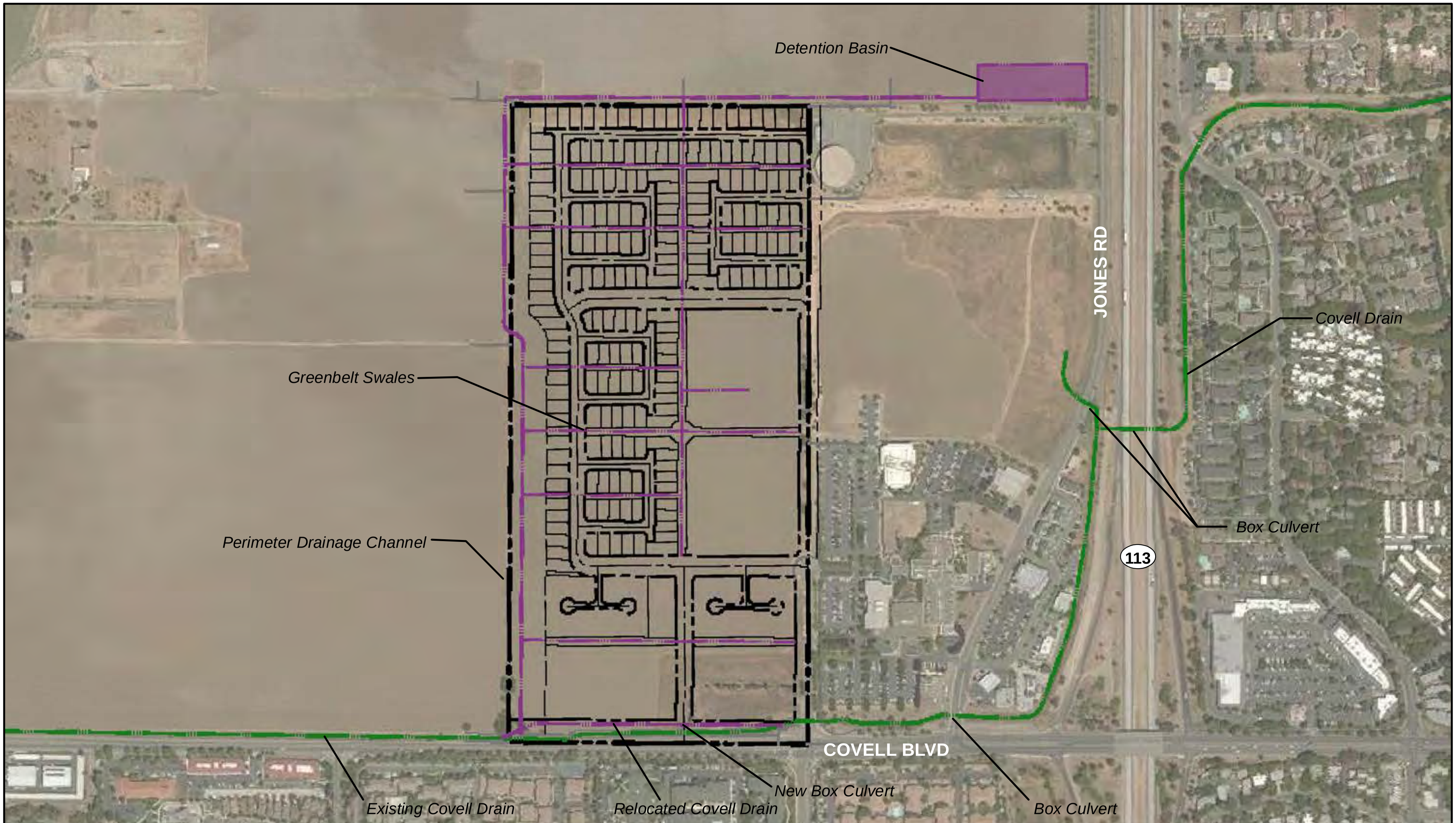

Legend

- Existing Drainage Conveyance
- Proposed Drainage Conveyance

Source: Cunningham Engineering. Map date: April 11, 2017.

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Figure 2.0-10. Drainage Infrastructure Exhibit

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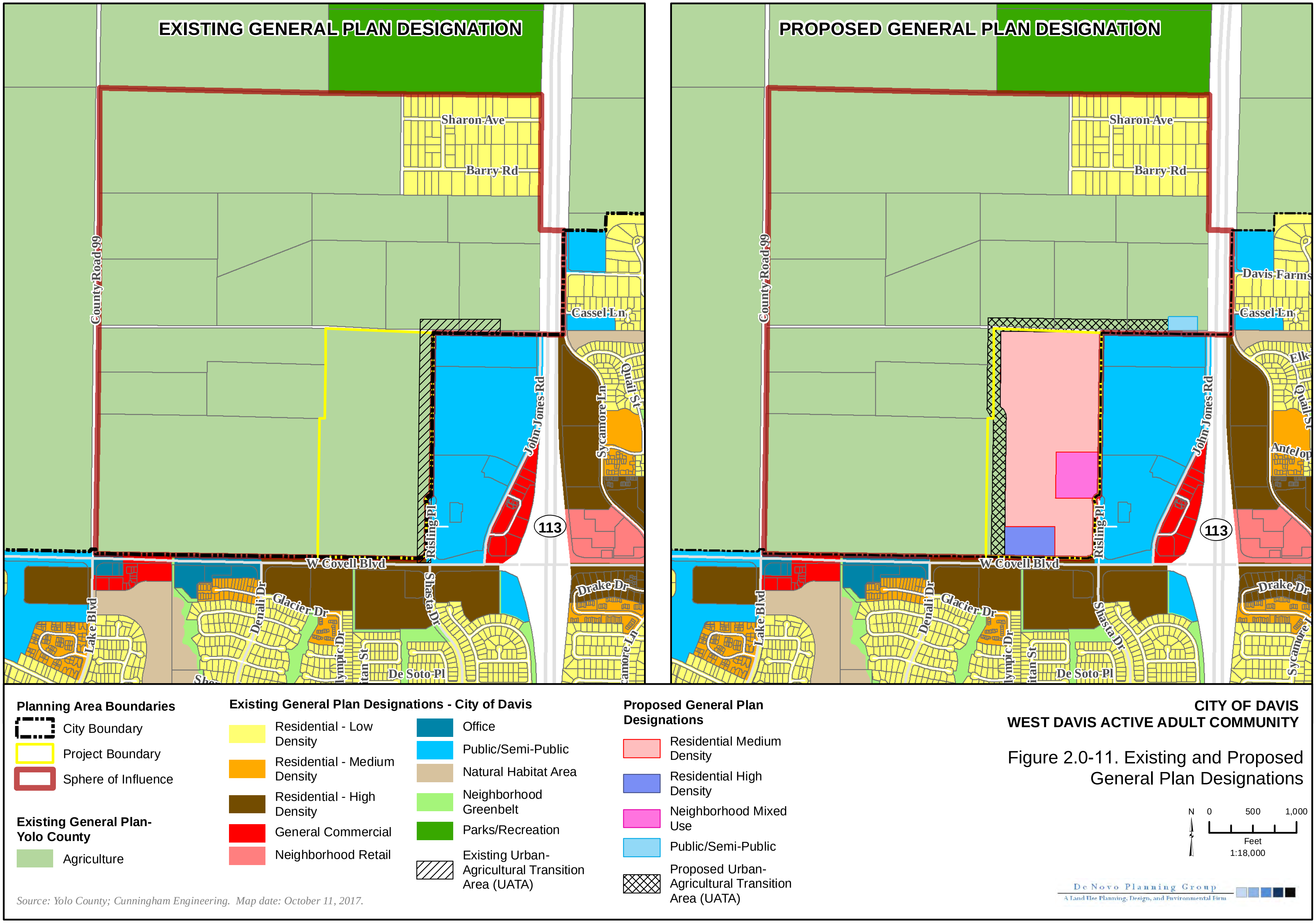

Source: Yolo County; Cunningham Engineering. Map date: October 11, 2017.

CITY OF DAVIS
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Figure 2.0-11. Existing and Proposed General Plan Designations

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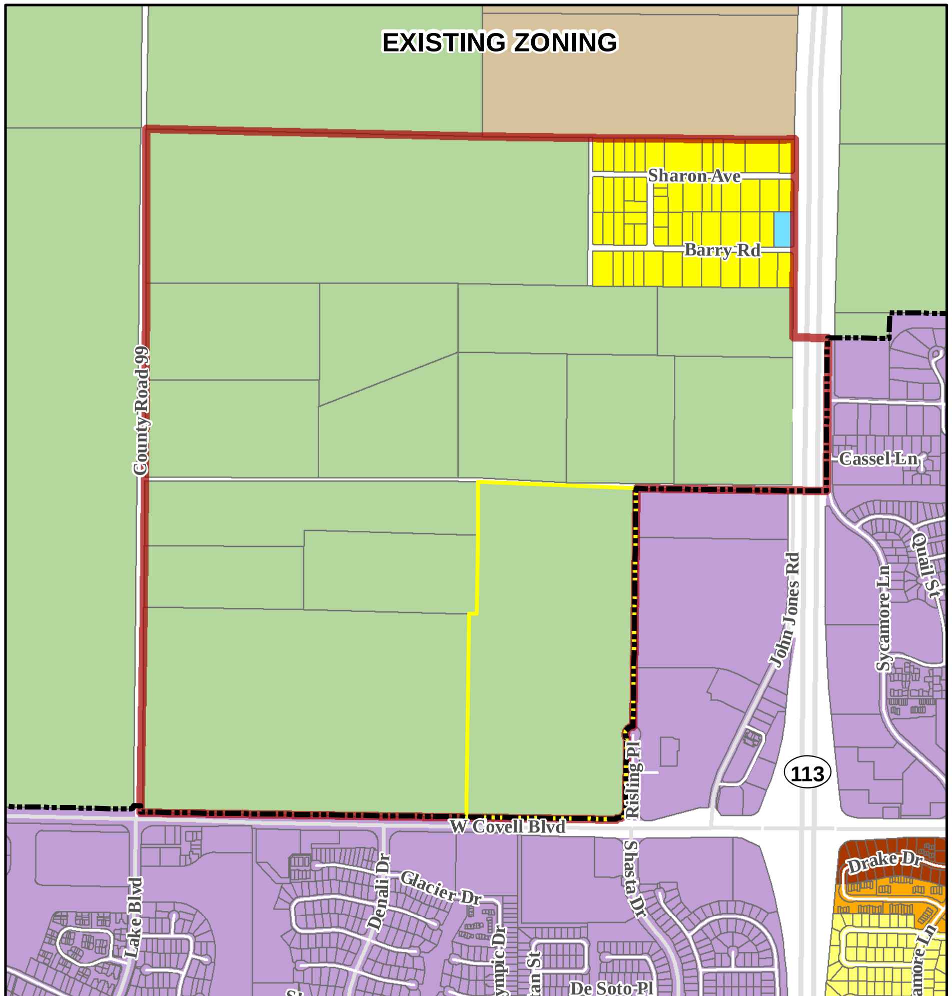

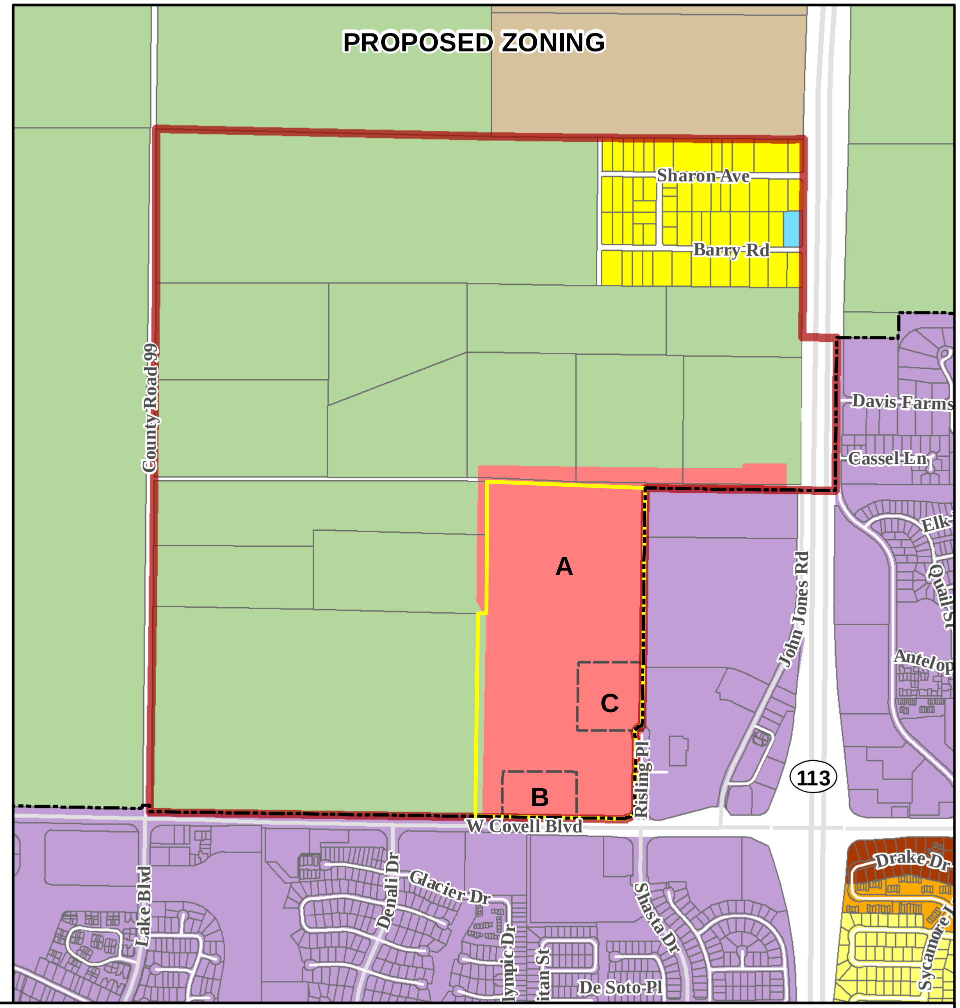

CITY OF DAVIS
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Figure 2.0-12. Existing and Proposed Zoning

Planning Area Boundaries
- City Boundary
- Project Boundary
- Sphere of Influence

Existing Zoning - Yolo County
- Agricultural Intensive
- Low Density Residential
- Public Open Space
- Public/QuasiPublic

Existing Zoning - City of Davis
- R-1
- R-2
- R-3
- PD

Proposed Zoning
- Planned Development
  - A - Medium Density Residential
  - B - High Density Residential
  - C - Neighborhood Mixed Use

N 0 500 1,000 Feet 1:18,000

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Source: Yolo County; Cunningham Engineering. Map date: October 11, 2017.

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This section provides an overview of the visual character, scenic resources, views, scenic highways, and sources of light and glare that are encountered on the project site and the surrounding area. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts. Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Greg Rowe (May 11, 2017), Corinne Gee (April 24, 2017), Robin Whitmore (April 26, 2017), Russ Kanz and Toni Terhaar (May 4, 2017), and County of Yolo (April 18, 2017). Each of the comments related to this topic are addressed within this section. Information in this section is derived primarily from the following:

- *City of Davis General Plan* (City of Davis, May 2001, Amended through 2007).

3.1.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The City of Davis planning area is located 11 miles west of Sacramento and approximately 79 miles northeast of San Francisco. The planning area consists of approximately 160 square miles, and is characterized by agricultural/open space landscapes to the north, west, and south; highly developed urban landscapes within the City Limits; and open space lands, including the Yolo Bypass Wildlife Area to the east. Views from agricultural fields are enclosed on the west by the Coast Range hills. Views to other directions are open to the horizon, although the Sierra Nevada Mountains, Sutter Buttes, and Mount Diablo can be seen on clear days. The UC Davis campus is located adjacent to the southwest corner of the City and occupies a total of 2,900 unincorporated acres. General Plan land uses within the planning area include Residential (low, medium, medium-high, and high density); Neighborhood Retail; Community Retail; General Commercial; Business Park; Industrial; Public/Semi-Public; Parks and Recreation; Urban Agriculture Transition Areas; Agriculture; and Natural Habitat.

The planning area has no officially designated scenic highways, corridors, vistas, or viewing areas (Davis General Plan Update EIR, p. 5A-1). Landscapes in and near the City are predominantly urban, with the core area of the community having more established neighborhoods and urban landscaping. Newer developed areas on the edges of the community are more noticeable from a distance due to the immaturity of the landscaping. The City's planning area buffers the City on all sides by extending into areas that are dominated by agricultural uses, and views in this area are open and rural in nature.

PROJECT SITE AND SURROUNDING AREA

The project site is currently undeveloped and has been previously used for agricultural uses. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east north of

Covell Boulevard. Frontage improvements along Covell Boulevard are limited but include a bus shelter, a section of curb, and traffic signs and signals.

The project site has developed or semi-developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt nine lot residential subdivision. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of State Route (SR) 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

SCENIC HIGHWAYS AND CORRIDORS

Scenic highways and corridors make major contributions to the quality of life enjoyed by the residents of a region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the local lifestyle are all ways in which scenic corridors are valuable to residents.

Scenic highways and corridors can also strengthen the tourist industry. For many visitors, highway corridors will provide their only experience of the region. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the region's economy.

Scenic Highways

A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. As described in the Davis General Plan EIR**,** there are no Officially Dedicated California Scenic Highway segments, corridors, vistas, or viewing areas in the Davis Planning Area.

Yolo County Scenic Highways/Corridors

There are no highways in Yolo County listed as Designated Scenic Highway by the Caltrans Scenic Highway Mapping System. Only one highway section in Yolo County is listed as an Eligible State Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of SR 16 from approximately the town of Capay north to the northern edge of the County. The City of Davis and the project site are not visible from this roadway segment.

As identified in the Land Use and Community Character Element of the Yolo County General Plan, designated scenic routes in the county include SR 16 (Colusa County line to Capay), SR 128 (Winters to Napa County line), CR 116 and 116B (Knights Landing to eastern terminus of CR 16), CR

16 and 117 and Old River Road (CR 107 to West Sacramento), and South River Road (West Sacramento city limits to Sacramento County line). Neither the City of Davis nor the project site are visible from these routes.

LIGHT AND GLARE

There are two typical types of light intrusion. First, light emanates from the interior of structures and passes out through windows. Secondly, light projects from exterior sources such as street lighting, security lighting, balcony lighting, and landscape lighting. "Light spill" is typically defined as the presence of unwanted and/or misdirected light on properties adjacent to the property being illuminated.

Street lighting is provided within the developed areas of the City, either by the City or through private ownership, such as PG&E. In new developments, the City itself does not install streetlights. Rather, the City requires developers to install lights and dedicate them to the City. Light introduction can be a nuisance to adjacent residential areas and diminish the view of the clear night sky, and, if uncontrolled, can disturb wildlife in natural habitat areas.

Glare is the sensation produced by luminance within the visual field that is significantly greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility.

Existing sources of light or glare are not currently located on the project site, although existing parking lot lighting, building lighting, and street lighting are located in the vicinity of the site. Sources of glare include the windows located on the Sutter Davis Hospital building to the east and the existing residential area to the south. Existing sources of light near the project site include street lighting along West Covell Boulevard and Risling Court, and building and parking lot lighting associated with the nearby residential areas and the Sutter Davis Hospital.

3.1.2 REGULATORY SETTING

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is "to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources." Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code (§260 et seq.). The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are eligible for designation as scenic.

Scenic highway designation can provide several types of benefits to the region. Scenic areas are protected from encroachment of inappropriate land uses, free of billboards, and are generally required to maintain existing contours and preserve important vegetative features. Only low density development is allowed on steep slopes and along ridgelines on scenic highways, and noise setbacks are required for residential development.

As described above, there are no designated Scenic Highway Corridors in the vicinity of the project site.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to aesthetics and visual resources:

URBAN DESIGN, NEIGHBORHOOD PRESERVATION AND COMMUNITY FOREST MANAGEMENT

Goal UD 1: Encourage community design throughout the City that helps to build community, encourage human interaction, and support non-automobile transportation.

> **Policy UD 1.1:** Promote urban/community design which is human-scaled, comfortable, safe, and conducive to pedestrian use.

Goal UD 2: Maintain an aesthetically pleasing environment and manage a sustainable community forest to optimize environmental, aesthetic, social, and economic benefits.

> **Policy UD 2.1:** Preserve and protect scenic resources and elements in and around Davis, including natural habitat and scenery and resources reflective of place and history.
>
> **Policy UD 2.2:** Maintain and increase the amount of greenery, especially street trees, in Davis, both for aesthetic reasons and to provide shade, cooling, habitat, air quality benefits, and visual continuity.
>
> **Policy UD 2.3:** Require an architectural “fit” with Davis’ existing scale for new development projects.
>
> **Policy UD 2.4:** Create affordable and multi-family residential areas that include innovative designs and on-site open space amenities that are linked with public bicycle/pedestrian ways, neighborhood centers, and transit stops.
>
> **Policy UD 2.5:** Ensure attractive functional signs.

Goal UD 3: Use good design as a means to promote human safety.

> **Policy UD 3.2:** Provide exterior lighting that enhances safety and night use in public spaces, but minimizes impacts on surrounding land uses.

Goal UD 4: Create an urban design framework that would strengthen the physical form of the city.

> **Policy UD 4.1:** Develop an urban design framework plan to consolidate and clarify the relevant design concepts in this chapter and other chapters to promote a positive and

memorable image for the city and to reinforce the functional systems of the city such as land use, circulation, and open space.

Goal UD 5: Create and enforce clear and reasonable design guidelines that operationalize the relevant goals, policies, and actions of this general plan.

Policy UD 5.1: Develop and implement new design guidelines, which are reviewed periodically.

Goal UD 6: Strengthen the city's neighborhoods to retain desirable characteristics while allowing for change and evolution, promoting public and private investments, and encouraging citizen involvement in neighborhood planning.

Policy UD 6.1: Recognize the existence of individual neighborhoods with general boundaries and facilitate the development of neighborhood strategies in partnership with residents and property owners. The strategies should recognize the unique characteristics of the individual neighborhood and the potential for change, within the context of a well-planned city. The strategies should be directed toward solving unique neighborhood problems and implementing neighborhood priorities and enhancing livability.

Outdoor Lighting Control Ordinance

The City enacted the Outdoor Lighting Control Ordinance in 1998. The ordinance, commonly referred to as the City's "Dark Sky Ordinance," provides standards for outdoor lighting in an effort to minimize light pollution, glare, and light trespass caused by inappropriate or misaligned light fixtures, while improving nighttime public safety, utility, security, and preserving the night sky as a natural resource and thus facilitating people's enjoyment of stargazing. This ordinance does not apply to interior lighting, including lighting at greenhouse facilities. Single-family and duplex properties are exempted.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have significant impact on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Potential to result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character (Significant and Unavoidable)

Development of the proposed project would convert the site from its existing use as undeveloped land previously used for agricultural uses to developed residential housing, a mixed-use area, a continuing care retirement community, and park/trail areas.

Project components would include:

- 150 affordable, age-restricted apartments;
- 32 attached, age-restricted cottages;
- 94 attached, age-restricted units;
- 129 single-family detached, age-restricted units;
- 77 single-family detached, non-age-restricted units;
- an approximately three-acre continuing care retirement community, which would likely consist of 30 assisted living, age-restricted detached units;
- an approximately 4.3-acre mixed use area, which would likely consist of a health club, restaurant, clubhouse, and up to 48 attached, age-restricted units;
- a small dog exercise area and tot lot;
- associated greenways, drainage, agricultural buffers;
- off-site stormwater detention facilities; and
- roadways, pedestrian pathways, sewers, storm drainage, and other public infrastructure to allow for access to and development of the site.

The project site is not designated as a scenic vista by the City of Davis General Plan or the Yolo County General Plan, nor does it contain any unique or distinguishing features that would qualify the site for designation as a scenic vista. However, the City's General Plan EIR does note that development could block existing panoramic views.

The project site is highly visible from W. Covell Boulevard, Risling Court, and Shasta Drive. Implementation of the proposed project would change the existing visual character of the site from an undeveloped site to an urbanized site. Impacts related to a change in visual character are largely subjective and very difficult to quantify. People have different reactions to the visual quality of a project or a project feature, and what is considered "attractive" to one viewer may be considered "unattractive" to other viewers. The project site currently consists of undeveloped land previously used for agricultural purposes. Agricultural and vacant lands provide visual relief from urban and suburban developments, and help to define the character of a region. The loss of agricultural lands can have an adverse cumulative impact on the overall visual character and quality of a region.

Upon development of the project site, views from W. Covell Boulevard would include W. Covell Boulevard, proposed landscaping and ornamental trees, the proposed perimeter multi-use trail, the proposed senior affordable apartment buildings, and the University Retirement Community expansion building(s) in the background. Similarly, views of the project from Risling Court would include Risling Court, landscaping and ornamental trees, the proposed University Retirement Community expansion building(s), the proposed bungalow court residential uses, and the proposed activity and wellness center building(s) and in the background.

The arborist report recommends removal of 45 trees from the project site due to their poor health, structure, or both. The 45 trees which would be removed as part of the project are located along the project site boundary as well as internally, generally near the eastern and western project site boundaries. The site would be re-landscaped upon development of the project site. Removal of 45 trees would have a temporary effect on the visual character of the site until the proposed landscaping matures.

The proposed project would include visual components that would assist in enhancing the appearance of the site following site development. These improvements would include landscaping improvements such as new street trees and other vegetation landscaping, multi-use trails, and a 150-foot agricultural buffer. The proposed Project would also incorporate an urban agriculture transition area along the northern and western project boundary adjacent to existing agricultural lands.

While implementation of the proposed project would change the existing visual character of the site, it would not result in substantial adverse effects on a designated scenic vista. The proposed project would result in the conversion of undeveloped land to urban uses, which would contribute to changes in the regional landscape and visual character of the area. In order to reduce visual impacts, development within the project site is required to be consistent with the General Plan and the Davis Zoning Ordinance which includes design standards in order to ensure quality and cohesive design of the project site. These standards include specifications for building height, massing, and orientation; exterior lighting standards and specifications; and landscaping standards. Implementation of the design standards would ensure quality design throughout the project site, and result in a project that would be internally cohesive while maintaining aesthetics similar to surrounding uses.

Additionally, the project would include pre-zoning to Planned Development (PD). The purpose of the PD District is to allow diversification in the relationship of various buildings, structures, and open spaces in order to be relieved from the rigid standards of conventional zoning. The criteria for PD Districts include the development of sound housing for persons of low, moderate and high income levels, residential developments which provide a mix of housing styles and costs, creative approaches in the development of land, more efficient and desirable use of open area, variety in the physical development pattern of the City and utilization of advances in technology which are innovative to land development. The project applicant would submit a Preliminary Planned Development to the City, which ultimately would require review and approval by the City.

The City of Davis General Plan includes goals and policies designed to protect visual resources and promote quality design in urban areas. The project would be subject to the policies and goals of the Davis General Plan, as well as the City's site plan and architectural approval process. As described in Article 40.31.020 of the Davis Municipal Code, the purpose of the site plan and architectural approval process is to determine compliance with the Article and to promote the orderly and harmonious growth of the city and the stability of land values and investments and the general welfare; to help prevent the impairment or depreciation of land values and the development by the erection of structures, additions or alterations thereto without proper attention to siting, or of unsightly, undesirable or obnoxious appearance; and to prepare for and help to prevent problems arising affecting the community due to the nature of existing and planned uses of land and structures, such as traffic, public, safety, public facilities, utilities and services, among others.

Under Article 40.31.020 of the Davis Municipal Code, a site plan and architectural (design review) application shall be approved, conditionally approved, or denied by the Community Development and Sustainability Director, Planning Commission, or City Council. Such application may be approved only if the following findings are made:

a) The proposed project is consistent with the objectives of the General Plan, complies with applicable zoning regulations, and is consistent with any adopted design guidelines for the district within which the project is located;
b) The proposed architecture, site design, and landscape are suitable for the purposes of the building and the site and will enhance the character of the neighborhood and community;
c) The architectural design of the proposed project is compatible with the existing properties and anticipated future developments within the neighborhood in terms of such elements as height, mass, scale, and proportion;
d) The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation; and
e) The location, climate, and environmental conditions of the site are adequately considered in determining the use of appropriate construction materials and methods. Sufficient conditions are included with the approval to ensure the long-term maintenance of the project.

Various temporary visual impacts could occur as a result of construction activities as the project develops, including grading, equipment and material storage, and staging. Though temporary, some of these impacts could last for several weeks or months during any single construction phase. The loss of existing landscaping and trees would also be a temporary impact until new landscaping matures. However, these construction-related impacts would be temporary and viewer sensitivity in the majority of cases would be slight to moderate.

Nevertheless, the loss of the visual appearance of the existing vacant land on the site will change the visual character of the project site in perpetuity. Compliance with the City's site plan and architectural approval process would reduce visual impacts to the greatest extent feasible; however, the proposed project would permanently convert the undeveloped site to urbanized uses. This is considered a ***significant and unavoidable*** impact. There is no additional feasible mitigation available that would reduce this impact to a less than significant level.

Impact 3.1-2: Project implementation may result in light and glare impacts (Less than Significant with Mitigation)

Implementation of the proposed project would introduce new sources of light and glare into the project area. New sources of glare would occur primarily from the windshields of vehicles travelling to and from the project site and from vehicles parked at the site. The parking areas are mainly located within the interior of the project site, and are not immediately adjacent to any of the light sensitive land uses in the project vicinity (the residential areas to the south and north, and Sutter Davis Hospital). The majority of the on-site residential parking would be located throughout the northern and central portions of the project site. Thus, headlights and windshields would be shielded by the proposed residential, mixed use, and the continuing care retirement community structures.

Additionally, as described above, the project includes plans for extensive landscaping and a multi-use trail around the perimeter of the site, which would provide visual screening and block potential windshield glare to areas surrounding the project site. Due to the distance between the sources of glare and the nearest sensitive receptors, impacts from vehicle windshield glare would be ***less than significant***.

The project would introduce new sources of nighttime lighting, which may result in increased nighttime lighting in the project vicinity. A detailed lighting plan has not been prepared for the project, but for the purposes of this analysis, it has been conservatively assumed that exterior lighting would be located throughout most of the outdoor areas of the project site. This includes, but is not necessarily limited to: street lighting in the residential areas; exterior lighting on the buildings; lighting for the interior and perimeter bicycle path; courtyard lighting; and parking lot lighting for guest parking.

Light sources from the proposed development may have a significant adverse impact on the surrounding areas, by introducing nuisance light into the area and decreasing the visibility of nighttime skies. Additionally, on-site light sources may create light spillover impacts on surrounding land uses in the absence of mitigation. However, the project will be required to comply with the City's Outdoor Lighting Control Ordinance which includes provision of a lighting plan as part of the construction documents as a standard City requirement. Compliance with the City of Davis Outdoor Lighting Control Ordinance would ensure that all exterior lighting associated with the project is properly shielded and directed downward in order to eliminate light spillage onto adjacent properties, and reduce impacts to "dark skies" to the greatest extent feasible. Compliance with the Outdoor Lighting Control Ordinance will ensure that potential impacts would be ***less than significant***.

Glare may also be generated from buildings proposed on-site. The use of reflective building materials, including polished steel and reflective glass, could increase daytime glare for sensitive receptors in the vicinity of the project site. This is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.1-1*: In order to reduce the potential for glare from buildings and structures within the project site, the Preliminary and Final Planned Developments for the project shall show that the use of reflective building materials that have the potential to result in glare that would be visible from sensitive receptors located in the vicinity of the project site shall be prohibited. The City of Davis Department of Community Development and Sustainability shall ensure that the approved project uses appropriate building materials with low reflectivity to minimize potential glare nuisance to off-site receptors.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.1-1 would ensure that reflective building materials are not used within the project, which would reduce the potential for daytime glare impacts to a ***less than significant*** level.

Impact 3.1-3: Project implementation may substantially damage scenic resources within a State Scenic Highway (Less than Significant)

There are no designated State Scenic Highways in the vicinity of the project site. There are no highways in Yolo County listed as Designated Scenic Highway by the Caltrans Scenic Highway Mapping System. Only one highway section in Yolo County is listed as an Eligible State Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of SR 16 from approximately the town of Capay north to the northern edge of the County. The City of Davis and the project site are not visible from this roadway segment.

As identified in the Land Use and Community Character Element of the Yolo County General Plan, designated scenic routes in the county include SR 16 (Colusa County line to Capay), SR 128 (Winters to Napa County line), CR 116 and 116B (Knights Landing to eastern terminus of CR 16), CR 16 and 117 and Old River Road (CR 107 to West Sacramento), and South River Road (West Sacramento city limits to Sacramento County line). Neither the City of Davis nor the project site are visible from these routes. As such, this is a ***less than significant*** impact, and no mitigation is required.

The purpose of this section is to disclose and analyze the potential impacts to agricultural resources associated with the development of the proposed project. This section also discusses the potential conflicts between proposed uses at project site and ongoing agricultural activities in the vicinity of the project site. Comments were received during the public review period for the Notice of Preparation regarding this topic from the following: Yolo LAFCo (May, 11 2017), Eileen M. Samitz (May, 13 2017), County of Yolo (April, 18 2017). Each of the comments related to agricultural resources are addressed within this section, and comments are included within Appendix A.

Information in this section is derived primarily from the following:

- City of Davis General Plan (City of Davis, May 2001, Amended through 2007)
- Soil Survey of Yolo County, California (USDA, Web Soil Survey)
- Yolo County 2030 Countywide General Plan (Yolo County, 2009)
- California Department of Conservation, Farmland Mapping and Monitoring Program
- Yolo County Agriculture Department

3.2.1 ENVIRONMENTAL SETTING

EXISTING SITE CONDITIONS

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. The project also includes approximately 11.53 acres of offsite improvements, as described in greater detail in Section 2.0, Project Description. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, nine mapped but undeveloped 13- to 23-acre residential lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south.

The project site is currently undeveloped and has been previously used for agricultural uses. As shown on Figure 3.2-1, the project site is designated as Farmland of Local Importance by the California Department of Conservation's Farmland Mapping and Monitoring Program. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east, north of Covell Boulevard. Frontage improvements along Covell Boulevard are limited but include a bus shelter, a section of curb, and traffic signs and signals.

ADJACENT AGRICULTURAL USES

Lands to the west and north of the project site are within the City of Davis SOI, and are currently zoned for agricultural purposes. The lands to the north and west of the project site are designated as Farmland of Local Importance, as shown on Figure 3.2-1. It is noted that the undeveloped land adjacent north of the project site is currently planned for nine 13- to 23-acre residential lots.

YOLO COUNTY AGRICULTURE

Although the project site is located within the Davis SOI, it is immediately adjacent to active agricultural operations in Yolo County. Agriculture is a major activity within the undeveloped portions of Yolo County. According to the 2015 Yolo County Agricultural Crop Report, published by the Yolo County Department of Agriculture and Weights and Measures, the gross value of Yolo County's agricultural production for 2015 was $661,752,000. Processing tomatoes were the top agricultural commodity grown in the County, with production values near $139 million.

As described in the County of Yolo 2030 Countywide General Plan, 92 percent of the land surface in Yolo County is off-limits to residential, commercial, and industrial development uses that are not consistent with the County's agricultural designation. Additionally, 67 percent of the unincorporated area of the County is protected under Williamson Act contracts.

CALIFORNIA AGRICULTURE

The California Department of Conservation Farmland Mapping and Monitoring Program identifies lands that have agriculture value and maintains a statewide map of these lands called the Important Farmlands Inventory (IFI). IFI classifies land based upon the productive capabilities of the land, rather than the mere presence of ideal soil conditions.

The suitability of soils for agricultural use is just one factor for determining the productive capabilities of land. Suitability is determined based on many characteristics, including fertility, slope, texture, drainage, depth, and salt content. A variety of classification systems have been devised by the State to categorize soil capabilities. The two most widely used systems are the Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating. The IFI is in part based upon both of these two classification systems.

Soil Capability Classification System

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils that are unsuitable for agriculture. Generally, as the rating of the capability classification increases, yields and profits are more difficult to obtain. A general description of soil classifications, as defined by the Natural Resources Conservation Service (NRCS) is provided in Table 3.2-1 below.

TABLE 3.2-1: SOIL CAPABILITY CLASSIFICATION

CLASS	DEFINITION
I	Soils have slight limitations that restrict their use.
II	Soils have moderate limitations that restrict choice plants or that require moderate conservation practices.
III	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limit their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plans and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF YOLO COUNTY, CALIFORNIA, 1972.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating) which have few or no limitations for agricultural production, to Grade 6 soils (less than 10) which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 3.2-2.

TABLE 3.2-2: STORIE INDEX RATING SYSTEM

GRADE	INDEX RATING	DEFINITION
1	80 - 100	Few limitations that restrict their use for crops
2	60 – 80	Suitable for most crops, but have minor limitations that narrow the choice of crops and have a few special management needs
3	40 – 60	Suited to a few crops or to special crops and require special management
4	20 – 40	If used for crops, severely limited and require special management
5	10 – 20	Not suited for cultivated crops, but can be used for pasture and range
6	Less than 10	Soil and land types generally not suited to farming

SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF YOLO COUNTY, CALIFORNIA, 1972.

In addition to soil suitability, other factors for determining the agricultural value of land include whether soils are irrigated, the depth of soil, water-holding capacity, and physical and chemical characteristics. Areas considered to have the greatest agricultural potential are designated as Prime Farmland or Farmland of Statewide Importance.

Farmland Mapping and Monitoring Program (FMMP)

The FMMP was established in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the USDA Soil Conservation Service (USDA-SCS). The intent of the USDA-SCS was to produce agriculture maps based on soil quality and land use across the nation. As part of the nationwide agricultural land use mapping effort, the USDA-SCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classified the land's suitability for agricultural production; suitability included both the physical and chemical characteristics of soils and the actual land use. Important Farmland Maps are derived from the USDA-SCS soil survey maps using the LIM criteria.

Since 1980, the State of California has assisted the USDA-SCS with completing its mapping in the state. The FMMP was created within the CDC to carry on the mapping activity on a continuing basis, and with a greater level of detail. The CDC applied a greater level of detail by modifying the LIM criteria for use in California. The LIM criteria in California utilize the Soil Capability Classification and Storie Index Rating systems, but also consider physical conditions such as dependable water supply for agricultural production, soil temperature range, depth of the ground water table, flooding potential, rock fragment content, and rooting depth.

The CDC classifies lands into seven agriculture-related categories: Prime Farmland, Farmland of Statewide Importance (Statewide Farmland), Unique Farmland, Farmland of Local Importance (Local Farmland), Grazing Land, Urban and Built-up Land (Urban Land), and Other Land. The first four types listed above are collectively designated by the State as Important Farmlands. Important Farmland maps for California are compiled using the modified LIM criteria (as described above) and current land use information. The minimum mapping unit is 10 acres unless otherwise specified. Units of land smaller than 10 acres are incorporated into surrounding classifications. Each of the seven land types is summarized below.

PRIME FARMLAND

Prime farmland is farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

FARMLAND OF STATEWIDE IMPORTANCE

Farmland of statewide importance is farmland with characteristics similar to those of prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

UNIQUE FARMLAND

Unique farmland is farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

FARMLAND OF LOCAL IMPORTANCE

Farmland of local importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

GRAZING LAND

Grazing land is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

URBAN AND BUILT-UP LAND

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

OTHER LAND

Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

PROJECT SITE SOILS AND FARMLAND CHARACTERISTICS

The project site encompasses approximately 74 acres. Additionally, the project includes approximately 11.53 acres of offsite improvements. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City’s SOI) to the west, nine mapped but undeveloped residential lots to the north (zoned for agricultural purposes), the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. According to the California Department of Conservation’s Farmland Mapping and Monitoring Program, the entire project site, including the offsite improvement areas, are designated as Farmland of Local Importance (84.27 acres), Farmland of Local Potential (1.56 acres), and Urban and Built-Up Land (2.09 acres), as shown in Figure 3.2-1.

The Soil Survey of Yolo County, shows that the project site contains Capability Class IV (non-irrigated) soils, and Class I-IV (irrigated soils), as shown in the table below. The Soil Capability Classifications are presented in Table 3.2-3 below. Soils present on the project site are shown in Figure 3.2-2.

TABLE 3.2-3: ON-SITE SOIL CAPABILITY CLASSIFICATIONS AND STORIE INDEX RATING

Soil Map Symbol and Name	*Soil Capability Classification*[1]		*Storie Index*	*Acres in AOI*[2]	
	Irrigated	*Non-irrigated*		*On-site*	*Off-site*
Brentwood silty clay loam (BrA)	I	IVc	90	36.20	1.61
Marvin silty clay loam (Mf)	IIs	IVs	62	26.75	2.88
Pescadero silty clay, saline-alkali (Pb)	IVw	VIw	15	0.56	2.00
Willows clay, alkali (Wc)	IVw	IVw	13	11.44	5.74

NOTES:
1. CAPABILITY SUBCLASSES ARE SOIL GROUPS WITHIN ONE CLASS. THEY ARE DESIGNATED BY ADDING A SMALL LETTER, E, W, S, OR C, TO THE CLASS NUMERAL, FOR EXAMPLE, IIE. THE LETTER 'E' SHOWS THAT THE MAIN HAZARD IS THE RISK OF EROSION UNLESS CLOSE-GROWING PLANT COVER IS MAINTAINED; 'W' SHOWS THAT WATER IN OR ON THE SOIL INTERFERES WITH PLANT GROWTH OR CULTIVATION (IN SOME SOILS THE WETNESS CAN BE PARTLY CORRECTED BY ARTIFICIAL DRAINAGE); 'S' SHOWS THAT THE SOIL IS LIMITED MAINLY BECAUSE IT IS SHALLOW, DROUGHTY, OR STONY; AND 'C', USED IN ONLY SOME PARTS OF THE UNITED STATES, SHOWS THAT THE CHIEF LIMITATION IS CLIMATE THAT IS VERY COLD OR VERY DRY.
2. THE AOI (AREA OF INTEREST) INCLUDES THE ON- AND OFF-SITE IMPROVEMENTS (74.49 ACRES ON-SITE, AND 11.53 ACRES OFF-SITE).
SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF YOLO COUNTY, CALIFORNIA, 1972.

Brentwood silty clay loam. This soil is found in the southern half of the project site. Brentwood soils are on nearly level to gently sloping fans and formed in valley fill from sedimentary rocks. These soils are well to moderately well drained. They have very slow to medium runoff and moderately slow permeability. Most areas are irrigated and are used for tree fruit, nut crops, vegetables, and field crops. Vegetation is annual grasses, forbs, and scattered oaks.

Marvin silty clay loam. This soil is found in the northern half of the project site. Marvin soils are on nearly level flood plains at elevations of 10 to 100 feet under annual grasses and forbs. They formed in fine textured alluvium from mixed sources. These soils are moderately well to somewhat poorly drained. They have slow runoff and slow permeability. Common uses include: irrigated and dry cropland and pasture; and grain, field crops, sugar beets, alfalfa and rice crops.

Pescadero silty clay, saline-alkali. This soil is found in the northwestern corner of the project site. Pescadero soils are in basins and formed in alluvium from sedimentary rock. These soils are poorly drained or ponded on concave slopes. They have very slow runoff and very slow permeability. These soils are used mainly for livestock grazing. Some reclaimed areas are used for irrigated field, row crops and irrigated pasture. Commonly cultivated crops are sugarbeets, barley, alfalfa, corn and tomatoes.

Willows clay, alkali. This soil is found in the northern third of the project site. Willow soils are in basins and formed in alluvium from mixed rock sources. These soils are poorly drained. They have slow runoff and very slow permeability. These soils are generally used for growing rice, sugar beets and safflower.

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Program

The Natural Resource Conservation Service (NRCS) administers the Farmland Protection Program (FPP). This is a program that is designed to conserve productive farmland. The NRCS provides funds to agencies for the purchase of conservation easements that meet the specific requirements of the program. Landowners that are interested in the program must agree to conserve their farmland for a minimum period of 30 years.

STATE

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents.

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

The project site is not under a Williamson Act contract, nor are any of the parcels that are located immediately adjacent to the project site.

Farmland Security Zones

In 1998 the state legislature established the Farmland Security Zone (FSZ) program. FSZs are similar to Williamson Act contracts, in that the intention is to protect farmland from conversion. The main difference however, is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The term of the contract is a minimum of 20 years. The property owners are offered an incentive of greater property tax reductions when compared to the Williamson Act contract tax incentives; the incentives were developed to encourage conservation of prime farmland through FSZs. The non-renewal and cancellation procedures are similar to those for Williamson Act contracts. The project site and the immediately adjacent parcels are not within the FSZ program.

LOCAL

City of Davis General Plan

The City's General Plan includes goals, policies, standards, and actions that strive to preserve agricultural resources and minimize conflicts between agricultural and urban uses. The following General Plan goals, policies, standards, and actions are relevant to the proposed project.

AGRICULTURE, SOILS AND MINERALS

GOAL HAB 1. Identify, protect, restore, enhance and create natural habitats. Protect and improve biodiversity consistent with the natural biodiversity of the region.

Policy AG 1.1, Action C: Establish a 150-foot minimum agricultural buffer around the City. Require dedication from developers of lands to make up the buffer concurrently with any peripheral development.

Policy AG 1.1, Action F: Define land development guidelines for new projects proposed adjacent to existing agricultural activities, operations, or facilities. Such guidelines may include, but are not limited to, specific mitigation measures such as sound walls, landscaping, berms, and construction standards.

City of Davis Municipal Code

The City's Municipal Code includes the following sections which are relevant to the proposed project.

SECTION 40A.01: RIGHT TO FARM

One goal of the City of Davis General Plan is to work cooperatively with the Counties of Yolo and Solano to preserve agricultural land within the Davis Planning Area, and to encourage agricultural operations on land that has not been identified in the General Plan as necessary for development. Additionally, the City seeks to reduce conflicts between agricultural and nonagricultural land uses, and to protect public health. The Right to Farm and Farmland Preservation Ordinance helps achieve these goals by limiting the circumstances under which agricultural operations may be deemed a nuisance.

As part of this effort, the City provides purchasers and tenants of nonagricultural land adjacent to agricultural land with a notice about the City's support for the preservation of agricultural lands and operations. This notification requirement promotes a "good neighbor" policy by informing these prospective purchasers and tenants of the considerations associated with living in close proximity to agricultural land and operations. In addition, the City requires all new development adjacent to agricultural operations to provide a 150-foot-wide agricultural buffer zone, in order to reduce potential conflicts between agricultural and nonagricultural land uses.

SECTION 40A.02.010: PROPERLY OPERATED FARM NOT A NUISANCE

This section of the Davis Municipal Code states that agricultural operations in compliance with all applicable laws and regulations shall not be considered a nuisance except under California Civil Code Sections 3482.5 and 3482.6. The section further states that any allegations of agricultural nuisance must undergo the agricultural grievance procedure provided in Section 40A.02.020. This section does not interfere with an individual's ability to pursue legal action under other applicable laws.

SECTION 40A.03: FARMLAND PRESERVATION

The purpose of this chapter and this article is to implement the agricultural land conservation policies contained in the Davis general plan with a program designed to permanently protect agricultural land located within the Davis planning area for agricultural uses. This article of the Davis Municipal Code states that the City shall require agricultural mitigation as a condition of approval for any development project that would change the general plan designation or zoning from agricultural land to non-agricultural land and for discretionary land use approvals that would change an agricultural use to a non-agricultural use. Total mitigation for a development project shall not be less than a ratio of two acres of protected agricultural land for each acre converted from agricultural land to nonagricultural land. Developers must first preserve the land directly adjacent to their project (the "Adjacent Mitigation Land"). If this adjacent land is not enough to satisfy the 2:1 agricultural land mitigation requirement, then the developer must look elsewhere within the Davis Planning Area (the "Remainder Mitigation Land"). Both of these categories are briefly discussed below:

- **Adjacent Mitigation Land**. The developer must first protect the land along the entire non-urbanized perimeter of the project. If the developer cannot protect this land for some reason, then the developer must either (i) provide the Adjacent Mitigation Land on the development site itself or (ii) prove that its alternative proposal provides "extraordinary community benefits." The Adjacent Mitigation Land must be of a size that is economically viable as farmland (i.e., it must be a minimum 1/4 mile in width). Developers do not have to mitigate for the land being used as the required on-site agricultural buffer.

- **Remainder Mitigation Land**. If the Adjacent Mitigation Land is not enough to satisfy the 2:1 agricultural land mitigation requirement, then the developer must look to protect land elsewhere within the Davis Planning Area. Incentives, or location-based "credits," are provided to the developer to protect land in areas targeted for permanent protection by the City, such as land within a ¼ mile of the city limits and land within "priority acquisition areas" as determined by the City Council. These priority acquisition areas currently include land adjacent to the city limits, land separating the City from neighboring cities, and land providing particular agricultural, biological/natural and/or scenic benefits.

  Location based factors (credits) for Remainder Mitigation Land contained in Section 40A.03.035 may result in ratios greater than 2:1.

The developer may satisfy up to 50% of the agricultural land mitigation requirement by paying an in-lieu fee based on the appraised value of agricultural land near the city limits.

The proposed project is subject to the requirements of this section of the Municipal Code since the project site is currently zoned for agricultural uses.

SECTION 40A.01.050: AGRICULTURAL BUFFER REQUIREMENTS

This section of the Municipal Code states that all new developments adjacent to designated agricultural, agricultural reserve, agricultural open space, greenbelt/agricultural buffer, Davis greenbelt, or environmentally sensitive habitat areas shall be required to provide an agricultural buffer/agricultural transition area. The transition/buffer areas meet the policy objectives of the City of Davis General Plan and contribute to the area's aesthetic qualities by providing for unobstructed views of farmland, and allowing recreational use through the incorporation of bicycle and pedestrian trails.

The ordinance states that agricultural buffer/agricultural transition areas shall be a minimum of 150 feet measured from the edge of the agricultural, greenbelt, or habitat area; however, in consideration of the 500-foot aerial spray setback established by the Counties of Yolo and Solano, a buffer wider than 150 feet is encouraged. The transition/buffer areas shall be comprised of a 50-foot wide agricultural transition area located contiguous to a 100-foot wide agricultural buffer, which shall be directly adjacent to the agricultural, greenbelt, or habitat area. The transition/buffer areas may not be used as farmland mitigation.

Various uses are permitted in the 100-foot wide agricultural buffer areas. These uses include native plants, tree or hedgerows, drainage channels, storm retention ponds, natural areas such as creeks or drainage swales, railroad tracks or other utility corridors, and any other use determined by the planning commission to be consistent with the use of the property as an agricultural buffer. The 100-foot wide buffer area does not allow for public access, unless permitted uses such as railroad tracks already exist in the buffer area. Buffer areas shall be developed under a plan approved by the Parks and General Services Director, and the plan must provide for the establishment, management, and maintenance of the area. In addition, the City shall obtain either an easement for the transition/buffer area, or dedication of the property in fee title.

Unlike the 100-foot wide agricultural buffer areas, the 50-foot agricultural transition areas provide for public use. Uses permitted in the transition area include bike paths, native plants, tree and hedgerows, benches, lights, trash enclosures, fencing, and any other use determined by the Planning Commission to be of the same general character. As with the buffer areas, the 50-foot agricultural transition areas must be developed under a plan approved by the Parks and General Services Director. Once developed, the land shall be dedicated to the City. The City shall maintain the agricultural transition area.

Yolo County Municipal Code Sec. 8-2.404 Agricultural Conservation and Mitigation Program

The purpose of this section is to implement the agricultural land conservation policies contained in the Yolo County General Plan with a program designed to permanently protect agricultural land located within the unincorporated area.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on agricultural or forest resources if it will:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As described in the Initial Study, there are no forest resources or zoning for forest lands located on the project site. Therefore, there is ***no impact***. This environmental issue is not addressed further in this EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Project implementation may result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses (Significant and Unavoidable)

The project site is designated as Farmland of Local Importance (84.27 acres), Farmland of Local Potential (1.56 acres), and Urban and Built-Up Land (2.09 acres), as shown in Figure 3.2-1. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

While the project site is designated as Farmland of Local Importance by the California Department of Conservation, the project site does contain prime soils as defined by the Yolo County Agricultural Conservation and Mitigation Program. According to the Agricultural Conservation and Mitigation Program Farmland shall be considered prime farmland if it meets the definition of "prime agricultural land" in Government Code Section 51201. Government Code Section 51201 states that prime agricultural land means any of the following:

(1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.

(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.

(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.

(4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.

(5) Land which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than two hundred dollars ($200) per acre for three of the previous five years.

As described in Table 3.2-3, Brentwood silty clay loam (BrA) and Marvin silty clay loam (Mf) (if irrigated) both qualify as prime agricultural land under the Yolo County Agricultural Conservation and Mitigation Program. Conversion of important farmland as a result of project implementation is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.2-1: *Prior to initiation of grading activities for each phase of development of the project, the project applicant shall set aside in perpetuity, at a minimum ratio of 2:1 of active agricultural acreage, an amount equal to the current phase. The applicant may choose to set aside in perpetuity an amount equal to the remainder of the project site instead of at each phase. The agricultural land shall be elsewhere in the Davis Planning Area, through the purchase of development rights and execution of an irreversible conservation or agricultural easement, consistent with Section 40A.03.025 of the Davis Municipal Code. The location and amount of active agricultural acreage for the proposed project is subject to the review and approval by the City Council. The amount of agricultural acreage set aside shall account for farmland lost due to the conversion of the project site, as well as some of the off-site improvements, including but not necessarily limited to the off-site stormwater detention pond and the off-site Risling Court improvements. The amount of agricultural acreage set aside shall not include conversion of the agricultural buffer. The amount of agricultural acreage that needs to be set aside for off-site improvements shall be verified for each phase of the project during improvement plan review. Pursuant to Davis Code Section 40A.03.040, the agricultural mitigation land shall be comparable in soil quality with the agricultural land being changed to nonagricultural use. The easement land must conform with the policies and requirements of LAFCO including a LESA score no more than 10 percent below that of the project site.*

SIGNIFICANCE AFTER MITIGATION

The proposed project would directly result in the conversion of project site farmlands to non-agricultural uses. The conversion of these locally important farmlands requires mitigation through the City of Davis Farmland Preservation Program, as described previously. While implementation of Mitigation Measure 3.2-1 would reduce the above-identified impact through preservation of agricultural land at a 2:1 ratio, the impact would not be reduced to a less-than-significant level due to the fact that active agricultural land would still be permanently converted to urban uses. Consistent with the Davis General Plan EIR, feasible mitigation measures do not exist to reduce the above impact to a less-than-significant level. Therefore, the impact would remain ***significant and unavoidable***.

Impact 3.2-2: Project implementation may conflict with existing zoning for agricultural use (Less than Significant)

As described in Section 2.0 (Project Description), the proposed project would require a City of Davis General Plan Amendment to the Land Use Element to change land uses on the project site. Changes to the Land Use Element would include changing the entire approximately 74-acre project site from Agriculture to Residential – Medium Density, Residential – High Density, Neighborhood Mixed Use, Public/Semi-Public, and Urban Agriculture Transition Area. Figure 2.0-6 illustrates the current County General Plan land uses within the project site. Proposed General Plan land uses are also shown on Figure 2.0-6. The project site is currently within the jurisdiction of Yolo County. Current County zoning for the project site is Agriculture-Intensive (A-N). The Yolo LAFCo would require the project site to be pre-zoned by the City of Davis in conjunction with the proposed annexation. The City's pre-zoning for the project site would be Planned Development (PD). The pre-zoning would go into effect upon annexation into the City of Davis. The existing and proposed zoning for the project site is shown on Figure 2.0-7. Upon annexation into the City of Davis, the General Plan and zoning map for the City of Davis would be consistent with the intended use of the site and thus not conflict with the current agricultural site designations.

Additionally, the proposed project has been designed to comply with all applicable buffer and setback requirements between urban and agricultural lands. Specifically, the project includes a multi-use agricultural buffer transition area along the northern and western project site boundary adjacent to existing agricultural lands. The proposed agricultural buffer along the northern and western boundaries of the project site would be a minimum of 150-feet wide and would be planted with Californian native plants. Additionally, the transition area would include an approximately 50-foot wide multiuse trail, adjacent to the agricultural buffer area. The perimeter trail would loop around the north and west edges of the project site, connecting to off street paths proposed within the development and connecting to Risling Court and Covell Boulevard. These buffers would comply with the agricultural buffer requirements specified in Section 40A.01.050 of the Davis Municipal Code.

Overall, this would be considered a ***less than significant*** impact.

Impact 3.2-3: Project implementation may conflict with a Williamson Act Contract (Less than Significant)

The project site is not under a Williamson Act Contract, nor are any of the parcels immediately adjacent to the project site under a Williamson Act Contract. Implementation of the proposed project would not conflict with a Williamson Act Contract. Therefore, this would be considered a ***less than significant*** impact.

Impact 3.2-4: Project implementation may lead to the indirect conversion of adjacent agricultural lands to non-agricultural uses (Significant and Unavoidable)

As described above, lands to the north and west of the project site are within Yolo County and are currently designated for agricultural operations. The land to the west of the project site is currently farmed. Although the area to the north is designated for agricultural purposes, this area is not currently farmed and is planned for nine 13- to 23-acre residential lots. Approval of the proposed project would directly result in the approval of development on the site and direct loss of agricultural lands.

Implementation of the proposed project would place urban development more proximate to the nine mapped, but undeveloped, 13- to 23-acre residential lots to the north of the site. Additionally, the project includes development of utility infrastructure in close proximity to this mapped but undeveloped residential area. It is noted, however, that the utility lines would not be oversized. Nevertheless, development of the project and associated infrastructure may create pressure to sell the separate residential lots which, although consistent with existing zoning, would reduce the effectiveness as agricultural land.

The City of Davis has numerous ordinances and programs in place that are aimed at reducing potential land use conflicts between urban and agricultural lands. As noted above, the proposed project has been designed to comply with all applicable buffer and setback requirements between urban and agricultural lands. The proposed agricultural buffer would help minimize conflicts between the project site and existing agricultural lands to the north and west.

The Yolo County Agricultural Commissioner has established conditions covering the use of restricted materials, the purposes of which are to minimize undue hazards and risks associated with the application and handling of restricted materials. Condition #1 addresses the use of restricted materials in the proximity of environmentally sensitive areas. Examples given for environmentally sensitive areas include residential areas (cities, towns, rural neighborhoods), schools, playgrounds, bus stops (when in use), parks, hospitals, shopping centers, occupied labor camps, organic crops, estuaries, reservoirs, lakes, waterways, livestock, state wildlife management areas, and critical habitats of rare, endangered or threatened species. According to Condition #1, restricted pesticides shall not be applied in close proximity to environmentally sensitive areas unless the minimum distance between the closest operating nozzle and the sensitive area is shown in Table 3.2-4.

TABLE 3.2-4: THE USE OF RESTRICTED MATERIALS IN PROXIMITY TO ENVIRONMENTALLY SENSITIVE AREAS

TYPE OF PESTICIDE APPLICATION EQUIPMENT	MINIMUM DISTANCE BETWEEN CLOSEST OPERATING NOZZLE AND THE NON-TARGET AREA	
	DANGER	WARNING/CAUTION
Aircraft	500 Feet	300 Feet
Air Blast Orchard Sprayer	300 Feet	50 Feet
Ground Rigs	100 Feet	50 Feet

SOURCE: YOLO COUNTY, YOLO COUNTY AGRICULTURAL COMMISSIONER. CONDITIONS COVERING THE USE OF RESTRICTED MATERIALS. JANUARY 1, 2017

The juxtaposition of agricultural lands next to residential and mixed uses can be a land-use compatibility issue. For example, agricultural activities may result in noise, dust, or odors that may be perceived as nuisances by nonagricultural neighbors. As required by Section 40A.01 of the Davis Municipal Code (the Right to Farm Ordinance) the City provides purchasers and tenants of nonagricultural land adjacent to agricultural land with notice about the City's support for the preservation of agricultural lands and operations. This notification requirement promotes a “good neighbor” policy by informing these prospective purchasers and tenants of the considerations associated with living in close proximity to agricultural land and operations.

In order for the proposed project to develop, it would require annexation into the City of Davis in order to receive key public services such as water, sewer, police protection and fire protection.

Article 41 of the Davis Municipal Code establish procedures and protocols that must be followed prior to the approval of annexation and the development of urban uses on this site. The approval of the proposed project would not negate or remove any of these requirements, nor would approval of the proposed project increase the likelihood of voter approval of a ballot measure to approve annexation and development of adjacent areas. While it is conceivable that development and annexation of lands adjacent to the proposed project site may be approved by Davis voters sometime in the future, these actions would be subject to a comprehensive and detailed CEQA review process, which would assess the potential loss and conversion of agricultural lands to a non-agricultural use.

Given the project’s compliance with the City’s buffer and agricultural setback requirements, and Right to Farm Ordinance, implementation of the proposed project would not result in indirect pressure to convert agricultural lands to a non-agricultural use or conflict with agricultural operations other than the aerial application of pesticides. As noted in the above table, aerial application of “danger” labeled pesticides requires a 500-foot buffer from environmentally sensitive areas. The proposed project includes a 150-foot agricultural buffer. However, 350 feet of the required 500-foot setback would need to encroach onto the adjacent agricultural land. Therefore, if aerial application of pesticides is deemed necessary on the adjacent farmlands, the proposed project would indirectly disrupt farming operations on the adjacent property. This is a ***potentially significant*** impact.

MITIGATION MEASURE(S)

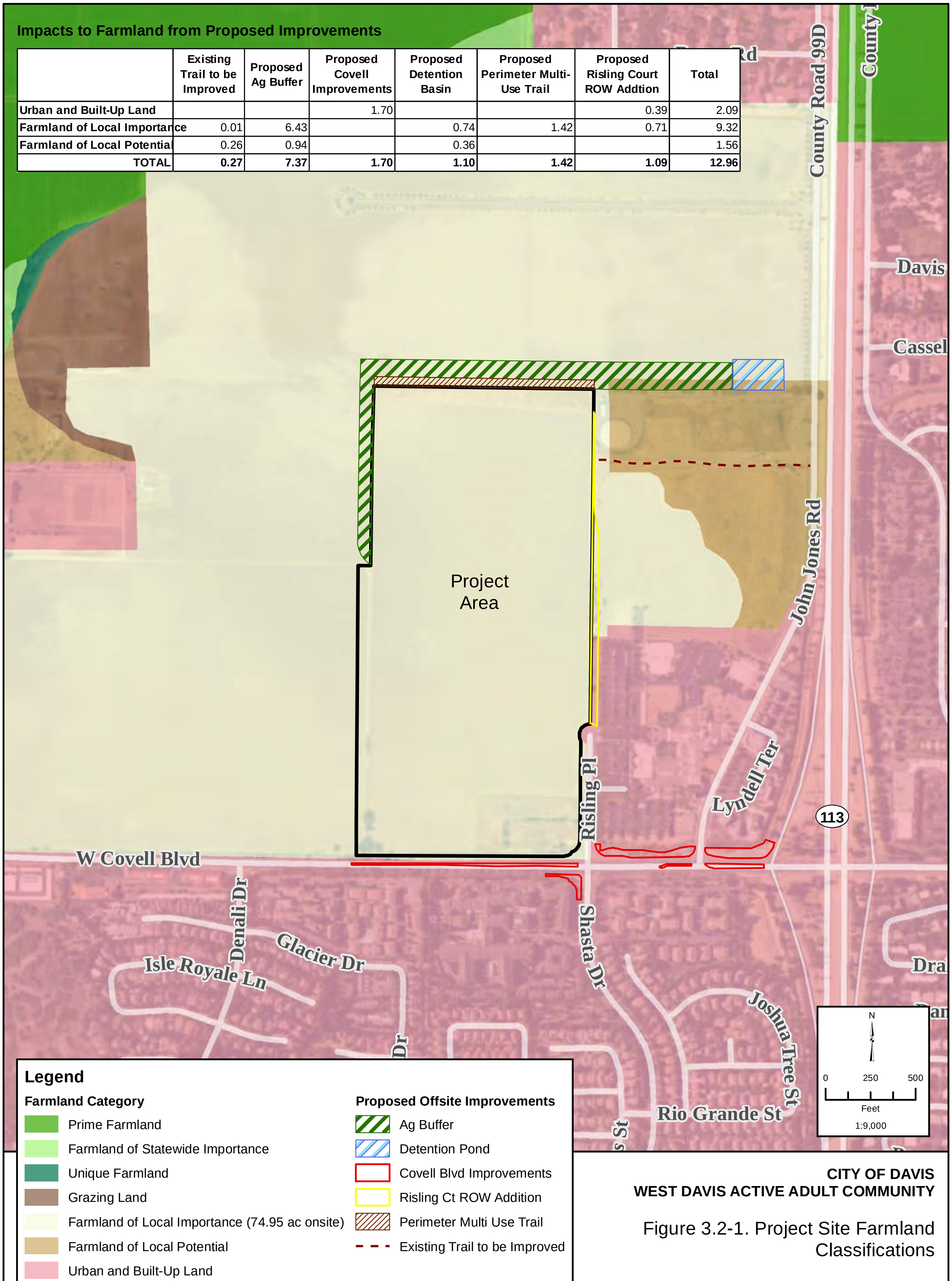
Mitigation Measure 3.2-2: *Prior to the issuance of occupancy permits, the applicant shall consult with adjacent agricultural property owners and attempt to purchase a "no aerial spray" easement. The applicant shall submit the written proof of the easement, or a statement indicated an agreement has not been reached to the Department of Community Development and Sustainability.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact. However, it is not guaranteed that an agreement will be reached, or that it would fully eliminate the potential burden placed on the adjacent agricultural lands from an operational perspective. Therefore, this is a ***significant and unavoidable*** impact.

Impacts to Farmland from Proposed Improvements

	Existing Trail to be Improved	Proposed Ag Buffer	Proposed Covell Improvements	Proposed Detention Basin	Proposed Perimeter Multi-Use Trail	Proposed Risling Court ROW Addtion	Total
Urban and Built-Up Land			1.70			0.39	2.09
Farmland of Local Importance	0.01	6.43		0.74	1.42	0.71	9.32
Farmland of Local Potential	0.26	0.94		0.36			1.56
TOTAL	**0.27**	**7.37**	**1.70**	**1.10**	**1.42**	**1.09**	**12.96**



CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.2-1. Project Site Farmland Classifications

Source: California Department of Conservation's Farmland Mapping and Monitoring Program, Yolo County 2014; Cunningham Engineering,10/13/2017; Yolo County GIS; ArcGIS Online World Imagery Map Service.
Map date: October 16, 2017.

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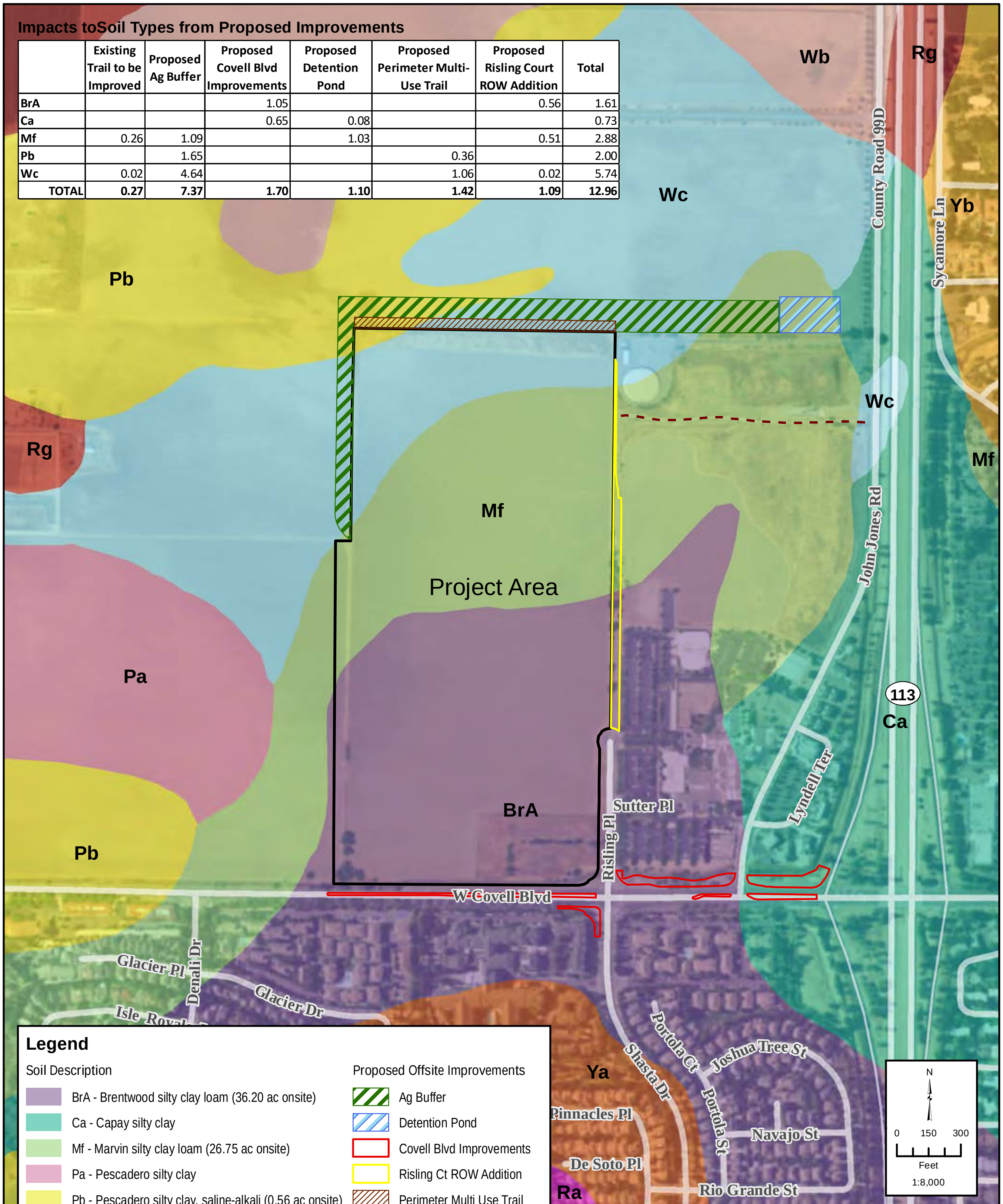
Impacts toSoil Types from Proposed Improvements

	Existing Trail to be Improved	Proposed Ag Buffer	Proposed Covell Blvd Improvements	Proposed Detention Pond	Proposed Perimeter Multi-Use Trail	Proposed Risling Court ROW Addition	Total
BrA			1.05			0.56	1.61
Ca			0.65	0.08			0.73
Mf	0.26	1.09		1.03		0.51	2.88
Pb		1.65			0.36		2.00
Wc	0.02	4.64			1.06	0.02	5.74
TOTAL	**0.27**	**7.37**	**1.70**	**1.10**	**1.42**	**1.09**	**12.96**



Legend

Soil Description

- BrA - Brentwood silty clay loam (36.20 ac onsite)
- Ca - Capay silty clay
- Mf - Marvin silty clay loam (26.75 ac onsite)
- Pa - Pescadero silty clay
- Pb - Pescadero silty clay, saline-alkali (0.56 ac onsite)
- Ra - Reiff very fine sandy loam
- Rg - Rincon silty clay loam
- Wb - Willows clay
- Wc - Willows clay, alkali (11.44 ac onsite)
- Ya - Yolo silt loam
- Yb - Yolo silty clay loam

Proposed Offsite Improvements

- Ag Buffer
- Detention Pond
- Covell Blvd Improvements
- Risling Ct ROW Addition
- Perimeter Multi Use Trail
- Existing Trail to be Improved

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.2-2. Project Site Soils

Source: Cunningham Engineering, 10/13/2017; NRCS Web Soil Survey; Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: October 16, 2017.

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This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. Following this discussion is an assessment of consistency of the proposed project with applicable policies and local plans. The Greenhouse Gases and Climate Change analysis is located in Section 3.7. Comments during the public review period and scoping meeting for the Notice of Preparation regarding this topic were provided from Patrick S. Blacklock (April 18, 2017).

This section is based in part on the following resources:

- *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board, 2005),
- *Handbook for Assessing and Mitigating Air Quality Impacts* (Yolo-Solano Air Quality Management District, 2007),
- *California Emissions Estimator Model* (CalEEMod v.2016.3.2) (CAPCOA, 2017).

3.3.1 ENVIRONMENTAL SETTING

ABBREVIATIONS

(AQAP)	Air Quality Attainment Plan
(AQMD)	Air Quality Management District
(ATCM)	Airborne Toxics Control Measure
(CARB)	California Air Resources Board
(CCAA)	California Clean Air Act
(CH&SC)	California Health and Safety Code
(CO)	Carbon monoxide
(EPA)	United States Environmental Protection Agency
(FCAA)	Federal Clean Air Act
(FHWA)	Federal Highway Administration
(HAPs)	Hazardous Air Pollutants
(NAAQS)	National Ambient Air Quality Standards
(NO_2)	Nitrogen dioxide
(NO_x)	Nitric oxide
(O_3)	Ozone

(Pb)	Lead
(PM)	Particulate matter
(PPM)	Parts per million
(ROG)	Reactive organic gases
(SIP)	State Implementation Plan
(SO_2)	Sulfur dioxide
(SVAB)	Sacramento Valley Air Basin
(TACs)	Toxic air contaminants
(TCMs)	Transportation control measures
(ug/m^3)	Micrograms per cubic meter
(VOC)	Volatile organic compounds
(YSAQMD)	Yolo-Solano Air Quality Management District

SACRAMENTO VALLEY AIR BASIN

Topography and Meteorology

The proposed project is located within the boundaries of the Sacramento Valley Air Basin (SVAB). The SVAB encompasses eleven counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo Counties, the westernmost portion of Placer County and the northeastern half of Solano County. The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is relatively flat.

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the SVAB. During the year the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 19 inches, and the rainy season generally occurs from November through March. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds, with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards.

CRITERIA POLLUTANTS

The United States Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O_3) is a photochemical oxidant and the major component of smog. While O_3 in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O_3 at ground level are a major health and environmental concern. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O_3 levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NOx). NOx plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NOx forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO_2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and VOCs are also considered particulate matter. PM is generally categorized based on the diameter of the particulate matter: PM_{10} is particulate matter 10 micrometers or less in diameter (known as respirable particulate matter), and $PM_{2.5}$ is particulate matter 2.5 micrometers or less in diameter (known as fine particulate matter).

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM_{10}) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural uses (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM_{10} causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter ($PM_{2.5}$) consists of small particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for $PM_{2.5}$.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also soils and damages materials, and is a major cause of visibility impairment.

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

ODORS

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools. The proposed project would include residences with sensitive receptors. Additionally, there are sensitive receptors located in the immediate vicinity of the proposed project to the east and south.

AMBIENT AIR QUALITY

Both the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant. Each pollutant is measured over several standardized timeframes (called the averaging times), which provide a standard to compare monitored levels of pollutants to the federal and state standards. Each criteria pollutant has more than one average time – for example, the state ambient air quality standard for ozone is monitored over both a 1-hour and 8-hour periods.

The federal and California state ambient air quality standards are summarized in Table 3.3-1 for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM_{10}).

The U.S. Environmental Protection Agency (U.S. EPA) established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.08 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001. More recently, the U.S. EPA reduced the 8-hour ozone standard from 0.08 PPM to 0.07 PPM (effective December 28, 2015).

TABLE 3.3-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour 8-Hour	-- 0.070 ppm	0.09 ppm 0.070 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.53 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 75 ppb	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
$PM_{2.5}$	Annual 24-Hour	15 ug/m^3 35 ug/m^3	12 ug/m^3 --
Lead	30-Day Avg. Calendar Quarter	-- 1.5 ug/m^3	1.5 ug/m^3 --

NOTES: PPM = PARTS PER MILLION, PPB = PARTS PER BILLION, UG/M^3 = MICROGRAMS PER CUBIC METER
SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2016A

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less ($PM_{2.5}$) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were revised.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within the project site are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, and odors. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (SO_2), areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Yolo County has a state designation of Nonattainment for ozone, PM_{10} and $PM_{2.5}$, and is either Unclassified or Attainment for all other criteria pollutants. Yolo County has a national designation of Nonattainment for ozone and PM_{10}, and Partial Nonattainment for $PM_{2.5}$. The County is designated either attainment or unclassified for all other criteria pollutants. Table 3.3-2 presents the state and national attainment status for Yolo County.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS (YOLO COUNTY)

CRITERIA POLLUTANTS	STATE DESIGNATIONS	NATIONAL DESIGNATIONS
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Partial Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Standard
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

SOURCE: CALIFORNIA AIR RESOURCES BOARD, AIR QUALITY STANDARDS AND DESIGNATIONS, 2017A.

Sacramento Valley Air Basin Monitoring

CARB and the local air districts maintains numerous air quality monitoring sites throughout each county in the Air Basin to measure ozone, $PM_{2.5}$, and PM_{10}. It is important to note that while the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards, California maintains 1-hour ozone standards, and CARB collects 1-hour ozone data at most monitoring sites. Data obtained from the monitoring sites throughout Yolo County between 2006 and 2015 are summarized in Tables 3.3-3 through 3.3-5.

TABLE 3.3-3: YOLO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE 2006-2015

YEAR	DAYS > STANDARD				1-HOUR OBSERVATIONS			8-HOUR AVERAGES				YEAR COVERAGE	
	STATE		NATIONAL		MAX.	STATE	NAT'L	STATE		NATIONAL			
	1-HR	8-HR	1-HR	'08 8-HR		D.V.¹	D.V.²	MAX.	D.V.¹	MAX.	'08 D.V.²	MIN	MAX
2015	0	1	0	3	0.086	0.08	0.082	0.072	0.072	0.067	0.067	98	100
2014	0	1	0	0	0.082	0.09	0.086	0.072	0.076	0.071	0.068	92	98
2013	0	0	0	0	0.080	0.09	0.088	0.067	0.080	0.067	0.069	97	99
2012	1	9	0	2	0.101	0.09	0.088	0.080	0.080	0.080	0.069	97	98
2011	0	2	0	0	0.088	0.09	0.088	0.073	0.082	0.072	0.069	98	99
2010	0	0	0	0	0.087	0.10	0.096	0.069	0.088	0.069	0.072	85	98
2009	0	11	0	3	0.093	0.10	0.097	0.082	0.088	0.082	0.074	100	95
2008	4	12	0	4	0.100	0.11	0.106	0.088	0.091	0.087	0.079	96	96
2007	1	5	0	2	0.106	0.10	0.106	0.078	0.091	0.077	0.080	97	100
2006	6	23	0	14	0.106	0.10	0.102	0.091	0.091	0.090	0.079	99	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V. ¹ = STATE DESIGNATION VALUE. D.V. ² = NATIONAL DESIGN VALUE. DATA TAKEN FROM THE WOODLAND-GIBSON ROAD AND DAVIS-UCD CAMPUS MONITORING STATIONS.

SOURCE: CALIFORNIA AIR RESOURCES BOARD, (ADAM) AIR POLLUTION SUMMARIES, 2016B.

TABLE 3.3-4: YOLO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 2.5 2006-2015

YEAR	EST. DAYS > NAT'L '06 STD.	ANNUAL AVERAGE		NAT'L ANN. STD. D.V.[1]	STATE ANNUAL D.V.[2]	NAT'L '06 STD. 98TH PERCENTILE	NAT'L '06 24-HR STD. D.V.[1]	HIGH 24-HOUR AVERAGE		YEAR COVERAGE	
		NAT'L	STATE					NAT'L	STATE	MIN.	MAX.
2015	0.0	7.5	10.0	7.0	10	20.8	19	29.4	36.3	92	92
2014	0.0	5.9	*	6.6	6	13.2	16	14.6	14.6	82	82
2013	0.0	7.5	*	*	6	22.0	*	22.0	22.0	93	93
2012	0.0	6.4	6.4	*	6	14.2	*	14.6	14.6	96	96
2011	*	*	*	*	6	*	*	39.4	39.4	93	93
2010	0.0	5.7	5.7	*	10	18.6	*	26.7	26.7	96	96
2009	0.0	7.5	*	*	10	27.4	*	27.6	27.6	94	94
2008	*	*	9.7	*	10	*	*	41.9	41.9	92	92
2007	15.1	8.3	*	8.7	9	39.5	33	42.0	42.0	95	95
2006	12.3	9.3	9.3	9.4	10	36.0	30	44.0	44.0	95	95

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V. [1] = STATE DESIGNATION VALUE. D.V. [2] = NATIONAL DESIGN VALUE. DATA TAKEN FROM THE WOODLAND-GIBSON ROAD AND DAVIS-UCD CAMPUS MONITORING STATIONS.

*= INDICATES THERE WAS INSUFFICIENT DATA AVAILABLE FOR CARB TO DETERMINE THE VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD, (ADAM) AIR POLLUTION SUMMARIES, 2016B.

TABLE 3.3-5: YOLO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 10 2006-2015

YEAR	EST. DAYS > STD.		ANNUAL AVERAGE		3-YEAR AVERAGE		HIGH 24-HR AVERAGE		YEAR COVERAGE
	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	
2015	0.0	12.2	21.5	21.8	20	23	70.8	69.4	100
2014	0.0	0.0	17.2	17.4	19	23	45.0	47.5	100
2013	0.0	23.2	22.4	22.9	19	23	60.3	61.5	99
2012	0.0	6.1	17.6	18.1	18	19	56.4	56.8	100
2011	0.0	6.1	18.4	19.1	19	21	53.2	56.6	98
2010	0.0	6.5	18.6	18.8	24	33	87.4	87.4	94
2009	0.0	12.2	20.5	21.1	26	33	64.6	64.0	96
2008	6.1	48.9	32.9	33.4	28	33	181.1	183.2	98
2007	0.0	18.7	25.2	25.3	25	26	119.0	119.0	95
2006	0.0	36.8	25.1	25.7	28	35	77.0	78.0	98

NOTES: THE NATIONAL ANNUAL AVERAGE PM_{10} STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. DATA TAKEN FROM THE WOODLAND-GIBSON ROAD MONITORING STATION.

SOURCE: CALIFORNIA AIR RESOURCES BOARD, (ADAM) AIR POLLUTION SUMMARIES, 2016B.

3.3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the EPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. CARB is the state agency that is responsible for preparing and implementing the California SIP.

Transportation Conformity

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas (maintenance areas are those areas that were in nonattainment that have been redesignated to attainment, under the FCCA). Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

CARB Air Quality and Land Use Handbook

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities. The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate [I] 405 and I-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day" (CARB, 2005).

California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards.

Air Quality Standards

NAAQS are determined by the EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards.

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM_{10}) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 3.3-1.

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, CARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Other recent milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

LOCAL

Yolo-Solano Air Quality Management District (YSAQMD)

YSAQMD attains and maintains air quality conditions in Yolo and Solano Counties through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of YSAQMD includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. YSAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA, CAAA, and CCAA.

YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts

Nearly all development projects in the region have the potential to generate air pollutants that may increase the difficulty of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, the YSAQMD has developed the H*andbook for Assessing and Mitigating Air Quality Impacts*. The YSAQMD's handbook includes screening methodology and recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors (ROG and NO_X) and PM_{10}. The YSAQMD's handbook also includes screening criteria for localized CO emissions and thresholds for new stationary sources of TACs. The YSAQMD's recommended thresholds of significance, as well as screening criteria and methodology, are discussed in further detail in the Thresholds of Significance section below.

YSAQMD 2016 Draft Triennial Assessment and Plan Update

In addition to the federal attainment plans discussed above for meeting NAAQS, the CCAA requires air districts to endeavor to achieve and maintain the CAAQS and develop plans for attainment. Yolo County meets the CAAQS for sulfur dioxide, nitrogen dioxide, and carbon monoxide, but is designated nonattainment for the State ozone and particulate matter standards. The CCAA requires districts that do not meet the State ozone standard to adopt an Air Quality Attainment Plan and to submit progress reports to the CARB every three years. The YSAQMD adopted the *2016 Draft Triennial Assessment and Plan Update* in July 2016, which assesses air quality data and includes a list of control measures the YSAQMD may take to ensure that the State standard for ozone is reached.

The YSAQMD is not required to prepare an attainment plan for PM_{10} or $PM_{2.5}$; however, the YSAQMD continues to work to reduce particulate emissions through rules affecting stationary sources, the construction industry, and the YSAQMD's agricultural burning program. The YSAQMD also works with the CARB to identify measures that can, where possible, reduce both ozone and particulate emissions. The YSAQMD has been proactive in attempts to implement the most readily available, feasible, and cost-effective measures that can be employed to reduce emissions of PM.

Because the proposed project is located within the nonattainment area for State ozone and PM standards, the project would be subject to any requirements set forth in the *2016 Draft Triennial Assessment and Plan Update* or YSAQMD efforts related to PM emissions, as enforced by YSAQMD through rules and regulations.

2013 REVISIONS TO THE SACRAMENTO REGIONAL 8-HOUR OZONE ATTAINMENT AND REASONABLE FURTHER PROGRESS PLAN

The most recent attainment plan for the ozone NAAQS is the *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan), which demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the federal NAAQS. The SVAB's attainment deadline is 2027. Because the proposed project is located within the nonattainment area for ozone, the project would be subject to the requirements set forth in the 2013 Ozone Attainment Plan, as enforced by YSAQMD through rules and regulations.

YSAQMD RULES AND REGULATIONS

All projects are subject to adopted YSAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Rule 2.3—(Ringelmann Chart)**. This rule prohibits stationary diesel-powered equipment from generating visible emissions that would exceed the rule's visibility threshold.
- **Rule 2.5—(Nuisance)**. This rule prohibits any source from generating air contaminants or other materials that would that would cause injury, detriment, nuisance, or annoyance to the public; endanger the comfort, repose, health, or safety of the public; or damage businesses or property.
- **Rule 2.11—(Particulate Matter Concentration)**. This rule prohibits any source that would emit dust, fumes, or total suspended particulate matter from generated emissions that would exceed the rule's established emission concentration limit.
- **Rule 2.14—(Architectural Coatings)**. This rule establishes volatile organic compound (VOC) content limits for all architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured within YSAQMD's jurisdiction.
- **Rule 2.28—(Cutback and Emulsified Asphalts)**. This rule establishes organic compound limits for cutback and emulsified asphalts manufactured, sold, mixed, stored, used, and applied within YSAQMD's jurisdiction.
- **Rule 2.40—(Wood Burning Appliances)**. This rule prohibits installation of open hearth wood burning fireplaces in any new development (residential or commercial, single or multi-family units). New developments may only use either a pellet-fueled heater, a U.S. EPA Phase II certified wood burning heater or a gas fireplace.
- **Rule 2.37—(Natural Gas-Fired Water Heaters and Small Boilers)**. This rule establishes NO_X emission limits for natural gas-fired water heaters with a rated heat input capacity less than 1,000,000 British Thermal Units per hour—(Btu/hour) manufactured, offered for sale, sold, or installed within YSAQMD's jurisdiction.
- **Rule 3.1—(General Permit Requirements)**. This rule establishes permitting processes (i.e., Authority to Construct and Permit to Operate) to review new and modified sources of air pollution.

- **Rule 3.4—(New Source Review)**. This rule would require any new or modified stationary source that generates emissions that exceed established emissions limits for each pollutant (i.e., ROG, NO_X, sulfur oxides [SO_X], PM_{10}, CO, and lead) to comply with Best Available Control Technology and emissions offset requirements.
- **Rule 3.13—(Toxics New Source Review)**. This rule requires the installation of best available control technology for toxics (T-BACT) at any constructed or reconstructed major source of TACs.

City of Davis General Plan

The Air Quality Element of the City's General Plan (amended through January 2007) contains goals, policies, and actions that pertain to CAP emissions, TACs, and odors (City of Davis, 2007). Key goals and policies applicable to the project include the following:

AIR QUALITY

Goal AIR 1. Maintain and strive to improve air quality.

Policy AIR 1.1. Take appropriate measures to meet the AQMD's goal for improved air quality.

City of Davis Municipal Code

40.24.040 Specified.

- c) Odors. No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable when diluted in the ratio of one volume of odorous air to four volumes of clean air at the points of measurement specified in section 40.24.030 or at the point of greatest concentration. Any process which may involve the creation or emission of any odors shall be provided with a secondary safeguard system, so that control will be maintained if the primary safeguard system should fail. There is hereby established as a guide in determining such quantities of offensive odors, Table iii, "odor thresholds," in Chapter 5, "Air Pollution Abatement Manual," Copyright 1951, by Manufacturing Chemists' Association, Inc., of Washington, D.C. and such manual or table as subsequently amended.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines and the YSQAMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (2007), the proposed project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

Impacts related to greenhouse gases and climate change are addressed in Section 3.7.

The YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (2007) provides project-level thresholds of significance for: particulate matter less than 10 micrometers in diameter (PM_{10}), carbon monoxide (CO), and the precursors to ozone, which are reactive organic gases (ROG) and nitrogen oxides (NOx). The thresholds apply to both construction and operational impacts.

TABLE 3.3-6: THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS OF CONCERN

POLLUTANT	*THRESHOLDS OF SIGNIFICANCE*
ROG	10 tons/year
NOx	10 tons/year
PM_{10}	80 lbs/day
CO	Violation of a state ambient air quality standard for CO

SOURCE: YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT'S HANDBOOK FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2007)

METHODOLOGY

Operational Emissions

There are three types of emission sources: area sources, mobile sources, and stationary sources. These collectively make up the project's operational emissions. The methodology used in this analysis to address each source is presented below.

AREA SOURCES

The term area source emissions refer to equipment or devices operating within a project that individually emit small quantities of air pollutants, but when considered collectively, represent large quantities of emissions. Examples include electricity and natural gas consumption, water and space heaters, fireplaces, wood burning heaters, lawn maintenance equipment, and application of paints and lacquers. The California Emission Estimator Model (CalEEMod)™ (v.2016.3.2) was used to estimate area source emissions.

The land use inputs for CalEEMod were derived from the project description, which includes information provided by the City of Davis and the Project Applicant. The CalEEMod land use inputs include:

- Residential:
    - Single Family Housing (77 dwelling units)
    - Retirement Community (303 dwelling units)
    - Congregate Care (Assisted Living) (30 dwelling units)
    - Apartments Low Rise (150 dwelling units)
- Recreational:
    - City Park (1.1 acres)
    - Health Club (8,000 square feet)
    - High Turnover (Sit Down Restaurant) (5,000 square feet)

MOBILE SOURCES

The term mobile source emissions refer to vehicle emissions generated by a project. Mobile source emissions are dependent on a large number of variables including trip length, average speed, trip generation rates, vehicle fleet mix, starting conditions, temperature, year, and other factors.

CalEEMod was used to estimate mobile source emissions. The traffic inputs were derived from the traffic analysis. The traffic inputs include trip generation rates as included within the Traffic Study provided by Fehr & Peers (Fehr & Peers, 2017).

STATIONARY SOURCES

The term stationary source emissions refer to equipment or devices operating at industrial and commercial facilities. Examples of facilities with stationary sources include manufacturing plants, quarries, print shops and gasoline stations. The proposed project does not propose stationary source emitters; therefore, this air quality analysis does not include stationary source emission estimates.

Construction Emissions

Construction activities can generate a substantial amount of air pollution. In some cases, the emissions from construction represent the largest air quality impact associated with a project. While construction-related emissions are considered temporary, these short-term impacts can contribute to the pollution load recorded at monitoring stations. Emissions from construction are assessed in this document to determine whether the thresholds of significance established by the YSAQMD would be exceeded.

Construction activities would include: site preparation, grading, building construction, paving, and architectural coatings. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

CalEEMod was used to estimate the construction emissions from construction activities. Based on construction phasing and schedule, the CalEEMod defaults for construction equipment were utilized.

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation (Significant and Unavoidable)

The proposed project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions), require the use of grid energy (natural gas and electricity), and generate area source emissions. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from landscape fuel combustion, consumer products, and architectural coatings.

CalEEMod was used to estimate operational emissions for the proposed project, without any mitigation measures incorporated. Table 3.3-7 shows the operational emissions, which includes both mobile and area source emissions of criteria pollutants that would result from the proposed project. Detailed CalEEMod emissions calculations are presented in Appendix B.

TABLE 3.3-7: PROJECT OPERATIONAL EMISSIONS (UNMITIGATED SCENARIO)

EMISSIONS[A]	*ROG (TONS/YEAR)*	*NOX (TONS/YEAR)*	*PM_{10} (LBS/DAY)*[B]	*CO (TONS/YEAR)*
Area	70.6908	1.2427	288.0215	88.0231
Energy	0.0435	0.3740	0.1648	0.1733
Mobile	0.9548	7.1290	972.1987	9.7482
Total	**71.6891**	**8.7457**	**1,260.3847**	**97.9446**
Threshold	**10**	**10**	**80**	**Violation of State Ambient Air Quality Standard for CO**
Above Threshold?	**Y**	**N**	**Y**	**See Impact 3.3-3**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.

SOURCE: CALEEMOD (V.2016.3.2)

The YSAQMD has established an operational emissions threshold of significance for ozone precursors of 10 tons per year for ROG and NO_X, and 80 pounds per day for PM_{10}. The YSAQMD utilizes a screening process and separate model for CO impacts. As shown in the table above, project generated emissions would be above the YSAQMD 10 tons per year threshold for ROG and the 80 pounds per day threshold for PM_{10}. Therefore, the project could result in a ***potentially significant*** impact. However, the proposed project would include the following project components (written as provided by CalEEMod) that would reduce project operational emissions below the unmitigated scenario as provided in Table 3.3-7.

- Increase density to 7.51 dwelling units per acre (based on 560 dwelling units proposed for the proposed 74.49-acre development area of the project site);
- Increase transit accessibility (project site within 0.1 miles to nearest transit (bus) station);
- Improve pedestrian network (project site and connecting off-site);
- No hearths.

Additionally, the proposed project would incorporate the following mitigation, as provided within CalEEMod:

- Use Low VOC Cleaning Supplies;
- Use Low VOC Paint (EF of less than 100 g/L for residential interior and, residential exterior, and 150 g/L for non-residential interior, non-residential exterior, parking);
- Install metal halide post top lights, metal halide cobrahead/cutoff lights, high-pressure sodium cutoff lights, or LED lights (for outdoor lighting);
- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower); and
- Use water-efficient irrigation systems.

As shown in Table 3.3-8, below, incorporation of these project components and mitigation measures (listed above) would reduce project-related operational emissions by an estimated 94.7% for ROG, 18.3% for NO_x, and 31.9% for PM_{10}, as calculated using CalEEMod (v.2016.3.2). The greatest percentage reductions occur within the Area emissions category (for ROG, NO_x, and PM_{10}).

TABLE 3.3-8: PROJECT OPERATIONAL EMISSIONS (MITIGATED SCENARIO)

EMISSIONS CATEGORY[A]	*ROG (TONS/YEAR)*	*NOX (TONS/YEAR)*	*PM_{10} (LBS/DAY)*[B]	*CO (TONS/YEAR)*
Area	2.8504	0.0453	0.2410	3.9248
Energy	0.0378	0.3247	0.1430	0.1511
Mobile	0.9160	6.7722	857.4825	8.9289
Total[B]	**3.8042**	**7.1421**	**857.8665**	**13.0048**
Threshold	**10**	**10**	**80**	**Violation of State Ambient Air Quality Standard for CO**
Above Threshold?	**N**	**N**	**Y**	**See Impact 3.3-3**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.
SOURCE: CALEEMOD (V.2016.3.2)

The percent reductions achieved by these project components and mitigation measures and the project's design features would bring the operational source emissions below the below the YSAQMD threshold of significance for ROG. NOx would remain below the applicable YSAQMD threshold. However, PM_{10} would remain above the applicable YSAQMD threshold. This is due to the number of mobile vehicle trips generated by the proposed project. The mobile emissions category constitutes the vast majority of PM_{10} emissions during project operations. Although reduced under the mitigated scenario, mobile PM_{10} emissions would cause operation-related PM_{10} emissions to remain above the applicable threshold. The proposed project would be required to implement Mitigation Measure 3.3-1.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-1: *Prior to the issuance of each building permit, the project applicant shall ensure that the project incorporates the following:*

- *Require the use Low VOC Cleaning Supplies during project operation*

- *Require the use of low VOC Paint (VOC emission factor of below 100 g/L for residential interiors exteriors, and below 150 g/L for non-residential interior, non-residential exterior, parking).*
- *For outdoor lighting, utilize energy efficient lighting, such as metal halide post top lights, metal halide cobrahead/cutoff lights, LED lights, and/or high-pressure sodium cutoff lights, in place of traditional typical mercury cobrahead lights.*
- *Require the use of low-flow appliances (including for the bathroom faucet, kitchen faucet, toilet, and shower).*
- *Require the use water-efficient irrigation systems.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.3-1 would reduce proposed project operation-related criteria pollutant emissions. In addition, implementation of Mitigation Measure 3.7-1, as provided in Chapter 3.7, "Greenhouse Gas Emissions", would reduce these emissions further. However, even after mitigation measures are applied, proposed project PM_{10} emissions would be above the YSAQMD threshold. Therefore, there is a ***significant and unavoidable*** impact relative to this topic.

Impact 3.3-2: Project construction has the potential to cause a violation of an air quality standard or contribute substantially to an existing or projected air quality violation (Less than Significant with Mitigation)

Construction activities associated with construction and implementation of the proposed project would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NO_x) as well as PM_{10}, which could exacerbate the County's existing non-attainment status for these criteria pollutants. It should be noted that construction vehicle emissions requirements in California have become stricter over time. Below is an estimated construction schedule for the proposed project:

- Site Preparation (April 1, 2020 – May 11, 2020)
- Grading: (May 12, 2020 – August 24, 2020)
- Building Construction: (August 25, 2020 – June 25, 2023)
- Paving: (June 26, 2021 – September 10, 2021)
- Architectural Coating: (September 11, 2021 – August 27, 2023)

CalEEMod was used to estimate construction emissions for the proposed project. Table 3.3-9 shows the construction emissions that would result from the proposed project. Detailed CalEEMod emissions calculations are presented in Appendix B.

TABLE 3.3-9: PROJECT CONSTRUCTION EMISSIONS (UNMITIGATED SCENARIO)

EMISSIONS YEAR	*ROG (TONS/YEAR)*	*NOX (TONS/YEAR)*	*PM_{10} (LBS/DAY)[(A)]*	*CO (TONS/YEAR)*
2020	0.4002	3.7838	378.8745	2.8107
2021	1.0446	3.3533	446.4530	3.5524
2022	2.3777	3.1849	446.2881	3.7066
2023	1.4994	1.6949	460.0231	2.2093
Maximum	**2.3777**	**3.7838**	**460.0231**	**3.7066**
Threshold	**10**	**10**	**80**	**Violation of State Ambient Air Quality Standard for CO**
Above Threshold?	**N**	**N**	**Y**	**See Impact 3.3-3**

NOTE: [(A)] MAXIMUM VALUE

The YSAQMD has established a construction emissions threshold of significance for ozone precursors of 10 tons per year for ROG and NO_X, and 80 pounds per day for PM_{10}. The YSAQMD utilizes a screening process and separate model for CO impacts. As shown in the table above, construction emissions of ROG would be at its maximum in year 2022, with approximately 2.3777 tons of ROG, which is below the 10 tons per year threshold for ROG. Year 2020 would be the peak year for construction emissions of NO_x, with approximately 3.7838 tons of NO_x in that year, which is below the 10 tons per year threshold for NO_x. PM_{10} construction emissions remain above the 80 pounds per day threshold for PM_{10}, with a maximum of 446.4530 pounds per day in 2021. This is a ***potentially significant*** impact.

YSAQMD advises that projects exceeding project construction emissions thresholds should implement best management practices to reduce dust emissions and avoid localized health impacts that could be generated by dust. Approximately 99 percent of the PM_{10} emissions during the construction emissions years would be related to PM_{10} dust, with the remainder related to PM_{10} exhaust. The YSAQMD recommends the use of construction dust mitigation measures to reduce PM_{10} emissions during construction. The YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (2007) provides a list of dust mitigation measures along with their effectiveness at reducing PM_{10} emissions. Below is a list of construction dust mitigation reduction assumptions used for this analysis.

TABLE 3.3-10: CONSTRUCTION DUST MITIGATION REDUCTION ASSUMPTIONS

MITIGATION MEASURE	*SOURCE CATEGORY*	*EFFECTIVENESS*	*REFERENCES*
Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.	Fugitive emissions from active, unpaved construction areas	50%	U.S. EPA, AP-42
Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area.	Wind erosion from inactive areas	Up to 80% (assumed 60%)	U.S. EPA, AP-42
Sweep streets if visible soil material is carried out from the construction site.	On-road entrained PM_{10}	14%	U.S. EPA Report Number EPA-600/R-95-171
Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel.	Mud/dirt carryout on-road entrained PM_{10}	42-52% (assumed 42%)	U.S. EPA Report Number EPA-600/R-95-171

SOURCE: YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT'S HANDBOOK FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2007)

CalEEMod allows the selection of Mitigation Measures that would reduce project-related construction PM_{10} emissions. The following Mitigation Measures and parameters were used within CalEEMod to calculate reductions in PM_{10}, consistent with the dust Mitigation Measures listed in Table 3.3-10 above:

- Soil Stabilizer for Unpaved Roads (60% Fugitive Dust PM_{10} reduction);
- Water Exposed Area three times daily (61% Fugitive Dust PM_{10} reduction);
- Clean Paved Road (14% Fugitive Dust PM reduction).

Additional Mitigation Measures were applied in CalEEMod:

- Unpaved Road Mitigation: Limit on-site construction vehicle speeds to 5 mph.

Implementation of the CalEEMod dust mitigation listed above, which is consistent with the Mitigation Reduction Assumptions listed in Table 3.3-10 above, would reduce project-related construction PM_{10} emissions to an estimated total of a maximum of approximately 69 pounds per day during the construction timeframe (an approximately 85% reduction from unmitigated project-related PM_{10} emissions), which is below the 80 pounds per day threshold. Therefore, with implementation of the following mitigation measure, which is consistent with the CalEEMod Mitigation listed above, the proposed project would have a ***less than significant*** impact as it relates to construction emissions.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-2: *The project applicant shall implement the following dust control measures during all construction activities. These measures shall be incorporated as part of the building and grading plans.*

- *Water all active construction sites at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure.*
- *Apply water or dust palliatives on exposed earth surfaces as necessary to control dust emissions. Construction contracts shall include dust control treatment in late morning and at the end of the day, of all earth surfaces during clearing, grading, earth moving, and other site preparation activities. Non-potable water shall be used, where feasible. Existing wells shall be used for all construction purposes where feasible. Excessive watering will be avoided to minimize tracking of mud from the project onto streets as determined by Public Works.*
- *Grading operations on the site shall be suspended during periods of high winds (i.e. winds greater than 15 miles per hour).*
- *Outdoor storage of fine particulate matter on construction sites shall be prohibited.*
- *Contractors shall cover any stockpiles of soil, sand and similar materials. There shall be no storage of uncovered construction debris for more than one week.*
- *Re-vegetation or stabilization of exposed earth surfaces shall be required in all inactive areas in the project.*

- *Cover all trucks hauling dirt, sand, or loose materials, or maintain at least two feet of freeboard within haul trucks.*
- *Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area (as applicable).*
- *Sweep streets if visible soil material is carried out from the construction site.*
- *Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel.*
- *Reduce speed on unpaved roads to less than 5 miles per hour.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.3-2 would ensure all applicable dust mitigation is applied, which would reduce the potential impact to construction emissions to a ***less than significant*** level.

Impact 3.3-3: Carbon monoxide hotspot impacts (Less than Significant)

Project traffic would increase concentrations of carbon monoxide along streets providing access to the project. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

The CO screening approach outlined in the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (2007) was used to estimate whether or not the proposed project's traffic impact would cause a potential CO hotspot. The CO screening approach uses the following screening criteria:

- Does the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity reduce to an unacceptable LOS (typically LOS E or F[1])? or
- Will the proposed project substantially worsen an already existing peak-hour LOS F on one or more streets or at one or more intersections in the project vicinity? (Note: This includes situations where the average delay would increase by 10 seconds or more when project-generated traffic is included.)

If the answer to the screening criteria is "yes," then the proposed project can be said to have the potential to create a violation of the CO standard and further modeling may be warranted. If the answer to the screening criteria is "no," then further modeling is not warranted and the proposed project would not create a violation of the CO standard.

The traffic impact analysis contained in Section 3.14 examined Level of Service (LOS) for intersections and road segments affected by the proposed project. As shown throughout Section

[1] The City of Davis has generally established LOS E as the significance level for intersection operations within the City. However, LOS F is acceptable in the downtown core area, and within areas with a corridor plan. A corridor plan is currently being prepared for East Covell Blvd., adjacent to the project site. As such, LOS F was used in the CO screening analysis.

3.14 of this EIR, the proposed project would not reduce peak-hour LOS on any streets or intersections to an unacceptable LOS, or substantially worsen an already existing peak-hour LOS F on any streets or intersections, during the non-cumulative scenarios.

However, under the cumulative scenario, the proposed project would cause greater than a 10-second increase in PM peak hour delay to the following study intersections, which are projected to operate at LOS F under cumulative conditions without the project:

- West Covell Boulevard/SR 113 NB Ramps (LOS F) – project-added traffic would cause an 11-second increase in delay.
- West Covell Boulevard/Sycamore Lane (LOS F) – project-added traffic would cause a 20-second increase in delay.

Separately, under cumulative conditions, the proposed project would contribute to vehicular queuing that extends from the SR 113 northbound off-ramp at West Covell Boulevard onto the SR 113 freeway mainline. Traffic impacts for CO Hotspots are discussed further under Section 4.0: Other CEQA Required Topics.

However, the cumulative conditions scenario is speculative (in that it is unclear that all of these proposed projects would be built by the buildout timeframe, if at all). Moreover, traffic volumes for the intersections and freeway facility under cumulative conditions, as identified by the traffic analysis (see Section 3.14 of this EIR), does not rise to a level sufficient to feasibly cause a CO Hotspot impact. The potential for the creation of a CO hotspot would require a roadway segment or intersection with peak hour traffic volumes in the tens of thousands. However, there are no traffic intersections or roadways that would be affected the proposed project that would reach this level of traffic volume (Fehr & Peers, 2017); therefore, there is no potential for the creation of a CO hotspot that would result in violations of applicable ambient air quality standards, and further modeling is not warranted.

Since the project is within an attainment area for carbon monoxide (ambient air quality standards are currently attained) and in an area with low background concentrations, and since it is not expected that a CO hotspot would be generated by the proposed project under cumulative and non-cumulative scenarios, changes in carbon monoxide levels resulting from the proposed project would not result in violations of the ambient air quality standards, and would represent a ***less than significant*** impact.

Impact 3.3-4: Potential for public exposure to toxic air contaminants (Less than Significant)

The screening approach outlined in the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (2007) was used to estimate whether or not the proposed project would result in air quality impacts associated with land use conflicts and sensitive receptors. The screening approach uses the project location relative to other uses to determine if there is the potential for localized air quality impacts. Localized air pollution impacts generally occur in one of two ways:

1. a (new) source of air pollutants is proposed to be located close to existing receptors. For example, an industrial facility is proposed for a site near a school; or
2. a (new) development project with receptors is proposed near an existing source of air pollutants. For example, a hospital is proposed for a site near an industrial facility.

The amount of emissions, the proximity between the emissions source and the nearest receptor, the direction of prevailing winds, and local topography can all influence the severity of a localized impact. The most frequent impacts are those related to: Toxic Air Contaminants (TACs), Odors, and Construction Dust.

TACS

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The California Air Resources Board (ARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The ARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 3.3-11 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

The proposed project does not include any of the source categories listed in Table 3.3-11. The proposed project does not include the long-term operation of any other major onsite stationary sources of TACs. In addition, no major stationary sources of TACs have been identified in the immediate vicinity of the project site. The project site is not located adjacent to a freeway or high traffic road that is considered a significant source of mobile source air toxics. The closest traffic facility that poses a risk from mobile source air toxics is State Route (SR) 113, located approximately 1,300 feet to the east of the project site. Implementation of the proposed project would not be anticipated to result in an increased exposure of sensitive receptors to localized concentrations of TACs that would exceed the relevant standards or thresholds. Therefore, this proposed project would have a ***less than significant*** impact on sensitive receptors.

TABLE 3.3-11: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

SOURCE CATEGORY	*ADVISORY RECOMMENDATIONS*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro- ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCE: YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT'S HANDBOOK FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2005)

DUST/PARTICULATE MATTER

The proposed project requires earthmoving during the project's construction phase. The majority of earthmoving would be associated with clear and grub, rough grading, trench/backfill, final grading, and building construction activities.

These construction activities would result in temporary dust generation (PM_{10}). Without control, dust emissions can create nuisances or localized health impacts. CalEEMod was used to estimate construction PM_{10} emissions for the proposed project. Construction emissions are discussed in more detail under Impact 3.3-2, Construction Impacts. Detailed CalEEMod emissions calculations are presented in Appendix B. Mitigation Measure 3.3-2 requires the implementation of construction dust mitigation measures to reduce PM_{10} emissions during construction. This mitigation measure is consistent with the recommendations of the YSAQMD in *Handbook for Assessing and Mitigating Air Quality Impacts* (2007). Below is a list of the best management practices that are required under this mitigation measure.

- Water all active construction sites at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Apply water or dust palliatives on exposed earth surfaces as necessary to control dust emissions. Construction contracts shall include dust control treatment in late morning and at the end of the day, of all earth surfaces during clearing, grading, earth moving, and

other site preparation activities. Non-potable water shall be used, where feasible. Existing wells shall be used for all construction purposes where feasible. Excessive watering will be avoided to minimize tracking of mud from the project onto streets as determined by Public Works.

- Grading operations on the site shall be suspended during periods of high winds (i.e. winds greater than 15 miles per hour).
- Outdoor storage of fine particulate matter on construction sites shall be prohibited.
- Contractors shall cover any stockpiles of soil, sand and similar materials. There shall be no storage of uncovered construction debris for more than one week.
- Re-vegetation or stabilization of exposed earth surfaces shall be required in all inactive areas in the project. Cover all trucks hauling dirt, sand, or loose materials.
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area.
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel.
- Reduce speed on unpaved roads to less than 5 miles per hour.

Implementation of the dust mitigation required under Mitigation Measure 3.3-2, and as reprinted in the above bullet list, would ensure that dust emissions are below the YSAQMD thresholds, and that the proposed project would have a ***less than significant*** impact with regard to dust and/or particulate matter.

Impact 3.3-5: Potential for exposure to odors (Less than Significant)

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the YSAQMD. The general nuisance rule (Heath and Safety Code §41700 and YSAQMD District Rule 2.5) is the basis for the YSAQMD threshold. A project may reasonably be expected to have a significant adverse odor impact where it "generates odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property."

As discussed under Impact 3.3-4, implementation of the proposed project would not place sensitive receptors adjacent to known toxic air contaminants above the applicable standards and thresholds. Similarly, implementation of the proposed project would not directly create or generate objectionable odors to a significant degree. The proposed project would also not place sensitive receptors near objectionable odors. Trash in enclosed areas would be separated at a sufficient distance from nearby residences, and enclosed in industry-standard containers, such that odors from trash would not generally generate noticeable odors for nearby residential receptors. The two closest producers of odors include the Yolo County Landfill located northwest of the County Road 104 and County Road 28H intersection, and the Davis Waste Water Treatment facility located on County Road 28H just east of County Road 105. These facilities are located approximately 4.66 and 5.60 miles away from the project site, respectively. This distance is beyond the screening distance of one mile that is recommended by the YSAQMD. There are no other known producers of odors within vicinity of the project site. Therefore, this impact is considered ***less than significant***.

This section describes the regulatory setting, regional biological resources, and impacts that are likely to result from Project implementation. This section is based in part on the following technical studies and field survey:

- *Draft Davis Innovation Center Biological Technical Report* (AECOM, 2014);
- *Arborist Report: WDAAC Project, Davis, CA* (Tree Associates, 2017);
- *Arborist Report Addendum: WDAAC Project, Davis, CA* (Tree Associates, 2017);
- Field survey by De Novo Planning Group staff biologist, Steve McMurtry (October 2017).

The analysis contained in this section is intended to be at a project-level, and covers impacts associated with development of the entire site to an urban use.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Russ Kanz and Toni Terhaar (May 4, 2017), Yolo Local Agency Formation Commission (LAFCo) (May 11, 2017), Craighton Chin (April 27, 2017), Susan Garbini (April 24, 2017), and County of Yolo (April 18, 2017). Each of the comments related to this topic are addressed within this section.

3.4.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The project site is located within the southern portion of the Sacramento Valley bioregion, and just north of the Bay/Delta bioregion. The Sacramento Valley bioregion is a watershed of the Sierra Nevada that encompasses the northern end of the great Central Valley, stretching from Redding to Yolo and Sacramento County. The bioregion is generally flat, and is rich in agriculture. The bioregion has a climate that is characterized by hot dry summers and cool wet winters. Historically, oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands have been the major natural vegetation of the bioregion; however, much of the region has been converted to agricultural uses. This bioregion is the most prominent wintering area for waterfowl, attracting significant numbers of ducks and geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks. Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are some of the wildlife that are common in this bioregion.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM

The California Wildlife Habitat Relationships (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

The Sacramento Valley region is considered to have low biological diversity due to the conversion of native habitat to agricultural and urban uses. As shown in Figure 3.4-1, the CWHR shows the project site as having the following habitats on the project site: Cropland (11.08 acres), Dryland Grain Crop (62.37 acres), and Irrigated Hayfield (1.49 acres). Below is a brief description of these CWHR habitats.

Cropland habitats are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Vegetation in this habitat includes a variety of sizes, shapes, and growing patterns. Field corn can reach ten feet while strawberries are only a few inches high. Although most crops are planted in rows, alfalfa hay and small grains (rice, barley, and wheat) form dense stands with up to 100 percent canopy closure. Most croplands support annuals, planted in spring and harvested during summer or fall. In many areas, second crops are commonly planted after harvesting the first. Wheat is planted in fall and harvested in late spring or early summer. Overwintering of sugar beets occurs in the Sacramento Valley, with harvesting in spring after the soil dries.

Dryland Grain Crop habitats are often located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Vegetation in the dryland (nonirrigated) grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. These seed and grain crops are annuals. They are usually planted by drilling in rows which produce solid stands, forming 100 percent canopy at maturity in good stands. They are normally planted in fall and harvested in spring. However, they may be planted in rotation with other irrigated crops and winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months), and then harvested in late spring.

Irrigated Hayfield habitats occur in variable climates, from hot and dry to cool and wet to cold and snowy. This habitat type requires relatively flat topography that allows irrigation or water spreading. Except for 2 to 6 months initial growing period, depending on climate, and soil, this habitat is dense, with nearly 100 percent cover. Average height is about 0.46 meters (1.5 feet) tall. Planted fields generally are monocultures (the same species or mixtures or a few species with similar structural properties). Structure changes to a lower stature following each harvest, grows up again and reverts to bare ground following plowing or discing. Plowing may occur annually, but is usually less often. Layering generally does not occur in this habitat. Unplanted "native" hay fields may contain short and tall patches. If not harvested for a year, they may develop a dense thatch of dead leaves between the canopy and the ground.

LOCAL SETTING

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, nine mapped but undeveloped 13- to 23-acre residential lots to the north, the

Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

The project site is currently undeveloped and has been previously used for agricultural uses. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Figure 2.0-4 shows the U.S. Geological Survey (USGS) topographic map. Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east north of Covell Boulevard. Frontage improvements along Covell Boulevard are limited but include a bus shelter, a section of curb, and traffic signs and signals.

The project site has developed or partially developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt residential area planned for nine 13- to 23-acre residential lots. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of SR 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

SPECIAL-STATUS SPECIES

Special-status species are generally defined as: 1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; 2) species considered rare or endangered under the California Environmental Quality Act; 3) plants considered "rare, threatened, or endangered in California" by the California Native Plant Society (Lists 1B); 4) animal listed as "species of special concern" by the state; and 5) animals fully protected in California by the Fish and Game Code.

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, the U.S. Fish and Wildlife Service's (USFWS) endangered and threatened species lists, and observations from local experts. The background search was regional in scope and focused on the documented occurrences within the 9-quadrangle radius of the project site, which includes the following USGS quadrangles: Madison, Woodland, Grays Bend, Winters, Merritt, Davis, Allendale, Dixon, and Saxon.

The search revealed 51 special-status species within the region: 20 plants, and 32 animals. Table 3.4-1 provides a list of special-status plant species that are documented in the region, their habitat, potential for project site occurrence, and current protective status. Table 3.4-2 provides a list of special-status wildlife species that are documented in the region, their habitat, potential for project site occurrence, and current protective status. Figure 3.4-2 illustrates the general location of these records maintained by the CNDDB.

TABLE 3.4-1: SPECIAL-STATUS PLANTS WITHIN 9-QUADRANGLE REGION FOR PROJECT SITE

PLANT	*STATUS (FED;CA; CNPS)*	*HABITAT ASSOCIATION*	*BLOOMING PERIOD*	*POTENTIAL FOR OCCURRENCE*
Astragalus tener var. ferrisiae Ferris' milk-vetch	--;--;1B.1	Meadows, seeps, foothill and valley grasslands. Usually found in subalkaline flats.	April to May	Not expected to occur; no suitable habitat.
Astragalus tener var. tener alkali milk-vetch	--;--;1B.2	Favors alkaline playas, valley and foothill grasslands, and vernal pools. Also occurs in open, alkaline and seasonally moist meadows from 0 to 200 feet.	March to June	Not expected to occur; no suitable vernal pool habitat.
Atriplex cordulata var. cordulata heartscale	--;--;1B.2	Grows in grasslands with sandy alkaline or saline soils. Favors chenopod scrub, meadows, seeps, valley and foothill grasslands.	April to October	Low potential to occur; marginal habitat and soils present on-site; CNDDB records within 3 miles of the site.
Atriplex depressa brittlescale	--;--;1B.2	Prefers meadows or grasslands with alkaline or saline clay soils. Also favors vernal pools, meadows and seeps, and grasslands.	April to October	Low potential to occur; marginal habitat and soils present on-site; CNDDB records within 3 miles of the site.
Extriplex joaquiniana San Joaquin spearscale	--;--;1B.2	Found in seasonal alkali wetlands or alkali sink scrub. Favors chenopod scrub, playas, valley and foothill grasslands and meadows and seeps.	April to October	Low potential to occur; marginal habitat and soils present on-site; CNDDB records within 3 miles of the site.
California macrophylla round-leaved filaree	--;--;1B.2	Species found in cismontane woodlands, valley and foothill grassland with clay soils.	March to May	Not expected to occur; outside elevational range.
Chloropyron palmatum palmate-bracted salty bird's-beak	FE;CE;1B.1	Species is restricted to seasonally-flooded, saline-alkali soils in lowland plains/basins at elevations below 500 ft. Favors chenopod scrub and valley and foothill grasslands.	May to October	Low potential to occur; marginal habitat present on-site; No CNDDB records within 3 miles of the site.
Fritillaria pluriflora adobe-lily	--;--;1B.2	Grows in chaparral, cismontane woodland, or foothill grasslands with clay or serpentine soils. Found at elevations of 60-705 meters.	February to April	Not expected to occur; outside elevational range.
Hibiscus lasiocarpos var. occidentalis woolly rose-	--;--;1B.2	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California.	June to September	Not expected to occur; no suitable habitat.

PLANT	STATUS (FED;CA; CNPS)	HABITAT ASSOCIATION	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE
mallow		Found at elevations of 0-120 meters.		
Lepidium latipes var. heckardii Heckard's pepper-grass	--;--;1B.2	This annual prefers valley and foothill grasslands with alkaline soils. Found at elevations of 2-200 meters.	March to May	Not expected to occur; no suitable habitat.
Lilaeopsis masonii Mason's lilaeopsis	--;CR;1B.1	Prefers brackish or freshwater swamps, intertidal marshes, and riparian scrub at or below 35 feet.	April to November	Not expected to occur; no suitable habitat.
Navarretia leucocephala ssp. bakeri Baker's navarretia	--;--;1B.1	This annual herb grows in vernal pools, cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grasslands. Can be found at elevations of 5-1740 meters.	April to July	Not expected to occur; no suitable habitat.
Neostapfia colusana Colusa grass	FT;CE;1B.1	Vernal pools or other seasonal wetlands. Found at elevations of 5-200 meters.	May to August	Not expected to occur; no suitable habitat.
Plagiobothrys hystriculus bearded popcorn-flower	--;--;1B.1	Vernal pools or other seasonal wetlands. Found at elevations of 0-274 meters.	April to May	Not expected to occur; no suitable habitat.
Puccinellia simplex California alkali grass	--;--;1B.2	Meadows and seeps, chenopold scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. 2-930 meters.	March to May	Not expected to occur; no suitable habitat.
Trifolium hydrophilum saline clover	--;--;1B.2	Grows in marshes, swamps, and vernal pools with alkaline soils. This annual herb can be found at elevations of 0-300 meters.	April to June	Low potential to occur; marginal habitat present on-site; No CNDDB records within 3 miles of the site.
Tuctoria mucronata Crampton's tuctoria	FE;CE;1B.1	Vernal pools or other seasonal wetlands. This annual herb can be found at elevations of 5-10 meters.	April to August	Not expected to occur; no suitable habitat.
Eryngium jepsonii Jepson's coyote-thistle	--;--;1B.2	Vernal pools or other seasonal wetlands such as valley and foothill grasslands. Mostly found in clay habitats at elevations of 3-300 meters.	April to August	Not expected to occur; no suitable habitat.
Delphinium recurvatum Recurved larkspur	--;--;1B.2	This perennial herb is found in alkaline soils typically in chenopod scrub, cismontane woodland, and valley and foothill grasslands. Found at elevations of 3-790 meters.	March to June	Low potential to occur; marginal habitat present on-site; No CNDDB records within 3 miles of the site.
Downingia pusilla Dwarf downingia	--;--;2B.2	Annual herb found in vernal pools and valley and foothill grasslands (mesic). At elevations of 1-445 meters.	March to May	Not expected to occur; no suitable habitat.

SOURCE: CDFW CNDDB 2017.

Federal Lists
- FE Federal Endangered
- FT Federal Threatened
- FC Federal Candidate
- FPD Federal proposed for delisting
- FPT Federal proposed threatened
- FD Federal delisted

California Rare Plant Ranks (formerly CNPS Lists)
- 1B CNPS - Rare, Threatened, or Endangered
- 2B CNPS - Rare, Threatened, or Endangered in California, But More Common Elsewhere

State Lists
- CE California Endangered Species
- CT California Threatened
- CD California Delisted
- CR California Rare
- CSC CDFW Species of Special Concern
- CC State candidate for listing

TABLE 3.4-2: SPECIAL-STATUS ANIMALS WITHIN 9-QUADRANGLE REGION FOR PROJECT SITE

ANIMAL	*STATUS (FED;CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
MAMMALS			
Antrozous pallidus pallid bat	--;SSC	Roosts in rock outcrops, hollow trees, abandoned mines, barns, and attics.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site. There is one CNDDB record within 3 miles of the site.
Lasionycteris noctivagans silver-haired bat	--;--	Roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. It forages in open wooded areas near water features.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site, but no water sources are located on-site. There is one CNDDB record within 2 miles of the site from 1957.
Lasiurus cinereus hoary bat	--;--	Prefer older large leaf trees such as cottonwoods, willows, and fruit/nut trees for daytime roosts. Often found in association with riparian corridors. Need open spaces to forage.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site. There is one CNDDB record within 2 miles of the site from 1991.
Lasiurus blossevillii Western red bat	--;SSC	Prefers edges that have trees for roosting as well as open areas. Requires water. Feeds on a multitude of insects. Roosts primarily in trees and sometimes in shrubs but less often. Roost 2-40 ft above the ground.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site, but no water sources are located on-site. Agricultural land use likely precludes this species from majority of the site. There are no CNDDB record within 5 miles of the site.
Taxidea taxus American badger	--;SSC	This species prefers dry open fields, grasslands, and pastures. From high alpine meadows to sea level.	Low potential to occur. Suitable foraging habitat present on-site, but no suitable burrows were found during site assessment. Agricultural land use likely precludes this species from majority of the site. There is one CNDDB record within 3 miles of the site.
Myotis yumanensis Yuma myotis	--;--	Range from juniper and riparian woodlands to the desert near open water sources. Found near rivers, streams, ponds, etc. Temperate and terrestrial habitats.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site. There are no CNDDB record within 5 miles of the site.
BIRDS			
Agelaius tricolor tricolored blackbird	--;CE	Colonial nester in cattails, bulrush, or blackberries associated with wetland or drainage habitats. Also need foraging areas such as grasslands or agricultural pastures.	Moderate potential to occur. Suitable nesting and foraging habitat present. One CNDDB record within 3 miles of the site.
Ammodramus savannarum Grasshopper sparrow	--;SSC	Prefer open grasslands with barren ground for foraging. Tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies.	Moderate potential to occur. Suitable foraging habitat present. There are no CNDDB record within 5 miles of the site.
Athene cunicularia burrowing owl	--;SSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats. Found in areas with sparse	High potential to occur. Suitable nesting and foraging habitat present on-site.

ANIMAL	*STATUS (FED;CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
		vegetation and few trees.	Ground squirrel burrows observed during site survey. Several CNDDB records within 3 miles of the site.
Buteo Swainsoni Swainson's hawk	--;CT	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	High potential to occur. Suitable nesting and foraging habitat present on-site. Old raptor nest in walnut tree observed during site assessment. Numerous CNDDB records within 3 miles of the site.
Charadrius alexandrinus nivosus western snowy plover	FT;SSC	Sandy beaches, salt pond levees and shores of large alkali lakes with friable sandy or gravelly soils. Large sandy rivers and lakes with sparse vegetation.	No potential to occur. Habitat not present.
Charadrius montanus mountain plover	--;SSC	Species nests/breeds in the Great Basin and migrates to California in the winter. It prefers grasslands and farmlands where it forages for insects.	Low potential to occur. Suitable foraging habitat present. There are no CNDDB record within 5 miles of the site.
Circus cyaneus Northern harrier	--;SSC	Found mostly in open habitats. Reside in fields, savannas, meadows, marshes, prairies and deserts. The largest populations tend to be in dense and low vegetative areas.	Moderate potential to occur. Suitable nesting and foraging habitat present on-site. One CNDDB record within 3 miles of the site.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT;CE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	No potential to occur. Habitat not present.
Elanus leucurus white-tailed kite	--;FP	Nests in riparian corridors along streams and rivers, and forages in nearby grasslands and fields.	High potential to occur. Suitable nesting and foraging habitat present. There is a CNDDB record for this species on the Project site.
Falco columbarius merlin	--;WL	It is not known to nest in California, but it is a winter transient throughout most of California with wintering populations in the Central Valley. Avoid dense forests and inhabit fairly open land.	Moderate potential to occur. Suitable foraging habitat present.
Melospiza melodia song sparrow ("Modesto" population)	--;SSC	Emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Nest in riparian forests of valley oak with a sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites.	Low to Moderate potential to occur. Suitable foraging habitat present.
Nycticorax nycticorax Black-crowned night heron	--;--	Found mostly within large wetland habitats such as swamps, streams, rivers, marshes, and mud flats. Typically found at the edges of bodies of water with over grown vegetation.	Low to Moderate potential to occur. Suitable foraging habitat present. Irrigation ditches provide some potential habitat.
Plegadis chihi white-faced ibis	--;WL	Forages and nests in fresh-water marshes with heavy growths of tules.	Low to Moderate potential to occur. Suitable foraging habitat present. Irrigation ditches provide some potential habitat.

ANIMAL	*STATUS (FED;CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
Riparia Riparia Bank swallow	--;CT	Prefer to nest along banks or bluffs alone rivers or coastal areas. Prefer low gradient and meandering rivers or bodies of water.	No potential to occur. Habitat not present.
AMPHIBIANS & REPTILES			
Ambystoma californiense California tiger salamander	FT;CT	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	No potential to occur; no suitable breeding habitat present on-site. Active disking on-site for agriculture likely precludes use of site as upland refugia habitat. There is one CNDDB occurrence within 3 miles of the site.
Emys marmorata western pond turtle	--;SSC	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	Low potential to occur. Marginal habitat present within Covell Drainage Canal. There are several CNDDB records for this species within 3 miles of the site.
Thamnophis gigas giant garter snake	FT;CT	Rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	Low potential to occur. Marginal habitat present within Covell Drainage Canal, but no habitat connectivity to known populations. There are CNDDB records for this species within 3 miles of the site.
FISH			
Spirinchus thaleichthys longfin smelt	FC;CT	Euryhaline, nektonic, and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater. They spend their adult life in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn.	No potential to occur. Habitat not present.
Oncorhynchus mykiss irideu steelhead - Central Valley DPS	FT;--	Populations in the Sacramento and San Joaquin Rivers and their tributaries. Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.	No potential to occur. Habitat not present.
Pogonichthys macrolepidotus Sacramento splittail	--;SSC	Adults migrate upstream from brackish areas to spawn in freshwater on submerged vegetation in temporarily flooded upland and riparian habitat in the lower reaches of rivers, bypasses, sloughs. The young remain in shallow, weedy areas inshore near spawning sites and move to deeper offshore habitat as they mature.	No potential to occur. Habitat not present.
INVERTEBRATES			
Branchinecta conservatio Conservancy fairy shrimp	FE;--	Vernal pools or other seasonal wetlands.	No potential to occur. Habitat not present.

ANIMAL	STATUS (FED;CA)	HABITAT ASSOCIATION	POTENTIAL FOR OCCURRENCE
Branchinecta lynchi vernal pool fairy shrimp	FT;--	Vernal pools or other seasonal wetlands. Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	No potential to occur. Habitat not present.
Branchinecta mesovallensis midvalley fairy shrimp	--;--	Vernal pools or grass-bottomed swales ranging from 4 to 660 square feet.	No potential to occur. Habitat not present.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT;--	Dependent upon elderberry plant (*Sambucus mexicana*) as primary host species. Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. Stream side habitats below 3,000 feet throughout the Central Valley.	Low potential to occur. Elderberry shrub clump located on western boundary of the Project site. No beetles or exit holes observed. Lack of adjacent riparian habitat. No CNDDB records within 3 miles of the site.
Lepidurus packardi vernal pool tadpole shrimp	FE;--	Vernal pools and ephemeral stock ponds. Shasta County south to Merced County.	No potential to occur. Habitat not present.
Linderiella occidentalis California linderiella	--;--	Occur on most land forms and soil types supporting vernal pools. Tend to be in deeper pools and tolerate a wider range of water temperatures.	No potential to occur. Habitat not present.

SOURCE: CDFW CNDDB 2017.

Abbreviations:

Federal Lists

FE Federal Endangered
FT Federal Threatened
FC Federal Candidate
FSC USFWS Birds of Conservation Concern
FPD Federal proposed for delisting
FPT Federal proposed threatened
FD Federal delisted
MBTA Protected by Migratory Bird Treaty Act

State Lists

CE California Endangered Species
CT California Threatened
CD California Delisted
SSC CDFW Species of Special Concern/CDFW Special Animals
CC State candidate for listing
FP Fully Protected

3.4.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFW, USFWS, USACE, and the National Marine Fisheries Service. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the federal, state and local regulations that are applicable to the proposed project.

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act (FESA), passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the USFWS. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, posses, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

STATE

Fish and Game Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Wildlife Commission.

Fish and Game Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Wildlife Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, posses, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of “Species of Special Concern,” developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional, multi-species planning before the special measures of the CESA become necessary.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate state water quality and protect beneficial uses.

LOCAL

Yolo County Joint Powers Agency/ Yolo Habitat Conservancy

The Yolo County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Joint Powers Agency (now known as the Yolo Habitat Conservancy [YHC]) was formed in August 2002 for the purposes of acquiring Swainson's hawk habitat conservation easements and to serve as the lead agency for the preparation of a county-wide NCCP/HCP, produced as part of the Yolo Natural Heritage Program. The YHC governing Board is composed of representatives from member Agencies, which include two members of the Yolo County Board of Supervisors, one member each from the City Councils of Davis, Woodland, West Sacramento and Winters, and one ex-officio member from UC Davis. The YHC is currently responsible for managing two programs: the Yolo Natural Heritage Program and the Swainson's Hawk Interim Mitigation Fee Program.

The YHC established a Steering Advisory Committee and a Technical Advisory Committee, prepared a draft Ecological Baseline Report, developed a GIS data base, completed the Independent Science Advisors process, prepared a Draft HCP/NCCP, and has begun the CEQA/NEPA process.

The Second Administrative Draft Yolo HCP/NCCP was released on March 31, 2015, and the public comment period for the Second Administrative Draft closed on May 29, 2015. The environmental review documents have not been completed. The Public Review Draft Plan and Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was released for public comment beginning on June 1, 2017. The 90-day public review period ended on August 30, 2017.[1] Now that the Draft EIR/EIS public review period is complete, a Final EIR/EIS will be drafted and completed.

Swainson's Hawk Interim Mitigation Fee Program

This program, established in 1993, utilizes mitigation fees to acquire conservation easements to protect Swainson's hawk habitat. Changes to the program in 2006 require project applicants with projects over 40 acres in size to mitigate directly by providing land for conservation. The program is administered by the Yolo Habitat Conservancy.

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to biological resources:

HABITAT, WILDLIFE, AND NATURAL AREAS

GOAL HAB 1. Identify, protect, restore, enhance and create natural habitats. Protect and improve biodiversity consistent with the natural biodiversity of the region.

Policy HAB 1.1 Protect existing natural habitat areas, including designated Natural Habitat Areas.

Policy HAB 1.2 Enhance and restore natural areas and create new wildlife habitat areas.

Policy HAB 1.3 Commit adequate City resources and staff time so as to protect habitat and other natural resources.

GOAL HAB 2. Increase public awareness of habitat, wildlife and sensitive species.

Policy HAB 2.1 Develop environmental educational programs and public access areas and programs to allow viewing of wildlife and habitat through controlled interactions of people with natural areas.

[1] Source: https://www.yolohabitatconservancy.org/documents.

City of Davis Tree Ordinance

The City of Davis acknowledges the importance of trees to the community's health, safety, welfare, and tranquility. Trees increase property values, provide visual continuity, provide shade and cooling, decrease wind velocities, control erosion, conserve energy, reduce stormwater runoff, filter airborne pollutants, reduce noise, provide privacy, provide habitat and food value, and release oxygen. On December 4, 2002, the City Council adopted the Tree Ordinance, Chapter 37 of the Municipal Code, to ensure that the community forest would be prudently protected and managed so as to ensure these multiple civic benefits. The Tree Ordinance protects the following trees:

- **Landmark Trees:** Any tree which has been determined by resolution of the City Council to be of high value because of its species, size, age, form, historical significance, or some other professional criterion. The Landmark Tree List, available from the Public Works Department, lists and identifies these trees.
- **Trees of Significance:** Any tree which measures 5 inches or more in Diameter at Breast Height (4'-6" above ground height).
- **Street Trees:** Any tree planted and/or maintained by the City, or recorded as a street tree, adjacent to a street or within a city easement or right-of-way, on private property, within the street tree easement. The Public Works Department maintains a master list of street trees.
- **City Trees:** Any tree, other than a street tree, planted or maintained by the City within a City easement, right-of-way, park, greenbelt, public place or property owned or leased by the City.
- **Private Tree:** Any tree privately owned and growing on private property, which may include a tree designated as a landmark tree and/or tree of significance, as defined within the definitions section of the Tree Ordinance, Chapter 37.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on biological resources if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

As part of a previously proposed project located on the project site, two AECOM biologists visited the project site on September 15, 2014. The biologists conducted the reconnaissance field survey on foot with binoculars, a field map, and a Trimble GPS to assess the existing biological conditions of the site and to map the locations of trees, water features, and habitat types. The biologists surveyed the area for habitat of that could potentially support special-status species, identified potential jurisdictional water features, mapped habitat types, and recorded tree species at the site. Any wildlife species observed at the site were also recorded. Binoculars were used to survey for old nests in trees, as the survey was conducted outside the nesting season. Floristic surveys and protocol-level wildlife surveys were not conducted during the 2014 field visit.

A reconnaissance-level site survey was conducted on October 23, 2017 by Steve McMurtry, De Novo Planning Group Principal Biologist. Prior to the site survey, several aerial photos and maps of the project site were reviewed to identify features within the project site and vicinity. Tools that were brought to the field investigation included a Trimble GeoExplorer XH Handheld (sub-foot unit), 30-meter tape measure, diameter tape, spade, Dutch auger, Munsell color chart, alph-alpha dipridil solution, muriatic acid, wetland flagging, digital camera, Vortex 20-60x80 spotting scope, and Bushnell 10x42 binoculars. Features were documented. The investigation was conducted on foot to systematically inspect and record existing conditions. The investigation was performed between 9:30 am and 1:30pm under clear skies. The temperatures ranged from around 72 degrees Fahrenheit in the morning, rising to around 78 degrees at the conclusion of the investigation. Winds were between 0 and 5 miles per hour throughout the investigation. After the on-site field investigation, a windshield survey was performed by driving the public right of way to investigation conditions within approximately one-half mile of the Project site.

Additionally, a literature review and database search was conducted to gather information regarding sensitive plants, animals, and habitats. The purpose of the literature and database review is to identify species known to occur within the region based on historic range, observations, and habitat requirements.

IMPACTS AND MITIGATION

Impact 3.4-1: Project implementation may result in direct or indirect effects on special-status invertebrate species (Less than Significant with Mitigation)

Special-status invertebrates that occur within the 9-quad region (which includes the following USGS quadrangles: Madison, Woodland, Grays Bend, Winters, Merritt, Davis, Allendale, Dixon, and Saxon) for the project site include: vernal pool tadpole shrimp, vernal pool fairy shrimp, California linderiella, and valley elderberry longhorn beetle. Each of these is discussed below:

Vernal Pool Branchiopods: The record search lists several occurrences of the federally endangered vernal pool tadpole shrimp (*Lepidurus packardi*) and Conservancy fairy shrimp (*Branchinecta conservatio*), the threatened vernal pool fairy shrimp (*Branchinecta lynchi*), and the non-listed California linderiella (*Linderiella occidentalis*) and midvalley fairy shrimp (*Branchinecta mesovallensis*) as occurring within the 9-quad region for the project site. These species exclusively inhabit vernal pools or other seasonally ponded wetlands that sustain inundation during the winter before drying in the late spring. The project site does not provide suitable habitat for this species.

Valley Elderberry Longhorn Beetle: The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is a federally threatened insect that is dependent upon the elderberry plant (*Sambucus* sp.) as a primary host species. Elderberry shrubs are a common component of riparian areas throughout the Sacramento Valley region. As noted previously in Table 3.4-2, an elderberry shrub clump consisting of approximately 10 shrubs was observed on the western boundary of the project site. However, no valley elderberry longhorn beetle or exit holes on the elderberry shrubs were observed during the site surveys (2014 and 2017). Additionally, the elderberry shrub clump would likely be located within the proposed 150-feet agricultural buffer. Preservation of the shrubs through design is highly likely. If trimming or removal of any of these shrubs is necessary, there is potential for direct impacts on valley elderberry longhorn beetle.

Other Insects: There are three other insects that are not formally listed, special-status species, but are included in the CNDDB search results. These include Antioch multilid wasp (*Myrmosula pacifica*), Crotch bumble bee (*Bombus crotchii*), and western bumble bee (*Bombus occidentalis*). While these species are documented within the 9-quad region for the project site, they are not documented on the project site. The habitat present on the project site is not ideal natural habitat for these species and none are believed to be present.

Conclusion: The project site is currently undeveloped and has been previously used for agricultural uses. There are five documented special-status invertebrates located within the 9-quad region for the project site. There are no documented or observed special-status invertebrate species on the project, and the reconnaissance-level site surveys performed in 2014 and 2017 by qualified biologists did not provide any evidence of presence. The project site does not provide the necessary habitat to support the majority of the special-status invertebrates. However, as noted above, valley elderberry longhorn beetle has a low potential to occur near the on-site elderberry shrubs, thus potentially impacted by project activities. This would be considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-1: *The project proponent shall implement the following measures to avoid or minimize impacts on valley elderberry longhorn beetle:*

- *All on-site elderberry shrubs shall be avoided and preserved on-site through site design, as feasible.*
- *All elderberry shrubs that are located adjacent to construction areas, but can be avoided, shall be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel. Fencing shall be placed at least 20 feet from the dripline of each shrub, unless otherwise approved by USFWS.*
- *No insecticides, herbicides, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of the elderberry shrubs.*
- *If the shrub(s) cannot be avoided through redesign, as determined by the City of Davis Public Works Department in conjunction with the project applicant, the project applicant shall mitigate for potential impacts to the shrub(s) by either (1) purchasing VELB conservation credits from a USFWS-approved conservation bank, or (2) transplanting the individual shrub(s) that is not avoided to a suitable mitigation site in a manner consistent with the USFWS' 1999 Conservation Guidelines for the VELB. The mitigation shall be overseen by a qualified biologist, approved by the City of Davis Department of Community Development and Sustainability and USFWS.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact related to direct or indirect effects on special-status valley elderberry longhorn beetle. With implementation of the above mitigation measure, this impact would be considered ***less than significant***.

Impact 3.4-2: Project implementation may result in direct or indirect effects on special-status reptile and amphibian species (Less than Significant with Mitigation)

Special-status reptiles and amphibians that occur within the 9-quad region for the project site include: California tiger salamander, western pond turtle, and Giant garter snake. Each of these is discussed below:

California Tiger Salamander: The California tiger salamander (*Ambystoma californiense*) is a federal and California threatened species. It typically breeds in fish-free seasonal or permanent ponds associated with grassland communities. California tiger salamander (CTS) may also breed in deeper ponded vernal pools, seasonal wetlands and/or other seasonal pools within swales or channels. CTS spends the majority of its life cycle below ground in ground squirrel or pocket gopher burrows in grasslands situated adjacent to potential breeding sites.

Forty-seven units of critical habitat, or habitat that has been deemed as essential to the survival and recovery of the CTS, were proposed by the USFWS on August 10, 2004. The 5,699-acre Unit 2 (Jepson Prairie Unit) is located approximately 17 miles southwest of the project site.

Active disking on-site for agriculture likely precludes use of site as upland refugia habitat. The necessary habitat (aestivation and aquatic) for this species is not present within the project site.

Western Pond Turtle: The western pond turtle (*Emys marmorata*) is a California species of special concern. Its favored habitats include streams, large rivers and canals with slow-moving water, aquatic vegetation, and open basking sites. Although the turtles must live near water, they can tolerate drought by burrowing into the muddy beds of dried drainages. This species feeds mainly on invertebrates such as insects and worms, but will also consume small fish, frogs, mammals and some plants. Western pond turtle predators include raccoons, coyotes, raptors, weasels, large fish, and bullfrogs. This species breeds from mid to late spring in adjacent open grasslands or sandy banks.

The necessary habitat for this species is not present within the project site, and this species has a low potential to occur on-site. However, marginal habitat (i.e., habitat which supports only a few species or individuals because of the limiting environmental conditions) is present along the Covell Drainage Canal along the southern boundary of the project site.

Giant Garter Snake: Giant garter snake (*Thamnophis gigas*) is designated as a federally threatened and state threatened species afforded special protection by FWS and CDFW. The giant garter snake is generally associated with larger canals, irrigation ditches, and other semi-permanent to permanent aquatic sites with slow moving water and an abundance of emergent vegetation.

The necessary habitat for this species is not present within the project site, and this species has a low potential to occur on-site. However, marginal habitat (i.e., habitat which supports only a few species or individuals because of the limiting environmental conditions) is present along the Covell Drainage Canal along the southern boundary of the project site. It is noted that there is no habitat connectivity to known source populations of giant garter snake in the project vicinity. Additionally, although there are CNDDB records for this species within 3 miles of the site, the snake has never been observed in the Covell Drainage Canal. Further, both the Covell Drainage Canal and the adjacent area are typically annually disturbed for maintenance/agricultural activities.

Conclusion: The project site is currently undeveloped and has been previously used for agricultural uses. There are three documented special-status reptiles/amphibians located within the 9-quad region for the project site. However, there are no documented or observed special-status reptile/amphibian species on the project, and the reconnaissance-level site survey conducted in October 2017 by Steve McMurtry, De Novo Planning Group Principal Biologist did not provide any evidence of presence. Nevertheless, project site does provide marginal habitat to support western pond turtle and giant garter snake. Without mitigation, this would be considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-2: *The project proponent shall implement the following measures to avoid or minimize impacts on western pond turtle:*

- *Ground-disturbing activities in areas of potential pond turtle nesting habitat shall be avoided during the nesting season (April–August), to the extent feasible.*
- *A preconstruction survey for western pond turtles within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall be conducted by a qualified biologist. In aquatic habitats which may be dewatered during project construction, surveys shall be conducted immediately after dewatering and before any subsequent disturbance. Elsewhere, surveys shall be conducted within 24 hours before project disturbance.*
- *If pond turtles are found during preconstruction surveys, a qualified biologist, with approval from CDFW, shall move the turtles to the nearest suitable habitat outside the area subject to project disturbance. The construction area shall be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.*
- *Construction personnel performing activities within aquatic habitats and adjacent suitable uplands to be disturbed by project activities shall receive worker environmental awareness training from a qualified biologist to instruct workers to recognize western pond turtle, their habitats, and measures being implemented for its protection.*
- *Construction personnel shall observe a 15-miles-per-hour speed limit on unpaved roads.*

Mitigation Measure 3.4-3: *The project proponent shall implement the following measures to avoid or minimize impacts on giant garter snake:*

The project proponent shall consult with USFWS regarding the potential for the project to affect giant garter snake habitat. If USFWS determines that giant garter snake may be potentially affected by project construction, the project proponent shall obtain an incidental take permit from USFWS and implement the minimization guidelines for giant garter snake, as follows:

- *Unless authorized by USFWS, construction and other ground-disturbing activities within 200 feet of suitable aquatic habitat for the giant garter snake shall not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance shall be completed by October 1.*
- *To the extent possible, construction activities shall be avoided within upland habitat within 200 feet from the banks of giant garter snake aquatic habitat. Movement of heavy equipment in these areas shall be confined to existing roadways, where feasible, to minimize habitat disturbance.*

- *Construction personnel shall receive USFWS-approved worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.*

- *Within 24 hours before construction activities, the project area shall be surveyed for giant garter snake. The survey shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it is determined by the qualified biologist and City staff, in coordination with USFWS and CDFW, that the giant garter snake shall not be harmed. Any sightings or incidental take shall be reported to USFWS and CDFW immediately.*

- *Any aquatic habitat for the snake that is dewatered shall remain dry for at least 15 consecutive days after April 15 and before excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area.*

- *Giant garter snake habitat to be avoided within or adjacent to construction areas will be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measures identified above would reduce the above identified impact related to direct or indirect effects on special-status reptile/amphibian species. With implementation of the above mitigation measures, this impact would be considered ***less than significant***.

Impact 3.4-3: Project implementation may result in direct or indirect effects on special-status fish species (No Impact)

Special-status fish that occur within the 9-quad region for the project site include: steelhead - Central Valley DPS, Sacramento splittail, and longfin smelt. These species require aquatic habitat, which is not present within the project site. Implementation of the proposed project would have ***no impact*** on special-status fish species.

Impact 3.4-4: Project implementation may result in direct or indirect effects on special-status bird species (Less than Significant with Mitigation)

Special-status birds that occur within the 9-quad region for the project site include: tricolored blackbird, grasshopper sparrow, burrowing owl, Swainson's hawk, western snowy plover, mountain plover, Northern harrier, western yellow-billed cuckoo, white-tailed kite, merlin, song sparrow ("Modesto" population), white-faced ibis, and bank swallow. These species are discussed below:

Tricolored Blackbird: Tricolored blackbirds (*Agelaius tricolor*) are listed by CDFW as a species of special concern due to declining populations in the region. They are colonial nesters that favor dense stands of cattails and/or bulrush, but they also commonly utilize blackberry thickets associated with drainages, ditches, and canals. The closest recorded occurrence is approximately 2.4 miles to the northwest.

This species was not encountered during the field survey. Nevertheless, the necessary foraging and nesting habitat is present within the project site.

Grasshopper Sparrow: Grasshopper sparrows (*Ammodramus savannarum*) are listed by CDFW as a species of special concern due to declining populations in the Great Central Valley of California. They prefer open grasslands with barren ground for foraging, and tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies. There are no CNDDB records within five miles of the project site.

This species was not encountered during the field survey. Nevertheless, the necessary foraging habitat is present within the project site.

Burrowing Owl: Burrowing owl (*Athene cunicularia*) is a ground nesting raptor species that is afforded protection by CDFW as a species of special concern due to declining populations in the Great Central Valley of California. They typically inhabit open grasslands and nest in abandoned ground squirrel burrows, cavities associated with raised mounds, levees, or soft berm features. The nearest CNDDB occurrences are located approximately 0.2 miles east of the project site, and 0.6 miles east of the project site.

Active ground squirrel burrows were observed in the disturbed areas within the project site. No burrowing owls or their signs were observed during the site visit. Nevertheless, any ground disturbance has potential to result in direct impacts on this species if present.

Swainson's Hawk: Swainson's hawk (*Buteo swainsoni*) is a raptor species currently listed as threatened in California by the CDFW. Breeding pairs typically nest in tall cottonwoods, valley oaks, or willows associated with riparian corridors, grassland, irrigated pasture, and cropland with a high density of rodents. The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter.

The riparian habitat along Willow Slough, approximately 2.5 miles north of the project site, supports a relatively high density of nesting Swainson’s hawks. Suitable nesting trees are located within the project site, and Swainson’s hawks have been recorded in and near the project site. An old raptor nest was observed in a black walnut within the project site during the 2014 site surveys. The majority of the site provides suitable foraging habitat for Swainson’s hawk. If tree removal were necessary, or if construction were to occur during the nesting season and an active Swainson’s hawk nest were present, the potential would exist for direct effects on the species. The project would also have a direct impact on Swainson’s hawk through the loss of foraging habitat.

Western Snowy Plover: The western snowy plover (*Charadrius alexandrinus nivosus*) is a federally threatened bird listed by CDFW as a species of special concern. This ground nester is associated with beaches, salt pond levees and shores of large alkali lakes with friable sandy or gravelly soils. There are no CNDDB record within five miles of the site.

The necessary habitat is not present within the project site, nor was it encountered during the field survey.

Mountain Plover: The mountain plover (*Charadrius montanus*) is a federally proposed threatened bird listed by CDFW as a species of special concern. This ground nester is considered a shorebird, but it prefers to live in drier areas away from water. It breeds in the Great Basin and migrates to California in the winter where its life cycle is poorly understood. It forages in California grasslands, pastures, and farmlands for insects which make up the majority of its diet. There are no CNDDB record within five miles of the site.

Suitable foraging habitat is present within the project site. This species was not encountered during the field survey.

Northern Harrier: Northern harrier (*Circus cyaneus*) are listed by CDFW as a species of special concern. They typically inhabit fields, savannas, meadows, marshes, prairies and deserts. The largest populations tend to be in dense and low vegetative areas. Northern harrier typically nest on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas. The nearest CNDDB occurrence is located approximately 1.9 miles northeast.

Suitable nesting and foraging habitat is present within the project site. This species was not encountered during the field survey.

Western yellow-billed cuckoo: The western yellow-billed cuckoo (*Coccyzus americanus occidentalis)* is a federally threatened and California endangered species. This riparian forest nester is found along the broad, lower flood-bottoms of larger river systems. They nest in riparian jungles of willow, often mixed with cottonwoods, with lower stories of blackberry, nettles, or wild grape. The closest CNDDB record is approximately 3.2 miles southwest of the project site.

The necessary habitat is not present within the project site. This species was not encountered during the field survey.

White-Tailed Kite: White-tailed kite (*Elanus leucurus*) is a CDFW fully protected species. This non-migrating bird typically attains a wingspan of approximately 40 inches and feeds primarily on insects, small mammals, reptiles, and amphibians, which it forages from open grasslands. It builds a platform-like nest of sticks in trees or shrubs and lays 3 to 5 eggs, but may brood a second clutch if prey is abundant. The kite's distinct style of hunting includes hovering before diving onto its target. Numerous occurrences of this species are located within ten miles of the project site including one located on the project site in 1993.

The project site contains appropriate foraging and nesting habitat. This species was not encountered during the field survey.

Merlin: The Merlin (*Falco columbarius*) is a CDFW species of special concern that has never been observed nesting in California. Though it is a transient throughout most of the state, wintering populations are known to occur in the Central Valley and along the coast.

Suitable foraging habitat is present within the project site. This species was not encountered during the field survey.

Song sparrow ("Modesto" population): The song sparrow ("Modesto" population) (*Melospiza melodia)* is a CDFW species of special concern. This species is found in emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. They nest in riparian forests of valley oak with a sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites.

Suitable foraging habitat is present within the project site. This species was not encountered during the field survey.

White-Faced Ibis: White-faced ibis (*Plegadis chihi*) is listed by CDFW as a Watch List animal. If favors marsh habitats where it forages for a variety of invertebrates. It is a colonial nester and prefers thick marshes or low-growing trees for its nest site.

Suitable foraging habitat is present on-site. Nearby irrigation ditches also provide some potential habitat. This species was not encountered during the field survey.

Bank Swallow: Bank swallow (*Riparia Riparia*) is listed by CDFW as a Threatened species. They typically prefer to nest along banks or bluffs alone rivers or coastal areas. This species also prefers low gradient and meandering rivers or bodies of water. There are no CNDDB record within five miles of the site.

The necessary habitat is not present within the project site. This species was not encountered during the field survey.

Conclusion: The project site is currently undeveloped and has been previously used for agricultural uses. Field surveys did not reveal the presence of any special-status species. However, the trees found on the project site can provide nesting opportunities for a variety of birds, including: Swainson's hawk and white-tailed kite, among other protected bird species. During field surveys there was no evidence of nesting; however, new nests can be constructed in future breeding cycles. Suitable foraging habitat is also located on and around the project site. The proposed project would require permanent disturbance to trees. This is a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-4: *The project proponent shall implement the following measure to avoid or minimize impacts on western burrowing owl:*

- *No less than 14 days before initiating ground disturbance activities, the project proponent shall complete an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Implementation of avoidance and minimization measures (as presented in the March 7, 2012, CDFW Staff Report on Burrowing Owl Mitigation) would be triggered if the initial take avoidance survey results in positive owl presence on the project site where project activities shall occur. If needed, the development of avoidance* *and minimization approaches shall be developed in coordination with CDFW and fully implemented prior to the start of construction activity.*

Mitigation Measure 3.4-5: *The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:*

- *No more than 30 days before the commencement of construction, a qualified biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31), on and within a ½ mile radius of the project site.*
- *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*
- *Before the commencement of construction, the project proponent shall provide 1:1 compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat to the Yolo County HCP/NCCP JPA in accordance with its Swainson's Hawk Interim Mitigation Program. If this measure is implemented after adoption of the Yolo Natural Heritage Program, the project proponent shall comply with all requirements of the Yolo Natural Heritage Program.*

Mitigation Measure 3.4-6: *The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:*

- *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.*
- *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas*

until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.4-4 through 3.4-6 would ensure that measures to avoid or minimize impacts on other protected bird species are implemented, which would reduce the potential for impacts to special-status bird species to a ***less than significant*** level.

Impact 3.4-5: Project implementation may result in direct or indirect effects on special-status mammal species (Less than Significant with Mitigation)

Special-status mammals that occur within the 9-quad region for the project site include: pallid bat, silver-haired bat, hoary bat, western red bat, American badger, and Yuma myotis. These species are discussed below:

Pallid Bat: Pallid bat (*Antrozous pallidus*) is a listed CDFW species of special concern. It favors roosting sites in crevices in rock outcrops, caves, hollow trees, abandoned mines, and human-made structures such as barns, attics, and sheds. Though pallid bats are gregarious, they tend to group in small colonies of 10 to 100 individuals. It is a nocturnal hunter and captures prey in flight, but unlike most American bats, the species has been observed foraging for flightless insects, which it seizes after landing. Trees located within the project site provide suitable roosting habitat. If tree removal is necessary for construction, direct impacts on special-status bat species could occur if the species are present.

Silver-Haired Bat: Silver-haired bat (*Lasionycteris noctivagans*) is a listed CDFW special animal. Primarily considered a coastal and montane forest species, the silver-haired bat roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. This insectivore's favored foraging sites include open wooded areas near water features. This species has a moderate potential to occur on-site. There is one CNDDB record within two miles of the site from 1957. Field surveys did not reveal the presence of this species.

Hoary Bat: The hoary bat (*Lasiurus cinereus*) is a listed CDFW special animal. It is considered to be one of the most widespread of all American bats with a range extending from Canada to central Chile, Argentina, and Hawaii. Hoary bats prefer older large leaf species such as cottonwoods, willows, and fruit or nut trees for daytime roosts. The species is primarily crepuscular or nocturnal and requires open areas to hunt its main prey item, moths. The hoary bat is considered a forest/woodland species, and in California they are often associated with undisturbed riparian or stream corridors. Field surveys did not reveal the presence of this species.

Western Red Bat: The western red bat (*Lasiurus cinereus*) is a listed CDFW species of special concern. This species typically prefers edges that have trees for roosting as well as open areas. This species on a multitude of insects and roosts primarily in trees and sometimes in shrubs, but less often. Suitable foraging habitat is present on-site, but no water sources are located on-site. The past agricultural land use likely precludes this species from majority of the site. Field surveys did not reveal the presence of this species.

American Badger: American badger (*Taxidea taxus*) is a listed CDFW species of special concern. This burrowing carnivorous mammal is solitary and very territorial preferring to feed on small mammals, lizards, snakes, insects, and carrion. It has no known natural enemies and inhabits dry, open fields, grasslands, and pastures. Field surveys did not reveal the presence of this species.

Yuma myotis: The Yuma myotis (*Myotis yumanensis*) is a listed CDFW special animal. This bat species ranges from juniper and riparian woodlands to the desert near open water sources. Field surveys did not reveal the presence of this species.

Conclusion: The project site is currently undeveloped and has been previously used for agricultural uses. There are six documented special-status mammal species located within the 9-quad region for the project site. The project site provides the necessary habitat to support these special-status mammals. This is a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-7: *Prior to any ground disturbance or removal of on-site trees, the project proponent shall implement the following measures to avoid or minimize impacts on special-status bats:*

- *If removal of any on-site trees with suitable roost cavities (as determined by a qualified biologist) and/or dense foliage must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts shall be conducted by a qualified biologist in trees designated for removal. The surveys shall be conducted from dusk until dark.*

- *If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. No project activity shall commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist conforms the maternity roost is no longer active.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact related to direct or indirect effects on special-status mammals. With implementation of the above mitigation measure, this impact would be considered ***less than significant***.

Impact 3.4-6: Project implementation may result in direct or indirect effects on candidate, sensitive, or special-status plant species (Less Than Significant with Mitigation)

The project site is currently undeveloped and has been previously used for agricultural uses for at least the last 30 years. During that period of time, the project site has been annually disced, planted, and harvested as part of the agricultural operation on the vast majority of the property. This area is classified as tilled farmland. There are microhabitats on the project site that have been less frequently disturbed as part of the operation. These microhabitats include farmland fringe, irrigation ditch, and paved road. Farmland fringe is the area located along the margins of the property just outside the tilled farmland. This area does have some disturbance during tilling, but is not actively planted each year and has some limited potential for native plants. Irrigation ditches occur in a variety of locations on the project site and are associated with the agricultural operation. The irrigation ditches support growth of hydrophytic vegetation as evidenced by the presence of cattails (*Typha* sp.), tules (*Schoenoplectus acutus*), and sedge (*Cyperus eragrostis*) in some locations. The slopes are vegetated with annual grassland and weedy species. These areas are not regularly disturbed, but do require some disturbance for weed abatement. There is paved road located along the southern boundary of the project site. This area is not considered habitat.

The CNDDB search identified 20 documented special-status plant species within the 9-quad region for the project site. These special-status plants include: Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*), alkali milk-vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata* var. *cordulata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), round-leaved filaree (*California macrophyllum*), palmate-bracted bird's-beak (*Chloropyron palmatus*), adobe-lily (*Fritillaria pluriflora*), woolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), Mason's lilaeopsis (*Lilaeopsis masonii*), Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*), Colusa grass (*Neostapfia colusana*), bearded popcorn-flower (*Plagiobothrys hystriculus*), California alkali grass (*Puccinellia simplex*), saline clover (*Trifolium hydrophilum*), Crampton's tuctoria (*Tuctoria mucronata*), Jepson's coyote-thistle (*Eryngium jepsonii*), recurved larkspur (*Delphinium recurvatum*), and dwarf downingia (*Downingia pusilla*).

Of the 20 special-status plants that occur in the region, none of these species occur within the tilled farmland. The tilled farmland is regularly disturbed and is planted for agricultural production and does not have any potential for these plants. The farmland fringe and the irrigation ditches are the only areas within the project site that have some potential for presence of native plants. Of the 20 special-status plants that occur in the region, six special-status plant species have low potential to occur within these areas: heartscale (*Atriplex cordulata* var. *cordulata*), brittlescale (*A. depressa*), San Joaquin spearscale (*A. joaquinana*), palmate-bracted bird's-beak (*Chloropyron palmatum*), recurved larkspur (*Delphinium recurvatum*), and saline clover (*Trifolium hydrophilum*). All six of these plants have similar habitat requirements and typically can be found in valley grassland in seasonally flooded, saline-alkali soils. The CNDDB records indicate the presence of two of these species (brittlescale, San Joaquin spearscale) within three miles of the project site. Suitable saline soils that could support these species have been mapped on the site including

Willows clay, alkali and Pescadero silty clay, saline alkali. However, agriculture and other activities even in the farmland fringe and irrigation ditches have significantly modified the hydrology and vegetation of the project site, and given the disturbed nature of these areas it is unlikely that these species occur there. However, a final floristic survey would be needed prior to disturbance to confirm the absence of these special-status plant species at the project site. Given that these species are known to occur within the region combined with the expectation that construction may not occur for multiple years, there is the potential for these plant species to establish and populate the farmland fringe and/or irrigation ditches in the future. This is a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-8: *Prior to construction, the project proponent shall retain a biologist to perform a focused survey for the following CNPS listed plants: heartscale (April to October), brittlescale (April to October), San Joaquin spearscale (April to October), recurved larkspur (March to June), and saline clover (April to June). The survey shall be performed during the floristic season (shown in parenthesis). While there is a low potential for these species to be found on the project site, there is some limited habitat present within and along the fringe of the irrigation ditches. If any of these plants are found during the focused survey, the project proponent shall contact the CNPS to obtain the appropriate avoidance and minimization measures.*

Mitigation Measure 3.4-9: *Prior to construction, the project proponent shall retain a biologist to perform a focused survey for the federally and state listed palmate-bracted salty bird's-beak (Chloropyron palmatum). The survey shall be performed during the floristic season (generally May through October). This species is generally restricted to seasonally-flooded, saline-alkali soils in lowland plains/basins, which is generally present within and along the fringe of the irrigation ditches. If this plant is found during the focused survey, the project proponent shall contact the USFS and CDFW to obtain the appropriate avoidance and minimization measures.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measures identified above would reduce the above identified impact related to direct or indirect effects on special-status mammals. With implementation of the above mitigation measures, this impact would be considered ***less than significant***.

Impact 3.4-7: The proposed project has the potential to affect protected wetlands and jurisdictional waters (Less than Significant with Mitigation)

Various water features were observed on the project site. A 0.42-acre detention basin occurs in the northern portion of the project site. The basin contains ruderal vegetation dominated by wild oats.

Agricultural ditches were observed within the project site along the northern project boundary. There is a roughly 150-foot ditch on the eastern edge of the project site that dissipates into the agricultural field at its southern end and ends in a depression on the northern end that does not connect to the east-west excavated agricultural ditch. Another agricultural ditch extends along the western boundary of the project site. The ditch begins at a well on the southwestern corner and extends north approximately 200 feet, where it dissipates into the adjacent agricultural fields. Further, another agricultural ditch begins at the north end of Riesling Court on the eastern boundary of the project site and extends approximately 200 feet south, parallel to Riesling Court. This ditch was covered in upland vegetation at the time of the site visit.

The Covell Drainage Channel extends along the southern boundary of the project site for approximately 1,271 linear feet. At the time of the site visits, the channel was dry but supports growth of hydrophytic vegetation as evidenced by the presence of cattails (*Typha* sp.), tules (*Schoenoplectus acutus*), and sedge (*Cyperus eragrostis*). The slopes are vegetated with annual grassland and weedy species. A wetland delineation has not been performed at the project site and the jurisdictional status of these water features has not been determined. Therefore, this is a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-10*: The project proponent shall implement the following measure to avoid or minimize impacts on potentially jurisdictional waters:*

- *Before any activities that would result in discharge, fill, removal, or hydrologic interruption of any of the water features within the project site, a wetland delineation and jurisdictional determination shall be conducted by a qualified delineator and the delineation that determines the extent of jurisdictional waters should be approved by USACE.*
- *Any impacts on jurisdictional features shall obtain the appropriate CWA Section 404 and or 401 permits. All permit conditions including required avoidance, minimization, and mitigation measures included as conditions of the permit shall be followed.*

SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact related to protected wetlands and jurisdictional waters. With implementation of the above mitigation measure, this impact would be considered ***less than significant***.

Impact 3.4-8: Project implementation may result in direct or indirect adverse effects on riparian habitat or a sensitive natural community (No Impact)

The CNDDB record search revealed documented occurrences of one sensitive habitat, Valley Oak Woodland, within the 9-quad region for the project site. This sensitive habitat does not occur within the project site. Implementation of the proposed project would have a **less than significant** impact on riparian habitats or natural communities.

Impact 3.4-9: Project implementation may result in interference with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites (No Impact)

The CNDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. Furthermore, the field surveys did not reveal any wildlife corridors or wildlife nursery sites on or adjacent to the project site. Implementation of the proposed project will have ***no impact*** relative to this issue.

Impact 3.4-10: Project implementation may result in conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant with Mitigation)

Swainson's Hawk Interim Mitigation Fee Program: The Swainson's Hawk Interim Mitigation Fee Program is applicable to the proposed project because the undeveloped project site is over 40 acres in size. As noted above, the majority of the site provides suitable foraging habitat for Swainson's hawk. If tree removal were necessary, or if construction were to occur during the nesting season and an active Swainson's hawk nest were present, the potential would exist for direct effects on the species. Implementation of Mitigation Measure 3.4-5 would ensure that the project applicant complies with the requirements of the Swainson's Hawk Interim Mitigation Fee Program. Compliance with this mitigation would ensure that implementation of the proposed project will have a ***less than significant*** impact relative to this issue.

City of Davis Tree Preservation Ordinance (Davis Municipal Code, Chapter 37): The City of Davis regulates tree planting and removal within the community in Chapter 37, Tree Planting, Preservation, and Protection, of the Municipal Code. The City's Tree Ordinance defines five categories of protected trees:

- Landmark Trees: Any tree which has been determined by resolution of the City Council to be of high value because of its species, size, age, form, historical significance, or some other professional criterion. The Landmark Tree List, available from the Public Works Department, lists and identifies these trees.
- Trees of Significance: Any tree which measures 5 inches or more in Diameter at Breast Height (4'-6" above ground height).
- Street Trees: Any tree planted and/or maintained by the City, or recorded as a street tree, adjacent to a street or within a city easement or right-of-way, on private property, within the street tree easement. The Public Works Department maintains a master list of street trees.
- City Trees: Any tree, other than a street tree, planted or maintained by the City within a City easement, right-of-way, park, greenbelt, public place or property owned or leased by the City.
- Private Tree: Any tree privately owned and growing on private property, which may include a tree designated as a landmark tree and/or tree of significance, as defined within the definitions section of the Tree Ordinance, Chapter 37.

The *Arborist Report* (Tree Associate, 2017) provides a review of the trees located on the project site, including: species, size, and current structure and vigor. This portion of the Report only reviewed trees within the 74.49-acre on-site area and along the proposed off-site Risling Court right-of-way addition. An *Arborist Report Addendum* (Tree Associate, 2017) provides a review of trees along Covell Boulevard and the Sutter Hospital frontage areas, located off-site.

According to the *Arborist Report*, the site contains 103 trees of significance on the 74.49-acre on-site area. Ten species were represented on site, including planted and naturalized California native trees (willow, California black walnut, valley oak, coast live oak and California sycamore) as well as exotic species (Italian cypress, cypress, black locust, Chinese elm, and Chinese pistache). The most common species were the walnut and cypress, which together comprised 75% of the trees on site. Only 21% of the trees had no significant structural concerns, while 43% were in poor or poor-fair structural condition.

Additionally, according to the *Arborist Report Addendum*, an additional 31 trees of significance are located along Covell Boulevard and the Sutter Hospital frontage areas, located off-site. Nine species were represented on site, including planted and naturalized California native trees (willow, coast live oak and California sycamore) as well as exotic species (Chinese pistache, golden rain tree, Chinese tallow, olive, fig, cork oak). The most common species were golden rain tree, willow and Chinese pistache, which together comprised 74% of the trees in this area.

According to the *Arborist Report*, a total of 34 trees (33% of the total) within the 74.49-acre development area are recommended for removal due to their poor health or structural condition or their close proximity to existing roadways. Tree health varied from poor to good. Five of the trees (16% of the total) were in poor or poor-fair health. Fifteen trees (48% of the total) had poor or poor-fair structure.

Additionally, according to the *Arborist Report Addendum*, an additional 11 trees within the Covell Boulevard and the Sutter Hospital frontage areas are recommended for removal due to their poor health, structure, or both.

Overall, the project site (including the 74.49-acre on-site area and the Covell Boulevard and the Sutter Hospital frontage areas) includes 134 trees of significance. The Arborist Report and Arborist Report Addendum recommend removal of 45 of the trees of significance. Removal of these trees on the project site is subject to the City's Tree Ordinance and would be addressed by a standard City condition of approval which requires preparation of a Tree Protection Plan for trees being preserved and approval of Tree Modification Permit for trees being removed with standard measures for tree replacement or payment for the appraised value of the trees. The Tree Protection Plan would include measures to ensure that all trees to be preserved would be protected during construction of the project. Additionally, street trees and landscaping would be provided along the Covell Boulevard and Sutter Hospital frontages and would be maintained by the project applicant in perpetuity.

It is noted that the *Arborist Report* and *Arborist Report Addendum* did not include surveys of the off-site trees located near the proposed off-site detention basin. Construction of the basin is not anticipated to require tree modification or removal in this area. Nevertheless, without mitigation to ensure that tree removal within all on- and off-site areas complies with the City's Tree Ordinance this would be a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-11*: The project proponent shall implement the following measure to avoid or minimize impacts on trees protected by the City of Davis:*

- *Before the commencement of construction, the project proponent shall retain a qualified arborist to perform a survey of any trees within the footprint of the proposed off-site detention basin (located north of Sutter Hospital, and east of the City water tank). The tree survey and arborist report shall detail the number, species, size, and relative health and structure of all trees in the aforementioned area. The report will also describe which trees on-site are subject to regulation under the City of Davis Tree Ordinance.*

- *A tree protection plan shall be prepared that includes measures to avoid or minimize impacts on trees that are to be preserved on-site and well as proposed mitigation for regulated trees subject to impact or removal. Compliance with the tree protection plan shall be required before and during any site disturbance and construction activity and before issuance of building permits. A tree modification permit shall be submitted to the City for any proposed removal of a tree. Fees shall be assessed by the City, and paid by the project proponent, in accordance with Davis Municipal Code Chapter 37, "Tree Planting, Preservation, and Protection."*

SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact related to conflicts with the local tree preservation policy or ordinance. With implementation of the above mitigation measure, this impact would be considered ***less than significant***.

Impact 3.4-11: Project implementation may result in conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (Less than Significant with Mitigation)

As noted previously, the Yolo YNHP is not yet an adopted plan. The Second Administrative Draft Yolo YNHP was released on March 31, 2015, and the public comment period for the Second Administrative Draft closed on May 29, 2015. The environmental review documents have not been completed. The Public Review Draft Plan and Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was released for public comment beginning on June 1, 2017. The 90-

day public review period ended on August 30, 2017.[2] Now that the Draft EIR/EIS public review period is complete, a Final EIR/EIS will be drafted and completed.

The possibility exists that the YNHP will be adopted prior to development of the first phase of the project. Should the YNHP be in place prior to development of any phase of the project, a ***potentially significant*** impact would result.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-12: *Should the Yolo Natural Heritage Program (YNHP) be adopted prior to initiation of any ground disturbing activities for any phase of development associated with the project, the project applicant shall comply with the mitigation/conservation requirements of the YNHP, as applicable. The project applicant, the City of Davis Department of Community Development and Sustainability, and a representative from the YNHP JPA shall ensure that all mitigation/conservation requirements of the YNHP are adhered to prior to and during construction. To the extent there is duplication in mitigation for a given species, the requirements of the YNHP shall supersede. If this measure is implemented after adoption of the YNHP, the project proponent shall comply with all requirements of the YNHP.*

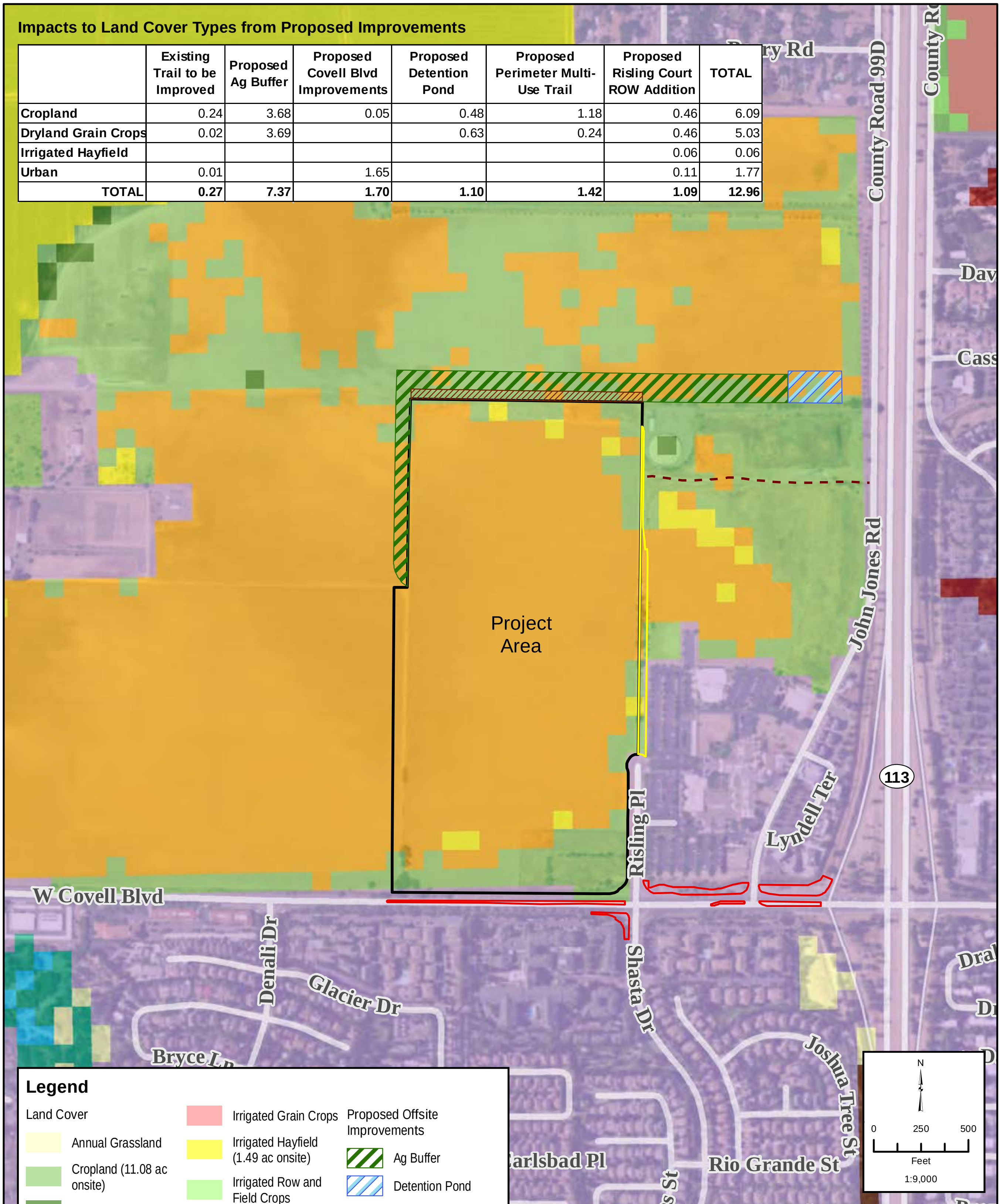
SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce the above identified impact related to conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. With implementation of the above mitigation measure, this impact would be considered ***less than significant***.

2 Source: https://www.yolohabitatconservancy.org/documents.

Impacts to Land Cover Types from Proposed Improvements

	Existing Trail to be Improved	Proposed Ag Buffer	Proposed Covell Blvd Improvements	Proposed Detention Pond	Proposed Perimeter Multi-Use Trail	Proposed Risling Court ROW Addition	TOTAL
Cropland	0.24	3.68	0.05	0.48	1.18	0.46	6.09
Dryland Grain Crops	0.02	3.69		0.63	0.24	0.46	5.03
Irrigated Hayfield						0.06	0.06
Urban	0.01		1.65			0.11	1.77
TOTAL	**0.27**	**7.37**	**1.70**	**1.10**	**1.42**	**1.09**	**12.96**



Legend

Land Cover
- Annual Grassland
- Cropland (11.08 ac onsite)
- Deciduous Orchard
- Dryland Grain Crops (62.37 ac onsite)
- Eucalyptus
- Fresh Emergent Wetland
- Irrigated Grain Crops
- Irrigated Hayfield (1.49 ac onsite)
- Irrigated Row and Field Crops
- Montane Hardwood
- Riverine
- Urban
- Valley Foothill Riparian

Proposed Offsite Improvements
- Ag Buffer
- Detention Pond
- Covell Blvd Improvements
- Risling Ct ROW Addition
- Perimeter Multi Use Trail
- Existing Trail to be Improved

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.4-1. Project Site Cover Types

Source: Cunningham Engineering, 10/13/2017. CalFire FRAP data fveg15_1; Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: October 16, 2017.

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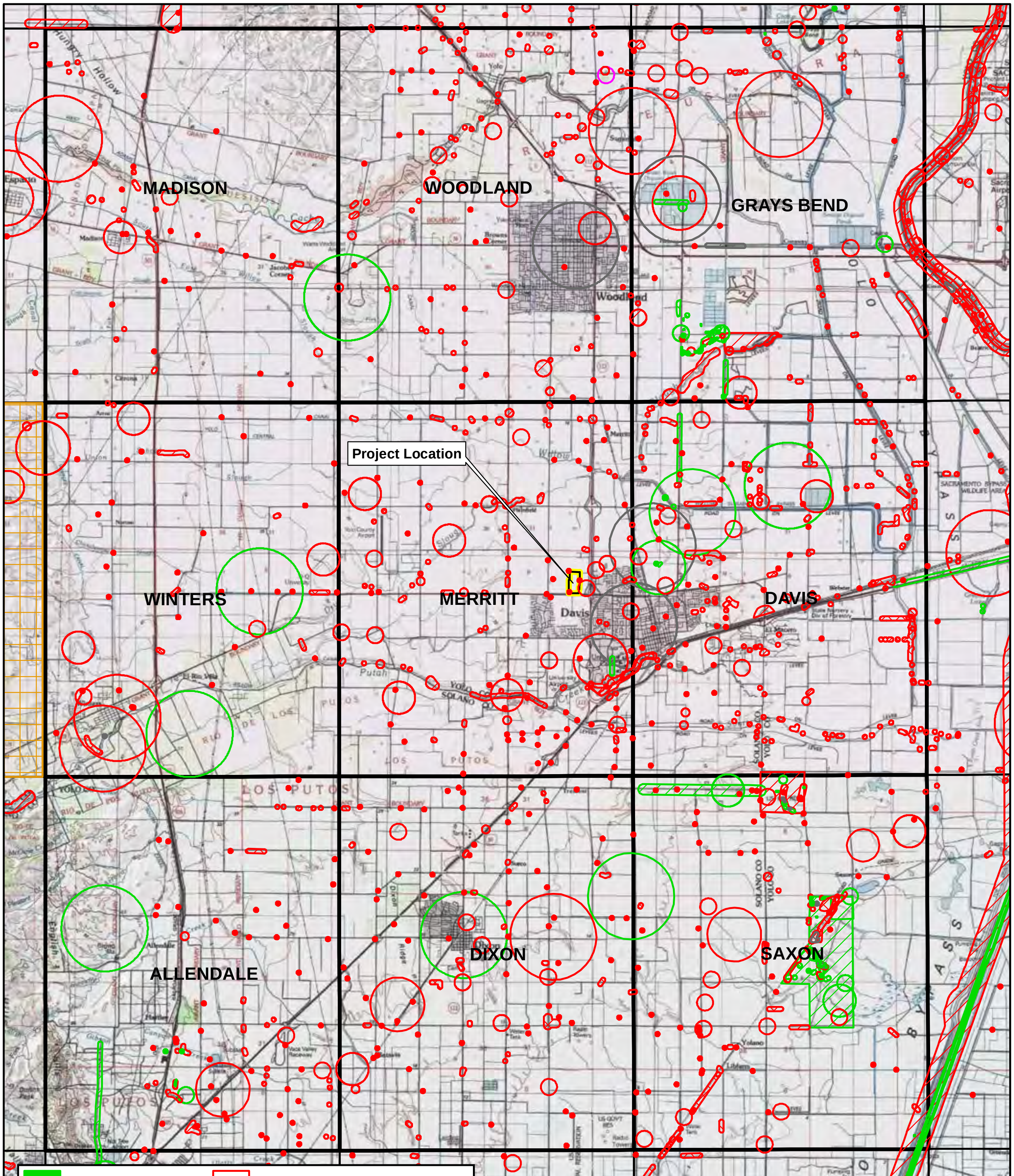

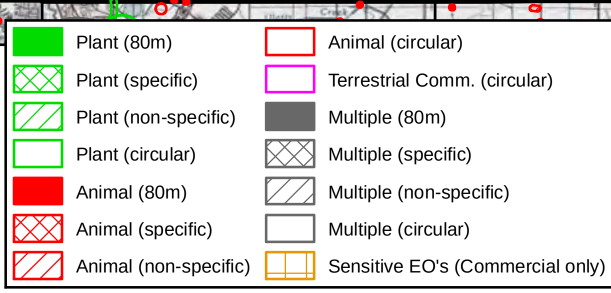

WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.4-2: California Natural Diversity Database
9-Quad Search

N
0 1 2
Miles
1:210,000

CNDDB version 03/2017. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: March 28, 2017.

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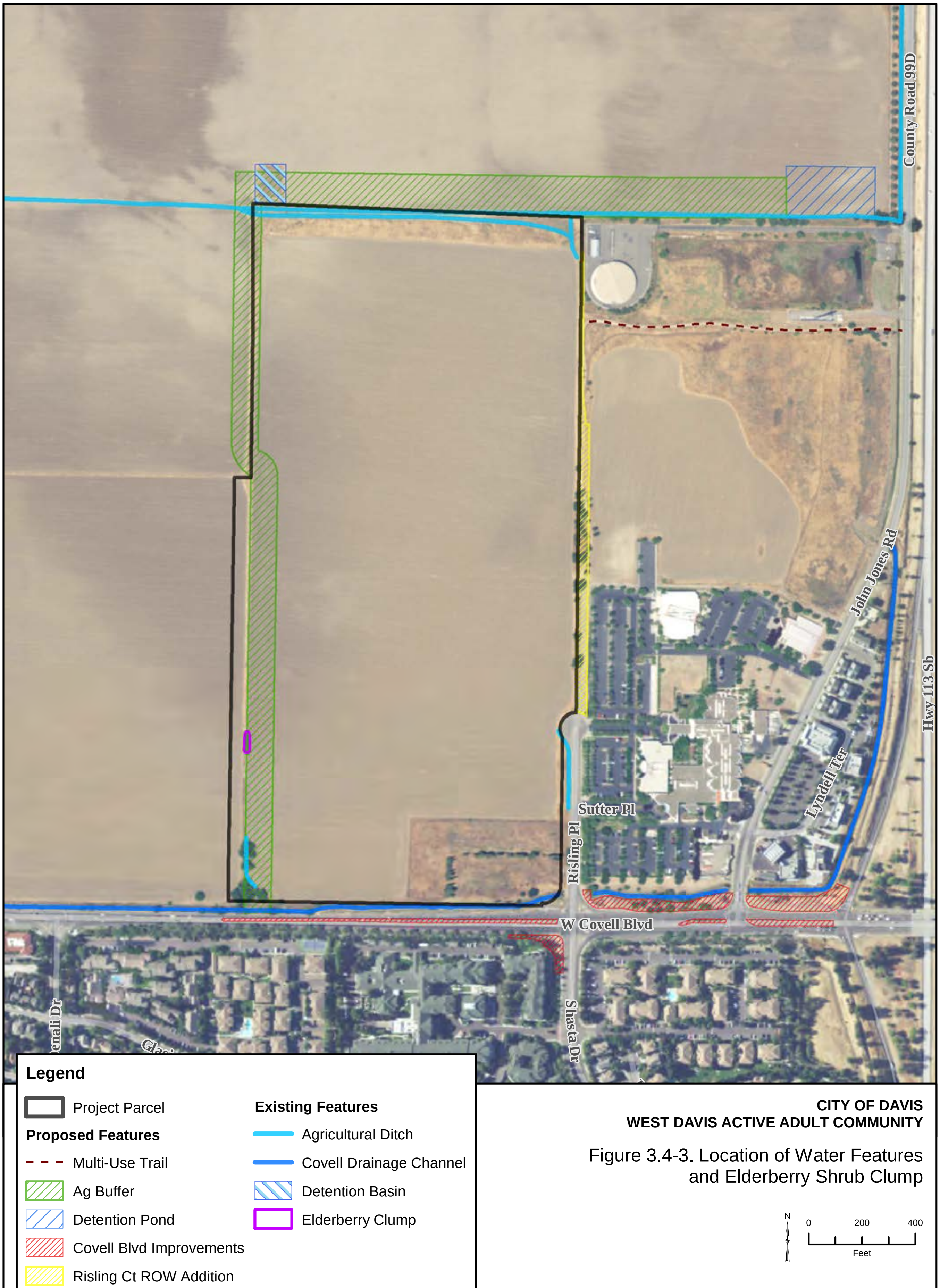

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.4-3. Location of Water Features and Elderberry Shrub Clump

Source: Cunningham Engineering 9/12/2017; Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: October 13, 2017.

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This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. Information in this section is derived primarily from the *Cultural Resources Assessment for the West Davis Active Adult Community EIR Project* (Peak & Associates, 2017), the *City of Davis General Plan* (City of Davis, 2007), and the *Draft Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School* (City of Davis, 2000).

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Sharaya Souza, Native American Heritage Commission (NAHC) (April 28, 2017). The NAHC comment letter is addressed within this section.

3.5.1 ENVIRONMENTAL SETTING

PROJECT SETTING

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. Approximately 11.29 acres of off-site improvements would also occur within developed and undeveloped areas surrounding the project site (see Figure 2.0-9 in Section 2.0, Project Description). The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, mapped rural residential subdivision lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

The project site is currently undeveloped and has been previously used for agricultural uses. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east north of Covell Boulevard.

The project site has developed and partially developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt seven lot rural residential subdivision. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of State Route (SR) 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

ARCHAEOLOGICAL BACKGROUND

The Central Valley region was among the first in the state to attract intensive cultural and historical fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data. In the early decades of the 1900s, E. J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W. E. Schenck (Schenck and Dawson, 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and exploration were conducted by the Sacramento Junior College (Lillard and Purves, 1936). Excavation data, in particular, from the stratified Windmiller Site (CA-Sac-107) suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California enabled the investigators to identify a third cultural tradition intermediate between the previously postulated early and late horizons. The three-horizon sequence was based on discrete changes in ornamental artifacts and mortuary practices as well as an observed difference in soils within sites (Lillard, Heizer and Fenenga, 1939). This sequence was later refined by Beardsley (1954), with an expanded definition of artifacts diagnostic of each time period and was extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads, a high percentage of burials with grave goods, frequent presence of red ocher in graves, large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types Ala and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis* sp. rather than red *Haliotis* sp. Other characteristic artifacts include perforated canid teeth, asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked-clay.

The Hotchkiss Culture (Late Horizon) burial pattern retains the use of the flexed mode, and there is widespread evidence of cremation, lesser use of red ocher, heavy use of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clamshell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnetite (Moratto, 1984:181-183). The characteristics noted above are not all-inclusive, but cover the more important traits.

There have been other chronologies proposed for this general region. Fredrickson (1973) has correlated his research with Bennyhoff's (1977) work, and has defined, based upon the work of Bennyhoff, patterns, phases and aspects. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities.

ETHNOGRAPHIC BACKGROUND

The Patwin occupied the southern Sacramento Valley west of the Sacramento River from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays. Patwin territory extended approximately 90 miles north to south and 40 miles east to west. Distinction is made between the River Patwin, who resided in large villages near the Sacramento River, especially between Colusa and Knights Landing, and the Hill Patwin, whose villages were situated in the small valleys along the lower hills of the Vaca Mountains and Coast Range, with concentrations in Long, Indian, Bear, Capay, Cortina and Napa valleys (Johnson, 1978:350; Powers, 1877:218). The term "Patwin" refers to the people belonging to the many small contiguous independent political entities in this area who shared linguistic and cultural similarities. Hill and River Patwin dialects are grouped into a North Patwin language, separate from South Patwin, spoken by people who live near present-day Knight's Landing and Suisun. Together, these are classified as southern Wintuan and belong to the Penutian language family as do the languages of the Miwok and Costanoan peoples in the study corridor (Johnson, 1978:350, 359; Kroeber, 1925:351-354).

Politically, the Patwin were organized in small tribes or tribelets, each consisting of a primary village with satellite villages. Tribelets were autonomous and differed from other such units in minor cultural variations. Dialects might encompass several tribelets. Territories were vaguely defined, but included fishing and gathering areas used by the group. In each village, a leader or chief administered subsistence ventures, such as hunting or gathering, and presided over ceremonies. Social and economic activities were divided among families within a village, with certain families responsible for different specialties such as trapping ducks, collecting salt, making foot drums, or performing particular dances or shamanistic rituals (Johnson, 1978:354-355).

Patwin territory includes the riverine environment of tule marshes, vines and brush near the Sacramento River, the flat grasslands dotted with oak groves, and the hills and small valley of the Coast Ranges. The villages situated on low bluffs near the river were often very large; in 1848, General Bidwell estimated at least 1000 residents at *Koru*, near Colusa (Powers, 1877:219). In the hills, the Patwin settled in the small valleys, particularly along Cache and Putah creeks, where large populations were reported. The plains were least hospitable; there, villages were sparse because of the seasonal flooding in winter and lack of reliable water sources during the dry months. As Powers described:

> In winter there was too much water on them, in summer none at all, and aborigines had no means of procuring an artificial supply. Besides there was no wood on them, and the overflowed portions in early summer breed millions of accursed gnats, which render human life a burden and weariness. Hence they were compelled to live beside water-sources, except during certain limited periods in the winter, when they established hunting-camps out on the plains (Powers 1877:219).

Kroeber noted that the Patwin responded to these seasonal changes by shifting their habitation sites:

> The valley people evidently had their permanent villages on the river itself -- that is, in the marsh belt -- but appear to have left this during the dry half of the year to live on the adjacent plains, mostly by the side of tributaries. The upland people built their winter homes where the streams issue on these creeks, and in summer moved away from the main water courses into the hills or mountains (Kroeber 1925:354).

Within a village, the Patwin constructed earth-covered semi-subterranean structures. The Hill Patwin used a circular floor plan while the River Patwin favored an elliptical shape. Four types of building occurred in a predictable pattern: the ceremonial dance house was placed a short distance to the north or south of the village, the sudatory or sweat house was positioned to the east or west of the dance house, and the menstrual hut was built on the edge of the village, farthest from the dance house. Family dwellings could be erected anywhere within the community. Family lodges were built by one's paternal relatives while the other structures were the product of a communal effort. They used readily available materials, forming a framework of saplings, and covering the walls and roof with mud and brush (Johnson, 1978:357-358; Powers, 1877:220-221).

Natural resources flourished in Patwin territory. The Patwin gathered seeds and plant foods and hunted game animals on the plains, shot or netted ducks and other migratory water fowl in the thick tule marshes, and netted salmon and other fish in the rivers and streams. Some of these activities were conducted by groups or families assigned to particular resource areas by a village chief. Acorns were a staple in the Patwin diet. Two types of Valley oak and, rarely, live oak acorns were gathered at communally-owned groves (Johnson, 1978:355). Common practice was to store abundant quantities of acorns in tall granaries to assure against hunger in years of poor harvest. Kroeber observed a Patwin granary more than eight feet tall and three feet in diameter (Heizer and Elsasser, 1980:99). Women prepared the crop by pulverizing the acorns, then leaching out the bitter tannic acid before making bread or acorn soup. At privately-owned gathering tracts on the plains, families gathered seeds, including sunflower, alfilaria, clover, bunchgrass, wild oat and yellow-blossom. The Patwin also collected a variety of bulbs, nuts, roots and berries, including buckeye, pine nuts, juniper berries, manzanita berries, blackberries, wild grapes, brodiaea bulbs, and tule roots. To obtain salt, the Patwin scraped off rocks that were found near Cortina, burned a grass that grew on the plains or obtained it in trade from the neighboring Pomo (Johnson, 1978:355).

King salmon, silver salmon and steelhead trout that run from the ocean to fresh-water rivers and streams were an important diet item. Explorers observed Patwin fishing for salmon with a boom net in 1854 (Heizer and Elsasser, 1980: Figure 37). The Patwin also caught smaller fish and collected mussels from the river bottom. They attracted wild ducks by setting out realistic decoys, then drove the fowl into large nets stretched above the marshes. Hunters also netted mud hens, geese and quail. The Suisun tribelet pursued waterfowl in tule rafts (Powers 1877:220). The Patwin hunted large game, such as tule elk, deer, antelope and bear, and took many varieties of small animals, reptiles, insects and birds either to eat or to use for ceremonial and practical materials (Johnson, 1978:355).

The ceremonial life of the Patwin was centered on the Kuksu cult system, which features one or more secret societies, each with its own dances and rituals. The Kuksu cult occurs among several north central California tribes, but it was more elaborate among the Patwin who possessed three secret societies: the Kuksu, ghost and Hesi types, each with a slightly different purpose. The ghost society stressed initiation, the Kuksu emphasized curing the shamanistic functions, and the Hesi elaborated on ceremonial dancing (Johnson, 1978:353). In addition to ritual duties, shamans were called upon to heal the sick by applying native medicines or by sucking out the offending spiritual cause of the illness. The Patwin generally buried their dead, although the tribelets furthest south may have cremated the deceased. The Patwin near Colusa bent the body, wrapped it with strings of shell money and covered it with an animal skin secured with ropes. They interred the corpse with material goods in a grave situated within a village or within 100 yards of a dwelling or dance house (Kroeber, 1925:359-361).

Historic accounts of the Patwin include the early mission registers of baptisms, marriages and deaths of Indians taken to Mission Dolores and Mission San Jose as early as 1800. In 1823, Mission San Francisco Solano was established in nearby Sonoma and it continued the missions' work until about 1832-1836, when all the missions were secularized. During the Mexican period of the 1830s and 1840s, Mariano G. Vallejo maintained military control of the area and often negotiated with Patwin leader Chief Solano. During this time, several Mexican land grants were awarded and large ranchos were established on Putah and Cache creeks (Johnson, 1978:351).

Pre-contact population is difficult to estimate, but a survey of various sources seems to indicate that the Patwin may have numbered 4,000 before their first encounter with non-Indians. Missionization, punitive military expeditions and fatal confrontations with ranchers took their toll on the populace. John Work's party of trappers from the Hudson's Bay Company came down the Sacramento River in 1832, returning up the river in 1833. They unintentionally introduced a deadly disease to native California and, in their wake, a malaria epidemic swept through the Sacramento Valley. Just four years later, in 1837, smallpox raged through the villages and, as a result of these diseases, up to 75 percent of the Patwin died (Cook, 1955). Those who survived these tragedies eventually settled on small reservations or worked as ranch laborers. Throughout the 1800s and

1900s, the population decreased; in 1972, the Bureau of Indian Affairs counted only 11 Patwin in the entire territory. Three reservations--Colusa, Cortina and Rumsey--remain active in former Patwin territory; they are occupied primarily by descendants of Wintun and other groups (Bureau of Indian Affairs, 1983; Johnson, 1978:352).

HISTORICAL BACKGROUND

The first settler in the Davis vicinity, Jerome Davis, settled on his land in the early 1850s. By 1856, Davis had 8000 acres of land, 1000 of which were enclosed. Davis irrigated portions of his land by pumping water from Putah Creek with a steam engine. Davis raised livestock, peaches, grapes, wheat and barley. By 1864, his ranch totaled about 13,000 acres, with 8,000 acres fenced.

In 1867, William Dresbach leased the Davis home, using it as a hotel, the "Yolo House." A settlement grew up in the vicinity, and Dresbach named it Davisville. This name persisted until 1907 when the University was established and the post office name was shortened to Davis.

In 1905, the State Legislature established the University Farm and the first buildings for the University were built in 1907. In 1922, the school was officially organized as a branch of the College of Agriculture of the University of California at Berkeley. More classes were added, and a College of Letters and Science organized in 1951. In 1959, Davis was authorized as a general campus of the University of California (Kyle, 1990:537).

The rich agricultural lands surrounding Davis continued to be developed and the railroad siding at Chiles became a busy shipping point. The mainline in this area was first constructed by the Central Pacific Railroad just after the Civil War. It was acquired by the Southern Pacific in 1884 and was their mainline from the Bay Area until the Union Pacific acquired the Southern Pacific in 1996.

The 1915 Official Map for Yolo County shows Henry C. Liggett as the owner of the project site, originally 175 acres. The property changed hands several times until the site was acquired by Joseph F. Silva in 1929. Silva was a Portugese immigrant. Between 1929 and 1937, Silva built some improvements on the property. One building appears to have been built on the site before 1907, but apparently removed in the 1930s by Silva. Silva owned and operated a dairy on the property until 1951. He then sold the project to Antony Machado (Supernowicz, 1994).

Machado owned the project site, originally 175 acres, until 1958. He sold the site to Ben and Victoria Williams, who retained the property until 1985 (Derr, 1991). At the time Supernowicz visited the property to record and evaluate the resource in 1994, there were four buildings and two structures as well as farm machinery (Supernowicz, 1994).

KNOWN CULTURAL RESOURCES

The project area is located in a featureless plain about two miles north of the North Fork of Putah Creek. Although the sediments have sufficient depth to possess buried deposits of prehistoric period material, the setting, roughly two miles north of the closest water source, would suggest otherwise. Prehistoric period settlement in this region was focused on areas with elevated terrain closer to permanent water sources. The likelihood of encountering buried prehistoric period deposits is, therefore, low.

A review of the U.S. Geological Survey (USGS) 1915 Merritt 1:31,680 topographic quadrangle, based on a 1905 survey, shows one structure present in the southeast corner of the project site and a road that would later become West Covell Boulevard. The structure shown on the 1915 USGS topographic quadrangle corresponds to the location of the later farm/dairy complex, P-57-000138 (CA-YOL-173H). Outside of the southeast corner of the project area, there is little likelihood that buried deposits of historic period remain.

Research

A record search was conducted for the project area at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on May 1, 2017 (NWIC File No. 16-1569, Appendix D). According to NWIC files, three previous cultural resource studies have been conducted within portions of the project area. The earliest of these was in 1991 with an inspection of the southeastern portion of the project area (Derr, 1991). During that study, Derr recorded a farm complex, P-57-000138 (CA-YOL-173H), within the project area and recommended further research be conducted as the proposed project at that time would have resulted in the demolition of the resource.

The evaluation of P-57-000138 (CA-YOL-173H) was conducted in 1994 for the Sutter-Davis Hospital in anticipation of the Covell Boulevard realignment and relocation of an irrigation canal by Dana Supernowicz (1994). The evaluation concluded that the site was a significant resource as a Point of Historic Interest, and thought that the Point of Historic Interest might be considered for listing in the California Register of Historical Resources (CRHR).

The reviewer noted that the dairy farm complex should be preserved or restored. If that could not happen and the complex had to be demolished, the researcher recommended taking archival large format photos of the complex. The 1994 document recommended that the photographs be placed with two facilities—Yolo County Archives and University of California, Davis (UCD) Special Collections.

Peak & Associates, Inc. consulted with the Yolo County Archives and UCD Special Collections regarding the project site; neither facility had any documentation or photographs for P-57-000138 (CA-YOL-173H). Katherine Hess, Community Development Administrator for the City of Davis, reported that “the ADEIR [Administrative Draft EIR] for DIC [Davis Innovation Center] describes the record and just says ‘the buildings were demolished’.” In addition, she noted that “Far Western found a slab on the site that was likely part of the Silva Dairy Ranch.”

The Far Western report and site form for the slab were not on file with the NWIC at the time Peak & Associates, Inc. completed the record search for the project. Yolo County did not return the Peak & Associates, Inc. phone calls about the demolition of the complex.

The barn was removed by 2003, and the house removed between August 2005 and August 2006. Peak & Associates, Inc. assumes that there was no mitigation work for the significant building complex, and it was demolished for a previously proposed undertaking on the project site.

The third survey of the project area on file with NWIC was for a small cell tower site located in the west central portion of the project area (Billet, 2007). No resources were identified during the 2007 investigation.

Consultation

Peak & Associates, Inc. sent a letter by email on August 8, 2017 to the Yolo County Historical Society and to the Davis Historical Society, relating the history of the cultural resource efforts regarding the significant historical site, and requesting information on any concerns their groups might have about the project site (see Appendix D). The Yolo County Historical Society responded by email on August 9, 2017, that the Davis Historical Society has suspended operations at this time, and suggested that Peak & Associates, Inc. contact the Davis Representative of the Yolo County Historical Society directly regarding this issue. Both the Davis Historical Society and Yolo County Historical Society letters have been forwarded to the Davis Representative. To date, no responses have been received. If Peak & Associates, Inc. receives any comments from the Yolo County or Davis Historical Societies, the comments will be forwarded to the City of Davis for their consideration.

Additionally, in accordance with AB 52, the City of Davis contacted the Ione Band of Miwok Indians (May 2, 2017) and the Yocha Dehe Wintun Nation (August 11, 2017) and provided both tribes with information regarding the proposed project. The City requested that the tribes supply any information they might have concerning prehistoric sites or traditional use areas within the project site. To date, one tribe has responded to the tribal consultation letters. The Yocha Dehe Winton Nation responded on September 25, 2017 and requested a site visit. The City followed up with this request via email with a few suggested dates. To date, the Yocha Dehe Winton Nation has not responded to the City’s email.

Field Assessment

Neal Neuenschwander, Peak & Associates, Inc., conducted an intensive pedestrian field survey of the entire project area on May 12, 2017, with transect spacing of fifteen meters or less. The project area was planted in hay that had just been cut and swept into rows for baling. The ground visibility was, therefore, very good. The area had also been disturbed by burrowing animals, and the mounds of turned up earth could also be inspected. Where necessary, the surveyor dug small holes to clear vegetation and to examine the sediments.

Resource Evaluations

Two historic period cultural resources are located within the project area. See Figure 3.5-1 for the location of both features.

PA-17-22

This resource, recorded as PA-17-22, is an above ground well pump, concrete standpipe, and scatter of sheet metal and concrete fragments located near the southwestern corner of the project area. The appearance of the pump, painted turquoise, implies an approximate date of manufacture of 1960. The pump was manufactured by U.S. Electrical Motors, Los Angeles, California. The pump rests on a base with a plate indicating that a former pump, manufactured by Bryon Jackson Pump Company, was present at one time prior to replacement. The resource was assigned a temporary field designation PA-17-22, and a DPR 523 series form for the resource is presented in Appendix D. The following image shows the existing resource (i.e., above ground well pump, concrete standpipe, and scatter of sheet metal and concrete fragments).

VIEW OF RESOURCE PA-17-22.

The current above ground irrigation pump, concrete standpipe, and scattering of sheet metal and concrete are most likely associated with the post-1958 ownership and use of the property by Ben and Victoria Williams. The couple were reported to have raised row crops in the southern portion of the project area near where the pump and standpipe are located (Derr, 1991:3). The above ground pump and standpipe are not associated with important events or people, nor is it distinctive in any way. This feature is not eligible for the CRHR.

P-57-000138 (CA-YOL-173H)

This resource, a building complex recorded as P-57-000138 (CA-YOL-173H), originally contained a residence, barn, and several outbuildings. This resource is no longer present except for two rows of introduced cypress and Italian cypress trees. The former ranch/dairy complex is now mostly covered with gravel and is currently used as a parking and equipment staging area. A small portion has exposed sediment, but other than some very small concrete fragments, nothing else associated with the buildings remain. A supplemental Department of Parks and Recreation (DPR) 523 series form is presented in Appendix D. The following image shows the existing resource (i.e., two rows of introduced cypress and Italian cypress trees).

VIEW OF RESOURCE PA-57-000138 (CA-YOL-173H).

The resource no longer retains any integrity as the buildings have been removed. The only physical remains are the introduced landscaping of cypress and Italian cypress trees that border the former complex. The introduced row of cypress and Italian cypress do, however, denote a remnant historic period landscape and have survived the demolition of the associated farm/dairy complex. They do not in themselves have national or statewide significance, but may be locally significant to the City of Davis.

3.5.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

STATE

California Register of Historic Resources

The CRHR was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

Cultural resources, under CRHR and NRHP guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR and/or NRHP if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

Assembly Bill 52

Assembly Bill (AB) 52, approved in September 2014, creates a formal role for California Native American tribes by creating a formal consultation process and establishing that a substantial adverse change to a tribal cultural resource has a significant effect on the environment. Tribal cultural resources are defined as:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

   A) Included or determined to be eligible for inclusion in the CRHR

   B) Included in a local register of historical resources as defined in PRC Section 5020.1(k)

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1 (c). In

applying the criteria set forth in PRC Section 5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria above is also a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. In addition, a historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a "non-unique archaeological resource" as defined in PRC Section 21083.2(h) may also be a tribal cultural resource if it conforms with above criteria.

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

Assembly Bill 978

In 2001, AB 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals, policies, and standards that are relevant to cultural resources:

HISTORIC AND ARCHAEOLOGICAL RESOURCES

Goal HIS 1. Designate, preserve and protect the archaeological and historic resources within the Davis community.

> **Policy HIS 1.2.** Incorporate measures to protect and preserve historic and archaeological resources into all planning and development.
>
> > **Standard HIS 1.2(b).** A cultural resources survey shall be required for development sites where cultural resource conditions are not known (as required by the Planning and Building Department). Resources within a project site that cannot be avoided should be evaluated. Additional research and test excavations, where appropriate, should be undertaken to determine whether the resource(s) meets CEQA and/or NRHP significance criteria. Impacts to significant resources that

cannot be avoided will be mitigated in consultation with the lead agency for the project. Possible mitigation measures include:

- a data recovery program consisting of archaeological excavation to retrieve the important data from archaeological sites;
- development and implementation of public interpretation plans for both prehistoric and historic sites;
- preservation, rehabilitation, restoration, or reconstruction of historic structures according to Secretary of Interior Standards for Treatment of Historic Properties;
- construction of new structures in a manner consistent with the historic character of the region; and
- treatment of historic landscapes according to the Secretary of Interior Standards for Treatment of Historic Landscapes.

Policy HIS 1.3. Assist and encourage property owners and tenants to maintain the integrity and character of historic resources, and to restore and reuse historic resources in a manner compatible with their historic character.

City of Davis Municipal Code

The City of Davis Demolition Ordinance establishes requirements and procedures for the demolition of structures for the public safety and to ensure that potentially significant historical properties are not demolished without being identified. On March 11, 2014, The City Council adopted Ordinance 2433 which updated the Demolition Ordinance. The Demolition Ordinance requires the following:

- For demolitions in general subject to the Ordinance, preparation of a site management plan prior to issuance of a demolition permit with details such as a material recycling plan, tree identification and protection/preservation consistent with the City Tree Preservation Ordinance, site grading, sidewalk protection and pedestrian access around the site, runoff control, weed control, details of any proposed fencing or screening, and the site appearance control.
- For demolition of structures within the adopted conservation district (Article 40.13A) or historic district, all necessary discretionary entitlements, including, but not limited to, design review, conditional use permits, map applications, public hearings, CEQA clearance, and any other discretionary entitlements that may be necessary for the construction of a replacement project shall be completed prior to issuance of a demolition permit.
- For demolition of structures that are fifty or more years old, review of the demolition shall occur in accordance with the City's Historic Resources Management Ordinance (Municipal Code Article 40.23) which includes a determination if the structure meets the criteria for potential historic designation.

Additionally, Article 40.23, Historical Resources Management, of the City's Municipal Code aims to promote the general welfare by providing for the identification, designation, protection, enhancement, perpetuation, and use of historical resources including improvements, buildings, structures, objects, signs, features, sites, cultural landscapes, places, and areas within the city that reflect special elements of the city's historical, architectural, archaeological, cultural, or aesthetic heritage. Section 40.23.040 of the Code establishes the City's Historical Resources Management Commission, which has several powers and duties. Section 40.23.060 of the Code establishes the designation criteria required in order to be designated as a "Landmark" or a "Historic District." The following summarizes the criteria required to be designated as a "Landmark":

> *Upon the recommendation of the historical resources management commission and approval of the city council a historical resource may be designated a landmark if the resource meets any of the following four criteria at the local, state, or national level of significance and retains a high level of historic integrity as defined by this article.*
>
> 1) *Associated with events that have made a significant contribution to the broad patterns in the history of Davis, California, or the nation; or*
> 2) *Associated with the lives of significant persons in the history of Davis, California, or the nation; or*
> 3) *Embodies the distinctive characteristics of a type, period, architectural style or method of construction; or that represents the work of a master designer; or that possesses high artistic values; or that represents a significant and distinguishable entity whose components may lack individual distinction; or*
> 4) *Has yielded or may likely yield archaeological or anthropological information important in the study of history, prehistory, or human culture.*

City of Davis Tree Ordinance

The City of Davis acknowledges the importance of trees to the community's health, safety, welfare, and tranquility. Trees increase property values, provide visual continuity, provide shade and cooling, decrease wind velocities, control erosion, conserve energy, reduce stormwater runoff, filter airborne pollutants, reduce noise, provide privacy, provide habitat and food value, and release oxygen. On December 4, 2002, the City Council adopted the Tree Ordinance, Chapter 37 of the Municipal Code, to ensure that the community forest would be prudently protected and managed so as to ensure these multiple civic benefits. The Tree Ordinance protects the following trees:

- **Landmark Trees:** Any tree which has been determined by resolution of the City Council to be of high value because of its species, size, age, form, historical significance, or some other professional criterion. The Landmark Tree List, available from the Public Works Department, lists and identifies these trees.
- **Trees of Significance:** Any tree which measures 5 inches or more in Diameter at Breast Height (4'-6" above ground height).
- **Street Trees:** Any tree planted and/or maintained by the City, or recorded as a street tree, adjacent to a street or within a city easement or right-of-way, on private property, within the street tree easement. The Public Works Department maintains a master list of street trees.

- **City Trees:** Any tree, other than a street tree, planted or maintained by the City within a City easement, right-of-way, park, greenbelt, public place or property owned or leased by the City.
- **Private Tree:** Any tree privately owned and growing on private property, which may include a tree designated as a landmark tree and/or tree of significance, as defined within the definitions section of the Tree Ordinance, Chapter 37.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource;
- Disturb any human remains, including those interred outside of formal cemeteries;
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either:
  1) a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  2) a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074 (Less than Significant with Mitigation)

The project site is located in an area known to have historical resources. As discussed previously, two historic period cultural resources are located within the project area: PA-17-22 and P-57-000138 (CA-YOL-173H). PA-17-22 is an above ground well pump, concrete standpipe, and scatter of sheet metal and concrete fragments located near the southwestern corner of the project area.

The above ground pump and standpipe are not associated with important events or people, nor is it distinctive in any way. This feature is not eligible for the CRHR.

P-57-000138 (CA-YOL-173H) is no longer present except for two rows of introduced cypress and Italian cypress trees. The original complex had a residence, barn, and several outbuildings. The former ranch/dairy complex is now mostly covered with gravel and is currently used as a parking and equipment staging area. A small portion has exposed sediment, but other than some very small concrete fragments, nothing else associated with the buildings remain.

The resource no longer retains any integrity as the buildings have been removed. The only physical remains are the introduced landscaping of cypress and Italian cypress trees that border the former complex. The introduced row of cypress and Italian cypress do, however, denote a remnant historic period landscape and have survived the demolition of the associated farm/dairy complex. These cypress and Italian cypress trees are not listed on the City's Landmark Tree list. Removal of any on-site trees on the project site is subject to the City's Tree Ordinance and would be addressed by a standard City condition of approval which requires preparation of a Tree Protection Plan for trees being preserved and approval of Tree Modification Permit for trees being removed with standard measures for tree replacement or payment for the appraised value of the trees. For more information regarding compliance with the City's Tree Ordinance, see Section 3.4, Biological Resources.

As with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical resource or tribal cultural resource. Implementation of the following mitigation measure would ensure that this potential impact is reduced to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1: *All construction workers shall receive a sensitivity training session before they begin site work. The sensitivity training shall inform the workers of their responsibility to identify and protect any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources, within the project site. The sensitivity training shall cover laws pertaining to cultural resources, examples of cultural resources that may be discovered in the project site, and what to do if a cultural resource, or anything that may be a cultural resource, is discovered.*

If any subsurface historic remains, prehistoric or historic artifacts, paleontological resources, other indications of archaeological resources, or cultural and/or tribal resources are found during grading and construction activities, all work within 100 feet of the find shall cease, the City of Davis Department of Community Development and Sustainability shall be notified, and the applicant shall retain an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, to evaluate the find(s). If tribal resources are found during grading and construction activities, the applicant shall notify the Yocha Dehe Wintun Nation. If paleontological resources are found during grading and construction activities, a qualified paleontologist shall be retained to determine the significance of the discovery.

The archaeologist and/or paleontologist shall define the physical extent and the nature of any built features or artifact-bearing deposits. The investigation shall proceed immediately into a formal evaluation to determine the eligibility of the feature(s) for inclusion in the California Register of Historical Resources. The formal evaluation shall include, at a minimum, additional exposure of the feature(s), photo-documentation and recordation, and analysis of the artifact assemblage(s). If the evaluation determines that the feature(s) and artifact(s) do not have sufficient data potential to be eligible for the California Register, additional work shall not be required. However, if data potential exists (e.g., an intact feature is identified with a large and varied artifact assemblage), further mitigation would be necessary, which might include avoidance of further disturbance to the resource(s) through project redesign. If avoidance is determined to be infeasible, additional data recovery excavations shall be conducted for the resource(s), to collect enough information to exhaust the data potential of those resources.

Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Data recovery efforts can range from rapid photographic documentation to extensive excavation depending upon the physical nature of the resource. The degree of effort shall be determined at the discretion of a qualified archaeologist and should be sufficient to recover data considered important to the area's history and/or prehistory. Significance determinations for tribal cultural resources shall be measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852[a]), and the definition of tribal cultural resources set forth in Public Resources Code Section 21074 and 5020.1 (k). The evaluation of the tribal cultural resource(s) shall include culturally appropriate temporary and permanent treatment, which may include avoidance of tribal cultural resources, in-place preservation, and/or re-burial on project property so the resource(s) are not subject to further disturbance in perpetuity. Any re-burial shall occur at a location predetermined between the landowner and the Yocha Dehe Wintun Nation. The landowner shall relinquish ownership of all sacred items, burial goods, and all archaeological artifacts that are found on the project area to the Yocha Dehe Wintun Nation for proper treatment and disposition. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

The language of this mitigation measure shall be included on any future grading plans, utility plans, and subdivision improvement drawings approved by the City for the development of the project.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.5-1 would require construction to halt in the event that a buried and previously undiscovered cultural or historical resource is encountered during construction activities so that it can be appropriately evaluated by a qualified professional. Subsequently, this mitigation measure would ensure that any potential impact to unknown resources is reduced to a ***less than significant*** level.

Impact 3.5-2: Project implementation has the potential to cause a substantial adverse change to a significant archaeological resource, as defined in CEQA Guidelines §15064.5 (Less than Significant with Mitigation)

The project site is located in an area known to have cultural resources. The field surveys did not reveal a significant archeological resource or site on the project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of previously unknown significant archeological resources. Implementation of the following mitigation measure would ensure that this potential impact is ***less than significant***.

MITIGATION MEASURE(S)

Implement ***Mitigation Measure 3.5-1.***

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.5-1 would require construction to halt in the event that a buried and previously undiscovered cultural or historical resource is encountered during construction activities so that it can be appropriately evaluated by a qualified professional. Subsequently, this mitigation measure would ensure that any potential impact to unknown resources is reduced to a ***less than significant*** level.

Impact 3.5-3: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource (Less than Significant with Mitigation)

The field surveys conducted for the proposed project did not reveal any surface evidence of paleontological resources on the project site. The project site is not expected to contain subsurface paleontological resources, although it is possible.

Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of the following mitigation measure would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This mitigation measure would reduce this impact to a ***less-than-significant*** level.

MITIGATION MEASURE(S)

Implement ***Mitigation Measure 3.5-1.***

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.5-1 would require construction to halt in the event that a paleontological resource is encountered during construction activities so that it can be appropriately evaluated by a qualified professional. Subsequently, this mitigation measure would ensure that any potential impact to unknown resources is reduced to a ***less than significant*** level.

Impact 3.5-4: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries (Less than Significant with Mitigation)

Indications suggest that humans have occupied Yolo County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during Project implementation.

While no human remains were found during field surveys of the project site, implementation of the following mitigation measure would ensure that all construction activities which inadvertently discover human remains implement state-required consultation methods to determine the disposition and historical significance of any discovered human remains. The following mitigation measure would reduce this impact to a ***less-than-significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-2: *If human remains are discovered during the course of construction during any phase of the project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Yolo County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
    - *The Native American Heritage Commission is unable to identify a descendent.*
    - *The descendant identified fails to make a recommendation.*
    - *The City of Davis or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.5-2 would require construction to halt in the event that human remains are encountered during construction activities. Subsequently, this mitigation measure would ensure that any potential impact to unknown resources is reduced to a ***less than significant*** level.

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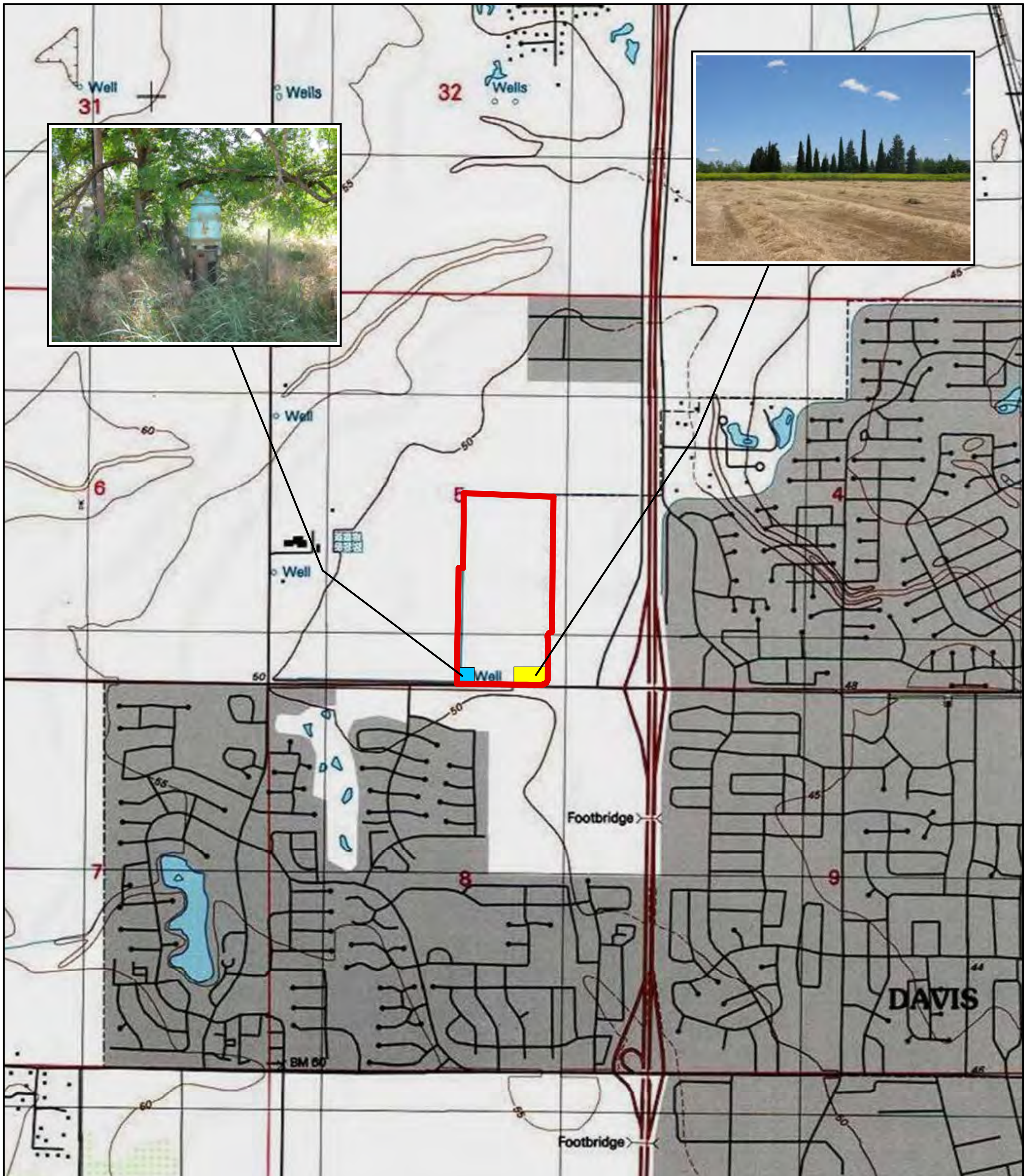

Legend

Project Location

Cultural Resource ID

PA-17-22

P-57-000138

N

0 500 1,000

Feet

1:24,000

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.5-1: Known Historic Period Cultural Resources

Data sources: Peak & Associates; Yolo County GIS; ArcGIS Online USGS Topographic Map Service. Map date: December 4, 2017.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the project region and general vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based in part on the following technical studies:

- *Preliminary Geotechnical Assessment – Davis Innovation Center* (ENGEO, 2014);
- *Web Soil Survey (*United States Department of Agriculture Natural Resources Conservation Service, 2016); and
- *Soil Survey of Yolo County, California* (USDA, 1972).

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.6.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The project site is located at the southwestern end of the Sacramento Valley, approximately 30 miles north of the confluence of the San Joaquin and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east.

The Sacramento Valley has been filled over time with up to a six-mile thick sequence of interbedded clay, silt, sand, and gravel deposits. The sediments range in age from more than 144 million years old (Jurassic Period) to less than 10,000 years (Holocene). The most recent sediments consist of coarse-grained (sand and gravel) deposits along river courses and fine-grained (clay and silt) deposits located in low-lying areas or flood basins and are referred to as alluvial deposits. These deposits are loose and not well consolidated soils.

Older alluvial deposits underlie the edges of the Valley. The older alluvial deposits are exposed in the foothill regions in the eastern portion of the county. The alluvial deposits, which slope gradually toward the center of the Valley, contain most of the groundwater supplies in region. The foothills of the coast ranges to the west of the project site are underlain by alluvial deposits and older marine sediments deposited during the Tertiary Period when an inland sea occupied the Great Valley.

Great Valley Geomorphic Province

The Great Valley is an alluvial plain, about 50 miles wide and 400 miles long, between the Coast Ranges and Sierra Nevada. The Great Valley is drained by the Sacramento and San Joaquin rivers, which join and enter San Francisco Bay. The eastern border is the west-sloping Sierran bedrock surface, which continues westward beneath alluvium and older sediments. The western border is underlain by east-dipping Cretaceous and Cenozoic strata that form a deeply buried synclinal trough, lying beneath the Great Valley along its western side.

City of Davis

The City of Davis is located in the eastern portion of the Putah Creek Plain, one of the major features of the southwestern Sacramento River valley. The land slopes at generally less than one percent, and elevations range from 60 feet above sea level in the west parts of the city to 25 feet in the east parts of the city. The foothills of the Coast Range are approximately fourteen miles to the west, and the Sacramento River is approximately eleven miles to the east.

SITE GEOLOGY

Soil Survey

A *Preliminary Geotechnical Assessment* (ENGEO, 2014) was prepared for the Davis Innovation Center, a project that was previously proposed for development at the project site. According to the Assessment, the project site is underlain by Quaternary (Holocene) Basin Deposits, Upper Modesto Formation alluvial deposits, and Lower Modesto Formation alluvial deposits.

A Custom Soil Survey was completed for the project site using the Natural Resources Conservation Service (NRCS) Web Soil Survey program. The NRCS Soils Map is provided in Figure 3.2-2 in Section 3.2, Agricultural Resources. Table 3.6-1 identifies the type and range of soils found in the project site.

TABLE 3.6-1: PROJECT SITE SOILS

UNIT SYMBOL	*NAME*	*ACRES IN AOI*		*PERCENT OF AOI*
		ON-SITE	*OFF-SITE*	
BrA	Brentwood silty clay loam	36.20	1.61	43.37
Mf	Marvin silty clay loam	26.75	2.88	33.99
Pb	Pescadero silty clay, saline-alkali	0.56	2.00	2.94
Wc	Willows clay, alkali	11.44	5.74	19.71

NOTE: THE AOI (AREA OF INTEREST) INCLUDES THE ON- AND OFF-SITE IMPROVEMENTS (74.49 ACRES ON-SITE, AND 11.53 ACRES OFF-SITE).
SOURCE: NRCS CUSTOM SOIL SURVEY 2017.

Brentwood silty clay loam. Brentwood soils are on nearly level to gently sloping fans and formed in valley fill from sedimentary rocks. These soils are well to moderately well drained. They have very slow to medium runoff and moderately slow permeability. Most areas are irrigated and are used for tree fruit, nut crops, vegetables, and field crops. Vegetation is annual grasses, forbs, and scattered oaks.

Marvin silty clay loam. Marvin soils are on nearly level flood plains at elevations of 10 to 100 feet under annual grasses and forbs. They formed in fine textured alluvium from mixed sources. These soils are moderately well to somewhat poorly drained. They have slow runoff and slow permeability. Common uses include: irrigated and dry cropland and pasture; and grain, field crops, sugar beets, alfalfa and rice crops.

Pescadero silty clay, saline-alkali. Pescadero soils are in basins and formed in alluvium from sedimentary rock. These soils are poorly drained or ponded on concave slopes. They have very slow runoff and very slow permeability. These soils are used mainly for livestock grazing. Some reclaimed areas are used for irrigated field, row crops and irrigated pasture. Commonly cultivated crops are sugarbeets, barley, alfalfa, corn and tomatoes.

Willows clay, alkali. Willow soils are in basins and formed in alluvium from mixed rock sources. These soils are poorly drained. They have slow runoff and very slow permeability. These soils are used for growing rice, sugar beets and safflower.

Groundwater

According to the *Preliminary Geotechnical Assessment* prepared by Engeo, groundwater elevation at the project site is likely 10 to 40 feet deep. It should be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater may be higher or lower than the level observed during Engeo's investigation.

FAULTS AND SEISMICITY

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.6-2 presents the California fault activity rating system.

TABLE 3.6-2: FAULT ACTIVITY RATING

FAULT ACTIVITY RATING	*GEOLOGIC PERIOD OF LAST RUPTURE*	*TIME INTERVAL*
Active (A)	Holocene	Within last 11,000 Years
Potentially Active (PA)	Quaternary	11,000-1.6 Million Years
Inactive (I)	Pre-Quaternary	Greater than 1.6 Million Years

No known faults traverse through the Davis Planning Area. However, the site does lie within a seismically active region, as California has numerous faults that are considered active. Generally, a fault is considered active if it has ruptured within the Holocene epoch (11,700 years before present). Mapped, active regional faults within the vicinity of the project site range from 12 to 50 miles away.

Fault Systems

Seismicity is directly related to the distribution of fault systems within a region. Depending on activity patterns, faults and fault-related geologic features may be classified as active, potentially active, or inactive.

The Quaternary Faults and Alquist-Priolo Earthquake Fault Zones are illustrated on Figure 3.6-2. The San Andreas fault system located to the west and the Eastern Sierra fault system located to the east are the closest significant fault systems. Numerous quakes along these fault systems have been felt in Davis. Major quakes occurred in 1833, 1868, 1892, 1902, 1906, and most recently in 2014, but Davis suffered no significant damage.

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.6-3 provides a description and a comparison of intensity and magnitude.

The Office of Planning and Research has placed the Davis area in Seismic Activity Intensity Zone II, which indicates that the maximum intensity of an earthquake would be VII or VIII on the Modified Mercalli Intensity Scale. An earthquake of such magnitude would result in slight damage in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures." The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

TABLE 3.6-3: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

RICHTER MAGNITUDE	*MODIFIED MERCALLI SCALE*	*EFFECTS OF INTENSITY*
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, the duration of shaking can be estimated by most people. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awaken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Alquist-Priolo Special Study Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site. The project site is not within an Alquist-Priolo Special Study Zone.

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking is expected in California. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking on the project site is expected during the life of the project. All structures will be built in accordance with the seismic design standards in California.

Fault Rupture

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. The project site does not have surface expression of active faults and fault rupture is not anticipated.

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. Additionally, the *Preliminary Geotechnical Assessment* (ENGEO, 2014) notes that, based on the fine-grained silt and clay anticipated in the Quaternary Basin deposits and the relatively dense nature of the Upper and Lower Modesto formations, the risk of liquefaction is considered low.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills to the west. There are no creeks or open bodies of water within an appropriate distance from the project site for lateral spreading to occur on the project site. For this reason, the probability of lateral spreading occurring on the project site is low.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The potential for landslides is considered remote in the valley floors due to the lack of significant slopes. For this reason, the probability of landslides occurring on the project site is low.

NON-SEISMIC HAZARDS

Expansive Soils

According to the *Preliminary Geotechnical Assessment* (ENGEO, 2014), based on a geologic review and review of limited subsurface data, expansive soil may be encountered in the project site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering.

Erosion

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

According to the *Soil Survey of Yolo County, California (USDA 1972)*, the erosivity of the soils on the project site are " slight". The surface runoff potential is considered “very slow to medium”.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Monitoring of subsidence in Yolo has been occurring since 1999 on a regional level. The monitoring efforts show that the greatest subsidence occurs in the corridor that runs north from Davis, through Woodland, north to Zamora and through to the northeast corner of the county. The subsidence does not appear to be strictly uniform, a characteristic of subsidence, but rather a result of several factors. Subsidence is likely a result of the groundwater pumping, water usage, and other related issues, but additional regional studies are needed over an extended period of time to better understand the subsidence in the region.

3.6.2 REGULATORY SETTING

FEDERAL

Uniform Building Code (UBC)

The purpose of the Uniform Building Code (UBC) is to provide minimum standards to preserve the public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. UBC standards address foundation design, shear wall strength, and other structurally related conditions.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the Act) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The Act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

STATE

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Code, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act.

California Building Code

The California Building Code (CBC) is included in Title 24 of the California Code of Regulations (CCR) and is a portion of the California Building Standards Code. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The CBC incorporates the Uniform Building Code, a widely adopted model building code in the United States. Through the CBC, the state provides a minimum standard for building design and construction. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and Criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;

- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

- Cities and Counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The Regional Water Quality Control Board (RWQCB) issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pretreatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the California Water Code.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB issues general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to geotechnical aspects of the proposed project:

SOILS

Goal AG 3. Conserve soil resources within the planning area.

Policy AG 3.1 Develop programs to help conserve soil resources.

Standard AG 3.1(a) Drainage facilities shall be designed to control runoff and minimize erosion.

Goal WATER 2. Ensure sufficient supply of high quality water for the Davis Planning Area.

Policy WATER 2.3 Maintain surface water quality.

Action WATER 2.3(a) Continue to implement best management practices and policies incorporated in the Urban Water Management Plan and other adopted plans.

Action WATER 2.3(b) Continue to monitor and enforce, at the local level, provisions to control non-point source water pollution contained in the United States Environmental Protection Agency NPDES program.

Action WATER 2.3(c) Continue to enforce provisions to control erosion and sediment from construction sites.

GEOTECHNICAL SAFETY

Goal HAZ 2. Minimize risks associated with soils, geology, and seismicity in Davis.

Policy HAZ 2.1 Take necessary precautions to minimize risks associated with soils, geology, and seismicity.

City of Davis Municipal Code

The City of Davis regulates site grading design in Chapter 40, Zoning, of the Municipal Code. The following guidelines are outlined in the ordinance:

40.42.110 Grading design plan

(a) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading plan shall be submitted as part of the landscape documentation package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.

1) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

A. Height of graded slopes;

B. Drainage patterns;

C. Pad elevations;

D. Finish grade; and

E. Stormwater retention improvements, if applicable.

2) To prevent excessive erosion and runoff, it is highly recommended that project applicants:

A. Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;

B. Avoid disruption of natural drainage patterns and undisturbed soil; and

C. Avoid soil compaction in landscape areas; and

D. Decompact and break up compacted soil in landscape areas.

3) The grading design plan shall contain the following statement: “I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan” and shall bear the signature of a licensed professional as authorized by law. (Ord. 2369 § 2, 2010).

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on geology, soils, and minerals if it will:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Strong seismic ground shaking; or
  - Seismic-related ground failure, including liquefaction;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan; or,
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to geology, soils, and mineral resources.

According to the Davis General Plan, the most important mineral resources in the region are sand and gravel, which are mined on Cache Creek and other channels in Yolo County. A survey of aggregate resources by the State Division of Mines and Geology did not show significant aggregate resources in the planning area. As a result, mineral resources were found not to be a significant issue for the City and further environmental analysis was not required in the Davis General Plan EIR.

Known mineral resources are not located on the project site or in the immediate vicinity and land designated or zoned for mineral resources is not within the City limits. As mineral resources are not located in the vicinity of the proposed project or the City, implementation of the proposed project would not result in the loss of availability of a known mineral resource or of a locally-important mineral resource recovery site. Therefore, the proposed project would have ***no impact*** related to mineral resources. Issues related to known or locally-important mineral resources are not further discussed.

In addition, the proposed project would connect to the existing City wastewater collection infrastructure and be served by the City's wastewater treatment facility. Therefore, the proposed project would not utilize a septic tank system and ***no impact*** would occur. Issues related to septic tanks or alternative wastewater disposal systems are not further discussed.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: The proposed project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure (Less than Significant)

The California Geologic Survey (CGS) evaluates faults and determines if a fault should be zoned as active, potentially active, or inactive. All active faults are incorporated into a Special Studies Zone, also referred to as an Alquist-Priolo Special Study Zone. The project site is not within an Alquist-Priolo Special Study Zone. In fact, there are no known faults (active, potentially active, or inactive) that traverse through the City of Davis.

The San Andreas fault system located to the west and the Eastern Sierra fault system located to the east are the closest significant fault systems. Numerous quakes along these fault systems have been felt in Davis. Major quakes occurred in 1833, 1868, 1892, 1902, 1906, and most recently in 2014, but Davis suffered no significant damage.

The Office of Planning and Research has placed the Davis area in Seismic Activity Intensity Zone II, which indicates that the maximum intensity of an earthquake would be VII or VIII on the Modified Mercalli Intensity Scale. An earthquake of such magnitude would result in slight damage in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures." The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the project site. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. Design in accordance with these standards would reduce any potential impact to a ***less than significant*** level.

Impact 3.6-2: Implementation and construction of the proposed project may result in substantial soil erosion or the loss of topsoil (Less than Significant with Mitigation)

According to the *Soil Survey of Yolo County, California (USDA 1972)*, the erosivity of the soils on the project site are "slight". According to the NRCS Web Soil Survey (USDA NRCS, 2016), the surface runoff potential is considered “very slow to medium”. However, there is always the potential for human caused erosion associated with construction activities or through the operational phase of a project.

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Mitigation Measure 3.6-1 requires an approved storm water pollution prevention plan (SWPPP) that includes best management practices for grading, and preservation of topsoil. The SWPPP will be designed to control storm water quality degradation to the extent practicable using best management practices during and after construction. The project applicant will submit the SWPPP with a Notice of Intent to the RWQCB to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities.

Additionally, there is the potential for erosion associated with stormwater runoff throughout the operational phase of the project. The potential for erosion is associated with the design of the improvements, structures, and landscaping. Mitigation Measure 3.6-2 requires the project to incorporate design measures that treat stormwater runoff in accordance with the standards of the California Stormwater Best Management Practice New Development and Redevelopment Handbook and Section E.12 of the Phase II Small MS4 General Permit. This includes the drainage design from all paved surfaces, including streets, parking lots, driveways, and roofs, as well as landscaping.

With the implementation of the following mitigation measures the proposed project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-1: *Prior to any site disturbance, the project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the project site. Measures shall include* *temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Davis and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

Mitigation Measure 3.6-2: *Prior to any site disturbance, the project proponent shall document to the satisfaction of the City of Davis that stormwater runoff from the project site is treated per the standards in the California Stormwater Best Management Practice New Development and Redevelopment Handbook and Section E.12 of the Phase II Small MS4 General Permit. Drainage from all paved surfaces, including streets, parking lots, driveways, and roofs shall be routed either through swales, buffer strips, or sand filters or treated with a filtering system prior to discharge to the storm drain system. Landscaping shall be designed to provide water quality treatment, along with the use of a Stormwater Management filter to permanently sequester hydrocarbons, if necessary. Roofs shall be designed with down spouting into landscaped areas, bubbleups, or trenches. Driveways should be curbed into landscaping so runoff drains first into the landscaping. The aforementioned requirements shall be noted on the Preliminary and Final Planned Developments for the project.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.6-1 and 3.6-2 would require the implementation of best management practices to reduce erosion from stormwater runoff and the introduction of pollutants into the local storm drainage system. These mitigation measures would reduce potential impacts related to erosion and the loss of topsoil to a ***less than significant*** level.

Impact 3.6-3: The proposed project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse (Less than Significant with Mitigation)

LIQUEFACTION

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. Additionally, the *Preliminary Geotechnical Assessment* (ENGEO, 2014) notes that, based on the fine-grained silt and clay anticipated in the Quaternary Basin deposits and the relatively dense nature of the Upper and Lower Modesto formations, the risk of liquefaction is considered low.

LATERAL SPREADING

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills to the west. There are no creeks or open bodies of water within an appropriate distance from the project site for lateral spreading to occur on the project site. For this reason, the probability of lateral spreading occurring on the project site is low.

LANDSLIDES

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The potential for landslides is considered remote in the valley floors due to the lack of significant slopes. For this reason, the probability of landslides occurring on the project site is low.

DIFFERENTIAL COMPACTION

If near-surface soils vary in composition both vertically and laterally, strong earthquake shaking can cause non-uniform compaction of the soil strata, resulting in movement of the near-surface soils. According to the *Preliminary Geotechnical Assessment* (ENGEO, 2014), Holocene Basin Deposits are mapped underlying the majority of the project. These deposits could be potentially weak and compressible under new loads. Hazards associated with compaction of soils can be successfully mitigated using proper engineering and construction techniques.

SUBSIDENCE

Monitoring of subsidence in Yolo has been occurring since 1999 on a regional level. The monitoring efforts show that the greatest subsidence occurs in the corridor that runs north from Davis, through Woodland, north to Zamora and through to the northeast corner of the county. The subsidence does not appear to be strictly uniform, a characteristic of subsidence, but rather a result of several factors. Subsidence is likely a result of the groundwater pumping, water usage, and other related issues, but additional regional studies are needed over an extended period of time to better understand the subsidence. Subsidence is present throughout the City of Davis including the project site, albeit at a low level.

CONCLUSION

During the geotechnical evaluation of the project site, Engeo (2014) concluded that the project site was has a low potential for liquefaction, lateral spreading, and landslides. However, given that fill was encountered at the site, and the lack of information on the compaction and placement history of the fill, Mitigation Measure 3.6-3 below would be required. Overall, it was determined that the project site was suitable for development, and with implementation of the following mitigation measure, the proposed project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

***Mitigation Measure 3.6-3**: Prior to final design approval and issuance of building permits for each phase of the project, the project applicant shall submit to the City of Davis Building Inspection Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall include the recommendations in the report entitled Preliminary Geotechnical Assessment, Davis Innovation Center, dated October 20, 2014 unless it is determined in the design-level report that one or more recommendations need to be revised. The design-level report shall address, at a minimum, the following:*

- *Compaction specifications and subgrade preparation for onsite soils;*
- *Structural foundations;*
- *Grading practices; and*
- *Expansive/unstable soils, including fill.*

The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the Davis Public Works Department prior to issuance of any building permits.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.6-3 would ensure that onsite fill soils are properly compacted and comply with the applicable safety requirements established by the CBC to reduce risks associated with unstable soils. Implementation of this mitigation measure would reduce this potential impact to a ***less than significant*** level.

Impact 3.6-4: The proposed project would be located on expansive soil creating substantial risks to life or property (Less than Significant)

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

According to the *Preliminary Geotechnical Assessment* (ENGEO, 2014), based on a geologic review and review of limited subsurface data, expansive soil may be encountered in the project site. In general, surface soil appeared to be silty clay with moderate to high plasticity. It is noted that the conclusions made in the *Preliminary Geotechnical Assessment* (ENGEO, 2014) are solely professional opinions and are valid for a period of no more than two years from the date of report issuance (October 20, 2014).

Implementation of Mitigation Measures 3.6-3 would reduce risk from expansive soils by requiring submittal of a design-level geotechnical engineering report. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

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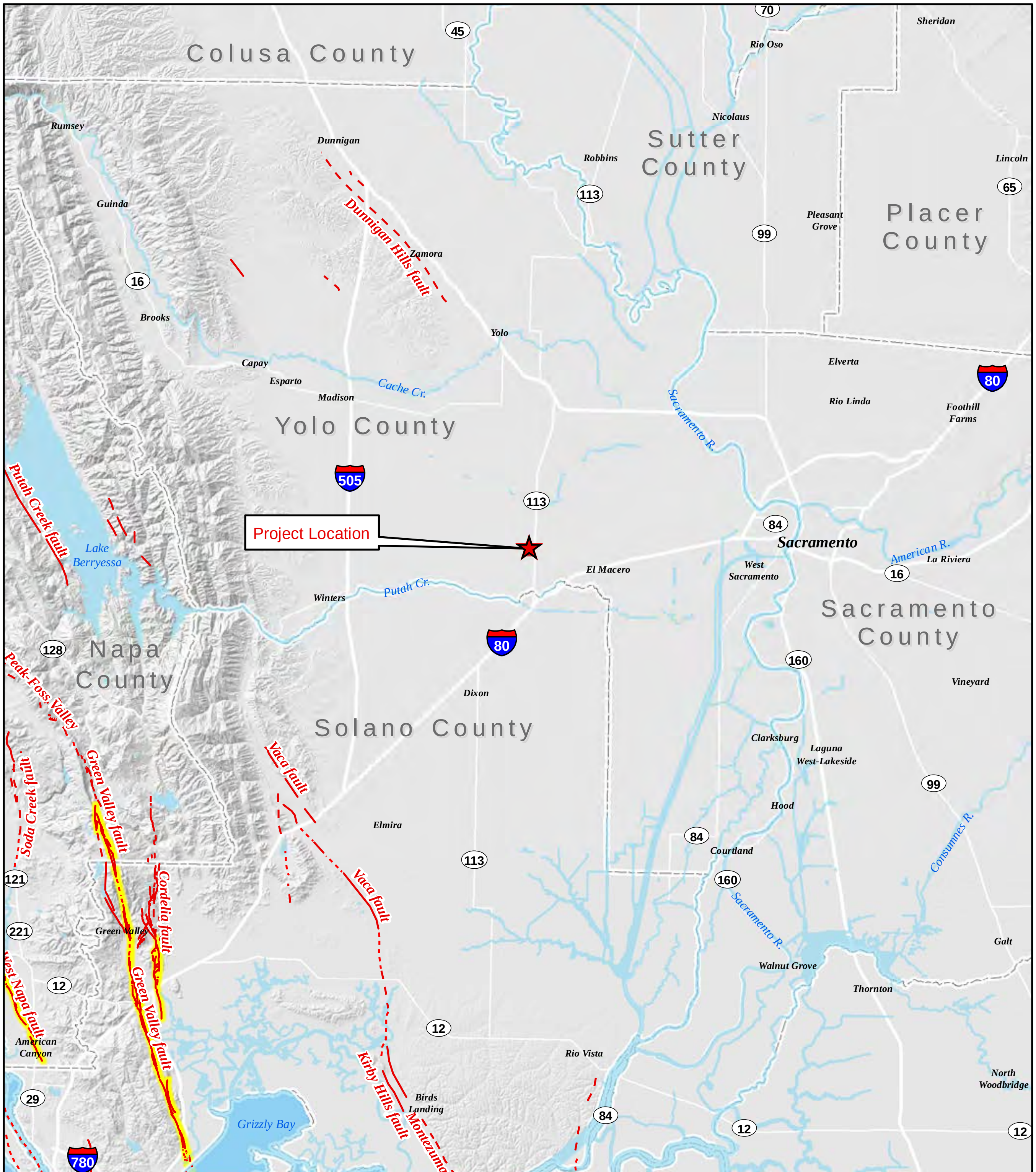

Legend

Quaternary Faults

- Well-constrained
- Moderately-constrained
- Inferred
- Alquist-Priolo Fault Zones

N

0 2½ 5

Miles

1:500,000

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.6-1. Known Faults in Project Area

Data sources: US Geologic Survey; CalAtlas. Map date: March 27, 2017.

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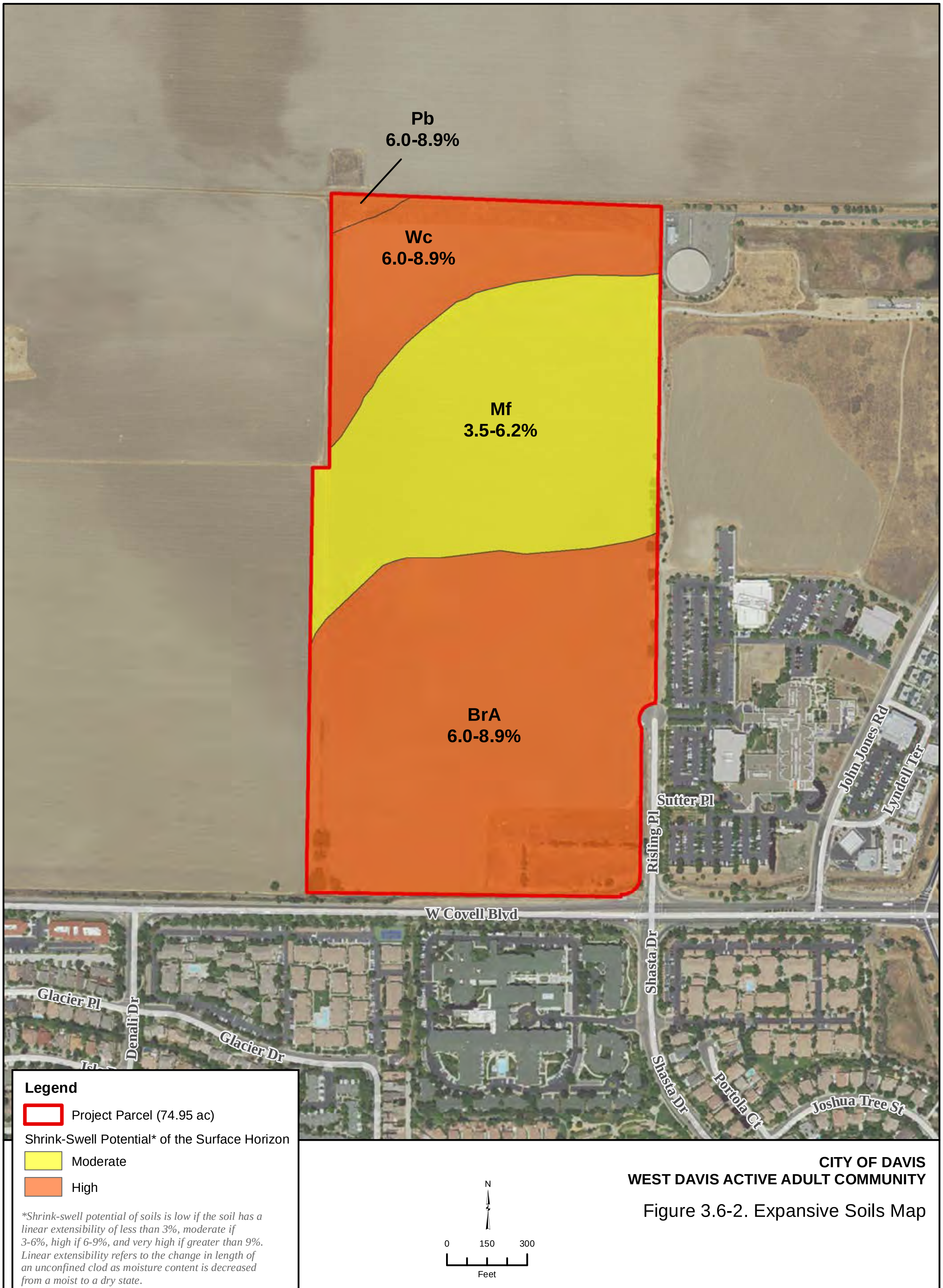

Source: NRCS Web Soil Survey; Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: March 31, 2017.

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Figure 3.6-2. Expansive Soils Map

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Greenhouse Gases, Climate Change, and Energy 3.7

This section discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from implementation of the proposed project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section also provides background discussion on energy use of the proposed project. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis.

The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the proposed project's consistency with local, regional, statewide, and federal climate change/energy conservation planning efforts and discusses the context of these planning efforts as they relate to the proposed project. Disclosures of the project's estimated energy usage and greenhouse gas emissions are provided.

Emissions of GHGs have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

Comments during the public review period and scoping meeting for the Notice of Preparation regarding this topic were provided from Patrick S. Blacklock (April 18, 2017).

3.7.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Air Resources Board, 2017b).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 440 million gross metric tons of carbon dioxide equivalents (MMTCO2e) in 2015 (California Air Resources Board, 2017b). By 2020, California is projected to produce 509 $MMTCO_2e$ per year (California Air Resources Board, 2014).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for 39% of total GHG emissions in the state. This category was followed by the industrial sector (23%), the electricity generation sector (including both in-state and out of-state sources) (29%) and the agriculture sector (8%), the residential sector (6%), and the commercial sector (5%) (California Air Resources Board, 2017b).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (Cal EPA 2006). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (Cal EPA 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (Cal EPA 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

PUBLIC HEALTH

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

WATER RESOURCES

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

AGRICULTURE

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

FORESTS AND LANDSCAPES

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy is California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable source of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 50 percent by 2030.

Overall, in 2015, California's per capita energy usage was ranked 49th in the nation (U.S. EIA, 2017). Additionally, California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Other fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012a). In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012a). The percentage of renewable resources as a proportion of California's overall energy portfolio is increasing over time, as directed the State's Renewable Portfolio Standard (RPS).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission, 2012b). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010. The Sacramento Area Council of Governments (SACOG) region consumed 18,398 GWh in 2010 (SACOG MTP/SCS 2035 Draft EIR, 2011) and 17,824 GWh in 2016 (CEC, 2016), roughly 6.7 percent of the state total. The SACOG region includes the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba as well as the 22 cities within these six counties.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012b).

Natural Gas

In 2010, the SACOG region consumed 529.5 million therms of natural gas. Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as PG&E, then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012b). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012b). PG&E is the largest publicly-owned utility in California and provides natural gas for residential, industrial, and agency consumers within the SACOG area, including the City of Davis.

3.7.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: National ambient air quality standards (NAAQS) for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which will take effect October 1, 2012.

U.S. Federal Climate Change Policy

The U.S. EPA published the latest version of the *Climate Change Indicators* report in 2016, in collaboration with more than 40 government agencies, academic institutions, and other organizations, to compile a key set of indicators related to the causes and effects of climate change. The U.S. EPA also currently administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

STATE

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California’s existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050. EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

EO S-13-08

EO S-13-08 was issued on November 14, 2008. The EO is intended to hasten California's response to the impacts of global climate change, particularly sea level rise, and directs state agencies to take specified actions to assess and plan for such impacts, including requesting the National Academy of Sciences to prepare a Sea Level Rise Assessment Report, directing the Business, Transportation, and Housing Agency to assess the vulnerability of the State's transportation systems to sea level rise, and requiring the Office of Planning and Research and the Natural Resources Agency to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required State agencies to develop adaptation strategies to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. The adaption strategies report summarizes key climate change impacts to the State for the following areas: public health; ocean and coastal resources; water supply and flood protection; agriculture; forestry; biodiversity and habitat; and transportation and energy infrastructure. The report recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Assembly Bill 32 - Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by Assembly Bill (AB) 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

Senate Bill 32

An update to Assembly Bill 32 was passed in August 2016, which extends the state's targets for reducing greenhouse gases from 2020 to 2030. Under Senate Bill (SB) 32, the state would reduce its greenhouse gas emissions to 40 percent below 1990 levels by 2030.

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97

Senate Bill (SB) 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

SB 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

The SACOG Board, which is the local metropolitan planning organization that covers the six-county area in the Sacramento region, including the City of Davis, adopted the 2012 MTP/SCS in April 2012. An update to the 2012 MTP/SCS (the "2016" MTP/SCS), with a focus on implementation of the goals established in the 2012 MTP/SCS, was adopted by the SACOG Board in February 2016. A program-level EIR addressing the environmental impacts of the 2016 MTP/SCS was also prepared and certified.

EO B-30-15

On April 29, 2015, Governor Jerry Brown issued EO B-30-15, which establishes a State GHG reduction target of 40 percent below 1990 levels by 2030. The new emission reduction target provides for a mid-term goal that would help the State to continue on course from reducing GHG emissions to 1990 levels by 2020 (per AB 32) to the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050 (per EO S-03-05). This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions. EO B-30-15 also addresses the need for climate adaptation and directs State government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the State climate adaptation strategy, to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by climate change;
- Factor climate change into State agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

CEQA Guidelines Appendix F

In order to ensure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy.

LOCAL

Sacramento Area Local Council of Governments

Pursuant to SB 375, SACOG was tasked by ARB to achieve a 7 percent per capita reduction in passenger-vehicle generated transportation emissions by 2020 and a 16 percent per capita reduction by 2035 from 2005, which ARB confirmed the region would achieve by implementing its Sustainable Communities Strategy. SACOG's 2012-2035 MTP/SCS projects (as identified in the 2012 MTP/SCS) are estimated to exceed ARB's targets with anticipated per capita reductions of 10 percent by 2020 and 16 percent by 2035 from 2005 levels [23.0 pounds (lb) CO_2 per capita per day].

City of Davis General Plan

The Energy Element of the City's General Plan (amended through 2007) contains goals, policies, and actions that pertain to energy use. The key goal and policies that are applicable to the proposed project include the following:

ENERGY

GOAL ENERGY 1. Reduce per capita energy consumption in Davis.

> **Policy ENERGY 1.3** Promote the development and use of advanced energy technology and building materials in Davis.

> **Policy ENERGY 1.5** Encourage the development of energy-efficient subdivisions and buildings.

Davis Climate Action and Adaptation Plan

The Davis Climate Action and Adaption Plan (D-CAAP), is designed to place the community on a path to achieve the greenhouse gas emission reduction targets adopted by the City Council in November 2008. The targets were based on a range that uses the State of California targets as a minimum goal and deeper reductions as the desired outcome. The City adopted this range in recognition that emission reductions are not precise and that many scientists believe that a reduction of 80 percent below 1990 levels by 2050 may not be adequate. The City's GHG reduction targets for community and City operations are shown in Table 3.7-1 below.

TABLE 3.7-1: DAVIS GHG REDUCTION TARGETS: COMMUNITY AND CITY OPERATIONS

YEAR	*TARGET RANGE**		*NOTES*
	STATE	*DAVIS***	
2010	2000 levels	1990 levels	Minimum: State target Desired: Provides baseline for subsequent average annual reductions
2012	1998 levels	7% below 1990 levels	Minimum: State does not establish a target for this year; linear interpolation from 2010 target. Desired: Consistent with Kyoto- Mayors Climate Protection Agreement Pledge- City of Davis Reso. 2006.
2015	1995 levels	15% below 1990 levels	Minimum: State does not establish a target for this year; linear interpolation from 2010 target. Desired: Consistent with initial ICLEI modeling conducted by the City.
2015 to 2020	Average annual reduction	Avg. of 2.6% reduction/yr to achieve 80% below 1990 levels by 2040	Minimum: State does not establish a target for these years. Desired: Average reduction encourages monitoring of progress and some flexibility in implementation.
2020	1990 levels	28% below 1990 levels	Minimum: State target Desired: Average reduction encourages monitoring of progress and some flexibility in implementation.
2030	40% below 1990 levels	Avg. of 2.6% reduction/yr to achieve 80% below 1990 levels by 2040	Minimum: State target Desired: Reduction level adopted by the state based on climate stabilization levels of 3-5.5 degree increase in temp. Average reduction encourages monitoring of progress and some flexibility in implementation.
2040	No formal target, but must reduce an average of 2.66% per year to achieve 80% below 1990 levels by 2050	Avg. of 2.6% reduction/yr to achieve 80% below 1990 levels by 2040	Minimum: State does not establish a target for these years. Desired: Reduction level adopted by the state based on climate stabilization levels of 3-5.5 degree increase in temp. Average reduction encourages monitoring of progress and some flexibility in implementation.
2050	80% below 1990 levels	Carbon neutral	Minimum: State target. Reduction level adopted by the state based on climate stabilization levels of 3.5.5 degree increase in temp. Average reduction encourages monitoring of progress and flexibility in implementation. Desired: Combination of actions at the local, regional, national, and international levels and carbon offsets. Similar target set by the UC system, City of Berkeley, and Norway.

*NOTE: * IT IS ANTICIPATED THAT DAVIS WILL ACHIEVE REDUCTIONS WITHIN THE RANGE OF THE STATE TARGETS (MINIMUM) AND LOCAL TARGETS (DESIRED)*
*** DUE TO RESIDENCY TIME OF GHG GASES IN THE ATMOSPHERE, EARLY GHG REDUCTION IS GENERALLY MORE BENEFICIAL FOR MITIGATION OF THE MOST SEVERE IMPACTS OF CLIMATE CHANGE.*

The D-CAAP responds to the challenge of these ambitious goals by setting out a framework for actions that Davis will take to reduce local GHG emissions and contribute to the effort to achieve a stable climate.

The D-CAAP preparation was guided by a community based public input process executed by the Davis Climate Action Team, the Natural Resources Commission, and staff. Based on community input, analysis of best practices adopted by other communities, and contributions from subject matter experts, the plan utilizes a systems-based approach to address local GHG emissions. The plan identifies objectives and actions that are designed to reverse local GHG emission growth and establish a foundation for deep, long-term reductions beyond 2015. The plan includes objectives and actions in nine sectors:

1. Mobility
2. Energy
3. Land use and buildings
4. Consumption and waste
5. Food and agriculture
6. Community engagement
7. Government operations
8. Advocacy
9. Climate change preparation (adaptation)

Adaptive management principles are integrated into the plan to guide action assessment and plan updates.

Davis GHG Thresholds and Standards for New Residential Development

In 2009 the City of Davis adopted a resolution establishing greenhouse gas emission thresholds, standards, and mitigation guidelines for new residential development projects. These thresholds and standards are used by the City to determine a project's GHG emissions impacts, and for negotiating development agreements.

The standards are designed to achieve critical long-term GHG reductions while maintaining the economic viability of new residential development. The general objective is to offer clear standards based on the best available information and allow flexibility in how those standards are met. To this end, the framework establishes multiple paths for meeting the overall requirements and includes suggested mitigation measures to help guide the development community's challenging work of achieving meaningful GHG reductions. The general rationale behind the standards is that housing built today will be here beyond 2050; the target year for when society will need to be effectively carbon neutral to minimize the effects of global warming.

The standards for new residential development vary by the number of units in the project. Projects with more than 26 units are required to reduce GHG emissions to 1990 levels, as shown in Table 3.7-2.

TABLE 3.7-2: DAVIS GHG REDUCTION THRESHOLDS: NEW RESIDENTIAL PROJECTS

NEW RESIDENTIAL UNITS	*STANDARD*	*MITIGATION*
Up to 12 units (less than 5% of total units in given year)	De minimis	No direct mitigation required – required to meet green building ordinance
13 to 25 units (up to 10% of total units in given year)	Reduce to 1990 levels (2.4 Metric Tons of CO_2e reduction per unit)	In lieu fee option, LEED ND Gold standard or Individualized program
Greater than 26 units (greater than 10% of total units in given year)	Reduce to 1990 levels (2.4 Metric Tons of CO_2e reduction per unit)	LEED ND Gold standard or Individualized program

SOURCE: CITY OF DAVIS, 2009

The general GHG emissions mitigation for new residential development projects is a phased approach that provides meaningful GHG reductions and rewards creative design that takes advantage of existing community form. The general standard includes two paths: the first is a package approach that the City would recognize as sufficient to satisfy GHG emission standards. The second would be a project specific calculation of GHG emissions and customized mitigation program to reduce project GHG emissions to target year levels. For projects of 26 units or more, the projects may achieve the reduction through meeting the LEED ND Gold standard or through developing an individualized program.

Projects may receive credit for GHG reductions based on project density and proximity to transit, as shown in Table 3.7-3.

TABLE 3.7-3: NEW RESIDENTIAL PROJECTS – GHG REDUCTIONS CREDIT CALCULATION

FACTOR	*GHG CREDIT*
Overall Project Density (General Plan density) – incorporates proximity to employment opportunities	
High	5%
Medium	2%
Low	No credit
Proximity to Transit	
Less than ¼ mile	5%
¼ mile to ½ mile	2%
Over ½ mile to ¾ mile	1%
Over ¾ mile	No credit

Green Building Standards

As of January 1, 2011, the City of Davis repealed its local Green Building Ordinance (previously Article 8.2 of the Davis Municipal Code) and replaced it with the 2010 California Green Building Standards Code (CCR, Title 24, Part11), including mandatory compliance with Tier 1 standards. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design

2. Energy efficiency
3. Water efficiency and conservation
4. Material conservation and resource efficiency
5. Environmental quality

On January 1, 2017, the 2016 California Green Building Standards Code went into effect.

City of Davis Municipal Code

Section 8.01.090 of the City of Davis Municipal Code requires mandatory compliance with Tier 1 standards of the CALGreen Code, which would otherwise be voluntary under the California Buildings Standards Code. Additionally, on December 4, 2002, the City Council adopted the Tree Ordinance, Chapter 27 of the Municipal Code, to ensure that the community forest would be prudently protected and managed so as to ensure these multiple civic benefits.

3.7.3 IMPACTS AND MITIGATION MEASURES

GHG THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

Analysis Approach

The California Office of Planning and Research (OPR) recommends that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with construction activities, stationary sources, vehicular traffic, and energy consumption: to determine whether the impacts have the potential to result in a significant project or cumulative environmental impact; and, where feasible mitigation is available, to mitigate any project or cumulative impact determined to be potentially significant. More recently, OPR prepared amendments to the State CEQA Guidelines, pursuant to SB 97 (Statutes of 2007) for adoption by the California Natural Resources Agency. The amendments added several provisions reinforcing the requirements to assess a project's GHG emissions as a contribution to the cumulative impact of climate change. The amendments went into effect on March 18, 2010.

Specifically, CEQA Guidelines Section 15064.4, as amended March 18, 2010, states:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

> *(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

GREENHOUSE GASES THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

In order to determine whether or not the proposed project would generate GHG emissions that may have a significant impact on the environment during the proposed project's operational phase, this EIR relies on the project's compliance with the City's established and adopted greenhouse gas emission thresholds, standards, and mitigation guidelines for new residential development projects. These thresholds and standards are used by the City to determine a project's GHG emissions impacts during the project's operational phase.

For emissions generated during the construction phase of the proposed project, this EIR relies on the project's compliance with the Yolo-Solano Air Quality Management District (YSAQMD) threshold for construction emissions (1,100 MT CO_2e/year). CalEEMod (v.2016.3.2) was utilized to calculate construction GHG emissions. For the construction phase of the proposed project, only CO_2, CH_4, and N_2O emissions were considered. Other GHGs were considered to be negligible.

City of Davis Residential GHG Emissions Budget Threshold

The City of Davis has established a residential GHG emissions budget threshold. Baseline and 1990 target GHG emission levels were based on the April 21, 2009 Staff Report on Greenhouse Gas Emission Thresholds and Standards for New Residential Development. To achieve 1990 levels of GHG emissions in 2020, each residential unit is required to reduce from a baseline of 5.5 MT CO_2 to 3.1 MT CO_2e (a 2.4 MT or 44% reduction per unit). At 560 residential units, a reduction of 1,344.0 MT CO_2e (following City of Davis methodology) is required to meet this threshold.

In order to determine whether or not the proposed project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs, the proposed project is analyzed for consistency with the City's D-CAAP, which is implemented through the City's adopted greenhouse gas emission thresholds, standards, and mitigation guidelines, as described above. The D-CAAP was developed by the City in order for future development projects and City actions to be consistent with – or better than - the statewide GHG reductions goals outlined in AB 32. Consistency with the D-CAAP would also ensure consistency with EO B-30-15 and EO S-03-05, which set State-wide GHG reduction targets for future years 2030 and 2050, respectively. If the project would generate GHG emissions below the residential thresholds identified above, then the project would be consistent with the D-CAAP.

Methodology

Greenhouse gases attributable to the construction phase of the proposed project would be generated from two primary sources: 1) emissions from off-road construction vehicles used to develop the proposed project and 2) emissions from worker and hauler vehicle trips and vehicle miles travelled generated during construction activities. CalEEMod (v.2016.3.2) was used to estimate construction GHG emissions.

Greenhouse gases attributable to the operational phase of the proposed project would be generated from two primary sources: 1) indirect energy (e.g. electricity and natural gas) usage from the proposed project and 2) emissions from vehicle trips and vehicle miles travelled generated by the proposed project.

For proposed project operational emissions, this EIR includes a quantitative assessment of the indirect energy usage of the proposed project, and compares those emissions levels to 1990 emissions levels, as described above. If the project is shown to meet the 1990 emissions threshold(s) listed above, then the project would have a less than significant impact with regard to operational GHG emissions.

ENERGY CONSERVATION THRESHOLDS OF SIGNIFICANCE

Additionally, per Appendix F of the State CEQA Guidelines, the proposed project would result in a significant impact on energy use if it would:

- Result in significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal;

- Result in significant adverse impacts on local and regional energy supplies and on requirements for additional capacity;
- Result in significant adverse impacts on peak and base period demands for electricity and other forms of energy;
- Fail to comply with existing energy standards;
- Result in significant adverse impacts on energy resources;
- Result in significant adverse impacts related to transportation energy use requirements of the project and use of transportation alternatives; or
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to energy conservation.

In order to determine whether or not the proposed project would result in a significant impact on energy use, this EIR includes an analysis of proposed project energy use, as provided under *Impacts and Mitigation Measures*, below.

GHG IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: The proposed project may generate construction-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant)

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction of the land uses on the project site is expected to occur over several years. Annual construction emissions are summarized in Table 3.7-4, in units of metric tons per year (MT/year).

TABLE 3.7-4: PROJECT CONSTRUCTION-RELATED GHG EMISSIONS (MT/YEAR) (UNMITIGATED SCENARIO)

YEAR	BIO- CO_2	NBIO-CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
2020	0.000	560.1389	560.1389	0.1150	0.0000	563.0149
2021	0.000	860.5132	860.5132	0.0919	0.0000	862.8115
2022	0.000	907.7628	907.7628	0.0922	0.0000	910.0671
2023	0.000	504.0380	504.0380	0.0611	0.0000	505.5648
Maximum	**0.000**	**907.7628**	**907.7628**	**0.1150**	**0.0000**	**910.0671**

NOTE: (A) NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. (B) MAXIMUM VALUE.

SOURCE: CALEEMOD (V.2016.3.2)

The GHG emissions are the greatest during 2021 and 2022 because that is when the majority of building construction is expected to take place. Refer Chapter 3.3, "Air Quality," for additional details on the construction schedule. Refer to Appendix B for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs. As shown in Table 3.7-4, annual GHG emissions from project construction would range from a low of approximately 563 MT CO_2e to a high of 910 MT CO_2e over an estimated 3½-year period.

YSAQMD recommends using 1,100 MT CO_2e per year to analyze construction-related GHG emissions. Peak-year construction-generated GHG emissions would not exceed YSAQMD's recommended GHG emissions threshold of 1,100 MT CO_2e for construction of the proposed project, as shown in Table 3.7-4. Therefore, this is a ***less than significant*** impact relative to this topic.

Impact 3.7-2: The proposed project may generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

In order to determine if the proposed project would generate operational GHGs that may have a significant effect on the environment, the City of Davis has relied on the proposed project's consistency with previously adopted plans and programs aimed at reducing GHG levels both locally and regionally.

RESIDENTIAL GHG EMISSIONS ANALYSIS

As described under the Thresholds of Significance above, to achieve 1990 levels of GHG emissions, each residential unit is required to reduce from a baseline of 5.5 MT CO_2e to 3.1 MT CO_2e (a 2.4 MT or 44% reduction per unit). At 560 residential units, a reduction of 1,344.0 MT CO_2e is required.

Table 3.7-5 shows the base level of GHG emissions that would be generated from each residential unit, prior to the implementation of any mitigation measures to reduce GHG emissions, the 1990 per unit targets for GHG emissions (the threshold of significance per unit), and provides the carbon reduction (GHG emissions reduction) required for each residential unit in order to comply with the City's adopted residential unit standard.

TABLE 3.7-5: BASE EMISSIONS, 1990 EMISSIONS TARGETS, AND CARBON REDUCTIONS REQUIRED

	METRIC TONS/UNIT	*# OF UNITS*	*CO_2 (METRIC TONS)*	*CO_2E (LBS)*
Baseline	5.5	560	3,080.0	6,790,230
Target 1990	3.1	560	1,736.0	3,827,220
Carbon Reduction Required	2.4	560	1,344.0	2,963,009

SOURCE: CITY OF DAVIS STAFF REPORT ON GREENHOUSE GAS EMISSION THRESHOLDS AND STANDARDS FOR NEW RESIDENTIAL DEVELOPMENT (APRIL 21, 2009).

As described in the Davis GHG Thresholds and Standards for New Residential Development, projects may receive credit for GHG reductions based on project density and proximity to transit, as shown in Table 3.7-6. Table 3.7-6 shows the credits that the project would receive towards meeting the GHG reduction requirements, based on the project density and proximity to transit.

TABLE 3.7-6: GHG CREDITS BASED ON DENSITY AND PROXIMITY TO TRANSIT

		% REDUCTION	UNIT REDUCTION	# OF UNITS	CO_2 (METRIC TONS)	CO_2E (LBS)
Project Density	High	5%	--	--	--	--
	Medium	2%	0.11	560	(61.6)	(135,804)
Proximity to Transit	Less than ¼ mile	5%	0.275	560	(154.0)	(339,511)
	¼ to ½ mile	2%	--	--	--	--
	½ to ¾ mile	1%	--	--	--	--
Total Credits					(215.6)	(475,316)

SOURCE: CITY OF DAVIS STAFF REPORT ON GREENHOUSE GAS EMISSION THRESHOLDS AND STANDARDS FOR NEW RESIDENTIAL DEVELOPMENT (APRIL 21, 2009)

As shown in Table 3.7-5, the project must demonstrate a total reduction of 1,344.0 metric tons of CO_2e to meet the 1990 threshold of significance. As shown in Table 3.7-6, the project receives a credit of 215.6 metric tons of CO_2e towards this reduction requirement, as a result of the project's density and proximity to transit. Therefore, in order to comply with the City's residential GHG emissions levels, the project must demonstrate a total reduction of 1,128.4 metric tons of CO_2e for the 560 proposed residential units (since 1,344.0 - 215.6 = 1,128.4). Implementation of Mitigation Measure 3.7-1 would provide a reduction at least equal to this amount, thereby reducing this impact to a ***less than significant*** level.

Table 3.7-7 provides an analysis of the mitigation measure credits that would reduce GHG emissions levels from the residential component of the proposed project to a level that is below the 1990 GHG emissions threshold used in this analysis. This reflects the total reduction that would be expected to occur due to implementation of Mitigation Measure 3.7-1.

As shown in the table below, the implementation of the GHG mitigation measure credits would reduce residential GHG emissions throughout the project by approximately 1,631.7 metric tons of CO_2e, which exceeds the required reduction for the project of 1,128.4 metric tons of CO_2e (by 503.3 metric tons of CO_2e).

TABLE 3.7-7: PRELIMINARY GHG MITIGATION MEASURES

MITIGATION MEASURES	% OF REDUCTION TOTAL	METRIC TONS PER UNIT	# OF UNITS	CO_2 (METRIC TONS)	LB CO_2E
15% Better than 2016 Title 24	100%	2.91	560	(1,631.7)	(3,597,206)
ENERGY STAR Appliances	-	-	-	-	-
Solar PV Installation (All Residential Rooftops)	-	-	-	-	-
Total Reduction Due to Mitigation[1]				**(1,631.7)**	**(3,597,206)**

NOTES:

1: THERE IS NO GUARANTEE THAT ESTIMATED ENERGY USAGE OR ESTIMATED SAVINGS PRESENTED HERE WILL OCCUR. ENERGY USE WILL VARY BASED ON FINAL DESIGN, OCCUPANCY, AND OPERATING CONDITIONS.

SOURCES: CALIFORNIA ENERGY COMMISSION, 2012A; CALIFORNIA ENERGY COMMISSION, 2015.

The assumptions used in the GHG reduction calculations shown in Table 3.7-7 are described below.

RESIDENTIAL UNIT BUILDING PERFORMANCE

The proposed residential units would be built to a level that is 15% better than the 2016 Title 24 California Building Energy Code. Savings are relative to the 2008 Title 24 Energy Code baseline and assume that the 2016 Title 24 code provides energy savings equivalent to 37.68% less energy than the 2008 Title 24 code. This was calculated based on the assumption that the 2013 Title 24 code is 25% more energy efficient than the 2008 Title 24 code[1], and that the 2016 Title 24 code is 16.9% more energy efficient than the 2013 Title 24 code[2]. In addition, compliance with Tier 1 standards of the CALGreen Code would provide an additional increase in energy efficiency of about 15% beyond the State-mandated 2016 Title 24 Code. This provides an aggregate 47.02% reduction in energy use as compared to the 2008 Title 24 Energy Code baseline.

ENERGY STAR APPLIANCES

The proposed residential units would also be required to install ENERGY STAR-compliant refrigerators and dishwashers. However, it not currently known what proportion of project energy usage would be reduced by Energy Star appliances. Therefore, the potential reduction in energy usage from this mitigation has not been quantified (for the sake of a conservative analysis).

ON-SITE SOLAR PV

The proposed project would also install on-site solar PV on residential rooftops. However, since it not currently known what proportion of project energy usage would be offset by on-site solar PV, the potential reduction in energy usage from this mitigation is also not quantified (for the sake of a conservative analysis).

MITIGATION MEASURE(S)

Mitigation Measure 3.7-1: *Prior to issuance of building permits, the applicant shall ensure that all residential units are designed such that they to achieve a minimum of 15% greater energy efficiency than the baseline 2016 Title-24 Energy Efficiency requirements (compliant with Tier 1 of the 2016 CalGreen Code).*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.7-1 would require implementation of GHG reduction measures in order to reduce GHG emissions. This mitigation measure would reduce potential impacts related to generation of GHGs to a ***less than significant*** level.

[1] According to the following California Energy Commission website: http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2013_Building_Energy_Efficiency_Standards_FAQ.pdf

[2] According to the following California Energy Commission website: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf

Impact 3.7-3: The proposed project may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant)

CONSISTENCY WITH CITY OF DAVIS GHG REDUCTION PLANS

The City's adopted GHG standard for new residential projects of 26 units or more is to reduce GHG emissions to 1990 levels (2.4 Metric Tons of CO_2e reduction per unit). As previously described under Impact 3.7-2, at 560 residential units, a reduction of 1,344.0 MT CO_2e in residential operational GHG emissions is required for the proposed project. With implementation of Mitigation Measure 3.7-1, which would ensure that the proposed project residences would be 15% more energy efficient than the most recent (2016) version of the Title 24 Energy Code (via compliance with CALGreen Tier 1), the proposed project would be in compliance with the applicable City of Davis GHG standard for new residential projects of 26 units or more.

The City's adopted GHG standard for new residential projects of 26 units or more is also in accordance with the Davis Climate Action and Adaption Plan (D-CAAP), adopted by the City Council in November 2008. The targets contained in the D-CAAP were also based on a range that uses the State of California targets as a minimum goal and deeper reductions as the desired outcome. The City adopted this range in recognition that emission reductions are not precise and that many scientists believe that a reduction of 80 percent below 1990 levels by 2050 may not be adequate. Since the proposed project achieves the City's GHG standard for new residential projects of 26 units or more, the proposed project would be consistent with the applicable targets contained in the D-CAAP.

The proposed project would not conflict with the City's adopted standards for the reduction of GHG emissions, and would not conflict with plans or programs adopted by the City of Davis to reduce community-wide GHG levels. This is a ***less than significant*** impact, following implementation of Mitigation Measure 3.7-1.

CONSISTENCY WITH STATE OF CALIFORNIA GHG REDUCTION TARGETS

The State of California has a target to reach 1990 GHG levels by 2020 (consistent with AB 32), 40 percent below 1990 levels by 2030 (consistent with EO B-30-15), and 80 percent below 1990 levels by 2050 (consistent with EO S-03-05). The Davis CAAP considers consistency with the State reduction goals as the "minimum" reduction target for the community, but sets more stringent "desired" reduction targets than the State. For example, the Davis CAAP has a minimum goal to reach 1990 GHG levels by the year 2020, consistent with AB 32, but had developed a desired goal to reach the same target by 2010. In addition, the D-CAAP includes a desired 2020 target of an additional 28 percent reduction below 1990 levels, a desired 2040 target of 80 percent below 1990 levels (ten years earlier than the State's goal), and a desired 2050 target of carbon neutral.

Since the proposed project is consistent with the applicable targets contained with the Davis D-CAAP, and since the D-CAAP is consistent with the State of California reduction goals, the proposed project would also be consistent with State GHG reduction goals, including AB 32, EO B-30-15, and

EO S-03-05. This is a ***less than significant*** impact, following implementation of Mitigation Measure 3.7-1.

CONSISTENCY WITH THE YSAQMD CONSTRUCTION GHG THRESHOLD

As previously described, the City of Davis has decided to utilize the YSAQMD threshold of 1,100 MT CO_2e/year for construction-related emissions. The proposed project would not exceed this threshold, as described under Impact 3.7-1. Therefore, the proposed project would have a ***less than significant*** impact relative to this threshold.

CONSISTENCY WITH THE SACOG MTP/SCS

The project site is outside of the City limits, and not part of the SCS growth projections. The proposed project would therefore not conflict with the MTP/SCS. The proposed project would have a ***less than significant*** impact relative to this threshold.

CONCLUSION

The proposed project would reduce residential unit energy use and building energy-related greenhouse gas emissions at least 15% beyond current (Year 2016) Title 24 levels through project design (as described by Mitigation Measure 3.7-1). This would, along with the additional mitigation required as part of Mitigation Measures 3.3-1, allow the proposed project to meet or exceed the adopted Scoping Plan reduction targets.

The City of Davis General Plan provides policy direction and support for natural resource conservation, compact community design and energy efficiency. The City has adopted standards and guidelines to address local, regional and global climate change impacts of future development. Moreover, the proposed project is designed in furtherance of the D-CAAP, as described in greater detail previously in this chapter.

The long-range goals and objectives for sustainability and smart growth initiated by the Davis City Council address land use policy through implementation of mandatory Tier 1 of the 2016 California Green Building Standards Code (CalGreen) and the City's greenhouse gas emissions reduction targets in the D-CAAP. The City of Davis requires new construction to achieve the CalGreen Tier 1 standard, which is equivalent to achieving an increase in energy efficiency of at least 15% beyond the base requirements of the 2016 version of Title 24.

The proposed project is consistent with the D-CAAP, which lays the framework for the City of Davis to achieve its target reduction goals of GHG emissions, and is consistent with the City's Davis GHG Thresholds and Standards for New Residential Development, which shall be demonstrated through the implementation of Mitigation Measure 3.7-1.

As demonstrated in the analysis provided above, the proposed project is consistent with these adopted plans, and would assist the City and the State of California in achieving their adopted GHG reduction targets. The proposed project would also achieve the YSAQMD operational GHG emissions threshold of 1,100 MT CO_2e per year for construction-related emissions. Therefore, there is a ***less than significant*** impact relative to this topic.

Impact 3.7-4: Project implementation may result in the inefficient, wasteful, or unnecessary use of energy resources (Less than Significant)

Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed project is primarily a residential development, with a few commercial/mixed use buildings. The amount of energy used at the project site would directly correlate to the number and size of the residential units, the energy consumption of associated unit appliances, outdoor lighting, and energy use associated with other on-site (e.g. restaurant and health club) buildings and activities. Other major sources of proposed project energy consumption include fuel used by vehicle trips generated during project construction and operation, and fuel used by off-road construction vehicles during construction. The following discussion provides calculated levels of energy use expected for the proposed project, based on commonly used modelling software (i.e. CalEEMod v.2016.3.2 and the California Air Resource Board's EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the proposed project. Therefore, this discussion provides a conservative estimate of proposed project emissions.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the proposed project would be used primarily to power on-site buildings. Total annual unmitigated and mitigated electricity (kWh) and natural gas (kBTU) usage associated with the operation of the proposed project are shown in Tables 3.7-8 and 3.7-9, below (as provided by CalEEMod). The proposed project incorporates feasible mitigation to reduce the proposed project's operational electricity and natural gas consumption.

According to Calico's *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

TABLE 3.7-8: PROJECT OPERATIONAL NATURAL GAS AND ELECTRICITY USAGE (UNMITIGATED SCENARIO)

EMISSIONS[A]	*NATURAL GAS (KBTU/YEAR)*	*ELECTRICITY (KWH/YEAR)*
Apartments Low Rise	1,814,810	674,136
City Park	0	0
Congregate Care (Assisted Living)	292,443	127,694
Health Club	149,120	67,600
High Turnover (Site Down Restaurant)	547,050	156,750
Retirement Community	1,560,730	604,362
Retirement Community	1,718,020	665,267
Single Family Housing	1,989,270	650,171
Total	**8,071,443**	**2,945,980**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING.

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 3.7-9: PROJECT OPERATIONAL NATURAL GAS AND ELECTRICITY USAGE (MITIGATED SCENARIO)

EMISSIONS[A]	*NATURAL GAS (KBTU/YEAR)*	*ELECTRICITY (KWH/YEAR)*
Apartments Low Rise	1,576,220	641,730
City Park	0	0
Congregate Care (Assisted Living)	256,643	121,798
Health Club	124,000	62,041
High Turnover (Site Down Restaurant)	512,760	145,473
Retirement Community	1,355,550	572,557
Retirement Community	1,492,160	630,256
Single Family Housing	1,688,050	621,515
Total	**7,005,383**	**2,795,370**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING.

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Tables 3.7-8 and 3.7-9, project operational energy usage would be reduced with implementation of project components considered mitigation by CalEEMod (note: given the limited mitigation options available in the current version of CalEEMod, the reduction attributable to mitigation represents a conservative analysis). As described under Mitigation Measure 3.3-1 (see Section 3.3 "Air Quality"), the proposed project incorporates feasible mitigation that would reduce the proposed project's energy consumption, as compared to the unmitigated scenario. Mitigation Measure 3.7-1, as provided previously under Impact 3.7-2, would require further mitigation that would reduce proposed project operational electricity and natural gas emissions. These reductions in overall proposed project energy usage also reflect a reduction in the project's energy intensity.

ON-ROAD VEHICLES (OPERATION)

The proposed project would generate vehicle trips during its operational phase. According to the Traffic Study prepared for the proposed project (Fehr & Peers, 2017), the project would generate approximately 3,586 new daily vehicles trips. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the project location and urbanization level parameters De Novo (the EIR consultant) selected within CalEEMod (i.e. "Yolo County" and "Urban", respectively). These values are provided by the individual districts or use a default average for the state, depending on the location of the proposed project (CAPCOA, 2017). Based on default factors provided by CalEEMod, the average distance per trip was conservatively calculated to be approximately 8.1 miles. Therefore, the proposed project would generate at total of approximately 29,118 average daily vehicle miles travelled (Average Daily VMT). Using fleet mix data provide by CalEEMod (v2016.3.2), and Year 2018 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors for operational on-road vehicles of approximately 23.7 MPG for gasoline and 12.6 MPG for diesel vehicles. With this information, De Novo calculated as a conservative estimate that the unmitigated proposed project would generate vehicle trips that would use a total of approximately 1,069 gallons of gasoline and 404 gallons of diesel fuel per day, on average, or 390,032 gallons of gasoline and 147,345 annual gallons of diesel fuel per year.

ON-ROAD VEHICLES (CONSTRUCTION)

The proposed project would also generate on-road vehicle trips during project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and Year 2018 gasoline MPG factors provided by EMFAC2014. For the purposes of simplicity, it was assumed that all vehicles used gasoline as a fuel source (as opposed to diesel fuel or alternative sources). Table 3.7-10, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed project would occur during the building construction phase. See Appendix B for a detailed calculation.

TABLE 3.7-10: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	*# OF DAYS*	*TOTAL DAILY WORKER TRIPS(A)*	*TOTAL DAILY VENDOR TRIPS(A)*	*GALLONS OF GASOLINE FUEL(B)*	*GALLONS OF DIESEL FUEL(B)*
Site Preparation	30	18	-	221	-
Grading	75	20	-	636	-
Building Construction	740	378	66	118,639	50,465
Paving	55	15	-	350	-
Architectural Coating	513	76	-	16,439	-
Total	**N/A**	**N/A**	**N/A**	**136,285**	**50,465**

NOTE: (A) PROVIDED BY CALEEMOD. (B)SEE APPENDIX B FOR FURTHER DETAIL

SOURCE: CALEEMOD (V.2016.3.2); EMFAC2014.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO_2 emissions expected to be generated by the proposed project (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the proposed project would use a total of approximately 25,103 gallons of diesel fuel for off-road construction vehicles (during the site preparation and grading phases of the proposed project). Detailed calculations are provided in Appendix B.

OTHER

Proposed project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately nine individuals one full day per week, or 3,744 hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the proposed project would require the use of approximately 1,842 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

The proposed project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. The proposed project would introduce solar PV onto residential rooftops, which would reduce the need for fossil fuel-based energy (for proposed project buildings), including for electricity.

CONCLUSION

The proposed project would use energy resources for the operation of project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the proposed project, and from off-road construction activities associated with the proposed project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The proposed project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The proposed project would be in compliance with all applicable Federal, State, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33% mix of renewable energy resources by 2020, and 50% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the proposed project (note: as provided under Mitigation Measure 3.7-1, the proposed project would achieve a 15% increase in energy efficiency beyond the 2016 version of the Title 24 Energy code). Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the incorporation of the mitigation measures described previously in this section would further reduce project energy consumption. The proposed project would also be in compliance with the planning documents described previously within this section.

As a result, the proposed project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed project. The proposed project would comply with all existing energy standards, including those established by the City of Davis, as described under Impacts 3.7-1 and 3.7-2, previously, and would not result in significant adverse impacts on energy resources. Furthermore, existing connections exist between the project site and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the proposed project would be linked closely with existing networks that, in large part, are sufficient for most residents of the proposed project and the City of Davis as a whole. The proposed project would also be required to implement Mitigation Measures 3.3-1 and 3.7-1. For these reasons, the proposed project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the *CEQA Guidelines*. This is a ***less than significant*** impact.

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The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials related to the project site and general vicinity, and to analyze the potential for exposure of people to hazards and hazardous materials as the project is built and operated in the future. This section is based in part on the following technical studies and other resources:

- *Preliminary Geotechnical Assessment – Davis Innovation Center* (ENGEO, 2014);
- *Phase I Environmental Site Assessment – Davis Innovation Center* (ENGEO, 2014);
- California Department of Toxic Substances Control. 2017. Envirostar database search (DTSC, 2016). Available online at: http://www.envirostor.dtsc.ca.gov/public/.
- State Water Resources Control Board (GeoTracker) Information System and Geographic Environmental Information Management System (GEIMS) 2017 (SWRCB, 2017). Available at: https://geotracker.waterboards.ca.gov/.
- United States Environmental Protection Agency. 2017. Toxics Release Inventory (TRI) Program (USEPA, 2017). Available at: https://www.epa.gov/toxics-release-inventory-tri-program.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Russ Kanz and Toni Terhaar (April 26, 2017), and Russ Kanz and Toni Terhaar (May 4, 2017). Each of the comments related to this topic are addressed within this section.

3.8.1 ENVIRONMENTAL SETTING

PHYSICAL SETTING

Project Location

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. Approximately 11.53 acres of off-site improvements would also occur within developed and undeveloped areas surrounding the project site (see Figure 2.0-5 in Section 2.0, Project Description). The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, mapped rural residential subdivision lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05. Figures 2.0-1 and 2.0-2 in Section 2.0 show the project's regional location and the project area.

Existing Site Uses

The project site is currently undeveloped and has been previously used for agricultural uses. Existing trees are located along the southwestern and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east north of Covell Boulevard.

Existing Surrounding Uses

As described in Section 2.0, the land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt seven lot rural residential subdivision. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of SR 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

Site Topography

The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL).

Airports

Three airports are located within five miles of the project site: the Medlock Field, the University of California, Davis (UC Davis) University Airport, and the Yolo County Airport

MEDLOCK FIELD AIRPORT

The Medlock Field Airport is located approximately 3.2 miles northeast of the project site. The airport is privately-owned and operated and has been actively used since 1974. The project site is not located within any safety restricted areas associated with this airport.

UNIVERSITY OF CALIFORNIA, DAVIS, UNIVERSITY AIRPORT

The UC Davis University Airport is located approximately 1.9 miles southwest of the project site. The airport is operated as a general aviation airport. The airport offers the sale of aviation fuel and rents hangers, open shades and tie downs for aircraft storage. In addition, two fixed base operators are located at the airport that provide aircraft maintenance, flight instruction, and aircraft rentals. A Comprehensive Land Use Plan (CLUP) has not been prepared for the UC Davis University Airport. The project site is not located within any safety restricted areas associated with this airport.

YOLO COUNTY AIRPORT

The Yolo County Airport is located approximately 4.3 miles west of the project site. The Yolo County Airport is a general aviation airport for public use owned and operated by Yolo County. The airport features a 6,000 foot runway, both full and self-service, hangars, and tie downs. The airport is open seven days a week. As described in SAGOG's ALUCP the project site is not located within the airport influence area.

HAZARDS ASSESSMENT

For the purposes of this EIR, "hazardous material" is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

"Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous waste" is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitibility, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly

contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.

- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

There are countless categories of hazardous materials and hazardous wastes that could be found on any given property based on past uses. Some common examples include agrichemicals (chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop [MCPP], Dinoseb, chlordane, dichloro-diphenyltrichloroethane [DDT], and dichloro-diphenyl-dichloroethylene [DDE]), petroleum based products (oil, gasoline, diesel fuel), a variety of chemicals including paints, cleaners, and solvents, and asbestos-containing or lead-containing materials (e.g., paint, sealants, pipe solder).

Historical Use Information

Historical information was reviewed to develop a history of the previous uses on the proposed project site and surrounding area, in order to evaluate the project site and adjoining properties for evidence of Recognized Environmental Conditions. Standard historical sources reviewed during the preparation of this report included the following, as available:

ENVIRONMENTAL RECORDS

De Novo Planning Group performed a search of local, state, and federal agency databases for the proposed project site and known contaminated sites in the vicinity. No parcels in the project site were found to contain any known contamination.

The EPA Toxic Release Inventory (TRI) does not list data on disposal or other releases of toxic chemicals in the project area (USEPA, 2017). The nearest TRI sites are located in the cities of Woodland, approximately 8.1 miles to the north, and West Sacramento, located approximately 10.7 miles to the east.

The CA Department of Toxic Substances Control (DTSC) maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. There are no sites listed in the database within the project site. See Table 3.8-1 for a complete list of active sites within one mile of the project site.

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The project site does not have any active or planned solid waste facilities listed in the database.

Additionally, in October of 2014, ENGEO conducted a Phase I Environmental Site Assessment for a 208-acre area identified by Assessor's Parcel Numbers (APN) 036-060-005 (39660 and 39668 West Covell), 036-020-018, 017, 016, 015, 014, 013, and 012 (which includes the proposed project site).

None of the records reviewed for the project area indicates that a Recognized Environmental Condition is associated with the project site.

DATABASES

There is a broad list of federal and state database that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List: The National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites is EPA's database of more than 1,200 sites designated or proposed for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. The project site is not listed in this database.

RCRIS System: The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment. The project site is not listed in this database.

CERCLIS Data: Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of CERCLA. CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The project site is not listed in this database.

CORRACTS: Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity. The project site is not listed in this database.

PADS System: PCB Activity Database System (PADS) is an EPA database that identifies generators, transporters, commercial storers, and/or brokers and disposers of polychlorinated biphynels (PCBs) who are required to notify EPA of such activities. The project site is not listed in this database.

Cortese Database: The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (CAL-EPA) and are found in the EPA's GeoTracker database. The project site is not listed in this database.

GeoTracker has replaced past databases, such as the Leaking Underground Storage Tank Information System (LUSTIS) and the Underground Storage Tank (UST) database. Permitted USTs are not located in the project site. The nearest permitted UST is located at the Sutter Davis Hospital, located approximately 350 feet east of the project site.

Hazardous Material Sites

As noted above, the State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to annually update the Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list.

GeoTracker is a geographic information system (GIS) that provides online access to environmental data and is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Searches of the above resources and records identified five active and five inactive hazardous material sites located within one mile of the project site known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. The terms "release" or "occurrence" include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping.

Table 3.8-1 displays the known hazardous material sites located within one mile of the project site with a description of the hazards provided. The open case closest to the project site is located at the Sutter Davis Hospital, approximately 350 feet to the east.

TABLE 3.8-1: GEOTRACKER KNOWN HAZARDOUS MATERIAL RELEASE SITES WITHIN 1 MILE

SITE NAME	*TYPE*	*STATUS*	*ADDRESS*
Anderson Gas & Mini Mart	Permitted UST	Active	1935 Anderson Rd., Davis
Anderson Road Shell #57	Permitted UST	Active	1944 Anderson Rd., Davis
Chevron #9-1420	LUST Cleanup Site	Completed - Case Closed	1935 Anderson Rd., Davis
Circle K Store #2701914	Permitted UST	Active	1930 Lake Blvd., Davis
Circle K Store # 01914	LUST Cleanup Site	Completed - Case Closed	1930 Lake Blvd., Davis
Davis 1 Stop	Permitted UST	Active	2002 Lyndell Terrace, Davis
Davis Texaco	LUST Cleanup Site	Completed - Case Closed	2002 Lyndell Terrace, Davis
Shell SS	LUST Cleanup Site	Completed - Case Closed	1944 Anderson Rd., Davis
Sutter Davis Hospital Inc.	Permitted UST	Active	2000 Sutter Pl., Davis
Westlake Plaza	Cleanup Program Site	Completed - Case Closed	1260 Lake Blvd., Davis

SOURCE: STATE WATER RESOURCES CONTROL BOARD GEOTRACKER (2017).

Other Environmental Records

Environmental Data Resources, Inc. (EDR) performed a search of federal, tribal, state, and local databases regarding the project site and nearby properties. The property is not listed on the Standard Environmental Record sources. Offsite facilities documented by EDR within 1-mile of the Study Area are listed below.

TABLE 3.8-2: OTHER OFFSITE FACILITIES DOCUMENTED BY EDR WITHIN 1-MILE

Facility	*Address*	*Database*
Sutter Davis Hospital	2000 Sutter Pl	UST, EMI, RCRA-SQG, FINDS, HAZNET
Sutter Medical	2020 Sutter Pl Ste 1	HAZNET
Sutter Medical	2030 Sutter Pl Ste 2	HAZNET
Beacon Station	3643 12845 Hwy 33	UST
R. & R. Enterprises	1940 Barry Rd	HIST UST
Not Listed	2002 Lyndell Tr	EDR US Hist Auto Stat
Davis 1 Stop	2002 Lyndell Tr	UST
Davis Texaco	2002 Lyndell Terranc	LUST
Not Listed	2014 Lyndell Ter	EDR US Hist Auto Stat, AST
Not Listed	39748 Sharon Ave	EDR US Hist Cleaners

SOURCE: ENGEO PHASE I ENVIRONMENTAL SITE ASSESSMENT (2014).

Based on the distances to the identified database sites, regional topographic gradient, and the EDR findings, it is unlikely that the above-stated database sites pose an environmental risk to the Study Area.

Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the property had been recorded.

- 1907 Map – A building is mapped in the southeast portion of APN 036-060-005.
- 1915 Map – A structure and access road is mapped near the southeast property corner.
- 1952 Map – Three buildings are mapped in APN 036-060-005. No other buildings are mapped on the property.
- 1953 and 1968 Maps – No significant changes are noted onsite.
- 1975 Map – Offsite Highway 113 and the Covell Boulevard interchange are mapped as newly developed.
- 1981 Map – No significant changes are noted.
- 1992 Map – The Davis City limit line is mapped along the east edge of the property.

Aerial Photographs

Aerial photographs were reviewed for information regarding past conditions and land use at the proposed project site and in the immediate vicinity. Below is a brief summering of the aerial photographs and related site conditions:

- 1957 Photograph – APN 036-060-005 is being used for growing small grain or hay. Two buildings and a small orchard consisting of approximately 50 trees are visible in the southeast corner of the APN 036-060-005.
- 1968-1993 Photographs – A small basin is visible near the northwest corner of APN 036-060-005. The small orchard is no longer visible. The property appears to be used for hay and grazing.
- 1998 Photograph – The western building is no longer visible in the southeast corner of APN 036-060-005. A soil stockpile is visible of the north edge of APN 036-060-005.
- 2005 Google Earth – One main building and a small outbuilding are visible remaining in APN 036-060-005.
- 2006 Google Earth – All buildings have been removed from APN 036-060-005.
- 2010 and 2011 Google Earth/Photographs – The former homestead area in APN 036-060-005 is being used as a parking lot for the adjacent medical center and construction equipment. The parking area appears to have a gravel surface. The gravel was removed and the parking area was abandoned in 2011.

Site Reconnaissance

A reconnaissance of the property was conducted by ENGEO on October 14, 2014. The reconnaissance was performed by Paul Cottingham, Senior Geologist, of ENGEO. The property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The site was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. A summary of findings based on site reconnaissance is provided below:

- Structures. No building structures were observed during the site reconnaissance.
- Hazardous Substances and Petroleum Products in Connection with Identified Uses. No hazardous substances or petroleum products were observed within the property during the site reconnaissance.
- Storage Tanks. No above-ground storage tanks or evidence of existing underground storage tanks was observed during the site reconnaissance.
- Odors. No odors indicative of hazardous materials or petroleum material impacts were noted at the time of the reconnaissance.
- Pools of Potentially Hazardous Liquid. No pools of potentially hazardous liquid were observed within the property at the time of site reconnaissance.
- Drums. No drums were observed on the property at the time of the reconnaissance.
- Polychlorinated Biphenyls (PCBs). No PCB-containing materials, including transformers, were observed within the property during the site reconnaissance.
- Pits, Ponds and Lagoons. No pits, ponds or lagoons were observed within the property at the time of the reconnaissance.
- Stained Soil/Pavement. No stained soil or pavement was observed within the property at the time of the reconnaissance.

- Stressed Vegetation. No signs of stressed vegetation were observed on the property at the time of the reconnaissance.
- Solid Waste/Debris. No disposal of solid waste was observed at the subject property.
- Stockpiles/Fill Material. Stockpiled soil along the north edge of APN 036-060-005 was observed. Based on aerial photos, the stockpile was created between 1993 and 1998.
- Wastewater. No wastewater conveyance systems were observed at the property during the reconnaissance.
- Wells. An older large irrigation well in the southwest corner of APN 036-060-005 was observed. A third well was observed at the east edge of APN 036-060-005. A determination if this well is located onsite or offsite has not been made.
- Septic Systems. No septic systems were found within the property during the site reconnaissance. Former buildings were observed on APN 036-060-005. Septic systems may exist at this location.

The project site was also surveyed by De Novo Planning Group on October 23, 2017. An overflow gravel parking lot is currently located in the southeastern portion of the site, adjacent to Risling Court. The remaining site conditions have not changed since the ENGEO site visit in 2014.

Site Features

Based on the ENGEO review of databases and site reconnaissance, the following present information on features of potential environmental concern that were either contained in the databases or observed on the property. These features were not considered to be RECs, and are briefly discussed below.

- Buildings were located in the southeast portions of APNs 036-060-005 prior to 1907. It is possible that abandoned septic tanks, fuel tanks, and/or wells remain at these locations.
- Irrigation wells currently exist in the southwest portion of APN 036-060-005. At third well is located at the east edge of APN 036-060-005. It has not been determined if this well is located onsite or offsite.
- A soil stockpile was created at the north edge of APN 036-060-005 between 1993 and 1998.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City of Davis is subject to various federal, state, and local regulations. The only roadway and transportation route approved for the transportation of explosives, poisonous inhalation hazards, and radioactive materials in the City of Davis is Interstate 80.

In addition to area roadways, hazardous materials are routinely transported on Union Pacific Railroad lines that exist approximately 1.5 miles east of the project site. The risk of accidents, and more specifically accidents involving hazardous materials, is relatively low. The U.S. Department of Transportation Federal Railroad Administration found the UPRR company train accident rate to be 4.18 train accidents per one million train miles traveled, resulting in a less than 0.001% chance of an accident. Risk of a railroad accident containing hazardous materials is considered much lower, as only an average of eight accidents involving hazardous material spills occur annually in California.

The Union Pacific Railroad Company does implement a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172 Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. The plan includes requirements to enhance the security of transported hazardous materials and ensures proper cleanup procedures in the instance of an accidental release.

3.8.2 REGULATORY SETTING

FEDERAL

The primary federal agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the Environmental Protection Agency (EPA), Department of Labor Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Several laws governing the transport, storage, and use of hazardous materials are governed by these agencies as well as oversight for contaminated sites cleanup. Federal laws and regulations that are applicable to hazards and hazardous materials are presented below.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the Act) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The Act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

STATE

The primary state agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the California Office of Emergency Services (OES), California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), California Department of Transportation (Caltrans), California Highway Patrol (CHP), California Water Quality Control Board, and the California Air Resources Board. Several laws governing the generation, transport, and disposal of hazardous materials are administered by these agencies. State laws and regulations that are applicable to hazards and hazardous materials are presented below.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Code of Regulations Title 22 and Title 26

The California Code of Regulations (CCR) Title 22 provides state regulations for hazardous materials, and CCR Title 26 provides regulation of hazardous materials management. In 1996, Cal/EPA established the "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program) which consolidated the six administrative components of hazardous waste and materials into one program.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to hazards and hazardous materials aspects of the proposed project:

DISASTER PLANNING

Goal HAZ 3. Provide for the safety and protection of citizens from natural and environmental hazards.

Policy HAZ 3.1 Provide for disaster planning.

TOXICS

Goal HAZ 4. Reduce the use, storage, and disposal of toxic and hazardous substances in Davis, and promote alternatives to such substances and their clean up.

Policy HAZ 4.1. Reduce and manage toxics within the planning area.

Policy HAZ 4.2. Provide for the proper disposal of hazardous materials in Davis.

Policy HAZ 4.3. Reduce the potential for pesticide exposure for people, wildlife, and the environment.

Policy HAZ 4.4. Increase awareness of agricultural chemical use impacting Davis residents.

Policy HAZ 4.5. Minimize impacts of hazardous materials on wildlife inhabiting or visiting the Davis area.

Policy HAZ 4.6. Increase awareness of asbestos in the community.

Policy HAZ 4.7. Ensure that remediation of hazardous waste sites is conducted in the most timely and environmentally responsible manner possible.

COMBINED POLLUTANTS

Goal HAZ 5. Reduce the combined load of pollutants generated in the City by 30 percent by the year 2010.

Policy HAZ 5.1. Reduce the combined load of pollutants generated in the City's wastewater, stormwater, and solid waste streams. Such pollutants include, but are not limited to toxic and hazardous substances.

Yolo County Office of Emergency Services

The Yolo County Office of Emergency Services (OES) is the emergency management agency for Yolo County. OES coordinates the County government's response to disaster or other large scale emergency. In 2013, the Yolo County OES began revision of many emergency management plans and systems to enhance the preparedness and response capability of the County. The revisions and enhancements encompass partners throughout the entire County over a multi-year strategy. The final product will be a set of emergency plans that outline responsibilities and provide guidance to local responders.

County of Yolo Emergency Operations Plan

The County of Yolo Emergency Operations Plan, revised in December 2013, was developed for each Yolo County department, local special districts with emergency services responsibilities, and in coordination with the cities in Yolo County. The content is based upon guidance approved and provided by the California Governor's Office of Emergency Services and the Federal Emergency Management Agency (FEMA). The intent of the County's Emergency Operations Plan is to provide direction on how to respond to an emergency from the onset, through an extended response, and into the recovery process.

Yolo County Operational Area Multi-Jurisdictional Hazard Mitigation Plan

Every five years, the local Multi-Hazard Mitigation Plan (MHMP) is updated and submitted to FEMA. The MHMP identifies natural hazards and risks and identifies the hazard mitigation strategy to reduce vulnerability and make the communities of Yolo County more disaster resistant and sustainable. The MHMP describes strategies that government and private sector organizations may utilize as acceptable and effective mechanisms for mitigating those hazards, within the realistic constraints of capability and priority. The MHMP was developed using the FEMA Local Mitigation Plan Review Guide, dated October 11, 2011, and is structured similar to their Plan Review Tool. Natural hazards, including dam failure, drought, earthquakes, flooding, severe weather, volcanic activity, and wildfire, are discussed in the MHMP.

City of Davis Multi-Hazard Functional Planning Guide

According to the City's General Plan, the City of Davis Fire Department maintains the City's Multi-Hazard Functional Planning Guide, which plans for emergency management and evacuation in the event of disasters. The Guide includes operating procedures in the event of a disaster, as well as descriptions of emergency evacuation routes in Davis.

City of Davis Emergency Operations Plan

In recognition of the critical need to make emergency operations planning a priority for all urban areas, the City of Davis City Council approved a Strategic Plan in 2008 to begin an update to the City's 2004 version of the Emergency Operations Plan. The current (January 2010) update of the Emergency Operations Plan was extensive. The plan has been completely restructured and includes expanded Emergency Operations Center (EOC) and Recovery Sections. In addition, the Emergency Operations Plan has been updated to include the National Incident Management System (NIMS), which is a requirement of the Federal Government.

The Davis Emergency Operations Plan is an essential document for emergency management. The plan provides a framework for response and emergency management systems, defines roles and responsibilities of the City's emergency response organization, and provides triggers for implementation of the plan during disasters, all of which, along with training and exercises, prepare the emergency organization to respond effectively when Davis is impacted by a disaster. The plan also fulfills federal and State planning requirements for continued Homeland Security Grant eligibility.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. The Yolo County Environmental Health Division is the CUPA designated for Davis, West Sacramento, Winters, Woodland, Yolo-Unincorporated. The Yolo County Environmental Health Division is responsible for the implementation of six statewide programs within its jurisdiction. These programs include:

- Underground storage of hazardous substances (USTs)
- Hazardous Materials Business Plan (HMP) requirements
- Hazardous Waste Generator requirements
- California Accidental Release Prevention (Cal-ARP) program
- Uniform Fire Code hazardous materials management plan
- Above Ground Storage Tanks (Spill Prevention Control; and Countermeasures Plan only)

Implementation of these programs involves:

- Permitting and inspection of regulated facilities.
- Providing educational guidance and notice of changing requirements stipulated in State or Federal laws and regulations.
- Investigations of complaints regarding spills or unauthorized releases.
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Potential hazards associated with active agricultural operations in close proximity to urban uses is addressed in Section, 3.2, Agricultural Resources.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: The project may have the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant with Mitigation)

Like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified on the project site or the vicinity above applicable levels, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides, in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop (MCPP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE). There are no records of soil contamination on the project site, and initial sampling found contaminates to be below criteria levels, however this is considered a ***potentially significant*** impact.

CONSTRUCTION PHASE IMPACTS

Construction of the proposed project would likely require the use of petroleum based products (oil, gasoline, diesel fuel), and a variety of chemicals including paints, cleaners, and solvents. The use of these materials will pose a reasonable risk of release into the environment if not properly handled, stored, and transported. Additionally, as described previously, buildings were located in the southeast portions of APN 036-060-005 prior to 1907. It is possible that abandoned septic tanks, fuel tanks, and/or wells could be located at these locations. Irrigation wells also currently exist in the southwest portion of APN 036-060-005. At third well is located at the east edge of APN 036-060-005. It has not been determined if this well is located onsite or offsite. A soil stockpile was also created at the north edge of APN 036-060-005 between 1993 and 1998. These are ***potentially significant*** impacts.

OPERATIONAL PHASE IMPACTS

The operational phase of the project would occur after construction is completed and tenants and residents move in to occupy the structures and facilities on a day-to-day basis. The site would be primarily used for residential uses. Residential land uses, such as the proposed project, do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc.

The project also includes a 4.3-acre mixed use area and a 3.0-acre University Retirement Community expansion site. The expansion area would have up to 30 assisted living, age-restricted detached units. Current plans for the mixed-use area include an 8,000-square-foot (sf) health club, outdoor swimming pool, and a 5,000 sf “fast casual” restaurant and clubhouse. The assisted living area and the mixed use uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by the Yolo County Environmental Health Division. These are ***potentially significant*** impacts.

MITIGATION MEASURE(S)

Mitigation Measure 3.8-1: *A soil sampling program shall be implemented to assess potential agrichemical (including pesticides, herbicides, diesel, petrochemicals, etc.) impacts to surface soil within the project site, as follows:*

The sampling and analysis plan shall meet the requirements of the Department of Toxic Substances Control Interim Guidance for Sampling Agricultural Properties (2008). If the sampling results indicate the presence of agrichemicals that exceed screening levels, a removal action workplan shall be prepared in coordination with Yolo County Environmental Health Division. The removal action workplan shall include a detailed engineering plan for conducting the removal action, a description of the onsite contamination, the goals to be achieved by the removal action, and any alternative removal options that were considered and rejected and the basis for that rejection. The removal action shall be deemed complete when the confirmation samples exhibit concentrations below the commercial screening levels, which will be established by the agencies.

Mitigation Measure 3.8-2*: Prior to commencement of grading, the applicant shall submit a Soil Management Plan (SMP) for review and approval by the City. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The city will approve the SMP prior to any earth moving.*

Mitigation Measure 3.8-3*: Prior to bringing hazardous materials (including 55 or more gallons for liquids, 500 or more pounds for solids, and/or 200 or more cubic feet for compressed gases) onsite, the applicant shall submit a Hazardous Materials Business Plan (HMBP) to Yolo County Environmental Health Division (CUPA) for review and approval. If during the construction process the applicant or his subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).*

Mitigation Measure 3.8-4: *If any underground septic tanks, or fuel tanks are uncovered from past site uses during construction, the project proponent shall retain an environmental professional to assist with the removal consistent with the Yolo County Environmental Health Department’s Underground Storage Tank Program, and Septic Abandonment Permit requirements.*

Mitigation Measure 3.8-5: *Project site wells that are no longer operated shall be properly abandoned through permit by the Yolo County Environmental Health Division (YCEH) permit program. The well abandonment work shall be completed by a C-57 State licensed well contractor.*

Mitigation Measure 3.8-6: *If the source of soil onsite soil stockpiles is undocumented, the applicant shall confirm to the City of Davis that soil sampling of the stockpiles was performed to identify potential soil contaminates associated with onsite soil stockpiles. The samples shall be submitted for laboratory analysis of total petroleum hydrocarbons (TPH) (gas, diesel and motor oil) by EPA Method 8015M and volatile organic compounds (VOCs) by EPA Method 8260. The results of the soil sampling shall be provided to the City of Davis. If elevated levels of TPH or VOCs are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.8-1 through 3.8-3 would ensure that soils are tested for residual agricultural chemicals prior to commencement of grading, and ensures a Soil Management Plan and a Hazardous Materials Business Plan are completed, and prior to bringing hazardous materials onsite, while Mitigation Measures 3.8.4 through 3.8-6 ensure that any unknown onsite conditions from past project site uses would be removed in compliance with county and state requirements, which would reduce potential impacts to a ***less than significant*** level.

Impact 3.8-2: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment (Less than Significant)

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use or past use of the property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the property. Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the property. Therefore, this is considered a ***less than significant*** impact.

Impact 3.8-3: The project has the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Less than Significant)

The proposed project has limited potential for the routine transport, use, or disposal of hazardous materials as discussed above (Impact 3.8-1). The closest school (Davis Waldorf School) is located approximately 0.37 miles northeast of the project site. Other schools nearby include Cesar Chavez Elementary School (0.85 miles southeast), and Ralph Waldo Emerson Junior High School (0.65 miles south). The proposed residential and mixed uses would not involve the routine transport, use, or disposal of hazardous materials, or present a reasonably foreseeable release of hazardous materials. Therefore, the project would have a ***less than significant*** impact with respect to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.

Impact 3.8-4: The project has the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (Less than Significant)

(*Note: The following discussion is associated with potential impacts of the proposed project on emergency response plans and/or evacuation plans. Proposed emergency vehicle access to and from the site is addressed in Section 3.14, Transportation and Circulation.*)

The City of Davis Fire Department maintains the *City's Multi-Hazard Functional Planning Guide*, which plans for emergency management and evacuation in the event of disasters. According to the department, the most likely disaster scenario for Davis is a toxic spill on Interstate 80 or the Southern Pacific mainline railroad tracks passing through town. Other disasters could occur, such as a flood, an earthquake or a major fire.

The Guide includes operating procedures in the event of a disaster, as well as descriptions of emergency evacuation routes in Davis. According to the Guide, all major roads are available for evacuation, depending on the location and type of emergency that arises. Major roads identified for evacuation in the Guide are Russell Boulevard, Highway 113, Interstate 80, Richards Boulevard, County Road 102/Pole Line Road, Mace Boulevard southbound, Road 32A, Covell Boulevard/Road 31, "F" Street/County Road 101A and North Sycamore Frontage Road.

Implementation of the proposed project would not result in any substantial modifications to the existing roadway system and would not interfere with potential evacuation or response routes used by emergency response teams. The proposed project would also not interfere with any emergency response plan or emergency evaluation plan. The proposed project does not include any actions that would impair or physically interfere with the City's Multi-Hazard Functional Planning Guide. As shown on Figure 2.0-6 (Chapter 2.0, Project Description), the project site includes vehicle access to provide for of ingress and egress in the event of an emergency that must comply with city street design standards to ensure streets adequately serve emergency response. An expanded discussion of local circulation and traffic volumes is provided in the Transportation and Circulation Section of this report. This is a ***less than significant*** impact.

Impact 3.8-5: The project has the potential to expose people or structures to a risk of loss, injury or death from wildland fires (Less than Significant)

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

The site is not located within an area where wildland fires are known to occur, or within a high or moderate Fire Hazard Severity Zone as indicated by Calfire FHSZ Maps. The site is surrounded by developed land uses and open space/agricultural land. Existing roadway, residential uses, and public uses are located to the east, southeast, and south, while undeveloped agricultural land is located to the west of the project site. County Road 99 is also located 0.5 miles west of the project site, which could serve as a firebreak from any potential fires to the west of the site. This is a ***less than significant*** impact.

Impact 3.8-6: The project has the potential to result in a safety hazard for people residing or working in the project are due to proximity to a private airstrip or public airport (Less than Significant)

The Federal Aviation Administration (FAA) establishes distances of ground clearance for take-off and landing safety based on such items as the type of aircraft using the airport. There are three airports in the vicinity of the project site. The UC Davis Airport is located approximately 1.9 miles southwest of the proposed project site. The Yolo County Airport is located approximately 4.3 miles to the west of the project site. Medlock Field Airport is located approximately 3.2 miles northeast of the project site.

The UC Davis Airport is operated as a general aviation airport. The project site is not located within any safety restricted areas. Additionally, the project site is buffered from the UC Davis Airport operations to the south by residential areas and other urban uses.

The Medlock Field Airport is located approximately 3.2 miles northeast of the project site. The airport is privately-owned and operated and has been actively used since 1974. The airfields also serves agricultural chemical aviation applications. The project site is not located within any identified safety zones, is not within the direct takeoff, landing, or flight path, and is not expected to interfere with, or be subject to hazards from private aviation activities.

The Yolo County Airport is a general aviation airport owned by the County. The Yolo County Comprehensive Airport Land Use Plan (1999) provides Yolo County Airport Safety Zones including: Clear Zone, Approach-Departure Zone, and Overflight Zone. The proposed project site is not located within any of the identified Yolo County Airport safety zones.

Additional flights near the project areas may include air ambulance services via helicopter at the adjacent Sutter Davis hospital. These helicopter flights are considered emergency services and operational safety requirements are governed by the FAA, which oversees all air ambulance operators. New structures within the project site would be used for residential and mixed uses. No high-rise buildings are proposed. Therefore, the project would not impede flights or place structures within helicopter airspace.

The proposed project site is not located within any identified airport safety zones. Additionally, the project site is located adjacent to urban uses on the south and east sides of the site. Implementation of the proposed project would have a ***less than significant*** impact with regards to this environmental issue.

This section describes the regulatory setting, regional hydrology and water quality impacts that are likely to result from project implementation, and includes measures to reduce potential impacts related to stormwater drainage, flooding and water quality. This section is based in part on the following documents, reports and studies:

- City of Davis General Plan (City of Davis, 2001; as amended through 2007);
- City of Davis Final 2015 Urban Water Management Plan (Brown Caldwell, 2016); and
- West Davis Active Adult SB 610 Water Supply Assessment (Tully & Young, 2017).

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Patrick S. Blacklock, County of Yolo (April 18, 2017), Gregor Blackburn, FEMA (April 19, 2017), Toni Terhaar and Russ Kanz (April 26, 2017), Stephanie Tadlock, Central Valley Regional Water Quality Control Board (CVRWQCB) (May 8, 2017), Christine M. Crawford, Yolo Local Agency Formation Commission (LAFCo) (May 11, 2017), Greg Rowe (May 11, 2017), and Eileen M. Samitz (May 13, 2017). Each of the comments related to this topic are addressed within this section.

3.9.1 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

The project site is located in the City of Davis, within Yolo County at the southwestern end of the Sacramento Valley, approximately 30 miles north of the confluence of the San Joaquin and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, harbors, and underground aquifers. The topography is generally flat, and is drained by the Sacramento River and the Yolo Bypass, which is part of the Sacramento River Flood Control Project.

Climate

Summers in the city are warm and dry, and winters are cool and mild. The region is subject to wide variations in annual precipitation, and also experiences periodic dry periods and wild fires in the regional watershed and surrounding areas with chaparral and oak lands. Summers can be hot at times with weekly periods of 100 degree Fahrenheit temperatures, greatly increasing summer irrigation requirements.

The city's average monthly temperature ranges from 45 to 75 degrees Fahrenheit, but the extreme low and high daily temperatures have been 12 and 116 degrees Fahrenheit, respectively. The historical annual average precipitation is approximately 19 inches. The rainy season normally begins in November and ends in March. Evapotranspiration (ETo) records, which measure the loss of water from the soil both by evaporation and by transpiration from the plants growing thereon, indicate average monthly values ranging from 1.2 inches in the city's wet January to 8.3 inches in much drier June and July. Low humidity usually occurs in the summer months, from May through

September. The combination of hot and dry weather results in high water demands during the summer.

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.9-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.9-1. STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	*APPROXIMATE SQUARE MILES (ACRES)*	*DESCRIPTION*
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

HYDROLOGIC REGION

The City of Davis is located in the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles) and all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades, Sutter Buttes in the south central portion of the valley, and the Sacramento River, which is the longest river system in the State of California with major tributaries the Pit, Feather, Yuba, Bear and American rivers. The region is home to over two million people. Area population centers include Sacramento, Redding, Chico, and Davis.

VALLEY PUTAH-CACHE HYDROLOGIC UNIT

The City of Davis is located within the Valley Putah-Cache Hydrologic Unit. For purposes of regional planning, hydrologic units are generally considered to be the appropriate watershed planning level. However, the hydrologic unit level is generally too large in terms of a planning scale for individual projects, and a hydrologic area or hydrologic subarea may be considered more appropriate.

LOWER PUTAH CREEK HYDROLOGIC AREA

The City of Davis is located within the Lower Putah Creek Hydrologic Area. This watershed is approximately 225,301 acres and is bound by Putah Creek to the south and Cache Creek to the north. The headwaters of the watershed begin just west of Winters near Lake Berryessa and extend to the east approximately 25 miles to the Sacramento River. There are 17 water bodies on the 303(d) list (list of impaired and threatened waters), six of which have a TMDL for various pollutants. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. None of the listed 303(d) water bodies are located in the vicinity of the project site.

LOCAL SETTING

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. Approximately 11.29 acres of off-site improvements would also occur within developed and undeveloped areas surrounding the project site (see Figure 2.0-5 in Section 2.0, Project Description). The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, mapped rural residential subdivision lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south.

Within the Lower Putah Creek Hydrologic Area, there are several principal watersheds. The project site is located within the Tule Canal-Toe Drain watershed (see Figure 3.9-1, Watersheds Map). The Dry Slough and the Willow Slough watersheds are located to the west and north of the project site and contribute flows to the Willow Slough Bypass channel. The Putah Creek-South Fork Putah Creek watershed is located to the south of the Tule Canal-Toe Drain watershed.

The major streams that drain the unincorporated County areas around Davis are Putah Creek to the south and Willow Slough Bypass to the north, both of which empty into the Yolo Bypass. Willow Slough Bypass is a leveed channel that drains approximately 200 square miles and receives flows from Willow, Cottonwood, Chickahominy, and Dry Sloughs south of Cache Creek.

Several major drainage facilities exist near the project site and the City of Davis. They are listed below.

- Box culvert (under Highway 113 east of project site)
- Covell Drain (along southern boundary of project site)
- Sutter Drainage Pond (near northeastern corner of project site)

Flooding

The risks of flooding hazards in the City of Davis and immediate surroundings are primarily related to large, infrequent storm events. These risks of flooding are greatest during the rainy season between November and March. Flooding events can result in damage to structures, injury or loss of human and animal life, exposure to waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater.

100-YEAR FLOODPLAIN

The 100-Year floodplain denotes an area that has a one percent chance of being inundated during any particular 12-month period. Floodplain zones (Special Flood Hazard Areas [SFHA]) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by the local jurisdictions, for any construction, whether residential, commercial, or industrial within 100-year floodplains.

Lands within the FEMA-designated 100-year floodplain (SFHA) are subject to mandatory flood insurance as required by FEMA. The insurance rating is based on the difference between the base flood elevation (BFE), the average depth of the flooding above the ground surface for a specific area, and the elevation of the lowest floor. Because the City of Davis participates in the National Flood Insurance Program, it must require development permits to ensure that construction materials and methods will mitigate future flood damage, and to prevent encroachment of development within floodways. New construction and substantial improvements of residential structures are also required to “have the lowest habitable floor (including the basement if it is, or easily could be ‘habitable’) elevated to or above the base flood level.” Non-residential structures must have their utility systems above the BFE or be of flood-proof construction.

Figure 3.9-2 illustrates the areas within the Federal Emergency Management Agency (FEMA) designated 100-year floodplain. The proposed project is shown on the FEMA Flood Insurance Rate Map (FIRM) number 06113C dated June 18, 2010. The project site is located within FEMA Zone A (shaded), which represents area that is within the designated 100-year floodplain. FEMA regulates flooding up to and including the 100-year storm event which Zone A represents.

Drainage

Existing: The project site is located within the Covell Drain Watershed, with approximately 17 square miles of the watershed lying upstream of the site. The project site includes the Covell Drain channel, which conveys stormwater and agricultural runoff from western portions of the City of Davis and from portions of unincorporated Yolo County west of the site. In the vicinity of the project site, the Covell Drain flows east along the north side of Covell Boulevard toward SR 113, turning north along the west edge of SR 113, and then discharging to an existing three- to 10-foot by 5-foot box culvert under the freeway. East of SR 113, the Covell Drain continues to the northeast along the north edge of Davis, through the Wildhorse Golf Course, and eventually discharges to Willow Slough Bypass northeast of the City.

The City of Davis maintains a storm drain pipe network in the project area which discharges to the Covell Drain. This network collects water from the south side of Covell Boulevard and pipes to the north into the existing channel. Storm drain pipes ranging from 15-inches to 42-inches provide collection and conveyance of stormwater throughout the Sutter Hospital Facility and along John Jones Road, tying into the Covell Drain parallel to SR 113.

The City of Davis also maintains a stormwater detention pond adjacent to the West Davis Water Tank site. The pond provides attenuation for the stormwater associated with the water tank site and the Sutter Davis Hospital site.

Proposed: Proposed drainage infrastructure are shown in detail in Figure 2.0-10 in Section 2.0, Project Description.

As shown on Figure 2.0-10, the proposed drainage infrastructure would include greenway swales, a perimeter drainage channel, an offsite detention basin, and relocation of the Covell Drain north to accommodate the widening of Covell Boulevard. The ditch would need to be contained within a culvert under the new entrance from Covell.

A guiding stormwater management principle for project should be that it does not result in new impacts to properties downstream or upstream. Potential impacts include considerations of both stormwater quantity and quality. With regard to stormwater quality, the project would be designed to conform with current City of Davis standard requirements, as discussed below. For water quantity, the objective of the preliminary analysis completed for the project is to identify the basic post-project storage volumes needed onsite in order to limit post-project peak discharges and associated peak water surface elevations (WSEs) to estimated existing levels in the Covell Drain on its approach to the SR 113 box culvert.

Dam Failure

The Monticello Dam, located approximately 25 miles from Davis at Lake Berryessa, has the potential to inundate the City of Davis if it were to fail. The failure of this dam is estimated by the California Emergency Management Agency to cause flooding up to three meters deep in Davis. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam.

Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The Monticello Dam is regulated by the California Dam Safety Act. The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

A critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels and contaminants have accumulated on impervious surfaces over the drier summer months. Besides greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980s. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of sediment, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affects both aquatic resources and flood control efforts.

303(d) Impaired Water Bodies: Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

There are seventeen 303(d) impaired waterbodies in the Lower Putah Creek Hydrologic Area, including major rivers, creeks, and tributaries. Two of the impairments are located along Cache

Creek, two are located along Putah Creek, three are located along the Sacramento River, and ten are located along the Delta Waterways. These water bodies are impaired by a variety of contaminants including: mercury, chlorpyrifos, DDT, diazinon, total dissolved solids, exotic species, Group A pesticides, and unknown toxicities. These constituents originate from a variety of sources, but generally include agricultural activities, resource extraction, urban runoff/storm sewers, and unknown sources. The project location does not directly discharge into any of the regionally identified 303(d) listed impaired waterbodies. As such TMDLs do not apply to this project site for post-construction treatment of stormwater runoff.

WATER RESOURCES

Davis Groundwater Supply

Prior to mid-2016, the City used groundwater as its sole potable water supply source. The City pumps from the Sacramento Valley groundwater basin, Yolo subbasin, 5-21.67. The Yolo subbasin is not adjudicated and there are no legal restrictions to groundwater pumping. The Department of Water Resources' Bulletin 118 does not consider the basin to be in overdraft. In 2006, the City and UC Davis developed a groundwater management plan (GWMP) that focuses on the sustainability of the yield and water quality of the groundwater basin.

The City's deep aquifer zone exists throughout the Davis planning area, and is more predominant to the north and west. The deep aquifer zone slopes downward from the Plainfield Ridge, 3.5 miles west of the Davis planning area, with gradual flattening towards the east. These productive aquifers occur in the Tehama and younger formations, which are found at depths of 700 feet to 1500 feet below ground surface.

Aquifers in the Davis area are recharged by a number of sources. Deep percolation of rainfall and to a lesser extent irrigation water, are major components of groundwater recharge. Other significant sources include infiltration in streambeds, channels, and the Yolo Bypass. Relatively course-grained deposits line both Putah and Cache Creeks, allowing substantial infiltration.

Water moves very slowly between aquifers at different depths. In some places, water moves between aquifers through wells that have been screened at a number of different depths to enhance production. This causes the well columns to act as open pipes to equalize the water pressure of aquifers at different depths. The deep aquifer has a much longer recharge period as compared to the intermediate depth aquifer, on the order of thousands of years versus hundreds of years, respectively. Both the City and UC Davis are increasingly reliant on the deep aquifer due to its superior quality of water.

The City has few physical constraints on its groundwater supply other than the pumping capacities of existing wells. The Plainfield Ridge creates a minor restriction to east-west groundwater flow just west of the City. There are no other major restrictions to horizontal groundwater flow in the area (DWR, 2003).

The City has been studying the deep aquifer and groundwater pumping capacity for many years. In 2004, the City prepared a *Davis Deep Aquifer Assessment Technical Memorandum* (Brown and

Caldwell and Winzler & Kelley, 2004) in support of the City's EIR for its Well Capacity Replacement Project. Because of concerns expressed over possible interference with University of California, Davis deep aquifer groundwater well capacity, the *Final Well Capacity Replacement EIR* (July 2005) limited the City's deep aquifer groundwater capacity to an additional 4,500 gallons per minute (gpm). With the development of Well DDW-33, and DDW-34 on the City's property, the City is in the process of constructing the deep well capacity documented in the *Final Well Capacity Replacement EIR*.

Groundwater Quality

Water quality affects the City's water management strategies through efforts to comply with Federal and State drinking water regulations. These regulations require rigorous water quality testing, source assessments, and treatment in some cases. Drinking water quality also impacts wastewater quality and affects the City's National Pollutant Discharge Elimination System (NPDES) permit requirements regulating discharges to the environment. The challenges related to groundwater quality is one of the reasons the City has pursued a surface water supply.

The quality of the existing groundwater and surface water supply sources over the next 25 years in the City of Davis is expected to be adequate. However, future water quality regulations (e.g. related to chromium) could result in the need to treat Davis' groundwater. Groundwater found in the intermediate depth wells has high total dissolved solids and hardness, which causes scaling in plumbing systems and taste and odor issues. Over one-half of the residential homes in Davis use water softeners to lower hardness levels. In recent years a number of City intermediate-depth wells have been removed from service due to water quality problems, including high concentrations of nitrates, iron, manganese, and selenium. The City has constructed wells in the deep aquifer to obtain water with higher overall quality versus the current quality of water from the intermediate depth aquifer. Groundwater will continue to be disinfected, and treated as necessary to meet drinking water standards. Additionally, given the addition of new surface water supplies to the City, the need for deep well pumping will in Davis will be reduced in coming years, compared with the City's prior groundwater pumping needs.

As deep well pumping continues, some lower quality intermediate depth aquifer water will flow into the deep aquifer. As indicated above, the vertical hydraulic connection between the intermediate and deep aquifers does not allow as much flow as horizontal connection. However, some flow would be expected. The rate at which the deep aquifer water quality would degrade is not known at this time.

Surface Water

Until mid-2016, the City utilized no surface water, relying solely on local groundwater resources for its entire community water supply. However, the City of Davis is now under contract to purchase wholesale surface water from the Woodland Davis Clean Water Agency (WDCWA) to use in combination with groundwater from the deep wells. The project participants consist of the City of Davis, City of Woodland, and UC Davis. Wholesale surface water supply became available in mid-2016. Following the addition of surface water supplies to the City's portfolio of water supply sources, some of the City's intermediate aquifer wells would be kept for emergency supply; deep aquifer wells would remain online to help supply maximum day and peak hour demands.

Water Distribution System

The City's water distribution system operates as a single pressure zone with one elevated tank and two ground level storage tanks with booster pump stations. The hydraulic grade in the system is based on the level in the elevated tank. The wells are controlled by a Supervisory Control and Data Acquisition (SCADA) system based on the level in the elevated tank.

PIPELINES

The City's water system consists of piping ranging from 6 to 14-inches (in). Almost 90 percent of the distribution system consists of 6 to 10-in diameter pipelines. The City's pipeline system was constructed to support localized supply, with wells spread throughout the City. This type of localized supply does not require large diameter transmission mains.

STORAGE FACILITIES/BOOSTER PUMP STATIONS

There are three storage tanks in the City's water system: the Elevated Tank, West Area Tank (WAT) and the East Area Tank (EAT). The three tanks have a combined storage capacity of 8.5 million gallons (MG). The WAT has a booster pumping capacity of 4,200 gpm and the EAT has a total pumping capacity of 8,000 gpm. The WAT and EAT fill during off-peak demand periods and then the booster station pumps stored water back into the system during peak periods based on time and system pressure.

INTERTIES

The only other water system to which the City is connected is the UC Davis water system via two interties of which UC Davis retains ownership. UC Davis entered into a water supply agreement with the City on July 9, 2010, which was in effect through June 30, 2016. The water supply agreement allowed the City to receive water supply up to 300,000 cubic feet per year with a flow rate not to exceed 1,500 gpm from UC Davis.

Water Use

Water production is the volume of water measured at the source, which includes all water delivered to residential, commercial, and public authority customers, as well as unaccounted-for water. There are three primary water rights and contracts (collectively, "water supplies") that are used within the City's existing service area and Sphere of Influence (SOI). All three of these water supplies are used to meet the water demands for the City's residents. In several areas within the City, the water supplies can be interchanged and commingled for delivery to end users. The water supplies are:

- Woodland-Davis Clean Water Agency (WDCWA) State Water Resources Control Board (SWRCB) Appropriative Water Right Permit 20281;
- WDCWA's Central Valley Project (CVP) Contract No. 14-06-200-7422X-R-1; and

- City of Davis' groundwater rights.

The City's water supplies have historically included water supplies solely derived from its groundwater resources. In June of 2016, the City began using a new water diversion facility from the Sacramento River and began taking water supplies from WDCWA's surface water assets. The City's additional water sources will reduce its historical reliance upon groundwater and improve other water quality issues associated with utilization of groundwater resources.

For the year 2016, City water use was supplied from groundwater (3,704 acre-feet [AF]), WDCWA Permit 20281 (1,391 AF), and CVP Contract No. 14-06-200-7422X-R-1 (4,400 AF). For the period 1995 to 2005, annual treated groundwater production for the City's water system varied from 11,908 AF per year (AFY) (1998) to 15,112 AFY (2002) (Tully & Young, 2017). For the period 2010 to 2016, annual treated groundwater production fluctuated with a high of 12,338 AFY in 2013 to a low of 3,704 AFY in 2016. The City expects total water demand to increase to 13,492 AFY by 2020, and 13,560 AFY by 2035 (City of Davis 2015 UWMP, 2016).

3.9.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Control Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that may be applicable to projects within the City of Davis.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2013-0001-DWQ) for small MS4s covered under the CWA to efficiently regulate numerous stormwater discharges under a single permit. Permittees must comply with all requirements as specified under the general permit.

303(d) Impaired Water Bodies: Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved. However, there are no discharges to 303(d) listed impaired water bodies within the City of Davis and no TMDLs required within the Phase II Small MS4 General Permit for the City of Davis.

Federal Emergency Management Agency (FEMA)

As noted above, Davis is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

200-Year Flood Protection in the Central Valley

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The new law restricts approval of development after 2016 if “adequate progress” towards achieving this standard is not met. Urban and urbanizing areas protected by State-Federal project levees cannot use “adequate progress” as a condition to approve development after 2025. Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the California Water Code.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for periods of five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to hydrology and water quality aspects of the proposed project:

MUNICIPAL WATER SUPPLY

Goal WATER 2. Ensure sufficient supply of high quality water for the Davis Planning Area.

> **Policy WATER 2.1.** Provide for the current and long-range water needs of the Davis Planning Area, and for protection of the quality and quantity of groundwater resources.
>
> **Policy WATER 2.2.** Manage groundwater resources so as to preserve both quantity and quality.
>
> **Policy WATER 2.3.** Maintain surface water quality.

FLOOD HAZARDS AND PROTECTION

Goal HAZ 1. Provide flood protection which minimizes potential damage, while enhancing recreational opportunities and wildlife habitats and water quality.

> **Policy HAZ 1.1.** Site and design developments to prevent flood damage.

Standard. No development may occur in flood-prone areas, including all areas below an elevation of 25 feet, unless mitigation of flood risk is assured. Any mitigation proposed by the project proponent to mitigate flood risks shall demonstrate that the mitigation/design does not adversely impact other properties.

Policy HAZ 1.2. Continue to provide flood control improvements that are sensitive to wildlife habitat and open space preservation.

STORMWATER DRAINAGE

Goal WATER 3. Design stormwater drainage and detention facilities to maximize recreational, habitat, and aesthetic benefits.

Policy WATER 3.1. Coordinate and integrate development of storm ponds and channels Citywide, to maximize recreational, habitat, and aesthetic benefits.

Policy WATER 3.2. Coordinate and integrate design, construction, and operation of proposed stormwater retention and detention facilities City-wide, to minimize flood damage potential, and improve water quality.

REGIONAL COORDINATION

Goal WATER 4. Monitor issues in the region that affect quality and quantity of water in the Davis Planning Area.

Policy WATER 4.1. Research, monitor, and participate in issues in Yolo County and the area of origin of the City's groundwater that affect the quality and quantity of water.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, run-off or flooding on- or off-site;

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of or the substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

As described in the Initial Study, there are no significant bodies of water near the project site that could be subject to a seiche or tsunami. Additionally, the project site and the surrounding areas are essentially flat, which precludes the possibility of mudflows occurring on the project site. As such, implementation of the proposed project would have a ***less than significant*** impact relative to these topics, and these environmental issues are not further addressed in this EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: The project may violate water quality standards or waste discharge requirements during construction (Less than Significant with Mitigation)

Grading, excavation, removal of vegetative cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

Petroleum, when improperly managed and stored, can present health hazards and threaten the environment, particularly navigable waters and adjoining shorelines. To prevent harm to the public and the environment, the federal Oil Pollution Prevention regulation, promulgated under the authority of §311 of the Clean Water Act, sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To contain potential discharges of oil, the regulation requires these facilities to develop and implement Spill Prevention Countermeasure and Control (SPCC) Plans and establishes procedures, methods, and equipment requirements.

As required by the Clean Water Act, each phase of construction will require an approved Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices for grading, and preservation of topsoil. The project proponent or contractor is required to submit the SWPPP with a Notice of Intent to the Regional Water Quality Control Board (RWQCB) to obtain coverage under the State Construction General Permit. The State Water Resources Control Board (SWRCB) is an agency responsible for reviewing the SWPPP with the Notice of Intent (NOI), prior to issuance coverage under the State Construction General Permit for the discharge of stormwater during construction activities. Mitigation Measure 3.6-1 in Section 3.6, Geology and Soils, requires an approved SWPPP that includes best management practices for grading, and preservation of topsoil. Implementation of the following mitigation measures would ensure consistency with the regulatory requirements and ensure that the proposed project would have a ***less than significant*** impact on construction related water quality.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.6-1**.*

Mitigation Measure 3.9-1: *Prior to the commencement of construction activities, the project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Yolo County Health Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.6-1 (Section 3.6, Geology and Soils) and 3.9-1 would ensure that an NOI, SWPPP, and SPCC are submitted and obtained by the project proponent, which would reduce potential impacts related to violation of water quality standards or waste discharge requirements during construction to a ***less than significant*** level.

Impact 3.9-2: The project may violate water quality standards or waste discharge requirements post-construction (Less than Significant with Mitigation)

The long-term operations of the proposed project could result in impacts to surface water quality from urban stormwater runoff. The proposed project would result in new impervious areas associated with streets, driveways, parking lots, buildings, and landscape areas. Normal activities in these developed areas include the use of various automotive petroleum products (i.e. oil, grease, fuel), household hazardous materials, heavy metals, pesticides, herbicides, and fertilizers. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of land uses, and density of people.

The proposed project will be required to comply with the Phase II Small MS4 General Permit (see Article 30.02 and 30.04 of the City of Davis Municipal Code). The proposed project must meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” dated February 5, 2013, adopted by the City of Davis. Permittees must implement a post-construction stormwater management program, as specified in Section E.12 of the Phase II Small MS4 General Permit

In order to meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” permanent storm water control measures would be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project. The proposed project would incorporate site design measures, source control measures, and treatment control measures. As shown on Figure 2.0-10 in Section 2.0, the proposed drainage infrastructure would include greenway swales, a perimeter drainage channel, an offsite detention basin, and relocation of the Covell Drain north to accommodate the widening of Covell Boulevard. The ditch would need to be contained within a culvert under the new entrance from Covell.

A guiding stormwater management principle for project should be that it does not result in new impacts to properties downstream or upstream. Potential impacts include considerations of both stormwater quantity and quality. With regard to stormwater quality, the project would be designed to conform with current City of Davis standard requirements, as discussed below. For water quantity, the objective of the preliminary analysis is to identify the basic post-project storage volumes needed onsite in order to limit post-project peak discharges and associated peak water surface elevations (WSEs) to estimated existing levels in the Covell Drain on its approach to the SR 113 box culvert.

Stormwater from the proposed project buildings and site would flow into the proposed greenway swales, perimeter drainage channel, and offsite detention basin. In order to meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” dated February 5, 2013, adopted by the City of Davis, permanent storm water control measures are proposed to be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project.

The term “site design measures” refers to land use or site planning practices that are used in design to reduce the project’s impact on water quality and beneficial uses. Utilizing site design measures in a project can help reduce the size of the required treatment measures. The following text discusses the site design measures proposed for use in the proposed project.

1. Tree Planting and Preservation
   - Numerous trees are proposed to be planted throughout the proposed project site.
2. Rooftop and Impervious Area Disconnection
   - None of the downspouts from the proposed buildings or any of the proposed impervious areas would flow directly into the proposed storm drain system. All of the roof drainage and impervious paving area drainage would flow through bio-treatment areas prior to entering the proposed storm drain system.

The term “source control measures” refers to land use or site planning practices, or structures that aim to prevent urban runoff pollution by reducing the potential for contamination at the source of pollution. Source control measures minimize the contact between pollutants and urban runoff.

The following text discusses the source control measures proposed for use in the proposed project.

1. Covered dumpster area, drain to sanitary sewer:
   - All of the trash collection areas for the proposed site would be designed with measures that would minimize pollution from stormwater runoff.
2. Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment):
   - The landscaping systems would be designed to include features to prevent irrigation during and after precipitation events and control water loss in the event of broken sprinkler heads or lines. The design of the irrigations system would be tailored to each landscape area's specific water requirements and would be laid out to prevent overspray to paved surfaces.
3. Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
   - The site and storm drain system would be maintained as required by the operations and maintenance plan.
4. Storm drain labeling:
   - Concrete stamping, or other storm drain labeling, would be provided for catch basins and any inlets located within the project site.

The term low impact development (LID) means a storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect predevelopment hydrologic functions. The project intends to integrate LID measures throughout the project to provide stormwater quality treatment. These LID measures would likely include both volume-based best management practices (BMPs) (i.e., bioretention, infiltration features, pervious pavement, etc.) and flow-based BMPs (i.e., vegetated swales, stormwater planter, etc.). The use of these features would be dependent upon the location and setting within the project site. These treatment measures would be designed in accordance with the City of Davis Storm Water Quality Control Standards. Sizing and configuration of these treatment measures would be determined with the future development of the tentative map and improvement plans for the project. The following text discusses the low impact development treatment systems that would be employed in the proposed project.

1. Bio-retention areas:
   - Bio-retention areas function as soil and plant-based filtration measures that remove pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a ponding area, a mulch layer, plants, and bio-treatment soil mix, underlain by drain rock and an underdrain (if required). Bio-retention areas are designed to distribute stormwater runoff evenly across the surface ponding area. Water stored in the ponding area percolates through the bio-treatment

soil mix to the drain rock layer and then either infiltrates into native soil or flows out through the underdrain to the storm drain system.

- Bio-retention areas can be any shape, including linear. Bio-retention areas with underdrains would be designed to maximize infiltration to native soils by placing the underdrain near the top of the drain rock layer unless infiltration is not permitted due to site conditions (e.g., high groundwater table, steep slopes, proximity to structures, presence of contaminated soil or groundwater, etc.). Bio-retention areas without underdrains are sometimes referred to as "bio-infiltration" measures. All bio-retention areas would include an overflow/bypass system to convey runoff volumes that are greater than the water quality design volume.

Implementation of the above-referenced water quality control measures would ensure project compliance with the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013, adopted by the City of Davis. Implementation of the following mitigation measure would reduce potential surface water quality impacts post-construction to a ***less than significant*** level. No additional mitigation is required.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-2*: Prior to issuance of building or grading permits, the applicant shall submit a final stormwater and drainage plan identifying permanent stormwater control measures to be implemented by the project to the City. The plan shall include measures consistent with the adopted guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013 and shall be subject to review and approval by the Public Works Department.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.9-2 would ensure that the permanent stormwater control measures are consistent with the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013, which would reduce potential impacts related to violation of water quality standards or waste discharge requirements post-construction to a ***less than significant*** level.

Impact 3.9-3: Project implementation could interfere substantially with groundwater recharge (Less than Significant)

(*Note: The following discussion is associated with potential impacts of the proposed project on groundwater as it relates to stormwater infiltration and groundwater recharge. Depletion of groundwater supplies as it relates to water usage is addressed in Section 3.15, Utilities.*)

The proposed project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

According to the *Soil Survey of Yolo County, California* (USDA, 1972) and the USDA NRCS Web Soil Survey (NRCS, 2016), the soils on the project site are classified as Brentwood silty clay loam (BrA) (permeability is moderately slow), Marvin silty clay loam (Mf) (permeability is slow), Pescadero silty clay, saline-alkali (Pb) (permeability is very slow), and Willows clay, alkali (Wc) (permeability is very slow).

Table 3.9-2 below identifies the soils in the project site and the soils infiltration rate. The majority of project site has soils all have a hydrologic rating of “C”, which is indicative of soils having a low infiltration rate (high runoff potential) when thoroughly wet. The pescadero and willows soils have a hydrologic rating of “D”, which is indicative of soils having an even lower low infiltration rate (high runoff potential).

TABLE 3.9-2: SOILS HYDROLOGIC RATING

DESCRIPTION	*SOURCE MATERIAL*	*RATING*
Brentwood silty clay loam	Alluvium derived from sedimentary rock	C
Marvin silty clay loam	Mixed silty and clayey alluvium	C
Pescadero silty clay, saline-alkali	Alluvium derived from sedimentary rock	D
Willows clay, alkali	Mixed alluvium	D

SOURCE: NCRS 2016.

The infiltration rate of the soils on the project site is considered low.

The new impervious surfaces, such as pavement, concrete, and structures that would be built on the project site, could reduce infiltration capacity, compared to the existing conditions. However, the proposed project is designed to promote infiltration of groundwater in areas with pervious surface. The proposed drainage infrastructure would include greenway swales, a perimeter drainage channel, and an offsite detention basin, all of which would provide opportunities for on-site groundwater infiltration. For water quantity, the objective of the project is to identify the basic post-project storage volumes needed onsite in order to limit post-project peak discharges. On-site storage of stormwater would provide opportunities for groundwater infiltration. Additionally, as required by Mitigation Measure 3.6-2 in Section 3.6, Geology and Soils, the project would be required to comply with the California Stormwater Best Management Practice New Development and Redevelopment Handbook and Section E.12 of the Phase II Small MS4 General Permit. These drainage design requirements aim to in promote stormwater infiltration, among other goals. Furthermore, the project site is not considered a significant groundwater recharge area for the region and the hydrologic ratings for the site soils indicate that the infiltration ability of the project site is low.

Therefore, implementation of the proposed project would have a ***less than significant*** impact to groundwater recharge.

Impact 3.9-4: Project implementation could alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff (Less than Significant)

The project site is located within the Lower Putah Creek Hydrological Area. The Lower Putah Creek Hydrological Area is approximately 225,301 acres and is bound by Putah Creek to the south and Cache Creek to the north. The headwaters of the watershed begin just west of Winters, near Lake Berryessa, and extend to the east, approximately 25 miles, to the Sacramento River. Within the Putah Creek Hydrological Area, there are four principal watersheds, which total 198 square miles. The project site is located within the Covell Drain watershed. The Covell Drain watershed includes the areas located in the central and north portions of the City, bounded by Putah Creek to the south, Dry Slough and Willow Slough bypass to the north, and the East Davis watershed to the east.

The development of the proposed project, when complete, would result in new impervious surfaces and thus could result in an incremental reduction in the amount of natural soil surfaces available for the infiltration of rainfall and runoff, thereby generating additional runoff during storm events. Additional runoff could contribute to the flood potential of natural stream channels or contribute runoff that could exceed the capacity of the City's drainage system.

When the proposed project is developed, the on-site impervious area would increase, leading to faster runoff rates. However, the increased rate of runoff would be attenuated using on-site and off-site facilities (including bio-retention areas). In general, runoff from the site would be routed through a network of proposed bio-treatment basins, proposed storm drain systems, and proposed off-site detention basin to the adjacent existing connection points.

In addition to the water quality treatment measures, the project proposes to provide mitigation for the expected increase in the site's post-project peak discharge relative to pre-project conditions. As a result of the project development, the effective impervious area for the site would increase, which in turn would increase the peak rate of runoff from the site.

The project is proposing 13.5 acres of open space/landscaping around the perimeter of and throughout the project site. The resulting 100-year peak discharge from the proposed development was estimated at 53.2 cubic feet per second (cfs).

Proposed mitigation for the pre-to-post increment in peak discharge would be accomplished by integrating of an offsite detention storage with the project, with the design goal of limiting the site's post-development peak flow to existing levels. A detention basin approximately 450-feet by 150-feet with a maximum water depth of 3.4 feet (5.75 acre-feet) may be required.

This detention basin would be located offsite of the northeast of the project site adjacent to the existing City of Davis detention basin. The proposed detention basin would be located within the footprint of the proposed perimeter drainage channel. The depth of the detention basin would be approximately equivalent to the existing City detention basin.

During final design of the project, the final layout of the storm drain system and detention basins will be determined, the stage-storage relationship of the final design of the detention basins will be modeled, and detention outlet works will be sized. Additionally, emergency outlet works will be sized to safely convey the 10-year un-detained storm event (assuming the 10-year detention storage volume is full when the peak 10-year flow arrives).

In order to meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” dated February 5, 2013, adopted by the City of Davis, permanent storm water control measures would be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project. The proposed project would incorporate site design measures, source control measures, and treatment control measures consisting of bio-treatment basins dispersed throughout the site, as described under Impact 3.9-2 (above). At final design, an Operation and Maintenance plan would be developed specifying the inspection frequencies, maintenance activities, and record keeping required to maintain the proposed permanent stormwater control measures. Regular inspection and maintenance would be required for landscaped areas, irrigation systems, bio-treatment areas, and storm drain systems on-site.

Incorporation of the aforementioned proposed project drainage system and the implementation of Mitigation Measure 3.9-2 would ensure that the proposed project would not substantially alter the existing drainage pattern of the site or area, in a manner that would result in substantial erosion or siltation, result in flooding, or exceed the capacity of the existing or planned stormwater drainage systems. Therefore, this is a ***less than significant*** impact.

Impact 3.9-5: The proposed project could otherwise substantially degrade water quality (Less than Significant)

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies: Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." However, the City of Davis does not directly discharge to any 303(d) listed water bodies. Therefore, the proposed project would not be expected to further impair any 303(d)-listed water body.

Additionally, a previously-required mitigation measure (Mitigation Measure 3.6-1 in Section 3.6) requires the project proponent to submit a Notice of Intent and SWPPP to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP will utilize BMPs and technology to reduce erosion and sediments to meet water quality standards during construction. Furthermore, Mitigation Measure 3.9-1 would require the development of a project-specific Spill Prevention Countermeasure and Control Plan (SPCC).

Further, the project design includes the use of stormwater quality features that will minimize nonpoint source pollution and long-term urban runoff impacts. These would include site design measures, source control measures, and low impact development. These LID measures would likely include both volume-based BMPs (i.e., bioretention, infiltration features, pervious pavement, etc.) and flow-based BMPs (i.e., vegetated swales, stormwater planter, etc.). The use of these features would be dependent upon the location and setting within the project site. These treatment measures would be designed in accordance with the City of Davis Storm Water Quality Control Standards. Sizing and configuration of these treatment measures would be determined with the future development of the tentative map and improvement plans for the project. Mitigation Measure 3.9-2 requires the applicant to submit a final plan identifying permanent stormwater control measures to be implemented by the project to the City.

These stormwater quality features are intended to treat runoff close to the source. Through the preparation of improvement and grading plans these measures will be refined so that they will functionally minimize stormwater quality impacts. Implementation of previously listed mitigation measure and the BMPs outlined in the project description will ensure that the proposed project would have a ***less than significant*** impact on these issues.

Impact 3.9-6: The project may place housing or structures that would impede/redirect flows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (Less than Significant with Mitigation)

The risks of flooding hazards in the City of Davis and immediate surroundings are primarily related to large, infrequent storm events. These risks of flooding are greatest during the rainy season between November and March. Flooding events can result in damage to structures, injury or loss of human and animal life, exposure to waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater.

The 100-Year floodplain denotes an area that has a one percent chance of being inundated during any particular 12-month period. Floodplain zones (Special Flood Hazard Areas [SFHA]) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by the local jurisdictions, for any construction, whether residential, commercial, or industrial within 100-year floodplains.

Lands within the FEMA-designated 100-year floodplain (SFHA) are subject to mandatory flood insurance as required by FEMA. The insurance rating is based on the difference between the base flood elevation (BFE), the average depth of the flooding above the ground surface for a specific area, and the elevation of the lowest floor. Because the City of Davis participates in the National Flood Insurance Program, it must require development permits to ensure that construction materials and methods will mitigate future flood damage, and to prevent encroachment of development within floodways. New construction and substantial improvements of residential structures are also required to "have the lowest habitable floor (including the basement if it is, or easily could be 'habitable') elevated to or above the base flood level."

Figure 3.9-2 illustrates the areas within the FEMA-designated 100-year floodplain. The proposed project is shown on the FEMA Flood Insurance Rate Map (FIRM) number 06113C dated June 18, 2010. The project site is located within FEMA Zone A (shaded), which represents area that is within the designated 100-year floodplain. FEMA regulates flooding up to and including the 100-year storm event which Zone A represents.

Because Zone A floodplains do not have a published Base Flood Elevation, the depth of floodwater onsite during the 100-year event is undetermined. However, anecdotal information suggests that large storm flooding on and near the project site is expected to be characterized by shallow (possibly one- to two-feet deep), slow-moving flows.

Based on the preliminary hydrology and hydraulic modeling efforts, construction of the proposed project without appropriate drainage/flood mitigations may increase peak discharges in the Covell Drain, and would most likely increase the maximum water surface elevations in the floodplain on and near the site. This potential impact would be mitigated through a combination of proposed detention storage near the existing water tank site and around the perimeter of the project site. Implementation of the following mitigation measures would reduce potential impacts related to the 100-year flood hazard area to a ***less than significant*** level. No additional mitigation is required.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-3: *Prior to the issuance of grading permits and subsequently prior to the issuance of building permits, the project applicant shall either demonstrate that the developed portions of the project site are outside of the anticipated 100-year flood hazard area, or incorporate measures into the proposed project to achieve a 100-year level of flood protection for any site installations. This may include elevating the proposed building pads above the base flood elevation, installing adequate storm water retention areas, or other measures commonly accepted by the City of Davis.*

Mitigation Measure 3.9-4: *Prior to commencement of grading operations, the project proponent shall prepare and submit an application for Conditional Letter of Map Revision (CLOMR) to FEMA for approval. The CLOMR shall include revised local base flood elevations based on current modeling of the project site. No building permit shall be issued in the area impacted by the CLOMR until a CLOMR has been approved by FEMA.*

Mitigation Measure 3.9-5: *The building pads for all onsite structures shall be set a minimum of 1.0 foot above the maximum 100-year water surface elevations on the project site, as shown on the Conditional Letter of Map Revision (CLOMR) approved by FEMA. No building permit shall be issued until a CLOMR has been approved by FEMA, and it has been demonstrated that no building pads would be placed below 1.0 feet above the calculated local base flood elevations.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures 3.9-3, 3.9-4, and 3.9-5 would ensure that the proposed housing and structures are not placed within a 100-year flood hazard area, which would reduce potential impacts related to flood hazards to a ***less than significant*** level.

Impact 3.9-7: The project may expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam (Less than Significant)

The project site is not located in an area that is at risk of flooding from a levee failure, seiche, tsunami, or mudflow, beyond the potential for localized flooding at the site, as described above.

However, the City of Davis, including the project site, is located such that a catastrophic failure of Monticello Dam at Lake Berryessa could cause flooding of up to three meters. Due to the size of this dam, it is regulated by California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring the dam in perpetuity. The proposed project would not result in actions that could result in a higher likelihood of dam failure at Monticello Dam. There will always be a remote chance of dam failure that results in flooding of the City of Davis, including the project site. However, given the regulations provided in the California Dam Safety Act, and the ongoing monitoring performed by the DSD, the risk of loss, injury, or death to people or structures from dam failure is considered ***less than significant***.

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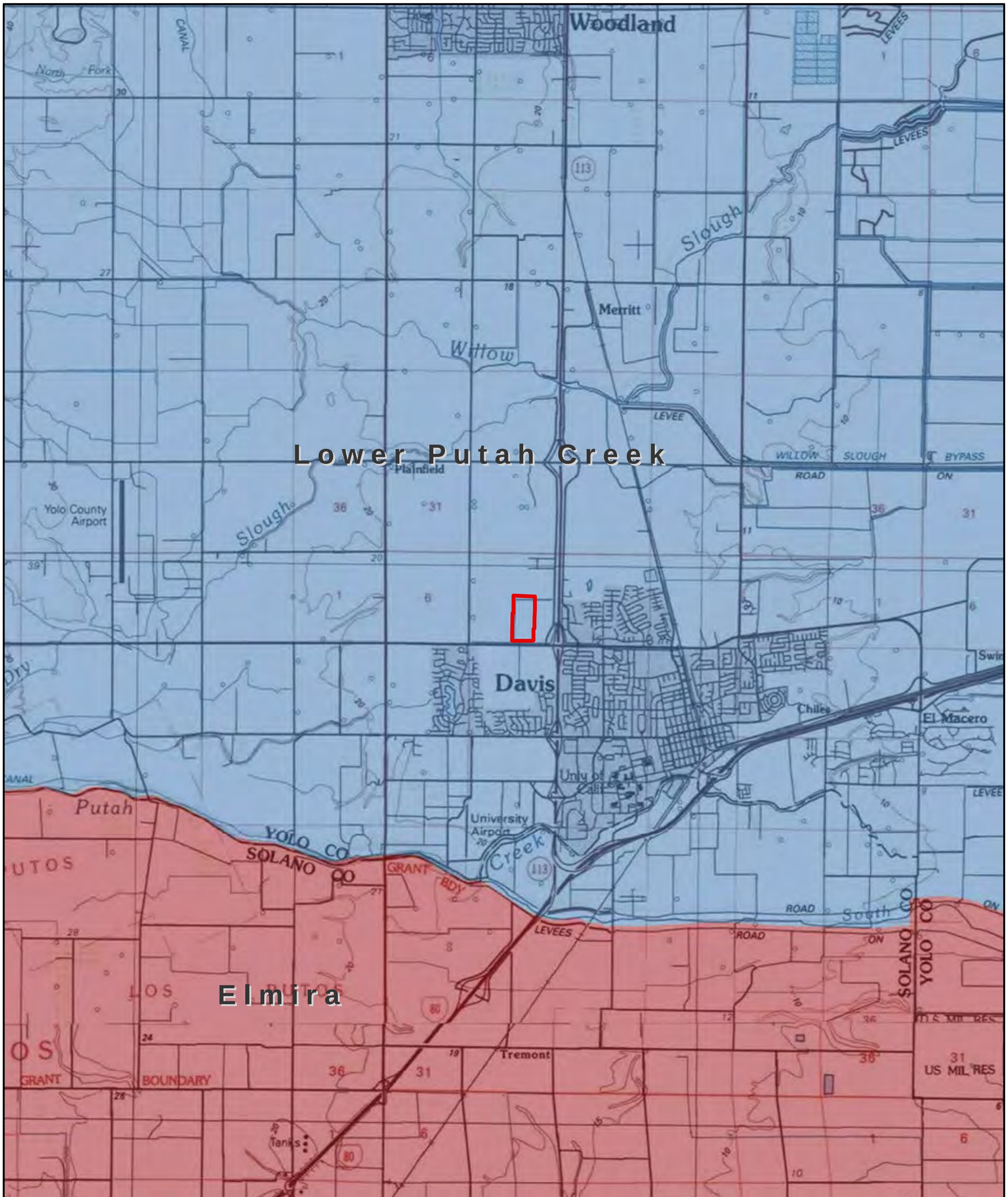

Legend

Project Location

Hydrologic Area

Elmira

Lower Putah Creek

N

0 ½ 1
Miles

1:100,000

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.9-1: Principal Watersheds Map

Sources: California Department of Forestry and Fire Protection, CalWater 2.2.1; Yolo County GIS; ArcGIS Online USGS Topographic Map Service. Map date: June 19, 2017.

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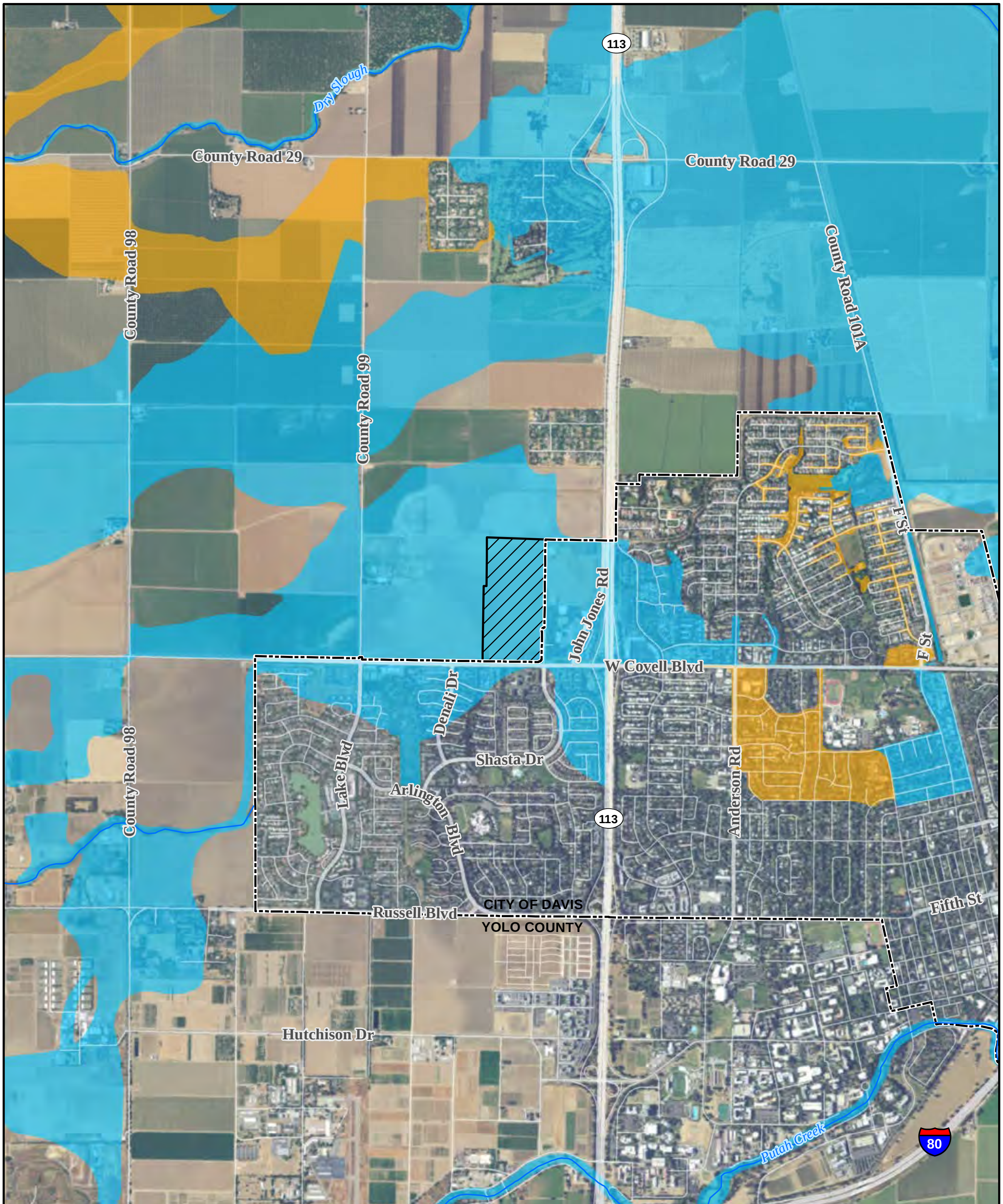

Legend

Project Parcel (74.95 ac)

1% Annual Chance Flood Hazard (100-yr Flood)

0.2% Annual Chance Flood Hazard (500-yr Flood)

N

0 1,000 2,000

Feet

1:36,000

Source: FEMA's National Flood Hazard Layer (Official).
Basemap: ArcGIS Online Imagery Service.
Map date: August 24, 2017.

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WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.9-2. FEMA Flood Insurance Rate Map

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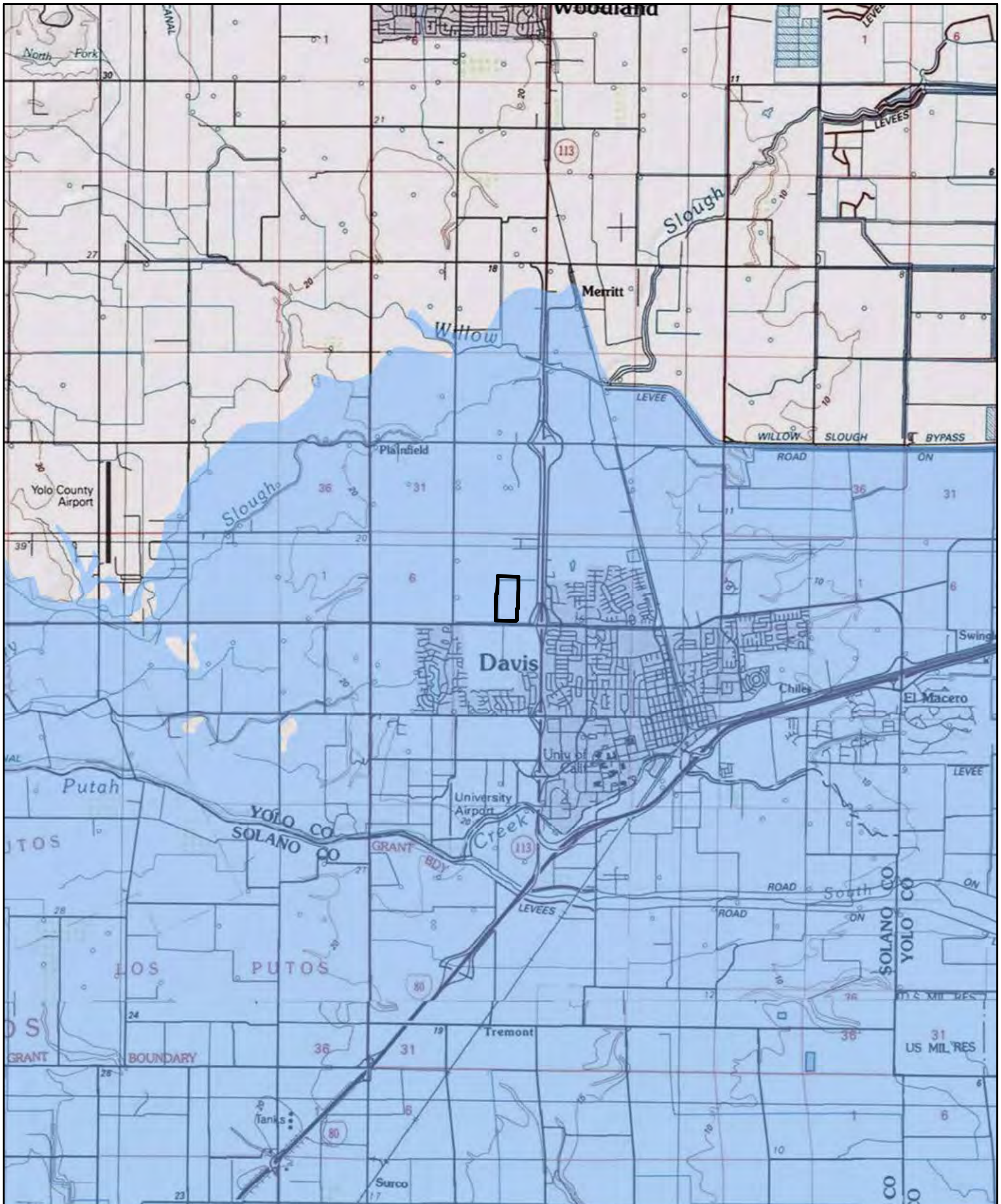

Legend

Project Parcel (74.95 ac)

Monticello Dam Inundation Area

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 3.9-3. Dam Inundation Areas

Source: California OES Dam Inundation Layer, ArcGIS Online.
Basemap: ArcGIS Online Topographic Map Service.
Map date:April 7, 2017.

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The purpose of this EIR section is to identify the existing land use conditions on the proposed West Davis Active Adult Community project site and the surrounding areas, analyze the project's compatibility with existing land uses, analyze the project's consistency with relevant planning documents and policies, and recommend mitigation measures to avoid or minimize the significance of potential impacts.

Information in this section is based on information provided by the project applicant, site surveys conducted by De Novo Planning Group in 2017, ground and aerial photographs, and the following reference documents:

- City of Davis General Plan (City of Davis, May 2001, Amended through January 2007);
- Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School (General Plan Update EIR) (2000);
- City of Davis Housing Element (2014);
- City of Davis Zoning Code; and
- Yolo Local Agency Formation Commission (LAFCo) Project Policies (2016).

During the NOP comment period for the EIR, comments regarding this topic were received from Robin Whitmore (March 2, 2017) and County of Yolo (April 18, 2017).

3.10.1 ENVIRONMENTAL SETTING

PROJECT SITE

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. Additionally, the project includes approximately 11.53 acres of offsite improvements. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, mapped rural residential subdivision lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

The project's regional location is shown in Figure 2.0-1 and the project area and site boundary are shown in Figure 2.0-2.

SURROUNDING LAND USES

The project site has developed or partially-developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt seven lot rural residential subdivision. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of SR 113 and east of John Jones Road. The parcels south of

West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

3.10.2 REGULATORY SETTING

STATE

Government Code

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a jurisdiction and of any land outside its boundaries that, in the jurisdiction's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the jurisdiction's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd. [c]).

State of California Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. In approving an annexation, the LAFCo will consider the following factors:

- Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas; and the likelihood of significant growth in the area and in adjacent incorporated and unincorporated areas during the next ten years.

- The need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; and the probable effect of the pro-posed incorporation, formation, annexation, exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.
- The effect of the proposed action and of alternative actions on adjacent areas, on mutual social and economic interests, and on the local government structure of the county.
- The conformity of both the proposal and its anticipated effects with both the adopted commission policies on providing planned, orderly, and efficient patterns of urban development, and the policies and priorities set forth in Government Code section 56377.
- The effect of the proposal on maintaining the physical and economic integrity of agricultural lands, as defined by Government Code section 56016.
- The definiteness and certainty of the boundaries of the territory, nonconformance of proposed boundaries with lines of assessment or ownership, creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.
- Consistency with city or county general and specific plans.
- The sphere of influence of any local agency that may be applicable to the proposal being reviewed.
- The comments of any affected local agency.
- The ability of the newly formed or receiving entity to provide the services that are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.
- Timely availability of water supplies adequate for projected needs as specified in Government Code section 65352.5.
- The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of the regional housing needs, as determined by the appropriate council of governments consistent with Housing Element laws.
- Any information or comments from lawmakers.
- Any information relating to existing land use designations.

In addition to the above factors, LAFCo may also consider any resolution raising objections to the action that may be filed by an affected agency, and any other matters which the commission deems material.

LOCAL

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the region and the corresponding Metropolitan Transportation Improvement Program (MTIP). The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (seven-year horizon) in more detail. The MTP/SCS was adopted by the SACOG board in 2016.

METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The MTP/SCS is a long-range plan for transportation improvements in the region. The plan is based on projections for growth in population, housing, and jobs. SACOG determines the regional growth projections by evaluating baseline data (existing housing units and employees, jobs/housing ratio, and percent of regional growth share for housing units and employees), historic reference data (based upon five- and ten-year residential building permit averages and historic county-level employment statistics), capacity data (General Plan data for each jurisdiction), and current MTP data about assumptions used in the most recent MTP/SCS. SACOG staff then meets with each jurisdiction to discuss and incorporate more subjective considerations about planned growth for each area. Finally, SACOG makes a regional growth forecast for new homes and new jobs, based upon an economic analysis provided by a recognized expert in order to estimate regional growth potential based on market analysis and related economic data. This growth forecast is then incorporated into the MTP/SCS.

Yolo Local Agency Formation Commission

The Yolo LAFCo is an independent agency responsible for the implementation of the Cortese-Knox-Hertzberg Local Government Reorganization Act. Yolo LAFCo is empowered to review, approve or deny boundary changes, city annexations, consolidations, special district formations, incorporations for cities and special districts, and to establish local Spheres of Influence, “SOI.” The SOI for each governmental agency is a plan for the future boundary and service area. The LAFCo function is outlined in Government Code, Section 56000 et seq., known as the Cortese-Knox-Hertzberg Local Government Reorganization Act.

The Yolo LAFCo is charged with the responsibility of preservation of agricultural land, orderly development, and the efficient provision of urban services. LAFCos evaluate the loss of agricultural land to development, the effect the proposed development would have on adjacent agricultural lands, the orderly expansion of city boundaries, and the ability of a city to provide urban services to the property. The Yolo LAFCo has adopted Standards for Evaluation of Proposals which include several policies that are applicable to the proposed project. Many of the policies provide guidance as to which territories are favored by the Commission in annexations. The policies also address agricultural preservation and promotion, requirements for pre-zoning and tax sharing agreements, and ability of the annexing agency to provide adequate water supply in a timely fashion.

City of Davis General Plan

The City of Davis General Plan articulates the community's vision of its long-term physical form and development. The general plan is comprehensive in scope and represents the city's expression of quality of life and community values. General plans are prepared under a mandate from the State of California, which requires that each city and county prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands. State law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. Sections IV and VII contain the bulk of the City's General Plan in the form of goals, policies, standards, and actions for a total of 22 separate topics, which address the State-required components as well as additional issues identified by the City. Each of the 22 chapters within these sections provides background information on a topic and the goals, policies, standards and actions that apply to it. Sections IV through VII include:

- Section IV, Community Form, addresses Land Use and Growth Management; Mobility; Urban Design, Neighborhood Preservation, and Community Forest Management Housing; and Economic and Business Development;
- Section V, Community Facilities and Services, addresses Water; Materials, Solid Waste and Recycling, Computers and Technology; Parks, Recreation, and Open Space; Youth and Education; Human Services; Art and Culture; and Diversity;
- Section VI, Community Resource Conservation, addresses Habitat and Natural Areas; Agriculture, Soils, and Minerals; Historic and Archaeological Resources; and Energy;
- Section VII, Community Safety, addresses Police and Fire, Hazards, Air Quality, and Noise.

GENERAL PLAN LAND USE MAP

The Land Use Map portrays the anticipated uses of land in and around Davis through land use designations. The Land Use Map designates areas intended for urban development, parks/recreation, open space, public/semi-public uses, UC Davis and related research park uses, agriculture, urban/agriculture transition, natural habitat, and urban reserve.

The City's Land Use Map designates the project site as Agriculture. Changes to the Land Use Element would include changing the entire approximately 74-acre project site from Agriculture to Residential – Medium Density, Residential – High Density, Neighborhood Mixed Use, and Urban Agriculture Transition Area. The City also anticipates that the off-site detention basin area will be changed from Agriculture to Public/Semi-Public. Lands to the east are designated as Public/Semi-Public and General Retail. The land directly to the south is designated Residential – High Density and Residential – Medium Density. The land use designations for the project site and surrounding lands are described as follows.

Agriculture. The Agriculture designation is intended to protect valuable natural resources such as agricultural land and wildlife habitat, to allow for productive agricultural use surrounding or within Davis, to ensure a permanent buffer between adjacent jurisdictions that will maintain the separate identities of Davis and the surrounding cities, and to serve as a visual amenity around urban development. New residential subdivisions are not allowed.

Public/Semi-Public. The Public/Semi-Public designation provides areas for appropriate, centrally-located sites for community facilities. Allowable uses include public facilities and offices, schools, child care facilities, hospitals and accessory medical offices, religious institutions, drainage facilities and utilities. A Public/Semi-Public site historically in agricultural use may continue in agricultural use until a public/semi-public use is developed.

General Retail. The General Retail designation provides opportunities for retail stores and centers favoring retail uses that are not currently adequately available in Davis, and not likely to be able to locate in the downtown area, and that are consistent with the overall City goal of maintaining the economic vitality of the downtown and neighborhood centers. A maximum floor area ratio of 50 percent is allowed, with an additional 10 percent allowed for development of shared parking facilities with neighboring uses. An additional 15 percent is allowed for the housing component of a mixed-use project.

Residential – High Density. The Residential – High Density designation is intended to allow for residential development emphasizing compact clustered development in new areas and infill in existing neighborhoods, together with a mixture of local-serving retail and institutional uses, to meet housing demands, reduce pressure for peripheral growth and facilitate transit and bicycle/pedestrian travel. Areas designated Residential – High Density designation may provide 25.00 to 50.00 units per gross acre.

Projects in this category are intended to: implement the “Smart Growth Principles” promoted in the SACOG Blueprint program including but not limited to: compact development for efficiency of land usage and infrastructure; contribution to the avoidance of sprawl; and reduction of vehicle miles travelled. The projects provide for needed market-rate and affordable housing, and alleviate the pressure for rental housing in established low density residential neighborhoods. The projects would typically be characterized by:[1]

- Location: The site location encourages walking, biking and public transit use, and the reduction of auto trips. The location is characterized by being: near transit routes and bicycle facilities; near community facilities and services, near shopping, employment centers, parks and greenbelts; and separated or adequately buffered from low density residential uses.
- Quality site and architectural design. The site and architectural design contributes to the attractiveness of living in a compact development and facilitates the ease of walking and biking to work or neighborhood services. The design fosters a sense of community and place,

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[1] City of Davis. 2016. Resolution No. 16-077, Series 2016 – Resolution Amending the City of Davis General Plan Land Use Element Regarding Allowable Uses and Densities; and Amending the City of Davis General Plan Land Use Map to Redesignate the Parcel Located at 2990 Fifth Street (APN #071-100-025), from Existing Residential Medium Density to the New Residential High Density Category.

interaction among residents, and the development of smaller communities within a larger project. Building considerations include: heights that accommodate the higher density while providing adequate setbacks from property lines; appropriate massing across a site in the placement of individual buildings and structures, and where necessitated by sensitivities to adjoining uses providing for "stepping" of building heights throughout of upper floors. Parking may be provided with surface parking, below grade, in structures or a combination thereof. Usable open space meets or exceeds normal standards for a residential high density project.

Residential – Medium Density. The Residential – Medium Density designation is intended to allow for residential development emphasizing compact clustered development in new areas and infill in existing neighborhoods, together with a mixture of local-serving retail and institutional uses, to meet housing demands, reduce pressure for peripheral growth and facilitate transit and bicycle/pedestrian travel. Areas designated Residential – Medium Density designation may provide 6.00 to 13.99 units per gross acre.

GENERAL PLAN LAND USE POLICIES

General Plan policies and standards applicable to environmental issues associated with land use are summarized below. General Plan policies associated with specific environmental topics (aesthetics, air quality, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, housing, noise, parks, public services, transportation, utilities, etc.) are discussed in the relevant chapters of this EIR.

Goal LU 1 Maintain Davis as a small, University-oriented city surrounded by and containing farmland, greenbelt, and natural habitats and reserves..

Policy LU 1.1 Recognize that the edge of the urbanized area of the City depicted on the land use map under this General Plan represents the maximum extent of urbanization through 2010, unless modified through the Measure J process.

Policy LU A.3 Require a mix of housing types, densities, prices and rents, and designs in each new development area.

Policy LU A.5 Require neighborhood greenbelts in all new residential development areas. Require that a minimum of 10 percent of newly-developing residential land be designated for use as open space primarily for neighborhood greenbelts.

Goal LU 3 Integrate land use, economic development, environmental, and transportation planning.

Policy LU 3.1 Create an efficient system of planning and zoning.

Standards

a. Specific plans or master site plans that indicate land use densities and intensities, building types, building variety, transit provision, bicycle and pedestrian facilities, and open space areas shall be required for major development areas.

Policy UD 1.1 Promote urban/community design which is human-scaled, comfortable, safe and conducive to pedestrian use.

Policy UD 2.2 Maintain and increase the amount of greenery, especially street trees, in Davis, both for aesthetic reasons and to provide shade, cooling, habitat, air quality benefits, and visual continuity.

Policy UD 2.3 Require an architectural "fit" with Davis' existing scale for new development projects.

Standards

a. There should be a scale transition between intensified land uses and adjoining lower intensity land uses.

Policy UD 2.4 Create affordable and multi-family residential areas that include innovative designs and on-site open space amenities that are linked with public bicycle/pedestrian ways, neighborhood centers.

Standards

a. Multi-family buildings should provide easy pedestrian access to the nearest transit stop and/or neighborhood center.

b. Multi-family development design should be compatible with adjoining single family areas.

c. High density housing should be organized around usable common space.

d. Multi-family housing complexes should be designed, constructed and managed in projects of no more than 150 units, not including any density bonus.

Policy UD 3.1 Use good design to promote safety for residents, employees, and visitors to the City.

Policy UD 3.2 Provide exterior lighting that enhances safety and night use in public spaces, but minimizes impacts on surrounding land uses.

Goal HOUSING 1 Promote an adequate supply of housing for people of all ages, income, lifestyles and types of households consistent with General Plan policies and goals.

Policy HOUSING 1.1 Encourage a variety of housing types that meet the housing needs of an economically and socially diverse Davis.

Standards

a. Housing, including affordable housing, should include a range of unit sizes appropriate to meet Davis housing needs.

b. Each new development area should include a mix of housing types, densities, prices and rents, and designs.

c. All new housing construction shall meet minimum densities and will have limited number of overly-large homes.

Policy HOUSING 1.2 Strive to maintain an adequate supply of rental housing in Davis to meet the needs of all renters, including students.

Policy HOUSING 1.3 Encourage the construction of housing to meet the needs of single persons and households with children with extremely low, very low, and low incomes.

Policy HOUSING 1.4 Encourage a variety of housing types and care choices for disabled persons.

Policy TRANS 1.3 (Goals 1, 2, 3, 4). Encourage higher intensity residential, commercial, and mixed-use development near existing activity centers and along corridors well served by non-motorized transportation infrastructure and public transportation.

Standard

a. Residential and commercial developments and redevelopment projects should achieve transit-supportive densities within ¼-mile of multi-modal corridors. Such densities would consist of ten (10) units per acre or greater, if compatible with neighborhood context.

Policy TRANS 1.5 (Goal: 2). Strive for carbon-neutrality or better from the transportation component of new residential development.

Policy TRANS 1.7 (Goal: 2). Promote the use of electric vehicles and other low-polluting vehicles, including Neighborhood Electric Vehicles (NEV).

Standard

a. New development shall include infrastructure for electric vehicles consistent with the future growth in the number of electric vehicles.

Policy TRANS 3.1 (Goals 1, 2). Facilitate the provision of convenient, reliable, safe, and attractive fixed route, commuter, and demand responsive public transportation that meets the needs of the Davis community, including exploring innovative methods to meet specialized transportation needs.

Standard

a. Provide convenient public transportation service within 1/8 mile of “activity centers” and within ¼ mile of medium - high density housing. Particular emphasis shall be given to activity centers frequently used by high numbers of persons dependent on public transportation.

Policy TRANS 3.3 (Goals: 1,2). Require new development to be designed to maximize transit potential.

City of Davis Zoning Code

The project site is currently zoned Agriculture-Intensive (A-N) by the Yolo County Zoning Map. The project would include pre-zoning to Planned Development (PD) by the City of Davis.

PLANNED DEVELOPMENT

The purpose of the Planned Development District is to allow diversification in the relationship of various buildings, structures, and open spaces in order to be relieved from the rigid standards of conventional zoning. The criteria for Planned Development districts include the development of sound housing for persons of low, moderate and high income levels, residential developments which provide a mix of housing styles and costs, creative approaches in the development of land, more efficient and desirable use of open area, variety in the physical development pattern of the City and utilization of advances in technology which are innovative to land development. In order to grant a final planned development application, the Planning Commission or City Council must find that the following are true:

(a) The property owner can commence substantial construction within eighteen months from the date of the final planned development approval and intends to complete the construction within a reasonable time.

(b) The proposed development conforms to the general plan and any specific plans approved for that area by the city.

(c) Any residential development shall constitute a residential environment of sustained desirability and stability in harmony with the character of the surrounding neighborhood. The applicant shall demonstrate that sites for public facilities are adequate to serve the anticipated population and that standards for open space are at least equivalent to standards otherwise specified in this chapter.

(d) Any industrial and research uses shall be appropriate in area, location and overall planning for the purpose intended, and the design and development standards shall create an industrial or research environment of sustained desirability and stability and such development shall meet performance standards established by this chapter.

(e) Any institutional, recreational and other similar nonresidential uses shall be appropriate in area, location and overall planning for the purpose proposed and surrounding area shall be protected from any adverse effects from such development.

(f) The auto, bicycle and pedestrian traffic system shall be adequately designed to meet anticipated traffic and shall be so designed to provide the minimum amount of interference with each other.

(g) Commercial development can be justified economically at the location proposed and that adequate commercial facilities of the types proposed will be provided.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and planning if it will:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: The project may result in the physical division of an established community (No Impact)

As noted in the Davis General Plan, the City of Davis has planned for orderly, logical development that supports compatibility among adjacent uses. The General Plan describes that it seeks to discourage urban sprawl, create urban open spaces and greenbelts, and continue to improve existing urban uses and place new urban uses in existing planned urban areas. The approximately 74-acre project site is currently undeveloped and has been previously used for agricultural uses. The project site has developed or partially-developed land uses on three sides, with residential development located to the south (across Covell Boulevard) and the Sutter-Davis Hospital to the east. The proposed project, which includes residential uses, a mixed-use area, and open space/greenways, would not physically divide an established community. Rather, the project represents a mixed-use development within the City's Sphere of Influence, adjacent to areas of the City that are currently urbanized. Therefore, the project would have ***no impact*** related to physically dividing an established community.

Impact 3.10-2: Implementation of the proposed project may conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect (Less than Significant)

CONSISTENCY WITH THE CITY OF DAVIS GENERAL PLAN

The City of Davis General Plan currently designates the project site as Agriculture. As described above, the Agriculture designation is intended to protect valuable natural resources such as agricultural land and wildlife habitat, to allow for productive agricultural use surrounding or within Davis, to ensure a permanent buffer between adjacent jurisdictions that will maintain the separate identities of Davis and the surrounding cities, and to serve as a visual amenity around urban development. As part of the proposed project, the applicant is requesting a General Plan Amendment to change the site's General Plan designation from Agriculture to Residential – Medium Density, Residential – High Density, Neighborhood Mixed Use, and Urban Agriculture Transition Area under the City of Davis General Plan Land Use Map. The City also anticipates that the off-site detention basin area will be changed from Agriculture to Public/Semi-Public. The Residential – High Density category in the General Plan establishes a density of between 25.00 and 50.00 dwelling units per gross acre. At a density of approximately 33.11 units per acre (150 units on 4.53 acres), the proposed high density portion of the project complies with the City's existing General Plan Residential – High Density levels. The Residential – Medium Density category in the General Plan establishes a density of between 6.00 and 13.99 dwelling units per gross acre. At a density of approximately 7.48 units per acre (410 units on 54.81 acres), the proposed medium density portion of the project complies with the City's existing General Plan Residential – Medium Density levels.

In evaluating the proposed General Plan amendments for potential environmental impacts related to consistency with land use plans, policies, and regulations, several General Plan policies must be examined for consistency.

The project is consistent with General Plan policies related to land use, including those identified above under the Regulatory Setting, related to amount and location of growth, allowed uses, development densities and intensities, project design, housing, and transportation. The project is consistent with Land Use Policies LU A.3 and LU A.5 through providing a mix of residential unit types and sizes (bungalows, cottages, small builder lots, high density apartments, assisted living units) and affordability levels. The project implements policies for integration of land use and transportation planning with convenient access and connections to existing bicycle, pedestrian, automobile, and public transit infrastructure consistent with Goal LU 3 and Policy 3.1. The project does not propose growth beyond the areas envisioned for urbanization on the Davis General Plan Land Use Map without approval by the voters, consistent with Policy LU 1.1. Consistency with the City's 1% Growth Policy, which implements Policy LU 1.1, is discussed in Section 3.12, Population and Housing.

The project is consistent with Urban Design policies related to land use. It meets the requirements of Policies UD 1.1, 2.2, 2.3, 2.4, 3.1, and 3.2 regarding building and site design, bicycle and pedestrian linkages, pedestrian scale, greenery, building transition, and setbacks. Nearby residential uses are located to the south and east of the project site and are separated from the project site by multi-lane arterial streets and/or highways (Covell Boulevard and SR 113), multi-use pathways, and street landscaping. Adjacent adjoining properties consist of agricultural and public uses. The project provides substantial building setbacks and buffer areas throughout and surrounding the project site. The senior affordable component would have a 150-foot agricultural buffer to the west of the site, and additional buffer areas would be located to the west and south of the affordable component. The project would include on-site services coordination staff that would facilitate appropriate health, educational and recreational activities, and supportive services for the residents. The proposed buildings would incorporate a mix of roof lines and building articulation to enhance the architectural interest. The conceptual master plan is organized around large outdoor common areas, and multi-use trails would be incorporated in and around the site. The project connects to and supports existing bicycle and pedestrian infrastructure and improves access to transit. The project also includes greenery and landscaping and will provide additional street trees along Covell Boulevard and within the site. Exterior lighting will comply with the City's outdoor lighting control ordinance and building code requirements to ensure adequate lighting while minimizing off-site glare.

Standard D of Policy UD 2.4 states that multi-family developments should not exceed 150 units, not including density bonus. The high density portion of the proposed project would provide up to 150 affordable units for seniors. Additionally, the project further implements housing and transportation policies, as described below.

The project is consistent with Housing Policies 1.1, 1.2, 1.3, 1.4, and 1.5 related to land use. The project includes market rate housing and affordable housing, a mix of unit sizes, and would add to supply and variety of rental and ownership housing in the City. Additionally, the project would accommodate single persons and households with children with low incomes. The proposed University Retirement Community would have up to 30 assisted living, age-restricted detached units. As such, this area would accommodate persons with disabilities and promote aging in place.

The project is consistent with Transportation Policies 1.3, 1.5, 1.6, 1.7, 3.1, and 3.3 related to land use. The project site is located on a main City corridor and is located in an area that is well-served by non-motorized transportation infrastructure. The proposed high density portion of the project supports transit use and two Unitrans routes pass the project site. The project incorporates features and amenities to reduce vehicle use and carbon emissions, such as bicycle parking and the potential for car share and bike share.

The proposed general plan amendment will ensure the project's consistency with the City's General Plan requirements. This is considered a ***less than significant*** impact and no mitigation is required.

CONSISTENCY WITH THE ZONING CODE

The project site is currently within the jurisdiction of Yolo County. Current County zoning for the project site is A-N. The Yolo LAFCo would require the project site to be pre-zoned by the City of Davis in conjunction with the proposed annexation. The City's pre-zoning for the project site would be PD. The pre-zoning would go into effect upon annexation into the City of Davis. Article 40.22 establishes processing, preliminary development plan (project application) content requirements, and standards for the PD district. The proposed PD would provide for the range of uses and development standards consistent with the project as described in Chapter 2.0 and would ensure that all applicable zoning requirements are met. As part of the project approval process, the project applicant will be required to submit a final development plan consistent with the requirements of Article 40.22 for review and approval of the City Council through a public hearing process. With continued compliance with Article 40.22 through the public hearing and approval process, the project would be consistent with the City's Zoning Code and this impact would be ***less than significant***.

CONSISTENCY WITH YOLO LAFCO POLICIES

The project site is currently within the jurisdiction of Yolo County. Current County zoning for the project site is A-N. The Yolo LAFCo would require the project site to be pre-zoned by the City of Davis in conjunction with the proposed annexation. The City's pre-zoning for the project site would be PD. The pre-zoning would go into effect upon annexation into the City of Davis. Article 40.22 establishes processing, preliminary development plan (project application) content requirements, and standards for the PD district. The proposed PD would provide for the range of uses and development standards consistent with the project as described in Chapter 2.0 and would ensure that all applicable zoning requirements are met. As part of the project approval process, the project applicant will be required to submit a final development plan consistent with the requirements of Article 40.22 for review and approval of the City Council through a public hearing process.

Should the project entitlements be approved by Davis City Council, and subsequently, the citizens of Davis via a Measure R vote, an application for annexation would be filed with Yolo LAFCo for review and consideration for approval. Yolo LAFCo is considered a responsible agency for this project, and as such, this EIR includes a discussion of the project's consistency with Yolo LAFCo's policies related to annexation proposals. According to the Yolo LAFCo Project Policies (adopted January 28, 2016), LAFCo will consider following factors to determine the local and regional impacts of proposed out of agency services:

a) Whether annexation is a reasonable and preferable alternative to LAFCo allowing extended services outside the agency's jurisdictional boundaries;
b) The growth inducing impacts of any proposal;
c) Whether the proposed extension of services promotes logical and orderly development of areas within the SOI (i.e. islands, strips and corridors are disfavored);
d) The agreed upon timetable and stated expectation for annexation to the agency providing the requested service;
e) The proposal's consistency with the policies and plans of all affected agencies;
f) The ability of the local agency to provide service to the proposed area without detracting from current service levels;
g) Whether the proposal contributes to the premature conversion of agricultural land or other open space land;
h) Whether the proposal conflicts with or undermines adopted Municipal Service Review determinations and/or recommendations; and
i) Other factors determined to be relevant by the Commission or staff.

The project's consistency with the above factors is included below:

a) The proposed annexation would be considered a reasonable extension of services within the area. This EIR includes an assessment of the impacts of the proposed project and proposed annexation on service agencies. This Draft EIR notes that the proposed project would have significant and unavoidable impacts related to aesthetics, agricultural resources, air quality, and transportation/circulation. The proposed development and annexation would not result in any significant, adverse impacts to any of the service agencies such that it would seriously impair operation. Therefore, the proposed annexation is consistent with this policy.
b) Implementation of the proposed project would not induce substantial population growth. As discussed in Impact 3.12-1 in Section 3.12, Population and Housing, of this Draft EIR, the project is consistent with the regional growth projections prepared by SACOG. Additionally, the City's requirements associated with the 1% Growth Policy and the City's Phased Allocation Ordinance would ensure that the population growth associated with the project is consistent with the City's growth management requirements. Therefore, the proposed annexation is consistent with this policy.
c) The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation would not result in the creation of islands, strips or corridors.
d) Should the project entitlements be approved by the Davis City Council, and subsequently, the citizens of Davis via a Measure R vote, an application for annexation would be filed with Yolo LAFCo for review and consideration for approval. Should the Yolo LAFCo approve the proposed annexation request, project construction would begin within the subsequent years. Construction of the project would be phased in order to reach an aging Davis population over an extended period of time. Therefore, the proposed annexation is consistent with this policy.
e) The project's consistency with local policies is discussed throughout this Draft EIR, including in the above discussion. Therefore, the proposed annexation is consistent with this policy.
f) The proposed project would not result in significant disruptions of existing services in the remaining adjacent territory, as indicated in the Public Services and Recreation section of this EIR. The Draft EIR assesses service capacity and demands for these services in Sections 3.13, Public Services and Recreation, and 3.15, Utilities. There are not any service deficiencies noted by the City of Davis, or contained within this EIR that are anticipated to occur after installation of infrastructure and payment of fees. Therefore, the proposed annexation is consistent with this policy.
g) The proposed annexation area is within the SOI and is designated for agricultural uses by the City of Davis and County of Yolo. The project site is not currently used for agricultural purposes and agricultural resources are located adjacent to the proposed annexation area. There are no Williamson Act contracts on or adjacent to the project site. The Department of Conservation Farmland Mapping and Monitoring Program (FMMP) designates the project site as Farmland of Local Importance (84.27 acres), Farmland of Local Potential (1.56 acres), and Urban and Built-Up Land (2.09 acres). Prime Farmland, Unique Farmland, and Farmland of Statewide Importance are not located adjacent to the project site. While the project site is designated as Farmland of Local Importance by the California Department of

Conservation, the project site does contain prime soils as defined by the Yolo County Agricultural Conservation and Mitigation Program. The proposed project would result in the development of existing open space lands for non-open space uses. The Yolo LAFCo imposes agricultural mitigation requirements for the conversion of agricultural land to urban uses for proposed annexations or other applications.

While the proposed project would result in the conversion of agricultural land to urban uses, the Agricultural Resources section of this EIR confirms the feasibility of continuing to farm adjacent to the project site, with the relocation of the existing Urban Agriculture Transition Area and incorporation of a minimum 150-foot agricultural buffer. This EIR requires mitigation for agricultural land conversion at a 2:1 ratio. Therefore, the proposed annexation is consistent with this policy.

h) The 2016 Municipal Service Review and SOI Study for the City identifies the project site as within the SOI; therefore, a sphere amendment prior to proceeding with the annexation would not be required. Therefore, the proposed annexation is consistent with this policy.

The policies discussed above are intended to ensure orderly reorganization to local jurisdictional boundaries, including annexations. The proposed Project is generally consistent with LAFCo policies adopted to address environmental impacts.

CONCLUSION

Overall, the project would be consistent with the City of Davis General Plan, Zoning Code, and LAFCo policies. Therefore, the project will have a ***less than significant*** impact.

Impact 3.10-3: Implementation of the proposed project may conflict with an applicable habitat conservation plan or natural community conservation plan (No Impact)

The Yolo Habitat Conservancy (YHC), formerly the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) Joint Powers Agency, directs the preparation of the Yolo HCP/NCCP and the Yolo Local Conservation Plan (LCP). These plans were formerly known as the Yolo Natural Heritage Program.

The Yolo County HCP/NCCP aims to conserve natural open space and agricultural areas that provide habitat for special status and at-risk species found within the habitats and natural communities in Yolo County. The habitat conservation goals are supplemented by additional goals related to preservation of the County's agricultural character and promotion of economic development, as well as enhancement of opportunities for recreation in natural areas. When completed and approved, the Yolo County HCP/NCCP will incorporate measures to conserve important biological resources, provide streamlined permitting for appropriate urban growth and public infrastructure projects, and support the preservation of Yolo County's rich agricultural heritage. All activities of the Yolo County HCP/NCCP are conducted under the oversight of the Yolo County Joint Powers Agency.

The Second Administrative Draft Yolo HCP/NCCP was released on March 31, 2015, and the public comment period for the Second Administrative Draft closed on May 29, 2015. The environmental review documents have not been completed. The Public Review Draft Plan and Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was released for public comment beginning on June 1, 2017. The 90-day public review period ended on August 30, 2017.[2] Now that the Draft EIR/EIS public review period is complete, a Final EIR/EIS will be drafted and completed. As such, the final HCP/NCCP has not been adopted. Therefore, in relation to conflicts with an applicable habitat conservation plan or natural community conservation plan, the project will have ***no impact***.

2 Source: https://www.yolohabitatconservancy.org/documents.

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This section provides a general description of the existing noise sources in the project vicinity, discusses the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for potentially significant noise-related impacts.

Comments were received during the public review period for the Notice of Preparation regarding this topic from the following: Toni Terhaar and Russ Kanz (April 26, 2017), and Toni Terhaar and Russ Kanz (May 4, 2017). Each of the comments related to noise and vibration are addressed within this section, and comments are included within Appendix A.

Information in this section is derived primarily from the following:

- City of Davis General Plan (City of Davis, May 2001, Amended through 2007)
- Noise Analysis for the West Davis Active Adult Community (j.c. brennan & associates, Inc., October 2017.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours (10 p.m. to 7 a.m.) weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second (Hertz.)
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.

L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

To quantify the existing ambient noise environment in the project vicinity, j.c. brennan & associates utilized noise level measurements previously conducted for the former Davis Innovation Center project on the same project site in January 2015. Short-term ambient noise level measurements and continuous (24-hour) noise level measurements were conducted at seven locations on the project site when schools, including the University of California, Davis (UC Davis), were in session. The noise measurement locations are shown in Figure 3.11-1. The noise level measurement survey results are provided in Table 3.11-2. Appendix E shows the complete results of the noise monitoring survey.

j.c. brennan & associates, Inc. conducted continuous hourly ambient noise level measurements for a period of 24-hours on the Davis Innovation Center project site from January 7th to January 8th, 2015. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels, and to determine the effective day/night distribution of roadway traffic for inclusion in the traffic noise prediction methodology. Instrumentation consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter, which was calibrated in the field before and after use with an LDL Model CAL200 acoustical calibrator.

TABLE 3.11-2: MEASURED AMBIENT NOISE LEVELS

Site	*Date*	*Average Measured Hourly Noise Levels, dBA*						
		L_{DN}	*Daytime*			*Nighttime*		
			L_{EQ}	*L_{50}*	*L_{MAX}*	*L_{EQ}*	*L_{50}*	*L_{MAX}*
Continuous 24-hour Noise Measurement Site								
A	January 7-8, 2015	65	63	61	78	57	49	75
B	January 7-8, 2015	68	64	62	76	61	57	73
Short-term Noise Measurement Sites						Notes:		
1	January 8, 2015 – 10:21 a.m.	N/A	50	49	53	SR 113 and CR 99 traffic noise.		
2	January 8, 2015 – 10:37 a.m	N/A	49	49	53	SR 113 and CR 99 traffic noise.		
3	January 8, 2015 – 10:55 a.m	N/A	50	49	56	SR 113 is primary noise source.		
4	January 8, 2015 – 11:33 a.m	N/A	48	47	57	SR 113 is primary noise source. Some parking lot noise audible.		
5	January 8, 2015 – 12:00 p.m	N/A	60	59	68	SR 113 is primary noise source.		

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. – 2017

Additionally, j.c. brennan & associates, Inc. staff conducted short-term noise level measurements on the Davis Innovation Center project site on Wednesday, January 7th, 2015. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels during the daytime periods at the project site. Instrumentation consisted of a LDL Model 824 precision integrating sound level meter which was calibrated in the field before use with an LDL CAL-200 acoustical calibrator. Table 3.11-2 shows the results of the short-term noise level measurements. Appendix E contains complete results of the noise monitoring.

Based upon field observations and the data in Table 3.11-2, the existing noise environment is primarily defined by traffic on State Route 113 (SR 113) and traffic on Covell Boulevard.

Existing Traffic Noise

Existing roadway noise levels were measured by j.c. brennan & associates, Inc. using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based on Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions on the local street system were obtained from a traffic study conducted by Fehr & Peers for the project site. Truck percentages and vehicle speeds on the local area roadway were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at an estimated distance along each project-area roadway segment. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. The traffic noise analysis is representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed.

Land uses adjacent to some of the project-area roadways consist primarily of commercial and retail uses, which are generally not considered sensitive to traffic noise.

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} along each roadway segment. This table also shows the distances to existing traffic noise contours. Appendix E shows the full inputs and results of the FHWA model.

TABLE 3.11-3: PREDICTED EXISTING TRAFFIC NOISE LEVELS

Roadway	*Segment - Location*	*Distance (feet)*	*Exterior Noise Level, dBA L_{DN}*	*Distance to Noise Contours (feet) Existing (L_{DN})*		
				70 dB	*65 dB*	*60 dB*
Anderson Rd	North of Covell Boulevard	100	56	11	25	53
Anderson Rd	South of Covell Boulevard	100	58	16	34	74
Covell Blvd	East of Anderson Road	100	62	28	61	132
Covell Blvd	West of Anderson Road	100	62	30	64	138
Covell Blvd	East of Denali Drive	100	63	36	78	167
Covell Blvd	West of Denali Drive	100	63	32	69	149
Covell Blvd	East of F Street	100	63	35	75	162
Covell Blvd	West of F Street	100	63	32	69	150
Covell Blvd	East of Lake Boulevard	100	62	31	66	142
Covell Blvd	West of Lake Boulevard	100	62	30	64	138
Covell Blvd	East of Sycamore Lane	100	62	30	65	140
Covell Blvd	West of J Street	100	63	35	75	162
F Street	North of Covell Boulevard	100	57	14	30	65
F Street	South of Covell Boulevard	100	57	14	30	64
Lake Blvd	North of Covell Boulevard	100	56	12	26	57
Lake Blvd	South of Covell Boulevard	100	56	12	26	57
Risling Ct	North of Covell Boulevard	100	48	4	8	16
Risling Ct	North of Sutter Hospital Dwy	100	47	3	6	13
Risling Ct	South of Sutter Hospital Dwy	100	48	4	8	16
Sycamore Ln	North of Covell Boulevard	100	55	10	22	47
SR 113	North of CR 31 / Covell Blvd.	180	68	142	307	1,423

NOTES: DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS. TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZEDSHIELDING.
SOURCE: FEHR & PEERS, CALTRANS, AND J.C. BRENNAN & ASSOCIATES, INC., 2017.

3.11.2 REGULATORY SETTING

STATE

Governor's Office of Planning and Research (OPR)

The *State of California General Plan Guidelines* (State of California 1998), published by OPR provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals, policies, and standards that are relevant to noise and vibration:

NOISE

Goal NOISE 1. Maintain community noise levels that meet health guidelines and allow for a high quality of life.

Policy NOISE 1.1 Minimize vehicular and stationary noise sources, and noise emanating from temporary activities.

Standards

a. The City shall strive to achieve the "normally acceptable" exterior noise levels shown in Table 19 of the General Plan [Table 3.11-4 of this section] and the target interior noise levels in Table 20 of the General Plan [Table 3.11-5 of this section] in future development areas and in currently developed areas.

b. New development shall generally be allowed only in areas where exterior and interior noise levels consistent with Table 19 of the General Plan [Table 3.11-5 of this section] and Table 20 of the General Plan [Table 3.11-6 of this section] can be achieved.

c. New development and changes in use shall generally be allowed only if they will not adversely impact attainment within the community of the exterior and interior noise standards shown in Table 19 of the General Plan [Table 3.11-4 of this section] and Table 20 of the General Plan [Table 3.11-5 of this section]. Cumulative and project specific impacts by new development on existing residential land uses shall be mitigated consistent with the standards in Table 19 of the General Plan [Table 3.11-4 of this section] and Table 20 of the General Plan [Table 3.11-5 of this section].

d. Required noise mitigation measures for new and existing housing shall be provided with the first stage and prior to completion of new developments or the completion of capacity-enhancing roadway changes wherever noise levels currently exceed or are projected within 5 years to exceed the normally acceptable exterior noise levels in Table 19 of the General Plan [Table 3.11-4 of this section].

TABLE 3.11-4: STANDARDS FOR EXTERIOR NOISE EXPOSURE (CITY OF DAVIS GENERAL PLAN TABLE 19)

LAND USE CATEGORY	*COMMUNITY NOISE EXPOSURE L_{DN} OR CNEL, DBA*			
	NORMALLY ACCEPTABLE	*CONDITIONALLY ACCEPTABLE*	*UNACCEPTABLE*	*CLEARLY UNACCEPTABLE*
Residential	Under 60	60-70*	70-75	Above 75
Transient Lodging – Motels, Hotels	Under 60	65-75	75-80	Above 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	Under 60	60-70	70-80	Above 80
Auditoriums, Concert Halls, Amphitheaters	Under 50	50-70	N/A	Above 70
Sports Arenas, Outdoor Spectator Sports	N/A	Under 75	N/A	Above 75
Playgrounds, Neighborhood Parks	Under 70	N/A	70-75	Above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Under 70	N/A	70-80	Above 80
Office Buildings, Business Commercial and Professional	Under 65	65-75	Above 75	N/A
Industrial, Manufacturing, Utilities, Agriculture	Under 65	70-80	Above 80	N/A

NORMALLY ACCEPTABLE: SPECIFIED LAND USE IS SATISFACTORY BASED UPON THE ASSUMPTION THAT ANY BUILDINGS INVOLVED ARE OF NORMAL CONVENTIONAL CONSTRUCTION, WITHOUT SPECIAL NOISE INSULATION REQUIREMENTS.
CONDITIONALLY ACCEPTABLE: NEW CONSTRUCTION OR DEVELOPMENT SHOULD BE UNDERTAKEN ONLY AFTER A DETAILED ANALYSIS OF THE NOISE REDUCTION REQUIREMENTS IS CONDUCTED, AND NEEDED NOISE ATTENUATION FEATURES ARE INCLUDED IN THE CONSTRUCTION OR DEVELOPMENT.
NORMALLY UNACCEPTABLE: NEW CONSTRUCTION OR DEVELOPMENT SHOULD BE DISCOURAGED. IF NEW CONSTRUCTION OR DEVELOPMENT DOES PROCEED, A DETAILED ANALYSIS OF THE NOISE REDUCTION REQUIREMENTS MUST BE CONDUCTED AND NEEDED NOISE ATTENUATION FEATURES SHALL BE INCLUDED IN THE CONSTRUCTION OR DEVELOPMENT.
CLEARLY UNACCEPTABLE: NEW CONSTRUCTION OR DEVELOPMENT SHALL NOT BE UNDERTAKEN.
NA: NOT APPLICABLE
** THE CITY COUNCIL SHALL HAVE DISCRETION WITHIN THE “CONDITIONALLY ACCEPTABLE” RANGE FOR RESIDENTIAL USE TO ALLOW LEVELS IN OUTDOOR SPACES TO GO UP TO 65 DBA IF COST EFFECTIVE OR AESTHETICALLY ACCEPTABLE MEASURES ARE NOT AVAILABLE TO REDUCE NOISE LEVELS IN OUTDOOR SPACES TO THE “NORMALLY ACCEPTABLE” LEVELS. OUTDOOR SPACES WHICH ARE DESIGNED FOR VISUAL USE ONLY (FOR EXAMPLE, STREETSIDE LANDSCAPING IN AN APARTMENT PROJECT), RATHER THAN OUTDOOR USE SPACE MAY BE CONSIDERED ACCEPTABLE UP TO 70 DBA.*

SOURCE: CITY OF DAVIS, 2010

TABLE 3.11-5: STANDARDS FOR INTERIOR NOISE LEVELS (CITY OF DAVIS GENERAL PLAN TABLE 20)

USE	*NOISE LEVEL (DBA)*
Residences, schools through grade 12, hospitals and churches	45 L_{dn}
Offices	55 L_{eq}

SOURCE: CITY OF DAVIS, 2010

Policy NOISE 1.2 Discourage the use of sound walls whenever alternative mitigation measures are feasible, while also facilitating the construction of sound walls where desired by the neighborhood and there is no other way to reduce noise to acceptable exterior levels shown in Table 19 of the General Plan [Table 3.11-4 of this section].

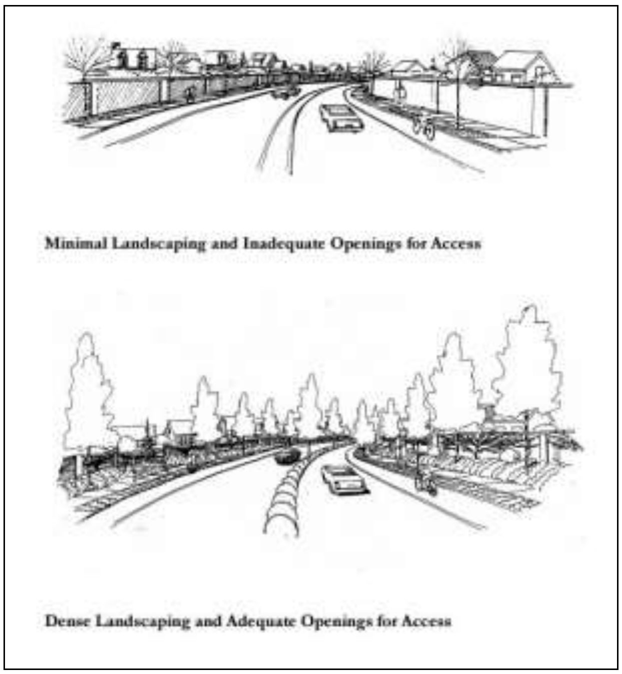
See the separate General Plan policy interpretation document titled "Major Arterial Landscaping, Noise Attenuation Design and Greenstreets".

Standards

a. Where sound walls are built, they should include dense landscaping along them to mitigate their visual impact, as illustrated in Figure 38 of the General Plan [shown below].

b. Where sound walls are built, they should provide adequate openings and visibility from surrounding areas to increase safety and access, as illustrated in Figure 38 of the General Plan [shown below]. Openings should be designed so as to maintain necessary noise attenuation.

Sound Wall Design Concepts
(City of Davis General Plan Figure 38)



c. Review sound walls and other noise mitigations through the design review process.

GOAL NOISE 2. Provide for indoor noise environments that are conducive to living and working.

Policy NOISE 2.1 Take all technically feasible steps to ensure that interior noise levels can be maintained at the levels shown in Table 20 of the General Plan [Table 3.11-5 of this section].

Standards

a. New residential development or construction shall include noise attenuation measures necessary to achieve acceptable interior noise levels shown in Table 20 of the General Plan [Table 3.11-5 of this section].

b. Existing areas that will be subjected to noise levels greater than the acceptable noise levels shown in Table 20 of the General Plan [Table 3.11-5 of this section] as a result of increased traffic on existing city streets (including streets remaining in existing configurations and streets being widened) shall be mitigated to the acceptable levels in Table 20 of the General Plan [Table 3.11-5 of this section]. If traffic increases are caused by specific projects, then the City shall be the lead agency in implementing cumulative noise mitigation projects. Project applicants shall pay their fair share for any mitigation.

City of Davis Noise Ordinance

Section 24 of the City of Davis City Code establishes a maximum noise level standard of 55 dB during the hours of 7:00 a.m. to 9:00 p.m., and 50 dB during the hours of 9:00 p.m. to 7:00 a.m. The ordinance defines maximum noise level as the "maximum continuous sound level or repetitive peak level produced by a sound source or group of sources. For the purposes of this analysis, J.C. Brennan & Associates, Inc. interpreted this definition to be equivalent to the average noise level descriptor, L_{eq}. The City Code makes exemptions for certain typical activities which may occur within the city. These exemptions are listed in Article 24.02.040, Special Provisions, and are summarized below:

a) Normal operation of power tools for non-commercial purposes are typically exempted between the hours of 8 am and 8 pm unless the operation unreasonably disturbs the peace and quiet of any neighborhood.

b) Construction or landscape operations would be exempt during the hours of 7am to 7 pm Mondays through Fridays and between the hours of 8 am to 8 pm Saturdays and Sundays assuming that the operations are authorized by valid city permit or business license, or carried out by employees or contractors of the city and one of the following conditions apply (conditions summarized, please see section 24.02.040 of the City Code for the full text):

  1) No piece of equipment produces a noise level exceeding 83 dBA at 25-feet.

  2) The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

  3) Requires that impact equipment and tools be fitted with the best available silencing equipment.

  4) Limits individual powered blowers to a noise level of 70 dBA at 50-feet.

  5) Prohibits more than one blower from simultaneously operating within 100-feet of another blower.

6) On single-family residential property, the 70 dBA at 50-feet requirement would not apply to blowers operated on single-family residential property.

c) The City Code also exempts air conditioners, pool pumps, and similar equipment from the noise regulations, provided that they are in good working order.

d) Work related to public health and safety is exempt from the noise requirements.

e) Safety devices are exempt from the noise requirements.

f) Emergencies are exempt from the noise requirements.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

NOISE STANDARDS

The noise standards applicable to the project include the relevant portions of the City of Davis General Plan, the City of Davis Noise Ordinance described in the Regulatory Setting section above (Section 3.11.2), and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible;
- A 5-dB change is clearly perceptible; and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.11-6 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.11-6: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, L_{DN}	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON).

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Davis does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are discussed in this section.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-7 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold, or 1 in/sec p.p.v., is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.11-7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

P.P.V. MM/SECOND	*P.P.V. IN/SECOND*	*HUMAN REACTION*	*EFFECT ON BUILDINGS*
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORNE VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Operation of the proposed project may generate unacceptable traffic noise levels at existing sensitive receptors (Less than Significant)

Tables 3.11-8 and 3.11-9 show the increases in traffic noise levels due to the project. Table 3.11-8 shows the increases in traffic noise levels based upon the Existing and Existing Plus Approved Projects Plus Project Conditions, and Table 3.11-9 shows the increases in traffic noise levels based upon the Cumulative No Project and Cumulative Plus Project Conditions. Appendix E shows the full inputs and results of the FHWA model.

Based upon Tables 3.11-8 and 3.11-9, the overall predicted traffic noise levels will not exceed 65.1 dB L_{dn}/CNEL, which falls within the City of Davis "Conditionally Acceptable" noise level standard of 60 to 70 dB L_{dn}/CNEL. Furthermore, the predicted increases in traffic noise levels do not exceed the FICON standards for significance of changes in noise exposure in Table 3.11-6. The highest increase in traffic noise levels occurs on Risling Court under the Existing Plus Project condition (+3.8 dB). However, this increase is not considered a significant increase in traffic noise levels. The highest predicted traffic noise levels are predicted along Covell Boulevard under the Cumulative Plus Project condition (65.1 dB). However, this increase is not considered a significant increase in traffic noise levels (+0.2 dB). At no point would the project result in an exceedance of the City of Davis exterior noise level standard. Therefore, this is a ***less than significant*** impact.

TABLE 3.11-8: PREDICTED EXISTING VS. EXISTING PLUS APPROVED PROJECTS PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA L_{DN}			DISTANCE TO CONTOURS (FEET) EXISTING			DISTANCE TO CONTOURS (FEET) EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		
			EXISTING	EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	CHANGE	70 L_{DN}	65 L_{DN}	60 L_{DN}	70 L_{DN}	65 L_{DN}	60 L_{DN}
Anderson Rd	North of Covell Blvd	100	55.9	55.7	-0.2	11	25	53	11	24	51
Anderson Rd	South of Covell Blvd	100	58.0	58.2	+0.2	16	34	74	16	35	76
Covell Blvd	East of Anderson Rd	100	61.8	62.1	+0.3	28	61	132	30	64	139
Covell Blvd	West of Anderson Rd	100	62.1	62.4	+0.3	30	64	138	31	68	146
Covell Blvd	East of Denali Dr	100	63.3	63.6	+0.3	36	78	167	37	81	174
Covell Blvd	West of Denali Dr	100	62.6	62.8	+0.2	32	69	149	33	72	154
Covell Blvd	East of F St	100	63.2	63.4	+0.2	35	75	162	36	78	169
Covell Blvd	West of F St	100	62.6	63.0	+0.4	32	69	150	34	73	158
Covell Blvd	East of Lake Blvd	100	62.3	62.5	+0.2	31	66	142	32	68	146
Covell Blvd	East of Oak Avenue	100	62.1	62.5	+0.4	30	64	138	31	68	146
Covell Blvd	East of Sycamore Ln	100	62.2	62.5	+0.3	30	65	140	32	68	147
Covell Blvd	West of J St	100	63.2	63.4	+0.2	35	75	162	37	79	169
F St	North of Covell Blvd	100	57.2	57.3	+0.1	14	30	65	14	31	66
F St	South of Covell Blvd	100	57.1	57.5	+0.4	14	30	64	15	32	68
Lake Blvd	North of Covell Blvd	100	56.3	56.3	0	12	26	57	12	26	57
Lake Blvd	South of Covell Blvd	100	56.3	56.5	+0.2	12	26	57	13	27	59
Project Dwy	North of Covell Blvd	100	N/A	47.4	N/A	N/A	N/A	N/A	3	7	14
Risling Ct	North of Covell Blvd	100	48.2	52.1	+0.3	4	8	16	6	14	30
Risling Ct	North of Sutter H. Dwy	100	46.6	49.1	+2.5	3	6	13	4	9	19
Risling Ct	South of Sutter H. Dwy	100	48.2	52.0	+3.8	4	8	16	6	14	29
Sutter H. Dwy	West of Risling Ct	100	N/A	47.9	N/A	N/A	N/A	N/A	3	7	16
Sycamore Ln	North of Covell Blvd	100	55.1	55.5	+0.4	10	22	47	11	23	50

NOTES:

[1] DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[2] TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
* ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.
SOURCE: CITY OF DAVIS, CALTRANS, AND J.C. BRENNAND & ASSOCIATES, INC., 2017.

TABLE 3.11-9: PREDICTED CUMULATIVE NO PROJECT VS. CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA L_{DN}			DISTANCE TO CONTOURS (FEET) CUMULATIVE NO PROJECT			DISTANCE TO CONTOURS (FEET) CUMULATIVE PLUS PROJECT		
			CUMULATIVE NO PROJECT	CUMULATIVE PLUS PROJECT	CHANGE	70 L_{DN}	65 L_{DN}	60 L_{DN}	70 L_{DN}	65 L_{DN}	60 L_{DN}
Anderson Rd	North of Covell Blvd	100	56.4	56.4	0	12	27	57	12	27	57
Anderson Rd	South of Covell Blvd	100	59.7	59.7	0	20	44	95	21	44	96
Covell Blvd	East of Anderson Rd	100	62.8	62.9	+0.1	33	72	155	34	73	157
Covell Blvd	West of Anderson Rd	100	63.3	63.4	+0.1	36	77	165	36	78	169
Covell Blvd	East of Denali Dr	100	64.9	65.1	+0.2	46	99	212	47	101	217
Covell Blvd	West of Denali Dr	100	64.1	64.2	+0.1	40	87	187	41	89	191
Covell Blvd	East of F St	100	64.6	64.6	0	43	93	201	44	94	202
Covell Blvd	West of F St	100	63.9	63.9	0	39	84	182	39	85	183
Covell Blvd	East of Lake Blvd	100	63.8	63.9	+0.1	38	83	178	39	84	182
Covell Blvd	East of Oak Avenue	100	63.2	63.3	+0.1	35	76	164	36	77	166
Covell Blvd	East of Sycamore Ln	100	63.5	63.6	+0.1	37	79	171	38	81	174
Covell Blvd	West of J St	100	64.5	64.6	+0.1	43	93	200	43	93	201
F St	North of Covell Blvd	100	58.0	58.0	0	16	34	73	16	34	73
F St	South of Covell Blvd	100	57.7	57.7	0	15	32	70	15	33	70
Lake Blvd	North of Covell Blvd	100	57.5	57.5	0	15	32	70	15	32	68
Lake Blvd	South of Covell Blvd	100	58.3	58.4	+0.1	17	36	77	17	36	79
Project Dwy	North of Covell Blvd	100	N/A	47.4	N/A	N/A	N/A	N/A	3	7	14
Risling Ct	North of Covell Blvd	100	52.9	54.4	+1.5	7	16	34	9	20	42
Risling Ct	North of Sutter H. Dwy	100	49.2	50.8	+1.6	4	9	19	5	11	24
Risling Ct	South of Sutter H. Dwy	100	52.9	54.3	+1.4	7	16	34	9	19	42
Sutter H. Dwy	West of Risling Ct	100	N/A	47.9	N/A	N/A	N/A	N/A	3	7	16
Sycamore Ln	North of Covell Blvd	100	56.6	56.6	0	13	28	59	13	28	59

NOTES:
[1] DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[2] TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
** ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.*
SOURCE: CITY OF DAVIS, CALTRANS, AND J.C. BRENNAND & ASSOCIATES, INC., 2017.

Impact 3.11-2: Construction of the proposed project may generate unacceptable noise levels at existing sensitive receptors (Less than Significant)

The proposed development, maintenance of roadways during construction, installation of public utilities, and infrastructure improvements associated with the project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 3.11-10 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

TABLE 3.11-10: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	*Predicted Noise Levels, L_{MAX} dB*				*Distances to Noise Contours (feet)*	
	Noise Level at 50'	*Noise Level at 100'*	*Noise Level at 200'*	*Noise Level at 400'*	*70 dB L_{MAX} contour*	*65 dB L_{MAX} contour*
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006. J.C. BRENNAN & ASSOCIATES, INC. 2012.

Activities involved in project construction would typically generate maximum noise levels ranging from 76 to 90 dB at a distance of 50-feet. The nearest sensitive receptor would be located 80-feet to the south across Covell Boulevard from on-site construction activities. At 80-feet, construction related activities are predicted to generate maximum noise levels ranging between 72 to 86 dB L_{max}.

Construction could result in periods of elevated ambient noise levels and the potential for annoyance. However, the City of Davis Noise Ordinance (Section 24.02.040, Special provisions) establishes allowable hours of operation and noise limits for construction activities as follows:

(b) Construction and landscape maintenance equipment. Notwithstanding any other provision of this chapter, between the hours of 7:00 a.m. and 7:00 p.m. on Mondays through Fridays, and between the hours of 8:00 a.m. and 8:00 p.m. on Saturdays and Sundays, construction, alteration, repair or maintenance activities which are authorized by valid city permit or business license, or carried out by employees of contractors of the city shall be allowed if they meet at least one of the following noise limitations:

(1) No individual piece of equipment shall produce a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the

property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.

(2) The noise level at any point outside of the property plane of the project shall not exceed eighty-six dBA.

(3) The provisions of subdivisions (1) and (2) of this subsection shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he/she may determine to be in the public interest.

Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at six a.m. on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 a.m. The permit shall be revoked if any noise complaint is received by the police department.

(4) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.

(5) No powered blower shall be operated within one hundred feet radius of another powered blower simultaneously.

(6) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

Because all construction activities will be subject to the requirements of Section 24.02.040 of the City of Davis Municipal Code with respect to limits on construction noise, this impact would be ***less than significant***.

Impact 3.11-3: Construction of the proposed project may result in excessive groundborne vibration impacts (Less than Significant)

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 80-feet or further from the project site. At distances of over 50-feet, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-11 shows the typical vibration levels produced by construction equipment.

TABLE 3.11-11: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Table 3.11-11 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances of 50-feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Therefore, this impact would be considered ***less than significant***.

Impact 3.11-4: Operation of the proposed project may generate unacceptable noise levels from on-site activities at existing sensitive receptors (Less Than Significant)

A finalized site plan depicting building elevations and floor plans is not currently available for the project site. Therefore, building façades are estimated at the parcel boundaries shown in Figure 2.0-6 in Section 2.0, Project Description. The on-site noise sources generated by the Activity and Wellness Center area include mechanical equipment, parking lot use, and swimming pool activities. Additional on-site noise sources are associated with activity at the proposed dog exercise area.

MECHANICAL EQUIPMENT

The proposed project includes the construction of an Activity and Wellness Center. Current plans for the proposed mixed use facility along Risling Court include a health club, restaurant, meeting rooms, and an outdoor swimming pool. It is expected that the primary noise source associated with these uses will be due to heating, air conditioning, and ventilation (HVAC) equipment. These types of equipment are often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from these types of equipment can vary significantly and generally range between 45 dB to 70 dB at a distance of 50-feet. Shielding from rooftop parapets substantially reduces noise from these types of equipment. Based upon measurements conducted at various commercial and retail facilities, HVAC mechanical equipment is not expected to generate noise levels exceeding 45 to 50 dB L_{eq} at distances beyond 50 feet from building façades.

For the purpose of this analysis, it is predicted that HVAC units are located on the rooftop of the Activity and Wellness Center, at a distance of 25 feet from the edge of the building. The rooftop is predicted to have an elevation of 20-feet, with parapets 3-feet in height along the perimeter of the rooftop, for a total height of 23-feet. HVAC units are estimated to be 3-feet in height. The nearest noise sensitive receptor is predicted to be 50-feet from the Activity and Wellness Center. At this distance, HVAC noise levels would be approximately 35 dBA L_{eq}, or less. By locating the HVAC units on the rooftop of the Activity and Wellness Center, noise resulting from the mechanical equipment would comply with the City of Davis Noise Ordinance.

SWIMMING POOL

The proposed project may include the construction of an outdoor swimming pool as part of the proposed Activity and Wellness Center. The outdoor swimming pool is proposed primarily for use by on-site residents and the public. However, the pool is not intended for use in high attendance activities such as swim meets.

People using swimming pools generate noise, and pool equipment, such as electrical pumps, could be a significant noise source. To quantify likely noise levels from people using the pool facilities on the project site, j.c. brennan & associates, Inc. utilized noise level data collected for other pool facilities. The noise level measurements were conducted at a distance of 50-feet from the center of the pool. The results of the noise level measurements indicate that, during the busiest hour of operations, the measured sound level would be 60 dB L_{eq}. Because this noise level represents the busiest hour of pool activity, it is expected to represent worst case noise levels associated with typical use of the proposed pool facilities. This could potentially exceed the City of Davis Noise Ordinance daytime standard of 55 dB L_{eq}. This is considered to be an amenity to the project site, and will not exceed noise level standards at any existing adjacent uses.

DOG EXERCISE AREA

The proposed project includes the construction of a dog exercise area north of the proposed senior affordable apartments.

Interactions between dogs and humans at dog parks have the potential to generate significant noise levels at nearby sensitive receptors. To quantify likely noise levels from the dog exercise area on the project site, j.c. brennan & associates, Inc. utilized noise level data collected at the Ashley Off-Leash Dog Park in Auburn, California. The primary noise sources at the dog park were caused by humans interacting with each other and with their pets. Dogs were observed to play quietly with other dogs, with occasional short barks or growls. The noise level measurements were conducted at a distance of 75-feet from the center of the dog park. The results of the noise level measurements indicate that, during the busiest hour of the day, the measured sound level was 53 dB L_{eq}. Because this noise level represents the busiest hour of dog park activity, it is expected to represent worst case noise levels associated with typical use of dog park facilities. This could potentially exceed the City of Davis Noise Ordinance daytime standard of 55 dB L_{eq}. This is considered to be an amenity to the project site, and will not exceed noise level standards at any existing adjacent uses.

CONCLUSION

As demonstrated above, operation of the proposed project would not result in exceedance of the City's noise level standards at existing sensitive receptors. Therefore, this impact would be considered ***less than significant*****.**

Impact 3.11-5: The proposed project may expose proposed residences or workers to excessive noise levels due to aircraft noise (Less than Significant)

The proposed project is located within the two-mile radius of the University Airport. However, as shown in Figure 3.11-2, the project site is located outside of the 55 dB CNEL noise level contour. Therefore, this impact would be ***less than significant***.

West Davis Active Adult Community

Figure : 3.11-1

Project Location and Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared: August 2017

: West Davis Active Adult Community (Current)

: West Davis Innovation Center (Former)

: 24-hr Noise Measurement Locations

: Short Term Noise Measurement Locations

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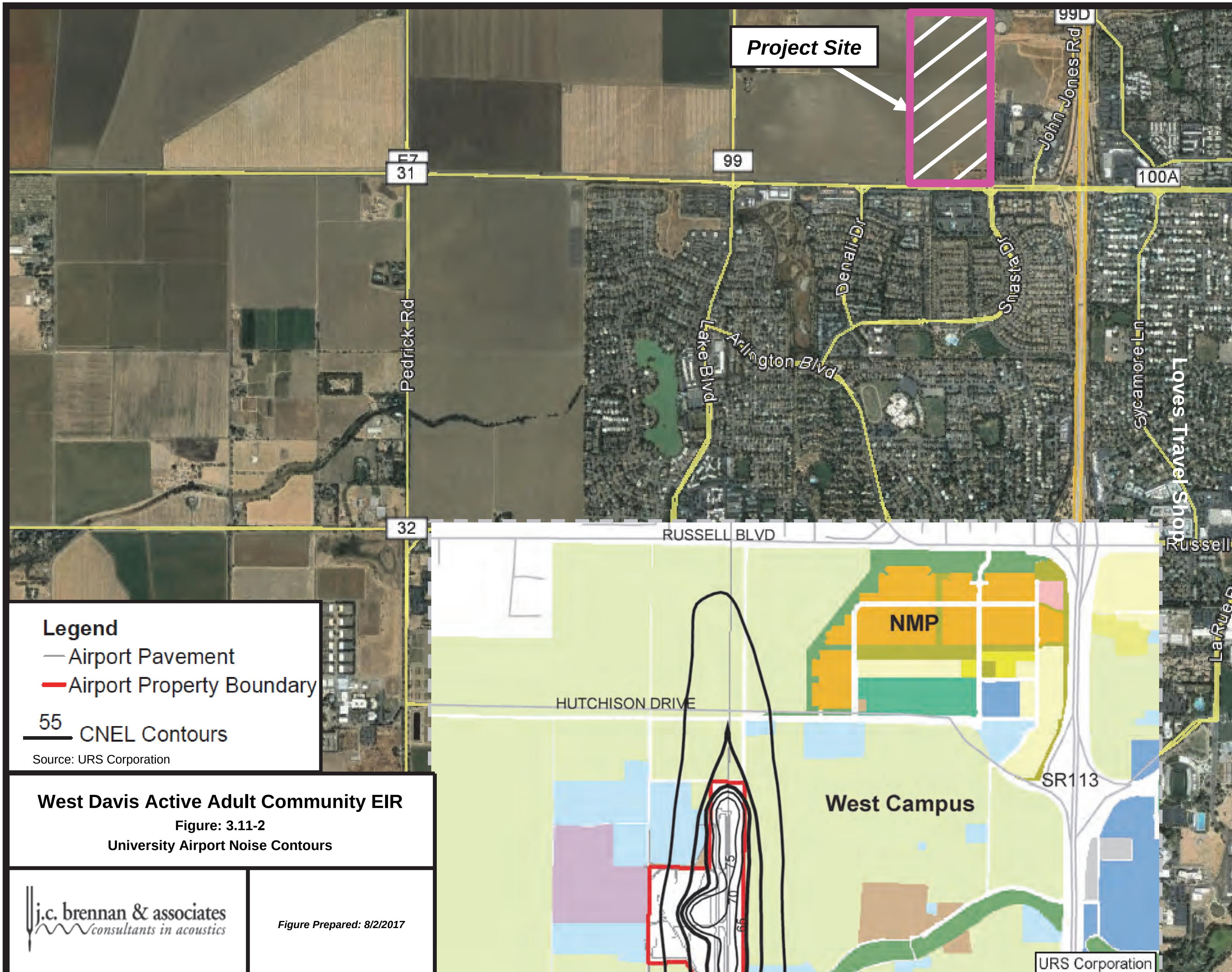

West Davis Active Adult Community EIR

Figure: 3.11-2

University Airport Noise Contours

j.c. brennan & associates
consultants in acoustics

Figure Prepared: 8/2/2017

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The purpose of this EIR section is to analyze and disclose the anticipated growth in population that would result from project implementation, analyze the project's consistency with relevant planning documents and policies related to population and housing, and recommend mitigation measures to avoid or minimize the significance of potential impacts.

Information in this section is based on information provided by the project applicant in the project application package submitted to the City of Davis, site surveys conducted by De Novo Planning Group in 2017, ground and aerial photographs, and the following reference materials:

- City of Davis General Plan (City of Davis, May 2001, Amended through January 2007);
- Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School (General Plan Update EIR, 2000);
- City of Davis Housing Element (Adopted February 25, 2014) (City of Davis, 2014);
- City of Davis Zoning Ordinance;
- US Census data (U.S. Census data, 2017);
- California Department of Finance Population and Housing Estimates (E-5 Reports) (California Department of Finance, 2017); and
- *Analysis of the Value of Economic Development and Potential Employment Growth in the City of Davis* prepared for the City of Davis by the Center for Strategic Economic Research (Center for Strategic Economic Research, 2010).

During the NOP comment period for the EIR, comments regarding this topic were received from Robin Whitmore (March 2, 2017), Toni Terhaar and Russ Kanz (April 26, 2017), and the Yolo Local Agency Formation Commission (LAFCo) (May 11, 2017).

3.12.1 ENVIRONMENTAL SETTING

DEMOGRAPHICS

POPULATION TRENDS

U.S. Census data indicates that the City of Davis experienced strong population growth from 1990 to 2000, increasing from 46,322 to 60,308 persons at an annual average increase of 3.0 percent as shown in Table 3.12-1. During the decade from 2000 to 2010, the rate of growth declined to an annual average increase of 0.9 percent, reaching a total population of 65,622 in 2010. The City's population has increased slightly during this decade to a population of 68,740 in 2016.

TABLE 3.12-1: POPULATION GROWTH – DAVIS

YEAR	*POPULATION*	*ANNUAL AVERAGE CHANGE*
1990	46,322	--
2000	60,308	3.0%
2010	65,622	0.9%
2012	65,052	<0.4%>
2014	66,742	1.3%
2015	67,666	1.4%
2016	68,740	1.6%

SOURCE: US CENSUS, 2017; CALIFORNIA DEPARTMENT OF FINANCE, 2017.

HOUSING STOCK

Table 3.12-2 summarizes the growth of the City of Davis' housing stock from the years 2000 to 2016, based on information from the US Census and California Department of Finance. The number of housing units has increased from 25,869 in 2010 to 26,366 in 2016, an average annual increase of 0.3 percent.

TABLE 3.12 -2: HOUSING UNIT GROWTH – DAVIS

YEAR	*HOUSING UNITS*	*ANNUAL AVERAGE CHANGE*
2000	23,617	--
2010	25,869	1.0%
2012	25,908	0.1%
2014	26,031	0.2%
2016	26,366	0.6%

SOURCE: US CENSUS, 2017; CALIFORNIA DEPARTMENT OF FINANCE, 2017.

PERSONS PER DWELLING UNIT

The average number of persons residing in a dwelling unit in Davis is 2.62 (California Department of Finance, 2016).

JOBS:HOUSING BALANCE

In 2010, there were 31,264 jobs in the City of Davis[1] and 19,846 jobs at UC Davis.[2] As shown in Table 3.12-3, the City's jobs:housing balance is approximately 1.20:1. Combined, the City and UC Davis have a jobs:housing balance of 1.87:1.

[1] City of Davis. City of Davis 2013-2021 Housing Element Update. Table 12, page 3-18.

[2] City of Davis. City of Davis 2013-2021 Housing Element Update. Table 8, page 3-14.

TABLE 3.12-3: JOBS: HOUSING BALANCE

	CITY	UC DAVIS	TOTAL
Jobs	31,264	19,846	51,110
Housing	25,613	1,648	27,261
Jobs:Housing Balance	1.22:1	12.04:1	1.87:1

SOURCE: CITY OF DAVIS 2013-2021 HOUSING ELEMENT UPDATE, TABLES 8, 12, AND 13.

GROWTH PROJECTIONS

As part of the Sacramento Region Blueprint process, the Sacramento Area Council of Governments (SACOG) produced regional growth projections through 2035. Table 3.12-4 identifies SACOG's growth projections for the City of Davis and Yolo County through 2035. The City is projected to have approximately 31,618 housing units and 21,298 jobs by 2035. By 2035, the City's population is projected to increase to 76,665.

TABLE 3.12-4: GROWTH PROJECTIONS

	CITY OF DAVIS				YOLO COUNTY			
	2005	2035	CHANGE	ANNUAL AVERAGE % CHANGE	2005	2035	CHANGE	ANNUAL AVERAGE % CHANGE
Population	61,854	76,665	14,811	0.8%	172,872	278,786	105,914	2.0%
Housing Units	24,832	31,618	6,786	0.9%	66,549	111,245	44,696	2.2%
Employment	16,236*	21,298	4,972	1.0%	92,047	145,562	53,515	1.9%

NOTE: EMPLOYMENT PROJECTIONS FOR THE CITY DO NOT INCLUDE UC DAVIS.
SOURCE: SACOG, 2008.

3.12.2 REGULATORY SETTING

SACRAMENTO AREA COUNCIL OF GOVERNMENTS

SACOG is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the region and the corresponding Metropolitan Transportation Improvement Program (MTIP). The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (seven-year horizon) in more detail. The 2016 MTP/SCS was adopted by the SACOG board in 2016.

Metropolitan Transportation Plan/Sustainable Communities Strategy

The 2016 MTP/SCS is a long-range plan for transportation improvements in the region. The plan is based on projections for growth in population, housing, and jobs. SACOG determines the regional growth projections by evaluating baseline data (existing housing units and employees, jobs/housing ratio, and percent of regional growth share for housing units and employees), historic reference data (based upon five- and ten-year residential building permit averages and historic county-level employment statistics), capacity data (General Plan data for each jurisdiction), and current MTP data about assumptions used in the most recent MTP/SCS. SACOG staff then meets with each jurisdiction to discuss and incorporate more subjective considerations about planned growth for each area. Finally, SACOG makes a regional growth forecast for new homes and new jobs, based upon an economic analysis provided by a recognized expert in order to estimate regional growth potential based on market analysis and related economic data. This growth forecast is then incorporated into the MTP/SCS.

Regional Housing Needs Plan

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation (RHNA) and is based on a Regional Housing Needs Plan (RHNP) developed by councils of government. SACOG is the lead agency for developing the RHNP for a six-county area that includes Yolo County and the City of Davis. The latest housing allocation for the City of Davis covers the nearly eight-year period from 2013 through 2021 and consists of 1,066 units (248 very low, 174 low, 198 moderate, and 446 above moderate income). The City is not required to make development occur; however, the City must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed. The City prepared and adopted an updated Housing Element to cover the 2013-2021 regional housing needs cycle (adoption date: February 25, 2014, sites inventory modified February 17, 2015).

CITY OF DAVIS GENERAL PLAN

The City of Davis General Plan articulates the community's vision of its long-term physical form and development. The general plan is comprehensive in scope and represents the city's expression of quality of life and community values. General plans are prepared under a mandate from the State of California, which requires that each city and county prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands. State law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. Population, housing, and growth policies relevant to this EIR are identified below.

LAND USE AND GROWTH MANAGEMENT

Policy LU.3 Require a mix of housing types, densities, prices and rents, and designs in each new development area.

Policy LU 1.1 Recognize that the edge of the urbanized area of the City depicted on the land use map under this General Plan represents the maximum extent of urbanization through 2010, unless modified through the Measure J process.

Standards

a. The General Plan Map is a representation of the ultimate geographic size of the city in the year 2010. No expansion of the City beyond those areas shown for urban use on the land use map will be permitted unless authorized through the Measure J process.

HOUSING ELEMENT

Policy HOUSING 1.1. Encourage a variety of housing types that meet the housing needs of an economically and socially diverse Davis.

Policy HOUSING 1.7. Analyze the models and options to promote housing for local employees.

1% GROWTH POLICY

In 2008, the City Council adopted an annual average growth guideline of one percent based on the number of housing units and dwelling unit equivalents. At adoption, the growth guideline was approximately 260 units per year and the allotted number increases proportionate to City growth. As noted in Table 3.12-2 above, since adoption of the growth guideline, the City's housing unit supply has increased to 26,366 units. As such, the allotted number of units per year would increase to approximately 263.

Second units, vertical mixed use units, and permanently affordable very low, low, and moderate income and senior housing are exempt from the growth guideline. The growth guideline limits peripheral growth to 60 percent of the allowed units each year, manages infill growth, and provides for Council approval of infill projects that exceed the growth guideline. The 1% growth guideline represents a cap that is not to be exceeded except for units that are specifically exempted or allowed by the City Council as an infill project with extraordinary circumstances and community benefits.

PHASED ALLOCATION ORDINANCE

The Phased Allocation Ordinance provides for orderly development through the annual adoption of a resolution by the City Council which designates the total number of units to be constructed in the fifth year following adoption of the resolution. The resolution may adjust the allocations, made by previous resolutions, for the first through fourth years following the resolution. The City Council's determination is based upon criteria set forth in the Phased Allocation Ordinance. In order to receive an allocation, a developer must submit an application in accordance with the ordinance, which requires a master plan sketch map and an internal project phasing plan for both single-family and multi-family units.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on the standards established by Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on population and housing if it will:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Implementation of the proposed project may induce substantial population growth (Less than Significant)

Growth in the City of Davis is limited by the 1% Growth Policy, which implements General Plan Policy LU 1.1 and associated Actions d and e. The City's 1% Growth Policy would allow approximately 263 dwelling units per year, based on the Department of Finance estimate of 26,366 units in the City in 2016. The growth policy does not include exempted units of affordable housing, accessory dwelling units, and units in vertical mixed-use buildings

The proposed project would be a residential development, resulting in the addition of up to 560 residential units (up to 484 age-restricted units and up to 76 non-age restricted units) in total. This would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[3] It is noted that, because 86% of the proposed units would be age-restricted, the actual population growth resulting from the project would likely be significantly lower. For example, the average persons per household in California for homes with a household head that is 55 years or older is 1.87. The maximum population associated with the project, 1,467 persons, utilizes the persons per household rate for the City of Davis of 2.62 persons.

The City of Davis 1% Growth Policy would be applicable to the proposed project. However, as noted above, second units, vertical mixed use units, and permanently affordable very low, low, and moderate income are exempt from the growth guideline. Therefore, the 150 affordable units

[3] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

would not count towards the growth limit. The expected increase in 410 residential units, over a multi-year construction period, would not exceed the limits set by the 1% Growth Policy.

It is noted that construction of the project would be phased in order to reach an aging Davis population over an extended period of time. Construction of the 150 affordable senior apartment homes would occur in two 75-unit phases in order to ensure that local Davis residents are the primary market for occupancy.

Overall, the project is consistent with the regional growth projections prepared by SACOG. Additionally, the City's requirements associated with the 1% Growth Policy and the City's Phased Allocation Ordinance would ensure that the population growth associated with the project is consistent with the City's growth management requirements. Therefore, this impact is ***less than significant***.

Impact 3.12-2: Implementation of the proposed project may displace substantial numbers of people or existing housing (No Impact)

There are no occupied housing units currently located on the project site. Construction and operation of the proposed project would not remove any existing housing units within the City of Davis, and would not displace any residents. There is ***no impact***.

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This section describes and evaluates potential impacts associated with the provision of police protection, fire protection and emergency services, schools, parks and recreation, and other services for the proposed project. The information in this section is derived from:

- City of Davis General Plan (City of Davis, 2007, amended through 2013),
- City of Davis Police Department 2015 Annual Report (Davis Police Department, 2015),
- City of Davis Fire Department website: http://cityofdavis.org/fire/ (Davis Fire Department, 2016),
- School Accountability Report Card (Davis Joint Unified School District, 2015-2016),
- City of Davis. Public Draft Environmental Impact Report for the Cannery Project (SCH#2012032022), February 2013,
- City of Davis, Parks and Recreation Facilities Master Plan Update (City of Davis, 2012), and
- Yolo County website (http://www.yolocounty.org/).

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Russ Kanz and Toni Terhaar (May 4, 2017), Russ Kanz and Toni Terhaar (April 26, 2017), and County of Yolo (April 18, 2017). Each of the comments related to this topic are addressed within this section.

3.13.1 ENVIRONMENTAL SETTING

POLICE PROTECTION

The City of Davis Police Department currently operates out of a single station at 2600 Fifth Street in Davis. There are currently 58 sworn police officers, 33 support professionals and normally one police patrol dog, plus Police Department volunteers. The Police Department provides professional law enforcement, maintenance of public order and safety, crime prevention planning, and coordination services that contribute to discouraging criminal behavior and enhancing community livability and sustainability.

Sworn officers perform law enforcement tasks as well as administration and supervision, and civilian personnel are involved in administration, support services, supervision, dispatch, parking enforcement, and community service duties. UC Davis also maintains an on-campus police department that has a mutual aid agreement with the City for major incidents, although direct officer-to-officer communication is severely limited due to non-compatible radio systems.

The demand for police services and the need for police staff will grow in direct proportion to the growth of population and businesses within the City. Table 3.13-1 provides statistics on police calls/service from 2012 through 2016. Table 3.13-2 provides crime statistics during that same period. The most frequent types of calls for police services from 2012 through 2016 are related to Drug/Alcohol and Nuisance complaints. Violent crimes accounted for 12.5% of calls in 2016 (City of Davis Police Department, 2016).

TABLE 3.13-1: DAVIS POLICE DEPARTMENT CALL/SERVICE STATS (2012-2016)

	2012	*2013*	*2014*	*2015*	*2016*
Total PD Calls for Service	58,002	57,417	51,358	47,044	46,916
Total Fire Calls for Service	5,289	5,763	4,953	5,719	6,183
Traffic Collision Reports	237	258	254	275	345
Total (Non-Parking) Citations	6,000	5,505	5,352	6,282	4,439
Cases (Including Collisions)	4,668	5,052	4,983	5,137	5,213

SOURCE: DAVIS POLICE DEPARTMENT 2016 ANNUAL REPORT.

TABLE 3.13-2: DAVIS POLICE DEPARTMENT CRIME STATS (2012-2016)

CALL TYPE	*CALL CATEGORY*	*2012*	*2013*	*2014*	*2015*	*2016*
DUI	Drug/Alcohol	340	174	132	133	145
Drunk in Public	Drug/Alcohol	395	349	395	235	291
Alcohol	Drug/Alcohol	69	62	86	84	64
Drugs	Drug/Alcohol	171	191	158	135	130
Panhandling	Nuisance	69	106	83	61	92
Noise	Nuisance	357	312	350	245	288
Music	Nuisance	462	428	337	315	299
Party	Nuisance	1,022	925	763	709	704
Mental Health	Mental Health	245	173	205	188	233
Battery	Violent	79	102	91	98	99
Assault	Violent	70	79	57	70	52
Fight	Violent	246	238	275	259	171

SOURCE: DAVIS POLICE DEPARTMENT 2016 ANNUAL REPORT.

FIRE PROTECTION AND EMERGENCY SERVICES

The City of Davis Fire Department (Fire Department) provides pre-hospital emergency medical services at the EMT-1D level; minimizes loss from fires, hazardous materials incidents and natural disasters and other emergency services; and ensures that the community's emergency service resources are effectively and efficiently managed. The Fire Department coordinates citywide planning for large scale disasters and emergency incidents.

The Fire Department is staffed by 35 shift personnel (nine captains and 26 firefighters), three division chiefs, one fire inspector, and one administrative staff. The department consists of three fire stations located in Central, West, and South Davis. The shift personnel (firefighters) are divided into three shifts, each shift working a 24-hour day (56-hour work week). Fire Department equipment consists of three engines, one rescue, one squad, two grass/wildland units, one water tender and two reserve engines and two antique fire apparatus.

The Fire Department has contractual agreements with the East Davis County Fire Protection District, the Spring Lake Fire Protection District and No Man's Land Fire Protection District for emergency response to these areas. The city and these three districts are divided into three emergency first-response areas. These areas provide a clearly defined territory for dispatching the nearest fire and EMS personnel and equipment to an emergency. The Fire Department has an automatic aid agreement with the University of California at Davis and the cities of Woodland, West Sacramento and Dixon and a mutual aid agreement with all other fire protection agencies in Yolo County and in the State of California.

The demand for fire services and the need for fire staff will grow in direct proportion to the growth of population and businesses in the City. Table 3.13-3 provides statistics on fire calls/service in 2014. The most frequent types of calls for fire services in 2014 were related to Medical (61.0%). Fires represented 3.3% of all calls.

TABLE 3.13-3: DAVIS FIRE DEPARTMENT CALL/SERVICE STATS (2014)

CALL TYPE	*NUMBER OF INCIDENTS*
Medical Call	**2,921**
Illness/Injury	*2,797*
Vehicle Accidents with Injuries	*124*
Service Call	**492**
Assist Invalid	*271*
Cover Assignment, Standby, Move-up	*24*
Assist Police or Other Governmental Agency	*90*
Smoke or Odor Removal	*17*
Other (Water or Steam Leak, Unauthorized Burning	*90*
Good Intent	**614**
Dispatched and Cancelled En-Route	*340*
No Incident Found on Arrival at Address or Wrong Location	*216*
Smoke Scare, Odor of Smoke	*29*
Other (Hazmat Release Investigation, No Release, Authorized Control Burn)	*29*
False Alarm	**234**
Smoke Detector, Activation Due to Malfunction or Unintentional	*71*
Alarm System Sounded, Activation Due to Malfunction or Unintentional	*73*
Other (CO Detector Activation Due to Malfunction, Sprinkler Activation – No Fire)	*90*
Hazardous Materials or Condition	**174**
Vehicle Accident (Non-Injury)	*73*
Gasoline, Oil, or Other Flammable Liquid Spill	*43*
Other (Electrical, Arcing Equipment, Power Line Down, Chemical Spill)	*58*
Fires	**159**
Structure	*31*
Vehicle	*29*
Grass, Wildland	*56*
Other (Cooking, Chimney Trash, Etc.)	*43*
Overpressure	**9**
Excessive Heat, Scorch Burns with no Ignition	*6*
Overpressure Rupture from Steam, Other	*3*
Rescue	**12**
Extrication of Victim from Stalled Elevator, Vehicle, or Building/Structure	*12*
Other	**6**
Total Calls for Service	**4,787***

*NOTE: * TYPE NOT RECORDED = 166*

SOURCE: DAVIS FIRE DEPARTMENT ANNUAL REPORT 2014-15.

SCHOOLS

Davis Joint Unified School District

The Davis Joint Unified School District (DJUSD) is the major provider of K-12 educational services for the City of Davis. The DJUSD covers an area of 126 square miles and employs approximately 1,000 people. The district maintains eight (8) standard elementary schools, one (1) "magnet" elementary school (César Chávez), three (3) junior high schools, one (1) comprehensive high school, one "magnet" high school, one School for Independent Study, and one continuation school. The District's total enrollment during the 2015/2016 school year was 8,551 students according to the School Accountability Report Cards for each school. Table 3.13-4 provides the enrollment for each school within the DJUSD.

TABLE 3.13-4: DAVIS JOINT UNIFIED SCHOOL DISTRICT: SCHOOL INVENTORY AND 2015/2016 ENROLLMENT

SCHOOL	*ENROLLMENT*
Elementary Schools	**4,286**
Birch Lane (K-6)	610
Cesar Chavez (K-6)	622
Fairfield (K-3)	48
Fred T. Korematsu (K-6)	520
Marguerite Montgomery (K-6)	443
North Davis (K-6)	555
Patwin (K-6)	404
Pioneer (K-6)	555
Robert Willet (K-6)	529
Junior High Schools (7-9)	**1,830**
Ralph Waldo Emerson	477
Oliver Wendell Holmes	731
Frances Ellen Watkins Harper	622
High Schools (10-12)	**1,733**
Davis Senior High (10-12)	1,683
Martin Luther King Jr. (10-12) (continuation school)	50
Other	**702**
Da Vinci Charter Academy (10-12)	583
Independent Study (K-12)	119
Total	**8,551**

SOURCE: DAVIS JOINT UNIFIED SCHOOL DISTRICT, SCHOOL ACCOUNTABILITY REPORT CARDS FROM 2015-2016 SCHOOL YEAR.

The District's policy for desired school size is:

- Elementary, 600 enrollment and 12 net acres site (with Class Size Reduction).
- Junior high, 800 enrollment and 22 net acres site (with Class Size Reduction).
- High school, 2,000 enrollment and 50 net acres site (with Class Size Reduction).

As shown in Table 3.13-4, two of the schools within the DJUSD currently exceed the desired school sizes: Birch Lane Elementary and Cesar Chavez Elementary.

LIBRARY SERVICES

Library services in the City of Davis are provided by Yolo County at two locations: the Mary L. Stephens Library, and the South Davis Montgomery Library. The Mary L. Stephens library is a Yolo County Branch Library located at 315 E. 14th St. Davis, CA 95616. The South Davis Montgomery library is a Satellite Branch located at the Marguerite Montgomery Elementary School. Yolo County also operates an additional book drop at Patwin Elementary School in Davis. The City does not have an adopted services or facilities standard for libraries.

PARKS AND RECREATION SYSTEM

The park and recreation system in Davis provides residents with 481.4 acres of parks and special use facilities, 696.4 acres of greenbelts and open space, an additional 2,791 acres of open space under easement, and numerous community buildings. The following provides a discussion of these facilities and is based on the City of Davis Parks and Recreation Facilities Master Plan Update (2012).

Park Inventory

Parks can be divided into four types of parks and recreational areas. These include: Community Parks; Neighborhood Parks; Mini Parks and Special Use Parks. Table 3.13-5 provides an inventory of park facilities within the city. There is a total of 89.5 acres of Community Parks, 96.3 acres of Neighborhood Parks, 6.4 acres of Mini Parks, and 289.8 acres of Special Use Parks.

TABLE 3.13-5: PARK FACILITIES INVENTORY

Type of Park/Recreation Area	*Existing Acreage*	*Planned Additions*	*Total Acreage*
Community Parks			
Arroyo Park	15.8	0	15.8
Central Park	4.8	0	4.8
Community Park	30.4	0	30.4
Mace Ranch Park	23	0	23
Walnut Park	15.5	0	15.5
Subtotal Community Parks	*89.5*	*0*	*89.5*
Neighborhood Parks			
Chestnut Park	6.1	0	6.1
Covell Park	5.2	0	5.2
John Barovetto Park	6.9	0	6.9
La Playa Park	4.8	0	4.8
Northstar Park	13.5	0	13.5
Oak Grove Park	2.5	0	2.5
Oxford Circle Park	3.9	0	3.9
Pioneer Park	6.1	0	6.1
Putah Creek Park	2.3	0	2.3
Redwood Park	3.3	0	3.3
Robert Arneson Park	5	0	5
Sandy Motley Park	5.2	0	5.2
Slide Hill Park	12	0	12
Sycamore Park	5.8	0	5.8
West Manor Park	2.9	0	2.9
Westwood Park	6.2	0	6.2

TYPE OF PARK/RECREATION AREA	*EXISTING ACREAGE*	*PLANNED ADDITIONS*	*TOTAL ACREAGE*
Willowcreek Park	4.6	0	4.6
Subtotal Neighborhood Parks	*96.3*	*0*	*96.3*
Mini Parks			
Cedar Park (K Street)	0.6	0	0.6
College Park	0.9	0	0.9
Hacienda Park	1	0	1
N Street Mini Park	0.2	0	0.2
Northstar Pocket Park	0.5	0	1
Village Park	0.8	0	0.8
Whaleback Park	1.4	0	1.5
Woodbridge Mini Park	0.4	0	0.4
Subtotal Mini Parks	*5.8*	*0*	*6.4*
Special Use Park			
Civic Center Ball Fields	4	0	4
Davis Municipal Golf Course	261	0	261
Little League Park	5.5	0	5.5
Playfields Park	16.5	0	16.5
Toad Hollow Dog Park	2.8	0	2.8
Sports Complex	0	100	0
Subtotal Special Use Parks	*289.8*	*100*	*289.8*

SOURCE: CITY OF DAVIS, PARKS AND RECREATION FACILITIES MASTER PLAN UPDATE 2012.

Greenbelts and Open Space Inventory

Greenbelts and open spaces are essential elements of the City's Parks System. Greenbelts are linear parcels inside of development areas that are undeveloped and landscaped, and which are used for recreation and non-motorized transportation. Open space is a general category that includes all undeveloped land that is set aside for passive recreation, habitat preservation, buffering of the City from surrounding uses, and/or agriculture. Table 3.13-6 provides an inventory of the greenbelts and open space within the City. There is a total of 167 acres of greenbelts, and 530.9 acres of open space. There is an additional 2,791 acres of open space under easement that is not included in this table.

TABLE 3.13-6: CITY OF DAVIS GREENBELTS AND OPEN SPACE

TYPE OF PARK/RECREATION AREA	*EXISTING ACREAGE*
Greenbelts	167
Open Space	530.9
Total Greenbelts & Open Space	**697.9**

SOURCE: CITY OF DAVIS, PARKS AND RECREATION FACILITIES MASTER PLAN UPDATE 2012.

Community Buildings Inventory

Community Buildings provide citizens with indoor meeting areas for a variety of purposes. Table 3.13-7 provides an inventory of community buildings within the city. There is a total of 13 facilities that range in size from 996 square feet to 25,929 square feet.

TABLE 3.13-7: CITY OF DAVIS COMMUNITY BUILDINGS

FACILITY NAME	ADDRESS	SIZE (SF)	FEATURES
Brady Building	23 Russell Blvd.	1,300	Small meeting/training room, offices and storage for swimming groups
Chestnut Park Roundhouse	1020 Chestnut Ln.	1,712	Multi-purpose room, kitchenette, restrooms
Civic Center	23 Russell Blvd.	17,348	Public offices with a 4,217 Community Chambers/auditorium
Civic Center Gymnasium	23 Russell Blvd.	13,346	Large gym, small gym room, restrooms, storage
Community Pool Building	203 E. 14th St.	996	Meeting space and snack bar counter
Hattie Weber Museum	445 C St.	1,270	Meeting space, exhibit space, restrooms, sink
Redwood Park Community Building	1001 Anderson Rd.	2,100	Portable multi-purpose room
Senior Center	646 A St.	10,280	Multi-purpose room, community use room, game room, kitchen, greenhouse, ceramics area, storage
Veteran's Memorial Center	203 E. 14th St.	25,929	Studios, multi-purpose room, Club Room, Game Room, kitchen, theatre
Explorit	3141 5th St.	2,000	Science Center operated by non-profit
Pence Gallery	212 D St.	4,880	Art gallery and educational outreach operated by non-profit
Third & B	303 Third St.	4,750	US Bicycling Hall of Fame
Hunt Boyer Mansion	604 Second St.	3,500	Offices (leased)

SOURCE: CITY OF DAVIS, PARKS AND RECREATION FACILITIES MASTER PLAN UPDATE 2012.

Other Facilities

There are numerous other facilities located in or around the City of Davis, including UC Davis and privately-owned facilities. These facilities limit access to members of the university or private organizations, and many are available for rental.

3.13.2 REGULATORY SETTING

STATE

Uniform Fire Code

The Uniform Fire Code with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building

Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) is a school construction measure authorizing the expenditure of State bonds totaling $9.2 billion through 2002, primarily for modernization and rehabilitation of older school facilities and construction of new school facilities. $2.5 billion is for higher education facilities and $6.7 billion is for K-12 facilities. Proposition 1A/SB 50 implemented significant fee reforms by amending the laws governing developer fees and school mitigation.

- Establishes the base (statutory) amount (indexed for inflation) of allowable developer fees at $1.93 per square foot for residential construction and $0.31 per square foot for commercial construction.

- Prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess of or in addition to those provided in the statute.

Proposition 1A/SB 50 also prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "[…] legislative or adjudicative act […] involving […] the planning, use, or development of real property" (Government Code 65996(b)). Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos. Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." The law identifies certain circumstances under which the statutory fee can be exceeded, including preparation and adoption of a "needs analysis," eligibility for State funding, and satisfaction of two of four requirements (post-January 1, 2000) identified in the law including: year-round enrollment, general obligation bond measure on the ballot over the last four years that received 50 percent plus one of the votes cast, 20 percent of the classes in portable classrooms, or specified outstanding debt. Assuming a district qualifies for exceeding the statutory fee, the law establishes ultimate fee caps of 50 percent of costs where the State makes a 50 percent match, or 100 percent of costs where the State match is unavailable. District certification of payment of the applicable fee is required before the City or County can issue the building permit.

Quimby Act

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fees are based upon the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreational facilities or the development of public school grounds.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals, policies, and standards that are relevant to public services:

SERVICE CAPACITY AND RESPONSE TIME

Goal POLFIRE 1. Provide high quality police and fire protection services to all areas of the City.

Policy POLFIRE 1.1. Recruit and maintain a staff of high-quality police officers and firefighters.

Policy POLFIRE 1.2. Develop and maintain the capacity to reach all areas of the City with emergency police and fire service within a five-minute emergency response time, 90% of the time. Response time included alarm processing, turnout time, and travel time.

POLICE

Goal POLFIRE 2. Provide for an emotionally and physically safe environment where the people of Davis are able to live without fear of violence or other forms of abuse.

Policy POLFIRE 2.1. Reduce crime through community policing, public education, crime prevention, neighborhood watch, and outreach programs.

FIRE PROTECTION

Goal POLFIRE 3. Increase fire safety through provision of adequate fire protection infrastructure, public education, and outreach programs.

Policy POLFIRE 3.1. Provide adequate infrastructure to fight fires in Davis.

Policy POLFIRE 3.2. Ensure that all new development includes adequate provision for fire safety.

Policy POLFIRE 3.3. Make fire protection services visible and accessible to Davis residents.

YOUTH AND EDUCATION

Goal Y&E 1. Ensure that high quality formal and informal learning opportunities exist for youth and adults.

Policy Y&E 1.1. Develop and participate in collaborative consortiums that will bring educational and recreational program providers together.

Policy Y&E 1.2. Provide a supportive environment for diverse forms and styles of learning.

Goal Y&E 2. Address social and recreational needs of youth, with an emphasis on youth experiencing at-risk situations, in energetic, innovative, and caring ways.

Policy Y&E 2.1. Provide a comprehensive range of services to serve youth with an emphasis on youth experiencing at-risk situations.

Policy Y&E 2.2. Involve youth and family members together in recreational and social programs offered by the City.

Goal Y&E 4. Recognize and celebrate youth and their accomplishments.

Policy Y&E 4.1. Recognize and celebrate the accomplishments of youth developed in a wide array of educational settings.

Goal Y&E 5. Promote, encourage, and support environmental education with a special focus on youth involvement.

Policy Y&E 5.1. Support educational programs that address the role of people in shaping the natural environment and their relationship to the environment.

Goal Y&E 7. Work with the Davis Joint Unified School district and private school operators to provide for public schools and educational facilities that serve as neighborhood focal points and maintain a quality learning and recreational environment.

Policy Y&E 7.1. It shall be the policy of the City to integrate public schools physically and functionally as focal points of their surrounding neighborhoods.

Goal Y&E 8. Plan for the costs of new school facilities when planning for specific new residential developments.

Policy Y&E 8.1. It shall be the policy of the City to require to the extent legally permissible the full mitigation of school impacts resulting from new residential development within the boundaries of the City.

Goal Y&E 9. Construct new public schools to meet the needs of residential growth.

Policy Y&E 9.1. It shall be the policy of the City to take all legally permissible steps to ensure the full mitigation of impacts of new development on school facilities

PARKS, RECREATION, AND OPEN SPACE

Goal POS 1. Provide ample, diverse, safe, affordable, and accessible parks, open spaces, and recreation facilities and programs to meet the current and future needs of Davis' various age and interest groups and to promote a sense of community, pride, family, and cross-age interaction.

Policy POS 1.1. Use systematic and comprehensive planning to guide the development, operation, and allocation of resources for all City parks, facilities, and recreation programs.

Policy POS 1.2. Provide informal areas for people of all ages to interact with natural landscapes, and preserve open space between urban and agricultural uses to provide a physical and visual edge to the City.

Policy POS 1.3. Involve individuals and citizen groups reflecting a cross section of Davis citizens (including youth and adults) in the planning, design and maintenance of parks, recreation facilities and recreation programs.

Policy POS 1.4. Make all parks, greenbelts, open space areas, and recreation facilities attractive, safe, and easy to maintain.

Policy POS 1.5. Attempt to provide all City residents with convenient access to parks and recreation programs and facilities.

Policy POS 1.7. Use all available mechanisms for preservation of open space.

Policy POS 1.8. Support regional and statewide effort that encourage open space preservation.

Goal POS 2. Develop an Urban Agricultural Transition Area around Davis, as shown on the Land Use Map in the Land Use and Growth Management Chapter and according to the concepts illustrated in Figure 32.

Policy POS 2.1. Develop the Urban Agricultural Transition Area to have segments which vary in overall size and configuration, level of development, and type of intended activity.

Goal POS 3. Identify and develop linkages, corridors, and other connectors to provide an aesthetically pleasing and functional network of parks, open space areas, greenbelts, and bike paths throughout the City.

Policy POS 3.1. Require creation of neighborhood greenbelts by project developers in all residential projects, in accordance with Policy LU A.5.

Policy POS 3.2. Develop a system of greenbelts and accessways in new non-residential development areas.

Policy POS 3.3. Implement specific projects to augment the existing greenbelt/open space system.

Goal POS 4. Distribute parks, open spaces, and recreation programs and facilities throughout the City.

Policy POS 4.1. Preserve existing parks, greenbelts, and open space areas.

Policy POS 4.2. Construct new parks and recreation facilities.

Goal POS 5. Respect natural habitat areas and agricultural land in planning and maintaining the City's park system.

Policy POS 5.1. Protect and retain wildlife habitat, agricultural land, and open space when planning and maintaining City park lands.

Goal POS 6. Encourage local organizations, the Davis Joint Unified School District, UC Davis, and the private sector to provide, develop, and maintain needed parks, open space, recreation facilities, programs, activities, and special events to the greatest extent possible.

Policy POS 6.1. Give local organizations, the School District, UC Davis, and the private sector opportunities and support for devising and implementing creative solutions for meeting recreation program and facility needs.

Policy POS 6.2. Require dedication of land and/or payment of an in-lieu fee for park and recreational purposes as a condition of approval for subdivisions, as allowed by the Quimby Act (Government Code 66477).

Goal POS 7. Reflect a balance between preservation, education, recreation, and public health and safety in park and open space planning.

Policy POS 7.1. Proceed with park and open space planning in a balanced fashion, pursuing all the varying and sometimes competing uses of Open Space as opportunities are identified. These competing uses include resource conservation (farm land and groundwater recharge), wildlife and habitat needs, buffering of the agricultural and urban interface, alternative transportation corridors, and active and passive recreation uses.

3.13.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on public services if it would result in:

Substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire Protection
- Police Protection
- Schools

- Parks
- Other public facilities

IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Project implementation may result in effects on fire staffing (Less than Significant)

The current service ratio for the City of Davis Fire Department is 0.38 firefighters (uniformed personnel) per 1,000 people (26 firefighters/68,111 people). According to the City of Davis General Plan EIR, the City does not have an adopted standard for firefighter staffing. Depending on city size, typical staffing levels for fire service range from one to three firefighters per 1,00 population. Therefore, there is currently a deficit of firefighters within the Fire Department.

The proposed project would be a residential development, resulting in the addition of up to 560 residential units (up to 484 age-restricted units and up to 76 non-age restricted units) in total. This would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[1] It is noted that, because 86% of the proposed units would be age-restricted, the actual population growth resulting from the project would likely be significantly lower. For example, the average persons per household in California for homes with a household head that is 55 years or older is 1.87. The maximum population associated with the project, 1,467 persons, utilizes the persons per household rate for the City of Davis of 2.62 persons.

The proposed project would require 1.5 additional firefighters, according to the typical staffing level of one firefighter per 1,00 population There would continue to be a deficit of firefighters regardless of the proposed project. This deficit is not a direct or indirect impact of the proposed project. Rather, fire protection service is evaluated and addressed annually on a city-wide level by the Davis City Council and Fire Chief. The City Council adopts an annual budget allocating resources to fire protection services, which effectively establishes the service ratio for that particular year. The annual budget is based on community needs and available resources as determined by the City Council and the Fire Chief. Therefore, the proposed project would have a ***less than significant*** impact to fire staffing.

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[1] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

Impact 3.13-2: Project implementation may result in effects on fire response times or require the construction of new or expanded fire stations (Less than Significant)

The Fire Department currently operates three fire stations, located in the downtown (core) area, south Davis, and west Davis. The closest fire station to the project site is currently Station 32 located at 1350 Arlington Boulevard, approximately 0.67 miles from the southern boundary of the project site. In addition, Stations 31 and 33 provide backup response to Station 32.

According to the U.S. Fire Administration/National Fire Data Center, the nation-wide average response time is approximately five minutes 50 percent of the time, and approximately 11 minutes 90 percent of the time. These national averages include urban and rural areas combined.

The City of Davis General Plan Policy POLFIRE 1.2 requires the City to "develop and maintain the capacity to reach all areas of the City with…fire service within a five-minute emergency response time, 90% of the time." According to the Davis General Plan EIR, the project site is located within the Fire Department's 5-minute response zone for Station 32.

The General Plan EIR concluded that the fire protection infrastructure was inadequate to maintain fire service standards in some areas of the City. The City Council found that fire response times would remain deficient until such time as a fourth fire station is constructed to serve the northern portion of the City of Davis. The proposed project site is located in the northern portion of the City of Davis and, thus, could require the construction of a fourth fire station or expansion of existing fire stations. Future construction of a fourth fire station or expansion of existing fire stations in order to serve the northern portion of the City would be subject to future environmental review. The proposed project would likely be served by Station 32 as the project site is located within the Fire Department's 5-minute response zone for Station 32. The Davis City Council adopted Findings of Fact and a Statement of Overriding Considerations that found that the specific economic, legal, social, technological, and other considerations supported approval of the General Plan despite the significant and unavoidable impact.

Additionally, as described in Impact 3.13-1, the City of Davis has adopted citywide development impact fees, which include Public Safety Impact Fees. Therefore, in accordance with existing law, prior to issuance of any building permits for any phase of development, the project applicant shall pay the City's Public Safety Impact Fees. Therefore, the proposed project would have a ***less than significant*** impact to fire protection services. Additionally, this impact would be reduced further when, or if, the City builds a fourth fire station to serve the northern portion of the City in accordance with the General Plan.

Impact 3.13-3: Project implementation may result in effects on police staffing or require the construction of new or expanded police stations (Less than Significant)

The current service ratio for the City of Davis Police Department is 0.90 officers per 1,000 people (61 sworn officers/67,666 people). The service standard for the Police Department is 1.2 officers per 1,000 people, which means that there is currently a deficit of 20 sworn officers within the Police Department.

The proposed project would primarily be a residential development, resulting in the addition of up to 560 residential units in total. As noted above, this would allow for a maximum population of approximately 1,467 residents. The proposed project would require an additional 1.8 sworn officers according to the service standard of 1.2 officers per 1,000 people. There would continue to be a deficit of 20 sworn officers regardless of the proposed project. This deficit is not a direct or indirect impact of the proposed project. Rather, police service is evaluated and addressed annually on a city-wide level by the Davis City Council and Police Chief. The City Council adopts an annual budget allocating resources to police services, which effectively establishes the service ratio for that particular year. The annual budget is based on community needs and available resources as determined by the City Council and the Police Chief.

In 2001, the Police Department moved to a new 35,000 square foot facility located at 2600 5th Street. The proposed project is located approximately 0.25 miles west of the new station. Additionally, UC Davis has an on-campus police department that maintains a mutual aid agreement with the City for major incidents. Further, the General Plan EIR concluded that impacts related to increased demand for law enforcement services were determined to be less than significant. The existing Police Department would be sufficient to serve the proposed project. Therefore, the proposed project would not require the construction of new or expanded police stations.

The City collects impact fees from new development based upon projected impacts from the development. The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with anticipated future facilities demands, assessed on a fair share basis for new development. Payment of the applicable impact fees by the project applicant and other revenues generated by the project would ensure that project impacts to police services are ***less than significant***.

Impact 3.13-4: Project implementation may result in effects on schools (Less than Significant)

The proposed project would be a residential development, resulting in the addition of up to 560 residential units (up to 484 age-restricted units and up to 76 non-age restricted units) in total. Of the 560 units, 466 would be multi-family units, and 94 would be single-family units. The increase in population of 1,467 people would result in the introduction of additional students to the DJUSD.

Table 3.13-8 presents the estimated increase in student enrollment as a result of the proposed project.

TABLE 3.13-8: STUDENT GENERATION ESTIMATES FOR PROPOSED PROJECT

LAND USE TYPE	*# OF UNITS*	*GENERATION RATE*	*TOTAL*
Single-family residential	94	0.69	64.86
Multi-family residential	466	0.44	205.04
		GRAND TOTAL	*269.90*

SOURCE: CITY OF DAVIS DRAFT PROGRAM EIR FOR THE CITY OF DAVIS GENERAL PLAN UPDATE AND PROJECT EIR FOR ESTABLISHMENT OF A NEW JUNIOR HIGH SCHOOL. TABLE 5C-6.

The proposed project is expected to generate 269 to 270 additional students for the DJUSD. It is noted that, because 86% of the proposed units would be age-restricted, the actual student generation resulting from the project would likely be significantly lower. Further, 30 of the units would be dedicated for assisted living. Therefore, the above analysis is considered very conservative. Assuming only the 77 single-family detached, non-age-restricted units generate students, the project would be expected to generate approximately 53 to 54 additional students for the DJUSD. It is noted that the K-6 grade students generated from the project would likely attend Patwin Elementary, which is currently below capacity.

Under the provisions of SB 50, a project's impacts on school facilities are fully mitigated via the payment of the requisite new school construction fees established pursuant to Government Code Section 65995. Through payment by the applicant or of special assessments by property owners within the project and payment of any applicable impact fees by the project applicant would ensure that project impacts to school services are ***less than significant*.**

Impact 3.13-5: Project implementation may result in effects on parks (Less than Significant)

The City's Parks and Recreation Facilities Master Plan Update (2012) establishes goals for distances to Neighborhood Parks and Community Parks. Table 3.13-9 notes the service area reach for Neighborhood Parks and Community Parks.

TABLE 3.13-9: ACCESS AREA REACH FOR NEARBY RECREATION AMENITIES

PARK TYPE	*TARGET ACCESS AREA REACH*
Neighborhood Parks	3/8 mile
Community Parks	1.5 mile

SOURCE: CITY OF DAVIS PARKS AND RECREATION FACILITIES MASTER PLAN UPDATE 2012.

The nearest Neighborhood Park to the proposed project site, Sycamore Park, is located approximately 0.47 miles to the southeast. Therefore, the project would not meet the Neighborhood Park access area reach goal of 3/8 miles (or 0.375 miles). The nearest Community Park to the proposed project site, Arroyo Park, is located approximately 0.42 miles to the south. Therefore, the project would meet the Community Park access area reach goal of 1.5 miles. It is noted that the access area reach goals established by the Parks and Recreation Facilities Master

Plan Update are not standards, but targets to be evaluated as a part of the planning entitlement review. Therefore, impacts related to the access area reach goals would be ***less than significant***.

The General Plan establishes a park dedication standard of five acres of parkland per 1,000 residents. This standard can be broken into four categories of Standard Recreation parks including: 1.8 acres of Community Park, 1.8 acres of Neighborhood Park, 0.2 acres of Mini Park, and 1.2 acres of Other Park. There are no established standards for Special Use Parks or Greenbelts and Open Space. Table 3.13-10 presents park standards.

TABLE 3.13-10: PARK STANDARD AND PARK ACREAGE (2008)

PARK TYPE	*STANDARD (ACRES/1,000 PERSONS)*
STANDARD RECREATION	
Community Parks	1.8
Neighborhood Parks	1.8
Mini Parks	0.2
Other Parks*	1.2*
Total	**5.0**

** THIS CATEGORY INCLUDES THE EXISTING CENTRAL PARK AND OTHER FUTURE ACTIVE PARKS AND RECREATION AREAS, INCLUDING THE POSSIBILITY OF ATHLETIC FIELDS, REGIONAL PARK OR OTHER FACILITIES.*
SOURCE: CITY OF DAVIS GENERAL PLAN 2007.

The proposed project would include the construction of up to 560 residential units. This would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development. It is noted that, because 86% of the proposed units would be age-restricted, the actual population growth resulting from the project would likely be significantly lower. For example, the average persons per household in California for homes with a household head that is 55 years or older is 1.87. The maximum population associated with the project, 1,467 persons, utilizes the persons per household rate for the City of Davis of 2.62 persons.

The Davis General Plan calls for a total of 5 acres of park per 1,000 residents. The 5 acres of park per 1,000 residents is broken down into 1.8 acres of community parks, 1.8 acres of neighborhood parks, 0.2 acres of mini parks, and 1.2 acres of other parks per 1,000 residents (see Table 14 of the City of Davis General Plan). The proposed project would thus require approximately 7.3 acres of total park space for these additional residents. The proposed project would provide a 0.68-acre dog park, a 0.42-acre tot lot, and 13.5 acres of open space / landscaping around the perimeter of and throughout the project site. The project also includes a perimeter 1.4-mile bicycle/pedestrian path that connects into the proposed internal greenway system and the existing City bicycle and trail system. While proposed project would include open space and extensive multi-use trail, it would not meet the aforementioned parkland requirement. As set forth in Section 36.08.040(i) of the Code, planned developments shall be eligible to receive a credit, as determined by the city council, against the amount of land required to be dedicated, or the amount of the fee imposed, pursuant to this section, for the value of private open space within the development which is usable for active recreational uses. Therefore, the project may be eligible to receive a credit for the proposed recreational facilities.

The City collects impact fees for parks from new development based upon projected impacts from the development. The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with anticipated future facilities demands, assessed on a fair share basis for new development. Additionally, Section 36.08.040 of the City's Municipal Code outlines the formula for fee payment in lieu of parkland dedication. The project applicant would be required to pay the in-lieu parkland fee, dedicate land for parkland uses, or provide a combination of dedication and in-lieu fees, as determined by the City. This would be required as a condition of approval of the project's tentative map. Payment of the project's in lieu park fee and development impact fees would ensure that the City requirements are satisfied, resulting in a ***less than significant*** impact.

Impact 3.13-6: Project implementation may result in effects on other public facilities (Less than Significant)

Yolo County, as a regional government, provides countywide services, including public health, elections, and criminal prosecutions.

The proposed project would increase demand for other public facilities within the City of Davis, such as libraries and community buildings. However, given that the additional population increase associated with the project is a small percentage of the population of the City as a whole, significant impacts due to increased demand on library and community facilities are not expected. The proposed project does include a 4.3-acre mixed use area, which is planned on the eastern edge of the site. Current plans for the facility include a health club, restaurant, meeting rooms, an outdoor swimming pool all for use by residents and the public. The outdoor pool at the health club is not proposed to be used for swim meets or other high attendance activities. The project would be interconnected via a grid of north-south and east-west neighborhood walking and biking paths. Specifically, the project includes a perimeter 1.4-mile bicycle/pedestrian path that connects into the proposed internal greenway system and the existing City bicycle and trail system. Exercise stations and detailed way finding signage with distance markers would be constructed along the path.

For impacts to other public facilities, the City and Yolo County collect impact fees from new development based upon projected impacts from the development. The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with the service or facility. Payment of the applicable impact fees by the project applicant and other revenues generated by the project would ensure that project impacts to other public facilities are ***less than significant***.

This section of the EIR analyzes the potential impacts of the proposed project on the surrounding transportation system including freeways, roadways, bicycle/pedestrian facilities, and transit facilities/services. This section identifies the significant impacts of the proposed project and recommends mitigation measures to lessen their significance. All technical calculations can be found in Appendix F of the Draft EIR. Information in this section is derived from the following:

- City of Davis General Plan (as amended through 2013);
- City of Davis Bicycle Map (June 1016);
- Unitrans and Yolobus websites (http://unitrans.ucdavis.edu/ and http://unitrans.ucdavis.edu/);
- *Highway Capacity Manual* Transportation Research Board (2010);
- *Trip Generation* (Institute of Transportation Engineers [ITE], 2012);
- *Trip Generation Handbook* (ITE, 2012);
- *State Route 113 Transportation Concept Report* (Caltrans, 2014);
- *California Manual on Uniform Traffic Control Devices for Streets and Highways* (Caltrans, 2014)
- City of Davis Capital Improvement Program (CIP).
- Sacramento Area Council of Governments (SACOG) 2036 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).
- *National Association of City Transportation Officials* (*NACTO) Urban Streets Design Guide (2013)*
- *Unitrans General Manager's Report Fiscal Year 2015-2016 (September 2016)*

Comments were received during the public review period for the Notice of Preparation (NOP) regarding this topic from the following: Jaron D. Ross (April 15, 2017), Corinne Gee (April 24, 2017), Robin Whitmore (April 26, 2017), Toni Terhaar and Russ Kanz (April 26, 2017), Toni Terhaar and Russ Kanz (May 4, 2017), Greg Rowe (May 11, 2017), California Department of Transportation (May 12, 2017), Eileen M. Samitz (May 13, 2017), and Brad and Cindy Nelson (May 15, 2017). Each of the comments related to this topic are addressed within this section, and comments are included within Appendix A.

Key comments that pertain to the transportation analysis included:

- The scope of the analysis should include State Route (SR) 113 as well as project-related VMT analysis.
- Mitigation should include transportation demand management and access management strategies.
- Cumulative conditions should consider projected increases in the University of California, Davis (UC Davis) student enrollment as described in its Long Range Development Plan (LRDP).
- Queuing at the Shasta Drive/Covell Boulevard intersection should be analyzed.
- Bicycle travel and safety along Covell Boulevard should be evaluated.

- Effects of more frequent pedestrian crossings of Covell Boulevard should be considered.
- The cumulative impacts of increases in traffic associated with the proposed Binning Ranch subdivision project should be evaluated.

To the extent the transportation-related NOP comments pertain to the environmental effects of the proposed project, they are included in the analysis presented in this section.

The following scenarios are analyzed in this section:

Existing Conditions – Establishes the existing setting, which is used to measure the significance of project impacts.

Existing Plus Project Conditions – Adds traffic resulting from buildout of the proposed project to existing conditions traffic.

Existing Plus Approved Projects Conditions – Adds traffic generated by various approved, but not yet constructed land developments to existing conditions traffic.

Existing Plus Approved Projects Plus Project Conditions – Adds traffic resulting from buildout of the proposed project to existing plus approved projects conditions traffic.

Cumulative No Project Conditions – Represents cumulative travel conditions based on output from the City of Davis Traffic Model. This scenario assumes the project site remains vacant.

Cumulative Plus Project Conditions – Adds the proposed project to the Cumulative No Project scenario.

Evaluations are performed for the freeway, roadway, bicycle, pedestrian, and transit systems for each of these scenarios.

3.14.1 ENVIRONMENTAL SETTING

PROJECT LOCATION

The proposed project site is located in the City of Davis, Yolo County, California. The project site is bordered on the south by West Covell Boulevard and on the east by Risling Court. The land located immediately to the north and west of the project is currently undeveloped. Sutter Davis Hospital is located directly to the east. Figure 3.14-1 displays the site and surrounding roadway network, as well as intersections included in the transportation analysis.

STUDY AREA ROADWAYS AND INTERSECTIONS

West Covell Boulevard provides access to the project site via Risling Court. Other key roadways in the project vicinity include Shasta Drive, John Jones Road, and SR 113. These roadways are described below. Refer to Figure 3.14-2 for the existing number of lanes on study area roadways.

Covell Boulevard is an east-west roadway that borders the southern edge of the site. It is referred to as either "West" or "East" depending on whether the street section is located east or west of the railroad tracks. The City of Davis General Plan classifies this street as a major arterial. The posted speed limit is 35 miles per hour (mph) from east of Risling Court/Shasta Drive to east of SR 113. West of Risling Court/Shasta Drive, the posted speed limit is 45 mph. This roadway consists of two lanes in each direction separated by a raised median east of Risling Court/Shasta Drive. West of Risling Court/Shasta Drive, the roadway narrows to one lane in each direction separated by a two-way left-turn lane. In 2016, the City of Davis recorded 23,700 daily vehicles on West Covell Boulevard west of SR 113. The segment of West Covell Boulevard from SR 113 to the West City limits is classified as a truck route in the City of Davis General Plan.

Risling Court is a two-lane local street that extends 700 feet to the north of West Covell Boulevard, terminating at a cul-de-sac. This roadway currently provides access to the Sutter Davis Hospital. Field observations revealed vehicles parked on the west side of the street. Additionally, temporary off-street parking has been provided for staff and visitors to the University Retirement Community, which is located south of West Covell Boulevard. The street does not have a posted speed limit, though prevailing speeds are typically 25 mph or less.

John Jones Road is a two-lane minor arterial that extends north from West Covell Boulevard into unincorporated Yolo County, where it becomes County Road 99D. This roadway has a posted speed limit of 35 mph (northbound) and 45 mph (southbound) within the City. The speed limit is 35 mph from Covell Boulevard until the roadway starts to run parallel to SR 113, just before the City limits. This roadway provides access to Sutter Davis Hospital as well as several other office and retail uses.

Shasta Drive is a two-lane minor arterial that extends south from West Covell Boulevard serving primarily residential uses. It has a posted speed limit of 25 mph.

According to the *State Route 113 Transportation Concept Report* (Caltrans, July 2014), the four-lane freeway segment of SR 113 between Interstate (I) 80 and I-5 (in Woodland) currently carries 39,800 daily vehicle trips and operates at Level of Service (LOS) B. Trucks represent approximately 7.7 percent of the total volume.

Page 17 of the *State Route 113 Transportation Concept Report* states the following:

> "The LOS for this segment is not projected to drop below the minimum standard of LOS E, but congestion during peak hours is a concern due to the fact that it is the primary route between major state highway system routes and the cities of Davis and Woodland. Currently, SR 113 is still equipped to handle the projected population, but certain merge points along the route (e.g., lane reduction or on/off ramps) have a tendency to cause congestion. Monitoring the impacts new development will have on SR 113 should continue and improvements to alleviate issues should be considered as they arise."

The following image shows West Covell Boulevard approaching Risling Court/Shasta Drive.

VIEW OF WEST COVELL BOULEVARD/RISLING COURT/SHASTA DRIVE SIGNALIZED INTERSECTION.

Study intersections were selected in consultation with City of Davis staff and based on the project's expected travel characteristics (i.e., project location and amount of project trips) as well as facilities susceptible to being impacted by the project. The following 12 intersections were selected for study:

1. West Covell Boulevard/Lake Boulevard
2. West Covell Boulevard/Denali Drive
3. Risling Court/Sutter Hospital Driveway (located 375 feet north of West Covell Boulevard)
4. West Covell Boulevard/Risling Court/Shasta Drive
5. West Covell Boulevard/John Jones Road
6. West Covell Boulevard/SR 113 SB Ramps
7. West Covell Boulevard/SR 113 NB Ramps
8. West Covell Boulevard/Sycamore Lane
9. West Covell Boulevard/Anderson Road
10. West Covell Boulevard/Oak Avenue
11. East Covell Boulevard/F Street
12. East Covell Boulevard/J Street

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

This section describes the existing pedestrian and bicycle facilities in the study area.

Pedestrian Facilities

The City of Davis has an extensive system of multi-use pathways, sidewalks, and crosswalks available for use by pedestrians. The following facilities are located near the project (see Figure 3.14-3):

- Shared-use paths (typically 10 feet wide and accommodate bicycle/pedestrian travel in both directions) exist on one and/or both sides of West Covell Boulevard from west of Risling Court across SR 113.
- Sidewalks are present on portions of study area streets including West Covell Boulevard, Risling Court, John Jones Road, and Shasta Drive.
- Marked crosswalks with push-button pedestrian actuation are provided on all four legs of the West Covell Boulevard/Risling Court/Shasta Drive intersection. Marked crosswalks with pedestrian actuation are also provided at the signalized West Covell Boulevard/John Jones Road and SR 113 SB and NB Ramps/West Covell Boulevard intersections.
- The northbound, eastbound, and westbound right-turn movements at the West Covell Boulevard/Risling Court/Shasta Drive intersection include channelized right-turn triangular medians. Crosswalks are provided in these right-turn lanes with posted yield signs for motorists.

Pedestrian facilities do not exist along the north side of West Covell Boulevard and the west side of Risling Court along the project frontage as this area has not been developed.

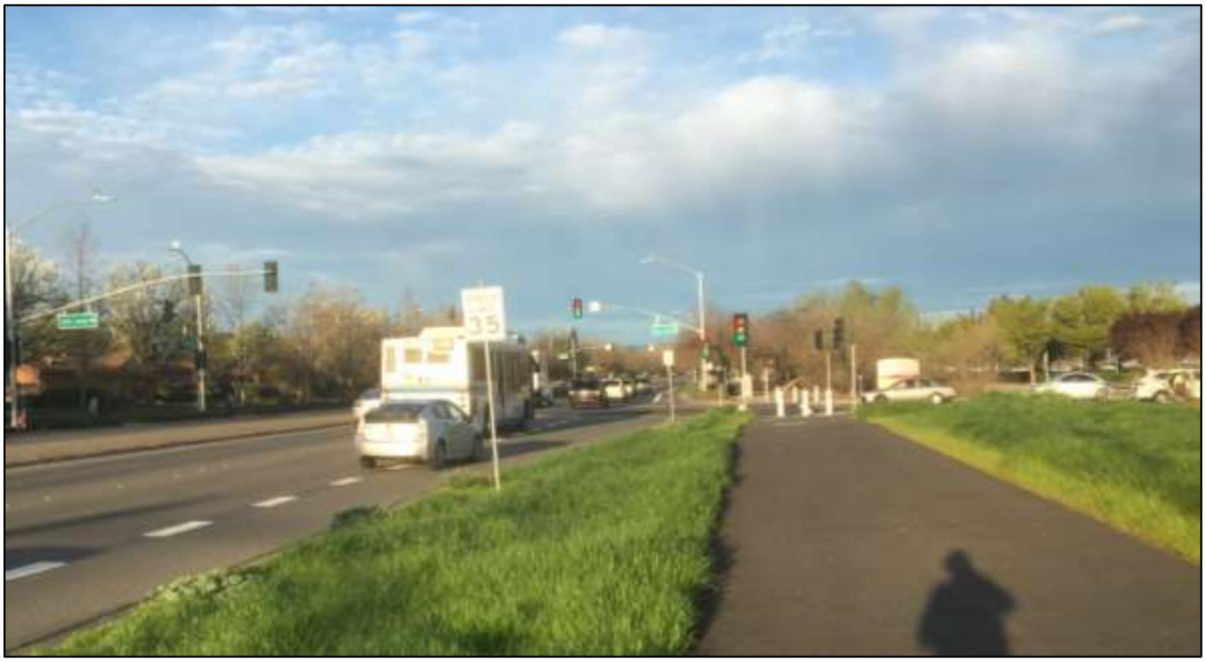
Bicycle Facilities

The following types of bicycle facilities exist within the City of Davis:

- Shared-use paths (Class I) – are paved trails that are separated from roadways, and allow for shared use by both cyclists and pedestrians.
- On-street bike lanes (Class II) – are designated for use by bicycles by striping, pavement legends, and signs.
- On-street bike routes (Class III) – are designated by signage for shared bicycle use with vehicles but do not include any additional pavement width.

Figure 3.14-3 displays existing bicycle facilities within the project vicinity. The previously discussed shared-use paths on West Covell Boulevard are located near the proposed project site. As shown in the figure, a number of Class II bike lanes are also provided within the project vicinity. A bicycle signal (with ramps and push-button actuation) is present at the signalized West Covell Boulevard/John Jones Road intersection to accommodate northbound bicycle travel (southbound bicyclists travel concurrently with the southbound vehicle phase). This bicycle route provides access to the grade-separated overcrossing of SR 113, which connects to Sycamore Lane and other destinations in central Davis, including the 12-mile Davis Bike Loop.

The following images show two bicycle facilities near the project site.



VIEW OF CLASS I SHARED-USE PATH ON NORTH SIDE OF WEST COVELL BOULEVARD EAST OF JOHN JONES ROAD

VIEW (FROM SOUTH SIDE OF WEST COVELL BOULEVARD) OF BICYCLE SIGNAL PROVIDED FOR BICYCLISTS DESIRING TO TRAVEL NORTH THROUGH WEST COVELL BOULEVARD/JOHN JONES ROAD INTERSECTION

TRANSIT SERVICE

Transit service in the City of Davis is provided by Unitrans (local), Yolobus (regional), and Davis Community Transit (paratransit).

Unitrans is a student-run public transportation bus system that serves the City of Davis. According to the Unitrans website (http://unitrans.ucdavis.edu/), the following transit routes exist in the project vicinity.

- **Unitrans Routes P & Q (Davis Perimeter)** – Route P operates in a counterclockwise direction, while Route Q operates in a clockwise direction. Each line originates/terminates at the Memorial Union Terminal on the UC Davis campus. Weekday service hours are from approximately 7:00 AM to 8:00 PM with 30-minute headways. Weekday (Monday to Thursday) evening service hours are 8:10 PM until 11:10 PM with 60-minute headways. Less frequent service is provided during weekday evenings and weekends. The Unitrans website provides real-time arrival prediction information for each route.

Buses generally run more frequently during the UC Davis academic year when ridership is higher and less frequently during the summer and breaks. Unitrans charges a $1.00 cash fare, and many types of prepaid discounted tickets and passes are available. UC Davis undergraduate students can show a valid student ID as their form of payment. Seniors (60+) may also ride free with an ID card available from the Senior Center. A variety of other fare options is also available.

According to the Yolobus website (http://www.yolobus.com/), the following transit routes exist in the study area.

- **Yolobus Route 220** – Provides fixed-route service to Davis, Winters, and Vacaville. On weekdays and Saturdays, this route provides one morning, one mid-day, and one afternoon round trip. Route 220C is similar but only operates between Davis and Winters, with one morning and one afternoon trip on weekdays only.

- **Yolobus Route 230 Express** – Provides three morning and three afternoon trips on weekdays between West Davis and downtown Sacramento. Route 231 is the last afternoon weekday Express trip from downtown Sacramento, returning to Davis.

The fare for single non-express rides is $2.25, and the fare for single express rides is $3.25. There are a variety of discounts and other pass purchase options available to riders.

Each of the above Unitrans and Yolobus routes stops at the bus stops located on West Covell Boulevard adjacent to the project (see Figure 3.14-3). Each of these stops includes a shelter. The two stops closest to the West Covell Boulevard/Risling Court/Shasta Drive intersection also include bus turnouts and parking for bicycles.

The following images show the bus facilities near the project site.

BUS STOP AND SHELTER IN NORTHWEST QUADRANT OF WEST COVELL BOULEVARD/RISLING COURT INTERSECTION

BOARDINGS ONTO ROUTE P FROM BUS STOP IN NORTHWEST QUADRANT OF WEST COVELL BOULEVARD/RISLING COURT INTERSECTION

3.14.2 ANALYSIS METHODS

The operational performance of the roadway network is commonly described with the term Level of Service, or LOS. LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The LOS analysis methods outlined in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010) were used in this study. The HCM methods for calculating LOS for signalized intersections and unsignalized intersections are described below.

Intersections

Traffic operations at signalized intersections are evaluated using the LOS method described in the 2010 HCM. A signalized intersection's LOS is based on the weighted average control delay measured in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Table 3.14-1 summarizes the relationship between the control delay and LOS for signalized intersections.

TABLE 3.14-1: INTERSECTION LOS CRITERIA

LOS	*DESCRIPTION*	*AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)*	
		SIGNALIZED INTERSECTIONS	*UNSIGNALIZED INTERSECTIONS*
A	Little or no delays	≤ 10.0	≤ 10.0
B	Short traffic delays	> 10.0 TO 20.0	> 10.0 to 15.0
C	Average traffic delays	> 20.0 TO 35.0	> 15.0 to 25.0
D	Long traffic delays	> 35.0 TO 55.0	> 25.0 to 35.0
E	Very long traffic delays	> 55.0 TO 80.0	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 80.0	> 50.0

SOURCE: HIGHWAY CAPACITY MANUAL (TRANSPORTATION RESEARCH BOARD, 2010).

The LOS for unsignalized intersections (side-street or all-way stop controlled intersections) is also defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop-controlled intersections, delay is calculated for each stop-controlled movement and for the uncontrolled left turns, if any, from the main street. The delay and LOS for the intersection as a whole and for the worst movement are reported for side-street stop intersections. The intersection average delay is reported for all-way stop intersections. Table 3.14-1 summarizes the relationship between delay and LOS for unsignalized intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections as drivers expect less delay at unsignalized intersections.

Study intersections 3 through 8 were analyzed using the SimTraffic microsimulation software based on their close spacing to one another and observed queues. The results of 10 runs were averaged to yield the reported results. The SimTraffic model applied actual traffic signal timings and was validated against measured traffic volumes and maximum queue lengths.

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered into the model according to the peak hour of the study area.
- The peak hour factor (PHF) was entered into the model to represent the busiest 15-minutes during each peak hour.
- The counted pedestrian and bicycle volumes were entered into the model according to the peak hour measurements.
- Signal phasing and timings were based on existing signal timing plans provided by the City and field observations.
- Speeds for the model network were based on the posted speed limits.

At the remaining study intersections, analyses were conducted using the Synchro software program. Synchro and SimTraffic apply procedures from the 2010 HCM.

The *California Manual on Uniform Traffic Control Devices for Streets and Highways* (Caltrans, 2014) provides criteria for eight signal warrants. Warrant 3 (Peak Hour Volumes) was applied to determine if traffic signals are warranted at any unsignalized study intersections. The use of the peak hour signal warrant is intended to examine the general correlation between existing/projected traffic levels and the need to install new traffic signals. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated. Furthermore, the decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to increases in certain types of collisions.

Freeway Merge/Diverge Areas

Operations at the SR 113 merge/diverge areas with West Covell Boulevard were analyzed using procedures described in the 2010 HCM. The LOS for these 'ramp junctions' is based on the vehicle density (passenger car equivalents/lane/mile/hour) at each ramp as shown in Table 3.14-2.

TABLE 3.14-2: FREEWAY MERGE/DIVERGE LOS CRITERIA

LEVEL OF SERVICE	*DENSITY (PASSENGER CARS/MILE/LANE/HOUR)*
	RAMP JUNCTIONS
A	≤ 10.0
B	> 10.0 to 20.0
C	> 20.0 to 28.0
D	> 28.0 to 35.0
E	> 35.0
F	Demand Exceeds Capacity

NOTE: OCCURS WHEN FREEWAY DEMAND EXCEEDS UPSTREAM (DIVERGE) OR DOWNSTREAM (MERGE) FREEWAY SEGMENT CAPACITY, OR IF OFF-RAMP DEMAND EXCEEDS OFF-RAMP CAPACITY
SOURCE: HIGHWAY CAPACITY MANUAL (TRANSPORTATION RESEARCH BOARD, 2010).

Bicycle and Pedestrian Facilities

Bicycle Level of Traffic Stress (LTS) refers to a bicyclist's comfort traveling along roadways. Metrics for bicycling LTS were developed at the Mineta Transportation Institute (MTI) and published in the report "Low-Stress Bicycling and Network Connectivity." Factors influencing LTS along corridors include: bicycle separation from vehicle traffic, presence of on-street parking, street width, bike lane width, vehicle speeds, and bike lane blockage. Factors influencing LTS at intersection approaches include: bicycle separation from vehicle traffic, bike lane separation from vehicle right turn lane, bike lane straight or shifted approach to the intersection, right turn lane length, and right turn vehicle speeds.

Bicycle riders vary in experience, skill, ability, and confidence. Different classes of bicyclists are correlated with different levels of "traffic stress" they are willing to experience while cycling. Bicycle LTS criteria span from 1 to 4, with 1 being the least stressful and 4 being the most stressful:

- **LTS 1**: Most children and elderly riders can tolerate this level of stress and feel safe and comfortable; bicyclists typically require more separation from traffic.
- **LTS 2**: This is the highest level of stress that the mainstream adult population will tolerate while still feeling safe.
- **LTS 3**: Bicyclists who are considered "enthused and confident" but still prefer having their own dedicated space for riding will tolerate this level of stress and feel safe while bicycling.
- **LTS 4**: For bicyclists, this is tolerated only by those characterized as "strong and fearless," which comprises a small percentage of the population. These roadways have high speed limits, multiple travel lanes, limited or non-existent bike lanes and signage, and large distances to cross at intersections.

Figure 3.14-4a shows the LTS for key bicycle corridors and intersection approaches near the project site. The LTS rating is based on the average score of all factors. A few factors contributing to a higher level of stress for bicyclists include the segment of West Covell Boulevard west of Shasta Drive having a 45 mph posted speed limit, and the southbound approach at the West Covell Boulevard/Risling Court/Shasta Drive intersection consisting of a mixed bicycle-vehicle travel lane.

Pedestrian StreetScore+ refers to the measure of pedestrian comfort on sidewalks and paths. StreetScore+ metrics were developed by Fehr & Peers using parameters and best practice guidance provided by the *National Association of City Transportation Officials* (*NACTO) Urban Streets Design Guide* (2013). Factors influencing StreetScore+ along corridors include: sidewalk width, sidewalk pavement quality, driveways within sidewalk zone, landscape buffer/street trees, number of roadway lanes, vehicle speeds, lighting, percentage of heavy vehicles on roadway, and crosswalk frequency. Factors influencing StreetScore+ at intersection crossings include: crossing distance, pedestrian signal accessibility, curb ramp accessibility, and presence of channelized right turns.

Pedestrian StreetScore+ has a parallel structure to the LTS approach for bicyclists, using the following 1 to 4 scale:

- **StreetScore+ 1**: Highly comfortable, pedestrian-friendly, and easily navigable for pedestrians of all ages and abilities, including seniors or school-aged children walking unaccompanied to school. These streets provide an ideal "pedestrian-friendly" environment.
- **StreetScore+ 2**: Generally comfortable for many pedestrians, but parents may not feel comfortable with children walking alone. Seniors may have concerns about the walking environment and take more caution. These streets may be part of a "pedestrian-friendly" environment where it intersects with a more auto-oriented roadway or other environmental constraints.
- **StreetScore+ 3**: Walking is uncomfortable but possible. Minimum sidewalk and crossing facilities may be present, but barriers are present that make the walking experience uninviting and uncomfortable.
- **StreetScore+ 4**: Walking is a barrier and is very uncomfortable or even impossible. Streets have limited or no accommodation for pedestrians and are inhospitable and possibly unsafe environment for pedestrians.

Figure 3.14-4b shows the StreetScore+ for key sidewalk corridors and intersection crossings near the project site. The StreetScore+ rating is based on the average score of all factors. A few factors contributing to a less comfortable environment for pedestrians include the lack of sidewalks adjacent to the project site, poor pavement quality along the shared-use path on the south side of West Covell Boulevard from Shasta Drive to John Jones Road, limited or no lighting on West Covell Boulevard, and the long crossing distance on the east leg of the West Covell Boulevard/Risling Court/Shasta Drive intersection.

DATA COLLECTION

Traffic counts were collected at the 12 study intersections during the AM peak hour period (7:00 AM to 9:00 AM) and PM peak hour period (4:00 PM to 6:00 PM) on Thursday, March 16, 2017 while UC Davis and local schools were in session. No unusual weather or traffic conditions were observed during the count periods.

Figure 3.14-5 displays the existing AM and PM peak hour traffic volumes at the study intersections. This figure also displays the existing traffic controls and lane configurations at each intersection, which were collected through review of aerial imagery and field observations. As shown, 10 of the 12 study intersections are controlled by traffic signals with the remaining two consisting of all way or side-street stop-control.

At the West Covell Boulevard/Risling Court/Shasta Drive intersection, the AM peak hour occurred from 7:45 to 8:45 AM and the PM peak hour occurred from 4:30 to 5:30 PM. The other study intersections featured slightly different peak hours of travel.

Pedestrian travel was observed at all study intersections. At the West Covell Boulevard/Risling Court/Shasta Drive intersection, the west leg (i.e., crossing of West Covell Boulevard) accommodated 33 pedestrians during the AM peak hour and 18 pedestrians during the PM peak hour. The other three legs accommodated less than 10 pedestrians per hour. The heavy pedestrian flow on the west leg was likely associated with persons traveling to/from the bus stop in the northwest quadrant of the intersection.

Bicycle travel on West Covell Boulevard was also recorded. On-street bicycle flows on eastbound and westbound West Covell Boulevard consisted of 10 bicyclists or fewer during each peak hour. However, additional bicyclists were observed using the shared-use (Class I) paths that parallel West Covell Boulevard.

The technical analyses presented in this section considers the effects of bicyclists and pedestrians on intersection operations and delays. Conversely, the effects of the project on these non-motorized travel modes are also evaluated.

INTERSECTION OPERATIONS

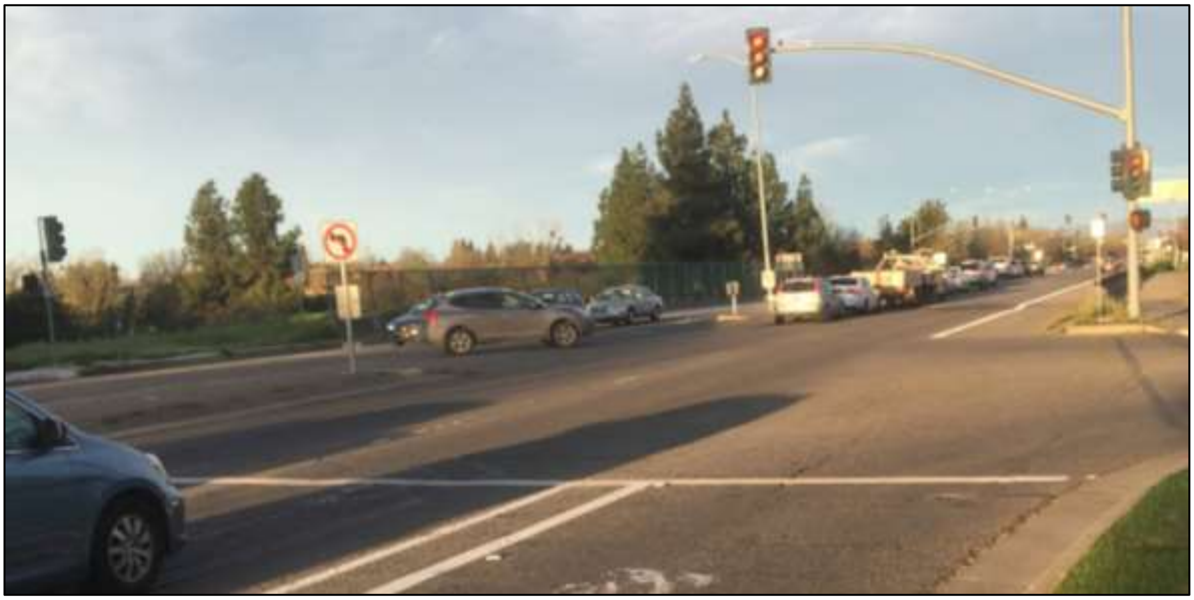
It is important that the SimTraffic model be adequately validated to be able to replicate existing vehicular queues for key movements in the study area. Table 3.14-3 displays the results of the SimTraffic model's validation against the maximum observed queue lengths (collected on March 16, 2017) for critical movements along the West Covell Boulevard study corridor. As shown, the model validates well against the observed maximum queue lengths, with the majority of movements being within 25 feet (one vehicle) of the observed maximum queue length. Given these results, the SimTraffic model is considered adequately validated to existing conditions, and therefore capable of accurately estimating how the project would change delays and queuing.

TABLE 3.14-3: SIMTRAFFIC MODEL MAXIMUM QUEUE LENGTH VALIDATION

Intersection	*Movement*	*Available Storage*	*Observed Maximum Vehicle Queue*		*Modeled Maximum Vehicle Queue*	
			AM Peak Hour	*PM Peak Hour*	*AM Peak Hour*	*PM Peak Hour*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	50 feet	50 feet	100 feet	75 feet
	Southbound LT	150 feet	75 feet	75 feet	100 feet	100 feet
	Southbound TH/RT	150 feet	75 feet	75 feet	75 feet	75 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	425 feet	275 feet	425 feet	250 feet
	Westbound TH	325 feet	250 feet	275 feet	300 feet	275 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. CRITICAL MOVEMENTS ALONG WEST COVELL BOULEVARD SELECTED FOR VALIDATION. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

Additionally, the model was able to accurately replicate the AM peak hour queuing effects associated with the heavy westbound left-turn movement onto the SR 113 southbound on-ramp. This movement spills back into the northbound ramps intersection, both in the field and as simulated in the SimTraffic model. Refer to the image on the following page.



VIEW OF QUEUING ON WESTBOUND WEST COVELL BOULEVARD DURING AM PEAK HOUR

Existing intersection operations were analyzed for the weekday AM and PM peak hours at the study intersections. Table 3.14-4 displays the intersection analysis results. This table indicates that all study intersections currently operate at LOS C or better.

TABLE 3.14-4: PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

LOCATION	CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (2)	A (A)
4. West Covell Blvd./Risling Ct./Shasta Dr.	Signal	17	B	16	B
5. West Covell Blvd./John Jones Rd.	Signal	21	C	13	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B
7. West Covell Blvd./SR 113 NB Ramps	Signal	24	C	21	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	25	C
9. West Covell Blvd./Anderson Rd.	Signal	22	C	29	C
10. West Covell Blvd./Oak Ave.	Signal	9	A	7	A
11. West Covell Blvd./F St.	Signal	24	C	23	C
12. East Covell Blvd./J St.	Signal	15	B	15	B

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

During the AM peak hour, eastbound traffic on West Covell Boulevard queues nearly back to Risling Court/Shasta Drive from John Jones Road. This occurs as the result of several factors. First, delays occur at the SR 113 SB Ramps intersection (particularly due to the heavy westbound left-turn movement of 454 vehicles in a single lane). Second, the signals along West Covell Boulevard, although interconnected, do not currently operate in a manner that facilitates efficient through movement of vehicles. Third, frequent pedestrian calls for service across West Covell Boulevard contribute to more lengthy queues in the east and west directions, which causes corridor operations to frequently “fall out of coordination”.

The two unsignalized study intersections were evaluated to determine if they satisfy the peak hour warrant for consideration of a traffic signal. The West Covell Boulevard/Lake Boulevard intersection currently meets the peak hour warrant during the AM and PM peak hours. The Risling Court/Sutter Hospital driveway does not meet the peak hour warrant for a traffic signal.

FREEWAY OPERATIONS

Table 3.14-5 displays existing operations at the SR 113/West Covell Boulevard freeway on/off ramp merge/diverge areas. As shown, all ramp junctions currently operate at LOS C or better.

TABLE 3.14-5: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING CONDITIONS

Ramp	*Movement*	*AM Peak Hour*		*PM Peak Hour*	
		Density	*LOS*	*Density*	*LOS*
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	22	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B

SOURCE: FEHR & PEERS, 2017.

BICYCLE/PEDESTRIAN CONDITIONS

Figure 3.14-4a shows that the majority of streets have bicycle facilities in the project vicinity that result in generally comfortable bicycling conditions. However, the Class II bike lane on westbound West Covell Boulevard west of Risling Court is along a street segment with a high posted speed limit (45 mph), and includes a conflict area with buses. Conditions may also be considered uncomfortable for some groups (though bike travel is still possible) approaching/departing certain intersections near the project site including southbound Risling Court in which a bicycle facility is not provided.

Figure 3.14-4b shows a generally comfortable walking environment along streets near the project site with developed frontage improvements. However, due to the lack of sidewalks, pedestrian travel along the project frontage of West Covell Boulevard and Risling Court is considered either very uncomfortable or impossible. Pedestrian travel across West Covell Boulevard at Risling Court/Shasta Drive is also considered uncomfortable due to the long crossing distance and/or presence of triangular right-turn medians, which results in an uncontrolled pedestrian crossing across a ‘free-flow’ right-turn movement.

3.14.3 PROJECT TRAVEL CHARACTERISTICS

PROJECT DESCRIPTION

The project includes development of: 150 affordable, age-restricted apartments; 32 attached, age-restricted cottages; 94 attached, age-restricted units; 129 single-family detached, age-restricted units; 77 single-family detached, non-age-restricted units; an approximately three-acre continuing care retirement community, which would likely consist of 30 assisted living, age-restricted detached units; an approximately 4.3-acre mixed use area, which would likely consist of a health club, restaurant, clubhouse, and up to 48 attached, age-restricted units; dog park and tot lot; associated greenways, drainage, agricultural buffers; and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 560 dwelling units and 4.5 miles of off street biking and walking paths within the project area and an additional 0.22 miles of off street biking and walking paths offsite.

For analysis purposes, the proposed project was assumed to consist of the trip generating land uses detailed in Section 2.0, Project Description (based on the NOP's project description and discussions with the project team). Refer to Section 2.0 for detailed project description including a project site plan exhibit.

TRIP GENERATION

Because the majority of project units would be age-restricted (up to 484 age-restricted units and up to 76 non-age restricted units), a suitable source of data was needed to estimate their trips. The *Trip Generation Manual* (Institute of Transportation Engineers, 2012) contains data on age-restricted / active adult housing. However, the extent of its applicability to the City of Davis is unknown. Accordingly, it was determined that a trip generation study should be conducted at a comparable facility.

The Rancho Yolo Senior Community, which is located at 620 Pole Line Road in east Davis and consists of 262 mobile home units, was selected as the comparable facility to study. This facility requires at least one resident to be age 55 or over. It includes a clubhouse (with kitchen and library area), two pools, a laundry room, and boat/RV parking. The facility is served by a nearby Unitrans bus stop, and has various bicycle/pedestrian facilities in close proximity.

Traffic counts were conducted on Tuesday, April 11, 2017, Wednesday, April 19, 2017, and Thursday, April 20, 2017 at the two entrances to the community. Table 3.14-6 shows the results of these counts. The daily traffic counts varied by less than two percent from one day to the next. The community generated an average of 1,200 external daily trips, which translates into an average of 4.6 daily vehicle trips per unit.

TABLE 3.14-6: VEHICLE TRIPS GENERATED BY RANCHO YOLO SENIOR COMMUNITY

Date	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		Total	*Inbound*	*Outbound*	*Total*	*Inbound*	*Outbound*
Tuesday, April 11, 2017	1,198	58	21	37	111	64	47
Wednesday, April 19, 2017	1,218	62	22	40	91	53	38
Thursday, April 20, 2017	1,199	63	25	38	80	43	37
Average	1,205	61	23	38	94	53	41
Vehicle Trip Rate	*4.60*	*0.23*	*38%*	*62%*	*0.36*	*56%*	*44%*

NOTE: VEHICLE TRIP RATE BASED ON 262 UNITS.
SOURCE: FEHR & PEERS, 2017.

Table 3.14-7 shows the mode split of external trips generated by the Rancho Yolo Senior Community. Walking (including some walk trips destined for nearby bus stops) and bicycling trips comprised 15 percent of all external trips during the AM peak hour and 12 percent of all external trips during the PM peak hour.

TABLE 3.14-7: AM AND PM PEAK HOUR MODE SPLIT AT RANCHO YOLO SENIOR COMMUNITY

Date	*AM Peak Hour*	*PM Peak Hour*
Vehicle	85%	88%
Bicycle	7%	4%
Walk [1]	8%	8%

NOTE: [1] SOME EXTERNAL WALK TRIPS WERE LIKELY DESTINED FOR NEARBY BUS STOPS.
SOURCE: FEHR & PEERS, 2017.

The following trip generation data was collected by Fehr & Peers in 2003 as part of the City of Davis travel demand model update. These trip rates are used in the City's travel demand model.

- **Montgomery Avenue, Catalina Drive, and Marina Circle Single-Family Developments**: These projects were observed to generate a weighted average of 12.82 daily vehicle trips per unit.

While other more recent trip generation studies of residential uses in Davis have been conducted, those have focused on student housing in the vicinity of the UC Davis campus. Thus, they are not considered applicable for this study given its location and intended resident types.

Table 3.14-8 estimates the gross trip generation of the various components of the proposed project. The following describes the specific trip generation estimates used for each land use type:

- **Age-restricted apartments, condominiums, and attached cottages** – These uses were analyzed using the *Senior Adult Housing – Attached* (LU Category 252) from the *Trip Generation Manual.* For the AM and PM peak hours, the data set consists of 10 studies whose average size is 138 units. Data does not exist to allow for differentiation between units that are affordable or not. This data is valid for use in this study because the trip rates are reasonable (i.e., somewhat lower) when compared with rates measured at the Rancho Yolo Senior Community, which are comprised of age-restricted detached units.

- **Single-family, non-age-restricted, detached units** – These uses are based on the single-family rate in the City of Davis travel demand model, which is derived from the trip generation study cited above. These units generate an average of 12.82 trips per day.
- **Life-long learning class in clubhouse** – This analysis conservatively assumes that 90 percent of the 50 attendees reside outside the project, and that 80 percent arrive during the AM peak hour and depart during the PM peak hour.
- **Health club and sit-down restaurant uses** – These uses were based on trip rates contained in *Trip Generation Manual* (Institute of Transportation Engineers, 2012).

TABLE 3.14-8: PROJECT TRIP GENERATION

LAND USE	*QUANTITY*	*TRIP RATES* [1]			*VEHICLE TRIPS*						
		DAILY	*AM PEAK HOUR*	*PM PEAK HOUR*	*DAILY*	*AM PEAK HOUR*			*PM PEAK HOUR*		
						TOTAL	*IN*	*OUT*	*TOTAL*	*IN*	*OUT*
Senior, age-restricted, affordable apartments	150 du	3.44	0.20	0.25	516	30	10	20	38	20	18
Age-restricted, attached cottages	32 du	3.44	0.20	0.25	110	6	2	4	8	4	4
Single-family, age-restricted, detached units	129 du	*4.6*	*0.23*	*0.36*	593	30	11	19	46	26	20
Single-family, non-age-restricted, detached units	77 du	*12.82*	*1.01*	*1.04*	987	78	12	66	80	56	24
Assist living, age-restricted detached units	30 du	*4.6*	*0.23*	*0.36*	138	7	3	4	11	6	5
Attached, age-restricted units	142 du	3.44	0.20	0.25	488	28	10	18	36	19	17
Health Club	8 ksf	32.93	1.41	3.77	263	11	6	5	30	17	13
High-Turnover (Sit-Down) Restaurant	5 ksf	127.2	10.81	9.85	636	54	30	24	49	30	19
Life-Long Learning Class [2]	50 attendees	-	-	-	160	33	30	3	33	3	30
Gross Trips					3,891	277	114	163	331	181	150
Internal Trips [3]					200	22	11	11	32	16	16
External Walk/Bike/Transit Trips [4]					105	9	3	6	9	5	4
New Vehicle Trips					3,586	246	100	146	290	160	130

NOTES:

[1] *TRIP RATES SHOWN IN ITALICS AND UNDERLINE WERE OBTAINED FROM EMPIRICAL STUDIES OF SIMILAR RESIDENTIAL PROJECTS ELSEWHERE IN DAVIS. TRIP RATES NOT SHOWN IN ITALICS AND UNDERLINE ARE BASED ON DATA FROM THE TRIP GENERATION MANUAL (INSTITUTE OF TRANSPORTATION ENGINEERS, 2012).*

[2] ASSUMES 10% OF ATTENDEES RESIDE WITHIN PROPOSED PROJECT. OF THE REMAINING 90%, 80% ARRIVE DURING THE AM PEAK HOUR, AND DEPART DURING THE PM PEAK HOUR, WITH 10% OF THESE TRIPS BEING DROP-OFFS AND PICK-UPS. AVERAGE VEHICLE OCCUPANCY CONSERVATIVELY ASSUMED TO BE 1.2 PERSONS PER VEHICLE.

[3] INTERNAL TRIPS ESTIMATED USING MIXED-USE TRIP GENERATION (MXD) MODEL (SEE FOLLOWING PAGE FOR DESCRIPTION). INTERNALIZATION OF TRIPS (EXCLUDING LIFE-LONG LEARNING CLASS WHICH IS ESTIMATED SEPARATELY) ESTIMATED AT 5.4% ON A DAILY BASIS, 9.0% DURING THE AM PEAK HOUR, AND 10.7% DURING THE PM PEAK HOUR.

[4] THE TWO SETS OF TRIP RATES COLLECTED AT EXISTING DAVIS RESIDENTIAL COMMUNITIES REFLECT VEHICLE TRIPS (I.E., TRIPS MADE BY WALKING, BICYCLING, AND TRANSIT ARE ALREADY REFLECTED IN THE RATES). HOWEVER, TRIP RATES FOR THE ATTACHED AGE-RESTRICTED UNITS ARE BASED ON ITE RATES AND DO NOT CONSIDER THE EXTENT OF TRAVEL BY NON-AUTO MODES THAT OCCURS IN DAVIS. ACCORDINGLY, EXTERNAL WALK/BIKE/TRANSIT ADJUSTMENTS WERE MADE TO THOSE USES (BASED ON PERCENTAGES OBSERVED AT RANCHO YOLO SENIOR COMMUNITY).

DU = DWELLING UNIT. KSF = THOUSAND SQUARE FEET.

SOURCE: FEHR & PEERS, 2017.

Due to the complementary nature of the project's land uses, some trips generated by the project would be expected to remain internal (i.e., residential to restaurant, etc.). The internalization of trips within the project site was estimated using a Mixed-Use Trip Generation Model (MXD), which was developed for the US Environmental Protection Agency (EPA) to estimate internal trip-making and external trips by non-auto travel modes. This model was developed by consultants and academic researchers to more accurately estimate the external vehicular trip generation of mixed-use land development projects than prior methods (e.g., ITE internalization spreadsheet). The model was developed based on empirical evidence at 240 mixed-use projects located across the U.S. The model considers various built environment variables such as land use density, regional location, proximity to transit, and various design variables when calculating the project's internal trips, and external trips made by auto, transit, and non-motorized modes. The MXD model has been applied in numerous EIRs throughout California. According to Table 3.14-8, approximately five percent of daily project trips, and nine to ten percent of AM and PM peak hour project trips would remain internal to the project.

The two sets of trip rates collected at existing Davis residential communities and applied in Table 3.14-8 already consider external trips made by walking, bicycling, and transit. Therefore, it was not necessary to make any further adjustments to those rates. However, trip rates for the attached age-restricted units are based on ITE rates and do not consider the degree of travel by non-auto modes that occurs in Davis. Accordingly, external walk/bike/transit adjustments were made to those uses (i.e., age-restricted apartments, attached cottages, and condominiums) based on percentages observed at the Rancho Yolo Senior Community. To be conservative, no adjustments to trip rates for the health club and sit-down restaurant were made to account for bicycle, pedestrian, or transit use, though it is possible that some employees and patrons may use those modes to access those uses. Similarly, no adjustments were made to reflect the potential for 'pass-by' trips to these uses.

Table 3.14-8 indicates that the proposed project would generate 3,586 new daily vehicle trips, with 246 occurring during the AM peak hour and 290 occurring during the PM peak hour. Approximately 59 percent of AM peak hour trips would be outbound and 55 percent of PM peak hour trips would be inbound.

TRIP DISTRIBUTION/ASSIGNMENT

Figure 3.14-6 shows the expected distribution of external residential vehicle trips to and from the project. The residential trip distribution was developed based on the following data sources:

- A 'project-only' traffic assignment for residential-only uses from the City of Davis base year travel demand model.
- Review of existing directional travel patterns to and from nearby housing developments to the south (i.e., trips accessing West Covell Boulevard from Shasta Drive and Denali Drive).

Figure 3.14-6 shows that 82 percent of residential trips would be distributed to/from the east toward the SR 113/West Covell Boulevard interchange.

Figure 3.14-7 shows the expected distribution of external commercial vehicle trips to and from the project. These percentages were developed based on a 'project-only' traffic assignment for commercial-only uses from the City of Davis base year travel demand model. This figure shows a relatively balanced distribution of trips to/from the east, west, and south. These percentages would apply only to external vehicle trips associated with the health club, Life-Long Classes, and sit-down restaurant.

Vehicle Miles of Travel (VMT)

This section describes the methodologies used to estimate the project's Vehicle Miles of Travel (VMT). VMT is presented for informational purposes in this section. However, the values shown here are used in other sections of the EIR as inputs to air quality, noise, and greenhouse gas emissions.

VMT is considered a useful metric in understanding how a project can affect the efficiency of the transportation system. By definition, one VMT occurs when a vehicle is driven one mile. In addition, a given VMT value represents vehicular miles of travel for entire weekday. Lastly, VMT values in this section represent the full length of a given trip, and are not truncated at city, county, or region boundaries.

Table 3.14-9 displays the project's estimated VMT. This table shows that the project is estimated to generate approximately 21,000 VMT on a typical weekday. Refer to the footnotes in the table for data sources and references used in this estimate. This estimate is applicable both to existing and cumulative conditions because there are not tangible changes in background conditions (e.g., introduction of new bus service that doesn't current exist, new streets, etc.) that would cause a meaningful change in VMT.

TABLE 3.14-9: PROPOSED PROJECT VMT ESTIMATION

LAND USE	*EXTERNAL DAILY VEHICLE TRIPS*	*DISTRIBUTION BY TRIP PURPOSE [1] (TRIP LENGTH) [2]*				*VMT*
		HOME-BASED WORK	*HOME-BASED SCHOOL*	*HOME-BASED OTHER*	*HOME-BASED UCD TRIPS*	
Senior / Age-Restricted Residential	1,728	5% (10.9 mi)	0%	90% (5.5 mi)	5% (2.8 mi)	9,737
Non-Age-Restricted Residential	927	20% (10.9 mi)	5% (1.5 mi)	66% (5.5 mi)	9% (2.8 mi)	5,689
Restaurant / Health Club / Entertainment	932	10% (12.4 mi)	0%	85% (5.5 mi)	5% (2.8 mi)	5,643
					Total	*21,069*

NOTES:
[1] THE DISTRIBUTION OF TRIP PURPOSES WAS DERIVED FROM THE CITY OF DAVIS TRAVEL DEMAND MODEL DEVELOPMENT REPORT, FEHR & PEERS, 2003. TO BE CONSERVATIVE (I.E., ENSURE THAT VMT IS NOT UNDERESTIMATED), A MODEST LEVEL OF HOME-BASED WORK TRIP PURPOSE WAS ASSUMED FOR SENIOR / AGE-RESTRICTED UNITS (I.E., HOME-BASED WORK TRIPS ARE LONGER THAN OTHER HOME-BASED TRIPS).
[2] TRIP LENGTHS ARE ESTIMATED FROM TAZ 316 WITHIN THE CALIFORNIA STATEWIDE TRAVEL DEMAND MODEL (CSTDM), (FOUND AT: HTTP://DOT.CA.GOV/HQ/TPP/OFFICES/OMSP/SB743.HTML) AS WELL AS ORIGIN-DESTINATION CALCULATIONS FOR NEARBY SCHOOLS AND UCD. REASONABLENESS OF CSTDM HOME-BASED OTHER TRIP LENGTH CONFIRMED BY REVIEWING CALIFORNIA 2012 HOUSEHOLD TRAVEL SURVEY, WHICH SHOWED AN AVERAGE 5.25 MILE TRIP LENGTH FOR HOME-BASED OTHER TRIPS BY DAVIS RESIDENTS.
SOURCE: FEHR & PEERS, 2017.

3.14.4 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the Proposed Project are summarized below. This information provides a context for the impact discussion related to the project's consistency with applicable regulatory conditions and development of significance criteria for evaluating project impacts.

City of Davis General Plan

The City of Davis General Plan Transportation Element was updated in 2013. The following goals and policies related to transportation and circulation are applicable to the project. Most of the listed goals and policies are relevant at a project-level scale, versus city-wide.

TRANSPORTATION

GOAL #2: The Davis transportation system will evolve to improve air quality, reduce carbon emissions, and improve public health by encouraging usage of clean, energy-efficient, active (i.e. human powered), and economically sustainable means of travel.

Performance Objective #2.1: Reduce carbon emissions from the transportation sector 61 percent by 2035.

- Performance Objective #2.2: Reduce vehicle miles traveled (VMT) 39 percent by 2035.

- Performance Objective #2.3: Annually increase funding for maintenance and operation needs of the transportation system, until fully funded.

Policy TRANS 1.6: Reduce carbon emissions from the transportation system in Davis by encouraging the use of non-motorized and low carbon transportation modes.

Policy TRANS 1.7: Promote the use of electric vehicles and other low-polluting vehicles, including Neighborhood Electric Vehicles (NEV).

Policy TRANS 2.1: Provide Complete Streets to meet the needs of drivers, public transportation vehicles and riders, bicyclists, and pedestrians of all ages and abilities in all transportation planning, programming, design, construction, reconstruction, retrofit, operations, and maintenance activities and products. The City shall view all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in Davis, and recognizes bicycle, pedestrian, fixed-route transit, and demand-response para-transit modes as integral elements of the transportation system along with motor vehicles. This policy also includes the following language pertaining to automobile level of service:

- LOS D or better is acceptable during non-peak traffic hours.
- LOS E or better is acceptable during peak traffic hours.
- LOS F is acceptable during peak traffic hours in the Core Area and Richards Boulevard/Olive Drive area.
- LOS F is acceptable during peak traffic hours in other areas if approved by City Council.

Action TRANS 2.1(i): Establish a multi-modal Level of Service (LOS) standard to address the needs of all users of the street, including bicyclists and pedestrians, at intersections.

Action TRANS 2.1(k): Work with citizens and technical experts to review the street width and “Greenstreet” standards to reflect pedestrian and bicycle friendly policies in this chapter, including but not limited to the following:

- Design/redesign residential and collector streets to slow vehicular traffic to 25 mph or less.
- Design travel lanes to prioritize pedestrians and bicycles, including provisions for a marked “buffer space” to further separate bicycles from both moving and parked motor vehicles, where right-of-way allows.
- Eliminate intersection standards that allow high speed right turns for motor vehicles.

- Adjust intersection signal operations to smooth traffic flow, reduce automobile idle time, and to adequately service bicycles and pedestrians by giving priority and to maintain momentum.

Action TRANS 2.1(l): Preserve rights-of-way for future transportation use.

Action TRANS 2.1(m): Ensure transit stops have adequate curb space for loading and unloading passengers.

Policy TRANS 2.2: Implement state-of-the-art street design solutions to improve bicycle/pedestrian access, comfort, and safety that may include:

- Bicycle boxes at intersections
- Cycletracks
- Shared lane markings (sharrows)
- Contraflow bicycle lanes
- Improved bicycle detection at intersections
- Two-stage turn queue boxes
- Colored bicycle lanes
- Bicycle route wayfinding

Policy TRANS 2.3: Apply best practices in sustainability to new streets and redesigns of existing streets/corridors.

Policy TRANS 2.4: As part of the initial project review for any new project, a project-specific traffic study may be required. Studies shall identify impacted transportation modes and recommend mitigation measures designed to reduce these impacts to acceptable levels.

Policy TRANS 2.5: Create a network of street and bicycle facilities that provides for multiple routes between various origins and destinations.

Policy TRANS 2.7: Minimize impacts of vehicle traffic on local streets to maintain or enhance livability of the neighborhoods. Consider traffic calming measures along collector and minor arterial streets, where appropriate and feasible, to slow speeds.

Policy TRANS 2.8: Improve the function, safety, and appearance of selected corridors as illustrated.

- **Action:**
  a. Develop "corridor plans" for selected streets which warrant special treatment because of existing impact problems or operational issues. Corridor plans should take into consideration adjacent land uses and result in streets that are both functional and aesthetic. The plans should utilize innovative means of slowing traffic, where appropriate, and provide safe access for pedestrians and

bicyclists. Mitigation shall be incorporated to protect residences and sensitive receptors from noise, air pollution and other traffic related impacts. The corridor plans may deviate from the standards established in the General Plan, if deviates improve the livability of the area. Covell Boulevard from SR 113 to the west City limit is included in this program.

Policy TRANS 2.10: Prohibit through truck traffic on streets other than identified truck routes shown in [the Transportation Element].

Policy TRANS 3.1: Facilitate the provision of convenient, reliable, safe, and attractive fixed route, commuter, and demand responsive public transportation that meets the needs of the Davis community, including exploring innovative methods to meet specialized transportation needs.

Policy TRANS 3.3: Require new development to be designed to maximize transit potential.

Policy TRANS 4.2: Develop a continuous trails and bikeway network for both recreation and transportation that serves the Core, neighborhoods, neighborhood shopping centers, employment centers, schools and other institutions; minimize conflicts between pedestrians, bicyclists, equestrians, and automobiles; and minimize impacts on wildlife. Greenbelts and separated bike paths on arterials should serve as the backbone of much of this network.

Policy TRANS 4.3: Continue to build transportation improvements specifically targeted at bicycles. Refer to Bicycle Plan and Transportation Implementation Plan for list of bicycle-related projects.

Policy TRANS 4.5: Establish and implement bicycle parking standards for new developments and significant redevelopment.

Policy TRANS 4.7: Develop a system of trails around the edge of the city and within the city for recreational use and to allow pedestrians and bicyclists to reach open space and natural areas.

Policy TRANS 5.1: Use parking management techniques to efficiently manage motor vehicle parking supply and promote sustainability.

Policy TRANS 5.2: Existing and future off-street parking lots in development should contribute to the quality of the urban environment and support the goals of this chapter to the greatest extent possible.

City of Davis Comprehensive Bicycle Plan

This document included discussions regarding goals and objectives, bicycle facility guidelines, engineering standards, and implementation and funding. The Plan was heard before and adopted by the City Council in February 2014. This document includes numerous goals and policies regarding enforcement, education, and engineering design. The following policies are particularly relevant to this study:

Goal: Provide bike lanes along arterial and collector streets. Provide separated bike paths adjacent to arterial and collector streets only where justified, with full consideration of the potential safety problems this type of facility can create.

Goal: Consider bicycle-operating characteristics in the design of bikeways, intersections, and traffic control systems.

In addition, this document shows a variety of existing and proposed bicycle facilities. No new proposed facilities were shown within the immediate project vicinity. However, Appendix K, the Davis Greenway Concept Plan, shows missing links and grade-separated crossings of SR-113 and Covell Boulevard as part of a loop around the City, as an illustration of the completed and missing links of the entire planned shared use path network.

SACOG MTP/SCS

SACOG is responsible for the preparation of, and updates to, the 2016 MTP/SCS and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in 2016.

Senate Bill 743

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." OPR is currently updating its CEQA Guidelines to implement SB 743 and is proposing that VMT be the primary metric used to identify transportation impacts.

Certification of these revisions to the Guidelines by the Secretary of the California Natural Resources Agency will trigger requirements for their use by lead agencies.[1] As this is a substantive change to

[1] Public Resources Code section 21099(b)(2).

CEQA practice, there has been considerable statewide interest and comment on OPR's latest (January 2016) on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA[2] (Revised Proposal). As of the date of this writing, the date for formal adoption of these Guidelines is uncertain. Accordingly, this EIR discloses the project's effects on VMT but does not apply a VMT significance threshold due to the lack of available guidance for how such a threshold should be developed.

3.14.5 THRESHOLDS OF SIGNIFICANCE

This section describes the thresholds or criteria that determine whether the project causes a significant impact on the roadway, bicycle, pedestrian, or transit systems. These thresholds are based on policies from the City of Davis General Plan and recommended/example thresholds from the CEQA Guidelines.

Intersection Impacts

According to the City of Davis General Plan, intersection operations at LOS E or better are acceptable at intersections within the City's right-of-way. The *State Route 113 Transportation Concept Report* identifies a concept LOS E for SR 113 between I-80 and I-5. For the purposes of this EIR analysis, significant traffic impacts at intersections are defined when the addition of project traffic causes any of the following:

- For signalized intersections, cause overall intersection operations to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- For signalized intersections, exacerbate unacceptable (LOS F) operations by increasing an intersection's average delay by five seconds or more;
- For unsignalized intersections, cause the worst-case movement (or average of all movements for all-way stop-controlled intersections) to worsen from an acceptable level (LOS E or better) to an unacceptable level (LOS F) and meet the peak hour signal warrant;
- For unsignalized intersections that operate unacceptably (LOS F) and meet the peak hour signal warrant without the project, worsen operations by increasing the overall intersection's volume by more than one percent; or
- For unsignalized intersections that operate unacceptably but do not meet the peak hour signal warrant without the project, add sufficient volume to meet the warrant.

[2] Governor's Office of Planning and Research, 2016. Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013), January 20, 2016.

Freeway Impacts

For the purposes of this EIR analysis, significant traffic impacts at a freeway facility on SR 113 are defined when the addition of project traffic causes any of the following:

- Cause a facility to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- Cause a facility operating unacceptably (LOS F) to experience more than a one percent increase in volume; or
- Cause the off-ramp maximum queue length to spill back onto the freeway mainline (or exacerbate this condition if already occurring or is projected to occur).

Transit, Bicycle, and Pedestrian Impacts

The proposed project is considered to result in a significant transit, bicycle, and/or pedestrian impact if:

- The project conflicts with existing or planned transit, bicycle, and/or pedestrian facilities and services;
- The project conflicts or creates demand for public transit services above that which is provided or planned; or
- The project does not provide connections to bicycle and pedestrian circulation systems of the surrounding area.

Additional Impacts

The proposed project is considered to result in a significant impact if any of the following conditions occur:

- The project does not provide for adequate emergency vehicle access or project access; or
- Construction-related traffic causes significant intersection impacts as defined by the traffic system criteria described above.

3.14.6 IMPACTS AND MITIGATION MEASURES

Project Access

This section describes project access and proposed improvements along the project frontage. The proposed project would extend Risling Court northerly from its existing terminus to the north project limits. Vehicular access to the project would be provided as follows:

- Construction of a westerly leg at the existing Risling Court/Sutter Hospital driveway.
- Multiple accesses along the extended portion of Risling Court.
- A new right-turn only driveway located on West Covell Boulevard about 460 feet west of the West Covell Boulevard/Risling Court/Shasta Drive intersection.

The project would construct the following improvements along its frontage:

- **West Covell Boulevard** – Would be widened (to the north) to extend its five-lane cross-section (i.e., two lanes in each direction separated by a median lane) to just west of the proposed driveway. The roadway would then transition back to match its existing three-lane cross-section. This improvement would result in better lane utilization in the eastbound and westbound through lanes on West Covell Boulevard at Risling Court/Shasta Drive.
- **Risling Court** – Would be widened (to the west) to consist of two 12-foot travel lanes, two 8-foot Class II bike lanes, and two 8-foot parking lanes between West Covell Boulevard and the Sutter Hospital Main Driveway. The northerly extension of this street would consist of two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. Sidewalks would be provided on both sides of the street.

The project would construct the following additional improvements within the project vicinity:

- **Bus Stop/Shelter on West Covell Boulevard west of Risling Court** – Would be reconstructed/upgraded in a new location nearly equidistant between Risling Court and the proposed driveway. The bus stop would include a bus turnout that would become a deceleration lane into the new driveway.
- **Bicycle Facilities** – The south side of West Covell Boulevard along the project frontage would include a buffered (i.e., separation between the bike lane and adjacent travel lane) Class II bike lane. The north side of West Covell Boulevard along the project frontage would include a Class I shared-use path that would connect to the existing path located east of Risling Court. To avoid conflicts with buses, the path would be routed behind the reconstructed bus stop.
- **West Covell Boulevard/Risling Court/Shasta Drive intersection** – Would be reconstructed as follows:
    - The existing 200-foot westbound right-turn taper would be replaced by a full-width turn lane of the same length.
    - The existing channelized eastbound right-turn movement would be removed, and this turn movement would instead be made from a shared through/right lane.
    - Southbound Risling Court would be designed to consist of a left-turn lane and a shared through/right lane (with 85 feet of storage) approaching West Covell Boulevard. The southbound through lane on this street would transition into the left-turn lane.
    - Upgraded bicycle facilities would be provided including bicycle crosswalks (parallel and adjacent to pedestrian crosswalks) on all four legs, green skip-striping of Class II bike lanes in areas of potential conflict, and pavement markings within the intersection to guide bicyclists on southbound Risling Court to the Class I shared-use trail located in the southeast quadrant of the intersection.

The new right-turn only driveway onto West Covell Boulevard would include a triangular raised median within its throat to physically restrict movements to right-turns only. Additionally, a raised, landscaped median would be constructed to prevent left-turn movements at this driveway. The eastbound left-turn movement at the West Covell Boulevard/Risling Court/Shasta Drive intersection would permit u-turn movements to enable motorists traveling from the west to access this driveway.

EXISTING PLUS PROJECT TRAFFIC IMPACTS

Traffic Forecasts

Project trips were assigned to the study intersections in accordance with the trip generation estimates and distribution percentages described previously. Those trips were then added to the existing volumes to yield "existing plus project" conditions. Refer to Figure 3.14-8 for the existing plus project volumes.

The project would add the following trips to West Covell Boulevard approaching SR 113:

- Eastbound West Covell Boulevard: 108 AM peak hour trips and 87 PM peak hour trips; and
- Westbound West Covell Boulevard: 61 AM peak hour trips and 116 PM peak hour trips.

When compared to the existing volumes, these volumes would represent an 11 percent increase in traffic in the eastbound direction. In the westbound direction, a 9 percent increase would occur during the AM peak hour and a 14 percent increase would occur during the PM peak hour.

Intersection Operations

The study intersections were re-analyzed under existing plus project conditions. The results are shown in Table 3.14-10. This table indicates that the proposed project would cause the West Covell Boulevard/Risling Court/Shasta Drive intersection to worsen from LOS B to C during the AM peak hour. The project would not cause any other intersection LOS degradations.

The West Covell Boulevard/Lake Boulevard intersection would continue to meet the peak hour volume warrant for consideration of a traffic signal. The Risling Court/Sutter Hospital Driveway would continue to not meet the peak hour volume warrant for consideration of a traffic signal.

TABLE 3.14-10: PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

LOCATION	CONTROL	EXISTING CONDITIONS				EXISTING PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C	16	C	18	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	8	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (2)	A (A)	4 (7)	A (A)	3 (5)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	17	B	16	B	24	C	19	B
5. West Covell Blvd./John Jones Rd.	Signal	21	C	13	B	22	C	14	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B	35	C	19	B
7. West Covell Blvd./SR 113 NB Ramps	Signal	24	C	21	C	24	C	21	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	25	C	30	C	26	C
9. West Covell Blvd./Anderson Rd.	Signal	22	C	29	C	23	C	29	C
10. West Covell Blvd./Oak Ave.	Signal	9	A	7	A	9	A	7	A
11. West Covell Blvd./F St.	Signal	24	C	23	C	24	C	23	C
12. East Covell Blvd./J St.	Signal	15	B	15	B	15	B	15	B
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				2 (4)	A (A)	2 (4)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

Table 3.14-11 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. This table indicates the following:

- The project would cause the maximum queue in the eastbound left-turn lane to increase from 50 to 125 feet during the AM peak hour. A 170-foot turn pocket is identified in the corridor improvement drawing. This pocket lane is adequate to provide storage for these movements as well as provide deceleration opportunities.
- The project would cause the maximum queue in the southbound left-turn lane to increase from 75 to 300 feet during the AM peak hour. Although traffic would not spill back to the Sutter Hospital Driveway, a lengthy queue would occur. The 85-foot shared through/right-turn lane results in vehicles desiring to enter this turn lane being blocked by left-turning traffic, which contributes to lengthened queues.

- The project would cause somewhat lengthier (i.e., up to 75 feet additional) maximum vehicle queues on West Covell Boulevard west of SR 113.

TABLE 3.14-11: MAXIMUM QUEUE LENGTH ESTIMATES – EXISTING PLUS PROJECT CONDITIONS

INTERSECTION	MOVEMENT	AVAILABLE STORAGE	EXISTING MAXIMUM VEHICLE QUEUE		EXISTING PLUS PROJECT MAXIMUM VEHICLE QUEUE	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	50 feet	50 feet	125 feet	75 feet
	Southbound LT	150 feet (600 feet)	75 feet	75 feet	300 feet	225 feet
	Southbound TH/RT	150 feet (85 feet)	75 feet	75 feet	150 feet	125 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	425 feet	275 feet	500 feet	275 feet
	Westbound TH	325 feet	250 feet	275 feet	275 feet	325 feet
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		75 feet	75 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE).
SOURCE: FEHR & PEERS, 2017.

Corridor Travel Time Evaluation

The SimTraffic model can be used to calculate average travel times along the West Covell Boulevard corridor. The following routes are of particular interest given that the majority of project trips would be distributed to/from the east toward SR 113:

- Route 1 (Westbound Travel on West Covell Boulevard): This route begins at the SR 113 NB off-ramp and terminates on West Covell Boulevard beyond the signalized Risling Court/Shasta Drive intersection.
- Route 2 (Eastbound Travel on West Covell Boulevard): This route begins on West Covell Boulevard prior to the signalized Risling Court/Shasta Drive intersection and terminates at the SR 113 SB on-ramp.

Although neither route is particularly lengthy (i.e., less than one-half mile), they nonetheless require travel through three or four signalized intersections, which currently feature moderate levels of queuing.

Table 3.14-12 compares the average AM and PM peak hour travel time for Routes 1 and 2 under existing and existing plus project conditions. As shown, the addition of project trips would cause average travel times on each route to increase by three to seven seconds depending on the peak hour and direction of travel. This increase in delay would not be perceptible to most motorists.

TABLE 3.14-12: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – EXISTING PLUS PROJECT CONDITIONS

ROUTE	*START LOCATION*	*END LOCATION*	*AVERAGE TRAVEL TIME (MIN : SEC)*			
			EXISTING CONDITIONS		*EXISTING PLUS PROJECT CONDITIONS*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:26	2:16	2:33	2:19
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:35	1:09	1:40	1:13

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-13 displays existing plus project operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS C or better.

TABLE 3.14-13: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

RAMP	*MOVE-MENT*	*EXISTING CONDITIONS*				*EXISTING PLUS PROJECT CONDITIONS*			
		AM PEAK HOUR		*PM PEAK HOUR*		*AM PEAK HOUR*		*PM PEAK HOUR*	
		DENSITY	*LOS*	*DENSITY*	*LOS*	*DENSITY*	*LOS*	*DENSITY*	*LOS*
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B	22	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B	26	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	22	C	15	B	23	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B	10	A	15	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-14 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under existing plus project conditions. As shown, the project would not cause queued vehicles to spill back onto the SR 113 mainline.

TABLE 3.14-14: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – EXISTING PLUS PROJECT CONDITIONS

OFF-RAMP	*AVAILABLE STORAGE*	*MAXIMUM QUEUE (FEET)*			
		EXISTING CONDITIONS		*EXISTING PLUS PROJECT CONDITIONS*	
		AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	225 ft.	200 ft.	225 ft.	200 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	375 ft.	425 ft.	425 ft.	475 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-1: Under existing plus project conditions, project implementation would not cause any significant impacts at study intersections (Less than Significant)

Table 3.14-10 indicates that all study intersections would continue to operate at an acceptable LOS C or better under existing plus project conditions. Therefore, project impacts at study intersections are considered ***less than significant***.

Impact 3.14-2: Under existing plus project conditions, project implementation would not cause any significant impacts at study freeway facilities (Less than Significant)

Table 3.14-13 indicates that all study freeway facilities would continue to operate at an acceptable LOS C or better under existing plus project conditions. Additionally, as shown in Table 3.14-14, the project would not cause traffic to queue back from the SR 113/West Covell Boulevard off-ramps into the SR 113 freeway mainline. Therefore, project impacts at study freeway facilities are considered ***less than significant***.

EXISTING PLUS APPROVED PROJECTS PLUS PROJECT TRAFFIC IMPACTS

Traffic Forecasts

An analysis was conducted to examine project impacts in consideration of traffic associated with various approved, but not yet constructed land developments within the study area. Based on discussions with City staff, the "approved projects" list consisted of the following projects:

- **Paso Fino**: 6 single-family units
- **2860 West Covell Boulevard Building**: 8,657 square feet of retail
- **Grande Subdivision**: 41 single-family units
- **Chiles Ranch**: 96 single-family units
- **University Retirement Community (URC) expansion**: 17 beds of continuing care
- **Sterling Apartments**: 198 multi-family units
- **Cannery Park (Remainder of Buildout)**: 86,250 square feet of retail, 49,800 square feet of office, 22,000 square feet of medical-office, 311 single-family dwelling units, and 264 multi-family units.

Although the above is not a comprehensive list of all approved/pending land developments in the City. it does represent those projects that would have the potential to add traffic to the study intersections.

These land uses were entered into the appropriate traffic analysis zone (TAZs) of the base year City of Davis travel demand model. The model was then run, and the change in traffic volumes predicted by the model was recorded at all study intersections. These trips were then added to the existing volumes to yield "existing plus approved projects" conditions shown on Figure 3.14-9.

The addition of the approved projects causes most turning movement volumes to remain relatively unchanged or increase slightly. However, in some instances, the volume actually decreases. This occurs as a result of the introduction of new retail or employment opportunities, to which the traffic model reassigns trips (i.e., a home-based shopping trip now stops at Cannery Park versus another destination).

Project trips were added to this scenario in accordance with the aforementioned project trip generation/distribution assumptions. The resulting "existing plus approved projects plus project" forecasts are shown on Figure 3.14-10.

Intersection Operations

The study intersections were re-analyzed under existing plus approved projects conditions, without and with the proposed project. The results are shown in Table 3.14-15.

TABLE 3.14-15 PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

Location	*Control*	*Existing Plus Approved Projects Conditions*				*Existing Plus Approved Projects Plus Project Conditions*			
		AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
		Average Delay (secs)	*LOS*	*Average Delay (secs)*	*LOS*	*Average Delay (secs)*	*LOS*	*Average Delay (secs)*	*LOS*
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C	16	C	18	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	8	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (3)	A (A)	5 (9)	A (A)	3 (5)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	18	B	15	B	25	C	19	B
5. West Covell Blvd./John Jones Rd.	Signal	19	B	14	B	23	C	14	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B	36	D	20	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	22	C	21	C	27	C	24	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	26	C	31	C	26	C
9. West Covell Blvd./Anderson Rd.	Signal	24	C	31	C	25	C	32	C
10. West Covell Blvd./Oak Ave.	Signal	8	A	8	A	8	A	8	A
11. West Covell Blvd./F St.	Signal	25	C	23	C	26	C	23	C
12. East Covell Blvd./J St.	Signal	37	D	37	D	37	D	38	D
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				2 (4)	A (A)	2 (4)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.

AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

During the AM peak hour, the project would cause the following drops in intersection LOS:

- West Covell Boulevard/Risling Court/Shasta Drive: LOS B to LOS C;
- West Covell Boulevard/John Jones Road: LOS B to LOS C; and
- West Covell Boulevard/SR 113 SB Ramps: LOS C to LOS D.

The project would cause the West Covell Boulevard/SR 113 SB Ramps intersection to worsen from LOS C to LOS D during the PM peak hour.

Among the 10 signalized study intersections, the project would cause an average delay increase of two seconds during the AM peak hour and one second during the PM peak hour.

Table 3.14-16 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. These results show similar conclusions as under existing plus project conditions, though slightly longer queues on West Covell Boulevard would occur during the PM peak hour.

TABLE 3.14-16: MAXIMUM QUEUE LENGTH ESTIMATES – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

Intersection	*Movement*	*Available Storage*	*Existing Plus Approved Projects Conditions Maximum Vehicle Queue*		*Existing Plus Approved Projects Plus Project Maximum Vehicle Queue*	
			AM Peak Hour	*PM Peak Hour*	*AM Peak Hour*	*PM Peak Hour*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	75 feet	50 feet	125 feet	125 feet
	Southbound LT	150 feet (600 feet)	75 feet	100 feet	300 feet	225 feet
	Southbound TH/RT	150 feet (85 feet)	75 feet	100 feet	125 feet	125 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	375 feet	275 feet	500 feet	300 feet
	Westbound TH	325 feet	250 feet	300 feet	275 feet	350 feet
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		75 feet	75 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE).
SOURCE: FEHR & PEERS, 2017.

Corridor Travel Time Evaluation

The SimTraffic model was used to calculate average travel times along the West Covell Boulevard corridor under existing plus approved projects conditions, both without and with the project. Table 3.14-17 compares the average AM and PM peak hour travel time for Routes 1 and 2. As shown, the addition of project trips would cause average travel times on each route to increase by six to 14 seconds depending on the peak hour and direction of travel.

TABLE 3.14-17: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

ROUTE	*START LOCATION*	*END LOCATION*	*AVERAGE TRAVEL TIME (MIN : SEC)*			
			EXISTING PLUS APPROVED PROJECTS CONDITIONS		*EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:24	2:12	2:30	2:25
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:33	1:07	1:47	1:15

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-18 displays existing plus approved projects plus project operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS C or better.

TABLE 3.14-18: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

RAMP	*MOVE-MENT*	*EXISTING PLUS APPROVED PROJECTS CONDITIONS*				*EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS*			
		AM PEAK HOUR		*PM PEAK HOUR*		*AM PEAK HOUR*		*PM PEAK HOUR*	
		DENSITY	*LOS*	*DENSITY*	*LOS*	*DENSITY*	*LOS*	*DENSITY*	*LOS*
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B	23	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B	27	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	23	C	16	B	23	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B	10	A	15	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-19 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under existing plus approved projects plus project conditions. As shown, the project would not cause queued vehicles to spill back onto the SR 113 mainline.

TABLE 3.14-19: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)			
		EXISTING PLUS APPROVED PROJECTS CONDITIONS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	225 ft.	200 ft.	250 ft.	200 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	400 ft.	475 ft.	400 ft.	550 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-3: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study intersections (Less than Significant)

Table 3.14-15 indicates that all study intersections would continue to operate at an acceptable LOS D or better under existing plus approved projects plus project conditions. Therefore, project impacts at study intersections are considered ***less than significant***.

Impact 3.14-4: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study freeway facilities (Less than Significant)

Table 3.14-18 indicates that all study freeway facilities would continue to operate at an acceptable LOS C or better under existing plus approved projects plus project conditions. Additionally, as shown in Table 3.14-19, the project would not cause traffic to queue back from the SR 113/West Covell Boulevard off-ramps into the SR 113 freeway mainline. Therefore, project impacts at study freeway facilities are considered ***less than significant***.

CUMULATIVE CONDITIONS TRAFFIC IMPACTS

The cumulative analysis considers planned land use growth and roadway improvements within the City of Davis and unincorporated Yolo County using the City of Davis travel demand model. The future year model is based on land use growth projected by SACOG in the MTP/SCS, but with several adjustments as described below.

The cumulative impact analysis first determines if the cumulative impact is significant, inclusive of the proposed project. For those cumulative impacts deemed to be significant, a subsequent evaluation is conducted to determine whether the project's contribution to that impact is considerable (using the significance criteria as the basis for this determination). If the proposed project's contribution is less than considerable, then the cumulative impact is less than significant. If the proposed project's contribution is considerable, then the cumulative impact is significant, and mitigation is required.

Land Use and Roadway System Assumptions

The following specific land developments are considered reasonably foreseeable under cumulative conditions:

- **Sutter Hospital Expansion** – Based on discussions with Sutter Davis Hospital representatives, a net increase of 100,000 square feet of medical-office space was assumed on the hospital property, which is located directly east of the project site.
- **UC Davis Long Range Development Plan (LRDP)** – According to the 2017 Notice of Preparation for the update to the LRDP (dated January 4, 2017), the UC Davis campus is assumed to have a net increase of 6,229 students and 2,000 employees between existing conditions and the 2027-2028 academic year. The LRDP NOP makes no mention of further growth beyond the 2027-2028 year.

The cumulative model assumes buildout of the Cannery Park project located on East Covell Boulevard at J Street. The model excludes the Nishi Gateway property because it was defeated in a public vote in 2016. The cumulative model also excludes the Davis Innovation Center because although the City Council certified its EIR in fall 2017, the project was not approved. Accordingly, neither of these projects are currently considered reasonably foreseeable. A revised version of the Nishi project, which would consist entirely of student housing, has begun to undergone initial planning and environmental review. A detailed analysis found that the Nishi project would not contribute any additional traffic at the study intersections analyzed in this chapter. This is to be expected given the Nishi project's size, use type, and location.

The cumulative model includes several planned roadway network improvements within the study area (as well as other improvements elsewhere in the City). Within the study area, the following improvements were assumed:

- **SR 113/Covell Boulevard Interchange Improvements** – The 2036 MTP/SCS identifies the widening of the overcrossing to add turn lanes as a planned improvement to be constructed in the 2021-2036 horizon. The specified improvements describe the need for additional turn lanes onto each on-ramp to SR 113 as well as on-ramp widening. Accordingly, the cumulative lane configurations assume second left-turns are added on westbound Covell Boulevard onto the SB on-ramp and on eastbound Covell Boulevard onto the NB on-ramp.
- **West Covell Boulevard Widening** – The 2036 MTP/SCS identifies the widening of the segment from west of Risling Court to Denali Drive from two to four lanes as a planned improvement to be constructed in the 2021-2036 horizon.
- **Covell Boulevard/Lake Boulevard** – The 2036 MTP/SCS identifies a future traffic signal at this intersection as a planned improvement to be constructed in the 2021-2036 horizon.

Traffic Forecasting

Traffic forecasts were developed for the cumulative no project scenario (i.e., no development on the project site) using the City of Davis travel demand model. Peak hour intersection turning movement forecasts were developed using the difference method procedure, which adds the growth in traffic between the base year and future year models to existing volumes. This method is commonly used in forecasting because it accounts for errors in the base year model, which could also translate to the cumulative forecasts if not accounted for by this method. The cumulative no project forecasts are shown on Figure 3.14-11.

A comparison of the existing volumes and cumulative no project traffic forecasts reveals the following traffic growth trends in the study area:

- Traffic growth is anticipated to be modest (i.e., between 18 and 38 percent depending on peak hour and direction) on West Covell Boulevard west of SR 113. This is to be expected given the mostly built out nature of the area. However, as noted previously, several new land developments (e.g., Sutter Hospital expansion) are anticipated under cumulative conditions. Lastly, it is possible that the widening of West Covell Boulevard to four lanes westerly to Denali Drive may cause traffic volumes to shift.
- During the PM peak hour, the following critical movements at the SR 113/West Covell Boulevard interchange are projected to experience significant traffic growth:
    - SR 113 SB on-ramp: 71 percent increase (341 vehicles) over existing conditions.
    - SR 113 NB off-ramp: 41 percent increase (360 vehicles) over existing conditions.
    - Westbound West Covell Boulevard through movement approaching the SR 113 NB Ramps: 71 percent increase (529 vehicles) over existing conditions.

  This growth is due to additional development anticipated east of SR 113 that would use West Covell Boulevard. It is also likely caused by the redistribution of trips away from the Russell Boulevard corridor, which becomes more congested under cumulative conditions.

The net effect of this traffic growth is the potential for additional congestion and queuing at the SR 113/West Covell Boulevard interchange as well as intersections to the east. Given the lesser amount of traffic growth projected west of the interchange, intersections along that corridor are likely to experience lower levels of delay increase.

Traffic forecasts were developed for cumulative plus project conditions based on the project's expected trip generation, mode split, and distribution characteristics. Project trips were added to the cumulative no project volumes to yield "cumulative plus project" conditions. These forecasts are shown on Figure 3.14-12.

Intersection Operations

The study intersections were analyzed under cumulative conditions, without and with the project. The results are shown in Table 3.14-20. Given changes in cumulative travel demands, it was reasonable to assume signal timings at the West Covell Boulevard corridor would be re-optimized.

TABLE 3.14-20: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

LOCATION	*CONTROL*	*CUMULATIVE NO PROJECT CONDITIONS*				*CUMULATIVE PLUS PROJECT CONDITIONS*			
		AM PEAK HOUR		*PM PEAK HOUR*		*AM PEAK HOUR*		*PM PEAK HOUR*	
		AVERAGE DELAY (SECS)	*LOS*	*AVERAGE DELAY (SECS)*	*LOS*	*AVERAGE DELAY (SECS)*	*LOS*	*AVERAGE DELAY (SECS)*	*LOS*
1. West Covell Blvd./Lake Blvd.	Signal	20	C	25	C	20	C	25	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	7	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (5)	A (A)	3 (5)	A (A)	3 (6)	A (A)	6 (11)	A (B)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	23	C	20	C	26	C	30	C
5. West Covell Blvd./John Jones Rd.	Signal	16	B	14	B	19	B	17	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	24	C	24	C	24	C	25	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	28	C	93	F	33	C	104	F
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	153	F	34	C	173	F
9. West Covell Blvd./Anderson Rd.	Signal	27	C	42	D	27	C	43	D
10. West Covell Blvd./Oak Ave.	Signal	9	A	9	A	9	A	9	A
11. West Covell Blvd./F St.	Signal	26	C	29	C	26	C	30	C
12. East Covell Blvd./J St.	Signal	33	C	50	D	33	C	51	D
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				4 (7)	A (A)	3 (6)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

The West Covell Boulevard/SR 113 NB Ramps intersection would operate at LOS F during the PM peak hour under cumulative no project conditions. This condition is primarily caused by the heavy volume of northbound off-ramp traffic, which is served by single left- and right-turn lanes. Queue spillback on the westbound approach extends back to the West Covell Boulevard/Sycamore Lane intersection, thereby contributing to its LOS F operations. Below is a screenshot from the SimTraffic model illustrating this queuing effect. All other study intersections would operate at LOS D or better under cumulative no project conditions.

The addition of project trips to cumulative no project conditions would worsen LOS F conditions during the PM peak hour at the West Covell Boulevard/SR 113 NB Ramps and West Covell Boulevard/Sycamore Lane intersections. Average delay at these intersections would increase by 11 and 20 seconds, respectively.

IMAGE OF SIMTRAFFIC MODEL SHOWING CONGESTION ON WEST COVELL BOULEVARD, SR 113 NB OFF-RAMP, AND SYCAMORE LANE UNDER CUMULATIVE NO PROJECT PM PEAK HOUR CONDITIONS.

Table 3.14-21 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. This table indicates the following:

- The project would cause the southbound left-turn movement at the West Covell Boulevard/Risling Court/Shasta Drive intersection to experience substantially greater queues. During the PM peak hour, the vehicle queue would extend back to Sutter Hospital/Project Driveway intersection.
- The project would cause the eastbound left-turn lane at the West Covell Boulevard/Risling Court/Shasta Drive intersection to have a maximum queue of 200 feet during the PM peak hour, which exceeds the available storage of 175 feet, thereby causing vehicles to spill into the adjacent through lane.

TABLE 3.14-21: MAXIMUM QUEUE LENGTH ESTIMATES – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Movement	Available Storage	Cumulative No Project Maximum Vehicle Queue		Cumulative Plus Project Maximum Vehicle Queue	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	225 ft.	150 ft.	225 ft.	200 ft.
	Southbound LT	150 feet (600 feet)	125 ft.	175 ft.	325 ft.	600 ft.
	Southbound TH/RT	150 feet (85 feet)	125 ft.	275 ft.	125 ft.	150 ft.
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	300 ft.	225 ft.	375 ft.	275 ft.
	Westbound TH	325 feet	325 ft.	300 ft.	350 ft.	350 ft.
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		50 ft.	50 ft.

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE). LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

Measures for addressing these queuing issues are discussed later in this section.

The Risling Court/Sutter Hospital Driveway intersection would continue to not meet the peak hour volume warrant for consideration of a traffic signal.

EFFECTS OF POTENTIAL LANE CONFIGURATION MODIFICATION AT WEST COVELL BOULEVARD/RISLING COURT/SHASTA DRIVE INTERSECTION

A supplemental analysis was performed to determine how cumulative traffic conditions would be affected by the following potential lane modifications at the West Covell Boulevard/Risling Court/Shasta Drive intersection:

- Replace channelized northbound right-turn lane with a shared through/right lane.
- Replace channelized westbound right-turn lane with a dedicated right-turn lane controlled by the traffic signal.

The analysis was performed for the cumulative plus project (with mitigation) scenario. The above modifications resulted in an increase in the average delay of four seconds during the AM peak hour and two seconds during the PM peak hour, with operations remaining at LOS C. The northbound through/right lane would have a maximum vehicle queue of 325 feet, which would cause blockage of the University Retirement Community / Adobe Residential driveways once or twice during the PM peak hour. The westbound right-turn lane would have a maximum queue of 200 feet.

Corridor Travel Time Evaluation

The SimTraffic model was used to calculate average travel times along the West Covell Boulevard corridor. Table 3.14-22 compares the average AM and PM peak hour travel time for Routes 1 and 2 under cumulative conditions, without and with the project. As shown, the addition of project trips would cause the average travel time on Route 1 to increase by 45 seconds during the PM peak hour. This occurs due to project-added traffic added to the northbound off-ramp, which already queues back onto the freeway mainline. Project-related delay increases on Route 2 would be less than 10 seconds during the AM and PM peak hours.

TABLE 3.14-22: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – CUMULATIVE PLUS PROJECT CONDITIONS

ROUTE	START LOCATION	END LOCATION	AVERAGE TRAVEL TIME (MIN : SEC)			
			CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:40	4:11	2:46	4:55
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:19	1:12	1:27	1:13

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-23 displays cumulative operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS D or better.

TABLE 3.14-23: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

RAMP	MOVE-MENT	CUMULATIVE NO PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DENSITY	LOS	DENSITY	LOS	DENSITY	LOS	DENSITY	LOS
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	28	C	14	B	28	C	14	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	30	D	18	B	31	D	18	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	19	B	29	D	19	B	29	D
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	B	18	B	10	B	18	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-24 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under cumulative conditions, without and with the project.

The West Covell Boulevard/SR 113 NB Ramps intersection would operate at LOS F during the PM peak hour under cumulative no project conditions. As shown in Table 3.14-24, this operating condition would cause the northbound off-ramp to have a maximum queue of 2,225 feet, which would extend beyond the gore point back onto the SR 113 freeway mainline section. The addition of project trips would cause the maximum off-ramp queue to increase by 200 feet.

TABLE 3.14-24: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – CUMULATIVE PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)			
		CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	275 ft.	300 ft.	275 ft.	300 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	450 ft.	2,225 ft.	450 ft.	2,425 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-5: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections (Cumulatively Considerable and Significant and Unavoidable)

Table 3.14-20 indicates that the project would cause greater than a five-second increase in PM peak hour delay to the following study intersections, which are projected to operate at LOS F under cumulative conditions without the project:

- West Covell Boulevard/SR 113 NB Ramps (LOS F) – project-added traffic would cause an 11-second increase in delay.
- West Covell Boulevard/Sycamore Lane (LOS F) – project-added traffic would cause a 20-second increase in delay.

Although the project would add traffic to other study intersections, the resulting LOS and delay values would not exceed the applicable significance criteria. Project impacts at study intersections are considered ***potentially significant***.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-1*: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:*

a) West Covell Boulevard/SR 113 NB Ramps – widen northbound off-ramp to consist of three lanes (i.e., one left, one shared left/through/right, and one right-turn lane) approaching West Covell Boulevard. The fair share funding shall be submitted to Caltrans.

b) West Covell Boulevard/Sycamore Lane – lengthen eastbound left-turn lane from 150 to 275 feet. The fair share funding shall be submitted to the City of Davis.

Table 3.14-25 displays the effectiveness of these mitigation measures at study intersections. As shown, operations would be improved to LOS C conditions at each intersection during the PM peak hour.

TABLE 3.14-25: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

LOCATION	CONTROL	CUMULATIVE NO PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (5)	A (A)	3 (5)	A (A)	3 (6)	A (A)	6 (11)	A (B)	3 (5)	A (A)	4 (6)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	23	C	20	C	26	C	30	C	26	C	26	C
5. West Covell Blvd./John Jones Rd.	Signal	16	B	14	B	19	B	17	B	20	B	18	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	24	C	24	C	24	C	25	C	26	C	28	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	28	C	93	F	33	C	104	F	28	C	29	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	153	F	34	C	173	F	30	C	67	E

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

Table 3.14-26 illustrates how these mitigations would change average corridor travel time. As shown, these improvements would achieve over a one-minute travel time savings for Route 1 (northbound off-ramp to westbound West Covell Boulevard) during the PM peak hour.

TABLE 3.14-26: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION

ROUTE	*START LOCATION*	*END LOCATION*	*AVERAGE TRAVEL TIME (MIN : SEC)*					
			CUMULATIVE NO PROJECT CONDITIONS		*CUMULATIVE PLUS PROJECT CONDITIONS*		*CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:40	4:11	2:46	4:55	2:47	3:41
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:19	1:12	1:27	1:13	1:32	1:12

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

The widening of the SR 113 northbound off-ramp would likely occur within Caltrans right-of-way, and would therefore require Caltrans approvals. It is unknown whether additional right-of-way would be needed for this improvement, or if a design exception would be required. There are no assurances that Caltrans would approve and/or fund such a widening. Since the remaining fair share funding sources needed for construction have not been identified, fair share payment would not ensure construction.

The lengthening of the eastbound left-turn lane at the West Covell Boulevard/Sycamore Lane intersection is considered feasible because the roadway is maintained by the City of Davis, right-of-way is available, and no adjacent intersections, driveway, or turn lanes would be adversely affected. However, this turn lane lengthening is not sufficient, on its own, to restore operations to LOS E (i.e., northbound off-ramp widening is also required). Therefore, project impacts at these two study intersections are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of mitigation measures, which if implemented, would improve intersection operations to acceptable levels.

Impact 3.14-6: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities (Cumulatively Considerable and Significant and Unavoidable)

Table 3.14-23 indicates that all study freeway facilities would continue to operate at an acceptable LOS D or better under cumulative plus project conditions. However, the project would contribute to vehicular queuing that extends from the SR 113 northbound off-ramp at West Covell Boulevard onto the SR 113 freeway mainline. Project impacts at study freeway facilities are considered ***potentially significant***.

MITIGATION MEASURE(S)

Implement Mitigation Measure 3.14-1(a): Pay fair share to widen northbound SR 113 off-ramp at West Covell Boulevard to consist of three lanes approaching West Covell Boulevard.

Table 3.14-27 shows how this mitigation measure would change the maximum queue in the northbound SR 113 off-ramp at West Covell Boulevard. As shown, the off-ramp widening would reduce the maximum queue during the PM peak hour from 2,425 feet to 750 feet under cumulative plus project conditions. Because 1,180 feet of storage is provided, this mitigation measure, if implemented, would result in traffic no longer spilling onto the SR 113 mainline under cumulative plus project conditions.

TABLE 3.14-27: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – CUMULATIVE PLUS PROJECT CONDITIONS

OFF-RAMP	*AVAILABLE STORAGE*	*MAXIMUM QUEUE (FEET)*					
		CUMULATIVE NO PROJECT CONDITIONS		*CUMULATIVE PLUS PROJECT CONDITIONS*		*CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION*	
		AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	450 ft.	2,225 ft.	450 ft.	2,425 ft.	325 ft.	750 ft.

SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

As noted previously, the widening of the SR 113 northbound off-ramp would occur within Caltrans right-of-way, and would therefore require Caltrans approvals. Because there are no assurances that Caltrans would approve and/or fund such a widening, impacts to freeway facilities are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate the queuing issue.

TRANSIT, BICYCLE, PEDESTRIAN, AND ADDITIONAL IMPACTS

Impact 3.14-7: The project would not conflict with existing / planned transit services, or create a demand for transit above that which is provided or planned (Less than Significant)

The proposed project would reconstruct the existing bus stop located in the northwest quadrant of the West Covell Boulevard/Risling Court/Shasta Drive intersection. The project would introduce new residential land uses that are situated within walking distance of this new stop as well as the existing stop on the south side of West Covell Boulevard. These stops are served by the Unitrans Route P and Q lines, as well as Yolobus Routes 220 and 230. Because the majority of project residents are expected to be retired, long distance travel via bus Routes 220 and 230 (to/from downtown Sacramento) is anticipated to be less common that use of Unitrans Routes P and Q, which can be used to access the UC Davis campus, downtown Davis, and other destinations.

According to the *Unitrans General Manager's Report Fiscal Year 2015-2016* (September 2016), certain bus lines can experience overcrowding, particularly during inclement weather conditions. The report does not specify exactly which routes experience recurring crush loading. However, it is apparent from other statistics, such as the farebox recovery ratio and passenger trips per vehicle revenue hour, that the P and Q routes are not as busy as other routes. Based on this data and the fact that 86 percent of the units would be age-restricted meaning a greater likelihood of making off-peak trips, these routes have available capacity to accommodate the project's expected transit riders. Therefore, this is considered a ***less than significant*** impact.

Impact 3.14-8: The project would not conflict with existing / planned bicycle and pedestrian facilities, and would provide connections to existing bicycle and pedestrian facilities (Less than Significant)

The proposed project would not interfere with any existing pedestrian/bicycle facilities, and would not preclude construction of any future facilities. The project would construct a Class I bike trail along the north side of West Covell Boulevard along the project frontage. This trail would be aligned behind (i.e., to the north of) the reconfigured bus stop to eliminate potential conflicts between buses and bicycles. The project would construct Class II bike lanes on both sides of the entirety of Risling Court. The project would also construct a Class I bike trail that extends easterly from Risling Court to connect with facilities along John Jones Road. The project would also include a multi-use trail on its north and west edges. Class I trails and Class II bike lanes would be provided within the project site. This, in turn, allows bicyclists to use the bike signal at the West Covell Boulevard/John Jones Road intersection to access bike facilities located south of West Covell Boulevard. In total, the project would provide 4.5 miles of walking and bicycling facilities. The project would also improve the condition of the West Covell Boulevard/Risling Court/Shasta Drive intersection by adding green bike lanes, upgraded sidewalks, and other features. This is considered a ***less than significant*** impact.

Impact 3.14-9: The proposed site plan would not provide adequate emergency vehicle access (Significant and Unavoidable)

The project consists of two vehicular accesses along West Covell Boulevard as well as several access points along Risling Court. These connections provide multiple access opportunities for emergency vehicles to access the site. Sutter Davis Hospital, which is located directly east of the project site, includes an Emergency Department. Signage is present at the Sutter Davis Hospital monument sign on West Covell Boulevard directing westbound motorists (including ambulances) to use John Jones Road to access the Emergency Department. Similarly, corridor travel time evaluations under near-term conditions revealed minimal (i.e., less than ten seconds) travel time increases along West Covell Boulevard.

If Covell Boulevard is not available during an emergency (i.e., the roadway becomes blocked or otherwise inoperable), potential emergency vehicle access issues may arise. The nearest fire station to the project site is located at Lake Boulevard / Arlington Boulevard intersection. Should the fire department need to access the project site, the fire department could use Shasta Drive / Risling Court to access the site if Covell Boulevard is not available.

Therefore, without mitigation to ensure that the site could be accessed if Covell Boulevard is unavailable, this is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-2*: By the time the final map is submitted, the final map shall indicate that the project shall dedicate an emergency vehicle access easement from the project site to John Jones Road. Best efforts shall be made by the project applicant to work with Sutter Davis Hospital to obtain the easement.*

SIGNIFICANCE AFTER MITIGATION

Because there are no assurances that this easement would be provided, impacts related to adequate emergency vehicle access are considered ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate this impact.

Impact 3.14-10: The proposed site plan would not provide adequate project access (Significant and Unavoidable)

Under cumulative conditions, the addition of project trips would cause the southbound Risling Court approach to West Covell Boulevard to have a maximum queue that extends back to the Sutter Hospital/Project Driveway intersection. This would inhibit egress from the project site (as well as from Sutter Davis Hospital). This is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-3*: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:*

a) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the southbound right-turn lane from 85 to 200 feet. The fair share funding shall be submitted to the City of Davis.

b) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the eastbound left-turn lane from 175 to 250 feet. The fair share funding shall be submitted to the City of Davis.

Table 3.14-28 displays the effectiveness of these mitigation measures at this intersection. As shown, improvement "a)" would result in maximum queues in the left and shared through/right lanes of 425 feet and 250 feet, respectively, during the more critical PM peak hour. Thus, traffic would no longer queue back to the upstream intersection. This improvement would require minor widening along the project's frontage, which is considered feasible. Similarly, lengthening of the eastbound left-turn lane is considered feasible and would provide adequate storage to accommodate the maximum vehicle queue expected under cumulative plus project conditions. Improvement a) described above would not adversely affect bicycle travel on southbound Risling Court. The conceptual intersection geometrics show a Class II on-street bike lane along the shoulder as well as another Class II lane situated between the left-turn and shared through/right lanes. These conditions represent a substantial improvement over the current condition.

TABLE 3.14-28: MAXIMUM QUEUE LENGTH ESTIMATES – CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION

Intersection	*Movement*	*Available Storage*	*Maximum Vehicle Queue (Feet)*					
			Cumulative No Project		*Cumulative Plus Project*		*Cumulative Plus Project With Mitigation*	
			AM Peak Hour	*PM Peak Hour*	*AM Peak Hour*	*PM Peak Hour*	*AM Peak Hour*	*PM Peak Hour*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet (250 feet)	225 ft.	150 ft.	225 ft.	200 ft.	225 ft.	200 ft.
	Southbound LT	150 feet (600 feet)	125 ft.	175 ft.	325 ft.	600 ft.	275 ft.	425 ft.
	Southbound TH/RT	150 feet (250 feet)	125 ft.	275 ft.	125 ft.	150 ft.	175 ft.	250 ft.

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT OR WITH MITIGATION STORAGE). LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

Because there are no assurances that this improvement would be funded and constructed, impacts related to adequate project access are considered ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate this impact.

Impact 3.14-11: Construction traffic would not cause any significant intersection impacts (Less than Significant)

This section demonstrates that project buildout under existing conditions would not cause any significant intersection impacts. Construction of the project, including site preparation, construction, and delivery activities, would generate employee trips and a variety of construction-related vehicles. However, the volume of construction-related traffic would be substantially less during peak hours when compared to the project's AM and PM peak hour trip generation. Therefore, construction traffic/activities would not cause any intersection impacts. This is considered a ***less than significant*** impact.

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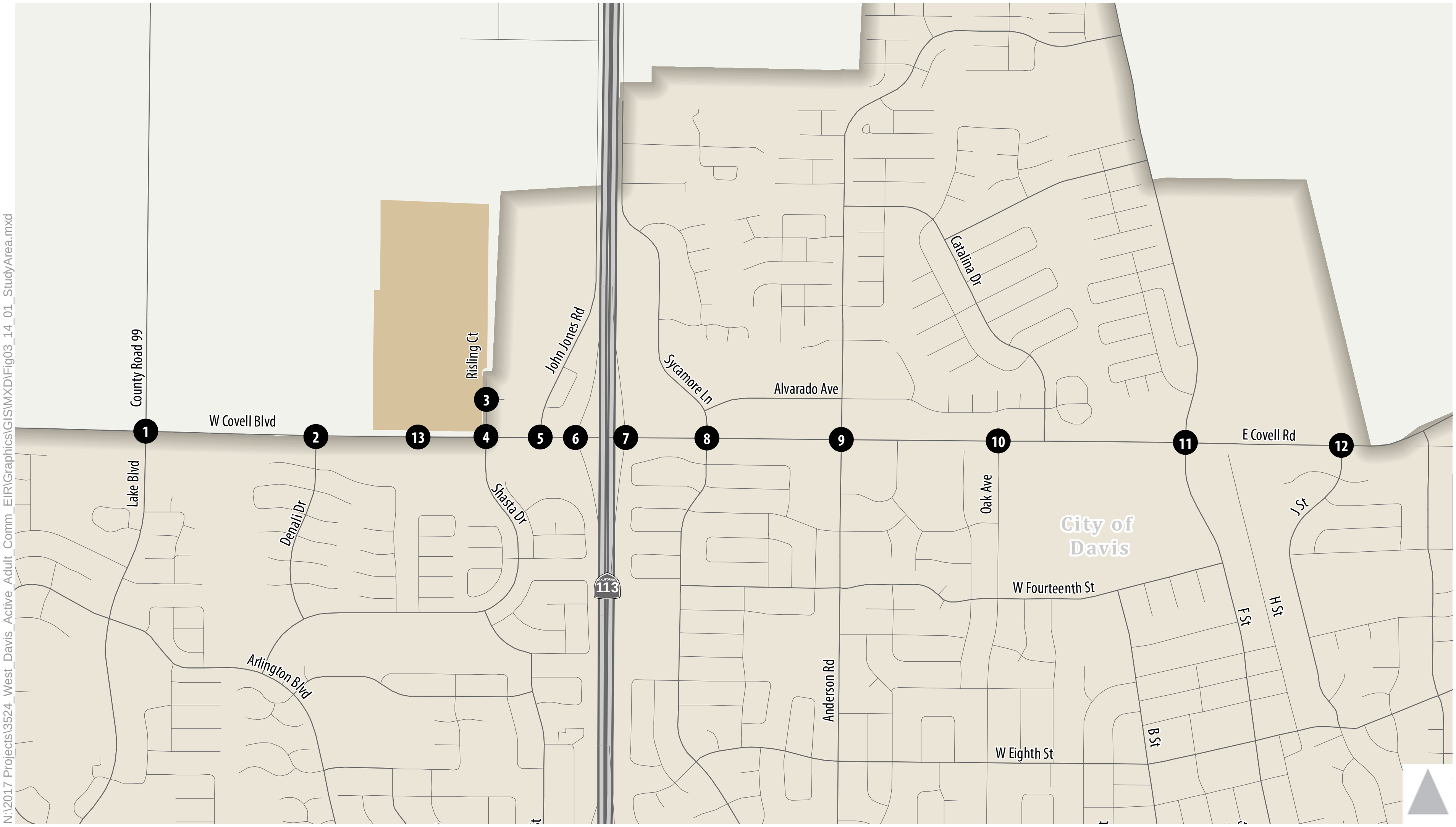

1 Study Intersection

City of Davis

Project Site

Figure 3.14-1

Study Area

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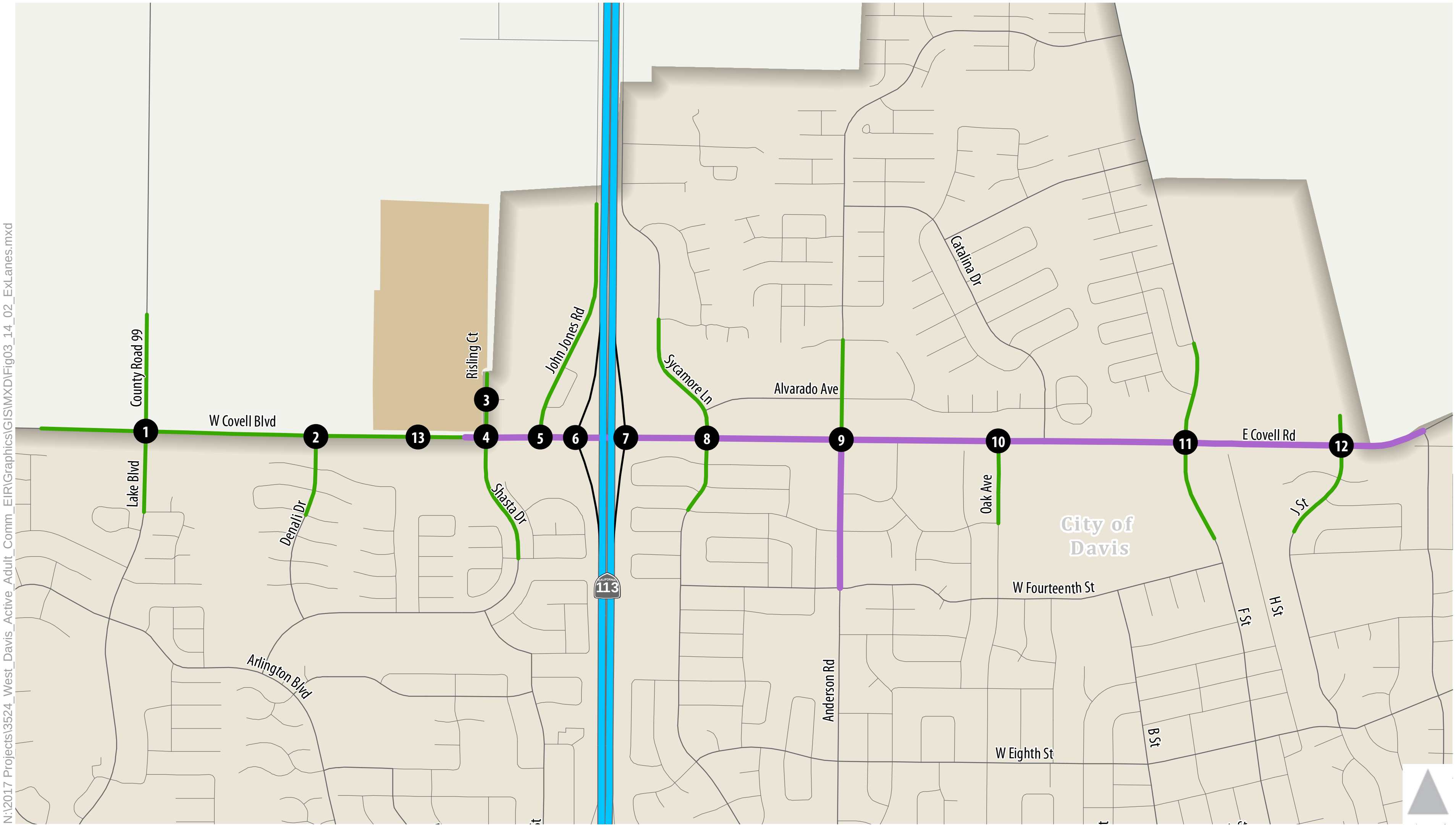

4-lane Freeway
4-lane City Street
2-lane City Street
Freeway Ramp

Study Intersection
City of Davis
Project Site

Note: Exhibit only shows through lanes and not turn lanes or median lanes.

Figure 3.14-2

Existing Number of Lanes

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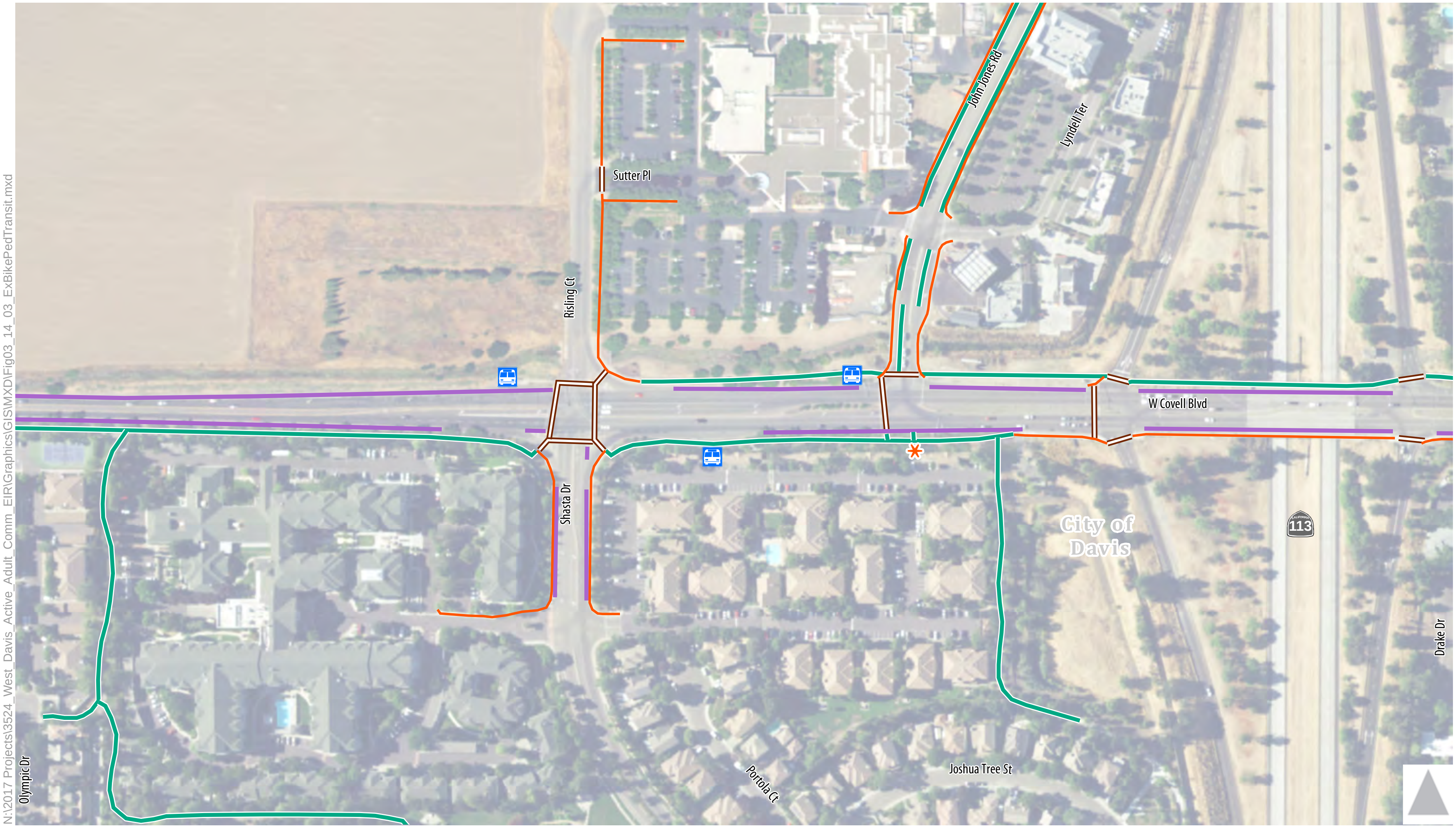

Class I (Off-Street) Shared-Use Path

Class II (On-Street) Bike Lane

Sidewalk

Crosswalk

Bus Stop

Bicycle Signal Present for Northbound Bicyclists

Figure 3.14-3

Existing Bicycle, Pedestrian, and Transit Facilities

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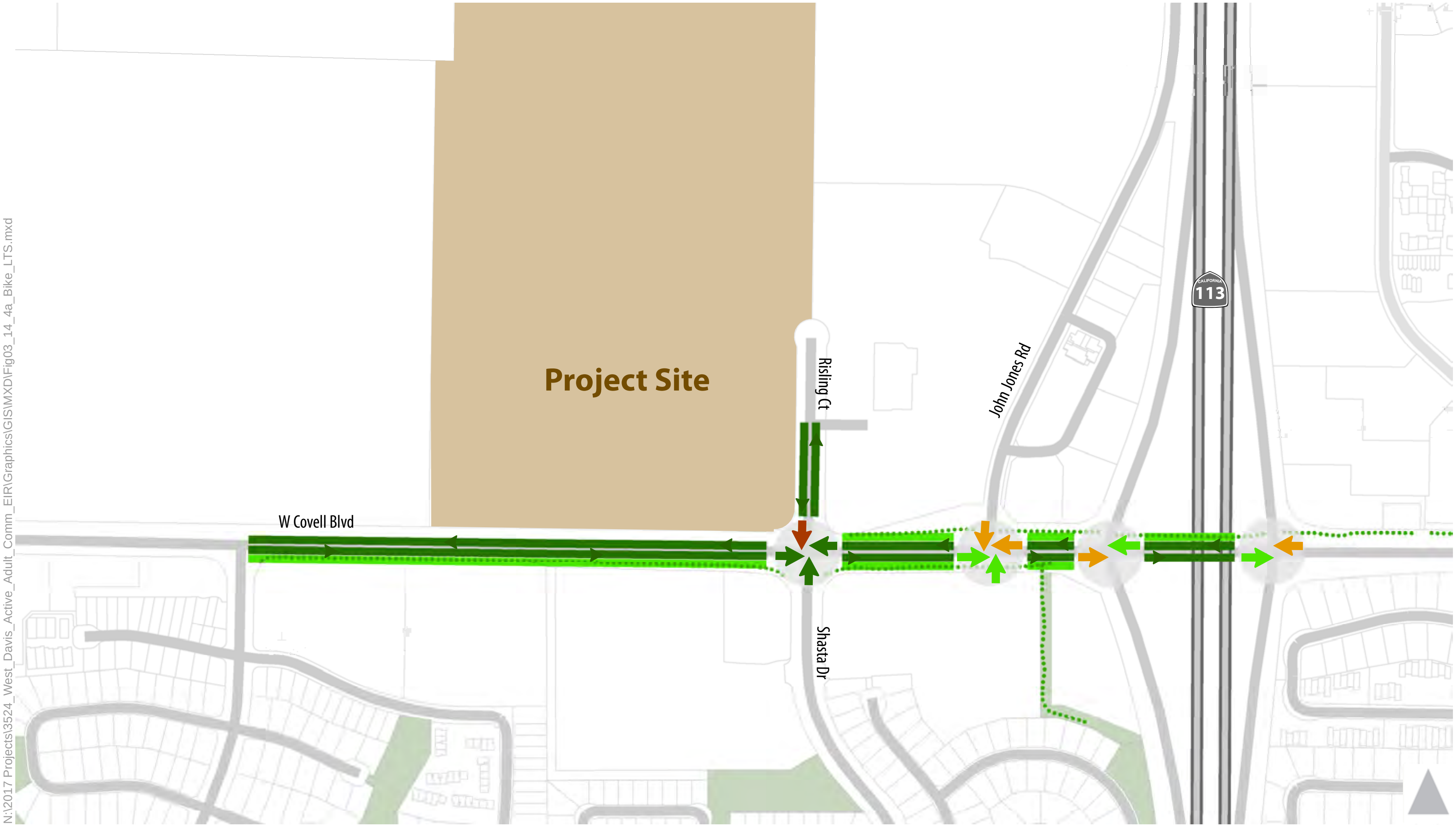

Project Site

Class I (Off-Street) Shared-Use Path

Roadway Level of Traffic Stress (LTS)

- Highly Comfortable
- Generally Comfortable
- Uncomfortable But Possible
- Very Uncomfortable or Impossible

Intersection Level of Traffic Stress (LTS)

- Highly Comfortable
- Generally Comfortable
- Uncomfortable But Possible
- Very Uncomfortable or Impossible

Notes:
Level of Traffic Stress rating based on the average score of the following criteria:
•Corridors - bicycle separation from vehicle traffic, presence of parking, street width, bike lane width, vehicle speeds, and bike lane blockage.
•Intersections – bicycle separation from vehicle traffic, bike lane separation from vehicle right turn lane, bike lane straight or shifted approach to the intersection, right turn lane length, and right turn vehicle speeds.

Figure 3.14-4a

Bicycle Level of Traffic Stess (LTS)

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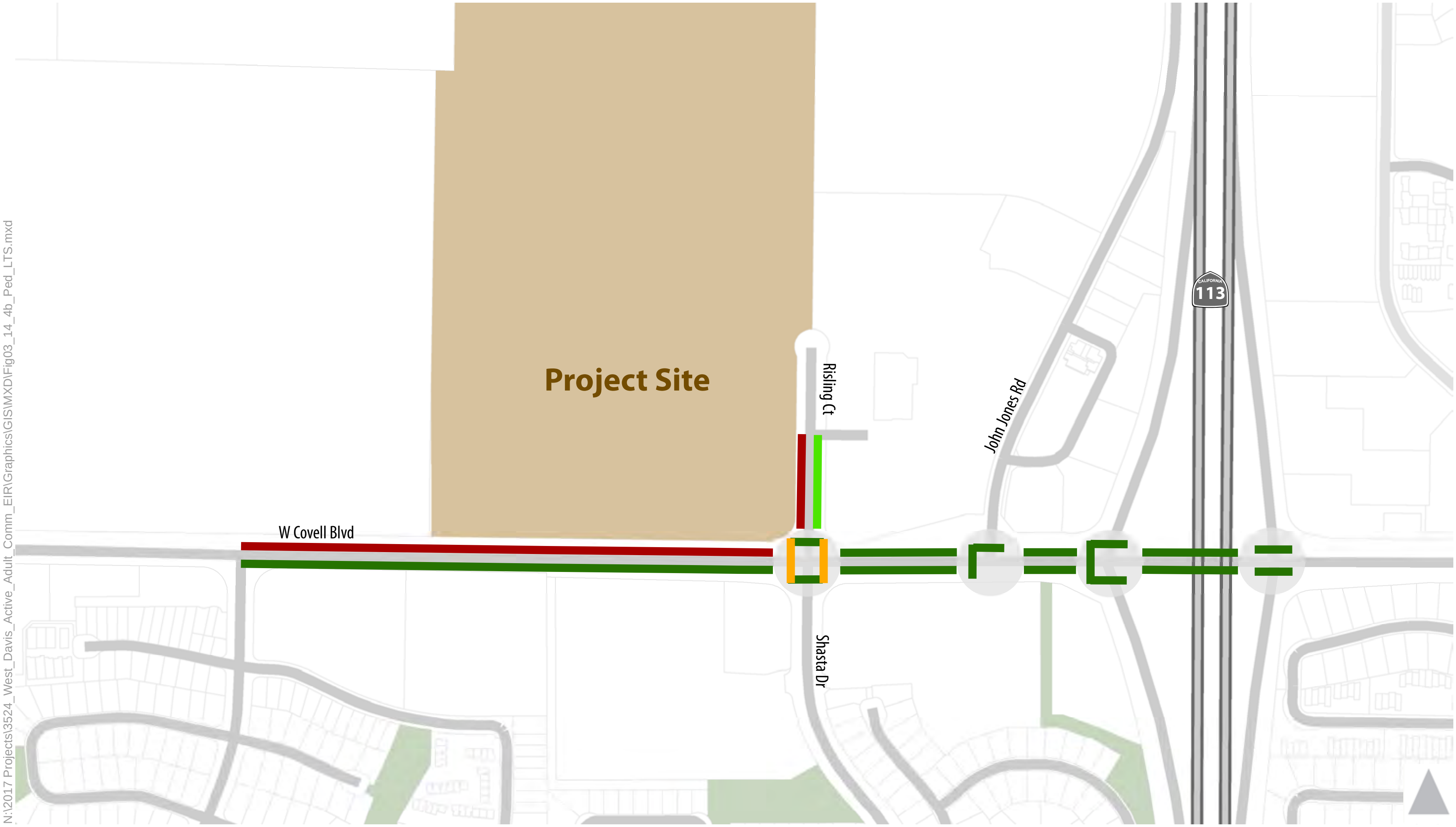

Project Site

Pedestrian StreetScore+

Highly Comfortable

Generally Comfortable

Uncomfortable But Possible

Very Uncomfortable or Impossible

Notes:
Streetscore+ rating based on the average score of the following criteria:
• Corridors – sidewalk width, sidewalk pavement quality, driveways within sidewalk zone, landscape buffer/street trees, number of roadway lanes, vehicle speeds, lighting, percentage of heavy vehicles on roadway, and crosswalk frequency.
• Intersections – crossing distance, pedestrian signal accessibility, curb ramp accessibility, and presence of channelized right turns.

Figure 3.14-4b

Pedestrian StreetScore+

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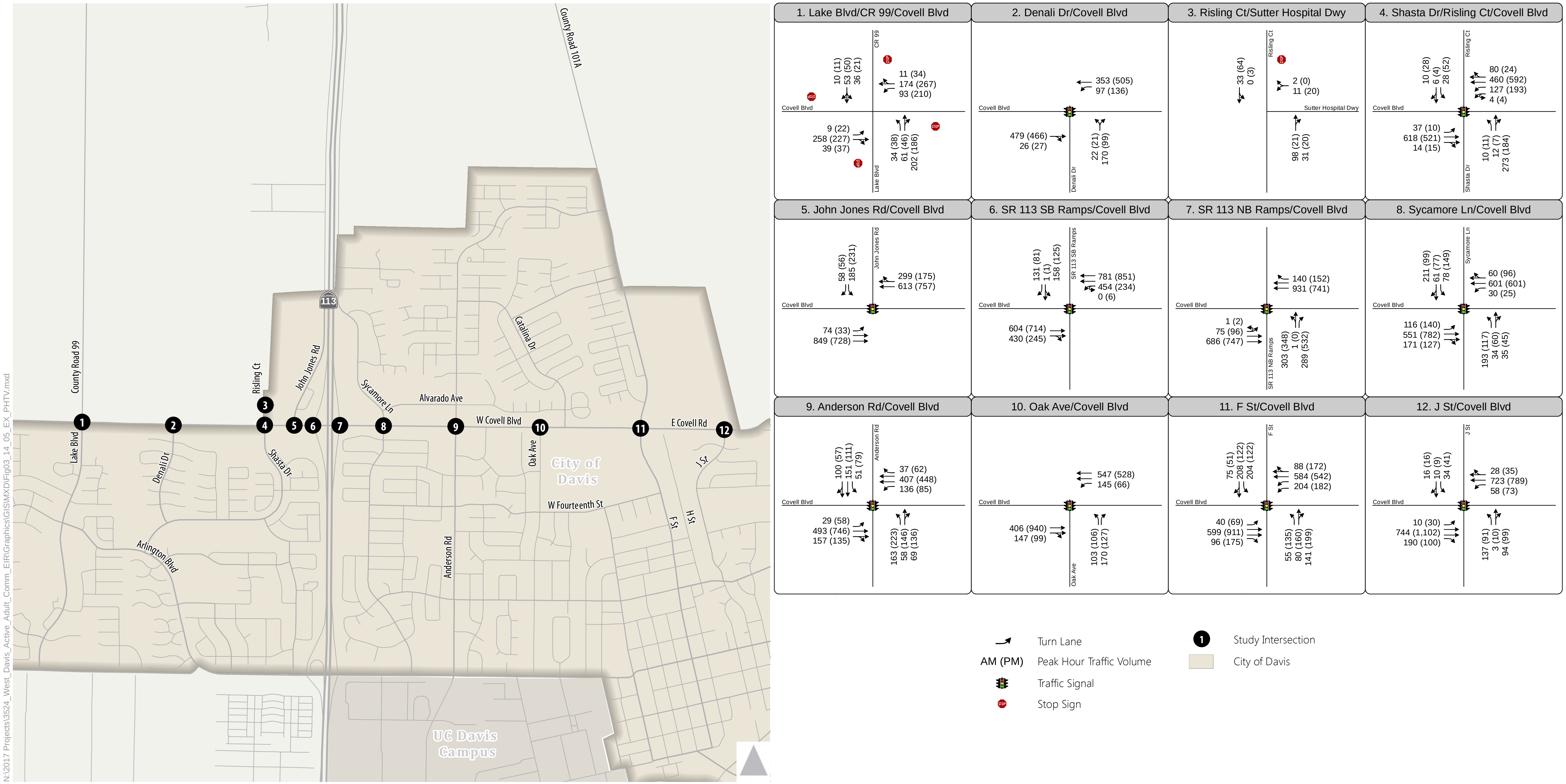

Figure 3.14-5

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

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Study Intersection

5% Trip Distribution

City of Davis

Project Site

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Figure 3.14-6

Trip Distribution for Residential Uses

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Figure 3.14-7

Trip Distribution for Non-Residential Uses

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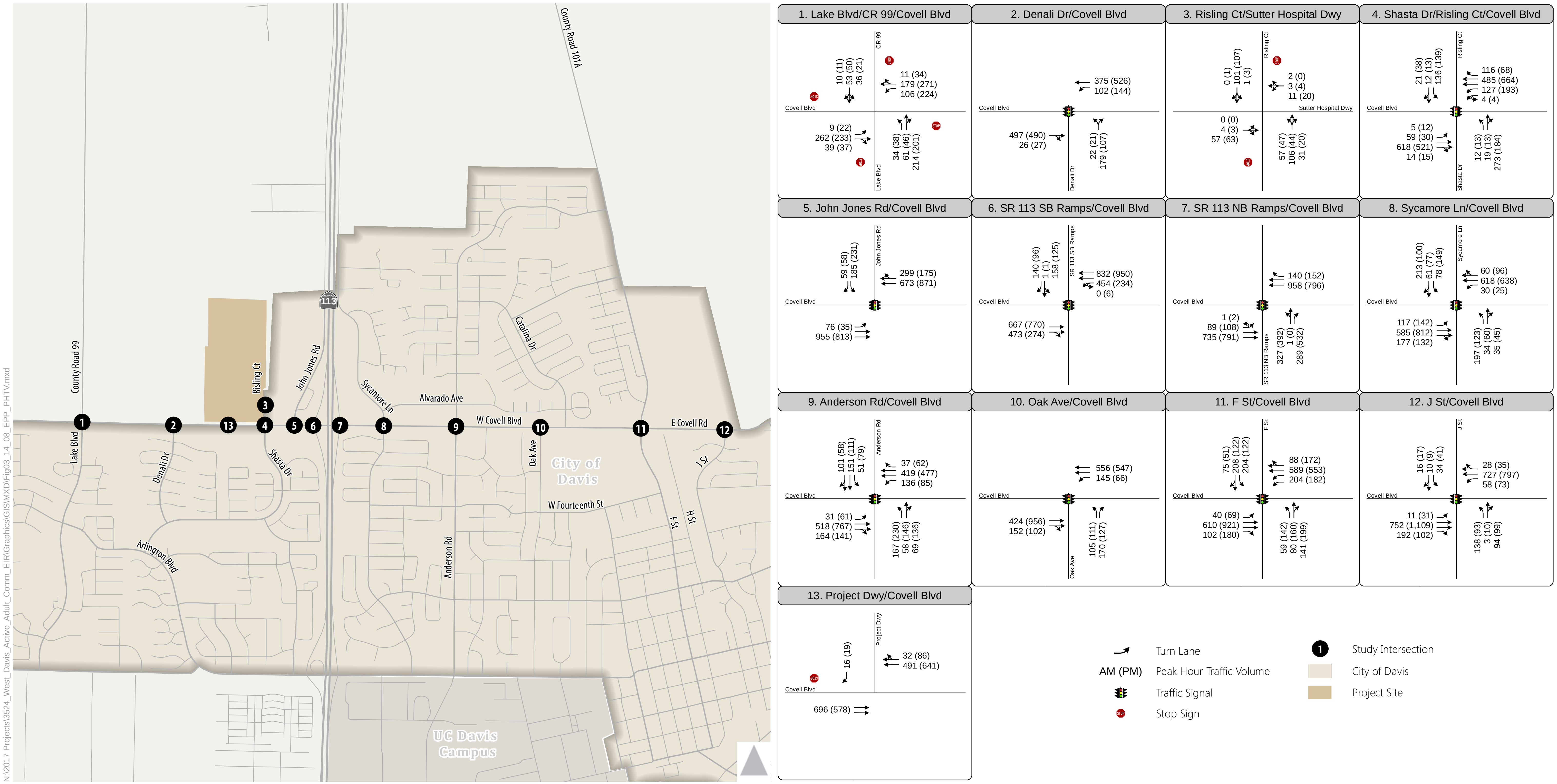

Figure 3.14-08

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

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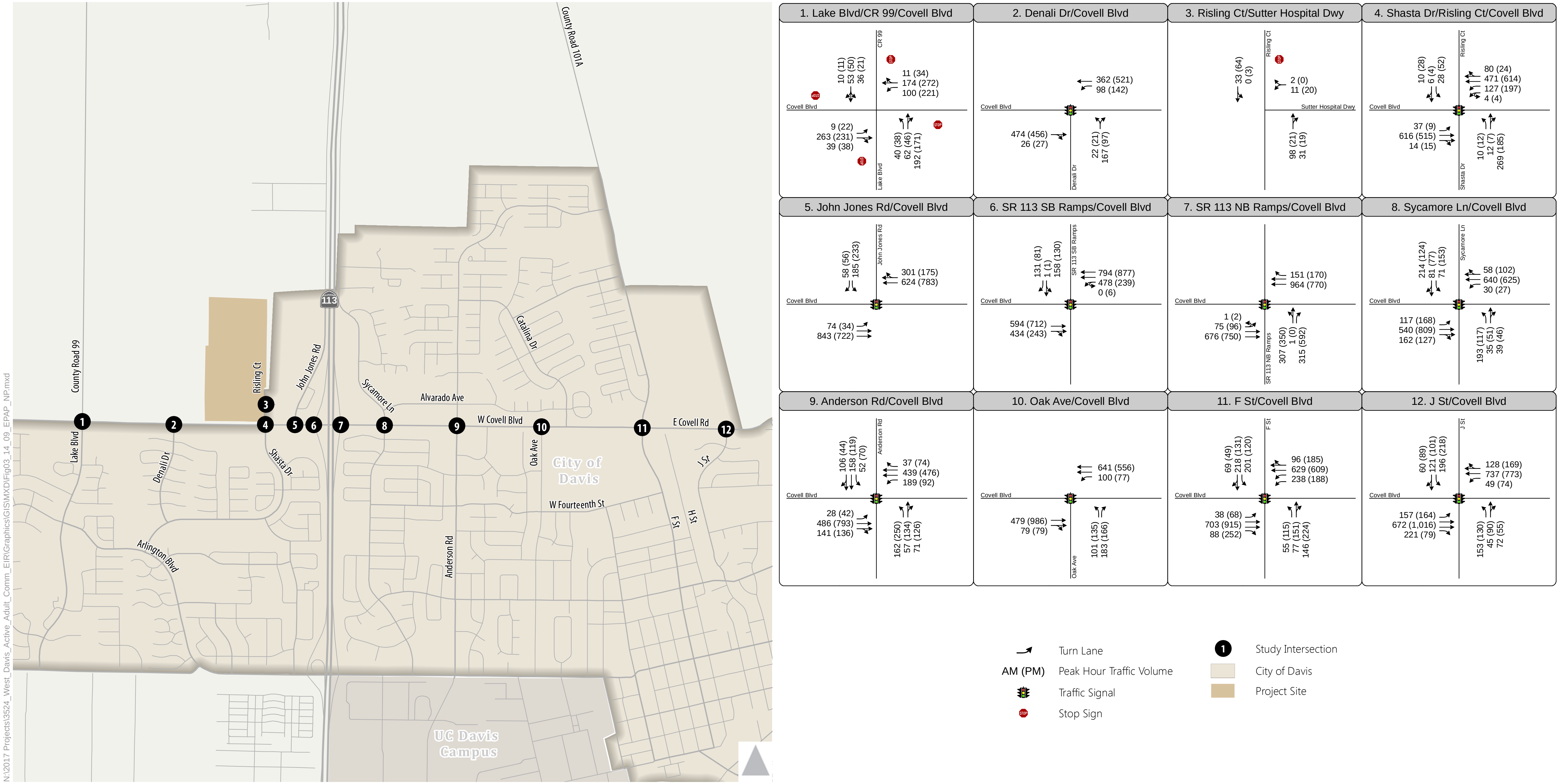

Figure 3.14-09

Peak Hour Traffic Volumes
and Lane Configurations -
Existing Plus Approved Project Conditions

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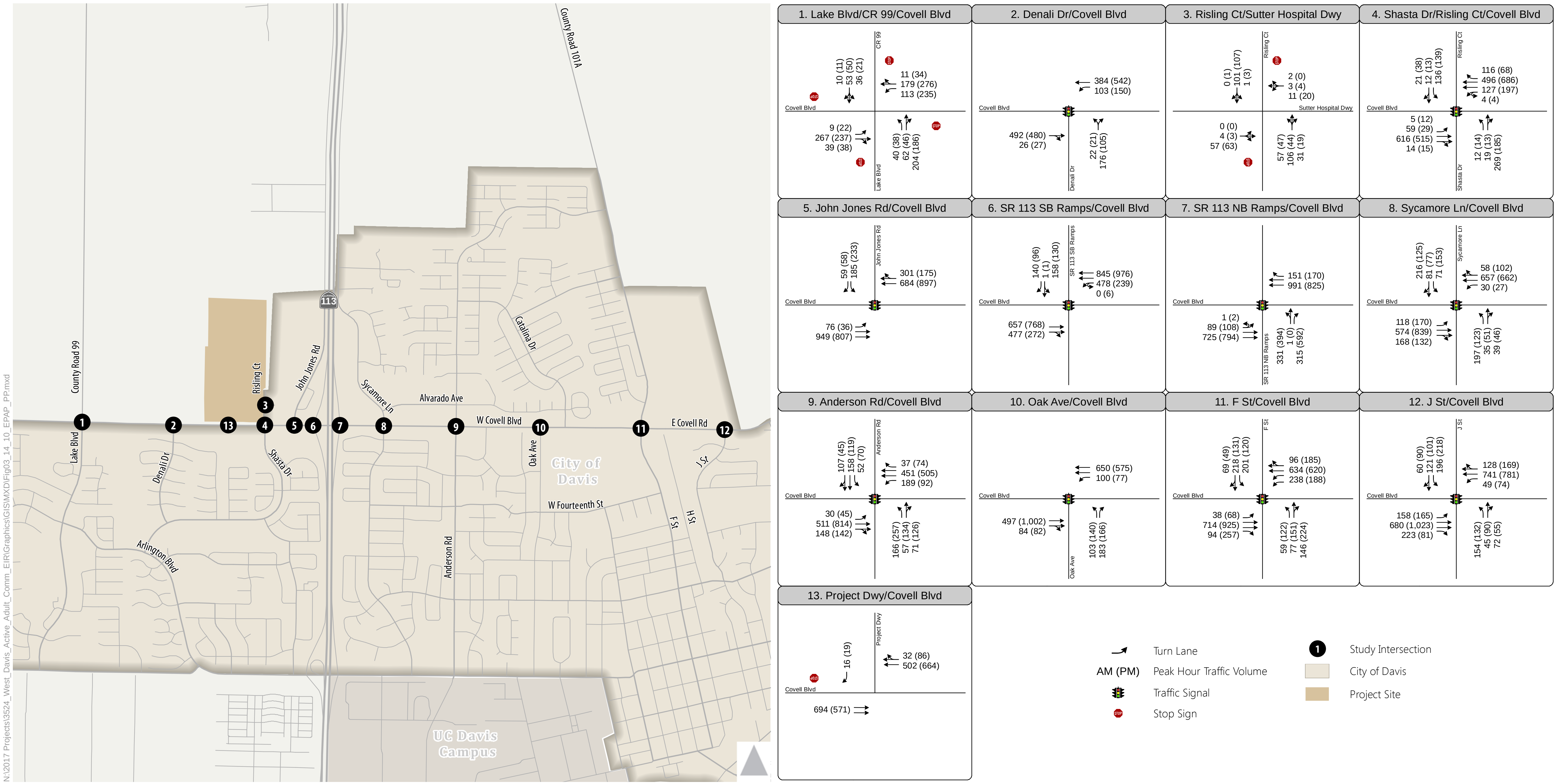

Figure 3.14-10

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Projects Plus Project Conditions

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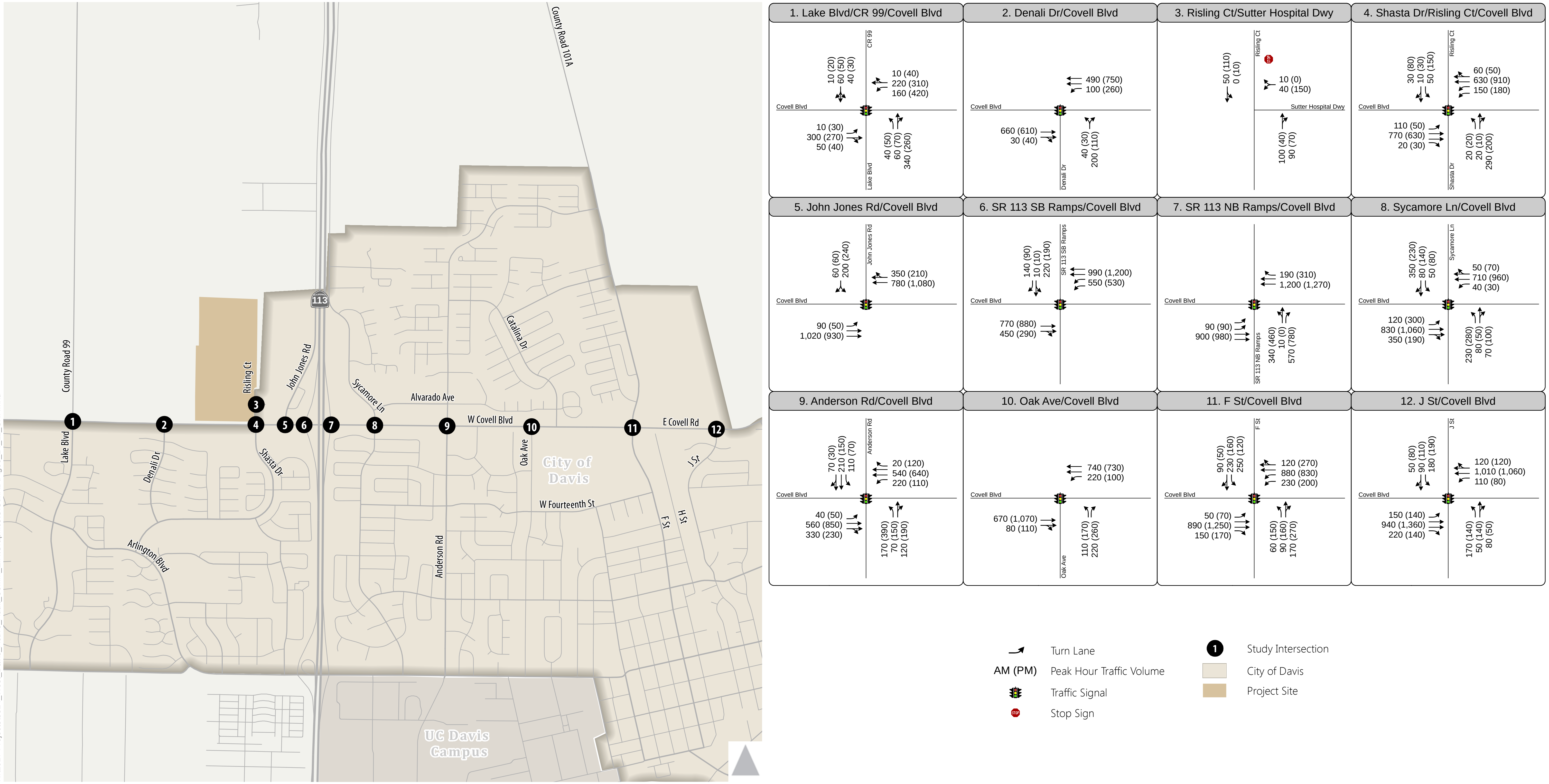

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Figure 3.14-11

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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Figure 3.14-12

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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This section describes the regulatory setting, impacts associated with wastewater services, water services, and solid waste disposal that are likely to result from project implementation, and measures to reduce potential impacts to wastewater, water supplies and solid waste. A detailed discussion of the proposed project's storm drainage and flood control facilities is included in Section 3.9, Hydrology and Water Quality. Therefore, storm water drainage and infrastructure are not addressed in this EIR section. This section is based in part on the following documents, reports and studies:

- City of Davis General Plan (City of Davis May 2001, Amended through 2007),
- West Davis Active Adult SB 610 Water Supply Assessment (Tully & Young, 2017),
- Memorandum – Subject: West Davis Active Adult Community Land Use Changes (Tully & Young, 2017),
- City of Davis 2015 Urban Water Management Plan (City of Davis, 2016),
- City of Davis Final 2015 Urban Water Management Plan (City of Davis, 2016),
- Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity Technical Memorandum (West Yost, 2015),
- Impacts of Innovation Center/Nishi Property Development on Wastewater Collection System Capacity Technical Memorandum (West Yost, 2015),
- Wastewater Facilities Strategic Master Plan (City of Davis, 2005).

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Patrick S. Blacklock, County of Yolo (April 18, 2017), Toni Terhaar and Russ Kanz (April 26, 2017), Shanie Tadlock, Central Valley Regional Water Quality Control Board (May 8, 2017), Christine M. Crawford, Yolo Local Agency Formation Commission (May 11, 2017), and Eileen M. Samitz (May 13, 2017). Each of the comments related to this topic are addressed within this section.

3.15.1 WASTEWATER SERVICES

EXISTING SETTING

Wastewater Conveyance and Treatment

The project site is located along a main thoroughfare with fully developed utilities infrastructure. The City of Davis wastewater collection system conveys wastewater for the area within the city limits to the Wastewater Treatment Plant (WWTP), located at 45400 County Road 28H. The collection system includes 156 miles of sewer pipelines ranging in diameter from six inches to 66 inches. In addition, the City has six sewer lift stations within the service area to facilitate the flow of wastewater to the WWTP.[1]

The City also provides sewer collection services to El Macero and North Davis Meadows. The City has an agreement to provide the same level of service to the El Macero District as within the City.

[1] City of Davis. *Sewer System Management Plan.* August 2012.

The City service and obligation to North Davis Meadows is limited to repairing the low-pressure line. Yolo County provides North Davis Meadows pump station maintenance services.

The City of Davis was authorized by the California Regional Water Quality Board in October 2013 to discharge pursuant to Order R5-2007-0132-02 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079049. The City of Davis submitted a Report of Waste Discharge, dated 4 April 2012, and applied for a NPDES permit renewal to discharge up to 7.5 MGD of treated wastewater from the City of Davis Wastewater Treatment Plant (WWTP). The Order will expire on November 1, 2018.

Under the Permit Order, the City has the ability to discharge treated wastewater from two different discharge points (Discharge Point Nos. 001 and 002). The treatment system for both discharge points consists of a mechanical bar screen, aerated grit tank, three primary sedimentation tanks, three facultative oxidation ponds, two aerated ponds, a polishing pond, an overland flow system, disinfection, and dechlorination. However, prior to the discharge at Discharge Point No. 002, the disinfected effluent passes through treatment wetlands. Each discharge point is located in a different receiving water. Treated wastewater is discharged from Discharge Point No. 001 to the Willow Slough Bypass, a water of the United States, and part of the Yolo Bypass flood protection structure within the Sacramento River Watershed. Treated wastewater is discharged from Discharge Point No. 002 to the Conaway Ranch Toe Drain, a water of the United States, and a part of the Yolo Bypass within the Sacramento River Watershed.

The City's WWTP was recently upgraded to ensure compliance with all existing and anticipated wastewater discharge standards. The treatment process upgrade was completed in October 2017.[2] The City's WWTP upgrade project included design and construction of improvements to the City's WWTP in order to meet State and Federal regulatory discharge requirements contained in the City's adopted 2013 National Pollutant Discharge Elimination System (NPDES) permit. The project was accomplished in two phases: Rehabilitation and Replacement (R&R) Phase and Secondary and Tertiary Improvements (STI) Phase.

The following secondary and tertiary WWTP improvements have been completed:

- Secondary replacement – new secondary biological treatment and clarification (replacing the ponds and overland flow treatment system with conventional activated sludge process);
- New tertiary (advanced treatment) – new filtration and coagulation facilities;
- Disinfection – upgrade existing disinfection;
- Incorporate ponds as equalization, redundancy for treatment systems, and future treatment capacity;
- New solids handling equipment and modifications to existing digesters; and

[2] Personal Communication with John Alexander, Plant Manager, City of Davis Public Works. December 4, 2017.

- New laboratory facility and modify existing operations and maintenance facilities.

The WWTP is sized to accommodate 6.0 mgd of average dry weather flow (ADWF). ADWF is defined as the average of the three consecutive lowest-flow calendar months, which for the City usually coincides with the period of July through September.

The 5-year average of ADWF values for the period of 2010 to 2014 is 4.34 mgd. The lowest ADWF value during that period was 3.78 mgd, measured in 2014, which is reflective of the strict water conservation measures implemented throughout the City during the severe 2014 drought conditions. This is supported by the fact that WWTP influent biochemical oxygen demand (BOD) concentrations were proportionally higher in 2014 versus previous years (A reverse correlation between WWTP influent flow and BOD concentration is expected). The calculated BOD loads in pounds per day (lbs/day) show less variability than either the flow or BOD concentrations during the same period due to the off-setting effect of the latter two parameters on each other.

Given the relatively high variability in ADWF measurements over the last five years, there is some question as to what actually represents the “current” ADWF value. Because the 2014 value was unusually low as compared to previous years, the use of the 2014 ADWF may be inappropriately low for assessing available WWTP capacity. On the other hand, the inclusion of the 2014 value in a 5-year average seems reasonable in calculating a sufficiently robust ADWF value, given the potential for drought-related water use reductions every few years.

Based on these considerations, the 5-year average ADWF value for the period of 2010 to 2014 (i.e., 4.34 mgd) is assumed to represent current ADWF conditions. Growth within the City has been minor over that span, so the flow-generating land uses within the City have remained relatively constant during that period. Given an existing ADWF of 4.34 mgd and a WWTP capacity of 6.0 mgd now that the STI phase of the WWTP upgrade project has been completed, West Yost has estimated that the available ADWF capacity of the WWTP is 1.66 mgd, or 28 percent of design capacity.[3]

Another way to assess remaining WWTP capacity involves consideration of BOD loadings rather than flows. The use of BOD loadings as an indicator of capacity is relevant because certain key treatment processes (namely secondary treatment facilities) are sized to handle organic loadings rather than flow. According to West Yost, the design average dry weather BOD loading is 10,100 lbs/day. It should be noted that sizing of secondary facilities is driven more by maximum month loadings rather than average loadings. However, it is generally assumed that the proportionality between average and maximum month BOD loadings remains constant over time, such that the use of average BOD loadings to assess available WWTP capacity remains valid.

Assuming the average BOD loading for the period of 2010 to 2014 represents current conditions (in a manner similar to the ADWF values for that same period), then the existing average dry weather WWTP influent BOD loading is 7,900 lbs/day. However, given the variability in the BOD

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3 West Yost Associates. *Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity [pg. 4]*. Technical Memorandum (Final). April 2, 2015.

loadings over the past five years, and given the variability inherent in influent BOD sampling, West Yost assumed a 5 percent safety factor when estimating existing BOD loadings. Therefore, the existing average dry weather WWTP influent BOD loading is assumed to be 8,300 lbs/day for this analysis. The use of this value implies that 1,800 lbs/day of average dry weather BOD loading are available for future development.

REGULATORY SETTING - WASTEWATER

Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Permits

The CWA is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. Section 402 of the Act creates the NPDES regulatory program which makes it illegal to discharge pollutants from a point source to the waters of the United States without a permit. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of three key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), and (3) pH acid/base balance. These levels can be achieved by well-operated sewage plants employing "secondary" treatment. Primary treatment involves screening and settling, while secondary treatment uses biological treatment usually in the form of "activated sludge."

All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant. Although not regulated under NPDES, "indirect" discharges are covered by another CWA program called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before being discharged to surface water.

The City of Davis was authorized by the California Regional Water Quality Control Board pursuant to Order R5-2007-0132-02. The City's current NPDES Permit (NPDES No. CA0079049), which regulates the wastewater effluent quantity and quality upon discharge, was issued on October 25, 2007 and amended in February 2009 and September 2010, and again in October 2013. The NPDES permit is administered by the Regional Water Quality Control Board.

City of Davis Wastewater Facilities Strategic Master Plan

In 2005, the City of Davis prepared the Davis Wastewater Facilities Strategic Master Plan. The purpose of the Master Plan is to provide a strategic plan that outlines wastewater treatment, disposal, and reuse facility needs for a 25-year planning horizon. The Master Plan outlines the facilities needed and steps required to: 1) meet treatment requirements specified in the then active 2001 NPDES permit, 2) provide flexibility to meet anticipated future regulatory requirements, 3) determine repair and replacement needs for the facility, 4) improve reliability to ensure process performance, and 5) provide community benefits.

City of Davis General Plan

The City of Davis General Plan contains the following goal and policies that are relevant to wastewater aspects of the proposed project:

Goal WATER 5. Remain within the capacity of the City wastewater treatment plant.

> **Policy WATER 5.1.** Evaluate the wastewater production of new large scale development prior to approval to ensure that it will fall within the capacity of the plant.
>
> **Policy WATER 5.2.** Provided that the existing plant capacity is not exceeded, require new large scale development to pay its fair share of the cost of extending sewer service to the site.

THRESHOLDS OF SIGNIFICANCE - WASTEWATER

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with Utilities if it will:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
2. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

IMPACTS AND MITIGATION MEASURES

Impact 3.15-1: Wastewater generated by the proposed project may exceed the capacity of the wastewater treatment plant, and may exceed the wastewater treatment permit requirements (Less than Significant)

Wastewater generated at the project site would be conveyed to the City's WWTP for treatment and disposal. The on-site sewer system for the proposed project would consist of a system of sewer lines under local streets which would collect and convey wastewater flows generated from the proposed project to one or more points of connection.

Table 3.15-1 presents the projected sewer flows from the proposed project. The calculated flows were based on rates provided by City staff in an August 1, 2012 Utility Guidance Letter. The proposed project would generate 0.13 mgd average dry weather flow. The peak dry day flows generated by the project would be 0.29 mgd.

TABLE 3.15-1: PROJECT SEWER FLOWS

LAND USE	*UNITS OR SF OR ACREAGE*	*FLOW PER UNIT OR ACRE (GPD)*	*ADDF (GPD)*	*PF*	*PDDF (GPD)*
Single Family Residential	360 DU	230 / DU	82,800	2.147 * ADDF	177,772
Multi-Family Residential	200 DU	230 / DU	46,000	2.147 * ADDF	98,762
Health Club and Pool	3.0 Acres	1,500 / Acre	4,500	2.147 * ADDF	9,662
Mixed Use (Restaurant)	5,000 SF (0.11Acres)	2,500 / Acre	275	2.147 * ADDF	590
Total	-	-	**133,575 (0.13 mgd)**	**2.147 * ADDF**	**286,486 (0.29 mgd)**

NOTES:
1- PER CAPITA FLOW RATES WERE ESTABLISHED BY THE DAVIS PUBLIC WORKS DEPARTMENT AND PROVIDED IN AN AUGUST 1, 2012 UTILITY GUIDANCE LETTER
2- INFILTRATION AND INFLOW ALLOWANCE IS ASSUMED 600 GPD PER GROSS ACRE PER DAVIS PUBLIC WORKS DEPARTMENT AND PROVIDED IN AN AUGUST 1, 2012 UTILITY GUIDANCE LETTER.
3- ADDF = AVERAGE DAILY DRY WEATHER FLOW
4- PF = PEAKING FACTOR
5- I/I = INFILTRATION AND INFLOW (APPLIED ON GROSS ACREAGE BASIS). PARKS, OPEN SPACE, & ROW ARE EXEMPT.
6- PWWF = PEAK WET WEATHER FLOW = DESIGN FLOW FOR PIPES
SOURCE: CITY OF DAVIS PUBLIC WORKS DEPARTMENT. "UTILITY GUIDANCE LETTER", AUGUST 1, 2012.

The WWTP would be sized to accommodate 6.0 MGD of ADWF. ADWF is defined as the average of the three consecutive lowest-flow calendar months, which for the City usually coincides with the period of July through September. Now that the STI phase of the WWTP upgrade project has been completed, West Yost has estimated that the available ADWF capacity of the WWTP is 1.66 MGD, or 28 percent of design capacity[4].

[4] West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Collection System Capacity. Technical Memorandum. March 25, 2015.

According to West Yost Associates, an infiltration/inflow factor of 600 gallons per gross acre per day is appropriate (West Yost Associates, 2015). This factor is applied on a gross acreage basis, and parks, open space, and right-of-way are exempt. As shown in Table 2.0-1 in Section 2.0, Project Description, approximately 30.01 acres of the 74.49-acre site would be utilized for greenway, urban agriculture transition area, and public right-of way. Based on the resulting 44.48 acres, the project would result in infiltration and inflow flow of 26,688 gallons per day (gpd).

Buildout of the proposed project would result in the construction of up to 560 dwelling units generating up to approximately 1,467 additional residents (based on 2.62 persons per household). According to West Yost Associates, a wastewater generation factor of 230 gallons per day per unit of multi-family or single family residential development is appropriate (West Yost Associates, 2015). Based on the proposed 560 units, the residential portion of the project would result in a wastewater flow of 128,800 gallons per day (0.129 mgd). According to West Yost Associates, a wastewater generation factor of 230 gallons per day per unit of multi-family or single family residential development is appropriate (West Yost Associates, 2015). Based on the proposed 8,000 square foot health club and pool (located on 3.0 acres) and the 5,000 square foot fast casual restaurant, the non-residential portion of the project would result in a wastewater flow of 4,775 gallons per day (0.005 mgd). Therefore, as shown in the above table, the total wastewater flow from the project site would be about 0.13 MGD.

Therefore, the current capacity of the WWTP would be sufficient to handle the wastewater flow from the proposed project. In addition, the proposed project is required to pay sewer impact fees which would contribute towards the cost of future upgrades, when needed. As a result, the proposed project would not have adverse impacts to wastewater treatment capacity. Because the project applicant would pay City sewer impact fees, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, a ***less than significant*** impact would occur related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

3.15.2 WATER SUPPLIES

EXISTING SETTING

Water Service Area

The City of Davis is located in the Central Valley in the southeastern corner of Yolo County and to the east of the coastal mountain range and San Francisco Bay Area, and 12 miles west of the state capital of Sacramento. It occupies an area of about 9.8 square miles (6,281 acres). Incorporation of the City occurred in 1917, and water service is provided to all residential (single and multi-family), commercial, industrial, and irrigation customers, and for open space and fire protection uses.

Water service within the City of Davis is provided to all residential (single and multi-family), commercial, industrial, institutional, and irrigation customers, as well as open space and fire protection uses. The City of Davis' water system service area coincides with the City's boundary, is bordered by the University of California, Davis (UC Davis) campus to the south, and additionally includes the El Macero (located south of Interstate 80), Willowbank, and the Royal Oak Manufactured Home Community areas that are located outside of the City's boundary. The City's water system currently serves a 2014 population of approximately 68,000, which includes an estimated 1,383 people in the El Macero and Willowbank areas.

City of Davis Water Supplies

The proposed project, if approved by the City, is capable of being served by the City from the City's existing and future portfolio of water supplies. The project site already has access to City water pipes along the Covell Boulevard and Risling Court right-of-way (ROW). The water supply for the proposed project would have the same water supply reliability and water quality as the water supply available to each of the City's other existing and future water customers.

There are three primary water rights and contracts (collectively, "water supplies") that are used within the City's existing service area and Sphere of Influence (SOI). All three of these water supplies are used to meet the water demands for the City's residents. In several areas within the City, the water supplies can be interchanged and commingled for delivery to end users. The water supplies are:

- Woodland-Davis Clean Water Agency (WDCWA) State Water Resources Control Board (SWRCB) Appropriative Water Right Permit 20281;
- WDCWA's Central Valley Project (CVP) Contract No. 14-06-200-7422X-R-1; and
- City of Davis' groundwater rights.

Each of these water supplies are subject to a unique set of conditions based upon the terms of the underlying water rights, the regulatory environment, the contractual limitations, and the City's ability to access and deliver the supplies to meet targeted end-user needs. Within this structural framework, the City manages its water assets to meet its customers' demands. Importantly, the structural framework morphs and changes, requiring the City's water managers to adjust the water asset management and use.[5]

HISTORICAL POTABLE WATER SUPPLIES

The City's water supplies have historically included water supplies solely derived from its groundwater resources. In June of 2016, the City began using a new water diversion facility from the Sacramento River and began taking water supplies from WDCWA's surface water assets. The City's additional water sources will reduce its historical reliance upon groundwater and improve other water quality issues associated with utilization of groundwater resources. In normal years, the City anticipates relying upon WDCWA's surface water assets to meet the majority of the City's water demands. In dry years, the City anticipates using additional groundwater to meet demands that its surface water supplies are unable to meet. In short, the City is developing a robust

[5] The City may investigate additional water assets that may be included in its water supply portfolio, including surface diversions that would be banked in groundwater aquifers.

conjunctive use program in coordination with WDCWA that will allow it to optimally manage its surface and groundwater resources to serve its near-term and long-term demands.

The City generally only purchases and delivers water that is necessary to meet the City's customers' demands. Thus, although the WDCWA may have rights and entitlements to significant sources of water, the City only utilizes the amount it needs under those rights and entitlements. Tables 3-15-2 and 3.15-3 show the City's historical water supply deliveries.

TABLE 3.15-2: CITY OF DAVIS HISTORIC WATER SUPPLIES

YEAR	*GROUNDWATER (AFY)*	*YEAR*	*GROUNDWATER (AFY)*
1995	12,494	2006	14,333
1996	12,995	2007	14,762
1997	13,857	2008	14,219
1998	11,908	2009	12,835
1999	13,740	2010	11,957
2000	14,099	2011	11,531
2001	15,072	2012	12,218
2002	15,112	2013	12,338
2003	14,551	2014	10,901
2004	15,100	2015	9,211
2005	14,452	'95-'13 Average	13,556

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

TABLE 3.15-3: CITY OF DAVIS 2016 WATER SUPPLIES

MONTH	*GROUNDWATER (AFY)*	*PERMIT*	*CVP CONTRACT*
January	467	0	0
February	446	0	0
March	465	0	0
April	703	0	0
May	959	0	0
June	0	0	1,093
July	0	0	1,218
August	264	0	980
September	0	0	1,150
October	400	412	0
November	0	527	0
December	0	452	0
Totals	*3,704*	*1,391*	*4,400*

NOTE: THESE WATER SUPPLIES ARE DERIVED FROM THE AVAILABILITY OF VARIOUS ASSETS UNDER THE CITY'S RIGHTS AND CONTRACTS AS WELL AS RESCHEDULING OPPORTUNITIES ASSOCIATED WITH THE CVP SUPPLY. TOTAL WATER USE DERIVED FROM THE CITY'S MEASURED DEMANDS COUPLED WITH SUPPLY AVAILABILITY PRODUCED THE SUPPLY NUMBERS DEPICTED IN THIS TABLE.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

WOODLAND-DAVIS CLEAN WATER AGENCY

The WDCWA is a joint powers authority (JPA) established by the Cities of Woodland and Davis to develop a sustainable high-quality water supply. The cities signed the "Amended and Restated

Woodland-Davis Clean Water Agency Joint Powers Agreement" on February 26, 2013 that outlines the structure and governance of the JPA. This Agreement, coupled with the "Amended and Restated Woodland-Davis Clean Water Agency and University of California Agreement Concerning Potential Water Supply Contract", allocate water supplies, infrastructure costs, and operating issues among the participating agencies.

The WDCWA and Reclamation District 2035 constructed a new water intake on the Sacramento River to divert surface water supplies to the cities of Woodland and Davis in order to allow those cities to reduce their dependence on groundwater. The WDCWA holds water right permit 20281 and CVP contract 14-06-200-7422X-R-1 and allocates the water assets under those contracts pursuant to the above noted agreements. In short, the pertinent cost allocation and supply allocation under the agreements is as follows: 52.1% for the City of Woodland, 44.4% for the City of Davis, and 3.5% for UC Davis. The information in the following sections describes the key aspects of WDCWA's water assets that make up the wholesale water that is delivered to the City of Woodland, City of Davis, and UC Davis

SWRCB Appropriative Water Right Permit 20281

The WDCWA's appropriative water right Permit 20281 (Permit) provides the primary surface water supply for the City that the City's retail customers will use from the fall through spring each year, as that right is available. The Permit allows WDCWA to divert a maximum 80 cubic feet per second (cfs) of water at its diversion facility on the Sacramento River. WDCWA may divert a maximum volume each year of 45,000 acre-feet (AF). The Permit has a priority date of April 19, 1994 – rendering it a significantly junior water right on the Sacramento River watershed system. The WDCWA began diverting water under this Permit in 2016.

The Permit is subject to two important conditions: Term 20 and Term 25. Term 20 is a standard permit term that is contained in nearly all recently issued SWRCB Appropriative Water Right Permits. Term 20 is commonly referred to as "Term 91." Term 91 does not authorize water diversions under the Permit when "satisfaction of inbasin entitlements requires release of supplemental Project water by the Central Valley Project or the State Water Project." The "inbasin entitlements" include other water users, as well as needs of the environment. Thus, although the water right allows diversions of water all year, the actual diversion period is limited by the needs of other demands on the broader Sacramento-San Joaquin Bay Delta.

In 2015, Term 91 was in effect – which would have disallowed diversions under this Permit – from April 30 through November 2. In 2016, Term 91 was in effect from May 2 through October 14 limiting diversions under this Permit. To date, in 2017, Term 91 has not been declared and the WDCWA continues to divert water under the Permit to meet its local demands.

Term 25 is another important term in the WDCWA Appropriative Water Right Permit. Term 25 states, in relevant part, the following: "No water shall be diverted under this permit until Permittee obtains a long-term water supply covering those periods when water is not available for diversion pursuant to this permit." Accordingly, the WDCWA was unable to divert water under this Permit until it acquired a water supply that could be used when Term 91 was in effect or otherwise "not available." The WDCWA acquired an additional water supply, noted below, in order to satisfy the Permit term.

WDCWA has recently initiated water diversions under its Permit. These diversions started on October 15, 2016 and have continued uninterrupted since that time. The water supplies have been delivered to the City of Davis through the terms of the applicable agreements. The supplies have resulted in reduced pumping from groundwater resources that have augmented groundwater supplies available to the City.

The total volume of water available under this Permit is divided proportionally pursuant to the allocation terms noted above. Thus, the total annual allowable water supply of 45,000 AF would be divided as follows: City of Woodland 23,445 AF, City of Davis 19,980 AF, and UC Davis 1,575 AF. Although these water supplies can be manipulated by the participating agencies, the maximum water available under the Permit to the City of Davis to meet its long-term demands was assumed to be 19,980 AF per year (AFY).

Central Valley Project Contract No. 14-06-200-7422X-R-1

The second surface water supply available to the City is based upon the terms and conditions contained in CVP Contract No. 14-06-200-7422X-R-1 issued to the WDCWA (Settlement Contract). The Settlement Contract is a settlement of water right claims against the United States when the United States acquired water rights and constructed the CVP. The "Settlement Contractors" essentially dismissed their claims against the United States in return for specific water supply contracts that generally promised water supply deliveries pursuant to the terms of underlying water rights.

The WDCWA was not an original Settlement Contractor. In 2010, however, the WDCWA purchased a portion of the underlying water rights from an existing Settlement Contractor and was assigned the protections of a Settlement Contract in an agreement with Conoway Preservation Group, LLC (CPG). The 2010 Agreement assigned a portion of CPG's water rights under Licenses 904 and 5487 to WDCWA. WDCWA now holds two water right licenses, Licenses 904A and 5487A, that make up the underlying water rights under the assigned Settlement Contract. License 904A has a priority date of March 1, 1919 and License 5487A has a priority date of September 8, 1947. The maximum volumes of water available collectively under these water right licenses is 10,000 AFY, even though License 904A has a maximum annual volume of 7,500 AFY and License 5487A has a maximum annual volume of 4,919 AFY (combined 12,419 AFY).

The Settlement Contract entitles WDCWA to a maximum of 10,000 AFY of water supplies from the Sacramento River. Article 5(c) notes, however, that in critical years the maximum water supply available will be only 7,500 AF. The contract entitles WDCWA to divert water from April through October. However, the Settlement Contract has some other specific terms that limit this open-ended diversion:

1. The WDCWA may schedule deliveries as follows "at no cost": June: 2,500 AF, July: 3,500 AF, August: 500 AF, and September: 3,500 AF.

2. The water may be made available under Article 3(c)(1) in other months “at additional cost”.
3. Under Article 3(c)(2)(ii), the July August and September maximum annual diversion is 7,500 AF.

Accordingly, in light of the ability to move water assets around in various months, the majority of the water supplies available for use were assumed to be used in the no-cost months as noted in the Settlement Contract. If additional water is available for use that was not used in the “no cost months”, then that water will be diverted as available in other months of the year. Water was initially diverted under this contract in June of 2015. Tables 3.15-4 and 3.15-5 represent the water supplies available under the Settlement Contract in accordance with the WDCWA’s allocation system.

TABLE 3.15-4: WDCWA NORMAL YEAR SETTLEMENT CONTRACT ALLOCATION (10,000 AF AVAILABLE)

CONTRACTING ENTITY	*PERCENTAGE SUPPLY*	*ANNUAL ALLOCATION (AF)*
City of Woodland	52.1	5,210
City of Davis	44.4	4,440
UC Davis	3.5	350

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

TABLE 3.15-5: WDCWA NORMAL YEAR SETTLEMENT CONTRACT ALLOCATION (7,500 AF AVAILABLE)

CONTRACTING ENTITY	*PERCENTAGE SUPPLY*	*ANNUAL ALLOCATION (AF)*
City of Woodland	52.1	3,907.5
City of Davis	44.4	3,330
UC Davis	3.5	262.5

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

The City of Davis can allocate its portion of its water supply delivered from WDCWA into a monthly allocation. Thus, Tables 3.15-6 and 3.15-7 represents the City of Davis’ monthly Settlement Contract allocation.

TABLE 3.15-6: CITY OF DAVIS NORMAL YEAR SETTLEMENT CONTRACT ALLOCATION (4,440 AF AVAILABLE)

MONTH	*PERCENTAGE SUPPLY BASED ON SETTLEMENT CONTRACT TERMS*	*MONTHLY ALLOCATION (AF)*
June	44.4	1,110
July	44.4	1,554
August	44.4	222
September	44.4	1,554

NOTE: ALTHOUGH THE SUPPLIES DEPICTED ARE DESIGNATED FOR THE MONTHS SHOWN, THE CITY MAY TAKE THE SUPPLIES IN OTHER MONTHS AS NEEDED, SUBJECT TO OTHER FEES AND CONDITIONS. ANY CHANGE DOES NOT ALTER TOTAL AVAILABLE SUPPLY.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

TABLE 3.15-7: CITY OF DAVIS NORMAL YEAR SETTLEMENT CONTRACT ALLOCATION (3,330 AF AVAILABLE)

MONTH	*PERCENTAGE SUPPLY BASED ON SETTLEMENT CONTRACT TERMS*	*MONTHLY ALLOCATION (AF)*
June	44.4	832.5
July	44.4	1,165.5
August	44.4	166.5
September	44.4	1,165.5

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

CITY GROUNDWATER SUPPLIES AND MANAGEMENT

The City of Davis has historically pumped groundwater from the Yolo Subbasin (Department of Water Resources [DWR] Bulletin 118 noted 5-21.67) which is part of the broader Sacramento Valley groundwater basin. The Subbasin is essentially bounded by the Coast Ranges in the west, Putah Creek in the south, Cache Creek in the north, and the Sacramento River on the east. The groundwater supplies within the Subbasin are shared by numerous agricultural and urban purveyors. The City has greatly reduced its reliance on groundwater to meet its needs since the development of the surface water supplies derived from the WDCWA. The development of these surface supplies has allowed the City to use groundwater only in instances where surface water assets are unavailable.

The aquifers in the Davis area are recharged from rainfall, applied irrigation water, streambed recharge, irrigation channel recharge, and water moving through the Yolo Bypass. Putah Creek and Cache Creek provide substantial stream channel infiltration.

The City's groundwater supply is provided by 12 active wells, as shown in Table 3.15-8. These wells are located in both the "intermediate aquifer" and the "deep aquifer." The "intermediate aquifer" begins at about 200 feet below the ground surface and the "deep aquifer" begins at about 700 feet below the ground surface. The deep aquifer's water chemistry has lower levels of nitrate and selenium, making it better suited for drinking water supplies. Moreover, the water at this depth is "less hard" than water at the intermediate depth, improving quality for municipal uses. Thus, urban water supplies are better derived from the deep aquifer while supplemental supplies are better derived from the intermediate aquifer.

The total capacity of the City wells is 20,241 gallons per minute (gpm).[6] In the majority of situations, the City will use only water derived from its deep wells but will keep the wells in the intermediate levels online for additional uses, as needed.[7] Together, the water supply available through these wells is sufficient to meet the City's needs but are only used to supplement the surface water supplies derived from WDWCA surface water assets.

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6 The total capacity of 20,241 gpm equates to 107.4 AF/day if wells were pumped continuously and at full capacity.

7 Deep well 30 is the first "stand by well" that would be used if surface and groundwater supplies cannot meet demands and wells 23, 24, 26 and 27 are the next stand by wells that would be used. Telephone call with City Staff on July 19, 2017

TABLE 3.15-8: CITY OF DAVIS GROUNDWATER WELLS

WELL NO.	AQUIFER	CAPACITY, GPM
11	Intermediate	1,360
15	Intermediate	1,178
23	Intermediate	1,700
24	Intermediate	1,855
26	Intermediate	1,591
27	Intermediate	1,058
28	Deep	591
30	Deep	1,712
31	Deep	2,759
32	Deep	2,339
33	Deep	1,750
34	Deep	2,348
	Total Deep Well Capacity	**11,499**
	Total Capacity	**20,241**

NOTE: GPM = GALLONS PER MINUTE.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

The Yolo Subbasin is not an adjudicated groundwater basin. The Yolo Subbasin, however, has been declared a "high priority basin" for purposes of the Sustainable Groundwater Management Act (SGMA). The Subbasin is not designated as "critically overdrafted" but it is subject to a rigorous water management program. The water management program is governed by the Water Resources Association of Yolo County (WRA), which is a consortium of local water agencies providing a regional forum to coordinate and facilitate water issues in Yolo County. Moreover, the City of Davis developed a groundwater management plan in 2006 that includes basin management objectives for monitoring and evaluating water levels, water quality, and inelastic ground subsidence. Additional groundwater management actions are anticipated with the development of a Groundwater Sustainability Plan as required by the SGMA. This Plan is in its earliest formative stages.

The City's historical pumping numbers is depicted in Table 3.15-9. As shown in the table, with the development of surface water supplies in 2015, the City has reduced its dependence on groundwater to meet its overall demands. Accordingly, the City will continue to protect and secure its unused groundwater as it implements its conjunctive use projects.

The pumping data noted in Table 3.15-9 shows the significant decrease in groundwater usage within the City that has accompanied the acquisition and use of surface water supplies from WDCWA in 2016. This conjunctive use effort will allow the City to better meet its long-term needs as well as preserve its groundwater assets for additional uses, as needed, in the future. Nevertheless, the utility of wells denoted in Table 3.15-8 as well as the groundwater analysis in the City's 2015 UWMP, demonstrates that there is sufficient groundwater to meet the City's existing needs.

TABLE 3.15-9: CITY OF DAVIS HISTORICAL GROUNDWATER USE

YEAR	GROUNDWATER PRODUCTION(AFY)
2000	14,099
2001	15,112
2002	14,551
2003	14,100
2004	15,100
2005	14,452
2006	14,333
2007	14,762
2008	14,219
2009	12,835
2010	11,957
2011	11,531
2012	12,218
2013	12,338
2014	10,901
2015	9,211
2016	3,704

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

CITY WATER SUPPLY SUMMARY

Tables 3.15-10 and 3.15-11 summarize the City of Davis' reasonably available water supplies in normal- and dry-year conditions.

TABLE 3.15-10: NORMAL YEAR WATER SUPPLY AVAILABILITY

MONTH	CVP SETTLEMENT CONTRACT	PERMIT 20281 (AF)	GROUNDWATER (AF)
January	-	2,200	3,329
February	-	2,200	3,007
March	-	2,200	3,329
April	-	2,200	3,222
May	-	2,200	3,329
June	-	2,200	3,222
July	1,554	-	3,329
August	1,332	-	3,329
September	1,554	-	3,222
October	-	2,200	3,329
November	-	2,200	3,222
December	-	2,200	3,329
Totals	**4,440**	**19,800**	**39,198**

NOTE: CVP SUPPLIES DEPICTED HERE SHOW A SHIFT IN ACQUISITION FROM JUNE TO AUGUST SO AS TO MAXIMIZE THE USE OF ALL AVAILABLE SURFACE WATER SUPPLIES EVEN THOUGH THERE MAY BE ADDITIONAL EXPENSES IN CHANGING THE MONTH OF USE.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

TABLE 3.15-11: DRY YEAR WATER SUPPLY AVAILABILITY

MONTH	CVP SETTLEMENT CONTRACT	PERMIT 20281 (AF)	GROUNDWATER (AF)
January	-	2,200	3,329
February	-	2,200	3,007
March	-	2,200	3,329
April	-	2,200	3,222
May	-	-	3,329
June	832.5	-	3,222
July	1,165.5	-	3,329
August	166.5	-	3,329
September	1,165.5	-	3,222
October	-	-	3,329
November	-	2,200	3,222
December	-	2,200	3,329
Totals	**3,330**	**19,800**	**39,198**

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

These supplies may be manipulated as the water assets are needed to meet the City's demands. In other words, the City only utilizes water supplies from its water asset portfolio that it needs to meet its demands. This manipulation may include using more surface water assets under Permit 20281 and the CVP Contract in certain hydrological and regulatory conditions rather than using groundwater. The Permit water supply is equally spread out during available months for use but may be redistributed to other months as needed. The groundwater numbers depicted in the tables below indicate a maximum volume available assuming full utilization of the City's pumping capacity.

City of Davis Water Demand

The projected water demands through 2035 include the buildout demand of the City's existing water system's services area.

HISTORICAL AND EXISTING WATER DEMAND

The City's water demand fluctuated over the past 20 years as population has increased and water conservation practices have been implemented. In 1995, the City's water demand was 12,494 AFY and, in 2010, the City's water demand was 11,955 AFY (City of Davis, 2011). Table 3.15-12 shows the City's water demand (based on water production) for the years 2005 through 2010, and for the single year 2015. It should be noted that the historical water demand numbers shown below for years 2005-2010 were provided from the City of Davis 2010 UWMP, while data for 2015 was provided from the City of Davis Public Draft 2015 UWMP.

TABLE 3.15-12: HISTORICAL POTABLE WATER DEMAND (AFY)

	2005	*2006*	*2007*	*2008*	*2009*	*2010*	*2015*
Total Urban Water Management Plan Water Demand	14,452	14,333	14,762	14,219	12,835	11,955	9,212

BASED ON TABLE 3-2- GROUNDWATER- VOLUME PUMPED (DWR TABLE 18), CITY OF DAVIS 2010 URBAN WATER MANAGEMENT PLAN, JULY 2011; AND TABLE 4-1- DEMANDS FOR POTABLE AND RAW WATER – ACTUAL, CITY OF DAVIS 2015 URBAN WATER MANAGEMENT PLAN, MAY 2016.

As shown in Table 3.15-12, the City's 2009 and 2010 potable water demands (based on water production) were about 2,000 to 2,800 AFY lower than 2007 demands (City of Davis, 2011). This reduction in potable water demand is partially due to additional water conservation measures which were implemented during the recent drought, relatively wet conditions in 2010, and a declining economy. This trend has generally been experienced by water utilities throughout California during this period. Additional city-wide conservation efforts undertaken in 2015 reduced water demand even further during that year, to 9,212 AFY (City of Davis, 2015).

FUTURE WATER DEMAND

The City's future water demand is anticipated to increase as approved projects build out and new developments are approved and constructed within the City's water service area. However, the rate of growth within the City service area has slowed as a result of growth management policies and the current economic downturn. Hence, water demands are not anticipated to increase as rapidly as they have in the past.

Water demands through the year 2035 were estimated in the Public Draft 2015 UWMP based on land use projections and unit water demand factors developed in the Water Supply Assessment for the Nishi Gateway Project (Brown and Caldwell, 2015). Unit water demand factors for existing development were developed based on 2013 water demand, estimated acreage, and demographics such as population, employee number, and connection number. These water demands are projected for a normal climate year. Projected future water demand within the City of Davis is shown in Table 3.15-13.

TABLE 3.15-13: PROJECTED FUTURE WATER DEMAND (AF/YR)

	2020	*2025*	*2030*	*2035*
Total Water Demand	13,492	13,971	13,560	13,560

BASED ON TABLE 4-3. TOTAL WATER DEMANDS, AF, CITY OF DAVIS 2015 URBAN WATER MANAGEMENT PLAN, MAY 2016.

It should be noted that 2015 was a dry year that was part of a multi-year drought. This reflects increased water conservation efforts and the Governor's mandated water use reductions. According to the 2015 UWMP, it is anticipated that, in the future, water use may increase but remain lower than the per capita water use demands of those in 2013. Water demand projections from 2020-2035 assume a normal water year type. At buildout of the existing service area in 2023, the overall demand is estimated to be 161 gallons per capita per day (gpcd). With increased water conservation, overall per capita demand for a normal year type is expected to decrease to 150 gpcd after buildout (City of Davis, 2015).

BUILDOUT DEMAND OF THE EXISTING SERVICE AREA

The buildout population of the City's existing water system service area is estimated to be 73,531. The water demand at buildout of the City's existing water system service area is projected to be 13,258 AFY.[8] The demand is equivalent to an overall demand of 161 gpcd. The projected buildout maximum day demand is 21.3 million gallons per day (mgd). As increased water conservation takes effect and the overall per capita demand is reduced to 150 gpcd, the buildout demand of the existing service area is projected to decline to 12,356 AFY by 2030. The decline in the overall per capita demand after the estimated buildout year of 2023 would result in a similar decline in the connection demand factors. The total demand is reduced after the buildout year in 2023 as the per capita water use within the City's existing service area declines to 150 gpcd by 2030. The total water demand for 2015 and 2020 is determined by assuming the per capita demand is 161 gpcd and 155 gpcd is assumed for 2025.

Demand and Supply Conclusions in the 2015 UWMP

The City of Davis' 2015 UWMP included a number of "Proposed Developments" in the supply reliability analysis for the City. One of the analyzed developments was the "Davis Innovation Center." The Davis Innovation Center was a previous project proposal located on the proposed project site. The UWMP accounted for 619 AF for the entire Innovation Center's 207 acres, which is approximately 2.99 AF per acre. Thus, the proposed project area, which includes 75 acres of the original 207 acres, is budgeted in the UWMP for approximately 221 AF. This total budgeted volume of water is greater than the 211 AF the proposed project is expected to use. Once the proposed raw water supply is accounted for, the City's water system will be using much less than what was budgeted for the project site in the 2015 UWMP.

In addition, the analysis in the City's 2015 UWMP did not account for surface water supplies. Although the development of surface water supplies is mentioned in the UWMP, the UWMP did not account for those supplies in assessing supply availability. The water usage analyzed in the UWMP was derived solely from groundwater supply sources. Thus, the project site's budgeted volume of water, 211 AF, that was contemplated for the Davis Innovation Center in the existing UWMP was also derived solely from groundwater supply sources. Since adoption of the 2015 UWMP, the City has developed surface water sources through the WDCWA.

Water Distribution System

The City's water distribution system operates as one pressure zone with one elevated tank and two ground level storage tanks with booster pump stations. The hydraulic grade in the system is

[8] City of Davis. Draft Environmental Impact Report Mace Ranch Innovation Center Project (SCH# 2014112012) [Table 4.15-9]. August 2013.

based on the level in the elevated tank. The wells are controlled by a Supervisory Control and Data Acquisition (SCADA) system based on the level in the elevated tank.

The City's water system consists of piping ranging from 2 to 14-inches (in). Almost 90 percent of the distribution system consists of 6 to 10-in diameter pipelines. The City's pipeline system was constructed to support localized supply, with wells spread throughout the City. This type of localized supply does not require large diameter transmission mains.

There are three storage tanks in the City's water system, the existing Elevated Tank and West Area Tank (WAT) and the new East Area Tank (EAT). The three tanks have a combined storage of 8.2 million gallons. The WAT has a booster pumping capacity of 4,200 gpm and the EAT will have a total pumping capacity of 6,000 gpm. The WAT and EAT fill during off-peak demand periods and then the booster station pumps stored water back into the system during peak periods based on time and system pressure.

REGULATORY SETTING - WATER SUPPLY

Senate Bill 610

Senate Bill (SB) 610 requires that public agencies in a position of approving certain projects check with the water agency proposed to serve the project to determine if there are sufficient water supplies available to accommodate the project. SB 610 applies to projects that meet the following criteria:

- A proposed residential development of more than 500 dwelling units.
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one or more of the projects specified above.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

SB 610 amended Public Resources Code Section 21151.9 to provide that whenever a city or county decides that a project meets any of the above criteria, it must comply with Section 10910 *et seq.* of the Water Code. Section 10910 *et seq.* of the Water Code was also amended by SB 610 to require a city or county to coordinate the CEQA analysis with the water agency proposed to serve the project. Section 10910 *et seq*. requires a city or county to identify any public water system that may supply water to a proposed project. The city or county must ask each of these water providers to indicate whether its "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." If the city or county cannot receive this information from the water provider, it must provide the water supply assessment itself. It should be noted that the proposed project meets the above listed criteria (i.e. the project has more than 500 dwelling units); therefore, SB 610 is applicable to the proposed project, and a Water Supply Assessment has been prepared.

California Model Water Efficient Landscape Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the DWR to update the Model Water Efficient Landscape Ordinance (MWELO). In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[9] Because the City of Davis is a "local agency" under the MWELO, it must require "project applicants" to prepare plans consistent with the requirements of MWELO for review and approval by the City of Davis. The City of Davis is in compliance with this state law and uses the MWELO as written for projects within the City Limits. This WSA uses the methods described in the MWELO in setting landscaping irrigation limits. For the purposes of the WSA prepared for this project, the MWELO limit is applied to all aspects of the Proposed Project.

The MWELO applies to new construction with a landscape area greater than 2,500 square feet. The MWELO "highly recommends" use of a dedicated landscape meter on landscape areas smaller than 5,000 square feet, and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems. The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency.[10] Finally, the MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then to assign a unique valve for each hydrozone (low, medium, high water use).

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9 California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget. For purposes of the Water Supply Assessment, precipitation is not assumed to satisfy a portion of the outdoor landscape requirement because the determination of an appropriate effective precipitation factor is highly uncertain given the various landscape slopes, terrain composition, concurrent watering schedules, etc.

10 In calculating Estimated Total Water Use, the MWELO requires use of at least a 71% irrigation efficiency factor. Assuming 71% irrigation efficiency, the average plant factor must be 0.50. It would be possible to stay within the water budget if the average plant factor were higher than 0.50 by designing a system with an irrigation efficiency higher than 71%. Again, the relationship between a Plant Factor (PF) and Irrigation Efficiency (IE) in the Applied Water formula is: AW=(ETo*PF)/IE.

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to water supply for the proposed project:

Goal WATER 1. Minimize increases in water use. Reduce per capita water consumption by 20 percent as compared to historic use through programs encouraging water conservation.

> **Policy WATER 1.1.** Give priority to demand reduction and conservation over additional water source development.
>
> **Policy WATER 1.2.** Require water conserving landscaping.
>
> **Policy WATER 1.3**. Do not approve future development within the City unless an adequate supply of quality water is available or will be developed prior to occupancy.

Goal WATER 2. Ensure sufficient supply of high quality water for the Davis Planning Area.

> **Policy WATER 2.1**. Provide for the current and long range water needs of the Davis Planning Area, and for protection of the quality and quantity of groundwater sources.
>
> **Policy WATER 2.2**. Manage groundwater resources so as to preserve both quantity and quality of groundwater sources.
>
> **Policy WATER 2.3.** Maintain surface water quality.

City of Davis Urban Water Management Plan

The City of Davis prepared an Urban Water Management Plan (UWMP) in 2015, as required by the Urban Water Management Planning Act of 1983. The focus of the Plan is the conservation and efficient use of water in the Davis service area, and the development and implementation of plans to assure reliable water service in the future. The Plan contains projections for future water use, discusses the reliability of the City's water supply, describes the City's water treatment system, and contains a water shortage contingency plan. In addition, the Plan contains best management practices for efficient water use.

City of Davis Groundwater Management Plan

Under mutual agreement, the City and UC Davis Groundwater Management Plan (GWMP) was developed to address groundwater management needs specific to the City and UC Davis service areas. (These areas are not directly included or managed under the Yolo County Flood Control and Water Conservation District (YCFCWCD) GWMP.) The GWMP documents planned groundwater management activities and describe potential future actions to increase the effectiveness of groundwater management in the Davis area. The GWMP incorporates information from the Phase I and Phase II Deep Aquifer Studies and other regional groundwater investigations into a plan for managing and monitoring the effects of groundwater utilization. The GWMP includes all mandatory and suggested components outlined in CWC §10750 et seq. and §10753.7.

THRESHOLDS OF SIGNIFICANCE - WATER SUPPLY

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with Utilities if it will:

1. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or

2. Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed.

IMPACTS AND MITIGATION MEASURES

Impact 3.15-2: The project may not be adequately served by existing water supply sources under existing and cumulative conditions (Less than Significant)

The proposed project would connect to the City's existing water distribution infrastructure, including the infrastructure located adjacent to the project site, along Risling Court and Covell Boulevard.

The residential and non-residential water use demand resulting from the project is summarized below.

RESIDENTIAL WATER USE

The proposed project anticipates five general lot-size designations with the potential for some residential units within the mixed-use area. The size of the lot has the greatest impact on the annual per-lot demand for water as the irrigation needs for landscaping increase with larger landscaped areas. In contrast, indoor water demands remain relatively consistent regardless of lot size, but do vary slightly based on the number of people per dwelling unit. Distinct demand factors are provided for the following residential uses:

- Indoor Residential Use – this category differentiates the slight variance anticipated to occur between the conventional housing and higher density housing to reflect the difference in people per dwelling unit.
- Outdoor Residential Use – this category addresses the landscape water demands for varying lot sizes and housing types planned within the proposed project.

For purposes of the Water Supply Assessment, residential unit water demand factors are described as "the acre-feet of water use annually per dwelling unit" – or simply put, AF/dwelling unit (AF/du).

Indoor Residential Water Use Factors

The proposed project's residential elements will be built in accordance with all applicable building codes, including the Cal Green Code. Given the longevity of the City of Davis, indoor water use is likely highly variable because homes have been built over a long period of time. Older homes still typically use more water than newer homes, even with the additional requirements such as the Cal Green Code. As homes are remodeled and appliances are replaced, indoor water use falls, but there will always be lingering old appliances and fixtures in older neighborhoods keeping averages higher than new neighborhoods. Because of the age of the City, average indoor use is not accurate for a new development. With this in mind, Tully & Young reviewed a number of meter studies from throughout northern California and has developed an indoor demand estimate that is in line with newer homes and the impacts of the latest Cal Green Code.

Additionally, the size of the house has little impact on indoor water demands. While a bigger house may have more space dedicated to living areas, water use is predicated on bathroom fixtures and appliances, which are limited by the previously mentioned Cal Green Code. For the purposes of the Water Supply Assessment prepared for the proposed project, indoor demands are assumed to vary only slightly based on the number of people per unit. The proposed project's age-restricted units lead to persons per household numbers that differ from previous census records. This difference is due to the fact that age restricted units will almost universally house two people versus the City average of 2.64. For the proposed project, the projected persons per household are 2.64 for non-age restricted and 2.0 for the age-restricted units. To account for the differences in persons per household, the indoor water demand factors differ between housing unit type with age-restricted units having a lower indoor demand.

Outdoor Residential Water Use Factors

The primary factor driving outdoor water use on a per lot basis is the size of the lot and the landscaping square footage. The proposed project includes several residential lot types, each having a unique proposed housing layout and landscaped area. The plantings are intended to consist of low-water, drought-tolerant, and native plants. Landscapes not installed by the developer will be left to the homeowners, where MWELO compliance cannot be guaranteed. However, homeowners will be strongly encouraged to follow the sustainability principles and the City of Davis requires compliance for even small landscape projects.

To provide flexibility for the proposed project to landscape lots as needed and to provide a conservative assumption for this analysis, each lot is assumed to have a landscaped area equal to the lot square footage minus the house footprint and an amount of hardscaping in line with existing similar houses within the City. The remaining area of each lot is conservatively assumed to demand the maximum allowed by the MWELO. However, this characterization provides for a conservative analysis; the landscaping goals set forth by the proposed project will likely result in a lower outdoor residential water demand than is estimated by the Water Supply Assessment because of actions taken by developers and end users to be more water efficient.

A conservative starting point for landscape usage per acre is estimated at 4.01 AF per acre as 85% of the reference evapotranspiration (ETo).[11]

The primary driver that could significantly change both existing residential and non-residential outdoor water demands is the MWELO. In following MWELO methodologies, landscaping demand may be calculated as an estimate of reference ETo. Using demand values estimated for MWELO, a demand per acre or square foot is applied to the average lot size of each category to develop the outdoor demand for each residence type.

Using the outdoor unit demand factor of 4.01 AF/ac/yr and associated landscape area for an average lot in the City, an estimate of current outdoor demands can be derived.[12] Using this same number and the average lot size from the proposed project land use plan, which is a current example of future development in the City, an estimate of future outdoor demands is created. All lot sizes are calculated to use this number. For example, the single family builder lots are expected to share this demand per-acre value but with greater proportions of the lot dedicated to landscape versus areas covered by hardscape and the structure's footprint. The medium density cottage lots are also assumed to have similar per-acre values, but with lesser proportions of the lot dedicated to landscaping. Thus, the larger lots will see per dwelling unit outdoor demand factors that are greater than that of a dwelling unit on a smaller lot, such as a cottage.

The revised MWELO provides for determining the Maximum Applied Water Allowance (MAWA), where the maximum is determined as 55 percent of the ETo for the area for residential projects and 45 percent for non-residential, resulting in the following equation:

MAWA = (ETo) (0.62)(0.55 x LA), where ETo is the reference evapotranspiration in inches per year, LA is the landscape area, and 0.62 is a conversion factor. The resulting value is in "gallons per year"

The ETo value for the City of Davis is 59 inches, as recorded from the California Irrigation Management Information System (CIMIS) Davis Weather Station. The proposed project water demand is based on the following components:

- **Single Family.** The proposed 238 homes, bungalows, and builder lots will include single-family structures with extensive outdoor hardscapes. These proposed designations have lots with an average size of approximately 4,900 square feet. For the purposes of the

[11] ETo is the Evapotranspiration or a standard measurement used to calculate plant water demands. For more information on ETo, refer to MWELO. This value is still accurate for parks under the revised MWELO where special landscaped areas are allowed.

[12] This value is conservative for residential use under the revised MWELO but meter results for newer homes in similar areas support using this conservative value. It is anticipated that a small reduction in this value will be seen in the next meter study performed by the City. This reduction is both due to the conservative nature of the value and to ongoing conservation and improvements in water use efficiencies.

Water Supply Assessment, the proposed project will use the outdoor demand factor, derived in Table 3.15-14, of 0.21 AFY for lots in this category.

- **Cottages.** The proposed 92 cottage lots will include smaller single-family structures with extensive outdoor hardscapes. These designations for the proposed project have lots with an average size of approximately 3,600 square feet. For the purposes of the Water Supply Assessment, the proposed project will use the outdoor demand factor, derived in Table 3.15-14, of 0.13 AFY for lots in this category.
- **High Density Senior Affordable Apartments.** The proposed 150 senior affordable units will include attached multi-family dwellings on a single large lot with an average of about 1,100 square-feet of ground area per unit. This dwelling unit type is typically associated with community controlled outdoor spaces; thus, the average outdoor demands are typically quite low with typically less than a few hundred square feet of landscaping per unit. For the purposes of the Water Supply Assessment, the proposed project will use the outdoor demand factor, derived in Table 3.15-14, of 0.02 AFY for lots in this category.
- **Mixed Use Residential.** The proposed 50 units within the mixed-use area will be an unique dwelling unit type, typically existing above commercial space. Outdoor demands are minimal, if present, but are typically found. For the purposes of this WSA, the proposed project will use the outdoor demand factor, derived in Table 3.15-14, of 0.05 AFY for lots in this category.
- **University Retirement Expansion.** The proposed 30 retirement lots will include smaller single-family structures with extensive outdoor hardscapes. These designations for the proposed project have lots with an average size of approximately 4,350 square feet. For the purposes of the Water Supply Assessment, the proposed project will use the outdoor demand factor, derived in Table 3.15-14, of 0.19 AFY for lots in this category.

The residential water use factors from the Tully & Young Water Supply Assessment prepared for the City of Davis (August 2017), shown in Table 3.15-14, were used to project the potable water demand from the proposed project.

TABLE 3.15-14: CITY OF DAVIS RESIDENTIAL WATER USE FACTORS

WATER DEMAND CATEGORY	INDOOR FACTOR	OUTDOOR FACTOR	TOTAL DEMAND FACTOR
Homes, Bungalows, and Builder Lots	0.19 AF/du	0.21 AF/du	0.40 AF/du
Cottages	0.19 AF/du	0.13 AF/du	0.32 AF/du
Mixed Use	0.19 AF/du	0.05 AF/du	0.24 AF/du
Senior Affordable Apartments	0.15 AF/du	0.02 AF/du	0.17 AF/du
University Retirement Expansion	0.15 AF/du	0.19 AF/du	0.34 AF/du

NOTE: AF/DU = ACRE-FEET PER DWELLING UNIT.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

NON-RESIDENTIAL WATER USE

The non-residential factors are developed from either details provided in the proposed project land use plan and associated documents, or are based upon recent water use trends for similar types of land classifications found in other supporting materials.

For purposes of the Water Supply Assessment, the per-lot demand for non-residential classifications is described as either "the acre-feet of water use annually per acre of land" (AF/ac), or as a single demand projection for a demand category such as the community center (e.g. which has a unit of "1"), or AF/unit. These values reflect indoor and outdoor water needs expected for typical non-residential use for each of the following classifications:

- Mixed Use – Health Club, Club House, and Restaurant;
- Dog Park;
- Linear Parks;
- Other miscellaneous uses, including common area open space, agricultural setback open space, right-of-way landscaping, and construction water.

The non-residential water use factors from the Tully & Young Water Supply Assessment prepared for the proposed project (August 2017), shown in Table 3.15-15, were used to project the potable water demand from the proposed project.

TABLE 3.15-15: CITY OF DAVIS NON-RESIDENTIAL WATER USE FACTORS

WATER DEMAND CATEGORY	*TOTAL DEMAND FACTOR*
Non-Residential	
Mixed Use	2.80 AF/ac
Public	
Dog Park	4.01 AF/ac
Linear Parks	4.01 AF/ac
Agricultural Transition	2.81 AF/ac
Natural Open Space	0.00 AF/ac
Right of Ways	0.19 AF/ac
Miscellaneous	
Construction Water	1.00 AF/ac

NOTE: AF/AC = ACRE-FEET PER ACRE.
SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

PROPOSED PROJECT WATER DEMAND PROJECTIONS

Combining the proposed project's land use details and phasing with the demand factors presented in Tables 3.15-14 and 3.15-15, the water demands for the proposed project, from ground-breaking to build-out, can be estimated.

Non-Revenue Water Demands

The demand factors represent the demand for water at the residential or non-residential customer meter for each category. To fully represent the demand on water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially un-metered uses (such as fire protection, hydrant flushing, and unauthorized connections), and inescapable inaccuracies in meter readings.[13] In most instances, the predominant source of non-revenue water is from system leaks – the loss from fittings and connections from water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems. Because a significant portion of the delivery system used to bring water to the proposed project will be new, the percentage of non-revenue water is estimated to meet the 10 percent goal set forth by the American Water Works Association. Therefore, the proposed project's water delivery system is expected to require an additional 23 AF at build-out, with 11 AF of that required for outdoor demands that could be mostly met with non-potable water.

Projected Treated Demands Versus Landscape Water Demands

A unique feature of the proposed project is the separation of indoor and outdoor demands. The on-site well, previously used for agricultural purposes, has the capacity to serve more water than is needed on-site. This well would be used to serve the landscaping demands of the project through a separate pipe system. The demand on the City's treatment and distribution system will be limited to the indoor demands. Alternatively, if the agricultural well only services the agricultural buffer, then the outdoor demands on the City's treatment and distribution system would slightly increase. In this case, the demand on the City's treatment and distribution system will be limited to the indoor demands and the non-agricultural buffer, outdoor demands.

Total Demands

The estimated project water demand is shown in Table 3.15-16. At completion, the proposed project is estimated to require approximately 216 AF of water annually (prior to considerations of non-revenue water, described above) and approximately 240 AF when considering non-revenue water.

13 The American Water Works Association and the California Urban Water Conservation Council recognize the inherent non-revenue water that is either lost or not accounted for in urban treated water distribution systems and suggest purveyors strive for a value of 10% of all delivered water. Obtaining this value is dependent on numerous factors including the age and extent of distribution system infrastructure, meter rehabilitation programs, and how a purveyor accounts for actions such as fire flows and hydrant flushing.

TABLE 3.15-16: ESTIMATED PROPOSED PROJECT WATER DEMANDS

CATEGORY	DEMAND (AFY)					
	CURRENT	2020	2025	2030	2035	2040
Residential						
Homes, Bungalows, and Builder Lots - Indoor	0	0	45	45	45	45
Homes, Bungalows, and Builder Lots - Outdoor	0	0	54	54	54	54
Cottages – Indoor	0	0	6	6	6	6
Cottages – Outdoor	0	0	7	7	7	7
Mixed Use – Indoor	0	0	16	16	16	16
Mixed Use – Outdoor	0	0	1	1	1	1
Senior Affordable Apartments – Indoor	0	0	23	23	23	23
Senior Affordable Apartments – Outdoor	0	0	5	5	5	5
University Retirement Expansion – Indoor	0	0	5	5	5	5
University Retirement Expansion – Outdoor	0	0	6	6	6	6
Indoor Subtotal	*0*	*0*	*95*	*95*	*95*	*95*
Outdoor Subtotal	*0*	*0*	*73*	*73*	*73*	*73*
Non-Residential						
Mixed Use	0	0	7	7	7	7
Indoor Subtotal	*0*	*0*	*7.4*	*7*	*7*	*7*
Public						
Dog Park	0	0	4	4	4	4
Linear Parks	0	0	16	33	33	33
Agricultural Transition	0	0	12	0	0	0
Right of Way Landscaping	0	0	3	3	3	3
Outdoor Subtotal	*0*	*0*	*36.1*	*41*	*41*	*41*
Miscellaneous						
Construction Water	0	0	1	0	0	0
Outdoor Subtotal	*0*	*0*	*1*	*0*	*0*	*0*
Totals						
Indoor Total	0	0	102	102	102	102
Outdoor Total	0	0	110	114	114	114
Total	*0*	*0*	*213*	*216*	*216*	*216*
Outdoor Non-Revenue Water (11%)	0	0	12	13	13	13
Indoor Non-Revenue Water (11%)	0	0	11	11	11	11
Total Indoor	*0*	*0*	*114*	*114*	*114*	*114*
Total Outdoor	*0*	*0*	*123*	*127*	*127*	*127*
Total Proposed Project Demand	***0***	***0***	***236***	***240***	***240***	***240***

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

PROPOSED PROJECT'S WATER SUPPLY SUFFICIENCY ANALYSIS

The sufficiency analysis integrates the proposed project's water demands detailed above with the water supplies characterized in the Existing Setting. The assessment incorporates the City's existing and planned future uses as discussed in the 2015 UWMP. The maximum annual water supply results are presented in Table 3.15-17 beginning with "current" conditions (recognized as 2016, the first year with surface water contract use)[14] and continuing with 5-year increments from

[14] This period was chosen to represent the "current" condition because of the surface supply addition. It is recognized that the drought impacts reduced water use over the current normal use; thus, the current groundwater portion of supplies was conservatively approximated at 4,000 AF, slightly higher than projected.

2015 through 2040. While the analysis at various intervals before build-out is important, the most critical projection for the sufficiency analysis occurs beyond 2030 when build-out is projected in the 2015 UWMP. This analysis assumes that the proposed project is fully constructed, well before the City's build-out.

TABLE 3.15-17: MAXIMUM ANNUAL WATER SUPPLY AVAILABILITY

SURFACE WATER AND GROUNDWATER	*ESTIMATED SUPPLY (AFY)*					
	CURRENT	*2020*	*2025*	*2030*	*2035*	*2040*
Normal Year						
Surface Water	24,420	24,420	24,420	24,420	24,420	24,420
Groundwater	39,198	39,198	39,198	39,198	39,198	39,198
Normal Year Total	**63,618**	**63,618**	**63,618**	**63,618**	**63,618**	**63,618**
Dry Year						
Surface Water	16,530	16,530	16,530	16,530	16,530	16,530
Groundwater	39,198	39,198	39,198	39,198	39,198	39,198
Dry Year Total	**55,728**	**55,728**	**55,728**	**55,728**	**55,728**	**55,728**

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

As noted in the Existing Setting, the City will only utilize the water supplies that are needed to meet its annual demands. Thus, a depiction of the total available supplies in Table 3.15-17 is misleading in terms of how water will be used. First, as noted in previously, although the City has the physical capacity to pump significant volumes of groundwater, this amount of groundwater will likely never be used – even if the City were to utilize groundwater to meet its entire build-out demands. Thus, characterizing the pumping capacity as the groundwater supply overestimates actual groundwater utility, even though it is technically possible to produce significant volumes of groundwater.

Second, with the development of the WDCWA's surface water supplies, the City anticipates using as much surface water during a water year as can be made available through the new project. Importantly, the City anticipates developing active conjunctive use projects with its surface water supplies so that more surface water can be stored and less naturally-occurring groundwater will be used. All of these efforts to develop additional water supplies are in the planning stages with the WDCWA. For purposes of the Water Supply Assessment sufficiency analysis, however, the proposed project and future planned projects were assumed to only utilize the water assets that are currently available to the City.

The normal year and dry year sufficiency analyses are derived from the water rights and contractual limitations that the WDCWA has established. The key provisions of these water assets, as described previously, are as follows:

- Permit 20281: In normal years, as much as 19,800 AF could be available depending on whether Term 20 is instituted and in what months the water supply is curtailed. In dry years, the direct diversion water supplies under this Permit are assumed to be unavailable from May through October. This reduction in diversion months likely necessitates that the City reduce its overall dependence on the Permit supply to 13,200 AF.

- CVP Settlement Contract: In normal years, 10,000 AF is available to the WDCWA, of which 4,400 AF is available to the City of Davis. In dry years, the total available to WDCWA is reduced to 7,500 AF, of which 3,330 AF is available to the City of Davis.

Table 3.15-18 shows the anticipated water demands for the City as it approaches buildout. These water demands are derived from the City's 2015 UWMP, as well as the anticipated proposed project demands depicted above.

TABLE 3.15-18: CURRENT NORMAL YEAR ANNUAL AND PLANNED FUTURE ANNUAL DEMANDS

SURFACE WATER AND GROUNDWATER	*ESTIMATED DEMAND (AFY)*				
	2020	*2025*	*2030*	*2035*	*2040*
City of Davis Demand	14,227	14,416	13,992	13,992	13,992
Proposed Project Demand	0	236	240	240	240
Total Demand	**14,227**	**240**	**14,232**	**14,232**	**14,232**

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

Conservative modifications to the estimated demands of the proposed project are made to reflect conditions expected during single-dry and multiple dry year events as follows:

- *Single dry year*: Landscape irrigation demands will increase to reflect the generalized earlier start of the landscape irrigation season due to limited rainfall in the single driest year. Since this increase only applies to the outdoor portion of a customer's demand, an adjustment factor of five percent is applied to the total normal-year water demand values to conservatively reflect the expected increase in demand for water.
- *Multiple dry years*: During multiple dry years, demands are also expected to increase during the first in a series of dry years – as discussed above for the single dry year condition. However, during the second and third consecutive dry years, demands also are expected to reflect water shortage contingency plans implemented by the municipal water purveyor.[15] During the second year, the water purveyor is assumed to request a reduction target of 10 percent. The resulting demand, however, only reflects a five percent reduction to accommodate conservatively low participation by customers. During the third year, the purveyor is expected to set a conservation target of 20 percent. For this analysis, the demands in the third year are only reduced by 10 percent to, again, reflect a conservatively low participation rate by the customers. Thus, during multiple dry conditions, demands both increase due to reduced effective precipitation, but also decrease (from the increased demand) to reflect implementation of short-term conservation measures.

15 Though the municipal water purveyor does not exist yet for the Proposed Project, this WSA assumes that whatever purveyor is established will develop a water shortage contingency plan to address drought conditions.

Table 3.15-19 shows the anticipated dry year water demands for the City as it approaches buildout. These water demands are derived from the City's 2015 UWMP as well as the anticipated proposed project demands with the dry year impacts, as described above.

TABLE 3.15-19: CURRENT ANNUAL DEMANDS AND PLANNED FUTURE ANNUAL DEMANDS FOR SINGLE-DRY AND MULTIPLE-DRY YEARS

City of Davis		*Estimated Water Demand (AFY)*				
		2020	*2025*	*2030*	*2035*	*2040*
Single-Dry / Multi-Dry Year 1	City of Davis Demand	14,938	15,137	14,692	14,692	14,692
	Proposed Project	0	224	228	228	228
	Total Demand	**14,938**	**15,361**	**14,920**	**14,920**	**14,920**
Multi-Dry Year 2	City of Davis Demand	12,804	12,974	12,593	12,593	12,593
	Proposed Project	0	212	216	216	216
	Total Demand	**12,804**	**13,186**	**12,809**	**12,809**	**12,809**
Multi-Dry Year 3	City of Davis Demand	11,382	11,533	11,194	11,194	11,194
	Proposed Project	0	212	216	216	216
	Total Demand	**11,382**	**11,745**	**11,410**	**11,410**	**11,410**

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

CITY OF DAVIS WATER SUPPLY SUFFICIENCY ANALYSIS

The following section details the sufficiency of the City of Davis' water supplies as compared with total demands for normal, single-dry, and multi-dry year periods. Tables 3.15-2 and 3.15-21 provide the sufficiency analysis conclusions.

TABLE 3.15-20: WATER DEMAND AND SUPPLY COMPARISONS DURING NORMAL, SINGLE-DRY, AND MULTIPLE-DRY YEARS

Year	*Projected Baseline Demand (AF)*			*Hydrologic Year Type*	*Water Supplies (AF)*				
	City of Davis	*WDAAC*	*Total*		*Permit*	*CVP*	*Surface Water Used*	*Ground-water Supply*	*Ground-water Used*
2020	14,227	0	14,227	Normal	19,980	4,440	9,763	39,918	4,464
				Single Dry	13,200	3,330	8,761	39,918	6,177
				Multiple Dry Yr. 3	13,200	3,330	7,788	39,918	3,594
2025	14,416	236	14,663	Normal	19,980	4,440	9,851	39,918	4,812
				Single Dry	13,200	3,330	8,824	39,918	6,572
				Multiple Dry Yr. 3	13,200	3,330	7,908	39,918	3,823
2030	13,992	240	14,226	Normal	19,980	4,440	9,794	39,918	4,432
				Single Dry	13,200	3,330	8,761	39,918	6,177
				Multiple Dry Yr. 3	13,200	3,330	7,788	39,918	3,593
2035	13,992	240	14,226	Normal	19,980	4,440	9,794	39,918	4,432
				Single Dry	13,200	3,330	8,761	39,918	6,177
				Multiple Dry Yr. 3	13,200	3,330	7,788	39,918	3,593
2040	13,992	240	14,226	Normal	19,980	4,440	9,794	39,918	4,432
				Single Dry	13,200	3,330	8,761	39,918	6,177
				Multiple Dry Yr. 3	13,200	3,330	7,788	39,918	3,593

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

TABLE 3.15-21: WATER SUPPLY SUFFICIENCY AT BUILD-OUT

MONTH	DEMAND			SUPPLY			SURPLUS		
	NORMAL	SINGLE-DRY	MULTI-DRY	NORMAL	SINGLE-DRY	MULTI-DRY	NORMAL	SINGLE-DRY	MULTI-DRY
Jan	619	650	620	5,529	5,529	5,529	4,910	4,879	4,909
Feb	654	687	582	5,207	5,207	5,207	4,553	4,520	4,625
Mar	970	1,018	834	5,529	5,529	5,529	4,559	4,511	4,695
Apr	1,073	1,127	908	5,422	5,422	5,422	4,349	4,295	4,514
May	1,485	1,559	1,091	5,529	3,329	3,329	4,044	1,770	2,238
Jun	1,649	1,731	1,195	5,422	4,055	4,055	3,773	2,324	2,859
Jul	1,777	1,865	1,298	4,883	4,495	4,495	3,106	2,629	3,197
Aug	1,693	1,777	1,304	4,659	3,496	3,496	2,966	1,718	2,192
Sept	1,420	1,491	1,245	4,776	4,388	4,388	3,356	2,897	3,143
Oct	1,317	1,383	1,093	5,529	3,329	3,329	4,212	1,946	2,236
Nov	906	951	659	5,422	5,422	5,422	4,516	4,471	4,763
Dec	665	698	551	5,529	5,529	5,529	4,864	4,831	4,978
Total	**14,226**	**14,937**	**11,381**	**63,436**	**55,728**	**55,728**	**49,210**	**40,791**	**44,347**

SOURCE: SB 610 WATER SUPPLY ASSESSMENT, TULLY & YOUNG, AUGUST 2017.

In short, the City has both surplus surface water and groundwater during all months of usage during normal, single dry, and multiple-dry years. As noted previously, the anticipated source used to meet monthly demands may vary based upon the City's desire to conjunctively manage its water assets to maximize their utility.

WATER SYSTEM CAPACITY

Based on the comparison of contracted rights and projected citywide demands, there is ample water supply for the City to reach its projected build-out. Rights only entitle the City to the water, and infrastructure is needed to actually deliver supplies to the proposed project. Primary infrastructure includes treatment, pumping, and piping.

Existing Treatment Plant Capacity

The new WDCWA Treatment Plant was built to supply water to Woodland, Davis, and UC Davis. All designs are recent and capacities were designed to serve the cities and UC Davis as they currently exist. As the proposed project site is located on land that was accounted for in the 2015 UWMP, it is safe to assume that adequate surface water capacity exists to serve the proposed project.

Groundwater System Capacity

As discussed previously, the City has an ample supply of water to accommodate future development. With the transition to surface water, there is an abundance of groundwater well capacity. This system can provide more water for use in curtailment periods as well as peak demands that will likely ever be needed. The City will be optimizing the groundwater system to minimize maintenance costs, maintain appropriate backup supplies, and maintaining water quality in the system.

System Infrastructure Capacity

The proposed project will finance all needed infrastructure upgrades necessary to serve on-site metered demands and meet fire-flow requirements. The City of Davis operates an extensive Innovyze-based water model. Further, the City is currently installing advanced metering infrastructure which will allow for improved system analysis. The proposed project will rely on information from the City's system model to ensure sufficient capacity.

NON-POTABLE SOURCE SCENARIO

An existing agricultural supply well that was previously used for irrigation on the property is located on the southwest portion of the project site. The project proposes to convert this agricultural supply well to an irrigation well to supply non-potable supplies for landscape irrigation needs on-site. This is proposed to offset the high costs of treated water with the lower cost of simply pumping underlying groundwater.

The well and landscape water system would be owned and operated by a homeowners association or other type of community governance. Purple pipe would be used to ensure no accidental cross connections are made. Well water in the area is generally of potable quality, so body contact does not carry the same risk as recycled water; however, no drinking level monitoring will be conducted. The total impact to the supply availability may not differ even if this groundwater well is used because the City already accounts for the groundwater usage in its estimation of available supply. Development of a new well does not necessarily equate to an additional supply but simply may offset one source of supply for another source of supply from the same groundwater source.

Potential Impacts to Other Neighboring Groundwater Users

An existing neighborhood is located north of the project site which is served by groundwater; these residents have expressed concern over impacts to their water rights by use of well water to serve the proposed project. There are no likely risks or impacts to the existing users based on a number of factors, primarily being the City's shift to surface water supplies. Additionally, the rights of these water users are juxtaposed against the appropriation of the proposed project so effort and money would not be spent on the non-potable system without secure knowledge that water would be available.

As a reference point, if the parcel had historically been irrigated as part of an agricultural production operation, groundwater use per acre would have been much higher than the proposed use. As defined in Table 3.15-16, the proposed maximum outdoor demands are approximately 110 AFY. Typical agricultural demands are between 3 and 5 AFY per acre; thus, the proposed 75-acre site would have been using at least double what the proposed project is expected to require.

In 2016, the WDCWA Treatment Plant came online and began to serve surface water to the City. With the treatment plant in operation, well pumping has declined by over 10 MGD. While most of the large City production wells are deeper, some are in the same zone as residential wells in the area north of the City. With the City pumping seriously curtailed, it is anticipated that groundwater levels will rebound in and around the City. This reduction in pumping by thousands of AF is much more likely to benefit the groundwater users to the north than the proposed pumping of just over 100 AF.

CONCLUSION

Based on the analysis described above, the City's existing water supplies are sufficient to meet the City's existing and projected future potable water demands, including those future potable water demands associated with the proposed project, to the year 2040 under all hydrologic conditions (normal years and dry years). The expected water demand of approximately 216 AFY is small in comparison to the existing and projected year 2040 potable water supply surpluses. Additionally, the water demand resulting from development and operation of the project would be significantly lower than what was assumed for the project site in the City's 2015 UWMP. Therefore, the proposed project would result in a ***less than significant*** impact to water supplies, and no new water production, treatment or extraction facilities would be required to serve the proposed project. No mitigation is required.

3.15.3 SOLID WASTE

EXISTING SETTING

Solid waste collection and disposal in the City of Davis (including the project site) is provided by Davis Waste Removal, Inc. (DWR). DWR has a drop-off and buy-back center and provides residential curbside, apartment, and business collection services. In addition to the weekly garbage service, DWR provides green waste and recycling pickup and street sweeping service. Recoverable items include: mixed paper, glass, aluminum cans, steel and tin cans, some plastics, corrugated cardboard, yard waste, and used motor oil.

Local solid waste management planning is governed by the Integrated Waste Management Act of 1989. The Act established strict mandates for local agencies to achieve a 25 percent reduction in solid waste disposed of by 1995 and a 50 percent reduction by the year 2000. Each city is required to prepare, adopt, and submit to the County a Source Reduction and Recycling Element (SRRE). Counties must also prepare a SRRE for unincorporated areas.

Non-recyclable waste generated by the City of Davis is disposed of at the 722-acre Yolo County Central Landfill, which is located off County Road 28H near its intersection with County Road 104. The landfill is owned and operated by the Yolo County Department of Planning and Public Works. As described in the Yolo County General Plan Draft EIR (Yolo County, April 2009), the Central Landfill is a Class III solid waste landfill which provides comprehensive solid waste and recycling services, including municipal solid waste, recycling, salvaging, household hazardous waste, and business hazardous waste. Permitted maximum disposal ("throughput") at the Central Landfill is 1,800 tons per day. At the current waste disposal rate (also assuming a diversion rate of 70 percent, no large increase of waste from outside the County, and future waste cells operated as bioreactors described below) the landfill's closure date is estimated to be January 1, 2081. The Central Landfill has several unique features and operations that distinguish it from typical waste management facilities and has been recognized by the U.S. Environmental Protection Agency for its innovative approach to reducing its impact on the environment, as follows:

- Bioreactor. A portion of the landfill is operated as a bioreactor, where the decomposition of waste is accelerated by adding liquid and recirculating the leachate. This process enhances the growth of microbes that promote solid waste decomposition, and as a result, landfill waste can be decomposed and stabilized within 10 to 15 years rather than decades. Benefits of bioreactor operations include: an increased rate of gas generation and energy production which allows increased gas collection efficiency and a reduction in greenhouse gas emissions; reduced pollution; extended use of the landfill facility by refilling stabilized areas; and reduced closure maintenance costs.

- Phytoremediation. The area surrounding the landfill has a high groundwater table. In order to keep the groundwater table low, groundwater is pumped from 16 wells along the northern landfill boundary. Shallow groundwater in this area of the valley contains boron and selenium. These minerals are naturally-occurring but the amount in the water is too high for the water to be released into the adjacent Willow Slough bypass. As a result, the landfill uses phytoremediation (treating water with plant growth) to reduce the boron and selenium concentrations present in the groundwater. The water is stored and used to grow 45-acre parcels of kenaf, a hibiscus relative, which is known to accumulate boron and selenium. The kenaf is harvested and used as alternative daily cover at the landfill in place of soil.

- Energy Production. A landfill gas-to-energy plant is located in the southwest portion of the landfill. The plant owner leases rights to the landfill gas and the energy production rights from the County under an agreement, and subcontracts with Minnesota Methane to operate the energy plant. The plant produces a maximum of 3,860 kilowatts per hour.

REGULATORY SETTING - SOLID WASTE

California's Integrated Waste Management Act of 1989 (AB 939)

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. In order to achieve this goal, AB 939 requires that each City and County prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 939 also established requirements for cities and counties to develop and implement plans for the safe management of household hazardous wastes. In order to achieve this goal, AB 939 requires that each city and county prepare and submit a Household Hazardous Waste Element.

75 Percent Solid Waste Diversion

AB 341 requires CalRecycle to issue a report to the Legislature that includes strategies and recommendations that would enable the state to recycle 75 percent of the solid waste generated in the state by January 1, 2020, requires businesses that meet specified thresholds in the bill to arrange for recycling services by July 1, 2012, and also streamlines various regulatory processes.

Construction and Demolition Waste Materials Diversion

Senate Bill 1374 (SB 1374), Construction and Demolition Waste Materials Diversion Requirements, requires that jurisdictions summarize their progress realized in diverting construction and demolition waste from the waste stream in their annual AB 939 reports. SB 1374 required the California Integrated Waste Management Board (CIWMB, which is now CalRecycle) to adopt a model construction and demolition ordinance for voluntary implementation by local jurisdictions.

California Green Building Standards Code (CALGreen)

CALGreen requires the diversion of at least 50 percent of the construction waste generated during most new construction projects (CALGreen Sections 4.408 and 5.408) and some additions and alterations to nonresidential building projects (CALGreen Section 5.713).

City of Davis Municipal Code, Chapter 32

Chapter 32 of the City's Municipal Code regulates the management of garbage, recyclables, and other wastes. Chapter 32 sets forth solid waste collection and disposal requirements for residential and commercial customers, and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste. Article 32.04 establishes the Diversion of Construction and Demolition Debris Ordinance, which requires projects necessitating a building permit, with exceptions as set forth in the ordinance, to divert fifty percent of construction and demolition debris generated from applicable construction, remodeling, or demolition projects from disposal to landfills through recycling, reuse and diversion programs.

City of Davis General Plan

The City of Davis General Plan contains the following goals and policies that are relevant to solid waste disposal and recycling:

Goal MAT 1. Enhance the quality of the environment by conserving resources and minimizing waste by reducing, reusing, recycling, and re-buying.

> **Policy MAT 1.1.** Promote reduced consumption of non-renewable resources.

Goal MAT 2. Provide adequate waste disposal capacity for Davis.

> **Policy MAT 2.1**. Plan for the long-term waste disposal needs of Davis.

THRESHOLDS OF SIGNIFICANCE - SOLID WASTE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a less than significant impact on the environment associated with Utilities if it will:

1. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
2. Comply with federal, State, and local statutes and regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact 3.15-3: The project may not be served by a permitted landfill with sufficient capacity to meet the solid waste disposal needs of the project (Less than Significant)

Average solid waste generation rates are calculated using a per capita factor derived by dividing total solid waste by the current population. Although done on a per capita basis, this rate reflects all land uses within the City. The “per person generation rate” in the City was estimated at 3.12 pounds per day in the 2000 General Plan Update EIR (p. 5C-9).

The proposed project would be a residential development, resulting in the addition of up to 560 residential units (up to 483 age-restricted units and up to 77 non-age restricted units) in total. This would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[16] It is noted that, because 86% of the proposed units would be age-restricted, the actual population growth resulting from the project would likely be significantly lower. For example, the average persons per household in California for homes with a household head that is 55 years or older is 1.87. The maximum population associated with the project, 1,467 persons, utilizes the persons per household rate for the City of Davis of 2.62 persons.

Using the General Plan Update EIR’s generation rate of 3.12 pounds per person per day, the proposed project would generate approximately 4,577 lbs/day of solid waste from the proposed residential uses. This is equivalent to a total of approximately 2.29 tons/day of solid waste. Additionally, as described in Section 2.0, current plans for the proposed mixed use area include an 8,000 square foot (sf) health club and a 5,000 sf “fast casual” restaurant. In order to determine solid waste generation from the proposed health club, a rate of 5.0 lbs/day, per 1,000 sf was used. In order to determine solid waste generation from the proposed restaurant, a rate of 0.005 lbs/day, per sf was used. These waste generation rates are consistent with the guidance provided by the California Department of Recycling and Resources Recovery for commercial uses. Therefore, the non-residential components of the project would generate up to 65 lbs/day (40 lbs/day from the health club and 25 lbs per day from the restaurant) of solid waste. Total solid waste generated by all aspects of the project would be 4,642 lbs/day, or approximately 2.32 tons/day.

The proposed project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. Specifically, Chapter 32 of the City’s Municipal Code regulates the management of garbage, recyclables, and other wastes. Chapter 32 sets forth solid waste collection and disposal requirements for residential and commercial customers, and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste.

[16] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

As previously described, permitted maximum disposal at the Central Landfill is 1,800 tons per day. The total permitted capacity of the landfill is 49,035,200 cubic yards, which is expected to accommodate an operational life of about 68 years (January 1, 2081). The addition of the volume of 2.32 tons/day of solid waste generated by the proposed project to the Yolo County Central Landfill would not exceed the landfill's remaining capacity. This is a ***less than significant*** impact.

CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for cumulative impacts and irreversible impacts associated with the West Davis Active Adult Community Project. As described below, this section also includes an analysis of the project's growth inducing impacts.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

…the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

   (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

   (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CUMULATIVE SETTING

The cumulative analysis for this EIR is based on the City of Davis General Plan (May 2001) and the Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School (General Plan Update EIR) (January 2000). In addition to the cumulative growth projections provided by these documents, the cumulative analysis also used the following list of probable future projects within the City of Davis to determine cumulative growth in the area:

- **Paso Fino**: 6 single-family units
- **2860 West Covell Boulevard Building**: 8,657 square feet of retail
- **Grande Subdivision**: 41 single-family units
- **Chiles Ranch**: 96 single-family units
- **University Retirement Community (URC) expansion**: 17 beds of continuing care
- **Sterling Apartments**: 198 multi-family units
- **Cannery Park (Remainder of Buildout)**: 86,250 square feet of retail, 49,800 square feet of office, 22,000 square feet of medical-office, 311 single-family dwelling units, and 264 multi-family units.
- **Sutter Hospital Expansion** – Based on discussions with Sutter Davis Hospital representatives, a net increase of 100,000 square feet of medical-office space was assumed on the hospital property, which is located directly east of the project site.
- **UC Davis Long Range Development Plan (LRDP)** – According to the 2017 Notice of Preparation for the update to the LRDP (dated January 4, 2017), the UC Davis campus is assumed to have a net increase of 6,229 students and 2,000 employees between existing conditions and the 2027-2028 academic year. The LRDP NOP makes no mention of further growth beyond the 2027-2028 year.

The cumulative traffic scenarios and assumptions are described in greater detail in Section 3.14. Cumulative project impacts are addressed and summarized below.

CUMULATIVE EFFECTS OF THE PROJECT

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Consistent with state CEQA Guidelines §15130(a), the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. According to §15130(b) of the State CEQA Guidelines, in part, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

The goal of analysis of cumulative impacts is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the proposed project itself would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. (See state CEQA Guidelines §§15130[a]-[b], §15355[b], §15064[h], §15065[c]; Communities for a Better Environment v. California Resources Agency [2002] 103 Cal.App.4th 98, 120.) In other words, the required analysis first creates a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself, and then determines whether the proposed project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses a combination of the list approach and the projection approach for the cumulative analysis and considers the development anticipated to occur upon buildout of the Davis General Plan in addition to the aforementioned planning projects (Paso Fino, 2860 West Covell Boulevard Building, Grande Subdivision, Chiles Ranch, URC expansion, Sterling Apartments, Cannery (remainder of buildout), and Sutter Hospital Expansion) that are presumed not to have been included within the projections provided by the Davis General Plan.

Project Assumptions

The project's contribution to environmental impacts under cumulative conditions is based on full buildout of the proposed project. See Chapter 2.0, Project Description, for a complete description of the proposed project.

Cumulative Impacts

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic, noise and air quality (the latter two of which are associated with traffic volumes), which may be quantified by estimating future traffic patterns, pollutant emitters, etc. and determining the combined effects that may result. In consideration of the cumulative scenario described above, the proposed project may result in the following cumulative impacts.

AESTHETICS AND VISUAL RESOURCES

Impact 4.1: The project may contribute to the cumulative degradation of the existing visual character of the region (Cumulatively Considerable and Significant and Unavoidable)

The cumulative setting for aesthetics is the Davis Planning Area, as defined in the City of Davis General Plan. Under cumulative conditions, buildout of the Davis General Plan would result in changes to the visual character of the Davis Planning Area and result in impacts to localized views as new development occurs within the City and the Planning Area.

There are no designated State Scenic Highways in the vicinity of the project site. There are no highways in Yolo County listed as Designated Scenic Highway by the Caltrans Scenic Highway Mapping System.

As described in Section 3.1, Aesthetics, the project would introduce new sources of nighttime lighting, which may result in increased nighttime lighting in the project vicinity. The project will be required to comply with the City's Outdoor Lighting Control Ordinance which includes provision of a lighting plan as part of the construction documents as a standard City requirement. Project development could result in glare impacts; however, with implementation of Mitigation Measure 3.1-1, impacts related to cumulative light and glare would be ***less than cumulatively considerable***.

Implementation of the proposed project would change the visual character of the project site by introducing new residential and mixed uses to an undeveloped site. The project site has been previously used for agricultural uses, and is currently designated for agricultural uses by the Davis General Plan. As described in Section 3.1, project implementation would result in significant adverse impacts to the visual character or quality of the site. Development of the proposed project, in addition to other future projects in the area, would change the existing visual and scenic qualities of the City. There are no mitigation measures that could reduce this impact except a ceasing of all future development, which is not a feasible option. As such, impacts related to the existing visual character would be ***cumulatively considerable*** and ***significant and unavoidable***.

AGRICULTURAL RESOURCES

Impact 4.2: The project may contribute to cumulative impacts on agricultural land and uses (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.2, the project site is zoned for agricultural uses by the County. The project site is also currently designated for agricultural uses by the Davis General Plan Land Use Map. There are no existing agricultural operations or activities on the project site. The entire project site is designated as Farmland of Local Importance by the Farmland Mapping and Monitoring Program. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

While the project site is designated as Farmland of Local Importance by the California Department of Conservation, the project site does contain prime soils as defined by the Yolo County Agricultural Conservation and Mitigation Program. Brentwood silty clay loam (BrA) and Marvin silty clay loam (Mf) (if irrigated) both qualify as prime agricultural land under the Yolo County Agricultural Conservation and Mitigation Program.

As further described in Section 3.2, implementation of the proposed project may result in indirect pressure to convert agricultural lands to a non-agricultural use or conflict with agricultural operations other than the aerial application of pesticides. The project has the potential to impact adjacent pesticide application due to the County Agricultural Commissioner’s Conditions Covering the Use of Restricted Materials guidance. According to the guidance, aerial application of “danger” labeled pesticides requires a 500-foot buffer from environmentally sensitive areas. The proposed project includes a 150-foot AG buffer. However, 350 feet of the required 500-foot setback would need to encroach onto the adjacent agricultural land. Therefore, if aerial application of pesticides is deemed necessary on the adjacent farmlands, the proposed project would indirectly disrupt farming operations on the adjacent property. Overall, cumulative impacts on agricultural land and uses would be ***cumulatively considerable*** and ***significant and unavoidable***.

AIR QUALITY

Impact 4.3: The project may contribute to cumulative impacts on the region's air quality (Cumulatively Considerable and Significant and Unavoidable)

The cumulative setting for air quality is the Davis Planning Area, as defined by the City of Davis General Plan, combined with the Paso Fino, 2860 West Covell Boulevard Building, Grande Subdivision, Chiles Ranch, URC expansion, Sterling Apartments, Cannery (remainder of buildout) projects.

Cumulative Operational Emissions: Yolo County has a state designation of Nonattainment for ozone, particulate matter (PM_{10} and $PM_{2.5}$), and is either Unclassified or Attainment for all other criteria pollutants. Yolo County has a national designation of Nonattainment for ozone, and PM_{10}, and Partial Nonattainment for $PM_{2.5}$. The County is designated either attainment or unclassified for all other criteria pollutants. Operational activities would increase emissions of reactive organic gasses (ROG), nitric oxide (NOx), carbon monoxide (CO), and PM_{10}. The emissions model showed that ROG, NO_X, and PM_{10} emissions are projected to exceed the Yolo-Solano Air Quality Management District (YSAQMD) threshold of significance. Mitigation Measure 3.3-1 is provided to reduce project-related operational emissions (area source and mobile source) for ROG, NO_X, and PM_{10}. The mitigation would bring operational emissions of ROG below the YSAQMD threshold of significance, but P PM_{10} and NO_x would remain above the threshold. With incorporation of Mitigation Measure 3.3-1, the proposed project was determined to have a significant impact to operational emissions. As such, the proposed project would have a ***cumulatively considerable*** and ***significant and unavoidable*** impact on operational emissions.

Cumulative Construction Emissions: Construction activities would increase emissions of ROG and NOx (Ozone precursors), CO, and PM_{10}. The emissions model showed that ROG, NOx and PM_{10} emissions are projected to fall below the YSAQMD thresholds of significance. Additionally, with the implementation of the YSAQMD-recommended dust mitigation, the PM_{10} emissions from construction activities would be reduced by approximately 85%. Therefore, the proposed project was determined to have a less than significant impact relative to construction emissions. Implementation of the proposed project would have a ***less than cumulatively considerable*** impact from construction emissions.

Cumulative CO Emissions: The region is designated attainment for CO, which means that there are low background concentrations of CO. The screening-level of analysis found that there are not any risks for CO hotspots because there is no existing or future street or intersection with substantial traffic volumes that is forecast to operate at an unacceptable LOS F or worse with the recommended mitigation. Individually, the proposed project was determined to have a less than significant impact relative to CO emissions. Implementation of the proposed project would have a ***less than cumulatively considerable*** impact from CO emissions.

Cumulative TAC Emissions-Sensitive Receptors: The proposed project does not include any of the TAC source categories listed in the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB, 2007). The proposed project does not include the long-term operation of any other major onsite stationary sources of TACs. In addition, no major stationary sources of TACs have been identified in the immediate vicinity of the project site. The project site is not located adjacent to a freeway or high traffic road that is considered a significant source of mobile source air toxics. The closest traffic facility that poses a risk from mobile source air toxics is State Route (SR) 113, located approximately 1,300 feet to the east of the project site. Implementation of the proposed project would not be anticipated to result in an increased exposure of sensitive receptors to localized concentrations of TACs that would exceed applicable standards. Individually, the proposed project was determined to have a less than significant impact relative to TACs on sensitive receptors. Implementation of the proposed project would have a ***less than cumulatively considerable*** impact from to TACs on sensitive receptors.

Cumulative Odors-Sensitive Receptors: The two closest producers of odors include the Yolo County Landfill located northwest of the County Road 104 and County Road 28H intersection, and the Davis Waste Water Treatment facility located on County Road 28H just east of County Road 105. These facilities are located 4.66 and 5.60 miles away from the project site, respectively. These distances are beyond the screening distance of one mile that is recommended by the YSAQMD. There are no other known producers of odors within vicinity of the project site. Individually, the proposed project was determined to have a less than significant impact relative to objectionable odors on sensitive receptors. Implementation of the proposed project would have a ***less than cumulatively considerable*** impact from to objectionable odors on sensitive receptors.

Cumulative Dust Emissions-Sensitive Receptors: The region is designated nonattainment for PM_{10}, which is largely attributed to dust. Construction activities would increase dust emissions. The emissions model showed that PM_{10} emissions are not projected to exceed the threshold of significance during construction. Additionally, with the implementation of the YSAQMD recommended dust mitigation requirements, the PM_{10} emissions from construction activities would be reduced to by a further 99% below the unmitigated scenario. Individually, the proposed project was determined to have a less than significant impact relative to construction related dust emissions. Implementation of the proposed project would have a ***less than cumulatively considerable*** impact from dust emissions.

Conclusion: Overall, because operational emissions would be significant, the proposed project would have a ***cumulatively considerable*** and ***significant and unavoidable*** impact.

BIOLOGICAL RESOURCES

Impact 4.4: The project may contribute to the cumulative loss of biological resources including habitats and special status species (Less than Cumulatively Considerable)

The cumulative setting for biological resources includes the City of Davis Planning Area and the greater Yolo County region. Development associated with implementation of the Davis General Plan would contribute to the ongoing loss of natural and agricultural lands in the Davis area, which currently provide habitat for a variety of species. Cumulative development would result in the conversion of existing agricultural habitat to urban uses. The Davis General Plan, in addition to regional, State and federal regulations, includes policies and measures that mitigate impacts to biological resources associated with General Plan buildout. Development outside of Davis in Yolo County, would also be subject to the same regional, State and federal regulations addressing sensitive species. Implementation of regional, State and federal regulations, such as the Endangered Species Act would also minimize risks to sensitive populations and reduce cumulative impacts throughout the region.

As described in Section 3.4, Biological Resources, construction on the project site has the potential to result in impacts to special-status species on the project site. Occurrences of special-status species have been documents on the project site. As described in Section 3.4, mitigation measures will be implemented to ensure that construction activities do not adversely impact biological resources or special-status species. Project implementation would not result in any indirect or offsite impacts to biological resources. This is considered a ***less than cumulatively considerable*** impact.

CULTURAL AND TRIBAL RESOURCES

Impact 4.5: The project may contribute to cumulative impacts on known and undiscovered cultural resources (Less than Cumulatively Considerable)

The cumulative setting for cultural resources includes the City of Davis Planning Area and the surrounding areas of Yolo County. Cumulative development anticipated in Davis and the greater Yolo County area, including growth projected by adopted general plans, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed in Section 3.5, Cultural and Tribal Resources, there are two known cultural or historic resources present on the project site: site PA-17-22 and P-57-000138 (CA-YOL-173H). Site PA-17-22, an above ground well pump, concrete standpipe, and scatter of sheet metal and concrete fragments located near the southwestern corner of the project area, is not associated with important events or people, nor is it distinctive in any way. This feature is not eligible for the CRHR. Site P-57-000138 (CA-YOL-173H) is no longer present except for two rows of introduced cypress and Italian cypress trees. Removal of any on-site trees on the project site is subject to the City's Tree Ordinance and would be addressed by a standard City condition of approval which requires preparation of a Tree Protection Plan for trees being preserved and approval of Tree Modification Permit for trees being removed with standard measures for tree replacement or payment for the appraised value of the trees.

Mitigation measures provided in Section 3.5 would require the proposed project to evaluate any resources discovered during construction activities. Any significant finds would be required to be preserved, either through relocation or documentation and the project is not anticipated to considerably contribute to a significant reduction in cultural resources. Therefore, the project would have a ***less than cumulatively considerable*** contribution to impacts to cultural resources and no further mitigation is required.

GEOLOGY AND SOILS

Impact 4.6: The project may contribute to cumulative impacts on geologic and soils characteristics (Less than Cumulatively Considerable)

The cumulative setting area for geology and soils includes the City of Davis Planning Area. As discussed in Section 3.6, Geology and Soils, implementation of the proposed project would not result in any significant impacts related to this environmental topic. Geologic and soils impacts tend to be site-specific and project-specific. Implementation of the proposed project would not result in increased risks or hazards related to geologic conditions in the cumulative setting area, nor would it result in any off-site or indirect impacts. Additionally, as described in Section 3.6, mineral resources were not found to be a significant issue for the City of Davis and would therefore have no impact related to mineral resources. This is considered to be a ***less than cumulatively considerable*** impact, and no further mitigation is required.

GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY

Impact 4.7: The project may contribute to cumulative impacts on greenhouse gases and climate change (Less than Cumulatively Considerable)

The cumulative setting for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

The analysis of GHGs and climate change included in Section 3.7 was conducted at the cumulative level, as described in greater detail in that EIR section. As described in Section 3.7, the proposed project is consistent with statewide, regional, and local planning efforts to reduce GHG emissions. The project is consistent with the City of Davis CAAP, and the City's GHG Standards for New Residential Projects. As required by Mitigation Measure 3.7-1, the proposed project must be designed to comply with Tier 1 of the 2016 CalGreen Code, which would assist the City of Davis in meeting their adopted GHG reduction targets. Additionally, the proposed project would have a less than significant impact related to the use of inefficient, wasteful, or unnecessary use of energy, and the development of other projects would not cause a cumulative impact to the use of energy. This is considered to be a ***less than cumulatively considerable*** impact, and no further mitigation is required.

HAZARDS AND HAZARDOUS MATERIALS

Impact 4.8: The project may contribute to cumulative impacts related to hazards and hazardous materials (Less than Cumulatively Considerable)

The cumulative setting area for hazards and hazardous materials is the City of Davis Planning Area. As discussed in Section 3.8, Hazards and Hazardous Materials, implementation of the proposed project would not result in any significant impacts related to this environmental topic. Hazard-related impacts tend to be site-specific and project-specific. Implementation of the proposed project would not result in increased risks of hazards in the cumulative setting area, nor would it result in any off-site or indirect impacts. Mitigation measures have been included to reduce the risk of on-site hazards associated with prior uses on the project site, and hazards that could occur during construction activities. This is considered to be a ***less than cumulatively considerable*** impact, and no further mitigation is required.

HYDROLOGY AND WATER QUALITY

Impact 4.9: The project may contribute to cumulative increases in peak stormwater runoff flows from the project site (Less than Cumulatively Considerable)

Implementation of the proposed project would add impervious surfaces on the project site, which could increase peak stormwater runoff rates and volumes on and downstream of the site. However, the proposed project includes an extensive system of on-site stormwater collection, treatment and retention facilities to accommodate the increased stormwater flows that would originate on and off-site.

As indicated on page 5G-15 of the General Plan Update EIR, a proposed land use would be considered to have a significant impact if the new land use would "result in a substantial increase in the rate or amount of surface runoff in a manner that would result in on- or off-site flooding; or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage facilities." The effect of the proposed project plus other development in the project area, leading to buildout of the General Plan, could be to increase stormwater flows to a degree that would exceed existing drainage system capacity and cause flooding downstream. As described in greater detail in Section 3.9, the proposed project would include a stormwater detention system that would ensure that the proposed project would not result in a cumulatively considerable incremental increase in stormwater flows that would result in flooding downstream of the project site. Furthermore, future development within the City of Davis would be required to comply with City drainage plans and polices to ensure that each project would not cause a significant negative impact to other drainage facilities in the watershed. Permanent storm water control measures would be reviewed by the City Public Works Department for consistency prior to implementation of the project. Therefore, a ***less than cumulatively considerable*** impact would result from implementation of the proposed project, following the implementation of the mitigation measures included in Section 3.9.

Impact 4.10: The project may contribute to cumulative impacts related to degradation of water quality (Less than Cumulatively Considerable)

Construction of the proposed project could contribute to a cumulative increase in urban pollutant loading, which would adversely affect water quality. Cumulative development in the Davis area, including the proposed project, could also result in increased impervious surfaces that could increase the rate and amount of runoff, thereby potentially adversely affecting existing surface water quality through increased erosion and sedimentation. The primary sources of water pollution include: runoff from roadways and parking lots; runoff from landscaping areas; non-stormwater connections to the drainage system; accidental spills; and illegal dumping. Runoff from roadway and parking lots could contain oil, grease, and heavy metals; additionally, runoff from landscaped areas could contain elevated concentrations of nutrients, fertilizers, and pesticides.

The mitigation measures for the project-specific impacts identified in Section 3.9 would reduce the pollutants in the stormwater from this project to a level lower than in the runoff from most developed areas within the Davis area, because most of these areas were constructed before stormwater quality BMPs were required. Additionally, future development projects would be required to implement BMPs comparable to the BMPs identified in this project. However, without implementation of proper BMPs, this project and other future projects would result in a continued decrease in the water quality of the local Davis natural drainage system. Implementation of Mitigation Measures 3.6-1 (Section 3.6, Geology and Soils) and 3.9-2 would ensure that the project results in a ***less than cumulatively considerable*** impact to surface water quality.

LAND USE

Impact 4.11: The project may contribute to cumulative impacts on communities and local land uses (Less than Cumulatively Considerable)

The cumulative setting for land use and planning impacts includes the City of Davis and the Davis Planning Area, as well the Paso Fino, 2860 West Covell Boulevard Building, Grande Subdivision, Chiles Ranch, URC expansion, Sterling Apartments, Cannery Park (remainder of buildout) projects. Cumulative land use and planning impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and project-specific. Subsequent projects allowed by the Davis General Plan may result in site specific land use conflicts; however, these effects are not anticipated to be cumulatively considerable. Prior to project authorization, the City of Davis would amend the General Plan to designate the site for the land uses proposed by the project applicant. Additionally, the project site would be pre-zoned as Planned Development (PD). The proposed PD would provide for the range of uses and development standards consistent with the project as described in Chapter 2.0 and would ensure that all applicable zoning requirements are met. As part of the project approval process, the project applicant will be required to submit a final development plan consistent with the requirements of Article 40.22 for review and approval of the City Council through a public hearing process, thereby eliminating any potential zoning code impacts.

Land use conflicts are site-specific and would not result in a cumulative impact. Incompatibility issues are generally addressed and mitigated on a project-by-project basis. The proposed project has been designed to be consistent with applicable aspects of the City's General Plan, and as described in this EIR, the project would not be incompatible with any of the surrounding land uses. The project's contribution to cumulative land use impacts is ***less than cumulatively considerable***, and no further mitigation is required.

NOISE

Impact 4.12: The project may contribute to the cumulative exposure of existing and future noise- sensitive land uses or to increased noise resulting from cumulative development (Less than Cumulatively Considerable)

The cumulative context for noise impacts associated with the proposed project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total construction noise impact of the proposed project would not be a substantial increase to the existing future noise environment.

As discussed in Impact 3.11-5 in Section 3.11, Noise and Vibration, the on-site noise sources generated by the Activity and Wellness Center area include mechanical equipment, parking lot use, and swimming pool activities. Additional on-site noise sources are associated with activity at the proposed dog exercise area. Heating, air conditioning, and ventilation (HVAC) noise levels would be approximately 35 dBA L_{eq}, or less, at the nearest sensitive receptor. Additionally, during the busiest hour of operations, noise levels resulting from the swimming pool activities would be 60 dB L_{eq}. Further, during the busiest hour of the day, noise levels resulting from the dog exercise area would be 53 dB L_{eq}. These uses are considered to be amenities to the project site, and will not exceed noise level standards at any existing adjacent uses. Overall, operational noise associated with the proposed HVAC system, swimming pool, and dog park would not be anticipated to exceed the noise levels set forth in the City of Davis Noise Ordinance, and impacts related to operational noise were determined to be less than significant with mitigation.

Based upon the site plan, and the predicted traffic noise levels shown in Table 3.11-9, the overall predicted traffic noise levels will not exceed 65.1 dB L_{dn}/CNEL, which falls within the City of Davis "Conditionally Acceptable" noise level standard of 60 to 70 dB L_{dn}/CNEL. The highest predicted traffic noise levels are predicted along Covell Boulevard Court under the Cumulative Plus Project condition (65.1 dB). However, this increase is not considered a significant increase in traffic noise levels (+0.2 dB). At no point would the project result in an exceedance of the City of Davis exterior noise level standard. Therefore, this is a ***less than cumulatively considerable*** impact.

POPULATION AND HOUSING

Impact 4.13: The project may contribute to cumulative impacts on population growth and displace substantial numbers of people or existing housing (Less than Cumulatively Considerable)

As described in Section 3.12, growth in the City of Davis is limited by the 1% Growth Policy, which implements General Plan Policy LU 1.1 and associated Actions d and e. The City's 1% Growth Policy would allow approximately 263 dwelling units per year, based on the DOF estimate of 26,366 units in 2014. The 1% Growth Policy includes provisions to accommodate larger projects. The 1% Growth Policy requires larger projects (such as 100 or more units) to use a development agreement or a metered allocation system to phase units. The City's Housing Element, in discussing constraints to growth, identifies that larger projects would include provisions for phasing development through a development agreement.

The City of Davis 1% Growth Policy would be applicable to the project. Second units, vertical mixed use units, and permanently affordable very low, low, and moderate income housing are exempt from the growth guideline. Therefore, the 150 affordable units would not count towards the growth limit. The expected increase in 410 residential units, over a multi-year construction period, would not exceed the limits set by the 1% Growth Policy.

It is noted that construction of the project would be phased in order to reach an aging Davis population over an extended period of time. Construction of the 150 affordable senior apartment homes would occur in two 75-unit phases in order to ensure that local Davis residents are the primary market for occupancy. The project is also consistent with the regional growth projections prepared by SACOG.

Additionally, as described in Section 3.12, implementation of the proposed project would not displace substantial numbers of people or existing project. The proposed project would have a ***less than cumulatively considerable*** impact to this topic.

PUBLIC SERVICES AND RECREATION

Impact 4.14: The project may contribute to cumulative impacts on public services (Less than Cumulatively Considerable)

Implementation of the proposed project would contribute toward an increased demand for public services and facilities within the City of Davis. Public service and facility needs for the City of Davis have been evaluated in the Davis General Plan, and the goals and policies included in the General Plan ensure that adequate services will be available for build-out of the General Plan according to the current Land Use Diagram. The current Land Use Diagram shows the project site as Agricultural. Therefore, development of the project site with residential uses would exceed the demand for public services and facilities anticipated in the Davis General Plan. However, as demonstrated in this Draft EIR, impacts to public services and facilities as a result of the proposed project would be less than significant. Therefore, the project's cumulative contribution to the City's public service and facility needs would be ***less than cumulatively considerable***. Furthermore, other future development projects would be required by the City to pay their fair share fees toward the expansion and creation of public services and facilities. Therefore, cumulative impacts associated with public services and facilities would be considered less-than-significant.

TRANSPORTATION AND CIRCULATION

Impact 4.15: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.14, Transportation and Circulation, under the cumulative plus project condition, the West Covell Boulevard/SR 113 NB Ramps intersection would operate at LOS F during the PM peak hour under cumulative no project conditions. This condition is primarily caused by the heavy volume of northbound off-ramp traffic, which is served by single left- and right-turn lanes. Queue spillback on the westbound approach extends back to the West Covell Boulevard/Sycamore Lane intersection, thereby contributing to its LOS F operations.

The addition of project trips to cumulative no project conditions would worsen LOS F conditions during the PM peak hour at the West Covell Boulevard/SR 113 NB Ramps and West Covell Boulevard/Sycamore Lane intersections. Average delay at these intersections would increase by 11 and 20 seconds, respectively.

As noted in Table 3.14-20 in Section 3.14, Transportation and Circulation, the project would cause greater than a five-second increase in PM peak hour delay to the following study intersections, which are projected to operate at LOS F under cumulative conditions without the project:

- West Covell Boulevard/SR 113 NB Ramps (LOS F) – project-added traffic would cause an 11-second increase in delay.
- West Covell Boulevard/Sycamore Lane (LOS F) – project-added traffic would cause a 20-second increase in delay.

Although the project would add traffic to other study intersections, the resulting LOS and delay values would not exceed the applicable significance criteria. Mitigation Measure 3.14-1 in Section 3.14 would require the project applicant to contribute fair share funding to cover their proportionate cost of the following intersection improvements:

a) West Covell Boulevard/SR 113 NB Ramps – widen northbound off-ramp to consist of three lanes (i.e., one left, one shared left/through/right, and one right-turn lane) approaching West Covell Boulevard.
b) West Covell Boulevard/Sycamore Lane – lengthen eastbound left-turn lane from 150 to 275 feet.

These improvements would achieve over a one-minute travel time savings for Route 1 (northbound off-ramp to westbound West Covell Boulevard) during the PM peak hour.

The widening of the SR 113 northbound off-ramp would occur within Caltrans right-of-way, and would therefore require Caltrans approvals. It is unknown whether additional right-of-way would be needed for this improvement, or if a design exception would be required. There are no assurances that Caltrans would approve and/or fund such a widening. Since the remaining fair share funding sources needed for construction have not been identified, fair share payment would not ensure construction.

The lengthening of the eastbound left-turn lane at the West Covell Boulevard/Sycamore Lane intersection is considered feasible because the roadway is maintained by the City of Davis, right-of-way is available, and no adjacent intersections, driveway, or turn lanes would be adversely affected. However, this turn lane lengthening is not sufficient, on its own, to restore operations to LOS E (i.e., northbound off-ramp widening is also required). Therefore, project impacts at these two study intersections are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of mitigation measures, which if implemented, would improve intersection operations to acceptable levels.

Impact 4.16: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.14, Transportation and Circulation, under the cumulative plus project condition, Table 3.14-23 in Section 3.14 indicates that all study freeway facilities would continue to operate at an acceptable LOS D or better under cumulative plus project conditions. However, the project would contribute to vehicular queuing that extends from the SR 113 northbound off-ramp at West Covell Boulevard onto the SR 113 freeway mainline.

As shown in Table 3.14-27 in Section 3.14, this operating condition would cause the northbound off-ramp to have a maximum queue of 2,225 feet, which would extend beyond the gore point back onto the SR 113 freeway mainline section. The addition of project trips would cause the maximum off-ramp queue to increase by 200 feet.

Implementation of Mitigation Measure 3.14-1(a) would change the maximum queue in the northbound SR 113 off-ramp at West Covell Boulevard. The off-ramp widening would reduce the maximum queue during the PM peak hour from 2,425 feet to 750 feet under cumulative plus project conditions. Because 1,180 feet of storage is provided, this mitigation measure, if implemented, would result in traffic no longer spilling onto the SR 113 mainline under cumulative plus project conditions.

However, the widening of the SR 113 northbound off-ramp would occur within Caltrans right-of-way, and would therefore require Caltrans approvals. Because there are no assurances that Caltrans would approve such a widening, impacts to freeway facilities are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate the queuing issue.

UTILITIES

Impact 4.17: The project may contribute to cumulative impacts on utilities (Less than Cumulatively Considerable)

The cumulative setting for utilities includes the City of Davis Planning Area. Under General Plan buildout conditions, plus development of additional projects that are currently planned (as described previously), the City of Davis would see an increased demand for water service, sewer service, solid waste disposal services, and stormwater infrastructure needs.

As described under Impact 3.15-1, there is currently adequate capacity at the City's WWTP to receive and treat all of the wastewater generated by the proposed project in addition to future development under cumulative conditions. Project implementation would not result in the need for new or expanded WWTP facilities, and would not exceed the existing or projected capacity of the City's WWTP. Therefore, the project's cumulative impact to wastewater services is **less than cumulatively considerable**, and no additional mitigation is required.

As described under Impact 3.15-2, the potable water demands for the proposed project, together with the City's existing water demands and projected future water demands, are within the water demand projections included in the City's 2015 UWMP. Potable water would be provided from the City's municipal water supply. As demonstrated by the analysis in Section 3.15 and under Impact 3.15-2, there are adequate water supplies to serve cumulative demand within the City, and the proposed project would result in **less than cumulatively considerable** impacts to water supplies.

As described in greater detail in Section 3.9, the proposed project would include a stormwater detention system that would ensure that the proposed project would not result in a cumulatively considerable incremental increase in stormwater flows that would result in flooding downstream of the project site. Furthermore, future development within the City of Davis would be required to comply with City drainage plans and polices to ensure that each project would not cause a significant negative impact to other drainage facilities in the watershed. This is a **less than cumulatively considerable** impact.

As described under Impact 3.15-3, all non-recyclable waste generated by the City of Davis is disposed of at the 722-acre Yolo County Central Landfill, which is located off County Road 28H near its intersection with County Road 104. The landfill is owned and operated by the Yolo County Department of Public Works and Transportation. As described in the Yolo County General Plan Draft EIR (Yolo County, April 2009), the Central Landfill is a Class III solid waste landfill which provides comprehensive solid waste and recycling services, including municipal solid waste, recycling, salvaging, household hazardous waste, and business hazardous waste. Permitted maximum disposal ("throughput") at the Central Landfill is 1,800 tons per day. The total permitted capacity of the landfill is 49,035,200 cubic yards. At the current waste disposal rate (also assuming a diversion rate of 70 percent, no large increase of waste from outside the County, and future waste cells operated as bioreactors (described previously) the landfill's closure date is estimated to be January 1, 2081.

The proposed project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. Specifically, Chapter 32 of the City's Municipal Code regulates the management of garbage, recyclables, and other wastes. Chapter 32 sets forth solid waste collection and disposal requirements for residential and commercial customers, and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste.

As previously described, permitted maximum disposal at the Central Landfill is 1,800 tons per day. The total permitted capacity of the landfill is 49,035,200 cubic yards, which is expected to accommodate an operational life of about 68 years (January 1, 2081). The addition of the volume of 2.32 tons/day of solid waste generated by the proposed project to the Yolo County Central Landfill would not exceed the landfill's remaining capacity. This is a **less than cumulatively considerable** impact.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

> *The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove*

> *obstacles to population growth…It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.*

Section 15126 of the CEQA Guidelines identifies criteria for evaluating the extent to which growth could be induced, accelerated, intensified, or shifted as a result of the proposed project. Subsection (d) provides the framework for a discussion of these potential growth-inducing impacts, as follows:

- Would the project foster economic or population growth or the construction of additional housing?
- Would the project remove obstacles to population growth?
- Would the project tax existing community facilities?
- Would the project encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively?

The proposed project would result in the construction of additional housing within the City of Davis. As discussed in Section 3.12, Population and Housing, growth in the City of Davis is limited by the 1% Growth Policy. The 1% Growth Policy would allow approximately 263 dwelling units per year, based on the Department of Finance estimate of 26,366 units in the City in 2016. The City of Davis 1% Growth Policy would be applicable to the project. Second units, vertical mixed use units, and permanently affordable very low, low, and moderate income housing are exempt from the growth guideline. Therefore, the 150 affordable units would not count towards the growth limit. The expected increase in 410 residential units, over a multi-year construction period, would not exceed the limits set by the 1% Growth Policy.

By providing additional age-restricted and non-age restricted housing within the City of Davis, the project would provide areas for seniors and other members of the community to live. The project would not remove obstacles to population growth.

Additionally, as discussed in Section 3.13, Public Services and Recreation, the proposed project would increase demand for other public facilities within the City of Davis, such as libraries and community buildings. However, given that the additional population increase associated with the project is a small percentage of the population of the City as a whole, significant impacts due to increased demand on community facilities are not expected. The proposed project includes a 4.3-acre mixed use area, which would provide additional community facilities. Current plans for the facility include a health club, restaurant, meeting rooms, and an outdoor swimming pool all for use by residents and the public. The project also includes a perimeter 1.4-mile bicycle/pedestrian path that connects into the proposed internal greenway system and the existing City bicycle and trail system.

As demonstrated throughout this Draft EIR, the proposed project would not encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively. Any significant or potentially significant impacts discussed throughout this Draft EIR would occur within the proposed project site only.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

Legal Considerations

CEQA Section 15126.2(c) and Public Resources Code Sections 21100(b)(2) and 21100.1(a), requires that the EIR include a discussion of significant irreversible environmental changes which would be involved in the proposed action should it be implemented. Irreversible environmental effects are described as:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Determining whether the proposed project would result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Analysis

Implementation of the proposed project would result in the development of a residential mixed use project on 74 acres of unoccupied land that is currently designated Agricultural by the Davis General Plan. This property was previously used for agricultural purposes. Development of the proposed project would constitute a long-term commitment to residential uses. It is unlikely that circumstances would arise that would justify the return of the land to its prior condition.

A variety of resources, including land, energy, water, construction materials, and human resources would be irretrievably committed for the project's initial construction, infrastructure installation, and its continued maintenance. Construction of the project would require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals.

Additionally, a variety of resources would be committed to the ongoing operation and life of the proposed project. The introduction of new residential uses to the site will result in an increase in area traffic over existing conditions. Fossil fuels are the principal source of energy and the project will increase consumption of available supplies, including gasoline and diesel fuel, and natural gas. These energy resource demands relate to initial project construction, project operation and site maintenance and the transport of people and goods to and from the project site. Additional information the estimated energy usage of the proposed project can be found under Impact 3.7-3 of Section 3.7, Greenhouse Gases, Climate Change, and Energy. This impact concluded that project implementation would not result in the inefficient, wasteful, or unnecessary use of energy resources.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the West Davis Active Adult Community Project are discussed in Chapters 3.1 through 3.15 (project-level) and previously in this chapter (cumulative-level).

- Impact 3.1-1: Potential to result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character
- Impact 3.2-1: Project implementation may result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses
- Impact 3.2-4: Project implementation may lead to the indirect conversion of adjacent agricultural lands to non-agricultural uses
- Impact 3.3-1: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation
- Impact 3.14-5: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections
- Impact 3.14-6: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities
- Impact 3.14-9: The proposed site plan would not provide adequate emergency vehicle access
- Impact 3.14-10: The proposed site plan would not provide adequate project access
- Impact 4.1: The project may contribute to the cumulative degradation of the existing visual character of the region
- Impact 4.2: The project may contribute to cumulative impacts on agricultural land and uses
- Impact 4.3: The project may contribute to cumulative impacts on the region's air quality
- Impact 4.15: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections
- Impact 4.16: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities

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5.1 CEQA REQUIREMENTS

CEQA requires that an EIR analyze a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

Alternatives that are evaluated in the EIR must be potentially feasible alternatives. However, not all possible alternatives need to be analyzed. An EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines, Section 15126.6(f).) The CEQA Guidelines provide a definition for a "range of reasonable alternatives" and, thus limit the number and type of alternatives that need to be evaluated in an EIR.

First and foremost, alternatives in an EIR must be potentially feasible. In the context of CEQA, "feasible" is defined as:

> *… capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.* (CEQA Guidelines 15364)

The inclusion of an alternative in an EIR is not evidence that it is feasible as a matter of law, but rather reflects the judgment of lead agency staff that the alternative is potentially feasible. The final determination of feasibility will be made by the lead agency decision-making body through the adoption of CEQA Findings at the time of action on the Project. (Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 489 see also CEQA Guidelines, §§ 15091(a)) (3)(findings requirement, where alternatives can be rejected as infeasible); 15126.6 ([an EIR] must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation"). The following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plan or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (Section 15126.6 (f) (1)).

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a less than significant level. The following significant and unavoidable impacts of the West Davis Active Adult Community Project are discussed in Sections 3.1 through 3.15 (project-level) and Chapter 4.0 (cumulative-level):

- Impact 3.1-1: Potential to result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character

- Impact 3.2-1: Project implementation may result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses
- Impact 3.2-4: Project implementation may lead to the indirect conversion of adjacent agricultural lands to non-agricultural uses
- Impact 3.3-1: Project operations have the potential to cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation
- Impact 3.14-5: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections
- Impact 3.14-6: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities
- Impact 3.14-9: The proposed site plan would not provide adequate emergency vehicle access
- Impact 3.14-10: The proposed site plan would not provide adequate project access
- Impact 4.1: The project may contribute to the cumulative degradation of the existing visual character of the region
- Impact 4.2: The project may contribute to cumulative impacts on agricultural land and uses
- Impact 4.3: The project may contribute to cumulative impacts on the region's air quality
- Impact 4.15: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections
- Impact 4.16: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities

The following analysis of alternatives focuses on significant impacts, including both those that can be mitigated to a less than significant level and those that would remain significant even if mitigation is applied or for which no feasible mitigation is available.

A Notice of Preparation was circulated to the public to solicit recommendations for a reasonable range of alternatives to the proposed project. Additionally, a public scoping meeting was held during the public review period to solicit recommendations for a reasonable range of alternatives to the proposed project. The following comments were received related to potential alternatives to the project to be addressed in the EIR:

- Toni Terhaar and Russ Kanz (April 26, 2017): Suggested development of the project as an affordable housing project, instead of a senior community.
- Toni Terhaar and Russ Kanz (May 4, 2017): Suggested consideration of a range of alternatives to the project, such as a non-age restricted alternative.
- Greg Rowe (May 11, 2017): Suggested development of two alternatives: a Binning Ranch alternative, and a higher density alternative.

PROJECT OBJECTIVES

The alternatives to the proposed project selected for analysis in the EIR were developed to minimize significant environmental impacts while fulfilling the basic objectives of the project. As described in Chapter 2.0, Project Description, the following objectives have been identified for the West Davis Active Adult Community Project:

- Create a community that connects the City's senior population to existing services and facilities in West Davis.
- Design a neighborhood with homes to support an active lifestyle for older adults.
- Create a diverse community that provides housing for multiple generations and lifestyles by including a provision in the single-family neighborhood for 20% non-age restricted housing.
- Provide Davis residents with housing options that meets their long-term needs so they remain local rather than leave the City.

1. Provide a community that is not isolated from the rest of the City by providing public gathering spaces for all City residents.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Four alternatives to the proposed project were developed based on City of Davis staff and City Council input, input from the public during the NOP review period, and the technical analysis performed to identify the environmental effects of the proposed project. The alternatives analyzed in this EIR include the following four alternatives in addition to the proposed West Davis Active Adult Community Project:

- No Project (No Build) Alternative
- Conventional (Non-Age Restricted) Alternative
- Higher Density, Less Land Alternative
- Off-Site (Inside Mace Curve) Alternative

NO PROJECT (NO BUILD) ALTERNATIVE

The CEQA Guidelines (Section 15126.6[e]) require consideration of a No Project Alternative that represents the existing conditions, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved. For purposes of this analysis, the No Project (No Build) Alternative assumes that the project site remains in its existing state and no additional development would occur. The current condition of the site consists of agricultural uses, a gravel parking lot, and the existing Covell Boulevard improvements and drainage channel. It is noted that the No Project (No Build) Alternative would fail to meet the project objectives identified by the City of Davis.

CONVENTIONAL (NON-AGE RESTRICTED) ALTERNATIVE

Under the Conventional (Non-Age Restricted) Alternative, the project site would be developed similar to the proposed project with up to 560 units, but the units would not be age-restricted.

The required affordable housing component would be provided on-site under this alternative, similar to the proposed project. The proposed amenities, mixed use area, bicycle and pedestrian improvements, and landscaping would be the same as the proposed project.

HIGHER DENSITY, LESS LAND ALTERNATIVE

Under the Higher Density, Less Land Alternative, the project site would be developed with the same number of dwelling units as the proposed project (up to 560), but on a smaller footprint than the proposed project. This alternative would include development of approximately fifty percent of the footprint of the proposed project site, or approximately 37 acres. This alternative would result in a density of approximately 15.1 units per acre. The assumed type of units would be adjusted to reflect the increased density. The increased density under this alternative would allow a portion of the required agricultural land mitigation area and stormwater detention facilities to be located on the project site. The proposed amenities, mixed use area, bicycle and pedestrian improvements, and landscaping would be the same as the proposed project.

OFF-SITE (INSIDE MACE CURVE) ALTERNATIVE

Under the Off-Site (Inside Mace Curve) Alternative, the proposed project would be developed with a decrease in units at an off-site location. Parcels of similar size that are designated and/or zoned for residential uses are not currently available for development within the City. For the purposes of evaluating an off-site alternative location within the City, City staff has identified the 47-acre property located inside the Mace Curve, adjacent to Harper Junior High School. The off-site location is designated Agriculture by the Yolo County General Plan land use map has a County zoning of Agriculture-Extensive (A-N). Similar to the proposed project site, development of this off-site location would require a Measure R vote. This site was identified as a “yellow light” site in the 2008 Resolution by City Council implementing the Housing Element Steering Committee recommendations. The 2008 Resolution noted that this off-site location could support 350 to 473 dwelling units.

The overall proposed project density of approximately 7.6 dwelling units per acre (du/ac) (560 du ÷ 74 ac = 7.57 du/ac). Utilizing this density of 7.6 du/ac, the approximately 47-acre off-site location would provide up to 360 units (360 du ÷ 47 ac = 7.55 du/ac). The proposed amenities, mixed use area, bicycle and pedestrian improvements, and landscaping would be the same as the proposed project.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5.0-1 summarizes the comparative effects of each alternative.

NO PROJECT (NO BUILD) ALTERNATIVE

Aesthetics and Visual Resources

The No Project (No Build) Alternative would leave the project site in its existing state and would not result in increases in daytime glare or nighttime lighting. The visual character of the project site would not change under this alternative compared to existing conditions.

As described in Section 3.1, the visual character of the project site would be significantly altered as a result of project implementation. Compliance with the City's site plan and architectural approval process and consistency with the General Plan and the Davis Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

In summary, the proposed project would result in potentially significant new sources of light and glare. The proposed project would also result in impacts to the existing visual character or quality of the project site and its surroundings. However, the No Project (No Build) Alternative would avoid these impacts altogether. As such, this impact would be reduced when compared to the proposed project.

Agricultural Resources

The majority of the project site was previously used for agricultural purposes, and the project site is zoned for agricultural uses by the Yolo County zoning code. The No Project (No Build) Alternative would result in no development in on the project site. As such, this alternative would have no impact on agricultural land, no potential for conflicts with existing agricultural resources, and no potential for conflict with regulations and plans intended to protect those resources. As such, this impact would be reduced when compared to the proposed project.

Air Quality

As described in Section 3.2, and shown in Table 3.2-7, operation of the unmitigated proposed project would result in a significant impact associated with respirable particulate matter (PM_{10}) and reactive organic gasses (ROG). With incorporation of the mitigation described in Section 3.2, the proposed project would generate significant operational air quality impacts. Under the No Project (No Build) Alternative, the project site would not be developed, and there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to air quality. As such, this impact would be reduced when compared to the proposed project.

While the proposed project would result in less than significant construction emissions impacts after mitigation, under this alternative, no construction emissions would be generated. Therefore, this impact is avoided under this alternative. The No Project (No Build) Alternative would reduce air quality impacts as compared with the proposed project, and therefore have less of an impact than the proposed project on air quality.

Biological Resources

As described in Section 3.3, while project implementation is not anticipated to result in significant impacts to biological resources, construction activities would result in tree removal and ground disturbing activities that may impact or harm biological resources, including special-status bird species. Under the No Project (No Build) Alternative, the proposed project would not be constructed, no habitat would be removed, and no ground disturbing activities would occur. As such, this impact would be reduced when compared to the proposed project.

Cultural and Tribal Resources

The No Project (No Build) Alternative would not result in ground disturbing activities and would reduce the potential to disturb or destroy cultural, tribal, historic, archaeological, and paleontological resources. While the proposed project is not anticipated to result in significant impacts to cultural or historical resources, the No Project (No Build) Alternative would further reduce the risk of the unintentionally discovery of such resources.

Geology and Soils

The No Project (No Build) Alternative would result in the project site remaining in its existing condition. The current condition of the site consists of agricultural uses, a gravel parking lot, and the existing Covell Boulevard improvements and drainage channel. There are currently no structures on the project site that are subject to seismic or geologic risks, including earthquakes, liquefaction, subsidence, etc. The No Project (No Build) Alternative would not involve new construction that could be subject to seismic, geologic or soils hazards, thus this alternative would have no potential for impact. As such, this impact would be reduced when compared to the proposed project.

Greenhouse Gases, Climate Change, and Energy

Under the No Project (No Build) Alternative, the project site would not be developed, and there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to greenhouse gas (GHG) reductions. Development of the project site under this alternative would not provide for a development that is consistent with the Sacramento Area Council of Government's (SACOG's) Sustainable Community Strategy (SCS). Additionally, the proposed project assists with local GHG reduction efforts by providing a residential project that meets the GHG reduction requirements set forth in the City's Staff Report on GHG Thresholds and Standards for New Residential Development, based on the project density and proximity to transit. As described in Section 3.6, the proposed project is consistent with the City of Davis

Climate Action and Adaptation Plan. Under the No Project (No Build) Alternative, the site would not be developed, and there would be no potential for the project to conflict with any adopted plans or policies related to GHG reductions. Overall, impacts related to greenhouse gases, climate change, and energy would be reduced as compared to the proposed project.

Hazards and Hazardous Materials

Under the No Project (No Build) Alternative, no new land uses would be introduced to the project site, and the potential for hazardous material release on the project site would be eliminated. As described in Section 3.7, construction activities may result in the use and transport of common hazardous materials, including oils, fuels, paints, and solvents. This potential impact would be eliminated under the No Project (No Build) Alternative. Under the No Project (No Build) Alternative, a new land use would be introduced to the site, and the potential for future residents to be exposed to contamination on the site would be eliminated. This impact, though less than significant with implementation of mitigation, would be avoided under the No Project (No Build) Alternative.

Hydrology and Water Quality

Under the No Project (No Build) Alternative, potential water quality impacts from construction and operation of the proposed project would be eliminated. While groundwater recharge is not considered a significant impact under the proposed project, under this alternative, the land will be kept in its present state with the majority of the project site containing permeable surfaces. The majority of project site has soils all have a hydrologic rating of “C”, which is indicative of soils having a low infiltration rate (high runoff potential) when thoroughly wet. The pescadero and willows soils have a hydrologic rating of “D”, which is indicative of soils having an even lower low infiltration rate (high runoff potential). The project site is not a major source of groundwater recharge due to the lack of precipitation and the absence of a major water source. The No Project (No Build) Alternative will have a greater chance of groundwater recharge because it does not introduce large areas of impervious surfaces as would the proposed project. As such, potential impacts related to groundwater recharge would be reduced under the No Project (No Build) Alternative when compared to the proposed project.

Stormwater from the proposed project buildings and site would flow into the proposed greenway swales, perimeter drainage channel, and offsite detention basin. In order to meet the guidelines and requirements set forth in the “Phase II Small MS4 General Permit, 2013-0001-DWQ,” dated February 5, 2013, adopted by the City of Davis, permanent storm water control measures are proposed to be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project. Because project improvements would manage and treat stormwater flows from the site, it would represent an improvement to water quality over the No Project (No Build) Alternative.

As described in Section 3.9, when the proposed project is developed, the on-site impervious area would increase, leading to faster runoff rates. Thus, the proposed project would provide more impervious surface on-site as compared to the No Project (No Build) Alternative, which would also result in an increase in rainfall infiltration, and a reduction in runoff during storm events.

As described in Section 3.0, project implementation has the potential to result in the discharge of pollutants into on-site detention basins and storm drains, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of project design and applied mitigation measures. Under the No Project (No Build) Alternative, these potential impacts would be eliminated. Overall, potential impacts related to hydrology and water quality would be reduced under the No Project (No Build) Alternative when compared to the proposed project.

Land Use

The No Project (No Build) Alternative would not require a change of the project site's General Plan Land Use designation from Agriculture to Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. While the proposed project would provide significant affordable, age-restricted, and non-age restricted housing within the City of Davis, the No Project (No Build) Alternative would maintain this site in its current state with no new construction or significant housing. Maintenance of the site for potential future agricultural uses would be consistent with the existing land use and zoning designations for the site. While the analysis in Section 3.10 concluded that the proposed project would not result in any significant land use impacts, the No Build Alternative would not improve conditions on the subject property or devote it to a productive use, and therefore, would have adverse impacts compared to the proposed project.

Noise and Vibration

As described in Section 3.10, implementation of the proposed project would result in increased transportation and stationary source noise levels. Under the No Project (No Build) Alternative, the project site would not be developed and there would be no potential for new noise sources. Construction noise and vibration would not occur under this alternative. This would result in a reduction of noise from on-site construction activities at existing sensitive receptors. Additionally, operational noise resulting from the proposed residences, health club, restaurant, and park areas would be eliminated under the No Project (No Build) Alternative. Therefore, impacts related to noise and vibration would be reduced under this alternative.

Population and Housing

Under the No Project (No Build) Alternative, the proposed project would not be developed and additional housing sites within the City of Davis would not be provided. This alternative would not assist the City in providing additional housing sites for residents, including seniors and low-income residents. Additionally, as described in Section 3.12, project implementation would result in a maximum population of approximately 1,467 residents to the City. The No Project (No Build) Alternative would not result in development of housing which could increase the population. Overall, under this alternative, the proposed project would have similar impacts as the No Project (No Build) Alternative.

Public Services and Recreation

Under the No Project (No Build) Alternative, the project site would remain undeveloped and there would be no increased demand for public services or recreation. The recreational amenities within the proposed project, however, would not be developed for community use. The No Project (No Build) Alternative would have a reduced impact when compared to the proposed project because demand on public services would be reduced with compared to the proposed project, with the possible exception of recreational park facilities.

Transportation and Circulation

The No Project (No Build) Alternative would not introduce additional vehicle trips onto the study area roadways. It was determined that the proposed project would cause an increase in traffic on roadways or intersections that would cause traffic operations to degrade to an unacceptable level of service. Mitigation was identified to alleviate some impacts; however, certain impacts were deemed to be significant and unavoidable. Under the No Project (No Build) Alternative, these potential impacts would be avoided, and the No Project (No Build) Alternative would have a reduced traffic impact when compared to the proposed Project.

Utilities

Implementation of the proposed project would result in increased flows to the public wastewater system. The wastewater system is capable of handling the increased flows with their existing permit and infrastructure.

Implementation of the proposed project would result in increased demand for potable water. The City has adequate water supply to handle the increased demand with their existing supply and infrastructure.

Implementation of the proposed project would result in increased storm drainage from new impervious surfaces. The proposed project includes a storm drainage collection system to handle the increased storm drainage.

Implementation of the proposed project would result in increased generation of solid waste. However, the landfill has adequate capacity to dispose the solid waste.

Under the No Project (No Build) Alternative the project site would not increase the demand for any utilities, including wastewater services, potable water supplies, or solid waste disposal. There would be no need to construct stormwater drainage infrastructure. Overall, the demand for utilities would be reduced under the No Project (No Build) Alternative when compared to the proposed project.

CONVENTIONAL (NON-AGE RESTRICTED) ALTERNATIVE

Aesthetics and Visual Resources

Similar to the proposed project, this alternative would result in the construction of up to 560 units. However, under this alternative, the units would not be age-restricted. When compared to the proposed project, approximately the same area of the project site would be developed with residential uses. Developing the entire project site with an increase in residential units would likely result in buildings with equal stories as the proposed project. Additionally, the building setbacks from Covell Boulevard under this alternative would likely be similar to the proposed project, which would equally impact the visual and aesthetic appeal of the site compared to the proposed project. Overall, this alternative would have equal impacts to aesthetics when compared to the proposed project.

Agricultural Resources

This alternative would result in the construction of the same number of housing units and the same area of mixed uses as the proposed project. However, under this alternative, the residential units would not be age-restricted. Because the same site and site area as the proposed project would be developed under this alternative, impacts related to land use conflicts and conversion of farmland to urban uses would be identical to the proposed project. Given the loss of active agricultural land that would occur under this alternative, this alternative would have equal impacts to agricultural resources as the proposed project.

Air Quality

As described in Section 3.2, implementation of the proposed project would generate emissions during both the construction phase and the operational phase. Construction related impacts would be similar under this alternative when compared to the proposed project, as the area of ground disturbance would be comparable, and the duration of construction would be comparable. However, under this alternative, mobile source emissions would increase. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. Under this alternative, the non-age restricted residential uses developed on the project site would generate more daily vehicle trips when compared to the proposed project, which would generate higher levels of pollutants from mobile sources. Therefore, this alternative would have greater impacts related to air quality when compared to the proposed project.

Biological Resources

Potential impacts to biological resources are primarily related to the area proposed for disturbance and less on the type of urban uses that would occur on the project site. Under this alternative, a similar amount of the project site would be disturbed when compared to the proposed project, and the potential for impacts to biological resources would remain unchanged when compared to the proposed project.

Cultural and Tribal Resources

Potential impacts to cultural resources are primarily related to the area proposed for disturbance and less to the type of urban uses that would occur on the project site. Under this alternative, a similar amount of the project site would be disturbed when compared to the proposed project, and the potential for impacts to cultural resources would remain unchanged when compared to the proposed project.

Geology and Soils

This alternative would result in the construction of the same number of housing units as the proposed project over approximately the same area as the proposed project. These buildings and structures would be exposed to the same level of risk from geologic hazards as the proposed project. However, as discussed further below, the number of residents resulting from this alternative would increase compared to the proposed project. Because more residents would be located on the project site under the Conventional (Non-Age Restricted) Alternative, more residents would be exposed to the risks from geologic hazards as compared to the proposed project. Therefore, this impact would be slightly increased under this alternative when compared to the proposed project.

Greenhouse Gases, Climate Change, and Energy

This alternative would result in the construction of the same amount of housing units as compared to the proposed project over approximately the same area as the proposed project, but the units would not be age-restricted. Development of the project site under this alternative would provide for a development that is consistent with SACOG's SCS. Similar to the proposed project, the Conventional (Non-Age Restricted) Alternative would assist with regional GHG reduction efforts by providing a residential project at a density level that meets the SCS goals. Additionally, as described above, this alternative would result in greater daily vehicle trips when compared to the proposed project. Therefore, this impact would be slightly greater under this alternative when compared to the proposed project.

Hazards and Hazardous Materials

This Conventional (Non-Age Restricted) Alternative is similar to the proposed project, but would increase the number of residents residing within the project site. As described in Section 3.8, construction activities may result in the use and transport of common hazardous materials, including oils, fuels, paints and solvents. This potential impact would still occur under the Conventional (Non-Age Restricted) Alternative. Additionally, the operational phases of both the proposed project and the Conventional (Non-Age Restricted) Alternative would not pose a significant hazard to the public or the environment. This impact would be similar under this alternative when compared to the proposed project.

Hydrology and Water Quality

Under this alternative a similar amount of land would be covered with impervious surfaces compared to the proposed project. Similar to the proposed project, stormwater from the buildings and site would flow into the greenway swales, perimeter drainage channel, and offsite detention basin. In order to meet the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013, the Conventional (Non-Age Restricted) Alternative would be required to develop permanent storm water control measures and incorporate these measures into the alternative in order to mitigate the impacts of pollutants in storm water runoff from the alternative. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Section 3.9, when the proposed project is developed, the on-site impervious area would increase, leading to faster runoff rates. The Conventional (Non-Age Restricted) Alternative would provide a similar amount of impervious surface on-site as compared to the proposed project, which would also result in similar impacts related to rainfall infiltration and runoff during storm events as compared to the proposed project.

As described in Section 3.9, project implementation has the potential to result in the discharge of pollutants into on-site detention basins and storm drains, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of project design and applied mitigation measures. Under the Conventional (Non-Age Restricted) Alternative, these potential impacts would be similar as the project. Overall, potential impacts related to hydrology and water quality would be similar under the Conventional (Non-Age Restricted) Alternative when compared to the proposed project.

Land Use

Similar to the proposed project, the Conventional (Non-Age Restricted) Alternative would require a change of the project site's General Plan Land Use designation from Agriculture to Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. This alternative would be required to be consistent with the General Plan, including the goals, policies, and standards and with the Zoning Code. The analysis in Section 3.10 concluded that the proposed project would not result in any significant land use impacts. This alternative would provide increased housing for the city, but less variety in the type of housing. Similar to the proposed project, upon approval of the General Plan amendment, this alternative would be consistent with the adopted General Plan and other land use regulations, and therefore, would have similar impacts as the proposed project.

Noise and Vibration

As discussed in Section 3.11, the primary sources of noise associated with implementation of the proposed project are from increased vehicle trips on study area roadways in the project vicinity from on-site uses, and increased noise from the proposed mechanical equipment, swimming pool, and dog park. Under this alternative, noise associated with vehicle trips is expected to increase, while other on-site noise sources would likely be comparable to those generated by the proposed project. The proposed project is estimated to generate approximately 3,586 new external vehicle trips on a daily basis. Under this alternative, the conventional residential uses developed on the project site would generate a greater number of daily vehicle trips and peak hour trips, which would generate increased noise levels on area roadways. Similar to the proposed project, this alternative would expose new residential uses to noise sources. Therefore, due to the increase in peak hour vehicle trips, this alternative would have increased impacts related to noise when compared to the proposed project.

Population and Housing

This alternative would result in the construction of the same number of housing units over the same area as the proposed project, but the units would not be age-restricted. As discussed in Section 3.12, the proposed project would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[1] It is noted that, because 86% of the proposed units would be age-restricted, the actual population growth resulting from the project would likely be significantly lower. For example, the average persons per household in California for homes with a household head that is 55 years or older is 1.87. The maximum population associated with the project, 1,467 persons, utilizes the persons per household rate for the City of Davis of 2.62 persons. Additionally, the proposed project includes up to 30 assisted living, age-restricted detached units within the three-acre University Retirement Community expansion area. These 30 units would likely house only one persons per unit.

Under the Conventional (Non-Age Restricted) Alternative, the project site would be developed similar to the proposed project with up to 560 units, but the units would not be age-restricted. For the aforementioned reasons, this alternative would be more likely to result in 1,467 residents in the area as compared to the proposed project.

As discussed in Section 3.12, the City's 1% Growth Policy would allow approximately 263 dwelling units per year, based on the Department of Finance (DOF) estimate of 26,366 units in 2017. Because second units, vertical mixed use units, and permanently affordable very low, low, and moderate income housing are exempt from the City's 1% Growth Policy, the 150 affordable units would not count towards the growth limit. The expected increase in 410 residential units, over a multi-year construction period, would not exceed the limits set by the 1% Growth Policy.

Because the Conventional (Non-Age Restricted) Alternative would not be exempt from the Policy, this alternative would exceed the housing limit set by the City's 1% Growth Policy; however, the 1% Growth Policy requires larger projects (such as 100 or more units) to use a

[1] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

development agreement or a metered allocation system to phase units. Nevertheless, because the alternative would add additional residents as compared with the proposed project, and exceed the allowable annual growth set by the City's 1% Growth Policy, impacts related to population and housing would be increased as compared to the proposed project.

Public Services and Recreation

This alternative would result in the construction of the same number of housing units as compared to the proposed project. As described in Section 3.13, implementation of the proposed project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, there would be a greater change in the population generated under this alternative when compared to the proposed project. In addition, a project without age restrictions would be expected to have a greater number of school-age children, and a correspondingly greater impact on schools. As such, this alternative would have an increased demand for public services compared to the proposed project. Additionally, the level of increased demand for recreational facilities would slightly increase as compared to the proposed project. Therefore, impacts related to public services and recreation would be greater than the proposed project.

Transportation and Circulation

As described above, this alternative would result in an increase in total daily vehicle trips when compared to the proposed project, which would in turn increase the peak hour AM and PM vehicle trips. The proposed project is estimated to generate up to 3,586 new external vehicle trips on a daily basis, including 246 AM and 290 PM peak hour trips, respectively. Under this alternative, the conventional residential uses developed on the project site would generate a greater number of daily vehicle trips and peak hour trips. This increase in AM and PM peak hour trips under this alternative would generate increased traffic levels on area roadways when compared to the proposed project. This has the potential to increase impacts to area roadways and intersections. Impacts related to traffic and circulation would be increased under this alternative when compared to the proposed project.

Utilities

This alternative would result in the construction of the same number of housing units over the same area as the proposed project, but the units would not be age-restricted. As shown in Table 3.15-1 in Section 3.15, the proposed project would generate approximately 133,575 gallons per day (gpd), or 0.13 million gallons per day (mgd) of wastewater. The wastewater generation factors provided by City staff in an August 1, 2012 Utility Guidance Letter that were used to calculate the project's sewer flows do not differentiate between age-restricted and non-age restricted units. Therefore, because the Conventional (Non-Age Restricted) Alternative would result in the same number of units as the proposed project, the wastewater generated by this alternative would be similar to the proposed project.

As shown in Table 3.15-17 in Section 3.15, the proposed project would generate the demand for approximately 216 acre-feet per year (AFY) of water. The unit water demand factors provided from the Tully & Young Water Supply Assessment prepared for the City of Davis (August 2017) do not differentiate between age-restricted and non-age restricted units. Therefore, because the Conventional (Non-Age Restricted) Alternative would result in the same number of units as the proposed project, the water demand for this alternative would be similar to the proposed project.

Using the General Plan Update EIR's generation rate of 3.12 pounds per person per day, the proposed project would generate approximately 4,577 pounds per day (lbs/day) of solid waste from the proposed residential uses. This is equivalent to a total of approximately 2.29 tons/day of solid waste. Additionally, as described in Section 2.0, current plans for the proposed mixed use area include an 8,000 square foot (sf) health club and a 5,000 sf "fast casual" restaurant. In order to determine solid waste generation from the proposed health club, a rate of 5.0 lbs/day, per 1,000 sf was used. In order to determine solid waste generation from the proposed restaurant, a rate of 0.005 lbs/day, per sf was used. These waste generation rates are consistent with the guidance provided by the California Department of Recycling and Resources Recovery for commercial uses. Therefore, the non-residential components of the project would generate up to 65 lbs/day (40 lbs/day from the health club and 25 lbs/day from the restaurant) of solid waste. Total solid waste generated by all aspects of the project would be 4,642 lbs/day, or approximately 2.32 tons/day.

The Conventional (Non-Age Restricted) Alternative would include development of the same number of units and the same amenities as the proposed project. However, as noted previously, this alternative would be more likely to result in 1,467 residents in the area as compared to the proposed project due to the non-age restricted units. As such, the solid waste generated by this alternative would likely be slightly greater than the proposed project.

Overall, under this alternative, wastewater generation, water demand, and solid waste generation would increase slightly when compared to the proposed project. This alternative would have increased impacts to utilities when compared to the proposed project.

HIGHER DENSITY, LESS LAND ALTERNATIVE

Aesthetics and Visual Resources

This alternative would result in the construction of 560 dwelling units on approximately 37 acres of the project site. The overall development intensity under this alternative would be greater than the proposed project. The assumed type of units would be adjusted to reflect the increased density. In order to provide the same number of units on a smaller area, the buildings would likely be taller under this alternative. When compared to the proposed project, approximately half of the project site would be developed with residential uses, leaving the remainder of the site for agricultural land mitigation area and stormwater detention facilities. This would reduce impacts related to light and glare as well as the visual quality of the site and its surroundings. Overall, due to approximately half of the site remaining in its existing state under this alternative, this alternative would have slightly fewer impacts to aesthetics when compared to the proposed project.

Agricultural Resources

This alternative would result in the construction of the same number of housing units and the same area of mixed-use as the proposed project, but on a smaller footprint than the proposed project. The increased density under this alternative would allow a portion of the required agricultural land mitigation area and stormwater detention facilities to be located on the project site. Under this alternative, approximately half of the project site, which is zoned for agricultural uses by the County, would remain in its existing state. This increase in preserved agricultural area would decrease impacts to Important Farmland compared to the project. Therefore, this impact would be reduced under this alternative when compared to the proposed project.

Air Quality

This alternative would result in the construction of the same number of dwelling units as the proposed project (up to 560), but on a smaller footprint than the proposed project. As described in Section 3.2, implementation of the proposed project would generate emissions during both the construction phase and the operational phase. Construction related impacts would be less under this alternative when compared to the proposed project, as the area of ground disturbance would be approximately half, although the duration of construction would be comparable. However, under this alternative, mobile source emissions would be similar to the proposed project. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. The proposed project is estimated to generate approximately 3,586 new external vehicle trips on a daily basis. Under this alternative, the residential uses developed on the project site would generate a similar number of daily vehicle trips as the prosed project, which would generate similar levels of pollutants from mobile sources. Therefore, this alternative would have slightly decreased impacts related to air quality when compared to the proposed project.

Biological Resources

Potential impacts to biological resources are related primarily to the area proposed for disturbance and less to the type of urban uses that would occur on the project site. Under this alternative, approximately half of the project site would be disturbed when compared to the proposed project. As such, the potential for impacts to biological resources would be reduced when compared to the proposed project.

Cultural and Tribal Resources

Potential impacts to cultural resources are primarily related to the area proposed for disturbance and less to the type of urban uses that would occur on the project site. Under this alternative, approximately half of the project site would be disturbed when compared to the proposed project. As such, the potential for impacts to cultural resources would be reduced when compared to the proposed project.

Geology and Soils

This alternative would result in the construction of the same number of housing units as compared to the proposed project over approximately half the area as the proposed project. These buildings and structures would be exposed to the same level of risk from geologic hazards as the proposed project. Because the same number units would be constructed under the Higher Density, Less Land Alternative, a similar number of residents would be exposed to the risks from geologic hazards as compared to the proposed project. Therefore, this impact would be similar under this alternative when compared to the proposed project.

Greenhouse Gases, Climate Change, and Energy

This alternative would result in the construction of the same number of housing units as the proposed project over approximately half the area as the proposed project. Development of the project site under this alternative would provide for a development that is consistent with SACOG's SCS. Similar to the proposed project, the Higher Density, Less Land Alternative would assist with regional GHG reduction efforts by providing a residential project at a density level that meets the SCS goals. Construction related impacts would be less under this alternative when compared to the proposed project, as the area of ground disturbance would be approximately half, although the duration of construction would be comparable. Additionally, as described above, this alternative would result in a similar number of daily vehicle trips as the proposed project. This alternative would generate similar levels of GHGs from vehicles as the proposed project. Therefore, this alternative would have slightly decreased impacts related to GHGs when compared to the proposed project.

Hazards and Hazardous Materials

Under the Higher Density, Less Land Alternative, the project site would be developed with the same number of dwelling units as the proposed project (up to 560), but on a smaller footprint than the proposed project. These buildings and structures would be exposed to the same level of risk from previous site contamination hazards as the proposed project. This impact would remain unchanged under this alternative when compared to the proposed project.

Hydrology and Water Quality

Under this alternative, approximately half of the project site would be covered with impervious surfaces compared to the proposed project. While groundwater recharge is not considered a significant impact under the proposed project, under this alternative, approximately half of the land will be kept in its present state with half of the project site containing permeable surfaces.

Stormwater from the proposed project buildings and site would flow into the proposed greenway swales, perimeter drainage channel, and offsite detention basin. In order to meet the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-

DWQ," dated February 5, 2013, adopted by the City of Davis, permanent storm water control measures are proposed to be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project. In order to meet the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013, the Higher Density, Less Land Alternative would be required to develop permanent storm water control measures and incorporate these measures into the alternative in order to mitigate the impacts of pollutants in storm water runoff from the alternative. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Section 3.9, when the proposed project is developed, the on-site impervious area would increase, leading to faster runoff rates. As noted above, under this alternative, approximately half of the land will be kept in its present state with half of the project site containing permeable surfaces, which would also result in fewer impacts related to rainfall infiltration and runoff during storm events as compared to the proposed project.

As described in Section 3.9, project implementation has the potential to result in the discharge of pollutants into on-site detention basins and storm drains, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of project design and applied mitigation measures. The increased density under this alternative would allow a portion of the required agricultural land mitigation area and stormwater detention facilities to be located on the project site. Under the Higher Density, Less Land Alternative, these potential impacts would be slightly fewer than the project. Overall, potential impacts related to hydrology and water quality would be reduced under the Higher Density, Less Land Alternative when compared to the proposed project.

Land Use

Similar to the proposed project, the Higher Density, Less Land Alternative would require a change of the project site's General Plan Land Use designation from Agriculture to Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. This alternative would be required to be consistent with the General Plan, including the goals, policies, and standards and with the Zoning Code. The analysis in Section 3.10 concluded that the proposed project would not result in any significant land use impacts. This alternative would provide increased housing for the city, and would also provide a variety of housing types. Similar to the proposed project, upon approval of the General Plan amendment, this alternative would be consistent with the adopted General Plan and other land use regulations, and therefore, would have similar impacts as the proposed project.

Noise and Vibration

As discussed in Section 3.11, the primary sources of noise associated with implementation of the proposed project are from increased vehicle trips on study area roadways in the project vicinity from on-site uses, and increased noise from the proposed mechanical equipment, swimming pool, and dog park. Under this alternative, noise associated with vehicle trips is expected to be comparable to those generated by the proposed project. The proposed project is estimated to generate approximately 3,586 new external vehicle trips on a daily basis. Under this alternative, the higher density residential uses developed on the project site would generate a comparable number of vehicle trips, which would generate increased noise levels on area roadways. Similar to the proposed project, this alternative would expose new residential uses to noise sources. Therefore, this alternative would have similar impacts related to noise when compared to the proposed project.

Population and Housing

This alternative would result in the construction of the same number of housing units as the proposed project over approximately half the area as the proposed project. As discussed in Section 3.12, the proposed project would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[2] Because the Higher Density, Less Land Alternative would result in the same number of units as the proposed project, this alternative would result in the same amount of population growth.

As discussed in Section 3.12, the City's 1% Growth Policy would allow approximately 263 dwelling units per year, based on the DOF estimate of 26,366 units in 2017. Both the proposed project and the Higher Density, Less Land Alternative would not exceed the housing limit set by the City's 1% Growth Policy. Because the alternative would add the same number of residents as the proposed project, impacts related to population and housing would be similar compared to the proposed project.

Public Services and Recreation

This alternative would result in the construction of the same number of housing units as compared to the proposed project. As described in Section 3.13, implementation of the proposed project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, the population generated under this alternative would be equal to the proposed project. As such, this alternative would have similar increases in demand for public services as the proposed project. Additionally, the level of increased demand for recreational facilities would be similar to the proposed project. Therefore, impacts related to public services and recreation would be similar to the proposed project.

Transportation and Circulation

As described above, this alternative would result in an equal amount of total daily vehicle trips when compared to the proposed project, which would in turn result in an equal amount of peak hour AM and PM vehicle trips. Therefore, this alternative would generate similar traffic levels on

[2] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

area roadways as the proposed project. Impacts related to traffic and circulation would be similar to the proposed project.

Utilities

This alternative would result in the construction of the same number of housing units as the proposed project over approximately half the area as the proposed project. As shown in Table 3.15-1 in Section 3.15, the proposed project would generate approximately 133,575 gpd, or 0.13 mgd of wastewater. Because the Higher Density, Less Land Alternative would result in the same number of units as the proposed project, the wastewater generated by this alternative would be similar to the proposed project.

As shown in Table 3.15-17 in Section 3.15, the proposed project would generate the demand for approximately 216 AFY of water. Because the Higher Density, Less Land Alternative would result in the same number of units as the proposed project, the water demand for this alternative would be similar to the proposed project.

Using the General Plan Update EIR's generation rate of 3.12 pounds per person per day, the proposed project would generate approximately 4,577 lbs/day of solid waste from the proposed residential uses. This is equivalent to a total of approximately 2.29 tons/day of solid waste. Additionally, the non-residential components of the project would generate up to 65 lbs/day (40 lbs/day from the health club and 25 lbs/day from the restaurant) of solid waste. Total solid waste generated by all aspects of the project would be 4,642 lbs/day, or approximately 2.32 tons/day.

The Higher Density, Less Land Alternative would include development of the same number of units and the same amenities as the proposed project. As such, the solid waste generated by this alternative would likely be similar to the proposed project.

Overall, under this alternative, wastewater generation, water demand, and solid waste generation would be similar to the proposed project. This alternative would have similar impacts to utilities when compared to the proposed project.

OFF-SITE (INSIDE MACE CURVE) ALTERNATIVE

Aesthetics and Visual Resources

Under the Off-Site (Inside Mace Curve) Alternative, the proposed project would be developed with a decrease in units at an off-site location. The overall development intensity under this alternative would be equal to the proposed project at 40 units per acre, but because the off-site location is smaller than the proposed project site, the alternative would provide a total of 360 units. The buildings would be a similar height as the proposed project, and the amenities and parking would also be similar to the proposed project. When compared to the proposed project, approximately the same area of the off-site location would be developed with residential uses. This would result in similar impacts related to light and glare as well as the visual quality of the site and its surroundings. However, due to the smaller site and reduction in units, impacts to scenic vistas would be slightly reduced under this alternative. Overall, this alternative would have reduced impacts to aesthetics when compared to the proposed project.

Agricultural Resources

This alternative would result in the construction of the 200 fewer housing units as the proposed project, but at an off-site location. The off-site location is designated Agriculture by the Yolo County General Plan land use map has a County zoning of A-N. The off-site location is designated as Farmland of Local Importance by the Department of Conservation. Therefore, impacts related to conversion of Important Farmland would be reduced under this alternative. It is noted that, because the Off-Site (Inside Mace Curve) Alternative is also located adjacent to agricultural uses, a similar potential to result in indirect conversion of adjacent agricultural lands would also occur under this alternative. Overall, impacts to agricultural resources would be reduced under this alternative when compared to the proposed project.

Air Quality

Under this alternative, the proposed project would be developed with a decrease in units at an off-site location. As described in Section 3.2, implementation of the proposed project would generate emissions during both the construction phase and the operational phase. Construction related impacts would be less under this alternative when compared to the proposed project, as the area of ground disturbance would be reduced by approximately 27 acres, although the duration of construction would be comparable. Additionally, under this alternative, mobile source emissions would be reduced when compared to the proposed project. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. The proposed project is estimated to generate approximately 3,586 new external vehicle trips on a daily basis. Under this alternative, the reduced unit count developed on the project site would generate fewer daily vehicle trips than the prosed project, which would generate reduced levels of pollutants from mobile sources. Therefore, this alternative would have decreased impacts related to air quality when compared to the proposed project.

Biological Resources

Potential impacts to biological resources are related primarily to the area proposed for disturbance and less to the type of urban uses that would occur on the project site. Under this alternative, the majority of the 47-acre property located inside the Mace Curve, adjacent to Harper Junior High School, would be disturbed. The existing habitat on this property includes disturbed grass and agricultural uses. The habitat types on the proposed project site and the off-site property are similar. For example, the Off-Site (Inside Mace Curve) Alternative and the project site both have drainage channels which may provide habitat for giant garter snake. Both sites also have elderberry shrubs, which provide suitable habitat for valley elderberry longhorn beetle. Therefore, the potential for impacts to biological resources would be similar compared to the proposed project.

Cultural and Tribal Resources

Potential impacts to cultural resources are primarily related to the area proposed for disturbance and less to the type of urban uses that would occur on the project site. Under this alternative, the majority of the 47-acre property would be disturbed, and the potential for impacts to cultural resources would be similar when compared to the proposed project.

Geology and Soils

This alternative would result in the construction of 200 fewer housing units as compared to the proposed project over a smaller area as compared to the proposed project. These buildings and structures would be exposed to the same level of risk from geologic hazards as the proposed project. The off-site property is currently vacant and undeveloped. Because both the proposed project and the off-site location are both currently undeveloped sites located on previous agricultural land, both sites likely contain similar soil characteristics. However, because 200 fewer units would be constructed under the Off-Site (Inside Mace Curve) Alternative, fewer residents would be exposed to the risks from geologic hazards as compared to the proposed project. Therefore, this impact would be slightly decreased under this alternative when compared to the proposed project.

Greenhouse Gases, Climate Change, and Energy

This alternative would result in the construction of 200 fewer housing units than the proposed project at a smaller off-site location. The off-site property is designated for High Density Mixed Residential by SACOG's Blueprint. Development of the off-site property under this alternative would provide for a development that is consistent with SACOG's SCS. Similar to the proposed project, the Off-Site (Inside Mace Curve) Alternative would assist with regional GHG reduction efforts by providing a residential project at a density level that meets the SCS goals. Construction related impacts would be less under this alternative when compared to the proposed project, as the area of ground disturbance would be reduced by approximately 20 acres, although the duration of construction would be comparable. Additionally, as described above, this alternative would result in fewer daily vehicle trips as compared to the proposed project. As such, this alternative would generate less GHGs from vehicles as compared to the proposed project. Therefore, this alternative would have decreased impacts related to GHGs when compared to the proposed project.

Hazards and Hazardous Materials

This alternative would result in the construction of fewer housing units than the proposed project at an off-site location. The off-site property is currently vacant and undeveloped and was previously used for agricultural uses. Mitigation similar to the proposed project would be required in order to ensure that potential contamination hazards associated with the past agricultural uses would be reduced. This impact would remain unchanged under this alternative when compared to the proposed project.

Hydrology and Water Quality

Under this alternative a reduced amount of land would be covered with impervious surfaces compared to the proposed project. In order to meet the guidelines and requirements set forth in the "Phase II Small MS4 General Permit, 2013-0001-DWQ," dated February 5, 2013, the Off-Site (Inside Mace Curve) Alternative would be required to develop permanent storm water control measures and incorporate these measures into the alternative in order to mitigate the impacts of pollutants in storm water runoff from the alternative. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Section 3.9, when the proposed project is developed, the on-site impervious area would increase, leading to faster runoff rates. As noted above, under this alternative, a reduced amount of land would be covered with permeable surfaces, which would also result in fewer impacts related to rainfall infiltration and runoff during storm events as compared to the proposed project.

As described in Section 3.9, project implementation has the potential to result in the discharge of pollutants into on-site detention basins and storm drains, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of project design and applied mitigation measures. The increased density under this alternative would allow a portion of the required agricultural land mitigation area and stormwater detention facilities to be located on the off-site property. Under the Off-Site (Inside Mace Curve) Alternative, these potential impacts would be slightly fewer than the project. Overall, potential impacts related to hydrology and water quality would be reduced under the Off-Site (Inside Mace Curve) Alternative when compared to the proposed project.

Land Use

The off-site property has the same agricultural zoning designation as the proposed project site. Development of the site would require similar land use entitlements as the proposed project, including a rezone, General Plan amendment, and voter approval under "Measure R.". This alternative would be required to be consistent with the General Plan, including the goals, policies, and standards and with the Zoning Code. Similar to the proposed project site, development of this off-site location would require a Measure R vote. The analysis in Section 3.10 concluded that the proposed project would not result in any significant land use impacts. This alternative would provide increased housing for the city, and would also provide a variety of housing types. Similar to the proposed project, upon approval of the General Plan amendment, this alternative would be consistent with the adopted General Plan and other land use regulations, and therefore, would have similar impacts as the proposed project.

Noise and Vibration

As discussed in Section 3.11, the primary sources of noise associated with implementation of the proposed project are from increased vehicle trips on study area roadways in the project vicinity from on-site uses, and increased noise from the proposed mechanical equipment, swimming pool, and dog park. Under this alternative, due to the decrease in units compared to the project, noise associated with vehicle trips is expected to decrease compared to the proposed project, while other on-site noise sources would likely be comparable to those generated by the proposed project. The proposed project is estimated to generate approximately 3,586 new external vehicle trips on a daily basis. Under this alternative, the reduced unit count developed on the off-site property would generate fewer daily vehicle trips, which would generate decreased noise levels on area roadways. Similar to the proposed project, this alternative would expose new residential uses to noise sources. Therefore, this alternative would have fewer impacts related to noise when compared to the proposed project.

Population and Housing

This alternative would result in the construction of fewer housing units than the proposed project at an off-site location. As discussed in Section 3.12, the proposed project would allow for a maximum population of approximately 1,467 residents, based on the number of units planned for development.[3] Because the Off-Site (Inside Mace Curve) Alternative would result in fewer units than the proposed project, this alternative would result in less population growth.

As discussed in Section 3.12, the City's 1% Growth Policy would allow approximately 263 dwelling units per year, based on the DOF estimate of 26,366 units in 2017. Both the proposed project and the Off-Site (Inside Mace Curve) Alternative would not exceed the housing limit set by the City's 1% Growth Policy. Because the alternative would add fewer residents than the proposed project, impacts related to population and housing would be reduced compared to the proposed project.

Public Services and Recreation

This alternative would result in the construction of fewer housing units than the proposed project. As described in Section 3.13, implementation of the proposed project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, the population generated under this alternative would be less than the proposed project. As such, this alternative would have reduced increases in demand for public services than the proposed project. Additionally, the level of increased demand for recreational facilities would be reduced as compared to the proposed project. Therefore, impacts related to public services and recreation would be reduced compared to the proposed project

[3] Calculated using 2.62 persons per household for the City of Davis, California (Department of Finance, 2016).

Transportation and Circulation

Due to the off-site location in east Davis, the Off-Site (Inside Mace Curve) Alternative would introduce additional vehicle trips onto different area roadways than those identified in Section 3.14 for the proposed project. As described above, this alternative would result in a decrease in daily vehicle trips when compared to the proposed project. The proposed project is estimated to generate 3,586 new external vehicle trips on a daily basis. Under this alternative, the residential uses developed on the off-site property would generate fewer daily vehicle trips than the proposed project due to the reduced unit count under this alternative. This alternative would decrease the amount of daily vehicle trips generated, although the alternative would still have the potential to increase impacts to area roadways and intersections. The major area roadways that the Off-Site (Inside Mace Curve) Alternative could potentially impact include: Interstate 80, State Route 113, Mace Boulevard, East Covell Boulevard, County Road 32A, County Road 30B/104A, Alhambra Drive, and 2nd Street. Impacts related to traffic and circulation would be decreased under this alternative when compared to the proposed project.

Utilities

This alternative would result in the construction of 200 fewer housing units than the proposed project over the 47-acre off-site property. As shown in Table 3.15-1 in Section 3.15, the proposed project would generate approximately 133,575 gpd, or 0.13 mgd of wastewater. Because the Off-Site (Inside Mace Curve) Alternative would result in fewer units than the proposed project, the wastewater generated by this alternative would be less than under the proposed project.

As shown in Table 3.15-17 in Section 3.15, the proposed project would generate the demand for approximately 216 AFY of water. Because the Off-Site (Inside Mace Curve) Alternative would result in fewer units than the proposed project, the water demand for this alternative would be less than the proposed project.

Using the General Plan Update EIR's generation rate of 3.12 pounds per person per day, the proposed project would generate approximately 4,577 lbs/day of solid waste from the proposed residential uses. This is equivalent to a total of approximately 2.29 tons/day of solid waste. Additionally, the non-residential components of the project would generate up to 65 lbs/day (40 lbs/day from the health club and 25 lbs/day from the restaurant) of solid waste. Total solid waste generated by all aspects of the project would be 4,642 lbs/day, or approximately 2.32 tons/day.

The Off-Site (Inside Mace Curve) Alternative would include development of fewer units than the proposed project and the same amenities as the project. As such, the solid waste generated by this alternative would likely be less than the proposed project.

Overall, under this alternative, wastewater generation, water demand, and solid waste generation would be less than the proposed project. This alternative would have fewer impacts to utilities when compared to the proposed project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project (No Build) Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed project.

A comparative analysis of the proposed project and each of the project alternatives is provided in Table 5.0-1 below. The table includes a numerical scoring system, which assigns a score of "2," "3," or "4" to the proposed project and each of the alternatives with respect to how each alternative compares to the proposed project in terms of the severity of the environmental topics addressed in this EIR. A score of "2" indicates that the alternative would have a better (or lessened) impact when compared to the proposed project. A score of "3" indicates that the alternative would have the same (or equal) level of impact when compared to the proposed project. A score of "4" indicates that the alternative would have a worse (or greater) impact when compared to the proposed project. The project alternative with the lowest total score is considered the environmentally superior alternative.

TABLE 5.0-1: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROPOSED PROJECT

Environmental Issue	*Proposed Project*	*No Project (No Build) Alternative*	*Conventional (Non-Age Restricted) Alternative*	*Higher Density, Less Land Alternative*	*Off-Site (Inside Mace Curve) Alternative*
Aesthetics and Visual Resources	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Agricultural Resources	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Air Quality	3 – Same	2 – Less	4 – Greater	2 – Less	2 – Less
Biological Resources	3 – Same	2 – Less	3 – Same	2 – Less	3 – Same
Cultural and Tribal Resources	3 – Same	2 – Less	3 – Same	2 – Less	3 – Same
Geology and Soils	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Greenhouse Gas, Climate Change, and Energy	3 – Same	2 – Less	4 – Greater	2 – Less	2 – Less
Hazards and Hazardous Materials	3 – Same	2 – Less	3 – Same	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	2 – Less	3 – Same	2 – Less	2 – Less
Land Use	3 – Same	4 – Greater	3 – Same	3 – Same	3 – Same
Noise and Vibration	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Population and Housing	3 – Same	3 – Same	4 – Greater	3 – Same	2 – Less
Public Services and Recreation	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Transportation and Circulation	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Utilities	3 – Same	2 – Less	4 – Greater	3 – Same	2 – Less
Summary	**45**	**33**	**53**	**38**	**34**

As shown in Table 5.0-1, the (No Project (No Build) Alternative is the environmentally superior alternative when looked at in terms of all potentially significant environmental impacts. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. The Conventional (Non-Age Restricted) Alternative would result in 53 points, the (Higher Density, Less Land Alternative would result in 38 points, and the Off-Site (Inside Mace Curve) Alternative would result in 34 points. Therefore, the Off-Site (Inside Mace Curve) Alternative is the next environmentally superior alternative to the proposed project. It is noted that the superior alternative would depend on the City's local priorities (i.e., preservation of agricultural land, traffic impacts to the regional roadway system, maintenance of public services and utilities services, etc.), as well as the ability to meet the proposed project's objectives. Each alternative's ability to satisfy the project objectives is discussed in the following section.

5.4 COMPARATIVE EVALUATION OF THE PROJECT AND ALTERNATIVES TO SATISFY PROJECT OBJECTIVES

This section examines how each of the alternatives selected for more detailed analysis meets the project objectives.

1. *Create a community that connects the City's senior population to existing services and facilities in West Davis.*

The No Project (No Build) Alternative would not satisfy this project objective because under this alternative, no development would occur and the site would remain unchanged. The Conventional (Non-Age Restricted) Alternative would not meet this objective because the alternative would provide up to 560 conventional apartments not oriented to the City's senior population. In contrast, the Higher Density, Less Land Alternative would meet this objective because the alternative would provide the same number of dwelling units as the proposed project (up to 560), but on a smaller footprint than the proposed project. The Off-Site (Inside Mace Curve) Alternative would result in the development of up to 360 units for the City's senior population. However, due to the off-site property's location in East Davis, this alternative would not connect seniors to existing services and facilities in West Davis. As such, the Off-Site (Inside Mace Curve) Alternative would only partially meet this objective.

2. *Design a neighborhood with homes to support an active lifestyle for older adults.*

The No Project (No Build) Alternative would not satisfy this project objective because under this alternative, no development would occur and the site would remain unchanged. The Conventional (Non-Age Restricted) Alternative would not meet this objective because the alternative would not provide homes which support an active lifestyle for older adults. The Higher Density, Less Land Alternative would meet this objective because the alternative would provide market-rate, assisted living units, and affordable apartments for older adults in the City. The Off-Site (Inside Mace Curve) Alternative would only partially meet the objective because, although the residential uses would support an active lifestyle for older adults, this alternative would result in 200 fewer units than the proposed project. This alternative would satisfy this objective to a lesser degree than the proposed project.

3. *Create a diverse community that provides housing for multiple generations and lifestyles.*

The No Project (No Build) Alternative would not satisfy this project objective because under this alternative, no development would occur and the site would remain unchanged. The

Conventional (Non-Age Restricted) Alternative would partially meet this objective because the alternative would provide housing for multiple generations and lifestyles, including non-age restricted families and affordable housing for low income families. However, because this alternative would not provide any age-restricted housing, this objective would only be partially met. The Higher Density, Less Land Alternative would meet this objective because the alternative would provide housing for multiple generations and lifestyles, including market-rate, assisted living units, and affordable apartments for older adults. The Off-Site (Inside Mace Curve) Alternative would only partially meet the objective because, although this alternative would provide housing for multiple generations and lifestyles, this alternative would result in 200 fewer units than the proposed project. This alternative would satisfy this objective to a lesser degree than the proposed project.

4. *Provide Davis residents with housing options that meets their long-term needs so they remain local rather than leave the City.*

The No Project (No Build) Alternative would not satisfy this project objective because under this alternative, no development would occur and the site would remain unchanged. The Conventional (Non-Age Restricted) Alternative would meet this objective because the alternative would provide Davis residents with housing options that meet their long-term needs so they remain local. Similarly, the Higher Density, Less Land Alternative would provide Davis residents with housing options that meet their long-term needs and would also meet this objective. The Off-Site (Inside Mace Curve) Alternative would only partially meet the objective because, although this alternative would provide housing for Davis residents, this alternative would result in 200 fewer units than the proposed project. This alternative would satisfy this objective to a lesser degree than the proposed project.

5. *Provide a community that is not isolated from the rest of the City by providing public gathering spaces for all City residents.*

The No Project (No Build) Alternative would not satisfy this project objective because under this alternative, no development would occur and the site would remain unchanged. The Conventional (Non-Age Restricted) Alternative would meet this objective because the alternative would provide a community that is not isolated from the rest of the City by providing public gathering spaces for all City residents. Similarly, the Higher Density, Less Land Alternative would provide public gathering spaces for all City residents and would also meet this objective. The Off-Site (Inside Mace Curve) Alternative would also meet the objective because this alternative would provide amenities and public gathering spaces for all City residents, similar to the proposed project.

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Appendix A

Initial Study, Notice of Preparation, and NOP Comments

NOTICE OF PREPARATION AND INITIAL STUDY

FOR THE

WEST DAVIS ACTIVE ADULT COMMUNITY PROJECT

APRIL 2017

Prepared for:

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Notice of Preparation and Initial Study

FOR THE

West Davis Active Adult Community Project

April 2017

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Notice of Scoping Meeting and Preparation of a Draft Environmental Impact Report

Date:	April 14, 2017
Subject:	**Notice of Scoping Meeting and Preparation of a Draft Environmental Impact Report for the West Davis Active Adult Community Project**
To:	State Clearinghouse State Responsible Agencies State Trustee Agencies Other Public Agencies Organizations and Interested Persons
Lead Agency:	City of Davis Community Development and Sustainability Department 23 Russell Boulevard, Suite 2 Davis, CA 95616 Phone: 530-757-5652 Email: khess@cityofdavis.org

SCOPING MEETING: **On Wednesday, April 26, 2017 starting at 4:45 p.m.** the City of Davis Community Development and Sustainability Department will conduct a public scoping meeting to solicit input and comments from public agencies and the general public on the proposed Draft Environmental Impact Report (EIR) for the West Davis Active Adult Community Project. **This meeting will be held at Davis City Hall, located at 23 Russell Boulevard, Davis, CA 95616.** The meeting will run from 4:45 p.m. to 6:45 p.m.

This meeting will be an open house format and interested parties may drop in to review the proposed project exhibits and submit written comments at any time between 4:45 p.m. and 6:45 p.m. Representatives from the City of Davis, the EIR consultant, and the Applicant will be available to address questions regarding the EIR process. Members of the public may provide written comments throughout the meeting.

If you have any questions regarding this scoping meeting, contact the project planner, Katherine Hess at khess@cityofdavis.org, or by phone at: 530-757-5652.

NOTICE OF PREPARATION: This is to notify public agencies and the general public that the City of Davis, as the Lead Agency, will prepare a Draft EIR for the West Davis Active Adult Community Project. The City is interested in the input and/or comments of public agencies and the general public as to the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project, and public input. Public agencies will need to use the EIR prepared by the City when considering applicable permits, or other approvals for the proposed project.

Project Title: West Davis Active Adult Community

Project Location: Yolo County Assessor's Parcel Number (APN) 036-060-05

COMMENT PERIOD: Consistent with the time limits mandated by State law, your input, comments or responses must be received in writing and sent at the earliest possible date, but not later than 5:00 p.m., Monday, May 15, 2017.

COMMENTS/INPUT: Please send your input, comments or responses (including the name for a contact person in your agency) to: Attn: Katherine Hess, City of Davis Community Development and Sustainability Department, 23 Russell Boulevard, Suite 2, Davis, CA 95616, or by email at: khess@cityofdavis.org.

PROJECT DESCRIPTION: The project site is currently undeveloped and has been previously used for agricultural uses. The project includes development of 325 for-sale residential housing units, which will consist primarily of single-family detached units (of which 80%, or 260 units, will be dedicated for seniors), 150 affordable senior apartments, an approximately three-acre Activity and Wellness Center, which is anticipated to include a pool, public restaurant, outdoor patio, and parking lot, an approximately three-acre parcel for University Retirement Community expansion, small dog park and associated greenways, drainage, agricultural buffers, and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 505 dwelling units and 3.1 miles of off street biking and walking paths within the project area and an additional 0.25 miles of off street biking and walking paths offsite. While the land use plan currently contains 505 units, the project impacts will be evaluated at 560 units to allow for consideration of a zone of other higher density residential to be included in the Activity and Wellness Center and in the Cottages area, if appropriate.

AREAS OF POTENTIAL IMPACTS: The Draft EIR will examine most of the environmental areas contained in Appendix G of the State CEQA Guidelines, with the exception of Mineral Resources. The topics to be addressed in the Draft EIR include: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Tribal and Cultural Resources, Geology/Soils, Greenhouse Gases/Climate Change, Hazards and Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Noise, Population/Housing, Public Services, Recreation, Transportation/Circulation, Utilities, Cumulative Impacts, and Growth Inducing Impacts.

INITIAL STUDY: An Initial Study has been prepared for this project. The Initial Study identifies environmental areas/issues that would result in No Impact or a Less than Significant Impact, and environmental areas/issues that would result in a Potentially Significant Impact. All Potentially Significant Impact areas/issues will be addressed in greater detail in the Draft EIR. Areas/issues that would result in No Impact or a Less than Significant Impact, as identified in the Initial Study, will not be addressed further in the Draft EIR.

ADDITIONAL INFORMATION: Copies of the Initial Study, including additional information on the project proposal is on the city's website at: http://cityofdavis.org/city-hall/community-development-and-sustainability/development-projects/west-davis-active-adult-community.

Date: ___________________________________

Signature:____

Name/Title:____

Phone/Email:____

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INITIAL STUDY

PROJECT TITLE

West Davis Active Adult Community

LEAD AGENCY NAME AND ADDRESS

City of Davis
23 Russell Boulevard
Davis, CA 95616

CONTACT PERSON AND PHONE NUMBER

Katherine Hess, Community Development Administrator
City of Davis
Department of Community Development and Sustainability
(530) 757-5652

PROJECT SPONSOR'S NAME AND ADDRESS

David Taormino
505 Second Street
Davis, CA 95616
(530) 231-5519

PURPOSE OF THE INITIAL STUDY

An Initial Study (IS) is a preliminary analysis which is prepared to determine the relative environmental impacts associated with a proposed project. It is designed as a measuring mechanism to determine if a project will have a significant adverse effect on the environment, thereby triggering the need to prepare an Environmental Impact Report (EIR). It also functions as an evidentiary document containing information which supports conclusions that the project will not have a significant environmental impact or that the impacts can be mitigated to a "Less Than Significant" or "No Impact" level.

This Initial Study has been prepared consistent with CEQA Guidelines Section 15063, to determine if the proposed West Davis Active Adult Community Project (project) may have a significant effect upon the environment. Based upon the findings and mitigation measures contained within this report, environmental impacts are significant enough to warrant the preparation of an EIR.

PROJECT LOCATION AND SETTING

PROJECT LOCATION

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, a mapped rural residential subdivision lots to the north, the Sutter

Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

The project's regional location is shown in Figure 1, the project area and site boundary are shown in Figure 2, and the APN map is shown in Figure 3. It is noted that the proposed project includes development of an off-site detention basin to the east of the project site, adjacent to and west of John Jones Road. A proposed drainage conveyance channel would connect the northern project boundary to the proposed detention basin.

EXISTING SITE USES

The project site is currently undeveloped and has been previously used for agricultural uses. The site is nearly level at an elevation of approximately 47 to 50 feet above mean sea level (MSL). Figure 4 shows the U.S. Geological Survey (USGS) topographic map. Existing trees are located along the western and eastern project site boundaries, as well as within the southeastern corner of the site. Risling Court, an existing public access roadway to the Sutter Davis Hospital, is located along the southernmost portion of the eastern project site boundary. An existing drainage channel (known as the Covell Drain) conveys runoff from west to east north of Covell Boulevard. Frontage improvements along Covell Boulevard are limited but include a bus shelter, a section of curb, and traffic signs and signals. Figure 5 shows an aerial view of the project site.

SURROUNDING LAND USES

The project site has developed land uses on three sides. The land directly to the north of the project site is Binning Ranch, an improved, final mapped, but unbuilt seven lot rural residential subdivision. Further north is a single-family rural residential development known as the Binning Farms community. Public/Semi-Public land uses such as Sutter Davis Hospital, Sutter Medical Foundation, North Davis Water Tank, and the Sutter Drainage Pond are located directly adjacent to the project site to the east. Further to the east are existing developed General Commercial land uses located west of SR 113 and east of John Jones Road. The parcels south of West Covell Boulevard are designated Residential – High Density by the City's General Plan (including the University Retirement Community and the Saratoga West Apartments). Residential – Low Density land uses also exist south of the project site (including the Evergreen and Aspen Neighborhoods). Additionally, land west of the project site consists of agricultural uses and fallow land with a few ranchette-style single family homes and associated structures located along County Road (CR) 99.

GENERAL PLAN AND ZONING DESIGNATIONS

The project site is currently designated Agriculture by the Yolo County General Plan Land Use Map and as both Agriculture and Urban Agriculture Transition Area by the City of Davis General Plan Land Use Map. The project includes a City of Davis General Plan Amendment to change the land use to the following City designations: Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. The project site is currently zoned as Agricultural Intensive (A-N) by the County's zoning code. The project includes pre-zoning as a Planned Development (PD) for the City of Davis. The zoning change would go into effect after the proposed annexation. The existing County General Plan land use designation and proposed City land use designation for the site is shown on Figure 6. The existing County zoning and proposed City pre-zoning for the site is shown on Figure 7.

PROJECT DESCRIPTION

PROJECT OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed project shall be discussed. The principal objective of the proposed project is the approval and subsequent implementation of the West Davis Active Adult Community Project (the proposed project). The quantifiable objectives of the proposed project include annexation of approximately 74 acres of land into the Davis City limits, and the subsequent development of land, which would include: for-sale residential housing units, affordable senior apartments, an Activity and Wellness Center, University Retirement Community expansion, and associated greenways, drainage, agricultural buffers, and off-site stormwater detention facilities.

The proposed project identifies the following objectives:

- Create a community that connects the City's senior population to existing services and facilities in West Davis.
- Design a neighborhood with homes to support an active lifestyle for older adults.
- Create a diverse community that provides housing for multiple generations and lifestyles.
- Provide Davis residents with housing options that meets their long-term needs so they remain local rather than leave the City.
- Provide a community that is not isolated from the rest of the City by providing public gathering spaces for all City residents.

PROJECT CHARACTERISTICS

The project includes development of 325 for-sale residential housing units, which would consist primarily of single-family units, 150 affordable senior apartments, an approximately three-acre Activity and Wellness Center, which is anticipated to include a pool, public restaurant, outdoor patio, and parking lot, an approximately three-acre parcel for University Retirement Community expansion, small dog park and associated greenways, drainage, agricultural buffers, and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 505 dwelling units and 3.1 miles of off street biking and walking paths within the project area and an additional 0.25 miles of off street biking and walking paths offsite. While the land use plan currently contains 505 units, the project impacts will be evaluated at 560 units to allow for consideration of a zone of other higher density residential to be included in the Activity and Wellness Center and in the Cottages area, if appropriate.

The conceptual master plan is shown on Figure 8.

Proposed Land Uses

Table 1 provides a summary of the land uses proposed for the project.

Table 1: Land Use Summary

LAND USE	*ACREAGE*	*DENSITY*	*UNITS*
Greenway facing homes, bungalows, and small builder lots	26.86	8.9	238
Cottages	5.27	12.0	64
Public Right of Way	17.59	-	-
Dog Park	0.77	-	-
Greenway	4.69	-	-
Urban Agriculture Transition Area	7.19	-	-
Mixed Use Area	5.27	14.8	78
Senior Affordable Apartments	3.83	40.0	150
University Retirement Expansion Site[1]	3.03	10.0	30
Total	**74.5**	**6.7**	**560**

NOTES: SF = SQUARE FEET.

[1] *INCLUDED IN INFRASTRUCTURE CALCULATIONS AS 30 UNITS.*

The analysis in this environmental document addresses potential impacts associated with the full development of the project, which includes a total of up to 560 residential units on the 74-acre project site.

Residential – Medium Density

The Conceptual Master Plan for the project reflects 325 medium density units, of which 80% (260 units) will be senior-friendly, and 53 units will be single family detached ownership units built on lots larger than 5,000 square feet in area. All 325 medium-density units would be single story with various architectural styles and structures. A second level, above the garage only, would be included for caregiver use, which are anticipated would range in size from approximately 900 square feet (sf) to 1,800 sf.

The three-acre University Retirement Community expansion would be located in the southeastern corner of the project site. This would provide expansion opportunities for the University Retirement Community which is currently located directly south of the proposed expansion site, on the opposite side of Covell Boulevard. The existing University Retirement Community has remodeled and added onto their facility and is currently evaluating their expansion needs to meet the growing demand for their services.

Residential – High Density

The project includes reservation of land for 150 affordable apartments for seniors 62 years and older. The affordable units would be located in the southwestern corner of the project site, west of the proposed University Retirement Community expansion.

The proposed project has a total requirement to include 60 affordable units. The project proposes to provide these 60 affordable units as rental housing units developed within the subdivision. Fifty-Seven of these affordable units must have rents affordable on average to households whose incomes do not exceed 65 percent of the Yolo County median income. An additional three of these affordable units must have rents affordable to households whose incomes do not exceed 40 percent of the Yolo County median income.

At least 60 of the high-density units would meet the minimum income and rent targets above. However, based on currently available affordable housing subsidy funding, it is anticipated that approximately 35 percent of the units would be affordable to households whose incomes do not exceed 25 percent of the Yolo County median income, 35 percent of the units would be affordable to households whose incomes do not exceed 50 percent of the Yolo County median income, and 30 percent of the units would be affordable to households whose incomes do not exceed 60 percent of the Yolo County median income.

Construction of the 150 affordable senior apartment homes would occur in two 75-unit phases in order to ensure that local Davis residents are the primary market for occupancy. Construction of the affordable senior apartments would be phased in order to reach an aging Davis population over an extended period of time. The senior apartment homes concept drew inspiration from Eleanor Roosevelt Circle, an existing 60-unit affordable senior housing complex in east Davis developed in 2006. The project would include on-site services coordination staff that would facilitate appropriate health, educational and recreational activities, and supportive services for the residents.

Mixed Use

The approximately three-acre Activity and Wellness Center would be located in the central portion of the project site and would be connected to the remainder of the site by greenway paths. The outdoor space at the proposed Activity and Wellness Center would be able to accommodate local music and events in Davis. The open space around the Activity and Wellness Center is anticipated to include a pool, sport courts (possibly including pickle ball or bocce ball), and lawn areas for soccer practices or games. The exact uses and facilities would be finalized through ongoing coordination with the City and the ongoing public outreach process. Current plans for the facility include a public restaurant, meeting rooms, catering kitchen and dining areas, fitness center, yoga room(s), extensive outdoor patio, and a covered parking lot which could serve as a location for markets and other events. In addition, as a way of considering providing for additional housing types, 15 to 30 loft units are being evaluated for purposes of the EIR.

Residential Greenspace

The project site would be interconnected via a grid of north-south and east-west neighborhood walking and biking paths. The internal greenways would vary in width between 25- to 35-feet wide, with 10-foot concrete paths, providing connection between the site access points, the residential housing units and the activity and wellness center. The project also includes a perimeter1.4-mile bicycle/pedestrian path that connects into the proposed internal greenway system and the existing City bicycle and trail system. Exercise stations and detailed way finding signage with distance markers would be constructed along the path to encourage an active lifestyle

Dog Park

A 0.77 acre fenced dog park, programmed for smaller dogs, would be included as part of the project. It would be located near the secondary access off of Covell Blvd.

Urban Agriculture Transition Area

The project would include an urban agriculture transition area along the northern and western project boundary adjacent to existing agricultural lands. Pursuant to Section 40A.01.050 of the City's Municipal Code, the proposed agricultural buffer along the northern and western boundaries of the project site would be a minimum of 150-feet wide and would be planted with Californian native plants. Additionally, the transition area would include an approximately 50-foot wide multi-use trail, adjacent to the agricultural buffer area. The perimeter trail would loop around the north and west edges of the project site, connecting to off street paths proposed within the development and connecting to Risling Court and Covell Boulevard.

Proposed Circulation Improvements

The proposed vehicular and alternative transportation (i.e., bicycle, pedestrian, and transit) circulation improvements are discussed in detail below.

Vehicular Circulation

The existing streets providing access around the project site include Covell Boulevard and Risling Court. Covell Boulevard is a major arterial roadway serving the project site and connects the western and eastern limits of the City, continuing as Mace Boulevard in the eastern limits of the City and Country Road 31 west of the City limits.

Access to the project site would be provided via Risling Court, which runs along the eastern edge of the site, as well as an entrance on West Covell Boulevard. The proposed internal north-south and east-west roadways would connect to housing and recreation areas. Cul-de-sacs are included in the project plan within the proposed cottages development area and as a termination for some internal streets.

Along the project frontage, Covell Boulevard is currently a four-lane arterial with Class II bike lanes and dedicated right and left turn lanes west of the intersection with Shasta Drive. Traveling westbound, the road narrows and the road transitions to a two-lane arterial with a two-way left turn (TWLT) lane and Class II bike lanes. The transportation element of the City's General Plan calls for upgrading Covell Boulevard to a four-lane arterial. As part of this project, Covell Boulevard would be expanded to the north within the project site to accommodate four vehicular lanes. Cycling improvements would add a Class I bike trail which would pass behind a new bus island and shelter. These improvements are intended to reduce conflicts between cyclists and buses. Covell Boulevard has been conceptually designed to the extent possible with the 2016 design standards. These standards call for 10-foot and 10.5-foot travel lanes and a 7-foot bike lane on four-lane major arterials.

Risling Court is an existing street section, which currently serves the Sutter Davis Medical Campus. Risling Court currently extends from Covell Boulevard north to the first entrance of the Medical Campus parking lot. As part of the proposed street circulation improvements, Risling Court would ultimately be widened and extended to provide primary access to the neighborhood at two points. This roadway currently includes an approximately 40-foot paved section. On the east side adjacent to Sutter Hospital is a 15-foot parkway strip, a five-foot sidewalk, and a four-foot parkway strip, which provides a buffer between the sidewalk and the parking area. The proposed street section would be widened from Covell Boulevard to the Sutter Davis Medical Campus entrance. The 104-foot right-of-way would include a 56-foot paved section containing two 12-foot travel lanes, two 8-foot Class II bike lanes, and two 8-foot parking lanes. The sidewalk and parkway strips on the west side of the street are proposed with a 6-foot sidewalk and 5-foot planter strip consistent with the current City Standards.

Risling Court would then be extended from the Sutter Davis Medical Campus entrance to the northern entrance of the proposed neighborhood. This 76-foot right-of-way would include a 52-foot paved section of two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. Six-foot parkway strips with 6-foot sidewalks would be installed on both sides. Bikers and pedestrians could continue past the termination of Risling Court on a 25-foot wide multipurpose pathway. The extension would connect to the proposed agricultural buffer and the Sutter Davis exercise loop.

The entrance to the proposed Activity and Wellness Center off Risling Court would be located opposite the main entrance to the Sutter Davis Medical Campus. Risling Court provides connection to two proposed primary neighborhood entrances. The entrance streets would include an 84-foot right of way and a 52-foot paved section, 8-foot center medians, 6-foot parkway strips, and 6-foot sidewalks. The paved section would include 12-foot travel lanes, 7-foot Class II bike lanes, and 7-foot parking lanes.

The secondary access point via Covell Boulevard would only allow right in, right out movements. The 64-foot right of way would include a 52-foot paved section with two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. The sidewalk would be 5-feet wide on both sides.

Two different internal streets are proposed by the project, depending on the anticipated usage. The street section would be a 64-foot right-of-way with a 52-foot paved section with two 12-foot travel lanes, 7-foot Class II bike lanes, 7-foot parking lanes, and a 6-foot attached sidewalk. The second internal street section would be a local street with a 46-foot right-of-way and a 34-foot paved section with two 10-foot travel lanes with Class III bike lanes, 7-foot parking lanes, and 6-foot attached sidewalks.

In addition to the internal streets described above, 25-foot wide streets for bungalow court with cul-de sacs are proposed.

Alternative Transportation Circulation

The project site is located adjacent to a Class I off-street bike trail located along the south side of Covell Boulevard. There is also a Class I trail on the north side of Covell Boulevard, east of the project site and on-street bike lanes on both sides of Covell Boulevard. This infrastructure provides connections to the system of neighborhood greenways and the designated Davis bicycle loop within the City. For planning purposes, it is assumed that all external bicycle and pedestrian trips would use the intersection of Covell Boulevard, Shasta Drive, and Risling Court.

Figure 9 shows the proposed bicycle and pedestrian facilities. The project would provide approximately 4.5 miles of biking and walking paths. This includes 2.4 miles of Class I bikeways (off road pathways), 1.4 miles of Class II bikeways (on street bike lanes), Class III bikeways (bicycle routes) throughout the site, and a 0.7-mile decomposed granite path within the agricultural buffer. The compilation of this infrastructure allows for a 1.4-mile walking path around the perimeter of site and allows connections to the Sutter Davis Parkour and the interior concrete walking/biking paths.

The project would include development of all on-site facilities shown in Figure 9. The proposed bicycle and pedestrian facilities would eventually connect to planned future improvements within the vicinity of the project site, including a future bicycle and pedestrian overcrossing for SR 113 and John Jones Road that is being considered by the City of Davis.

The project site is directly adjacent to public transit stops for the Yolobus and Unitrans systems, which serve Davis and the surrounding area. Adjacent bus stops are located on the north side of Covell Boulevard, near the intersection with Risling Court (at southeast corner of project site), and near the John Jones Road and Covell Boulevard intersection. On the south side of Covell Boulevard, a stop is located approximately 250 feet east of Risling Court.

These stops serve Yolobus lines 220 (between Vacaville and Winters) and 220C (Winters Express) and Unitrans bus lines 230, 231, 232, P and Q. Additionally, Davis Community Transit provides paratransit service for persons with disabilities via a door-to door demand response system in which users of the system call for transportation service when needed. In addition to public transportation, zip cars or other shared service vehicles would be accommodated with parking and charging stations at the proposed Activity and Wellness Center. The bus stop located adjacent to the site would be improved and relocated to accommodate the additional Covell Blvd improvements as part of this project.

Proposed Utility Improvements

The project proposes to connect to existing City utility infrastructure to provide water, sewer, and stormwater drainage.

Water System

The City of Davis currently maintains and operates an above ground water tank and pump station immediately adjacent to the project site (West Area Tank & Pump Station). The City also has two active deep wells within the vicinity of the project site, one immediately east of the Sutter Davis Hospital and one immediately west of the University Retirement Community. The City also operates an intermediate well east of SR 113 near the Davis Waldorf School.

The existing City infrastructure system includes a 14-inch main extending from John Jones Road to the West Area Water Tank and Pump Station; a 12-inch main in John Jones Road and West Covell Boulevard; and a 12-inch main up Risling Court, extending around the hospital and tying into John Jones Road.

The project is not currently planning for a non-potable water source for irrigation of public green spaces. The City of Davis has long term planning goals to provide the City with non-potable water from the waste water treatment plant for irrigation of public green spaces.

Figure 10 identifies the potential water infrastructure layout for the proposed West Davis Active Adult Community. The preliminary water infrastructure for the proposed development is assumed to consist of 8-inch pipes. A future water pressure and flow study would need to be conducted to further refine the proposed pipe sizes throughout the development in order to meet the domestic demands and the fire flow demands. The triggers for the proposed infrastructure would also be defined in this future study to confirm adequate flow can be provided with each phase of the development. The project proposes connection points to the existing system at the existing water tank northeast of the project site, at the existing Risling Court cul-de-sac and in Covell Boulevard at the proposed entrance off Covell Boulevard.

Sewer System

Wastewater treatment for the project area is currently provided by the City of Davis. The City of Davis sewer collection system for the western portion of Davis utilizes pipe under Covell Boulevard ranging from 18-inch diameter on the western end to 36-inch diameter at the eastern edge. The Covell Boulevard truck main extends to Pole Line Road and ties into a 42-inch diameter sewer heading north and east to the City of Davis Waste Water Treatment Plant, located approximately three miles east of Pole Line Road/CR 102. The existing Covell Boulevard trunk main has section of pipe which are hydraulically limited due to the size/slope of the pipe and the tributary flows. A preliminary study of these hydraulically limited segments of the sewer trunk indicates that capacity may exist to serve the project.

Figure 11 identifies the preliminary sewer infrastructure layout for the proposed project. The proposed sewer infrastructure would utilize 8-inch pipes to serve the development. A future sanitary sewer study would need to be conducted to further refine the proposed pipe sizes throughout the development in order to meet the peak flows. The triggers for the proposed infrastructure would also be defined in this future study to confirm adequate flow can be provided with each phase of the development.

The proposed project would pursue water efficient fixtures and water conservation throughout the development in accordance with the 2016 CAL Green Building Code Standard, as adopted by the City of Davis. The project does not anticipate any high use facilities or functions that would generate a large amount of wastewater.

Storm Drainage System

The project site is located within the Covell Drain Watershed, with approximately 17 square miles of the watershed lying upstream of the site. The project site includes the Covell Drain channel, which conveys stormwater and agricultural runoff from western portions of the City of Davis and from portions of unincorporated Yolo County west of the site. In the vicinity of the project site, the Covell Drain flows east along the north side of Covell Boulevard toward SR 113, turning north along the west edge of SR 113, and then discharging to an existing three 10-foot by 5-foot box culverts under the freeway. East of SR 113, the Covell Drain continues to the northeast along the north edge of Davis, through the Wildhorse Golf Course, and eventually discharges to Willow Slough Bypass northeast of the City.

The City of Davis maintains a storm drain pipe network in the project area which discharges to the Covell Drain. This network collects water from the south side of Covell Boulevard and pipes to the north into the existing channel. Storm drain pipes ranging from 15-inches to 42-inches provide collection and conveyance of stormwater throughout the Sutter Hospital Facility and along John Jones Road, tying into the Covell Drain parallel to SR 113.

The City of Davis also maintains a stormwater detention pond adjacent to the West Davis Water Tank site. The pond provides attenuation for the stormwater associated with the water tank site and the Sutter Davis Hospital site.

As shown on Figure 12, the proposed drainage infrastructure would include greenway swales, a perimeter drainage channel, an offsite detention basin, and relocation of the Covell Drain north to accommodate the widening of Covell Boulevard. The ditch would need to be contained within a culvert under the new entrance from Covell.

A guiding stormwater management principle for project should be that it does not result in new impacts to properties downstream or upstream. Potential impacts include considerations of both stormwater quantity and quality. With regard to stormwater quality, the project would be designed to conform with current City of Davis standard requirements, as discussed below. For water quantity, the objective of this preliminary analysis would be to identify the basic post-project storage volumes needed onsite in order to limit post-project peak discharges and associated peak water surface elevations (WSEs) to estimated existing levels in the Covell Drain on its approach to the SR 113 box culvert.

As such, the proposed project would provide stormwater storage and conveyance facilities that would likely consist of the following components:

Water Quality Mitigation: The project intends to integrate Low Impact Development (LID) measures throughout the project to provide stormwater quality treatment. These LID measures would likely include both volume-based best management practices (BMPs) (i.e., bioretention, infiltration features, pervious pavement, etc.) and flow-based BMPs (i.e., vegetated swales, stormwater planter, etc.). The use of these features would be dependent upon the location and setting within the project site. These treatment measures would be designed in accordance with the City of Davis Storm Water Quality Control Standards. Sizing and configuration of these treatment measures would be determined with the future development of the tentative map and improvement plans for the project.

Mitigation for Increase in Project Site Discharge Due to Development: In addition to the water quality treatment measures, the project proposes to provide mitigation for the expected increase in the site's post-project peak discharge relative to pre-project conditions. As a result of the project development, the effective impervious area for the site would increase, which in turn would increase the peak rate of runoff from the site.

The project is proposing 9.8 acres of open space/landscaping around the perimeter of and throughout the project site. The resulting 100-year peak discharge from the proposed development was estimated at 53.2 cubic feet per second (cfs).

Proposed mitigation for the pre-to-post increment in peak discharge would be accomplished by integrating of an offsite detention storage with the project, with the design goal of limiting the site's post-development peak flow to existing levels. A detention basin approximately 450-feet by 150-feet with a maximum water depth of 3.4 feet (5.75 acre-feet) may be required.

This detention basin would be located offsite of the northeast of the project site adjacent to the existing City of Davis detention basin. The proposed detention basin would be located within the footprint of the proposed perimeter drainage channel and, pending further discussion with the City, may include expansion and merging with the immediately adjacent City of Davis/Sutter Health detention basin to the south. The depth of the detention basin would be approximately equivalent to the existing City detention basin.

Flood Management System

A substantial portion of the project site is currently located within FEMA Zone A, which are areas determined to flood during the 1% annual flood event. Because Zone A floodplains do not have a published Base Flood Elevation, the depth of floodwater onsite during the 100-year event is undetermined. However, anecdotal information suggests that large storm flooding on and near the project site is expected to be characterized by shallow (possibly one- to two-feet deep), slow-moving flows.

Based on the preliminary hydrology and hydraulic modeling efforts, construction of the proposed project without appropriate drainage/flood mitigations may increase peak discharges in the Covell Drain, and would most likely increase the maximum water surface elevations in the floodplain on and near the site. This potential impact would be mitigated through a combination of proposed detention storage near the existing water tank site and around the perimeter of the project site.

Electricity and Natural Gas

The project site has nearby access to PG&E service for both natural gas and electric service.

The proposed project would provide energy efficient homes. All of the State of California design guidelines for new homes including "tight building envelopes," energy efficient appliances and HVAC, insulation and window efficacy, would be incorporated into the project design. The project development would comply with current City standards, including Tier 1 of the CalGreen codes. Additionally, solar would be incorporated on all of the proposed rooftops. The amount of solar on each home would likely be a ratio of square footage of the home to anticipated electrical usage.

GENERAL PLAN AMENDMENT

The proposed project would require a City of Davis General Plan Amendment to the Land Use Element to change land uses on the project site. Changes to the Land Use Element would include changing the entire approximately 75-acre project site from Agriculture to Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. Figure 6 illustrates the current County General Plan land uses within the project site. Proposed General Plan land uses are also shown on Figure 6.

MEASURE R

Because the General Plan Amendment would redesignate the site from Agricultural and Urban Agriculture Transition Area to urban uses, voter approval is required under the Citizens' Right to Vote on Future Use of Open Space and Agricultural Lands Ordinance (Measure R). Measure R requires approval of Baseline Project Features such as recreation facilities, public facilities, and significant project design features, which cannot be eliminated, significantly modified, or reduced without subsequent voter approval.

PRE-ZONING

The project site is currently within the jurisdiction of Yolo County. Current County zoning for the project site is A-N. The Yolo Local Agency Formation Commission (LAFCo) would require the project site to be pre-zoned by the City of Davis in conjunction with the proposed annexation.

The City's pre-zoning for the project site would be PD. The pre-zoning would go into effect upon annexation into the City of Davis. The existing and proposed zoning for the project site is shown on Figure 7.

ANNEXATION

The project site is currently within Yolo County, and within the City of Davis' SOI. The proposed project would result in the annexation of the approximately 75-acre project site into the City of Davis.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

The City of Davis is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050.

This document will be used by the City of Davis to take the following actions:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of City of Davis General Plan Amendments (including Measure R voter approval);
- Approval of City of Davis Pre-zoning and Preliminary Planned Development;
- Approval of Annexation;
- Approval of Final Planned Developments and Tentative Subdivision Maps;
- Approval of Grading Plans;
- Approval of Building Permits;
- City review and approval of Project utility plans.

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CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 1. Regional Location Map

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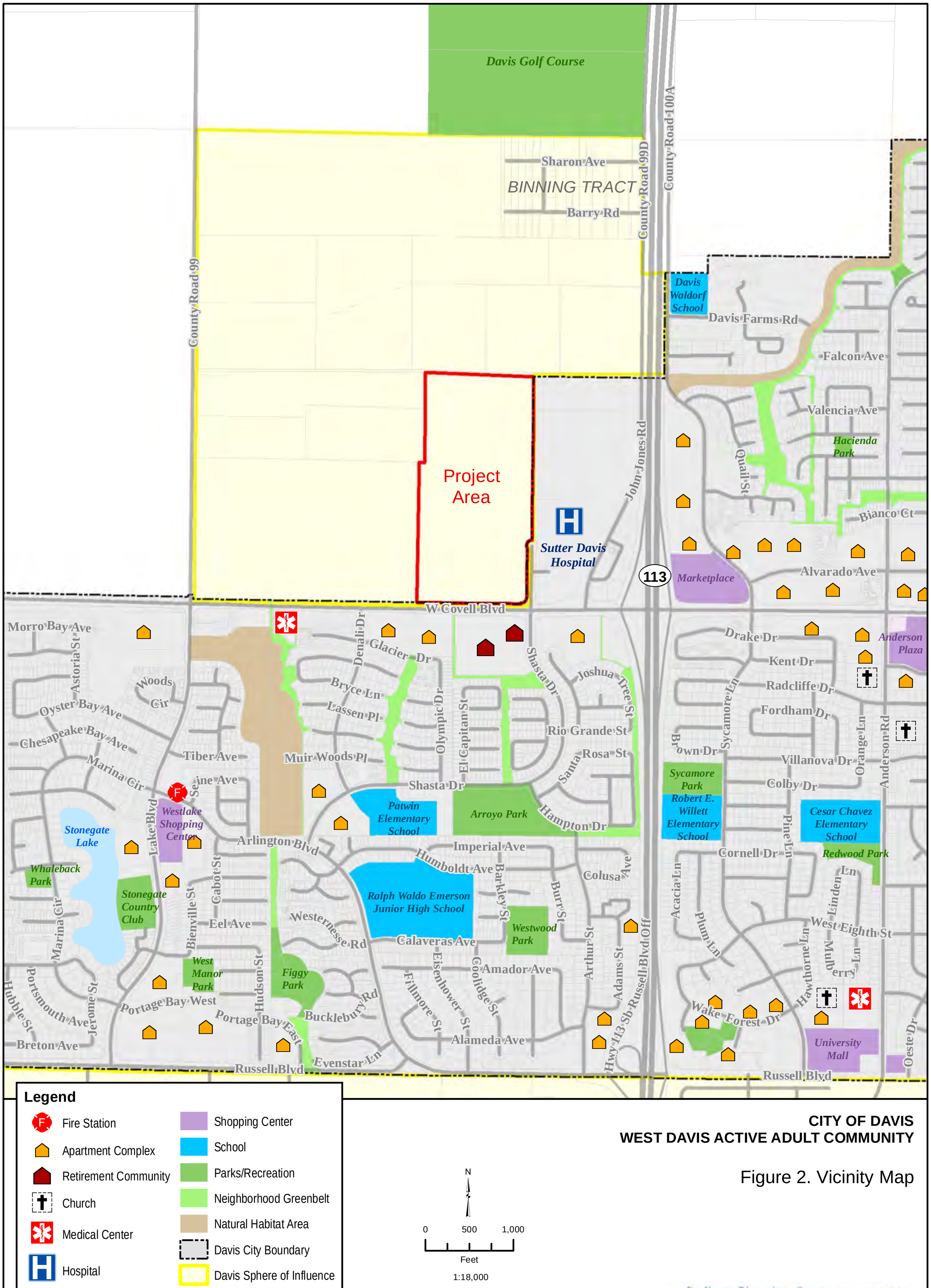

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 2. Vicinity Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Source: Yolo County GIS; City of Davis GIS; Google Maps. Map date: February 20, 2017.

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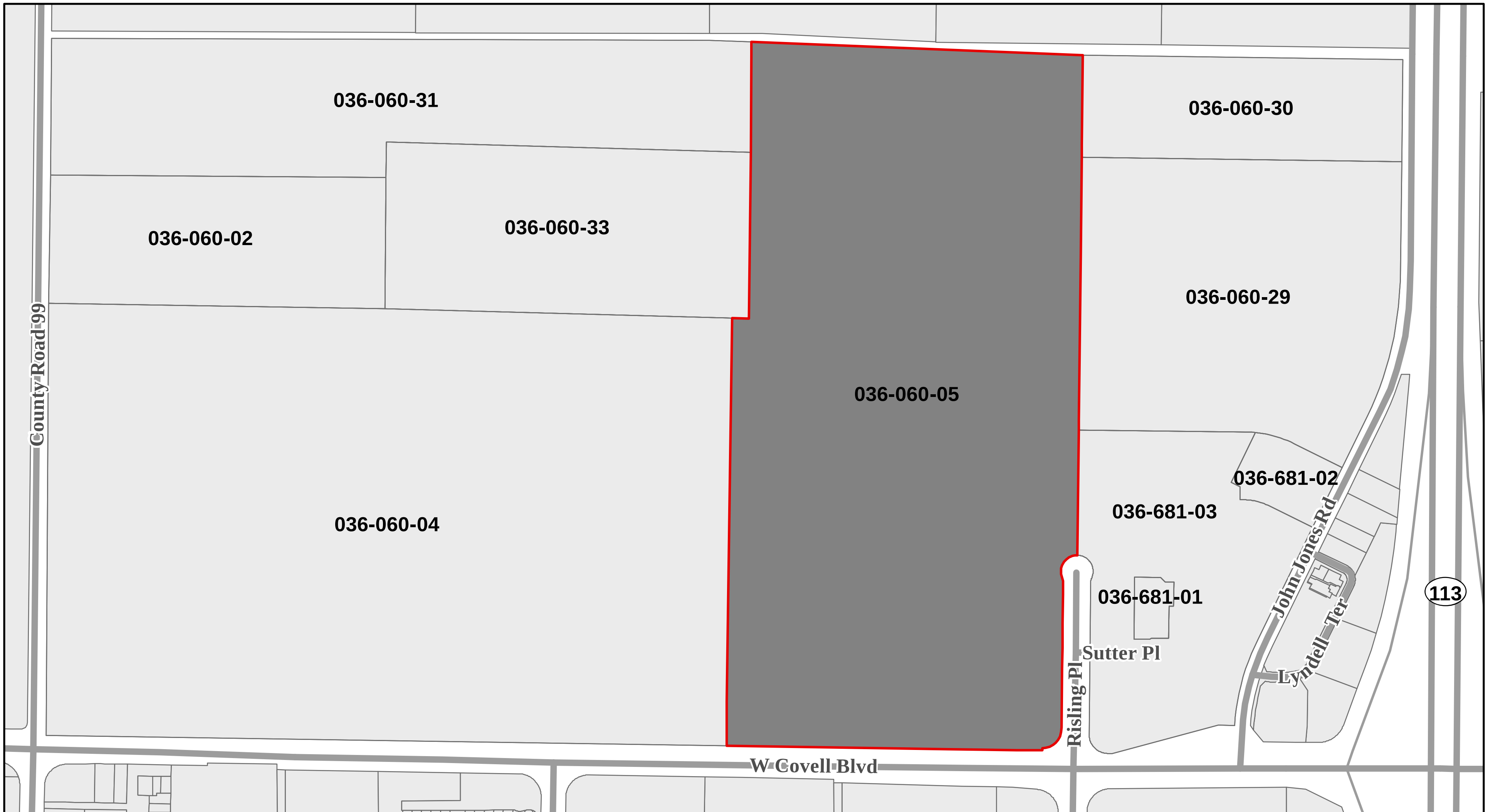

CITY OF DAVIS
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Figure 3. Assessor's Parcel Map

Source: Yolo County GIS. Map date: February 20, 2017.

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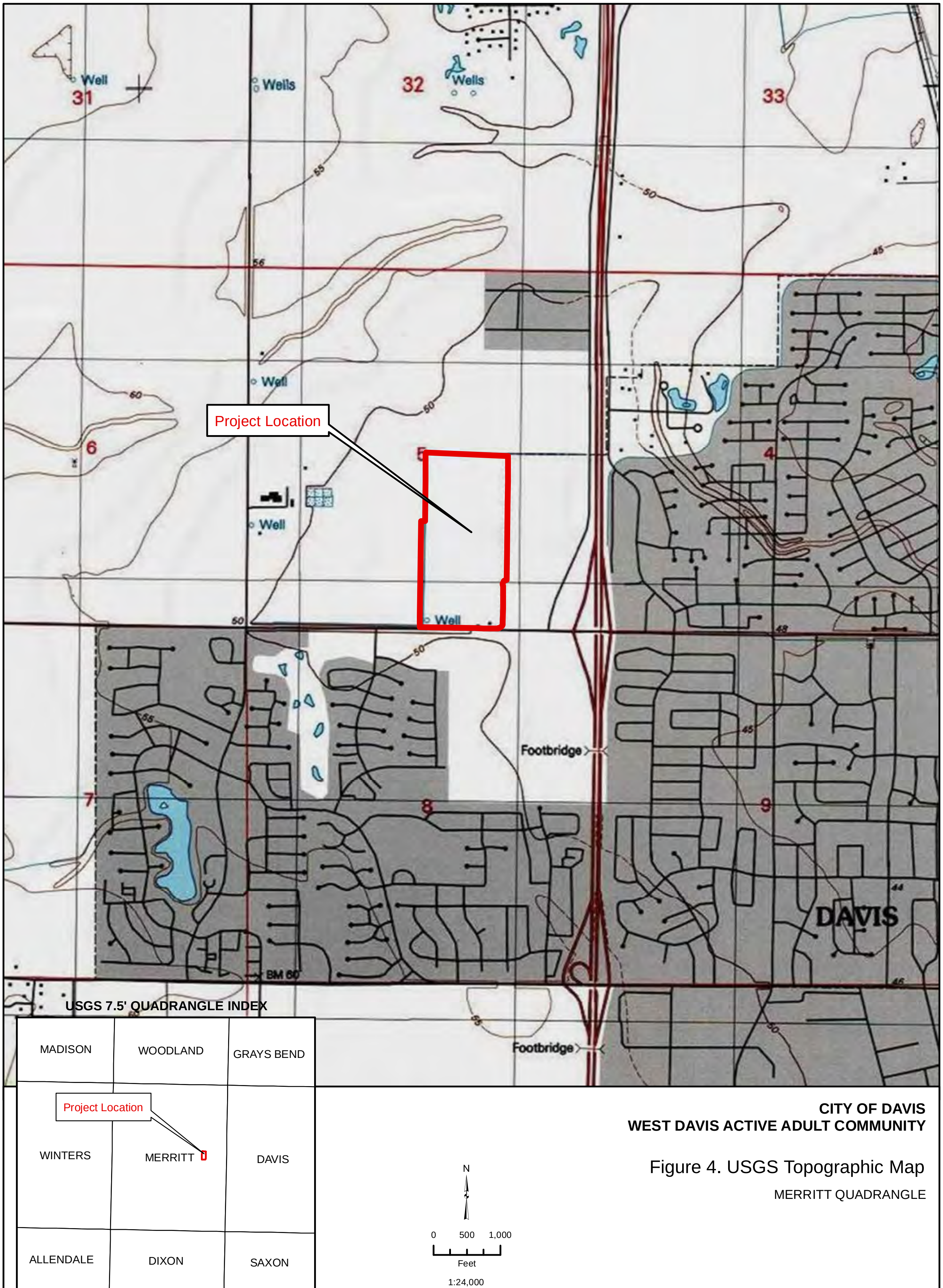

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 4. USGS Topographic Map

MERRITT QUADRANGLE

Data sources: Yolo County GIS; ArcGIS Online USGS Topographic Map Service. Map date: February 20, 2017.

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Legend

Project Parcel

N

0 200 400

Feet

1:6,000

CITY OF DAVIS
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Figure 5. Aerial View of Project Site

Source: Yolo County GIS; ArcGIS Online World Imagery Map Service. Map date: February 20, 2017.

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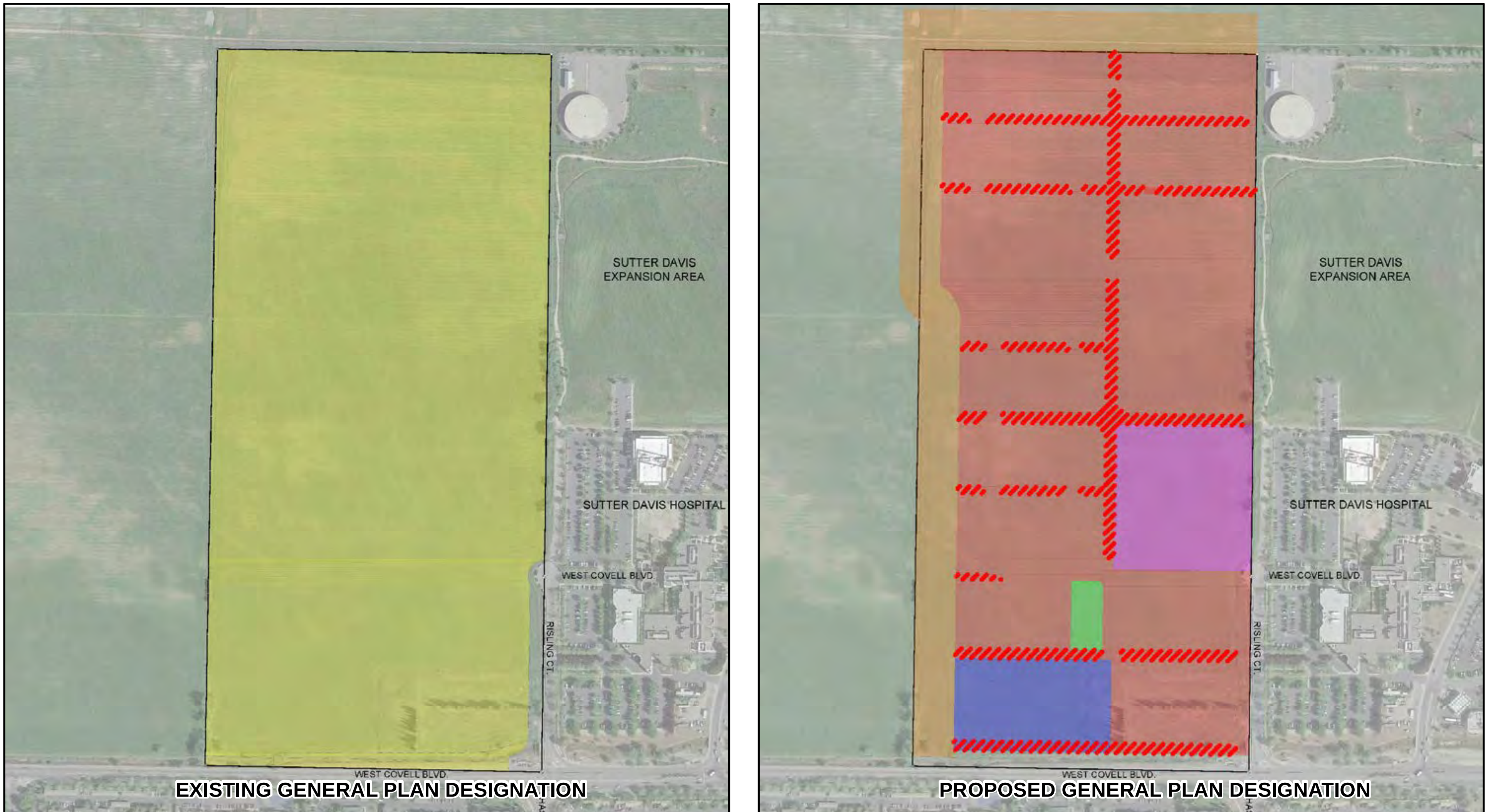

General Plan Designations

- Agricultural
- Park
- Urban Agriculture Transition Area
- Residential - Medium Density
- Residential - High Density
- Residential Green Space Overlay
- Mixed Use

N

0 200 400

Feet

1:6,600

Source: Yolo County; Cunningham Engineering. Map date: April 11, 2017.

CITY OF DAVIS
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Figure 6. Existing and Proposed General Plan Designations

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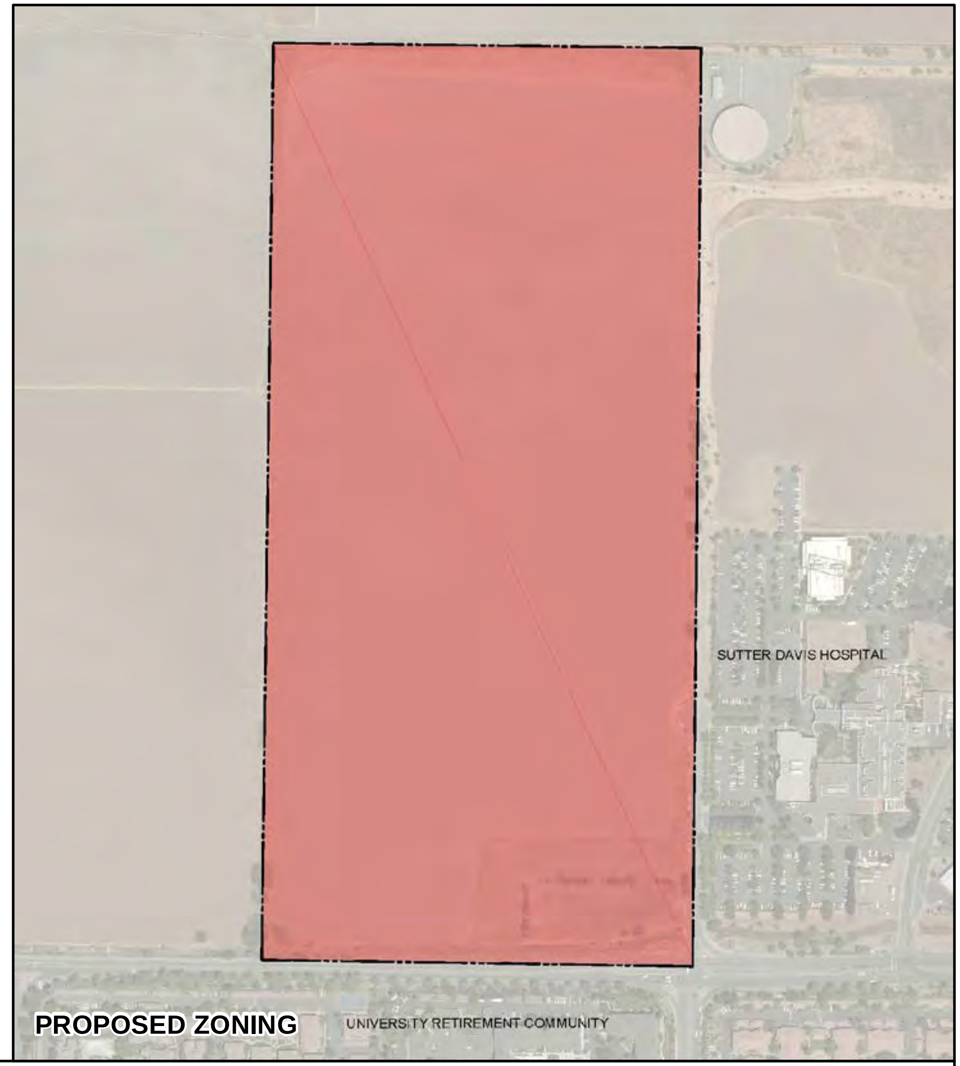

Zoning Designations

- Agricultural-Extensive
- Planned Development (P-D)

N

0 200 400
Feet
1:6,600

CITY OF DAVIS
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Figure 7. Existing and Proposed Zoning

Source: Yolo County; Cunningham Engineering. Map date: April 11, 2017.

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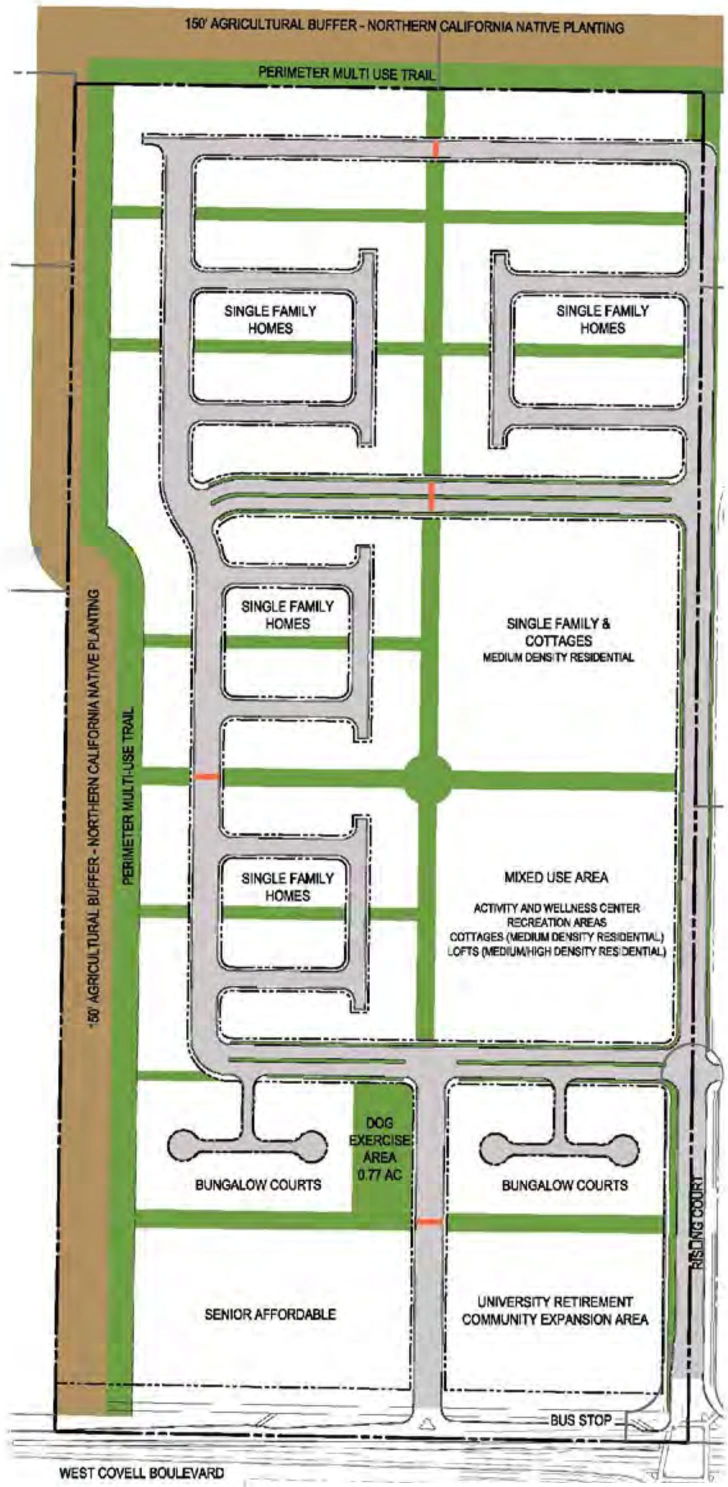

Legend

- Property Line
- Right of Way
- Raised Crosswalk

N

0 100 200
Feet
1:4,500

CITY OF DAVIS
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Figure 8. Conceptual Master Plan

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Source: Cunningham Engineering. Map date: April 11, 2017.

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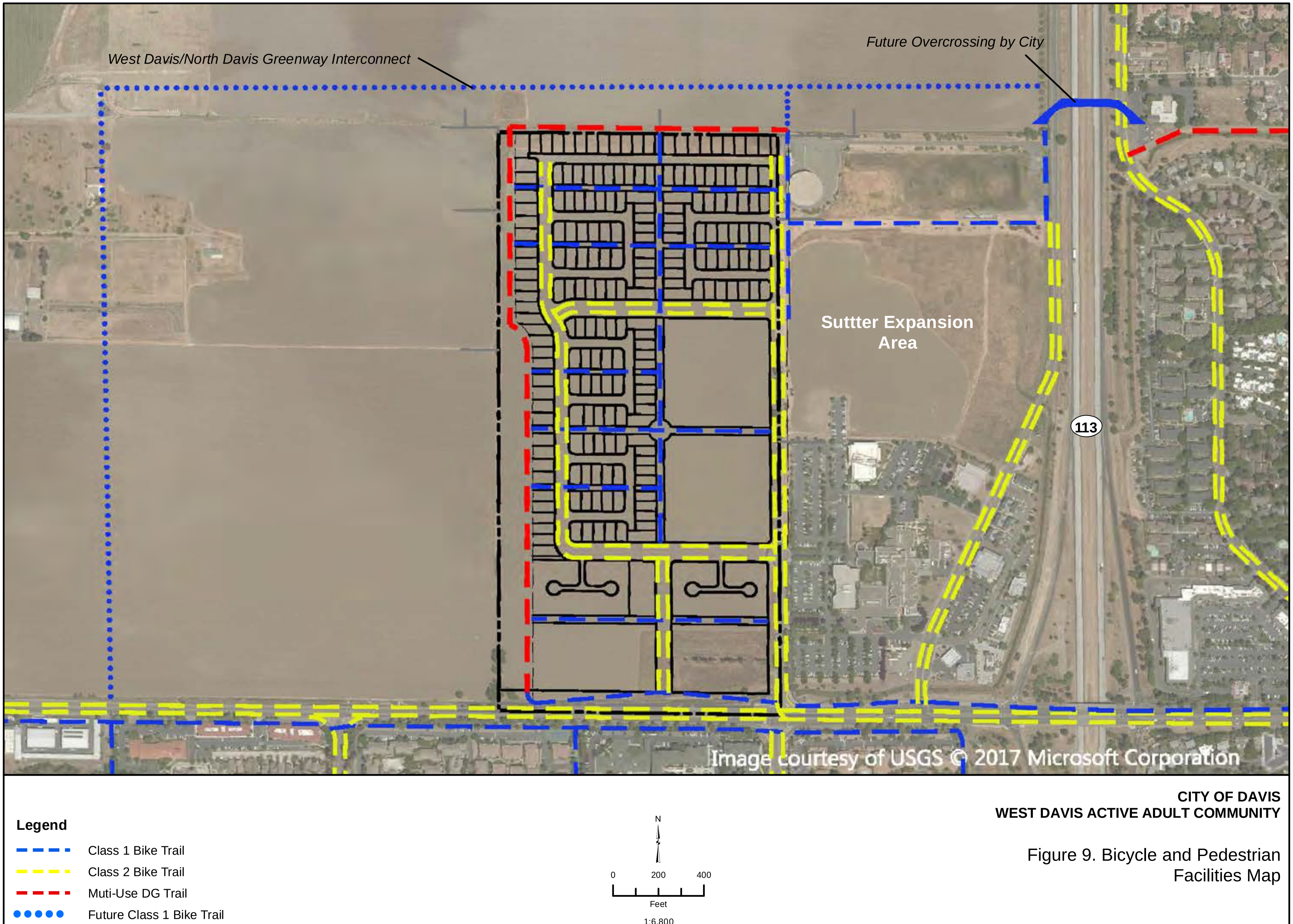

Source: Yolo County; Cunningham Engineering. Map date: April 11, 2017.

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Figure 9. Bicycle and Pedestrian Facilities Map

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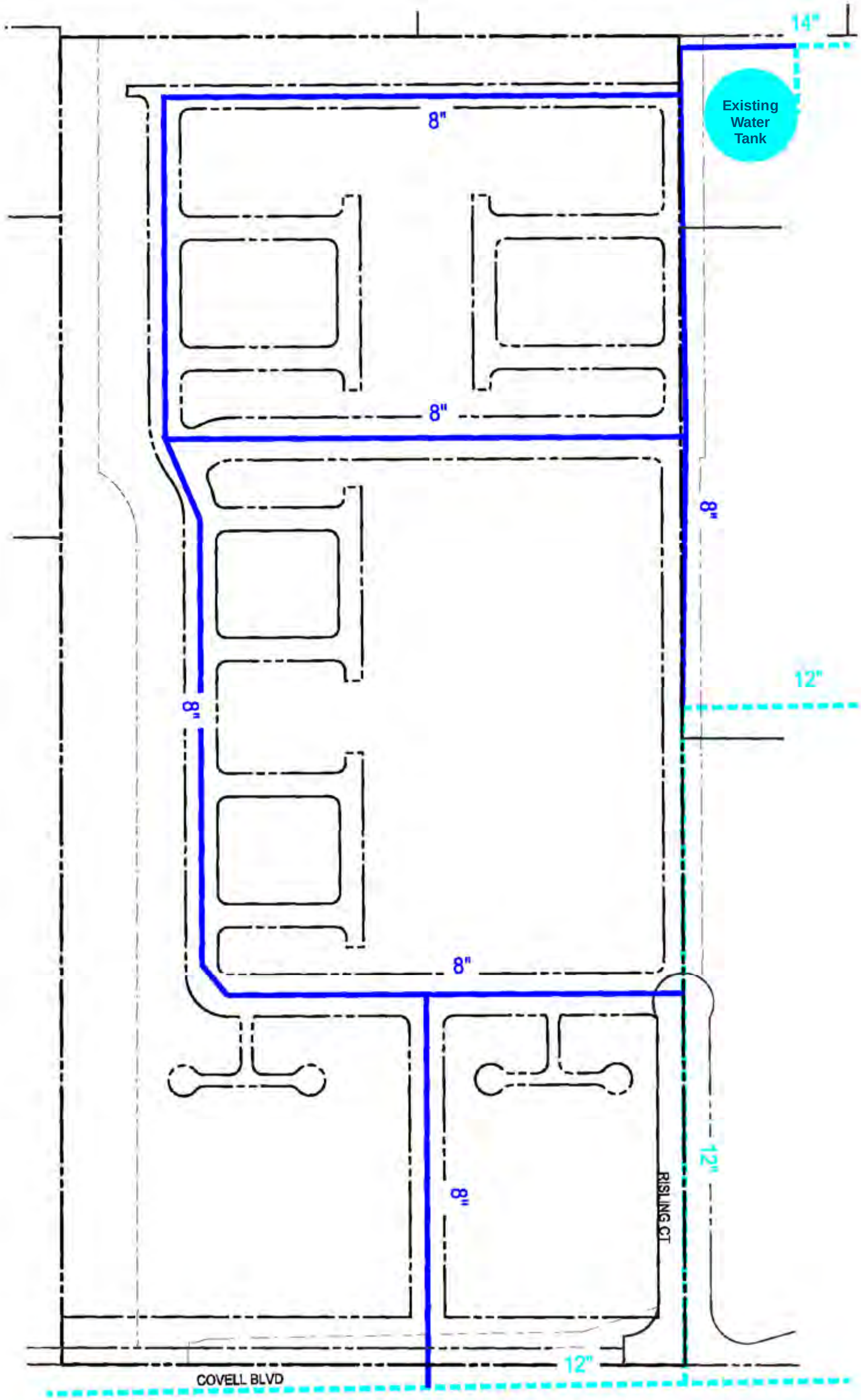

Legend

Existing Water Pipeline

Proposed Water Pipeline

N

0 100 200

Feet

1:4,200

CITY OF DAVIS
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Figure 10. Water System Exhibit

Source: Cunningham Engineering.
Map date: April 11, 2017.

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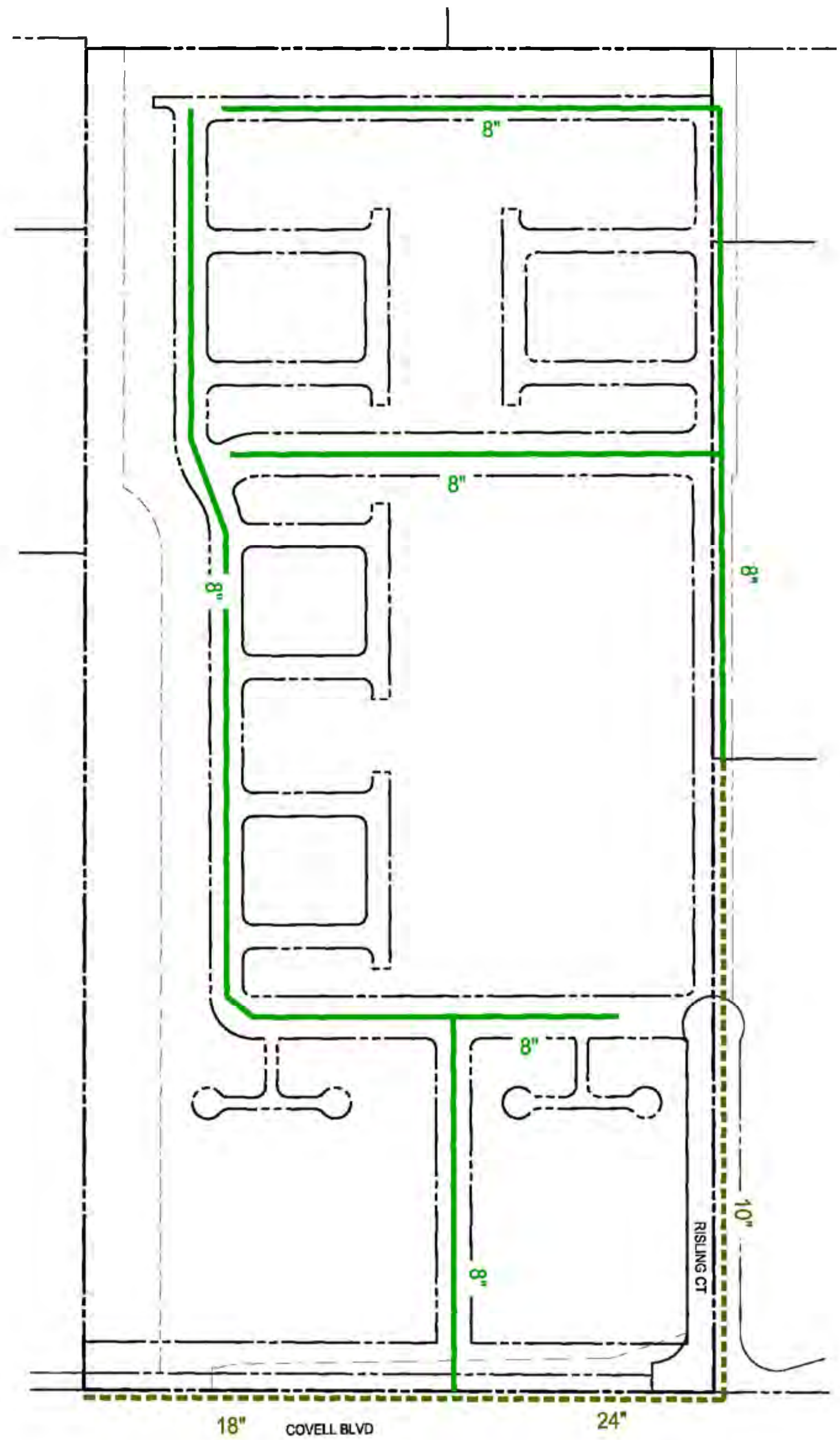

Legend

- Existing Sewer Pipeline
- Proposed Sewer Pipeline

N

0 100 200

Feet

1:4,500

CITY OF DAVIS
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Figure 11. Sanitary System Exhibit

Source: Cunningham Engineering.
Map date: April 11, 2017.

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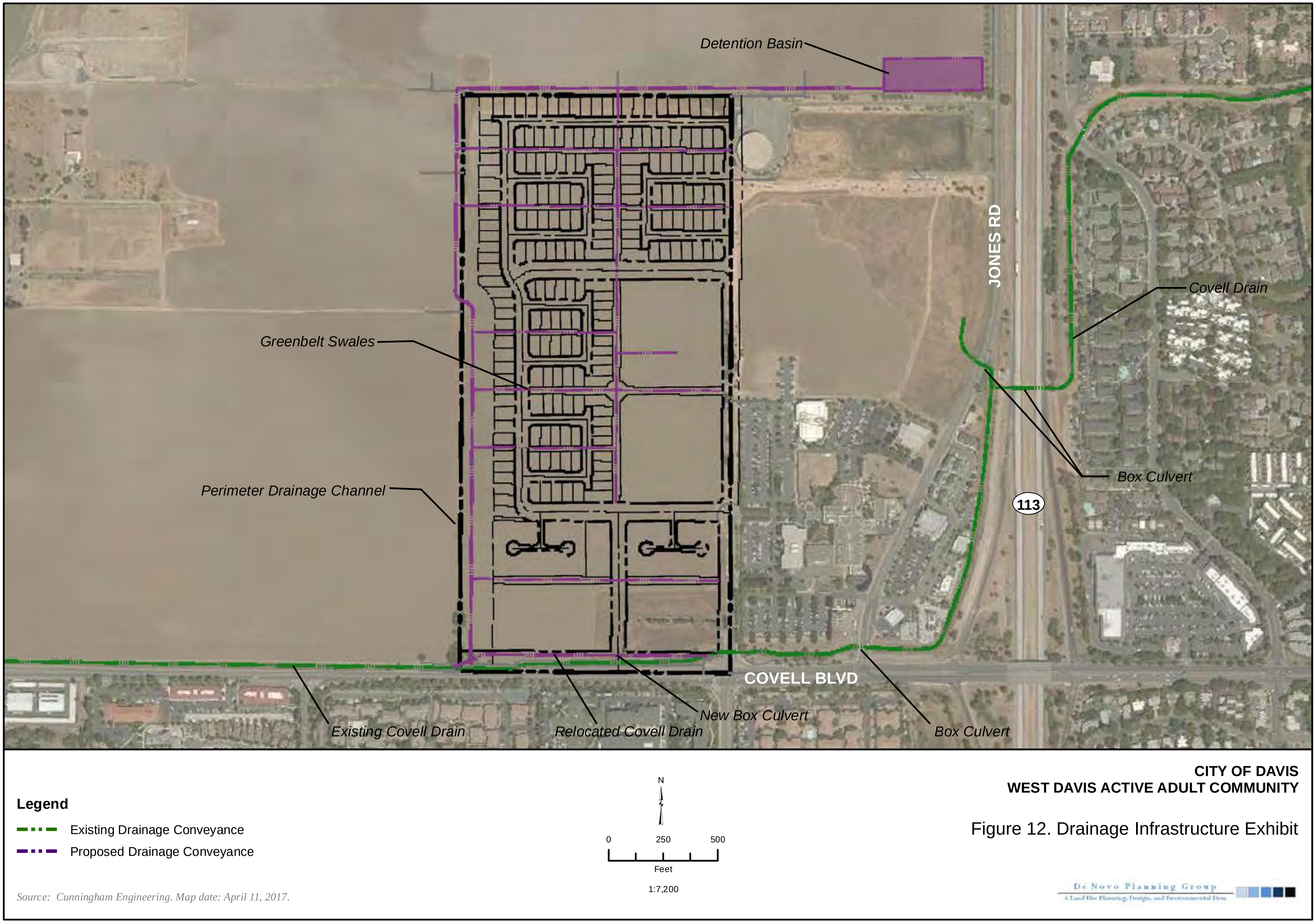

CITY OF DAVIS
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Figure 12. Drainage Infrastructure Exhibit

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

X	Aesthetics	X	Agriculture and Forest Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources	X	Geology and Soils
X	Greenhouse Gasses	X	Hazards and Hazardous Materials	X	Hydrology and Water Quality
X	Land Use and Planning		Mineral Resources	X	Noise
X	Population and Housing	X	Public Services	X	Recreation
X	Transportation and Traffic	X	Tribal Cultural Resources	X	Utilities and Service Systems
X	Mandatory Findings of Significance				

DETERMINATION

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
X	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form, contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 19 environmental topic areas.

I. AESTHETICS -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?	X			
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	X			
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	X			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-d): It has been determined that the potential impacts on aesthetics caused by the proposed project will require a more detailed analysis in the EIR. As such, the lead agency will examine each of the four environmental issues listed in the checklist above in the EIR and will decide whether the proposed project will have a potentially significant impact on aesthetics. At this point, a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will provide a discussion of viewsheds, proximity to scenic roadways and scenic vistas, existing lighting standards, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts on aesthetics. This section of the EIR will identify applicable General Plan policies that protect the visual values located along public roadways and surrounding land uses, and will also address the potential for the project to substantially impair the visual character of the project vicinity. The analysis will address any proposed design and landscaping plans developed by the applicant and provide a narrative description of the anticipated changes to the visual characteristics of the project site as a result of project implementation and the conversion of the existing on-site land uses. The analysis will also address potential impacts associated with light spillage onto adjacent properties during nighttime activities.

II. AGRICULTURE AND FOREST RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	X			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	X			
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), e): It has been determined that the potential impacts on agricultural resources caused by the proposed project will require a more detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project will have a potentially significant impact on agriculture resources. The analysis will include a discussion of potential impacts related to the proposed on- and off-site improvements, as well as any potential rural-urban agriculture conflicts. At this point, a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will describe the character of the region's agricultural lands, including maps of prime farmlands, other important farmland classifications, and protected farmland (including Williamson Act contracts). The County Agricultural Commissioner's Office and the State Department of Conservation will be consulted and their respective plans, policies, laws, and regulations affecting agricultural lands will be presented within the analysis.

The EIR will include thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to offset the loss of agricultural lands and Williamson Act cancellations as a result of project implementation.

Responses c), d): There are no forest resources or zoning for forest lands located on the project site. This CEQA topic is not relevant to the proposed project and does not require further analysis. Therefore, there would be ***no impact*** regarding the loss of forest resources.

III. AIR QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Conflict with or obstruct implementation of the applicable air quality plan?	X			
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
d) Expose sensitive receptors to substantial pollutant concentrations?	X			
e) Create objectionable odors affecting a substantial number of people?	X			

EXISTING SETTING

The project site is located within the boundaries of the Yolo Sacramento Air Quality Control District (YSAQMD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the Sacramento Valley Air Basin (SVAB) and has jurisdiction over most air quality matters within its borders. The Sacramento Valley is often described as a bowl-shaped valley, with the SVAB being bounded by the North Coast Ranges on the west, the Northern Sierra Nevada Mountains on the east, and the intervening terrain being flat. The Sacramento Valley has a Mediterranean climate, characterized by hot, dry summers and mild, rainy winters. Average annual rainfall is approximately 20 inches, with snowfall being very rare. According to the Western Regional Climate Center, the prevailing wind direction throughout the year in the project area is from the south[1].

RESPONSES TO CHECKLIST QUESTIONS

Responses a-e): Based on the current air quality conditions in the air basin it has been determined that the potential impacts on air quality caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the five environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on air quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

[1] Western Regional Climate Center. Prevailing Wind Direction. Available at: http://www.wrcc.dri.edu/htmlfiles/westwinddir.html. Accessed February 2017.

The EIR will include an air quality analysis that presents the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts on air quality. The air quality analysis will include the following:

- Regional air quality and local air quality in the vicinity of the project site will be described. Meteorological conditions in the vicinity of the project site that could affect air pollutant dispersal or transport will be described. Applicable air quality regulatory framework, standards, and significance thresholds will be discussed.
- Short-term (i.e., construction) increases in regional criteria air pollutants will be quantitatively assessed. The ARB-approved CalEEMod computer model will be used to estimate regional mobile source and particulate matter emissions associated with the construction of the proposed project.
- Long-term (operational) increases in regional criteria air pollutants will be quantitatively assessed for area source, mobile sources, and stationary sources. The ARB-approved CalEEMod computer model will be used to estimate emissions associated with the proposed project. Exposure to odorous or toxic air contaminants will be assessed through a screening method as recommended by the YSAQMD.
- Local mobile-source CO concentrations will be assessed through a CO screening method as recommended by the YSAQMD.

IV. BIOLOGICAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	X			
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X			
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	X			
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-f): Based on the documented special status species, sensitive natural communities, wetlands, and other biological resources in the region, it has been determined that the potential impacts on biological resources caused by the proposed project will require a detailed analysis. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on biological resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will provide a summary of local biological resources, including descriptions and mapping of plant communities, the associated plant and wildlife species, and sensitive biological resources known to occur, or with the potential to occur in the project vicinity. The analysis will conclude with a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented in order to reduce impacts on biological resources and to ensure compliance with federal and state regulations.

V. CULTURAL RESOURCES -- *WOULD THE PROJECT:*

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	X			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X			
d) Disturb any human remains, including those interred outside of formal cemeteries?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-d): Based on known historical and archaeological resources in the region, and the potential for undocumented underground cultural resources in the region, it has been determined that the potential impacts on cultural resources caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the four environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on cultural resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an overview of the prehistory and history of the area, the potential for surface and subsurface cultural resources to be found in the area, the types of cultural resources that may be expected to be found, a review of existing regulations and policies that protect cultural resources, an impact analysis, and mitigation that should be implemented in order to reduce potential impacts to cultural resources. In addition, the CEQA process will include a request to the Native American Heritage Commission for a list of local Native American groups that should be contacted relative to this project. The CEQA process will also include consultation with any Native American groups that have requested consultation with the City of Davis.

VI. GEOLOGY AND SOILS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	X			
ii) Strong seismic ground shaking?	X			
iii) Seismic-related ground failure, including liquefaction?	X			
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?	X			
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	X			
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	X			
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses ai, aii, aiii, b, c, d): It has been determined that the potential impacts from geology and soils will require a detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from geology and soils. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a review of existing geotechnical reports, published documents, aerial photos, geologic maps and other geological and geotechnical literature pertaining to the site and surrounding area to aid in evaluating geologic resources and geologic hazards that may be present. The EIR will include a description of the applicable regulatory setting, a description of the existing geologic and soils conditions on and around the project site, an evaluation of geologic hazards, a description of the nature and general engineering characteristics of the subsurface conditions within the project site, and the provision of findings and potential mitigation strategies to address any geotechnical concerns or potential hazards.

This section will provide an analysis including thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with geology and soils.

Response aiv): Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The potential for landslides is considered remote in the valley floors due to the lack of significant slopes. The site is nearly level at an elevation of approximately 47 to 50 feet above MSL. For these reasons, the probability of landslides occurring on the project site is low. This is a **less than significant** impact, and no additional analysis of this CEQA topic is warranted.

Response e): The proposed project would connect to the municipal sewer system for wastewater disposal. Septic tanks or septic systems are not proposed as part of the project. As such, this CEQA topic is not relevant to the proposed project and does not require further analysis.

VII. GREENHOUSE GAS EMISSIONS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Implementation of the proposed project could generate greenhouse gases (GHGs) from a variety of sources, including but not limited to vehicle trips, vehicle idling, electricity consumption, water use, and solid waste generation. It has been determined that the potential impacts from GHG emissions by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from GHG emissions. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X			
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	X			
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	X			
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	X			
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	X			
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	X			
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-h): It has been determined that the potential impacts from hazards and/or hazardous materials by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from hazards and/or hazardous materials. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a review of existing environmental site assessments and any other relevant studies for the project site to obtain a historical record of environmental conditions. The analysis will also include a review of recent records and aerial photographs. A site reconnaissance will be performed to observe the site and potential areas of interest. Property owners/managers will be interviewed to gather information on the current and historical use of the properties, and the potential for project implementation to introduce hazardous materials to and from the area during construction and operation. If environmental conditions are identified, mitigation measures, as applicable, will be identified to address the environmental conditions.

This section will provide an analysis including the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with hazards and hazardous materials.

IX. HYDROLOGY AND WATER QUALITY -- *WOULD THE PROJECT:*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	X			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	X			
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	X			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	X			
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	X			
f) Otherwise substantially degrade water quality?	X			
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	X			
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	X			
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	X			
j) Inundation by seiche, tsunami, or mudflow?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a-i): Flood hazards can result from intense rain, snowmelt, cloudbursts, or a combination of the three, or from failure of a water impoundment structure, such as a dam. Floods from rainstorms generally occur between November and April and are characterized by high peak flows of moderate duration. Human activities have an effect on water quality when chemicals, heavy metals, hydrocarbons (auto emissions and car crank case oil), and other materials are transported with stormwater into drainage systems. Construction activities can increase sediment runoff, including concrete waste and other pollutants.

It has been determined that the potential impacts on hydrology and water quality caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the potentially significant environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on hydrology and water quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will present the existing FEMA flood zones, levee protection improvements, reclamation districts, and risk of flooding on the project site and general vicinity.

The EIR will summarize onsite hydrology and hydraulic calculations under existing and proposed conditions. Some of the specific items to be reviewed include: land use classification; acreage calculations; runoff coefficients; time of concentration; and methodology. Calculations will be reviewed for reasonableness and consistency with the site plan and with the City's master plans.

The EIR will evaluate the potential construction and operational impacts of the proposed project on water quality. This section will describe the surface drainage patterns of the project site and adjoining areas, and identify surface water quality in the project site based on existing and available data. This section will identify impaired water bodies, listed pursuant to Section 303(d) of the federal Clean Water Act, in the vicinity of the project site. Conformity of the proposed project to water quality regulations will also be discussed. Mitigation measures will be developed to incorporate best management practices (BMPs), consistent with the requirements of the Central Valley Regional Water Quality Control Board to reduce the potential for site runoff.

This section will provide an analysis including the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with hydrology and water quality.

Response j): There are no significant bodies of water near the project site that could be subject to a seiche or tsunami. Additionally, the project site and the surrounding areas are essentially flat, which precludes the possibility of mudflows occurring on the project site. This is a **less than significant** impact, and no additional analysis of this CEQA topic is warranted.

X. LAND USE AND PLANNING -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Physically divide an established community?	X			
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	X			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	X			

RESPONSES TO CHECKLIST QUESTIONS

Response a-c): It has been determined that the potential land use and planning impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of these environmental issues in the EIR and will decide whether the proposed project has the potential to have a significant impact. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a detailed discussion of the project entitlements, including Annexation, Pre-zoning, General Plan Amendments, and approval of Preliminary and Final Planned Developments as it relates to the existing General Plan, Zoning Code, and other local regulations. The local, regional, state, and federal jurisdictions potentially affected by the project will be identified, as well as their respective plans, policies, laws, and regulations, and potentially sensitive land uses. The proposed project will be evaluated for consistency the City of Davis General Plan, the Zoning Ordinance, and other local planning documents. Planned development and land use trends in the region will be identified based on currently available plans. Reasonably foreseeable future development projects within the region will be noted, and the potential land use impacts associated with the project will be presented.

This section will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to ensure consistency with the existing and planned land uses.

XI. MINERAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): No Impact. According to the Davis General Plan, the most important mineral resources in the region are sand and gravel, which are mined on Cache Creek and other channels in Yolo County. There are no known mineral resources located on the project site or in the immediate vicinity. Additionally, there is no land designated or zoned for mineral resources within the City limits or on the project site. Given that no known mineral resources are located in the vicinity of the proposed project, implementation of the proposed project would not result in the loss of availability of a known mineral resource or of a locally-important mineral resource recovery site. Therefore, there would be **no impact** regarding the loss of availability of a known mineral resource that would be of value to the region.

XII. NOISE -- *WOULD THE PROJECT RESULT IN:*

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	X			
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-f): Based on existing and projected noise levels along roadways, and the potential for noise generated during project construction and operational activities, it has been determined that the potential impacts from noise caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the six potentially significant environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from noise. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a noise study. The noise study will identify the noise level standards contained in the City of Davis General Plan Noise Elements which are applicable to this project, as well as any germane state and federal standards. Continuous (24-hour) and short-term noise measurements will be performed on the project site and in the project vicinity in order to quantify existing ambient noise levels from existing noise sources, including project site roadways and activities associated with the Sutter Davis Hospital. The noise study will provide an estimate of existing traffic noise levels adjacent to the project -area roadways through application of accepted traffic noise prediction methodologies. Any significant noise sources other than local traffic within the project site will be identified and quantified through noise level measurements. The noise study will identify all significant noise impacts due to and upon development of the proposed project. The noise study will determine the land use compatibility of proposed residential and commercial uses as it may affect existing noise sensitive receptors in the project site. An assessment of construction noise impacts and potential mitigation measures will also be provided. The study will present appropriate and practical recommendations for noise control aimed at reducing any noise impacts.

The EIR will include thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with noise.

XIII. POPULATION AND HOUSING -- WOULD THE PROJECT:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	X			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

RESPONSES TO CHECKLIST QUESTIONS

Response a): It has been determined that the potential population and housing impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine this environmental issue in the EIR and will decide whether the proposed project has the potential to have a significant impact. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a detailed discussion of the project characteristics, including Annexation, Pre-zoning, General Plan Amendments, and approval of Preliminary and Final Planned Developments, and housing proposed by the project as it relates to the existing General Plan Housing Element, and other local regulations. The local, regional, state, and federal jurisdictions potentially affected by the project will be identified, as well as their respective plans, policies, laws, and regulations, and potentially sensitive land uses. The proposed project will be evaluated for consistency the City of Davis General Plan, the Zoning Ordinance, and other local planning documents. Planned development and housing and population trends in the region will be identified based on currently available plans.

This section will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to ensure population and housing consistency with the existing and planned land uses.

Responses b-c): There are no existing housing units located on the project site. As such, implementation of the proposed project does not have the potential to displace existing housing units or displace people as a result of implementation. There is **no impact**, and these environmental topics will not be further addressed in the EIR.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	X			
b) Police protection?	X			
c) Schools?	X			
d) Parks?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a)i- v: Implementation of the proposed project would result in increased demand for police, fire protection, schools, parks, and other public facilities in the area. It has been determined that the potential impacts from increased demands on public services caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of these environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on public services. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

During the preparation of the EIR, the public service providers will be consulted in order to determine existing service levels in the project area. This would include documentation regarding existing staff levels, equipment and facilities, current service capacity, existing service boundaries, and planned service expansions. Master plans from such public service providers and City policies, programs, and standards associated with the provision of public services will be described in the EIR.

The EIR will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented reduce impacts associated with public services.

XV. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	X			
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	X			

RESPONSES TO CHECKLIST QUESTIONS

Response a), b): Implementation of the proposed project would result in increased demand for parks, and other recreational facilities in the area. It has been determined that the potential impacts from increased demands to recreation facilities caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of these environmental issues listed in the checklist above in the EIR, and will decide whether the proposed project has the potential to have a significant impact on recreational facilities. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

During the preparation of the EIR, the recreational facilities and services will be analyzed to determine existing service levels in the project area. This would include documentation regarding existing and future facility needs, current service capacity, and planned service expansions. City policies, programs, and standards associated with the provision of public services will be presented in the EIR.

The EIR will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented reduce impacts associated with recreation.

XVI. TRANSPORTATION AND TRAFFIC -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	X			
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	X			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	X			
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	X			
e) Result in inadequate emergency access?	X			
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-f): The proposed project includes the development of uses that will increase traffic on existing and planned roadways. The circulation design includes roadway improvements intended to accommodate traffic patterns in the area. Based on existing and projected traffic volume levels along roadways, it has been determined that the potential traffic impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the EIR will examine each of the environmental issues listed in the checklist above and will determine whether the proposed project has the potential to have a significant impact from traffic. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is conducted in the EIR.

The EIR will describe existing and future traffic conditions and will identify the trips that will be generated by the project and the projected distribution of those trips on the roadway system. The EIR will analyze traffic impacts associated with the project under existing and cumulative conditions. Potential impacts associated with site access and on-site circulation will also be addressed in the EIR.

The potential transportation impacts will be analyzed using the Synchro traffic operations software, which is based on the Highway Capacity Manual. The traffic analysis will include an

Existing Plus Project condition, Existing Plus Approved Projects Plus Project, and a Cumulative Plus Project condition. Impacts to the bicycle, pedestrian, rail, and transit facilities and services will be also evaluated. Significant impacts will be identified in accordance with the established criteria. Mitigation measures will be identified to lessen the significance of impacts where feasible.

The EIR will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented reduce impacts associated with transportation/traffic.

XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	X			
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): Based on known historical, cultural, tribal, and archaeological resources in the region, and the potential for undocumented underground cultural resources in the region, it has been determined that the potential impacts on tribal cultural resources caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine the two environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on tribal cultural resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an overview of the prehistory and history of the area, the potential for surface and subsurface tribal cultural resources to be found in the area, the types of tribal cultural resources that may be expected to be found, a review of existing regulations and policies that protect tribal cultural resources, an impact analysis, and mitigation that should be implemented in order to reduce potential impacts to tribal cultural resources. In addition, the CEQA process will include a request to the Native American Heritage Commission for a list of local Native American groups that should be contacted relative to this project, as per the requirements of AB 52. The CEQA process will also include consultation with any Native American groups that have requested consultation with the City of Davis.

XVIII. UTILITIES AND SERVICE SYSTEMS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	X			
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	X			
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	X			
g) Comply with federal, state, and local statutes and regulations related to solid waste?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-g): Implementation of the proposed project would result in increased demands for utilities to serve the project. As such, the EIR will examine each of the seven environmental issues listed in the checklist above and will decide whether the proposed project has the potential to have a significant impact to utilities and service systems. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will analyze wastewater, water, and storm drainage infrastructure, as well as other utilities (i.e. solid waste, gas, electric, etc.), that are needed to serve the proposed project. The wastewater assessment will include a discussion of the proposed collection and conveyance system, treatment methods and capacity at the treatment plants, disposal location(s) and methods, and the potential for recycled water use for irrigation. The EIR will analyze the impacts associated with on-site construction of the conveyance system, including temporary impacts associated with the construction phase. The proposed infrastructure will be presented. This will likely include a system of gravity pipes, pump station(s), and a forcemain(s). The EIR will provide a discussion of the wastewater treatment plants that are within proximity to the project site, including current demand and capacity at these plants. The analysis will discuss the disposal methods and location, including environmental impacts and permit requirements associated with disposal of treated wastewater.

The storm drainage assessment will include a discussion of the proposed drainage collection system including impacts associated with on-site construction of the storm drainage system. The EIR will identify permit requirements and mitigation needed to minimize and/or avoid impacts. The proposed infrastructure will be presented. This will likely include a system of gravity pipes, storage basin(s), pump station(s), and forcemain(s).

The EIR will include an assessment for consistency with City Master Plans and Management Plans that are directly related to these utilities.

The EIR will analyze the impacts associated with on-site and off-site construction of the water system, including temporary impacts associated with the construction phase. The EIR will also identify permit requirements and mitigation needed to minimize and/or avoid impacts, and will present the proposed infrastructure as provided by the project site engineering reports.

The EIR will also address solid waste collection and disposal services for the proposed project. This will include an assessment of the existing capacity and project demands. The assessment will identify whether there is sufficient capacity to meet the project demands.

The EIR will provide thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with utilities and service systems.

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	X			
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	X			
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-c): It has been determined that the potential for the proposed project to: degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of a rare or endangered plant or animal; eliminate important examples of the major periods of California history or prehistory; create cumulatively considerable impacts; or adversely affect human beings will require more detailed analysis in an EIR. As such, the EIR will examine each of these environmental issues and will decide whether the proposed project has the potential to have a significant impact on these environmental issues. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

REFERENCES

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- City of Davis 2010 Urban Water Management Plan (City of Davis 2010 UWMP, 2011). July 2011.
- City of Davis General Plan (City of Davis General Plan Update, 2007). Adopted May 2001. Amended Through January 2007.
- City of Davis Climate Action and Adaptation Plan. Adopted June 2010.
- City of Davis General Plan EIR (Davis General Plan EIR, 2000). January 2000.
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- Envirostar database search (DTSC, 2015). Available online at: https://www.envirostor.dtsc.ca.gov/public/.
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- West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Collection System Capacity. Technical Memorandum. March 25, 2015.

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West Davis Active Adult Community Project
Scoping Meeting Comments
Wednesday April 26th, 2017 – 4:45 PM

Commenter: Toni Terhaar and Russ Kanz

Comments:

- It is speculative that the low-income portion of the housing development would even be developed.
- The developer has proposed 1-story housing, but the site was meant for 2-story housing.
- The deed says that the property will be an age 55+ community, but deeds can be changed – so this is a contradiction. If it can be changed, how would it only be a 55+ community only?
- Traffic: the access road off of Covell needs to be analyzed by the traffic consultant, since it is a bad spot from a safety standpoint.
- Drainage: The engineering needs to be checked. The ditch surrounding the project site can flood.
- Schools – schools would be impacted because of older people moving out of their existing home in Davis into the project community – the existing homes would then be occupied by younger families with children, thus increasing the burden on the local schools.
- The restrictions on the owner-builder lots surrounding the project site need to be analyzed.
- Traffic: The project will route cars to Covell. Sunday traffic in particular would be a big problem. Also, I-80 Westbound jams up frequently, and the project will make this worse. Also, the intersection of Lake & Covell should be analyzed.
- Regarding the nearby hospital – increased traffic would increase ambulance and other emergency response times.
- Noise: The project will generate additional emergency responders (e.g. ambulances), which would increase noise for nearby communities.
- Lighting: the project lighting may cause issues for nearby residents, including light pollution.
- Aesthetics: The project will be a physically imposing structure that may not be visually pleasing. The project building(s) would be even taller than Sutter Hospital.
- Biological Resource: Swainson's Hawk habitat could be destroyed, or Swainson's hawk nesting ground could be disturbed. Also, Red-shouldered hawks and red-tailed hawks could be affected, and the project's impact to these species and their habitats should be analyzed.
- Traffic: A lot of University workers live in Woodland. Between 3-6pm, there is a lot of traffic on Covell driving home to Woodland. This should be analyzed.
- Cumulative traffic would be an issue, given the development of the new Innovation Center. Other large projects under development and planned for development in Davis should be analyzed within the Cumulative scenario.
- Alternatives: one alternative that should be analyzed is an 'Affordable Housing' alternative, instead of a 55+ community.

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
2379 GATEWAY OAKS DRIVE, STE 150 – MS 19
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (916) 263-1796
TTY 711

Serious drought.
Help save water!

May 12, 2017

03-YOL-2017-00030
SCH #2017042043

City of Davis
23 Russell Blvd.
Davis, CA, 95616

Notice of Preparation (NOP) for West Davis Active Adult Community Project

Dear Ms. Katherine Hess:

Thank you for including the California Department of Transportation (Caltrans) in the application review process for the project referenced above. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this local development for impacts to the State Highway System in keeping with our mission, vision and goals for sustainability/livability/economy, and safety/health. We provide these comments consistent with the State's smart mobility goals that support a vibrant economy, and build communities, not sprawl.

The proposed project is the West Davis Active Adult Community Project which consists of 325 single family homes, 260 of which are for senior citizens, and an additional 150 affordable senior apartments The project also includes an approximately three acre Activity and Wellness Center, which is anticipated to include a pool, public restaurant, outdoor patio and parking lot.

This project involves an annexation of Yolo County land to the City of Davis and a City of Davis General Plan amendment changing the zoning from the County's Agricultural Intensive (A-N) to the City's Residential – Medium Density, Residential – High Density, Residential Greenspace Overlay, Urban Agriculture Transition Area, and Mixed Use. The zoning change would go into effect after the proposed annexation.

The project is on a site north of Covell Blvd., west of SR113, at the intersection of Shasta Drive and West Covell Blvd. Caltrans desires to continue the long standing coordination with the City of Davis on the Covell Boulevard/SR 113 interchange, specifically to ensure it balances the needs of pedestrians, bicyclists, vehicles, and transit given this planned annexation.

Transit service and bicycle facilities are accessible along Covell Boulevard. Based on our forecasting, this project is expected to generate a minimum of 134 a.m. and 171 p.m. peak hour trips.

Multi-Modal Traffic Analysis

In developing this plan we encourage the City to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths, and achieve a high level of non-motorized travel and transit use. As such, we encourage the City to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network as well as transit service and bicycle or pedestrian connectivity improvements. The Department also seeks to reduce serious injuries and fatalities, as well as provide equitable mobility options for people who are economically, socially, or physically disadvantaged. Therefore, we ask the City to evaluate the plan for access problems, VMT and service needs that may need to be addressed.

The eventual Draft Environmental Impact Report (DEIR) should include an analysis of the multimodal travel demand expected from the proposed project. The study should include an analysis of the Base Year, (at the time the project opens for business), project only, Base Year plus Project, and cumulative year both with and without project. This analysis should also identify potentially significant adverse impacts from such demands and avoidance, minimization, and mitigation measures needed to address them. Early collaboration, such as sharing the analysis for review and comment prior to the environmental document, leads to better outcomes for all stakeholders.

Given that Caltrans current guidelines are in the process of being updated, a transportation impact study scoping meeting with District staff could be used to discuss the most appropriate methodology for this analysis. At a minimum, the analysis should provide the following:

1. Vicinity maps, regional location map, and a site plan clearly showing project access in relation to nearby roadways and key destinations. Ingress and egress for all project components should be clearly identified. Clearly identify the State right-of-way (ROW). Project driveways, the State Highway System and local roads, intersections and interchanges, pedestrian and bicycle routes, car/bike parking, and transit routes and facilities should be mapped.

2. Project-related VMT including per capita use of transit, rideshare or active transportation modes and VMT reduction factors. The assumptions and methodologies used to develop this information should be detailed in the study, should utilize the latest place based research, and should be supported with appropriate documentation. They should at minimum include:

    a. Peak hour zone to zone Origin-Destination matrixes
    b. Weekday zone to zone Origin-Destination matrixes
    c. Peak hour VMT Calculation based on O-D matrixes and trip generation
    d. Weekday VMT calculation based O-D matrixes and trip generation

3. Schematic illustrations of walking, biking and auto traffic conditions at the project site and study area roadways, trip distribution percentages and volumes as well as intersection geometrics, i.e., lane configurations, for AM and PM peak periods. Operational concerns for all road users that may increase the potential for future collisions should be identified and fully mitigated. At

minimum provide synchro output for Length of Queue for all off-ramp analyses utilizing the Highway Capacity Manual.

4. The scope of the analysis should include SR-113 mainline, ramps, and ramp intersections. Mitigation proposed in the analysis should include Transportation Demand Management and Access Management projects and strategies that increase multimodal access and reduce VMT on the SHS.

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any questions regarding these comments or require additional information, please contact Jacob Buffenbarger, Intergovernmental Review Coordinator at (916) 263-1625 or by email at: Jacob.Buffenbarger@dot.ca.gov.

Sincerely,

JEFFREY MORNEAU, Chief
Office of Transportation Planning – South Branch

CC: State Clearinghouse

COUNTY OF YOLO

Office of the County Administrator

Patrick S. Blacklock
County Administrator

625 Court Street, Room 202 Woodland, CA 95695
(530) 666-8150 FAX (530) 668-4029
www.yolocounty.org

April 18, 2017

Katherine Hess
City of Davis Community Development and Sustainability Department
23 Russell Boulevard, Suite 2
Davis, CA 95616

Re: Comments on West Davis Active Adult Community EIR Scoping

Dear Katherine Hess:

The County of Yolo submits this letter to provide its initial comments on the West Davis Active Adult Community Environmental Impact Report Scoping. Enclosed with this letter is the County's annexation policy framework. The County's annexation policy framework provides a starting point for comprehensively accounting for the impacts of a given annexation and subsequent development project while also offering potential mechanisms for addressing such impacts and providing public benefits. The issue of public benefits should be forefront throughout the planning process, ensuring that an annexation provides sufficient and equitable revenue to the County and City of Davis to address the increased need for public services.

The County looks forward to working closely with the City of Davis as this process moves forward.

Sincerely,

Patrick S. Blacklock
Yolo County Administrator

Enclosure

cc: Yolo County Board of Supervisors

Annexation Policy Framework

Purpose and Objective

The annexation of land to a city—and in particular, the development and related activities that follow—can impact the County in a number of ways. The purpose of this document is to identify appropriate issues to consider in assessing the potential impacts of an annexation upon the County. While each proposed annexation will have to be evaluated individually, this document provides a good starting place for identifying issues that require consideration and, if appropriate, resolution through one or more of the following mechanisms:

- Tax-sharing Agreement
- Development Impact Fees
- Development Agreement
- CEQA Mitigation Measures
- Joint Planning/Environmental Review MOU
- Community Facilities District

Within the Land Use, Fiscal, and Infrastructure sections that follow, each category of potential impacts briefly references the mechanism(s) that may be best suited to implement measures that reduce or eliminate adverse effects on the County. The use of a Development Agreement to secure public benefits (net gains) should also be considered in connection with individual annexation proposals. Tax-sharing agreements can also be an effective mechanism for non-traditional allocations of property and sales tax revenues in a manner that enables counties to share in the fiscal benefits of development that follows annexations.

Land Use Impacts

Land use impacts vary greatly from project to project and necessarily require individualized analysis. This will typically happen through the environmental review process under the California Environmental Quality Act. Some of the more common issues to anticipate include the following:

1. Visual Impacts/Aesthetics.
   - Signage, particularly sign height and illumination
   - Architectural and landscape themes that complement the region's agricultural heritage
   - Compatibility with surrounding neighborhoods

Mechanisms: Development Agreement, CEQA Mitigation Measures.

2. Agricultural Resources.
   - County land use policy (including General Plan/Zoning) considerations, including but not limited to foregone development opportunities
   - Project density/intensity
   - Loss of farmland and mitigation on like/better soils (preferably, 2:1 without stacking), within Woodland/Davis "greenbelt" or other strategic areas if feasible

- Appropriate buffers within the project site to minimize impacts on nearby farming operations
- Fencing or other measures to reduce trespassing and vandalism on adjacent farmland
- Proximity of proposed agricultural mitigation to existing conserved lands and the potential for “islands” of agriculture due to development patterns
- Agricultural sustainability/viability, particularly due to development-related impacts, and potential tie-in to Agricultural Economic Development Fund

Mechanisms: Development Agreement, CEQA Mitigation Measures, Joint Planning MOU

3. Growth Inducement.
    - Potential for new infrastructure to ease the path for additional development, potential tie-in to countywide Capital Improvement Plan
    - Effect on regional jobs/housing balance

Mechanisms: Development Agreement, Community Facilities District

4. Air Quality/Odors.
    - Emissions from onsite uses, including industrial facilities and gas stations
    - Odor impacts

Mechanisms: CEQA Mitigation Measures

5. Transportation/Traffic.
    - Measures to reduce vehicle miles traveled and promote active transportation, including bus stops, bicycle paths, and ride-sharing programs, potential to tie-in to bicycle plan
    - Construction of all infrastructure necessary to serve project and mitigate its impacts on existing facilities, potentially including road widening, turn lands, signals and signage, and (for major projects) freeway on-ramps, ingress and egress
    - Ongoing road maintenance issues, including increased wear and tear
    - Mitigation for short-term construction impacts

Mechanisms: Development Agreement, CEQA Mitigation, Joint Planning MOU, Community Facilities District

6. Climate Change/Greenhouse Gases.
    - Energy efficient building design features, onsite solar, and public transit facilities are among the methods frequency used to address GHG emissions
    - Consideration of relevant provisions of the County Climate Action Plan including EV charging stations (will vary by development)

Mechanisms: Development Agreement, Joint Planning MOU

7. Hydrology/Water Quality.
    - Floodplain issues, including displacement of floodwaters and related regional/system effects (may be obviated by onsite detention or retention facilities)

Mechanisms: CEQA Mitigation Measures

8. Biological Resources.
   - Swainson's hawk mitigation (without easement stacking)
   - Coordination with Habitat JPA on biological resources assessment and, as appropriate, mitigation of any impacts

Mechanisms: CEQA Mitigation Measures

9. Urban Decay
   - Effect on existing shopping centers or other facilities that may be affected by a project
   - Ability to address through infill rather than "greenfield" development

Mechanisms: Joint Planning MOU

Fiscal Impacts

Fiscal impacts include the revenue issues typically addressed in a tax-sharing agreement, and will also frequently include both direct and indirect impacts associated with the increased use of County facilities and services. Affected County facilities and services will commonly include including probation, law enforcement, health services, public works, solid waste (landfill), parks, and social services. County infrastructure (e.g., roads, bridges) is discussed separately below. Where practical, contributions to the Yolo County Agricultural Economic Development Fund should also be considered.

Mechanisms: Tax-sharing Agreement, Development Impact Fees, Development Agreement, Community Facilities District

Infrastructure Impacts

Effects on County infrastructure can be direct (e.g., road relocation) and indirect (e.g., bridge reconstruction to accommodate increased traffic). The extension of city utility services, such as water and sewer, also presents unique issues and opportunities, as annexations and related development can reduce the fiscal and other barriers to providing such services to existing portions of the unincorporated area.

Many such impacts will be identified and addressed—to varying degrees—through the environmental review process. However, conventional tools such as "fair share" contributions to new infrastructure are frequently inadequate to fully address effects on County facilities. Alternative approaches, including but not limited to Development Agreements as a means of securing dedicated funding for such improvements and/or implementation of the countywide Capital Improvement Plan, may be appropriate in some cases.

Mechanisms: Tax-sharing Agreement, Development Impact Fees (as CEQA Mitigation Measures or otherwise), Development Agreement, Community Facilities District

RECEIVED
MAY 12 2017
City of Davis
Community Development

8 May 2017

Katherine Hess
City of Davis
23 Russell Boulevard
Davis, CA 95616

CERTIFIED MAIL
91 7199 9991 7036 6990 6514

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, WEST DAVIS ACTIVE ADULT COMMUNITY PROJECT, SCH# 2017042043, YOLO COUNTY

Pursuant to the State Clearinghouse's 14 April 2017 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the West Davis Active Adult Community Project, located in Yolo County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Caltrans Phase I MS4 Permit, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance (i.e., discharge of dredge or fill material) of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

Land Disposal of Dredge Material

If the project will involve dredging, Water Quality Certification for the dredging activity and Waste Discharge Requirements for the land disposal may be needed.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture
If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

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APR 28 2017

City of Davis
Community Development

April 19, 2017

Katherine Hess
City of Davis, Community Development and Sustainability Department
23 Russell Boulevard, Suite 2
Davis, California 95616

Dear Ms. Hess:

This is in response to your request for comments regarding the Notice of Scoping Meeting and Preparation of a Draft Environment Impact Report for the West Davis Active Adult Community Project.

Please review the current effective countywide Flood Insurance Rate Maps (FIRMs) for the Yolo County (Community Number 060423), Maps revised May 16, 2012 and City of Davis (Community Number 060424), Maps revised June 18, 2010. Please note that the City of Davis, Yolo County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- All buildings constructed within a coastal high hazard area, (any of the "V" Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Davis floodplain manager can be reached by calling Greg Mahoney, Chief Building Official, at (530) 757-5610. The Yolo County floodplain manager can be reached by calling David Morrison, Assistant Director Planning, at (530) 666-8041.

If you have any questions or concerns, please do not hesitate to call Xing Li of the Mitigation staff at (510) 627-7267.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:
Greg Mahoney, Chief Building Official, City of Davis
David Morrison, Assistant Director of Planning, Yolo County
Ray Lee, WREA, State of California, Department of Water Resources, North Central Region Office
Xing Li, NFIP Compliance Planner, DHS/FEMA Region IX
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

Greg Rowe
1610 Pismo Court
Davis, CA 95616
530-759-7092; gregrowe50@comcast.net
May 11, 2017

Katherine Hess
City of Davis Community Development and Sustainability Department
23 Russell Boulevard, Suite 2
Davis, CA 95616

Subject: DEIR Scoping Comments- West Davis Active Adult Community (WDAAC) Project

Dear Katherine:

This letter provides scoping comments for the Draft Environmental Impact Report (DEIR) that will be prepared for the proposed West Davis Active Adult Community (WDAAC). I have lived in Evergreen Meadows near the proposed project site since 1999 and have therefore witnessed significant changes in the project vicinity.

- Storm Drainage System and Flood Management System: Pages 11 – 13 of the Initial Study (IS) devote consideration attention to these subjects. It is stated that "Based on the preliminary hydrology and hydraulic modeling efforts, construction of the proposed project without appropriate drainage/flood mitigations may increase peak discharges in the Covell Drain, and would most likely increase the maximum water surface elevations in the floodplain on and near the site. This potential impact would be mitigated through a combination of proposed detention storage near the existing water tank site and around the perimeter of the site."
    - I suggest that the DEIR provide precise details on the mitigation measures that would be implemented to prevent flooding of the site, as well as measures that would be implemented to prevent inundation of surrounding areas. During almost 18 years living near the project site I have witnessed periodic flooding of the intersection of Covell Boulevard and Lake Boulevard/County Road 99, and during the past winter the Covell Drain frequently overflowed its banks on the south side of Sutter Davis hospital. The potential for such occurrences to recur and to be intensified after completion of the proposed project should be fully evaluated in the DEIR.
    - Figure 6 (page 27) depicts a "Sutter Davis Expansion Area" between the existing hospital to the south, the water tank to the north, and the project site to the west. The DEIR should evaluate the cumulative stormwater impacts that would result from development of the project site in combination with development of the hospital's expansion site.

- Aesthetics: The table on page 43 indicates that development of the project could potentially have a significant impact on scenic resources and vistas, etc. I contend that visual resource impacts would be insignificant because the surrounding area is already highly developed, including the Adobe Apartments and University Retirement Center (URC) on the south side of Covell Boulevard, along with the hospital and a service station on the north side of Covell.

- Transportation and Traffic (pages 65 and 66): During the almost 18 years in which I have lived near the project site there has been a noticeable increase in eastbound morning traffic on Covell Boulevard and a corresponding increase in PM westbound traffic. I have been informed anecdotally that the increased traffic is to a large extent related to increased employment and student enrollment at UC Davis. This seems logical because UCD enrollment was approximately 22,000 when I moved into my home in fall 1999, whereas enrollment was just under 35,000 during the fall 2016 quarter—an increase of almost 60%. The Notice of Preparation (NOP) for the draft UCD Long Range Development Plan (LRDP) indicates that student enrollment is expected to reach 39,000 during the 2027-28 academic year (compared to 32,663 during the 2015-16 baseline year; Table 2, page A-8). The NOP further indicates (Table 3, page A-8) that 8 percent of students commuted to UCD from cities such as Woodland, Winters and Vacaville during the 2015-16 baseline. Because the LRDP only proposes to house 90% of the projected increase of 6,337 students on campus by the 2027-28 academic year (i.e., no net reduction in the number living off campus), it is only logical to conclude that student commuting traffic on Covell from cities to the north and south of Davis will increase correspondingly as enrollment continues growing. In addition, during the ten-years covered by the draft LRDP it is anticipated the following additional net growth will occur: 2,319 employees, 615 Los Rio Community College students, 1,444 dependents of UC residents, and 305 non-UCD employees. These categories total an additional 4,683 people, but the LRDP provides no details on where they would live or from where they would commute to campus. Given past trends, it only seems logical to conclude that a substantial number of these individuals would commute to campus via Interstate 505, State Route 113, and Covell Boulevard.

  - In consideration of rising congestion observable on the segment of Covell Boulevard between its intersection with John Jones Road and its intersection with Anderson Road, coupled with the LRDP's projected growth of 6,337 UCD students and 4,683 non-UCD individuals (total of 11,020), I strongly suggest that the cumulative transportation and traffic analysis for the WDAAC should include the projected increase in both students and non-students included in the LRDP. The impacts to be studied should also include potential interaction between the increased vehicle traffic on Covell and older pedestrians crossing Covell to visit the two medical offices on the south side of Covell, plus those walking to the Marketplace shopping center.

- Potential Alternatives to Be Studied: Several alternatives to the proposed project are suggested.
  - Binning Ranch Alternative: this site is bounded by County Road 99D on the east, and is south of the Binning Track shown on Figure 2 of the IS (page 19). It is my understanding that this site was previously proposed for large lot single-family development but that no development appears imminent. The site would offer many of the same advantages as the proposed project site (proximity to medical services, shopping, the URC). Like the proposed project site, it would require Measure R ballot approval.
  - Higher Density Alternative: The proposed project would consist of single story homes on small lots in order to accommodate the presumed desire of older adults for lower exterior maintenance responsibilities. The same number of total units could be attained if a portion of the homes were in a multi-story configuration (2 – 4 floors with elevators). I suggest that a higher density alternative could include 25% of the units in multi-floor structures. This would allow more open space in the project area and potentially result in reduced stormwater runoff.

Thank you for considering my comments on the WDAAC project.

Sincerely,

Greg Rowe

Greg Rowe

May 4, 2017

RECEIVED
MAY 08 2017
City of Davis
Community Development

City of Davis
Community Development and Sustainability Department
23 Russell Blvd., Suite 2
Davis, CA 95616

Attn: Katherine Hess

Regarding: Comments on The West Davis Active Adult Community Project EIR Notice of Preparation

Dear Ms. Hess:

Below are our comments for the EIR NOP West Davis Active Adult Community Project. Following are items that we believe need to be analyzed in the EIR consistent with the CEQA Guidelines.

1. The proposed project includes a range of housing options including low income housing and section for development by the University Retirement Community. Without a firm commitment and adequate funding these portions of the project may be speculative. The EIR should clearly define the proposed project and not include any portions that may be developed at a later date.

2. The trees on the southwest side of the property may be used by Swanson's hawk for nesting and perching. We recently observed both nesting activities within a 1/4 mile of the project site and hawks actively hunting in the farm fields proposed for development. Swanson's hawk is both State and Federally listed species. There are also Elderberry Trees on the Western edge of the project site. Elderberry Trees are habitat for the Valley Elderberry Longhorn Beetle, a Federally Threatened species. This project could result in take of these species. The EIR will need to evaluate the project impact on these species. If needed the project will need to avoid, reduce, or mitigate the impacts to these species.

3. The exit road from the proposed development onto the west bound lane of West Covell Boulevard may create a traffic hazard. The road is located at place where two lanes reduce to one lane at a 45 mph speed limit. There is also a bus stop near this location. The EIR should evaluate the new road and any impacts on road safety.

4. The proposed project includes a system of large drainage ditches to move water from the site. Currently, the ditches along West Covell Boulevard are at capacity during storm events.

Development of the agricultural land to a housing project will significantly increase the amount of run-off from the project site. The EIR will need to include an independent review that the proposed drainage system adequately channels runoff in a way that does not result in flooding. The drainage canal between Starbucks on Lyndel Terrace and Highway 113 offramp failed in 2016 due to rain runoff.

5. The path on the north side of West Covell Boulevard is paved with asphalt. It's not clear if this is a bike or pedestrian path, but it is used by both. Increased use of the path by residents of the proposed project may be needed to improve safety. There is no safe connection from that path into the Safeway Marketplace, except for walking or riding a bike into the driveway of the Marketplace. It is not uncommon to see residents of the University Retirement Community walk with their walkers to the Safeway Marketplace. It is important for the seniors to have a safe walking path to the Safeway and CVS stores.

6. The impacts of noise from this project must be analyzed. One of the more significant impacts will be from emergency vehicles such as fire department and ambulances. We know that communities where large numbers of elderly people live have a higher number of emergency calls. The closest fire station is located on Arlington Drive. Emergency vehicles typically will travel up Lake Boulevard and turn east on West Covell Boulevard to this proposed project site. This will result in increased noise from sirens.

7. As Interstate 80 becomes more congested, drivers are using applications such as Waze to find alternate routes. The increases in traffic from this project needs to be evaluated in consideration of future increases in traffic diverted from Interstate 80 to Highway 113 and then onto West Covell Boulevard. In addition, the Binning Ranch subdivision adjacent to this site may be developed in the near future. The cumulative impacts of increases in traffic and the development of the Binning Ranch must be evaluated in the EIR.

8. Impact of light pollution from the project must be evaluated in the EIR. The project will convert undeveloped land to a dense housing project which will increase light pollution. The threshold of significance for light should be the current status, and any change should be considered significant. The project will need to avoid, reduce, or mitigate these impacts to a less than significant level.

9. Over the last several years air ambulance helicopters have landed at the Sutter Davis Hospital next to the project site. Will development of the project alter this use? The EIR must evaluate the project impact on landing helicopters at the adjacent hospital.

10. The developer has stated they expect seniors to move from houses in Davis to smaller retirement homes in this development. They further stated this will open up houses for families. If this is true the EIR should consider the impact of the project to the City of Davis schools.

11. The EIR must consider a range of alternatives to the proposed project. We believe an alternative that should be considered is not restricting the project to seniors. The Davis schools have been suffering from declining enrollment, and providing affordable housing to families may increase attendance at the schools. This alternative could still include the low income senior housing portion of the proposed project.

Thank you for the opportunity to provide comments on this Notice of Preparation. We look forward to reviewing the Draft EIR when it is released later this year. If you have any questions about these comments please contact us.

Toni Terhaar

Russ Kanz and Toni Terhaar
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Davis, CA 95616
530-341-4275

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May 11, 2017

Katherine Hess
City of Davis Community Development and Sustainability Department
23 Russell Boulevard, Suite 2
Davis, CA 95616

Re: Notice of Preparation for the West Davis Active Adult Community DEIR

Dear Ms. Hess:

Thank you for the opportunity to comment on the Notice of Preparation for the West Davis Active Adult Community DEIR. As you know, LAFCo will be a responsible agency for this project and if the project is approved by the City and its voters, LAFCo will use this EIR to process subsequent annexation of the project area to the City of Davis.

As such LAFCo requests that the following issues be addressed in the Draft EIR:

- Impacts to agricultural resources from developing the project itself, plus the continued productivity and viability of surrounding agricultural lands;
- Housing need for the project; and
- Water and water availability.

Attached are Yolo LAFCo's Agricultural Conservation Policies for your reference in the DEIR. Please note that LAFCo has a different definition in state law for prime agricultural land than what is more commonly used. Specifically, the soils can qualify as prime agricultural land regardless of whether the soils are irrigated or not.

Thank you again for consulting with Yolo LAFCo. If you have any questions, please feel free to contact me.

Best regards,

Christine M. Crawford, AICP

encl: Yolo LAFCo Agricultural Conservation Policies

4.0 AGRICULTURAL CONSERVATION

4.1 LEGISLATIVE MANDATE

California Government Code § 56377 mandates LAFCO consider the following factors. In reviewing and approving or disapproving proposals which could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses, the commission shall consider all of the following policies and priorities:

a) Development or use of land for other than open-space uses shall be guided away from existing prime agricultural lands in open-space use toward areas containing non-prime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area.

b) Development of existing vacant or non-prime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open-space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency.

4.2 APPLICABILITY

Given the direction outlined by the California Legislature in Government Code § 56377, LAFCo adopts the following policies in respect to the conversion of agricultural land to urban uses. This policy is meant to apply both to city and special district changes of organization when urban development is the ultimate goal.

Unless otherwise provided in this Policy, the provisions of this Policy shall apply to all proposals requiring approval by the Commission, including but not limited to, any proposal for approval of a change of organization, reorganization, or out-of-agency service agreement.

This Policy applies to proposals of both public agencies and private parties. However, LAFCo recognizes that there are significant differences between public agencies and private parties. In light of those differences, in some circumstances it may not be appropriate to require mitigation for the loss of prime agricultural land as would otherwise be required by this Policy.

A fundamental difference is that public agencies are generally responsible to the electorate, while private parties are not. Public agencies are also generally required to provide constitutionally or statutorily mandated services. In addition, a public agency is generally required, by law or policy considerations, to locate its facilities within its boundaries, while a private party has no such constraints.

Public agencies are also generally subject to constitutional or statutory constraints on their ability to raise revenues. Public agencies often experience increases in demand for services that are not (and often cannot) be accompanied by equivalent increases in revenues. In light of these and other fiscal constraints that are currently imposed upon public agencies, a mitigation requirement could result in an additional cost to a public agency that it is unable to recoup by increasing its revenues, which in turn could impair the agency's ability to provide its constitutionally and statutorily mandated services.

In addition, unlike private parties, public agencies are often exempt from the land use controls and regulations of other public agencies, despite the fact that the activities of the former occur within the boundaries of the latter. Although a public agency might request input from other local agencies, it is not necessarily bound by or required to follow their local planning requirements. As a result, a public agency's development or construction activities may not be subject to the same degree of control as a private party, and it might not learn of a mitigation requirement until after it has completed significant portions of the planning processes that are required by law.

Based upon the foregoing factors, LAFCo concludes that, in the case of proposals that are undertaken exclusively for the benefit of a public agency, the Commission should review the applicability of the mitigation requirements set forth in this Policy on a case-by-case basis to determine the appropriateness of requiring mitigation in any particular case.

4.3 AGRICULTURAL POLICY STATEMENT

Agriculture is a vital and essential part of the Yolo County economy and environment. Agriculture shapes the way Yolo County residents and visitors view themselves and the quality of their lives. Accordingly, boundary changes for urban development should only be proposed, evaluated, and approved in a manner which, to the fullest extent feasible, is consistent with the continuing growth and vitality of agriculture within the county.

4.4 REVIEW CRITERIA

To promote the policy statement, proposals shall be reviewed based on the following considerations:

a) Existing developed areas should be maintained and renewed;

b) Vacant land within developed areas should be developed before agricultural land is annexed for non-agricultural purposes;

c) Land substantially surrounded by existing agency boundaries should be annexed before other lands;

d) Urban development should be restricted in agricultural areas. For example, agricultural land should not be annexed for non-agricultural purposes when feasible alternatives exist;

e) The continued productivity and viability of agricultural land surrounding existing communities should be promoted, by preventing the premature conversion of agricultural land to other uses and, to the extent feasible, minimizing conflicts between agricultural and other land uses;

f) Development near agricultural land should not adversely affect the economic viability or constrain the lawful, responsible practices of the agricultural operations;

g) Where feasible, non-prime land should be annexed before prime land; and

h) A land's current zoning, pre-zoning, or land use designation is one of the factors the Commission will consider in determining whether mitigation will be required for the loss of agricultural land. A land's zoning, pre-zoning, or land use designation in the city's or County's general plan does not automatically exempt it from mitigation.

4.5 AGENCY GUIDELINES

LAFCo encourages local agencies to adopt policies that result in efficient, coterminous, and logical growth patterns within their general plan and sphere of influence areas and that encourage protection of prime agricultural land in a manner that is consistent with this Policy.

LAFCo encourages the maintenance of agricultural inter-city buffers between the cities. LAFCo encourages the cities and the County to formalize and strengthen existing agreements maintaining agricultural buffers.

LAFCo encourages local agencies to identify the loss of prime agricultural land as early in their processes as possible, and to work with applicants to initiate and execute plans to mitigate for that loss, in a manner that is consistent with this Policy, as soon as feasible. Local agencies may also adopt their own agricultural conservation policies, consistent with this Policy, in order to better meet their own circumstances and processes.

Detachment of prime agricultural lands and other open space lands shall be encouraged if consistent with the sphere of influence for that agency

4.6 STANDARDS FOR ANNEXATIONS INVOLVING PRIME AGRICULTURAL LAND

Annexation of prime agricultural lands shall not be approved unless the following factors have been considered:

a) There is insufficient marketable, viable, less prime land available in the subject jurisdiction for the proposed land use;

b) The adoption and implementation of effective measures to mitigate the loss of agricultural lands, and to preserve adjoining lands for agricultural use to prevent their premature conversion to other uses. Such measures may include, but need not be limited to: the acquisition and dedication of farmland, development rights, open space and conservation easements to permanently protect adjacent and other agricultural lands within the county; participation in other development programs (such as transfer or purchase of development rights); payments to responsible, recognized government and non-profit organizations for such purposes; the establishment of open space and similar buffers to shield agricultural operations from the effects of development; and

c) Less prime agricultural land generally should be annexed and developed before prime land is considered for boundary changes. The relative importance of different parcels of prime agricultural land shall be evaluated based upon the following (in a descending order of importance):

   i. Soil classification, with Class I or II soil receiving the most significance, followed by the Revised Storie Index Rating.

   ii. The land’s economic viability for continued agricultural use.

4.7 ANNEXATION OF LANDS IN AGRICULTURAL PRESERVE CONTRACT

Annexation for land uses in conflict with an existing agricultural preserve contract shall be prohibited, unless the Commission finds that it meets all the following criteria:

a) The area is within the annexing agency's sphere of influence;

b) The Commission makes findings required by Government Code § 56856.5.

c) The parcel is included in an approved city specific plan;

d) The soil is not categorized as prime;

e) Mitigation for the loss of agricultural land has been secured at least at a 1:1 ratio of agricultural easements for the land lost;

f) There is a pending, or approved, rescission for the property that has been reviewed by the local jurisdictions and the Department of Conservation; and

g) Any Williamson Act Contract on the property has been non-renewed if still awaiting rescission approval.

4.8 CHANGE OF ORGANIZATION/REORGANIZATION RESULTING IN CONVERSION OF PRIME AGRICULTURAL LAND

LAFCo will approve a change of organization which will result in the conversion of prime agricultural land or open space use to other uses only if the Commission finds that the proposal will lead to planned, orderly, and efficient development. The following factors shall be considered:

a) Contiguity of the subject land to developed urban areas;

b) Receipt of all other discretionary approvals for changes of boundary, such as prezoning, environmental review, and service plans as required by the Executive Officer before action by the Commission. If not feasible before the Commission acts, the proposal can be made contingent upon receipt of such discretionary approvals within not more than one (1) year following LAFCo action;

c) Consistency with existing planning documents of the affected local agencies, including a service plan of the annexing agency or affected agencies;

d) Likelihood that all or a substantial portion of the subject land will develop within a reasonable period of time for the project's size and complexity;

e) The availability of less prime land within the sphere of influence of the annexing agency that can be developed, and is planned and accessible, for the same or a substantially similar use; and

f) The proposal's effect on the physical and economic viability of other agricultural operations. In making this determination, LAFCo will consider the following factors:

   i. The agricultural significance of the subject and adjacent areas relative to other agricultural lands in the region;

ii. The existing use of the subject and adjacent areas;

iii. Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent or nearby agricultural land, or will be extended through or adjacent to, any other agricultural lands which lie between the project site and existing facilities;

iv. Whether natural or man-made barriers serve to buffer adjacent or nearby agricultural land from the effects of the proposed development;

v. Provisions of the General Plan's open space and land use elements, applicable growth management policies, or other statutory provisions designed to protect agriculture. Such provisions may include, but not be limited to, designating land for agriculture or other open space uses on that jurisdiction's general plan, adopted growth management plan, or applicable specific plan; adopting an agricultural element to its general plan; and acquiring conservation easements on prime agricultural land to permanently protect the agricultural uses of the property; and

vi. The establishment of measures to ensure that the new property owners shall recognize the rights of adjacent property owners conducting agricultural operations and practices in compliance with the agricultural zone in accordance with the Right to Farm Ordinance adopted by the Yolo County Board of Supervisors.

4.9 AGRICULTURAL MITIGATION

Except as expressly noted in sections 4.13 and 4.14 below, annexation of prime agricultural lands shall not be approved unless one of the following mitigations has been instituted, at not less than a 1:1 replacement ratio:

a) The acquisition and dedication of farmland, development rights, and agricultural conservation easements to permanently protect adjacent and other agricultural lands within the County.

b) The payment of fees that is sufficient to fully fund the acquisition and maintenance of such farmland, development rights or easements. The per acre fees shall be specified by a Fee Schedule or Methodology, noted in Section 4.15, which may be periodically updated at the discretion of the Commission.

c) Any such measures must preserve prime agricultural property of reasonably equivalent quality and character that would otherwise be threatened, in the reasonably foreseeable future, by development and/or other urban uses.

The loss of fewer than twenty (20) acres of prime agricultural land generally shall be mitigated by the payment of in lieu fees as mitigation rather than the dedication of agricultural conservation easements. The loss of twenty (20) acres or more of prime agricultural land generally may be mitigated either with the payment of in lieu fees or the dedication of agricultural conservation easements. In all cases, the Commission reserves the right to review such mitigation on a case-by-case basis.

4.10 AGRICULTURAL EASEMENT REQUIREMENTS

If an applicant provides agricultural easements to satisfy this requirement, the easements must conform to the following characteristics:

a) The land used to mitigate the loss of prime agricultural land must also be prime agricultural land as defined in this Policy and the CKH Act.

b) In addition, it must also be of reasonably equivalent quality and character as the mitigated land as measured using both of the following methodologies:

   i. Average Storie Index – The USDA calculation methodology will be used to calculate the average Storie Index or Revised Storie Index score. The mitigating land's average Index score shall be no more than 10% less than the mitigated land's average Index score. The decision of whether to use the Storie Index or Revised Storie Index is within LAFCo's sole discretion.

   ii. Land Equivalency and Site Assessment ("LESA") Model – The LESA calculation shall be in accordance with the methodology adopted by this Commission (see appendices). The mitigating land's LESA score shall be no more than 10% below the mitigated land's LESA score.

c) As a general rule, the Commission will not accept, as mitigation required by this Policy, an agricultural conservation easement or property that is "stacked" or otherwise combined with easements or property acquired for habitat conservation purposes, nor for any other purposes that are incompatible with the maintenance and preservation of economically sound and viable agricultural activities and operations. The Commission retains the discretion to make exceptions on a case-by-case basis, based upon whether the applicant made a good-faith effort to mitigate separately for the loss of habitat in accordance with the Yolo Natural Heritage Program process but such efforts were infeasible, and whether the proposed "stacked" mitigation for the loss of prime agricultural land and habitat involves one of the following, whichever results in the greatest acreage of preserved land:

i. Mitigation at a ratio of no less than 2:1 for the loss of prime agricultural soils; or

ii. Mitigation at a ratio of no less than 1:1 for the loss of all agricultural lands in the proposal area; or

iii. The property subject to the agricultural conservation easement is larger than the proposal area, meets the conditions specified in this Policy, and encompasses a complete field, legal parcel, or farm line.

d) The presence of a home on land that is subject to an agricultural conservation easement is generally incompatible with the maintenance and preservation of economically sound and viable agricultural activities and operations on that land. The presence or introduction of a home may diminish the value of the agriculture conservation easement as mitigation for the loss of prime agricultural land. Consequently, an agricultural conservation easement will generally not be accepted as mitigation for the loss of prime agricultural land if the easement permits the presence of a home, except an existing home that has been present on the proposed easement for at least twenty-five (25) years, or construction of a comparable replacement for such a home. Exceptions to this section of the Policy may be granted by the Commission on a case-by-case basis if the home site is less than two acres and if the applicant can provide sufficient evidence that a home site on the agriculture conservation easement is necessary to further the goals of maintaining and preserving economically sound and viable agricultural activities and operations on that easement.

4.11 EASEMENT HOLDER

LAFCo favors the use of a local non-profit agricultural conservation entity or the regional branch of a nationally recognized non-profit agricultural conservation entity as the easement holder. The Commission will use the following criteria when approving the non-profit agricultural conservation entity for these purposes:

a) Whether the entity is a non-profit organization that is either based locally or is a regional branch of a national non-profit organization whose principal purpose is holding and administering agricultural conservation easements for the purposes of conserving and maintaining lands in agricultural production;

b) Whether the entity has a long-term proven and established record for holding and administering easements for the purposes of conserving and maintaining lands in agricultural production;

c) Whether the entity has a history of holding and administering easements in Yolo County for the foregoing purposes;

d) Whether the entity has adopted the Land Trust Alliance's "Standards and Practices" and is operating in compliance with those Standards; and

e) Any other information that the Commission finds relevant under the circumstances.

A local public agency may be an easement co-holder if that agency was the lead agency during the environmental review process. LAFCo also favors that applicants transfer the easement rights or in lieu fees directly to the recognized non-profit agricultural conservation entity in accordance with that entity's procedures. The Commission retains the discretion to determine whether the agricultural conservation entity identified by the applicant and the local lead agency has met the criteria delineated above.

4.12 AGRICULTURAL MITIGATION IMPOSED BY OTHER AGENCIES

The Commission prefers that mitigation measures consistent with this Policy be in place at the time that a proposal is filed with the Commission. The loss of prime agricultural land may be mitigated before Commission action by the annexing city, or the County of Yolo in the case of a district annexation, provided that such mitigation is consistent with this Policy. LAFCo will use the following criteria in evaluating such mitigation:

a) Whether the loss of prime agricultural land was identified during the project's or proposal's review process, including but not necessarily limited to review pursuant to the California Environmental Quality Act;

b) Whether the approval of the environmental documents included a legally binding and enforceable requirement that the applicant mitigate the loss of prime agricultural land in a manner consistent with this Policy; and

c) Whether, as part of the LAFCo application, an adopted ordinance or resolution was submitted confirming that mitigation has occurred, or requiring the applicant to have the mitigation measure in place before the issuance of a grading permit, a building permit or final map approval for the site.

4.13 MITIGATION FOR PUBLIC AGENCY PROJECTS

As noted in Section 4.2, the Commission has concluded that, in the case of proposals that are undertaken exclusively for the benefit of a public agency, the Commission should review the applicability of the mitigation requirements set forth in this Policy on a case-by-case basis to determine the appropriateness of requiring mitigation in any particular case. In making such a determination, the Commission will consider all relevant information that is brought to its attention, including but not limited to the following factors:

a) Whether the public agency had any significant, practical option in locating its project, including locating the project on non-prime or less prime agricultural land;

b) Whether the public agency is subject to or exempt from the land use regulations of another public agency;

c) Whether the public agency identified the loss of agricultural land as an environmental impact during the project's review, including but not limited to California Environmental Quality Act review, and, if so, whether it adopted a "Statement of Overriding Considerations" for that impact;

d) When the public agency learned of the agricultural conservation mitigation requirements of the Commission's Policy or that of another public agency (whether or not it was subject to that agency's land use control);

e) Whether the public agency could reasonably have allocated or obtained sufficient revenues to provide for some or all of the mitigation required by this Policy if it had learned of that requirement before submitting its proposal to this Commission;

f) Whether the public good served by the public agency's proposal clearly outweighs the purposes served by this Policy and its mitigation requirements; and

g) Whether the proposal is necessary to meet the immediate needs of the public agency.

If the Commission determines that it is not appropriate to require mitigation for the loss of agricultural land resulting from a public agency's proposal, or to require less mitigation than otherwise prescribed by this Policy, it shall adopt findings, and a statement of overriding considerations if applicable, supporting that determination.

4.14 LESS THAN SIGNIFICANT AGRICULTURAL LAND LOSS

Mitigation shall not be required for the annexation of less than five (5) acres of land if the Commission finds that the land:

a) Scores in the fourth tier of LESA;

b) Is “infill” as defined in this Policy; and

c) Has not been used for active agriculture purposes in the previous 20 years.

4.15 AGRICULTURAL CONSERVATION POLICY PAYMENT IN LIEU FEE METHODOLOGY

In lieu of the dedication of agricultural conservation easements that would otherwise be required by the Agricultural Conservation Policy, the Commission may permit the payment of fees as set forth in this Schedule to fully fund the acquisition and maintenance of farmland, development rights or agricultural conservation easements.

No less than 35% of the average per acre price for full and unencumbered fee title price in the last five (5) unimproved land purchases plus a five percent (5%) endowment of the cost of the easement, and the payment of the estimated transaction costs associated with acquiring an easement. The purchases must be within the general vicinity of the annexing entity and of a size equal to or greater than the total acreage of prime soils within the subject territory.

Payment of the In Lieu Fee is to be made directly to an agricultural conservation entity that meets the criteria set forth in Section 4.10 of this Policy. The agricultural conservation entity receiving these funds must present to the Commission a letter stating its intention to use these funds for the acquisition of farmland, development rights or agricultural conservation easements in Yolo County whose prime soils are reasonably equivalent to the proposal area’s soils and that the location of the easements will be within the general vicinity of the annexing entity and in an area within the County of Yolo that would otherwise be threatened, in the reasonably foreseeable future, by development and/or other urban uses.

4.16 DEFINITIONS

Except where noted, the following definitions are not defined in the California Government Code Sections 56000 et seq.

AFFECTED LOCAL AGENCY - any local agency which contains, or would contain, or whose sphere of influence contains or would contain, any territory for which a change of organization is proposed or ordered, either singularly or as part of a reorganization or for which a study is to be reviewed by LAFCo (Government Code § 56014).

AGRICULTURAL LAND - areas within which the primary zoning or general plan designation is AG, AP, or AE, or any other agricultural zone.

FEASIBLE - capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, legal, social, and technological factors (Government Code § 56038.5).

INFILL LAND - property surrounded, or substantially surrounded, by urban uses or incorporated or special district boundaries.

PRIME AGRICULTURAL LAND - (Government Code § 56064) an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and which meets any of the following qualifications:

a) Land that qualifies, if irrigated, for rating as Class I or Class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is currently irrigated, provided that irrigation is feasible.

b) Land that qualifies for rating 80 - 100 Storie Index rating.

c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.

d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.

e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred ($400) per acre for three of the previous five calendar years.

URBAN DEVELOPMENT - a change of organization that contemplates or is likely to lead to the conversion of land from agricultural use to a primarily nonagricultural related use, generally resulting in the need for services such as sewer, water, fire protection, schools, drainage systems, and police protection.

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
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April 28, 2017

Katherine Hess
City of Davis

Sent by Email: Khess@cityofdavis.org

RE: SCH#2017042043, West Davis Active Adult Community Project, Yolo County

Dear Ms. Hess:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or

tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.
b. The lead agency contact information.
c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at:
https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    - **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    - **a.** If part or all of the APE has been previously surveyed for cultural resources.
    - **b.** If any known cultural resources have been already been recorded on or adjacent to the APE.
    - **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
    - **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    - **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    - **a.** A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

   - **b.** A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   - **a.** Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   - **b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   - **c.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
cc: State Clearinghouse

Sacramento Area
Council of
Governments

1415 L Street,
Suite 300
Sacramento, CA
95814

tel: 916.321.9000
fax: 916.321.9551
tdd: 916.321.9550
www.sacog.org

SACOG

May 15, 2017

Katherine Hess
City of Davis
Community Development and Sustainability Department
23 Russell Blvd., Suite 2
Davis, CA 95616

Re: Notice of Preparation of a Draft Environmental Impact Report for the West Davis Active Adult Community Project

Dear Ms. Hess:

Thank you for inviting SACOG's comments on the Notice of Preparation of a Draft Environmental Impact Report for the West Davis Active Adult Community Project. The project area is identified in SACOG's 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (2016 MTP/SCS) as an area not identified for development by the MTP/SCS horizon year of 2036. The 2016 MTP/SCS includes funding for widening and signal improvements along portions of Covell Boulevard in the general vicinity of the proposed project. Next year SACOG will begin its quadrennial update of the plan (scheduled adoption in 2020) and will be working with the City of Davis to determine if there is a need to update the projections for this area for the next MTP/SCS.

In the context of the Blueprint, a regional framework of principles for sustainable growth, the project is located in an area identified for future residential mixed use development. The Blueprint, and all subsequent MTP/SCS' since its adoption, identified the need for more attached and small-lot single family housing in the region.

If you have additional questions, please feel free to contact me or Kacey Lizon, Planning Manager, at klizon@sacog.org or 916-340-6265.

Sincerely,

James Corless
Chief Executive Officer
JC:KL:sm

From:	Brad Nelson
To:	khess@cityofdavis.org
Cc:	littlegraykitty2@gmail.com
Subject:	West Davis Active Adult Community Project
Date:	Monday, May 15, 2017 3:12:05 PM

Ms. Hess: My wife and I are longtime residents of Davis (over 40 years). We live on Bryce Lane in the Aspen subdivision. We are extremely concerned about the traffic impact of this proposed project. The traffic volume on West Covell Blvd. between Sycamore and Denali has steadily increased in the past decade. This project will put the volume over the top. Getting from Denali to 113 in the morning, and the reverse in the late afternoon or early evening, has already become time consuming. Adding the volume from 325 housing units is completely unacceptable. Thank you for considering our concerns. Brad and Cindy Nelson.

Sent from my iPad

From:	Corinne Gee
To:	khess@cityofdavis.org
Subject:	Fwd: West Davis Active Adult Community
Date:	Monday, April 24, 2017 7:28:55 PM

Dear Ms. Hess,

I would like to register my comments on the proposed West Davis Active Adult Community project. I strongly oppose this project. It is way too large and would completely change the character of our community. I am sure things such as considerable increase in traffic pattern and other related problems have been discussed.

Corinne Gee
1662 Joshua Tree Street

From:	Robin Whitmore
To:	khess@cityofdavis.org
Subject:	Fwd: West Davis Active Adult Community
Date:	Wednesday, April 26, 2017 3:22:35 PM

Dear Katherine Hess,

I attended one of the first West Davis Active Adult Community local meetings and sent this response to Robb Davis afterward. I had hoped to attend the EIR scoping meeting today, but perhaps this email could act as a form of feedback about the proposed development.

Thank you,

Robin Whitmore

---------- Forwarded message ----------
From: **Robin Whitmore** <rlwhitmore2@gmail.com>
Date: Thu, Mar 2, 2017 at 10:33 AM
Subject: West Davis Active Adult Community
To: rdavis@cityofdavis.org

Dear Mayor Davis:

I attended a recent information session with David and Justin Taormino and David Thompson about the proposed West Davis Active Adult Community. Based on what I heard there and what I subsequently read about this project, I have concerns that I hope the city will address in its deliberations.   I send this communication to you because you will know who are the appropriate staff or commission members to read it. Please forward it accordingly.

Some of the assertions made by the WDAAC developer seem questionable to me; to wit:

--Seniors will buy these houses. As I understand it, 80% of the properties have to be occupied by seniors but not necessarily owned by them. This means that houses can be bought by anyone and rented to seniors. This arrangement seems to me like a very attractive investment for speculators and out-of-town landlords. Creating another rental market isn't a goal for our community. Is there a way to privilege owner-buyers? I doubt it.

--Davis people will buy these houses. The developer admitted that there is no way to give Davis folk precedence in sales. Davis is undoubtedly attractive to seniors from the region and the Bay Area as a retirement community. Yet I believe the city's goal is to facilitate "aging in place." for existing Davis folk, not a wide-open regional real estate market.

--Residents will walk to the "nearby" Marketplace shopping center. As a resident in this area, I can tell you this is incorrect: it's too far, too unpleasant, and most of all, too dangerous.

--Davis seniors want a retirement community. I can see the appeal to seniors of one-story housing but along with the much-touted single stories (more on that later) comes a homogenous neighborhood. Is there any evidence that this old-folks-only community would attract (or deter) senior buyers/renters? As a Boomer myself, it's hard for me to imagine many other Boomers wanting to live in a retirement community. The developer doesn't like the "Sun City" label, but it's really kind of an accurate description.

--Non-seniors will buy homes in a senior citizen community. The developer indicated that 20% of the homes would be "unrestricted", meaning available to occupants of all ages. Would younger people and families choose a neighborhood designed for and filled with older people? If they don't, the development becomes even more homogenous.

Here are my "big picture" concerns about this project:

This development puts seniors on the periphery of town, without good transportation options. The Unitrans buses that pass here are the perimeter lines which are not routed for visits to places seniors might frequent. There isn't a dedicated bus system such as the URC bus proposed for the development. A safe biking or walking connection (for the few seniors likely to try to walk or ride their bikes anywhere from this distant location) would be a major infrastructure undertaking. Cars are the primary option, but as the occupants age, fewer of the residents will be able to drive. Even Mr. Taormino noted that the location is "pretty far, in many respects."

Because this property would have to be annexed by the city, it would require another Measure J (R?) vote. Time, energy, money...

Why would we group seniors together in one part of town? URC is already a huge senior development in this area and apparently also has ambitions to build more facilities on the north side of Covell. Olympic Cottages and Glacier co-housing are also in this part of town. It seems to me it would be better for the city and for all of us to keep our neighborhoods age diverse rather than segregated. And the idea that it's a good location because it's next to the hospital is horrible.

What are the economic impacts of attracting more seniors to Davis? It seems like this would not expand the city's economic base. What are the cultural impacts of adding more seniors to the mix? It seems to me that Davis already has a sizable aging population, and that we might want to attract more middle-income young families. While we might wish it to be Davis folk who move to this new development and free their current homes for families, there is apparently nothing that can be done to restrict the buyers to seniors or the occupants to Davisites.

Mr. Taormino stated that he expects people to be in the market for these homes starting in their mid-sixties. Earlier in the presentation, however, he noted that people don't think of themselves as "seniors" until they're in their eighties. What we define as "senior" keeps moving up: no Boomer in their sixties that I know would even consider moving to a retirement community like this. So, the neighborhood population could be considerably older than expected—perhaps seventies and eighties? It seems like this age group might need a lot more amenities: transportation, on-site services, in-home care, etc. beyond simply their independent homes.

The developer's assertion that the homes are one story does not hold up under scrutiny. If I understood this correctly, the vast majority of the homes would be built with the structural requirements to "add" a second story over the garage. In addition, the garages will built as an "expansion" living space. According to the developer, an 1800 sq foot one-story house with a two-car garage and a second story over the garage is 2600 square feet—a very sizable house, and *not* one-story. With this understanding, this development starts to look pretty much like all others in Davis. In addition, the custom homes that ring the property can be a full two stories I believe.

Is the restriction to senior-occupied housing for some limited period of time or forever? In other words, once this project is built and occupied by a first generation of folks, will it have to remain a senior community even as the number of seniors starts to decline after the Boomer population bulge? Being stuck with this kind of inflexible, restricted housing could be quite problematic and disadvantageous to the city in the long run.

Would there end up being more senior-owned and/or occupied homes than needed? As the developer noted, the unrestricted homes would naturally sell first, because of the flexibility for future sale or renting, so why wouldn't seniors buy these first? If seniors take up the unrestricted houses, is the demand for this type of senior housing then met with fewer total houses?

Does Davis Community Housing have the ability and financial wherewithal to pull off a low income housing project of this size—150 apartments? According to David Thompson's presentation, this is apparently twice the size of any they have built thus far, and would require them to obtain scarce and highly competitive grants from many different sources. It seems like there is a chance it might not come to fruition—and then what?

If the city is determined to annex and develop this parcel, this project is certainly better than, say, the gigantic business park proposed several years ago. But there is this to consider carefully: what is the value to us of a view? The sight of the Coast Range and the fields from Covell Blvd are the last big, open, public view toward the mountains from our city. Ironically, the tapestry behind the dais in the city council chambers celebrates this view--and we will lose this last bit of it if we develop north of Covell. Fields and mountains, big sky, snow, farms, sunsets and clouds, distant trees, the relief and beauty of open space—these don't have a monetary value, but they have immense value to my soul and surely to the souls of all of us who live here. Something of great value will be lost if we forever close our city off from this beauty with more streets and buildings.   I'd like to think Davis is the kind of place where a view that nourishes our souls is valued enough to preserve it.

Thank you,

Robin Whitmore

From: craighton chin
To: citycouncilmembers@cityofdavis.org; khess@cityofdavis.org
Subject: Mitigation Minimum
Date: Thursday, April 27, 2017 2:08:51 PM

I am against increasing the ag buffer for the West Davis Active Community as requested by Katherine Portman in the Davis Enterprise.

I like burrowing owls and used to enjoy seeing them around Wildhorse Golf course, but I have not seen any for a couple of years despite active and passive measures to protect them.

The money spent to increase the ag buffer from 150 ft to 250 ft as proposed by Portman would be much better spent supporting a wildlife preserve away from the city. The owls would be much happier away from chemicals, humans, and feral cats found in an urban environment.

Craighton Chin, MD

From:	Susan Garbini
To:	khess@cityofdavis.org
Cc:	"Jennifer.nguyen@wildlife.ca.gov"; "eric_tattersall@fws.gov"; mike_thomas@fws.gov; Chris Alford; Petrea Marchand; Marcus Neuvert
Subject:	RE: Proposed Project: West Davis Active Adult Community CORRECTED E-MAIL
Date:	Monday, April 24, 2017 9:21:03 AM
Attachments:	WDavisActive - Habitat Intensity Map.pdf

PLEASE DISREGARD PREVIOUS E-MAIL

TO: Katherine Hess
City of Davis
Community Development and Sustainability Department

The Yolo Habitat Conservancy appreciates the opportunity to provide comments on the project to construct an active adult community on 75 acres west of the City of Davis along W. Covell Blvd adjacent to Sutter Hospital) (Yolo County APN 036-060-05). Our concerns in these matters generally relate to considerations of impacts on species that are covered in the Draft Yolo Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP), which is currently in development.

Attached is a map showing actual Swainson's hawk and white-tailed kite nesting sites found in the area surrounding the proposed project, along with a table listing modeled acres of habitat* at this location for species covered in the Draft Yolo HCP/NCCP. Note that there is one documented Swainson's hawk nest site within the proposed site and one within the 1-mile buffer of the project. The Yolo Habitat Conservancy's model also identified potential habitat for the following species within the 1-mile buffer of the site: Swainson's hawk, white-tailed kite, burrowing owl, giant garter snake, western pond turtle, and tricolored blackbird.

These comments should not be construed as providing a complete environmental evaluation or assessment of environmental impacts for the proposed project. The information provided by the Yolo Habitat Conservancy references regional scale species habitat models that the Yolo Habitat Conservancy has developed for species covered in the Draft Yolo HCP/NCCP Plan. It is recommended that site-scale evaluations be conducted in order to obtain information at the level of detail necessary to accurately determine potential habitat impacts of the proposed project.

This information is also being sent to staff of the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service, who monitor these projects.

Please contact Chris Alford (chris@yolohabitatconservancy) if you have any questions.

Thank you,

Susan Garbini
Research Associate, Yolo Habitat Conservancy
susan@yolohabitatconservancy.org

611 North Street, Woodland, CA 95695
www.yolohabitatconservancy.org
Phone: 530.723.5909

From: Jaron Ross
To: Katherine Hess
Subject: Proposed West Davis active adult community
Date: Saturday, April 15, 2017 4:46:39 PM

Good afternoon Miss Hess,

My family and I live in West Davis very near the proposed construction. We, as well as every neighbor we have thus far spoken with of the Evergreen neighborhood, are vehemently opposed to the aforementioned proposal. We have followed the involved politics and specifics in the press and online with great interest, but are primarily opposed to the significant change presents the neighborhood and near-rural city outskirts that exist today. Most of us have chosen to live here precisely because of the adjacent fields, sunsets over sunflowers, walking and lower density environment.

In addition there are already significant structural and traffic challenges at the intersection of Shasta and Covell which would only be exacerbated by additional traffic throughput. This frequently backs up to the off ramps from northbound 113, to the Safeway parking lot and beyond at periods of high flow. Lastly there exists a very high number of us in these neighborhoods who are pedestrians and have children that daily ride bikes and or walk on the sidewalks on primary and peripheral streets nearby. Without being ageist, we hesitate to imagine higher risk drivers and larger numbers of cars adjacent to our family members walking to and from school and existing businesses.

If and when this proposal comes to a vote, ours will be a "No."

Thank you for your attention to this matter,

Jaron D Ross, M.D.
1603 portola st
davis ca 95616

From:	Eileen Samitz
To:	Mike Webb; Katherine Hess
Subject:	WDAAC Scoping comments
Date:	Saturday, May 13, 2017 1:01:44 PM

May 13, 2017

Dear Mike and Katherine,

I am writing in regard to submitting scoping comments for the Draft EIR for the West Davis Active Adult Community (WDAAC) project.

First, although this is not directly related to the draft EIR, I would like to reiterate comments which I have made along with other community members, regarding the need for all of the important planning documents be completed *before* the project is placed on the ballot for the Measure J/R public vote. This includes, but is not limited to the development agreement, conditions of approval, and the tax sharing agreement. It would also be best if the 2:1 mitigation land should be identified as well if possible before the project is placed on the ballot as well.

Second, since this entire north-west vicinity is in a 100-year flood plain, and has been prone to flooding in the past when there has been a lot of rain in the fall and winter, it is imperative that extra precautions be made for effective flood control. The City cannot afford another Mace Ranch development debacle, where flood control apparently was not properly planned and implemented, and later resulted in flooding the Howitt Ranch. Subsequently the City had to purchase Howitt Ranch to avoid litigation. Another concern is that it is expected that Sutter West Hospital will develop sometime in the future on the "Sutter Davis Expansion area". Therefore, that needs to be taken into account to assure that enough flood control is planned if and when that site is also developed in the future.

Third, it can be expected that more and more traffic will emerge in this Covell Blvd. vicinity particularly due to UCD's ambitious growth plans and their inadequate on-campus housing plan so far. In addition to these increased student population impacts which may ensue particularly if UCD does not increase its current inadequate on-campus housing plan, there would also be more non-student traffic impacts due to the Los Rios Community College expansion expected as well as UCD faculty and staff increases to accommodate serving at least 6,300 more UCD students that UCD wishes to add by 2028. So, increased traffic can be expected from cars and there will be more pedestrian crossing being done in this area by more elderly seniors which will need to be addressed since they will not be able to cross the streets as quickly as a younger person. Therefore, considerations like signalization need to be addressed including the timing of the intervals between the traffic light changes to allow the seniors to safely cross the streets.

Thank you for your time and consideration,

Eileen M. Samitz

Appendix B

Air Quality, Greenhouse Gas, and Energy Modeling

West Davis Active Adult Community

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	8.00	1000sqft	0.18	8,000.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.11	5,000.00	0
Apartments Low Rise	150.00	Dwelling Unit	4.26	150,000.00	429
Retirement Community	142.00	Dwelling Unit	9.21	142,000.00	406
Congregate Care (Assisted Living)	30.00	Dwelling Unit	3.03	30,000.00	86
Single Family Housing	77.00	Dwelling Unit	8.90	138,600.00	220
City Park	1.10	Acre	1.10	47,916.00	0
Retirement Community	129.00	Dwelling Unit	8.90	129,000.00	369

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO_2 Intensity (lb/MWhr)	641.35	**CH_4 Intensity (lb/MWhr)**	0.029	**N_2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - As provided by Project Applicant.

Construction Phase - Estimated based on project size.

Grading - 74.49 acres of developed land uses + 11.53 acres of off-site improvements = 86.02 acres

Vehicle Trips - Trip rates provided by the Traffic Study (Fehr & Peers, 2017)

Construction Off-road Equipment Mitigation - As provided by YSAQMD BMPs (Source: Yolo-Solano Air Quality Management District's Handbook for Assessing and Mitigating Air Quality Impacts (2007).

Mobile Land Use Mitigation - 560 du/74.49 acres = 7.51 du/acre; Existing bus stop is within 0.1 miles of the project site. Affordable units = 150/560 = 26.79%.

Area Mitigation -

Energy Mitigation - Exceed Title 24 by approximately 16.9; equivalent to meeting the 2016 Title 24 standard. See pg. 8: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	14
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	30.00	29.00
tblConstructionPhase	NumDays	55.00	510.00
tblConstructionPhase	PhaseEndDate	7/21/2020	5/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/24/2020
tblConstructionPhase	PhaseEndDate	9/5/2023	6/26/2023
tblConstructionPhase	PhaseEndDate	11/21/2023	9/8/2023
tblConstructionPhase	PhaseEndDate	2/6/2024	8/25/2023
tblConstructionPhase	PhaseStartDate	6/10/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	7/22/2020	5/12/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/25/2020
tblConstructionPhase	PhaseStartDate	9/6/2023	6/26/2023

tblConstructionPhase	PhaseStartDate	11/22/2023	9/11/2021
tblGrading	AcresOfGrading	187.50	86.02
tblLandUse	LotAcreage	9.38	4.26
tblLandUse	LotAcreage	28.40	9.21
tblLandUse	LotAcreage	1.88	3.03
tblLandUse	LotAcreage	25.00	8.90
tblLandUse	LotAcreage	25.80	8.90
tblVehicleTrips	ST_TR	7.16	3.44
tblVehicleTrips	ST_TR	2.20	3.44
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	ST_TR	9.91	12.82
tblVehicleTrips	SU_TR	6.07	3.44
tblVehicleTrips	SU_TR	2.44	3.44
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	SU_TR	8.62	12.82
tblVehicleTrips	WD_TR	6.59	3.44
tblVehicleTrips	WD_TR	2.74	3.44
tblVehicleTrips	WD_TR	2.40	3.44
tblVehicleTrips	WD_TR	9.52	12.82

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4002	3.7838	2.8107	6.2900e-003	16.2831	0.1677	16.4508	1.8699	0.1554	2.0253	0.0000	560.1389	560.1389	0.1150	0.0000	563.0149
2021	1.0446	3.3533	3.5524	9.5700e-003	44.3546	0.1334	44.4879	4.4971	0.1256	4.6227	0.0000	860.5132	860.5132	0.0919	0.0000	862.8115
2022	2.3777	3.1849	3.7066	0.0101	49.3874	0.1203	49.5077	5.0070	0.1137	5.1208	0.0000	907.7628	907.7628	0.0922	0.0000	910.0671
2023	1.4994	1.6949	2.2093	5.6300e-003	25.5168	0.0659	25.5826	2.5869	0.0620	2.6489	0.0000	504.0380	504.0380	0.0611	0.0000	505.5648
Maximum	**2.3777**	**3.7838**	**3.7066**	**0.0101**	**49.3874**	**0.1677**	**49.5077**	**5.0070**	**0.1554**	**5.1208**	**0.0000**	**907.7628**	**907.7628**	**0.1150**	**0.0000**	**910.0671**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4002	3.7838	2.8107	6.2900e-003	2.5440	0.1677	2.7118	0.6902	0.1554	0.8456	0.0000	560.1385	560.1385	0.1150	0.0000	563.0144
2021	1.0446	3.3533	3.5523	9.5700e-003	6.5786	0.1334	6.7120	1.6439	0.1256	1.7695	0.0000	860.5128	860.5128	0.0919	0.0000	862.8111
2022	2.3777	3.1849	3.7065	0.0101	7.3241	0.1203	7.4444	1.8300	0.1137	1.9437	0.0000	907.7624	907.7624	0.0922	0.0000	910.0667
2023	1.4994	1.6949	2.2093	5.6300e-003	3.7838	0.0659	3.8497	0.9454	0.0620	1.0074	0.0000	504.0378	504.0378	0.0611	0.0000	505.5646
Maximum	**2.3777**	**3.7838**	**3.7065**	**0.0101**	**7.3241**	**0.1677**	**7.4444**	**1.8300**	**0.1554**	**1.9437**	**0.0000**	**907.7624**	**907.7624**	**0.1150**	**0.0000**	**910.0667**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	85.07	0.00	84.77	63.40	0.00	61.39	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2020	6-30-2020	1.6605	1.6605
2	7-1-2020	9-30-2020	1.4890	1.4890
3	10-1-2020	12-31-2020	1.0342	1.0342
4	1-1-2021	3-31-2021	0.9215	0.9215
5	4-1-2021	6-30-2021	0.9263	0.9263
6	7-1-2021	9-30-2021	1.0579	1.0579
7	10-1-2021	12-31-2021	1.5010	1.5010
8	1-1-2022	3-31-2022	1.3814	1.3814

9	**4-1-2022**	**6-30-2022**	1.3917	1.3917
10	**7-1-2022**	**9-30-2022**	1.4070	1.4070
11	**10-1-2022**	**12-31-2022**	1.4121	1.4121
12	**1-1-2023**	**3-31-2023**	1.2898	1.2898
13	**4-1-2023**	**6-30-2023**	1.2873	1.2873
14	**7-1-2023**	**9-30-2023**	0.6161	0.6161
		Highest	1.6605	1.6605

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	70.6908	1.2427	88.0231	0.1525		11.8207	11.8207		11.8207	11.8207	1,126.222 6	319.1800	1,445.402 6	1.0799	0.0850	1,497.716 9
Energy	0.0435	0.3740	0.1733	2.3700e-003		0.0301	0.0301		0.0301	0.0301	0.0000	1,287.742 6	1,287.742 6	0.0470	0.0159	1,293.660 2
Mobile	0.9548	7.1290	9.7482	0.0396	172.7438	0.0330	172.7767	17.6731	0.0310	17.7041	0.0000	3,661.089 2	3,661.089 2	0.1636	0.0000	3,665.179 2
Waste						0.0000	0.0000		0.0000	0.0000	82.2986	0.0000	82.2986	4.8637	0.0000	203.8914
Water						0.0000	0.0000		0.0000	0.0000	11.5456	81.0963	92.6419	1.1895	0.0288	130.9497
Total	**71.6891**	**8.7457**	**97.9446**	**0.1945**	**172.7438**	**11.8837**	**184.6275**	**17.6731**	**11.8818**	**29.5549**	**1,220.066 8**	**5,349.108 1**	**6,569.174 9**	**7.3438**	**0.1296**	**6,791.397 3**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8504	0.0453	3.9248	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4043	6.4043	6.1800e-003	0.0000	6.5587
Energy	0.0378	0.3247	0.1511	2.0600e-003		0.0261	0.0261		0.0261	0.0261	0.0000	1,187.068 3	1,187.068 3	0.0439	0.0145	1,192.476 3
Mobile	0.9160	6.7722	8.9289	0.0354	152.3600	0.0296	152.3896	15.5877	0.0279	15.6155	0.0000	3,271.349 2	3,271.349 2	0.1526	0.0000	3,275.164 1
Waste						0.0000	0.0000		0.0000	0.0000	82.2986	0.0000	82.2986	4.8637	0.0000	203.8914
Water						0.0000	0.0000		0.0000	0.0000	9.2364	68.1868	77.4232	0.9518	0.0230	108.0824
Total	**3.8042**	**7.1421**	**13.0048**	**0.0377**	**152.3600**	**0.0774**	**152.4374**	**15.5877**	**0.0757**	**15.6633**	**91.5351**	**4,533.008 5**	**4,624.543 5**	**6.0182**	**0.0375**	**4,786.172 8**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**94.69**	**18.34**	**86.72**	**80.63**	**11.80**	**99.35**	**17.44**	**11.80**	**99.36**	**47.00**	**92.50**	**15.26**	**29.60**	**18.05**	**71.07**	**29.53**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2020	5/11/2020	5	29	
2	Grading	Grading	5/12/2020	8/24/2020	5	75	
3	Building Construction	Building Construction	8/25/2020	6/26/2023	5	740	
4	Paving	Paving	6/26/2023	9/8/2023	5	55	
5	Architectural Coating	Architectural Coating	9/11/2021	8/25/2023	5	510	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 86.02

Acres of Paving: 0

Residential Indoor: 1,193,940; Residential Outdoor: 397,980; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	378.00	66.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	76.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2620	0.0000	0.2620	0.1440	0.0000	0.1440	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0591	0.6151	0.3120	5.5000e-004		0.0319	0.0319		0.0293	0.0293	0.0000	48.4745	48.4745	0.0157	0.0000	48.8664
Total	**0.0591**	**0.6151**	**0.3120**	**5.5000e-004**	**0.2620**	**0.0319**	**0.2938**	**0.1440**	**0.0293**	**0.1733**	**0.0000**	**48.4745**	**48.4745**	**0.0157**	**0.0000**	**48.8664**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	6.2000e-004	6.3600e-003	2.0000e-005	0.1982	1.0000e-005	0.1982	0.0201	1.0000e-005	0.0201	0.0000	1.6862	1.6862	4.0000e-005	0.0000	1.6873
Total	**9.2000e-004**	**6.2000e-004**	**6.3600e-003**	**2.0000e-005**	**0.1982**	**1.0000e-005**	**0.1982**	**0.0201**	**1.0000e-005**	**0.0201**	**0.0000**	**1.6862**	**1.6862**	**4.0000e-005**	**0.0000**	**1.6873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1022	0.0000	0.1022	0.0562	0.0000	0.0562	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0591	0.6151	0.3120	5.5000e-004		0.0319	0.0319		0.0293	0.0293	0.0000	48.4744	48.4744	0.0157	0.0000	48.8664
Total	**0.0591**	**0.6151**	**0.3120**	**5.5000e-004**	**0.1022**	**0.0319**	**0.1340**	**0.0562**	**0.0293**	**0.0855**	**0.0000**	**48.4744**	**48.4744**	**0.0157**	**0.0000**	**48.8664**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	6.2000e-004	6.3600e-003	2.0000e-005	0.0294	1.0000e-005	0.0294	7.3300e-003	1.0000e-005	7.3400e-003	0.0000	1.6862	1.6862	4.0000e-005	0.0000	1.6873
Total	**9.2000e-004**	**6.2000e-004**	**6.3600e-003**	**2.0000e-005**	**0.0294**	**1.0000e-005**	**0.0294**	**7.3300e-003**	**1.0000e-005**	**7.3400e-003**	**0.0000**	**1.6862**	**1.6862**	**4.0000e-005**	**0.0000**	**1.6873**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2714	0.0000	0.2714	0.1291	0.0000	0.1291	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1669	1.8824	1.1984	2.3300e-003		0.0815	0.0815		0.0750	0.0750	0.0000	204.3161	204.3161	0.0661	0.0000	205.9681
Total	**0.1669**	**1.8824**	**1.1984**	**2.3300e-003**	**0.2714**	**0.0815**	**0.3530**	**0.1291**	**0.0750**	**0.2041**	**0.0000**	**204.3161**	**204.3161**	**0.0661**	**0.0000**	**205.9681**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	1.7800e-003	0.0183	5.0000e-005	0.5695	4.0000e-005	0.5696	0.0577	3.0000e-005	0.0577	0.0000	4.8455	4.8455	1.2000e-004	0.0000	4.8485
Total	**2.6500e-003**	**1.7800e-003**	**0.0183**	**5.0000e-005**	**0.5695**	**4.0000e-005**	**0.5696**	**0.0577**	**3.0000e-005**	**0.0577**	**0.0000**	**4.8455**	**4.8455**	**1.2000e-004**	**0.0000**	**4.8485**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1059	0.0000	0.1059	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1669	1.8824	1.1984	2.3300e-003		0.0815	0.0815		0.0750	0.0750	0.0000	204.3159	204.3159	0.0661	0.0000	205.9679
Total	**0.1669**	**1.8824**	**1.1984**	**2.3300e-003**	**0.1059**	**0.0815**	**0.1874**	**0.0503**	**0.0750**	**0.1253**	**0.0000**	**204.3159**	**204.3159**	**0.0661**	**0.0000**	**205.9679**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	1.7800e-003	0.0183	5.0000e-005	0.0844	4.0000e-005	0.0844	0.0211	3.0000e-005	0.0211	0.0000	4.8455	4.8455	1.2000e-004	0.0000	4.8485
Total	**2.6500e-003**	**1.7800e-003**	**0.0183**	**5.0000e-005**	**0.0844**	**4.0000e-005**	**0.0844**	**0.0211**	**3.0000e-005**	**0.0211**	**0.0000**	**4.8455**	**4.8455**	**1.2000e-004**	**0.0000**	**4.8485**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0986	0.8922	0.7835	1.2500e-003		0.0519	0.0519		0.0488	0.0488	0.0000	107.6986	107.6986	0.0263	0.0000	108.3555
Total	**0.0986**	**0.8922**	**0.7835**	**1.2500e-003**		**0.0519**	**0.0519**		**0.0488**	**0.0488**	**0.0000**	**107.6986**	**107.6986**	**0.0263**	**0.0000**	**108.3555**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0100	0.3502	0.0640	8.4000e-004	1.6349	1.5000e-003	1.6364	0.1667	1.4400e-003	0.1681	0.0000	79.5594	79.5594	3.9700e-003	0.0000	79.6587
Worker	0.0620	0.0416	0.4282	1.2600e-003	13.3471	8.6000e-004	13.3480	1.3524	7.9000e-004	1.3532	0.0000	113.5586	113.5586	2.8700e-003	0.0000	113.6303
Total	**0.0720**	**0.3918**	**0.4922**	**2.1000e-003**	**14.9820**	**2.3600e-003**	**14.9843**	**1.5191**	**2.2300e-003**	**1.5213**	**0.0000**	**193.1180**	**193.1180**	**6.8400e-003**	**0.0000**	**193.2890**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0986	0.8922	0.7835	1.2500e-003		0.0519	0.0519		0.0488	0.0488	0.0000	107.6985	107.6985	0.0263	0.0000	108.3554
Total	**0.0986**	**0.8922**	**0.7835**	**1.2500e-003**		**0.0519**	**0.0519**		**0.0488**	**0.0488**	**0.0000**	**107.6985**	**107.6985**	**0.0263**	**0.0000**	**108.3554**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0100	0.3502	0.0640	8.4000e-004	0.2452	1.5000e-003	0.2467	0.0617	1.4400e-003	0.0632	0.0000	79.5594	79.5594	3.9700e-003	0.0000	79.6587
Worker	0.0620	0.0416	0.4282	1.2600e-003	1.9771	8.6000e-004	1.9780	0.4936	7.9000e-004	0.4944	0.0000	113.5586	113.5586	2.8700e-003	0.0000	113.6303
Total	**0.0720**	**0.3918**	**0.4922**	**2.1000e-003**	**2.2223**	**2.3600e-003**	**2.2246**	**0.5553**	**2.2300e-003**	**0.5576**	**0.0000**	**193.1180**	**193.1180**	**6.8400e-003**	**0.0000**	**193.2890**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.9066	0.1540	2.3300e-003	4.5881	2.0400e-003	4.5902	0.4678	1.9500e-003	0.4697	0.0000	221.2720	221.2720	0.0107	0.0000	221.5386
Worker	0.1618	0.1044	1.0951	3.4000e-003	37.4580	2.3300e-003	37.4604	3.7954	2.1500e-003	3.7976	0.0000	307.7743	307.7743	7.1900e-003	0.0000	307.9541
Total	**0.1850**	**1.0109**	**1.2491**	**5.7300e-003**	**42.0461**	**4.3700e-003**	**42.0505**	**4.2632**	**4.1000e-003**	**4.2673**	**0.0000**	**529.0463**	**529.0463**	**0.0179**	**0.0000**	**529.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.9066	0.1540	2.3300e-003	0.6881	2.0400e-003	0.6901	0.1732	1.9500e-003	0.1752	0.0000	221.2720	221.2720	0.0107	0.0000	221.5386
Worker	0.1618	0.1044	1.0951	3.4000e-003	5.5486	2.3300e-003	5.5510	1.3853	2.1500e-003	1.3875	0.0000	307.7743	307.7743	7.1900e-003	0.0000	307.9541
Total	**0.1850**	**1.0109**	**1.2491**	**5.7300e-003**	**6.2367**	**4.3700e-003**	**6.2411**	**1.5585**	**4.1000e-003**	**1.5626**	**0.0000**	**529.0463**	**529.0463**	**0.0179**	**0.0000**	**529.4928**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0214	0.8597	0.1410	2.3000e-003	4.5705	1.7400e-003	4.5723	0.4660	1.6700e-003	0.4676	0.0000	218.3406	218.3406	0.0101	0.0000	218.5935
Worker	0.1507	0.0933	1.0013	3.2700e-003	37.3145	2.2600e-003	37.3168	3.7809	2.0800e-003	3.7830	0.0000	295.5619	295.5619	6.4300e-003	0.0000	295.7228
Total	**0.1721**	**0.9530**	**1.1422**	**5.5700e-003**	**41.8850**	**4.0000e-003**	**41.8890**	**4.2469**	**3.7500e-003**	**4.2506**	**0.0000**	**513.9025**	**513.9025**	**0.0166**	**0.0000**	**514.3162**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0214	0.8597	0.1410	2.3000e-003	0.6854	1.7400e-003	0.6872	0.1725	1.6700e-003	0.1742	0.0000	218.3406	218.3406	0.0101	0.0000	218.5935
Worker	0.1507	0.0933	1.0013	3.2700e-003	5.5274	2.2600e-003	5.5296	1.3800	2.0800e-003	1.3821	0.0000	295.5619	295.5619	6.4300e-003	0.0000	295.7228
Total	**0.1721**	**0.9530**	**1.1422**	**5.5700e-003**	**6.2128**	**4.0000e-003**	**6.2168**	**1.5525**	**3.7500e-003**	**1.5563**	**0.0000**	**513.9025**	**513.9025**	**0.0166**	**0.0000**	**514.3162**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0991	0.9063	1.0234	1.7000e-003		0.0441	0.0441		0.0415	0.0415	0.0000	146.0370	146.0370	0.0347	0.0000	146.9055
Total	**0.0991**	**0.9063**	**1.0234**	**1.7000e-003**		**0.0441**	**0.0441**		**0.0415**	**0.0415**	**0.0000**	**146.0370**	**146.0370**	**0.0347**	**0.0000**	**146.9055**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.6200e-003	0.3453	0.0573	1.0900e-003	2.2149	3.4000e-004	2.2153	0.2258	3.2000e-004	0.2261	0.0000	103.6192	103.6192	3.6200e-003	0.0000	103.7098
Worker	0.0684	0.0406	0.4452	1.5200e-003	18.0832	1.0700e-003	18.0843	1.8323	9.9000e-004	1.8333	0.0000	137.8291	137.8291	2.7900e-003	0.0000	137.8989
Total	**0.0760**	**0.3859**	**0.5024**	**2.6100e-003**	**20.2981**	**1.4100e-003**	**20.2995**	**2.0581**	**1.3100e-003**	**2.0594**	**0.0000**	**241.4483**	**241.4483**	**6.4100e-003**	**0.0000**	**241.6087**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0991	0.9063	1.0234	1.7000e-003		0.0441	0.0441		0.0415	0.0415	0.0000	146.0368	146.0368	0.0347	0.0000	146.9053
Total	**0.0991**	**0.9063**	**1.0234**	**1.7000e-003**		**0.0441**	**0.0441**		**0.0415**	**0.0415**	**0.0000**	**146.0368**	**146.0368**	**0.0347**	**0.0000**	**146.9053**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.6200e-003	0.3453	0.0573	1.0900e-003	0.3322	3.4000e-004	0.3325	0.0836	3.2000e-004	0.0839	0.0000	103.6192	103.6192	3.6200e-003	0.0000	103.7098
Worker	0.0684	0.0406	0.4452	1.5200e-003	2.6786	1.0700e-003	2.6797	0.6688	9.9000e-004	0.6698	0.0000	137.8291	137.8291	2.7900e-003	0.0000	137.8989
Total	**0.0760**	**0.3859**	**0.5024**	**2.6100e-003**	**3.0108**	**1.4100e-003**	**3.0122**	**0.7524**	**1.3100e-003**	**0.7537**	**0.0000**	**241.4483**	**241.4483**	**6.4100e-003**	**0.0000**	**241.6087**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2803	0.4011	6.3000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	55.0739	55.0739	0.0178	0.0000	55.5192
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0284**	**0.2803**	**0.4011**	**6.3000e-004**		**0.0140**	**0.0140**		**0.0129**	**0.0129**	**0.0000**	**55.0739**	**55.0739**	**0.0178**	**0.0000**	**55.5192**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	7.7100e-003	3.0000e-005	0.3132	2.0000e-005	0.3133	0.0317	2.0000e-005	0.0318	0.0000	2.3874	2.3874	5.0000e-005	0.0000	2.3887
Total	**1.1800e-003**	**7.0000e-004**	**7.7100e-003**	**3.0000e-005**	**0.3132**	**2.0000e-005**	**0.3133**	**0.0317**	**2.0000e-005**	**0.0318**	**0.0000**	**2.3874**	**2.3874**	**5.0000e-005**	**0.0000**	**2.3887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2803	0.4011	6.3000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	55.0738	55.0738	0.0178	0.0000	55.5191
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0284**	**0.2803**	**0.4011**	**6.3000e-004**		**0.0140**	**0.0140**		**0.0129**	**0.0129**	**0.0000**	**55.0738**	**55.0738**	**0.0178**	**0.0000**	**55.5191**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	7.7100e-003	3.0000e-005	0.0464	2.0000e-005	0.0464	0.0116	2.0000e-005	0.0116	0.0000	2.3874	2.3874	5.0000e-005	0.0000	2.3887
Total	**1.1800e-003**	**7.0000e-004**	**7.7100e-003**	**3.0000e-005**	**0.0464**	**2.0000e-005**	**0.0464**	**0.0116**	**2.0000e-005**	**0.0116**	**0.0000**	**2.3874**	**2.3874**	**5.0000e-005**	**0.0000**	**2.3887**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7600e-003	0.0611	0.0727	1.2000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003	0.0000	10.2130	10.2130	7.0000e-004	0.0000	10.2305
Total	**0.6017**	**0.0611**	**0.0727**	**1.2000e-004**		**3.7600e-003**	**3.7600e-003**		**3.7600e-003**	**3.7600e-003**	**0.0000**	**10.2130**	**10.2130**	**7.0000e-004**	**0.0000**	**10.2305**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9700e-003	6.4300e-003	0.0675	2.1000e-004	2.3084	1.4000e-004	2.3086	0.2339	1.3000e-004	0.2340	0.0000	18.9672	18.9672	4.4000e-004	0.0000	18.9783
Total	**9.9700e-003**	**6.4300e-003**	**0.0675**	**2.1000e-004**	**2.3084**	**1.4000e-004**	**2.3086**	**0.2339**	**1.3000e-004**	**0.2340**	**0.0000**	**18.9672**	**18.9672**	**4.4000e-004**	**0.0000**	**18.9783**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7600e-003	0.0611	0.0727	1.2000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003	0.0000	10.2130	10.2130	7.0000e-004	0.0000	10.2305
Total	**0.6017**	**0.0611**	**0.0727**	**1.2000e-004**		**3.7600e-003**	**3.7600e-003**		**3.7600e-003**	**3.7600e-003**	**0.0000**	**10.2130**	**10.2130**	**7.0000e-004**	**0.0000**	**10.2305**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9700e-003	6.4300e-003	0.0675	2.1000e-004	0.3419	1.4000e-004	0.3421	0.0854	1.3000e-004	0.0855	0.0000	18.9672	18.9672	4.4000e-004	0.0000	18.9783
Total	**9.9700e-003**	**6.4300e-003**	**0.0675**	**2.1000e-004**	**0.3419**	**1.4000e-004**	**0.3421**	**0.0854**	**1.3000e-004**	**0.0855**	**0.0000**	**18.9672**	**18.9672**	**4.4000e-004**	**0.0000**	**18.9783**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.9535**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0188	0.2013	6.6000e-004	7.5024	4.5000e-004	7.5028	0.7602	4.2000e-004	0.7606	0.0000	59.4252	59.4252	1.2900e-003	0.0000	59.4575
Total	**0.0303**	**0.0188**	**0.2013**	**6.6000e-004**	**7.5024**	**4.5000e-004**	**7.5028**	**0.7602**	**4.2000e-004**	**0.7606**	**0.0000**	**59.4252**	**59.4252**	**1.2900e-003**	**0.0000**	**59.4575**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.9535**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0188	0.2013	6.6000e-004	1.1113	4.5000e-004	1.1118	0.2775	4.2000e-004	0.2779	0.0000	59.4252	59.4252	1.2900e-003	0.0000	59.4575
Total	**0.0303**	**0.0188**	**0.2013**	**6.6000e-004**	**1.1113**	**4.5000e-004**	**1.1118**	**0.2775**	**4.2000e-004**	**0.2779**	**0.0000**	**59.4252**	**59.4252**	**1.2900e-003**	**0.0000**	**59.4575**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2599					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1108	0.1539	2.5000e-004		6.0200e-003	6.0200e-003		6.0200e-003	6.0200e-003	0.0000	21.7027	21.7027	1.3000e-003	0.0000	21.7351
Total	**1.2762**	**0.1108**	**0.1539**	**2.5000e-004**		**6.0200e-003**	**6.0200e-003**		**6.0200e-003**	**6.0200e-003**	**0.0000**	**21.7027**	**21.7027**	**1.3000e-003**	**0.0000**	**21.7351**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0186	0.0110	0.1208	4.1000e-004	4.9054	2.9000e-004	4.9057	0.4970	2.7000e-004	0.4973	0.0000	37.3888	37.3888	7.6000e-004	0.0000	37.4077
Total	**0.0186**	**0.0110**	**0.1208**	**4.1000e-004**	**4.9054**	**2.9000e-004**	**4.9057**	**0.4970**	**2.7000e-004**	**0.4973**	**0.0000**	**37.3888**	**37.3888**	**7.6000e-004**	**0.0000**	**37.4077**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2599					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1108	0.1539	2.5000e-004		6.0200e-003	6.0200e-003		6.0200e-003	6.0200e-003	0.0000	21.7026	21.7026	1.3000e-003	0.0000	21.7351
Total	**1.2762**	**0.1108**	**0.1539**	**2.5000e-004**		**6.0200e-003**	**6.0200e-003**		**6.0200e-003**	**6.0200e-003**	**0.0000**	**21.7026**	**21.7026**	**1.3000e-003**	**0.0000**	**21.7351**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0186	0.0110	0.1208	4.1000e-004	0.7266	2.9000e-004	0.7269	0.1814	2.7000e-004	0.1817	0.0000	37.3888	37.3888	7.6000e-004	0.0000	37.4077
Total	**0.0186**	**0.0110**	**0.1208**	**4.1000e-004**	**0.7266**	**2.9000e-004**	**0.7269**	**0.1814**	**2.7000e-004**	**0.1817**	**0.0000**	**37.3888**	**37.3888**	**7.6000e-004**	**0.0000**	**37.4077**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9160	6.7722	8.9289	0.0354	152.3600	0.0296	152.3896	15.5877	0.0279	15.6155	0.0000	3,271.349 2	3,271.349 2	0.1526	0.0000	3,275.164 1
Unmitigated	0.9548	7.1290	9.7482	0.0396	172.7438	0.0330	172.7767	17.6731	0.0310	17.7041	0.0000	3,661.089 2	3,661.089 2	0.1636	0.0000	3,665.179 2

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	516.00	516.00	516.00	1,354,117	1,194,331
Health Club	263.44	166.96	213.84	340,199	300,055
High Turnover (Sit Down Restaurant)	635.75	791.85	659.20	597,324	526,840
City Park	2.08	25.03	18.41	14,383	12,686
Congregate Care (Assisted Living)	103.20	103.20	103.20	270,823	238,866
Retirement Community	488.48	488.48	488.48	1,281,898	1,130,634
Retirement Community	443.76	443.76	443.76	1,164,541	1,027,125
Single Family Housing	987.14	987.14	987.14	2,590,510	2,284,830
Total	3,439.85	3,522.42	3,430.03	7,613,795	6,715,367

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Health Club	10.00	5.00	7.00	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	10.00	5.00	7.00	8.50	72.50	19.00	37	20	43
City Park	10.00	5.00	7.00	33.00	48.00	19.00	66	28	6
Congregate Care (Assisted	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Single Family Housing	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Health Club	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
High Turnover (Sit Down Restaurant)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
City Park	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Congregate Care (Assisted Living)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Retirement Community	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Single Family Housing	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	813.2345	813.2345	0.0368	7.6100e-003	816.4210
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	857.0195	857.0195	0.0388	8.0200e-003	860.3776
NaturalGas Mitigated	0.0378	0.3247	0.1511	2.0600e-003		0.0261	0.0261		0.0261	0.0261	0.0000	373.8338	373.8338	7.1700e-003	6.8500e-003	376.0553
NaturalGas Unmitigated	0.0435	0.3740	0.1733	2.3700e-003		0.0301	0.0301		0.0301	0.0301	0.0000	430.7231	430.7231	8.2600e-003	7.9000e-003	433.2826

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.81481e+006	9.7900e-003	0.0836	0.0356	5.3000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	96.8451	96.8451	1.8600e-003	1.7800e-003	97.4206
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	292443	1.5800e-003	0.0135	5.7300e-003	9.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	15.6059	15.6059	3.0000e-004	2.9000e-004	15.6986
Health Club	149120	8.0000e-004	7.3100e-003	6.1400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	7.9576	7.9576	1.5000e-004	1.5000e-004	8.0049
High Turnover (Sit Down Restaurant)	547050	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	29.1927	29.1927	5.6000e-004	5.4000e-004	29.3662
Retirement Community	1.56073e+006	8.4200e-003	0.0719	0.0306	4.6000e-004		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.0000	83.2868	83.2868	1.6000e-003	1.5300e-003	83.7817
Retirement Community	1.71802e+006	9.2600e-003	0.0792	0.0337	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003	0.0000	91.6800	91.6800	1.7600e-003	1.6800e-003	92.2248
Single Family Housing	1.98927e+006	0.0107	0.0917	0.0390	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003	0.0000	106.1551	106.1551	2.0300e-003	1.9500e-003	106.7859
Total		**0.0435**	**0.3740**	**0.1733**	**2.3800e-003**		**0.0301**	**0.0301**		**0.0301**	**0.0301**	**0.0000**	**430.7231**	**430.7231**	**8.2600e-003**	**7.9200e-003**	**433.2826**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.57622e+006	8.5000e-003	0.0726	0.0309	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	84.1132	84.1132	1.6100e-003	1.5400e-003	84.6130
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	256643	1.3800e-003	0.0118	5.0300e-003	8.0000e-005		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	13.6955	13.6955	2.6000e-004	2.5000e-004	13.7769
Health Club	124000	6.7000e-004	6.0800e-003	5.1100e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6171	6.6171	1.3000e-004	1.2000e-004	6.6564
High Turnover (Sit Down Restaurant)	512760	2.7600e-003	0.0251	0.0211	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003	0.0000	27.3628	27.3628	5.2000e-004	5.0000e-004	27.5254
Retirement Community	1.35555e+006	7.3100e-003	0.0625	0.0266	4.0000e-004		5.0500e-003	5.0500e-003		5.0500e-003	5.0500e-003	0.0000	72.3373	72.3373	1.3900e-003	1.3300e-003	72.7672
Retirement Community	1.49216e+006	8.0500e-003	0.0688	0.0293	4.4000e-004		5.5600e-003	5.5600e-003		5.5600e-003	5.5600e-003	0.0000	79.6271	79.6271	1.5300e-003	1.4600e-003	80.1003
Single Family Housing	1.68805e+006	9.1000e-003	0.0778	0.0331	5.0000e-004		6.2900e-003	6.2900e-003		6.2900e-003	6.2900e-003	0.0000	90.0808	90.0808	1.7300e-003	1.6500e-003	90.6161
Total		**0.0378**	**0.3247**	**0.1511**	**2.0700e-003**		**0.0261**	**0.0261**		**0.0261**	**0.0261**	**0.0000**	**373.8338**	**373.8338**	**7.1700e-003**	**6.8500e-003**	**376.0553**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	674136	196.1139	8.8700e-003	1.8300e-003	196.8823
City Park	0	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	127694	37.1476	1.6800e-003	3.5000e-004	37.2932
Health Club	67600	19.6656	8.9000e-004	1.8000e-004	19.7427
High Turnover (Sit Down Restaurant)	156750	45.6004	2.0600e-003	4.3000e-004	45.7791
Retirement Community	604362	175.8160	7.9500e-003	1.6400e-003	176.5049
Retirement Community	665267	193.5339	8.7500e-003	1.8100e-003	194.2922
Single Family Housing	650171	189.1422	8.5500e-003	1.7700e-003	189.8833
Total		**857.0195**	**0.0388**	**8.0100e-003**	**860.3776**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	641730	186.6868	8.4400e-003	1.7500e-003	187.4183
City Park	0	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	121798	35.4324	1.6000e-003	3.3000e-004	35.5713
Health Club	62041.2	18.0485	8.2000e-004	1.7000e-004	18.1192
High Turnover (Sit Down Restaurant)	145573	42.3489	1.9100e-003	4.0000e-004	42.5149
Retirement Community	572557	166.5633	7.5300e-003	1.5600e-003	167.2160
Retirement Community	630256	183.3488	8.2900e-003	1.7200e-003	184.0672
Single Family Housing	621515	180.8058	8.1800e-003	1.6900e-003	181.5142
Total		**813.2345**	**0.0368**	**7.6200e-003**	**816.4210**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8504	0.0453	3.9248	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4043	6.4043	6.1800e-003	0.0000	6.5587
Unmitigated	70.6908	1.2427	88.0231	0.1525		11.8207	11.8207		11.8207	11.8207	1,126.2226	319.1800	1,445.4026	1.0799	0.0850	1,497.7169

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	67.8403	1.1975	84.0983	0.1523		11.7990	11.7990		11.7990	11.7990	1,126.222 6	312.7757	1,438.998 3	1.0738	0.0850	1,491.158 2
Landscaping	0.1186	0.0453	3.9248	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4043	6.4043	6.1800e-003	0.0000	6.5587
Total	**70.6908**	**1.2427**	**88.0231**	**0.1525**		**11.8207**	**11.8207**		**11.8207**	**11.8207**	**1,126.222 6**	**319.1800**	**1,445.402 6**	**1.0799**	**0.0850**	**1,497.716 9**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3780					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1186	0.0453	3.9248	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4043	6.4043	6.1800e-003	0.0000	6.5587
Total	**2.8504**	**0.0453**	**3.9248**	**2.1000e-004**		**0.0217**	**0.0217**		**0.0217**	**0.0217**	**0.0000**	**6.4043**	**6.4043**	**6.1800e-003**	**0.0000**	**6.5587**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	77.4232	0.9518	0.0230	108.0824
Unmitigated	92.6419	1.1895	0.0288	130.9497

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	9.7731 / 6.1613	24.7580	0.3194	7.7200e-003	35.0451
City Park	0 / 1.31063	1.3345	6.0000e-005	1.0000e-005	1.3397
Congregate Care (Assisted Living)	1.95462 / 1.23226	4.9516	0.0639	1.5400e-003	7.0090
Health Club	0.473145 / 0.289992	1.1902	0.0155	3.7000e-004	1.6882
High Turnover (Sit Down Restaurant)	1.51767 / 0.0968725	2.9691	0.0496	1.1900e-003	4.5632
Retirement Community	17.6567 / 11.1314	44.7294	0.5771	0.0140	63.3148
Single Family Housing	5.01686 / 3.1628	12.7091	0.1640	3.9600e-003	17.9898
Total		**92.6419**	**1.1895**	**0.0287**	**130.9497**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	7.81848 / 5.78547	20.6784	0.2556	6.1900e-003	28.9115
City Park	0 / 1.23068	1.2531	6.0000e-005	1.0000e-005	1.2580
Congregate Care (Assisted Living)	1.5637 / 1.15709	4.1357	0.0511	1.2400e-003	5.7823
Health Club	0.378516 / 0.272303	0.9932	0.0124	3.0000e-004	1.3917
High Turnover (Sit Down Restaurant)	1.21413 / 0.0909632	2.3890	0.0397	9.5000e-004	3.6643
Retirement Community	14.1254 / 10.4524	37.3590	0.4618	0.0112	52.2334
Single Family Housing	4.01349 / 2.96987	10.6149	0.1312	3.1800e-003	14.8412
Total		**77.4232**	**0.9518**	**0.0231**	**108.0824**

8.0 Waste Detail

8.1 Mitigation Measures Waste

West Davis Active Adult Community - Yolo County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	82.2986	4.8637	0.0000	203.8914
Unmitigated	82.2986	4.8637	0.0000	203.8914

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	69	14.0064	0.8278	0.0000	34.7002
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Congregate Care (Assisted Living)	27.38	5.5579	0.3285	0.0000	13.7694
Health Club	45.6	9.2564	0.5470	0.0000	22.9323
High Turnover (Sit Down Restaurant)	59.5	12.0780	0.7138	0.0000	29.9226
Retirement Community	124.66	25.3049	1.4955	0.0000	62.6917
Single Family Housing	79.2	16.0769	0.9501	0.0000	39.8298
Total		**82.2986**	**4.8637**	**0.0000**	**203.8914**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	69	14.0064	0.8278	0.0000	34.7002
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Congregate Care (Assisted Living)	27.38	5.5579	0.3285	0.0000	13.7694
Health Club	45.6	9.2564	0.5470	0.0000	22.9323
High Turnover (Sit Down Restaurant)	59.5	12.0780	0.7138	0.0000	29.9226
Retirement Community	124.66	25.3049	1.4955	0.0000	62.6917
Single Family Housing	79.2	16.0769	0.9501	0.0000	39.8298
Total		**82.2986**	**4.8637**	**0.0000**	**203.8914**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

West Davis Active Adult Community

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	8.00	1000sqft	0.18	8,000.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.11	5,000.00	0
Apartments Low Rise	150.00	Dwelling Unit	4.26	150,000.00	429
Retirement Community	142.00	Dwelling Unit	9.21	142,000.00	406
Congregate Care (Assisted Living)	30.00	Dwelling Unit	3.03	30,000.00	86
Single Family Housing	77.00	Dwelling Unit	8.90	138,600.00	220
City Park	1.10	Acre	1.10	47,916.00	0
Retirement Community	129.00	Dwelling Unit	8.90	129,000.00	369

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - As provided by Project Applicant.

Construction Phase - Estimated based on project size.

Grading - 74.49 acres of developed land uses + 11.53 acres of off-site improvements = 86.02 acres

Vehicle Trips - Trip rates provided by the Traffic Study (Fehr & Peers, 2017)

Construction Off-road Equipment Mitigation - As provided by YSAQMD BMPs (Source: Yolo-Solano Air Quality Management District's Handbook for Assessing and Mitigating Air Quality Impacts (2007).

Mobile Land Use Mitigation - 560 du/74.49 acres = 7.51 du/acre; Existing bus stop is within 0.1 miles of the project site. Affordable units = 150/560 = 26.79%.

Area Mitigation -

Energy Mitigation - Exceed Title 24 by approximately 16.9; equivalent to meeting the 2016 Title 24 standard. See pg. 8: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	14
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	30.00	29.00
tblConstructionPhase	NumDays	55.00	510.00
tblConstructionPhase	PhaseEndDate	7/21/2020	5/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/24/2020
tblConstructionPhase	PhaseEndDate	9/5/2023	6/26/2023
tblConstructionPhase	PhaseEndDate	11/21/2023	9/8/2023
tblConstructionPhase	PhaseEndDate	2/6/2024	8/25/2023
tblConstructionPhase	PhaseStartDate	6/10/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	7/22/2020	5/12/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/25/2020
tblConstructionPhase	PhaseStartDate	9/6/2023	6/26/2023

tblConstructionPhase	PhaseStartDate	11/22/2023	9/11/2021
tblGrading	AcresOfGrading	187.50	86.02
tblLandUse	LotAcreage	9.38	4.26
tblLandUse	LotAcreage	28.40	9.21
tblLandUse	LotAcreage	1.88	3.03
tblLandUse	LotAcreage	25.00	8.90
tblLandUse	LotAcreage	25.80	8.90
tblVehicleTrips	ST_TR	7.16	3.44
tblVehicleTrips	ST_TR	2.20	3.44
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	ST_TR	9.91	12.82
tblVehicleTrips	SU_TR	6.07	3.44
tblVehicleTrips	SU_TR	2.44	3.44
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	SU_TR	8.62	12.82
tblVehicleTrips	WD_TR	6.59	3.44
tblVehicleTrips	WD_TR	2.74	3.44
tblVehicleTrips	WD_TR	2.40	3.44
tblVehicleTrips	WD_TR	9.52	12.82

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5315	50.2404	32.5235	0.0749	377.7062	2.1983	378.8735	38.2219	2.0224	39.3197	0.0000	7,427.3909	7,427.3909	1.9464	0.0000	7,447.0834
2021	18.8305	26.6722	31.1989	0.0825	445.3627	1.0895	446.4521	45.0644	1.0298	46.0942	0.0000	8,166.1949	8,166.1949	0.8017	0.0000	8,186.2376
2022	18.4957	24.3274	29.9569	0.0811	445.3626	0.9247	446.2873	45.0644	0.8746	45.9390	0.0000	8,025.4872	8,025.4872	0.7843	0.0000	8,045.0939
2023	19.2847	32.0265	43.7263	0.1033	458.7158	1.3071	460.0229	46.4149	1.2231	47.6379	0.0000	10,175.1613	10,175.1613	1.4661	0.0000	10,211.8126
Maximum	**19.2847**	**50.2404**	**43.7263**	**0.1033**	**458.7158**	**2.1983**	**460.0229**	**46.4149**	**2.0224**	**47.6379**	**0.0000**	**10,175.1613**	**10,175.1613**	**1.9464**	**0.0000**	**10,211.8126**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5315	50.2404	32.5235	0.0749	55.7071	2.1983	56.8744	13.9095	2.0224	15.0073	0.0000	7,427.390 9	7,427.390 9	1.9464	0.0000	7,447.083 4
2021	18.8305	26.6722	31.1989	0.0825	65.6739	1.0895	66.7634	16.3962	1.0298	17.4260	0.0000	8,166.194 9	8,166.194 9	0.8017	0.0000	8,186.237 6
2022	18.4957	24.3274	29.9569	0.0811	65.6739	0.9247	66.5985	16.3962	0.8746	17.2708	0.0000	8,025.487 2	8,025.487 2	0.7843	0.0000	8,045.093 9
2023	19.2847	32.0265	43.7263	0.1033	67.6410	1.3071	68.9480	16.8870	1.2231	18.1100	0.0000	10,175.16 13	10,175.16 13	1.4661	0.0000	10,211.812 6
Maximum	**19.2847**	**50.2404**	**43.7263**	**0.1033**	**67.6410**	**2.1983**	**68.9480**	**16.8870**	**2.0224**	**18.1100**	**0.0000**	**10,175.16 13**	**10,175.16 13**	**1.9464**	**0.0000**	**10,211.81 26**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**85.25**	**0.00**	**85.03**	**63.61**	**0.00**	**62.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,670.928 9	29.7093	2,094.786 6	3.7163		288.0215	288.0215		288.0215	288.0215	30,279.21 74	8,487.615 2	38,766.83 26	28.9442	2.2840	40,171.07 60
Energy	0.2385	2.0491	0.9495	0.0130		0.1648	0.1648		0.1648	0.1648		2,601.594 0	2,601.594 0	0.0499	0.0477	2,617.053 9
Mobile	6.7654	39.6683	60.0199	0.2377	972.0100	0.1847	972.1947	99.5151	0.1736	99.6887		24,189.80 73	24,189.80 73	1.0266		24,215.47 24
Total	**1,677.932 9**	**71.4267**	**2,155.756 0**	**3.9670**	**972.0100**	**288.3710**	**1,260.381 0**	**99.5151**	**288.3599**	**387.8749**	**30,279.21 74**	**35,279.01 65**	**65,558.23 38**	**30.0207**	**2.3317**	**67,003.60 23**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.2864	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410	0.0000	78.4387	78.4387	0.0757	0.0000	80.3307
Energy	0.2070	1.7790	0.8279	0.0113		0.1430	0.1430		0.1430	0.1430		2,257.979 0	2,257.979 0	0.0433	0.0414	2,271.397 0
Mobile	6.5391	37.7999	54.5248	0.2124	857.3128	0.1660	857.4788	87.7723	0.1560	87.9283		21,616.60 22	21,616.60 22	0.9543		21,640.45 88
Total	**23.0325**	**40.0819**	**98.9617**	**0.2260**	**857.3128**	**0.5499**	**857.8627**	**87.7723**	**0.5399**	**88.3122**	**0.0000**	**23,953.02 00**	**23,953.02 00**	**1.0732**	**0.0414**	**23,992.18 65**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	98.63	43.88	95.41	94.30	11.80	99.81	31.94	11.80	99.81	77.23	100.00	32.10	63.46	96.43	98.22	64.19

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2020	5/11/2020	5	29	
2	Grading	Grading	5/12/2020	8/24/2020	5	75	
3	Building Construction	Building Construction	8/25/2020	6/26/2023	5	740	
4	Paving	Paving	6/26/2023	9/8/2023	5	55	
5	Architectural Coating	Architectural Coating	9/11/2021	8/25/2023	5	510	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 86.02

Acres of Paving: 0

Residential Indoor: 1,193,940; Residential Outdoor: 397,980; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

West Davis Active Adult Community - Yolo County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	378.00	66.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	76.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.101 6	3,685.101 6	1.1918		3,714.897 5
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.101 6**	**3,685.101 6**	**1.1918**		**3,714.897 5**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0732	0.0386	0.5087	1.4200e-003	16.0239	8.8000e-004	16.0248	1.6206	8.1000e-004	1.6214		141.2164	141.2164	3.5900e-003		141.3062
Total	**0.0732**	**0.0386**	**0.5087**	**1.4200e-003**	**16.0239**	**8.8000e-004**	**16.0248**	**1.6206**	**8.1000e-004**	**1.6214**		**141.2164**	**141.2164**	**3.5900e-003**		**141.3062**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.101 6	3,685.101 6	1.1918		3,714.897 5
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.0458**	**2.1974**	**9.2433**	**3.8730**	**2.0216**	**5.8946**	**0.0000**	**3,685.101 6**	**3,685.101 6**	**1.1918**		**3,714.897 5**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0732	0.0386	0.5087	1.4200e-003	2.3606	8.8000e-004	2.3615	0.5890	8.1000e-004	0.5898		141.2164	141.2164	3.5900e-003		141.3062
Total	**0.0732**	**0.0386**	**0.5087**	**1.4200e-003**	**2.3606**	**8.8000e-004**	**2.3615**	**0.5890**	**8.1000e-004**	**0.5898**		**141.2164**	**141.2164**	**3.5900e-003**		**141.3062**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2384	0.0000	7.2384	3.4416	0.0000	3.4416			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.865 3	6,005.865 3	1.9424		6,054.425 7
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.2384**	**2.1739**	**9.4123**	**3.4416**	**2.0000**	**5.4416**		**6,005.865 3**	**6,005.865 3**	**1.9424**		**6,054.425 7**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0428	0.5652	1.5800e-003	17.8044	9.7000e-004	17.8053	1.8007	9.0000e-004	1.8016		156.9071	156.9071	3.9900e-003		157.0069
Total	**0.0814**	**0.0428**	**0.5652**	**1.5800e-003**	**17.8044**	**9.7000e-004**	**17.8053**	**1.8007**	**9.0000e-004**	**1.8016**		**156.9071**	**156.9071**	**3.9900e-003**		**157.0069**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8230	0.0000	2.8230	1.3422	0.0000	1.3422			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.865 3	6,005.865 3	1.9424		6,054.425 7
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**2.8230**	**2.1739**	**4.9969**	**1.3422**	**2.0000**	**3.3422**	**0.0000**	**6,005.865 3**	**6,005.865 3**	**1.9424**		**6,054.425 7**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0428	0.5652	1.5800e-003	2.6229	9.7000e-004	2.6238	0.6544	9.0000e-004	0.6553		156.9071	156.9071	3.9900e-003		157.0069
Total	**0.0814**	**0.0428**	**0.5652**	**1.5800e-003**	**2.6229**	**9.7000e-004**	**2.6238**	**0.6544**	**9.0000e-004**	**0.6553**		**156.9071**	**156.9071**	**3.9900e-003**		**157.0069**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.063 1**	**2,553.063 1**	**0.6229**		**2,568.634 5**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2115	7.4025	1.2780	0.0182	41.2040	0.0319	41.2359	4.1893	0.0305	4.2198		1,908.784 2	1,908.784 2	0.0894		1,911.0183
Worker	1.5374	0.8097	10.6819	0.0298	336.5022	0.0184	336.5206	34.0326	0.0170	34.0496		2,965.543 6	2,965.543 6	0.0755		2,967.430 6
Total	**1.7489**	**8.2122**	**11.9599**	**0.0480**	**377.7062**	**0.0503**	**377.7565**	**38.2219**	**0.0474**	**38.2693**		**4,874.327 8**	**4,874.327 8**	**0.1649**		**4,878.448 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.063 1**	**2,553.063 1**	**0.6229**		**2,568.634 5**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2115	7.4025	1.2780	0.0182	6.1348	0.0319	6.1667	1.5414	0.0305	1.5719		1,908.784 2	1,908.784 2	0.0894		1,911.0183
Worker	1.5374	0.8097	10.6819	0.0298	49.5723	0.0184	49.5907	12.3681	0.0170	12.3851		2,965.543 6	2,965.543 6	0.0755		2,967.430 6
Total	**1.7489**	**8.2122**	**11.9599**	**0.0480**	**55.7071**	**0.0503**	**55.7573**	**13.9095**	**0.0474**	**13.9570**		**4,874.327 8**	**4,874.327 8**	**0.1649**		**4,878.448 9**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1738	6.8443	1.0891	0.0181	41.2040	0.0153	41.2193	4.1893	0.0146	4.2039		1,891.708 6	1,891.708 6	0.0854		1,893.842 5
Worker	1.4277	0.7235	9.7556	0.0287	336.5022	0.0179	336.5200	34.0326	0.0165	34.0491		2,863.869 8	2,863.869 8	0.0675		2,865.556 3
Total	**1.6014**	**7.5678**	**10.8447**	**0.0468**	**377.7061**	**0.0332**	**377.7393**	**38.2219**	**0.0311**	**38.2530**		**4,755.578 4**	**4,755.578 4**	**0.1528**		**4,759.398 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1738	6.8443	1.0891	0.0181	6.1347	0.0153	6.1500	1.5414	0.0146	1.5560		1,891.708 6	1,891.708 6	0.0854		1,893.842 5
Worker	1.4277	0.7235	9.7556	0.0287	49.5723	0.0179	49.5901	12.3681	0.0165	12.3846		2,863.869 8	2,863.869 8	0.0675		2,865.556 3
Total	**1.6014**	**7.5678**	**10.8447**	**0.0468**	**55.7070**	**0.0332**	**55.7402**	**13.9095**	**0.0311**	**13.9406**		**4,755.578 4**	**4,755.578 4**	**0.1528**		**4,759.398 8**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1612	6.5232	1.0007	0.0179	41.2039	0.0131	41.2170	4.1892	0.0125	4.2018		1,873.957 5	1,873.957 5	0.0812		1,875.988 4
Worker	1.3334	0.6495	8.9748	0.0277	336.5022	0.0174	336.5196	34.0326	0.0160	34.0486		2,760.688 9	2,760.688 9	0.0606		2,762.203 5
Total	**1.4946**	**7.1727**	**9.9755**	**0.0456**	**377.7061**	**0.0305**	**377.7366**	**38.2219**	**0.0285**	**38.2504**		**4,634.646 4**	**4,634.646 4**	**0.1418**		**4,638.191 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1612	6.5232	1.0007	0.0179	6.1347	0.0131	6.1478	1.5414	0.0125	1.5539		1,873.957 5	1,873.957 5	0.0812		1,875.988 4
Worker	1.3334	0.6495	8.9748	0.0277	49.5723	0.0174	49.5896	12.3681	0.0160	12.3841		2,760.688 9	2,760.688 9	0.0606		2,762.203 5
Total	**1.4946**	**7.1727**	**9.9755**	**0.0456**	**55.7070**	**0.0305**	**55.7374**	**13.9095**	**0.0285**	**13.9380**		**4,634.646 4**	**4,634.646 4**	**0.1418**		**4,638.191 9**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1185	5.4226	0.8466	0.0175	41.2039	5.2400e-003	41.2091	4.1892	5.0100e-003	4.1942		1,835.029 7	1,835.029 7	0.0600		1,836.530 6
Worker	1.2468	0.5839	8.2534	0.0267	336.5022	0.0170	336.5192	34.0326	0.0156	34.0483		2,656.388 6	2,656.388 6	0.0543		2,657.745 7
Total	**1.3653**	**6.0065**	**9.1000**	**0.0442**	**377.7060**	**0.0222**	**377.7283**	**38.2218**	**0.0207**	**38.2425**		**4,491.418 3**	**4,491.418 3**	**0.1143**		**4,494.276 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1185	5.4226	0.8466	0.0175	6.1346	5.2400e-003	6.1399	1.5413	5.0100e-003	1.5464		1,835.0297	1,835.0297	0.0600		1,836.5306
Worker	1.2468	0.5839	8.2534	0.0267	49.5723	0.0170	49.5892	12.3681	0.0156	12.3838		2,656.3886	2,656.3886	0.0543		2,657.7457
Total	**1.3653**	**6.0065**	**9.1000**	**0.0442**	**55.7069**	**0.0222**	**55.7291**	**13.9095**	**0.0207**	**13.9301**		**4,491.4183**	**4,491.4183**	**0.1143**		**4,494.2763**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0232	0.3275	1.0600e-003	13.3533	6.7000e-004	13.3539	1.3505	6.2000e-004	1.3511		105.4123	105.4123	2.1500e-003		105.4661
Total	**0.0495**	**0.0232**	**0.3275**	**1.0600e-003**	**13.3533**	**6.7000e-004**	**13.3539**	**1.3505**	**6.2000e-004**	**1.3511**		**105.4123**	**105.4123**	**2.1500e-003**		**105.4661**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0232	0.3275	1.0600e-003	1.9672	6.7000e-004	1.9678	0.4908	6.2000e-004	0.4914		105.4123	105.4123	2.1500e-003		105.4661
Total	**0.0495**	**0.0232**	**0.3275**	**1.0600e-003**	**1.9672**	**6.7000e-004**	**1.9678**	**0.4908**	**6.2000e-004**	**0.4914**		**105.4123**	**105.4123**	**2.1500e-003**		**105.4661**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**15.0411**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2870	0.1455	1.9614	5.7800e-003	67.6565	3.5900e-003	67.6601	6.8425	3.3100e-003	6.8458		575.8045	575.8045	0.0136		576.1436
Total	**0.2870**	**0.1455**	**1.9614**	**5.7800e-003**	**67.6565**	**3.5900e-003**	**67.6601**	**6.8425**	**3.3100e-003**	**6.8458**		**575.8045**	**575.8045**	**0.0136**		**576.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**15.0411**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2870	0.1455	1.9614	5.7800e-003	9.9669	3.5900e-003	9.9705	2.4867	3.3100e-003	2.4900		575.8045	575.8045	0.0136		576.1436
Total	**0.2870**	**0.1455**	**1.9614**	**5.7800e-003**	**9.9669**	**3.5900e-003**	**9.9705**	**2.4867**	**3.3100e-003**	**2.4900**		**575.8045**	**575.8045**	**0.0136**		**576.1436**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**15.0267**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2681	0.1306	1.8045	5.5700e-003	67.6565	3.4900e-003	67.6600	6.8425	3.2200e-003	6.8458		555.0591	555.0591	0.0122		555.3637
Total	**0.2681**	**0.1306**	**1.8045**	**5.5700e-003**	**67.6565**	**3.4900e-003**	**67.6600**	**6.8425**	**3.2200e-003**	**6.8458**		**555.0591**	**555.0591**	**0.0122**		**555.3637**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**15.0267**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2681	0.1306	1.8045	5.5700e-003	9.9669	3.4900e-003	9.9704	2.4867	3.2200e-003	2.4899		555.0591	555.0591	0.0122		555.3637
Total	**0.2681**	**0.1306**	**1.8045**	**5.5700e-003**	**9.9669**	**3.4900e-003**	**9.9704**	**2.4867**	**3.2200e-003**	**2.4899**		**555.0591**	**555.0591**	**0.0122**		**555.3637**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**15.0138**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2507	0.1174	1.6594	5.3600e-003	67.6565	3.4100e-003	67.6599	6.8425	3.1400e-003	6.8457		534.0887	534.0887	0.0109		534.3616
Total	**0.2507**	**0.1174**	**1.6594**	**5.3600e-003**	**67.6565**	**3.4100e-003**	**67.6599**	**6.8425**	**3.1400e-003**	**6.8457**		**534.0887**	**534.0887**	**0.0109**		**534.3616**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**15.0138**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2507	0.1174	1.6594	5.3600e-003	9.9669	3.4100e-003	9.9703	2.4867	3.1400e-003	2.4899		534.0887	534.0887	0.0109		534.3616
Total	**0.2507**	**0.1174**	**1.6594**	**5.3600e-003**	**9.9669**	**3.4100e-003**	**9.9703**	**2.4867**	**3.1400e-003**	**2.4899**		**534.0887**	**534.0887**	**0.0109**		**534.3616**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5391	37.7999	54.5248	0.2124	857.3128	0.1660	857.4788	87.7723	0.1560	87.9283		21,616.60 22	21,616.60 22	0.9543		21,640.45 88
Unmitigated	6.7654	39.6683	60.0199	0.2377	972.0100	0.1847	972.1947	99.5151	0.1736	99.6887		24,189.80 73	24,189.80 73	1.0266		24,215.47 24

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	516.00	516.00	516.00	1,354,117	1,194,331
Health Club	263.44	166.96	213.84	340,199	300,055
High Turnover (Sit Down Restaurant)	635.75	791.85	659.20	597,324	526,840
City Park	2.08	25.03	18.41	14,383	12,686
Congregate Care (Assisted Living)	103.20	103.20	103.20	270,823	238,866
Retirement Community	488.48	488.48	488.48	1,281,898	1,130,634
Retirement Community	443.76	443.76	443.76	1,164,541	1,027,125
Single Family Housing	987.14	987.14	987.14	2,590,510	2,284,830
Total	3,439.85	3,522.42	3,430.03	7,613,795	6,715,367

4.3 Trip Type Information

West Davis Active Adult Community - Yolo County, Summer

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Health Club	10.00	5.00	7.00	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	10.00	5.00	7.00	8.50	72.50	19.00	37	20	43
City Park	10.00	5.00	7.00	33.00	48.00	19.00	66	28	6
Congregate Care (Assisted	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Single Family Housing	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Health Club	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
High Turnover (Sit Down Restaurant)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
City Park	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Congregate Care (Assisted Living)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Retirement Community	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Single Family Housing	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

West Davis Active Adult Community - Yolo County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2070	1.7790	0.8279	0.0113		0.1430	0.1430		0.1430	0.1430		2,257.979 0	2,257.979 0	0.0433	0.0414	2,271.397 0
NaturalGas Unmitigated	0.2385	2.0491	0.9495	0.0130		0.1648	0.1648		0.1648	0.1648		2,601.594 0	2,601.594 0	0.0499	0.0477	2,617.053 9

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4972.08	0.0536	0.4582	0.1950	2.9200e-003		0.0371	0.0371		0.0371	0.0371		584.9502	584.9502	0.0112	0.0107	588.4263
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	801.214	8.6400e-003	0.0738	0.0314	4.7000e-004		5.9700e-003	5.9700e-003		5.9700e-003	5.9700e-003		94.2604	94.2604	1.8100e-003	1.7300e-003	94.8206
Health Club	408.548	4.4100e-003	0.0401	0.0337	2.4000e-004		3.0400e-003	3.0400e-003		3.0400e-003	3.0400e-003		48.0645	48.0645	9.2000e-004	8.8000e-004	48.3501
High Turnover (Sit Down Restaurant)	1498.77	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112		176.3255	176.3255	3.3800e-003	3.2300e-003	177.3734
Retirement Community	4275.99	0.0461	0.3941	0.1677	2.5200e-003		0.0319	0.0319		0.0319	0.0319		503.0572	503.0572	9.6400e-003	9.2200e-003	506.0466
Retirement Community	4706.9	0.0508	0.4338	0.1846	2.7700e-003		0.0351	0.0351		0.0351	0.0351		553.7529	553.7529	0.0106	0.0102	557.0435
Single Family Housing	5450.06	0.0588	0.5023	0.2137	3.2100e-003		0.0406	0.0406		0.0406	0.0406		641.1833	641.1833	0.0123	0.0118	644.9935
Total		**0.2385**	**2.0491**	**0.9495**	**0.0130**		**0.1648**	**0.1648**		**0.1648**	**0.1648**		**2,601.5940**	**2,601.5940**	**0.0499**	**0.0477**	**2,617.0539**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4.31841	0.0466	0.3980	0.1694	2.5400e-003		0.0322	0.0322		0.0322	0.0322		508.0486	508.0486	9.7400e-003	9.3100e-003	511.0677
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	0.703132	7.5800e-003	0.0648	0.0276	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7214	82.7214	1.5900e-003	1.5200e-003	83.2130
Health Club	0.339726	3.6600e-003	0.0333	0.0280	2.0000e-004		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003		39.9677	39.9677	7.7000e-004	7.3000e-004	40.2052
High Turnover (Sit Down Restaurant)	1.40482	0.0152	0.1377	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105		165.2731	165.2731	3.1700e-003	3.0300e-003	166.2553
Retirement Community	3.71384	0.0401	0.3423	0.1456	2.1800e-003		0.0277	0.0277		0.0277	0.0277		436.9218	436.9218	8.3700e-003	8.0100e-003	439.5182
Retirement Community	4.0881	0.0441	0.3768	0.1603	2.4000e-003		0.0305	0.0305		0.0305	0.0305		480.9527	480.9527	9.2200e-003	8.8200e-003	483.8108
Single Family Housing	4.6248	0.0499	0.4262	0.1814	2.7200e-003		0.0345	0.0345		0.0345	0.0345		544.0936	544.0936	0.0104	9.9800e-003	547.3268
Total		**0.2070**	**1.7790**	**0.8279**	**0.0113**		**0.1430**	**0.1430**		**0.1430**	**0.1430**		**2,257.9790**	**2,257.9790**	**0.0433**	**0.0414**	**2,271.3971**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Mitigated	16.2864	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410	0.0000	78.4387	78.4387	0.0757	0.0000	80.3307
Unmitigated	1,670.9289	29.7093	2,094.7866	3.7163		288.0215	288.0215		288.0215	288.0215	30,279.2174	8,487.6152	38,766.8326	28.9442	2.2840	40,171.0760

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8981					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,654.642 5	29.2064	2,051.177 6	3.7140		287.7806	287.7806		287.7806	287.7806	30,279.21 74	8,409.176 5	38,688.39 38	28.8685	2.2840	40,090.74 53
Landscaping	1.3173	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410		78.4387	78.4387	0.0757		80.3307
Total	**1,670.928 9**	**29.7094**	**2,094.786 6**	**3.7163**		**288.0215**	**288.0215**		**288.0215**	**288.0215**	**30,279.21 74**	**8,487.615 2**	**38,766.83 26**	**28.9442**	**2.2840**	**40,171.07 60**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8981					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3173	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410		78.4387	78.4387	0.0757		80.3307
Total	**16.2864**	**0.5029**	**43.6090**	**2.3000e-003**		**0.2410**	**0.2410**		**0.2410**	**0.2410**	**0.0000**	**78.4387**	**78.4387**	**0.0757**	**0.0000**	**80.3307**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

West Davis Active Adult Community

Yolo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	8.00	1000sqft	0.18	8,000.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.11	5,000.00	0
Apartments Low Rise	150.00	Dwelling Unit	4.26	150,000.00	429
Retirement Community	142.00	Dwelling Unit	9.21	142,000.00	406
Congregate Care (Assisted Living)	30.00	Dwelling Unit	3.03	30,000.00	86
Single Family Housing	77.00	Dwelling Unit	8.90	138,600.00	220
City Park	1.10	Acre	1.10	47,916.00	0
Retirement Community	129.00	Dwelling Unit	8.90	129,000.00	369

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

West Davis Active Adult Community - Yolo County, Winter

Project Characteristics -

Land Use - As provided by Project Applicant.

Construction Phase - Estimated based on project size.

Grading - 74.49 acres of developed land uses + 11.53 acres of off-site improvements = 86.02 acres

Vehicle Trips - Trip rates provided by the Traffic Study (Fehr & Peers, 2017)

Construction Off-road Equipment Mitigation - As provided by YSAQMD BMPs (Source: Yolo-Solano Air Quality Management District's Handbook for Assessing and Mitigating Air Quality Impacts (2007).

Mobile Land Use Mitigation - 560 du/74.49 acres = 7.51 du/acre; Existing bus stop is within 0.1 miles of the project site. Affordable units = 150/560 = 26.79%.

Area Mitigation -

Energy Mitigation - Exceed Title 24 by approximately 16.9; equivalent to meeting the 2016 Title 24 standard. See pg. 8: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	14
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	30.00	29.00
tblConstructionPhase	NumDays	55.00	510.00
tblConstructionPhase	PhaseEndDate	7/21/2020	5/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/24/2020
tblConstructionPhase	PhaseEndDate	9/5/2023	6/26/2023
tblConstructionPhase	PhaseEndDate	11/21/2023	9/8/2023
tblConstructionPhase	PhaseEndDate	2/6/2024	8/25/2023
tblConstructionPhase	PhaseStartDate	6/10/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	7/22/2020	5/12/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/25/2020
tblConstructionPhase	PhaseStartDate	9/6/2023	6/26/2023

tblConstructionPhase	PhaseStartDate	11/22/2023	9/11/2021
tblGrading	AcresOfGrading	187.50	86.02
tblLandUse	LotAcreage	9.38	4.26
tblLandUse	LotAcreage	28.40	9.21
tblLandUse	LotAcreage	1.88	3.03
tblLandUse	LotAcreage	25.00	8.90
tblLandUse	LotAcreage	25.80	8.90
tblVehicleTrips	ST_TR	7.16	3.44
tblVehicleTrips	ST_TR	2.20	3.44
tblVehicleTrips	ST_TR	2.03	3.44
tblVehicleTrips	ST_TR	9.91	12.82
tblVehicleTrips	SU_TR	6.07	3.44
tblVehicleTrips	SU_TR	2.44	3.44
tblVehicleTrips	SU_TR	1.95	3.44
tblVehicleTrips	SU_TR	8.62	12.82
tblVehicleTrips	WD_TR	6.59	3.44
tblVehicleTrips	WD_TR	2.74	3.44
tblVehicleTrips	WD_TR	2.40	3.44
tblVehicleTrips	WD_TR	9.52	12.82

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5254	50.2509	32.4560	0.0709	377.7062	2.1983	378.8745	38.2219	2.0224	39.3206	0.0000	7,025.3007	7,025.3007	1.9460	0.0000	7,045.0900
2021	18.7150	26.9677	29.9791	0.0779	445.3627	1.0903	446.4530	45.0644	1.0306	46.0950	0.0000	7,708.8223	7,708.8223	0.8044	0.0000	7,728.9319
2022	18.3901	24.5862	28.7903	0.0767	445.3626	0.9255	446.2881	45.0644	0.8754	45.9398	0.0000	7,583.0143	7,583.0143	0.7872	0.0000	7,602.6942
2023	19.1836	32.2421	42.5307	0.0989	458.7158	1.3073	460.0231	46.4149	1.2233	47.6382	0.0000	9,736.5691	9,736.5691	1.4665	0.0000	9,773.2321
Maximum	**19.1836**	**50.2509**	**42.5307**	**0.0989**	**458.7158**	**2.1983**	**460.0231**	**46.4149**	**2.0224**	**47.6382**	**0.0000**	**9,736.5691**	**9,736.5691**	**1.9460**	**0.0000**	**9,773.2321**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5254	50.2509	32.4560	0.0709	55.7071	2.1983	56.8753	13.9095	2.0224	15.0082	0.0000	7,025.3007	7,025.3007	1.9460	0.0000	7,045.0900
2021	18.7150	26.9677	29.9791	0.0779	65.6739	1.0903	66.7642	16.3962	1.0306	17.4268	0.0000	7,708.8223	7,708.8223	0.8044	0.0000	7,728.9319
2022	18.3901	24.5862	28.7903	0.0767	65.6739	0.9255	66.5993	16.3962	0.8754	17.2716	0.0000	7,583.0143	7,583.0143	0.7872	0.0000	7,602.6942
2023	19.1836	32.2421	42.5307	0.0989	67.6410	1.3073	68.9483	16.8870	1.2233	18.1103	0.0000	9,736.5691	9,736.5691	1.4665	0.0000	9,773.2321
Maximum	**19.1836**	**50.2509**	**42.5307**	**0.0989**	**67.6410**	**2.1983**	**68.9483**	**16.8870**	**2.0224**	**18.1103**	**0.0000**	**9,736.5691**	**9,736.5691**	**1.9460**	**0.0000**	**9,773.2321**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**85.25**	**0.00**	**85.03**	**63.61**	**0.00**	**62.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,670.928 9	29.7093	2,094.786 6	3.7163		288.0215	288.0215		288.0215	288.0215	30,279.21 74	8,487.615 2	38,766.83 26	28.9442	2.2840	40,171.07 60
Energy	0.2385	2.0491	0.9495	0.0130		0.1648	0.1648		0.1648	0.1648		2,601.594 0	2,601.594 0	0.0499	0.0477	2,617.053 9
Mobile	5.1992	41.2342	58.4776	0.2187	972.0100	0.1884	972.1984	99.5151	0.1772	99.6922		22,279.41 61	22,279.41 61	1.0650		22,306.04 19
Total	**1,676.366 6**	**72.9927**	**2,154.213 7**	**3.9480**	**972.0100**	**288.3747**	**1,260.384 7**	**99.5151**	**288.3634**	**387.8785**	**30,279.21 74**	**33,368.62 53**	**63,647.84 27**	**30.0591**	**2.3317**	**65,094.17 18**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.2864	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410	0.0000	78.4387	78.4387	0.0757	0.0000	80.3307
Energy	0.2070	1.7790	0.8279	0.0113		0.1430	0.1430		0.1430	0.1430		2,257.979 0	2,257.979 0	0.0433	0.0414	2,271.397 0
Mobile	4.9798	39.1424	53.9500	0.1954	857.3128	0.1697	857.4825	87.7723	0.1595	87.9318		19,902.23 44	19,902.23 44	0.9974		19,927.17 02
Total	**21.4732**	**41.4243**	**98.3869**	**0.2090**	**857.3128**	**0.5536**	**857.8665**	**87.7723**	**0.5435**	**88.3158**	**0.0000**	**22,238.65 21**	**22,238.65 21**	**1.1164**	**0.0414**	**22,278.89 79**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	98.72	43.25	95.43	94.71	11.80	99.81	31.94	11.80	99.81	77.23	100.00	33.35	65.06	96.29	98.22	65.77

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2020	5/11/2020	5	29	
2	Grading	Grading	5/12/2020	8/24/2020	5	75	
3	Building Construction	Building Construction	8/25/2020	6/26/2023	5	740	
4	Paving	Paving	6/26/2023	9/8/2023	5	55	
5	Architectural Coating	Architectural Coating	9/11/2021	8/25/2023	5	510	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 86.02

Acres of Paving: 0

Residential Indoor: 1,193,940; Residential Outdoor: 397,980; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	378.00	66.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	76.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.101 6	3,685.101 6	1.1918		3,714.897 5
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.101 6**	**3,685.101 6**	**1.1918**		**3,714.897 5**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0678	0.0480	0.4480	1.2500e-003	16.0239	8.8000e-004	16.0248	1.6206	8.1000e-004	1.6214		124.6514	124.6514	3.2200e-003		124.7318
Total	**0.0678**	**0.0480**	**0.4480**	**1.2500e-003**	**16.0239**	**8.8000e-004**	**16.0248**	**1.6206**	**8.1000e-004**	**1.6214**		**124.6514**	**124.6514**	**3.2200e-003**		**124.7318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.0458**	**2.1974**	**9.2433**	**3.8730**	**2.0216**	**5.8946**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0678	0.0480	0.4480	1.2500e-003	2.3606	8.8000e-004	2.3615	0.5890	8.1000e-004	0.5898		124.6514	124.6514	3.2200e-003		124.7318
Total	**0.0678**	**0.0480**	**0.4480**	**1.2500e-003**	**2.3606**	**8.8000e-004**	**2.3615**	**0.5890**	**8.1000e-004**	**0.5898**		**124.6514**	**124.6514**	**3.2200e-003**		**124.7318**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2384	0.0000	7.2384	3.4416	0.0000	3.4416			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.2384**	**2.1739**	**9.4123**	**3.4416**	**2.0000**	**5.4416**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0534	0.4978	1.3900e-003	17.8044	9.7000e-004	17.8053	1.8007	9.0000e-004	1.8016		138.5015	138.5015	3.5800e-003		138.5909
Total	**0.0753**	**0.0534**	**0.4978**	**1.3900e-003**	**17.8044**	**9.7000e-004**	**17.8053**	**1.8007**	**9.0000e-004**	**1.8016**		**138.5015**	**138.5015**	**3.5800e-003**		**138.5909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8230	0.0000	2.8230	1.3422	0.0000	1.3422			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**2.8230**	**2.1739**	**4.9969**	**1.3422**	**2.0000**	**3.3422**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0534	0.4978	1.3900e-003	2.6229	9.7000e-004	2.6238	0.6544	9.0000e-004	0.6553		138.5015	138.5015	3.5800e-003		138.5909
Total	**0.0753**	**0.0534**	**0.4978**	**1.3900e-003**	**2.6229**	**9.7000e-004**	**2.6238**	**0.6544**	**9.0000e-004**	**0.6553**		**138.5015**	**138.5015**	**3.5800e-003**		**138.5909**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2228	7.5163	1.5259	0.0177	41.2040	0.0328	41.2368	4.1893	0.0314	4.2207		1,854.559 2	1,854.559 2	0.1011		1,857.087 0
Worker	1.4237	1.0083	9.4076	0.0263	336.5022	0.0184	336.5206	34.0326	0.0170	34.0496		2,617.678 5	2,617.678 5	0.0676		2,619.368 5
Total	**1.6465**	**8.5246**	**10.9335**	**0.0440**	**377.7062**	**0.0512**	**377.7574**	**38.2219**	**0.0484**	**38.2703**		**4,472.237 7**	**4,472.237 7**	**0.1687**		**4,476.455 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.063 1**	**2,553.063 1**	**0.6229**		**2,568.634 5**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2228	7.5163	1.5259	0.0177	6.1348	0.0328	6.1676	1.5414	0.0314	1.5728		1,854.559 2	1,854.559 2	0.1011		1,857.087 0
Worker	1.4237	1.0083	9.4076	0.0263	49.5723	0.0184	49.5907	12.3681	0.0170	12.3851		2,617.678 5	2,617.678 5	0.0676		2,619.368 5
Total	**1.6465**	**8.5246**	**10.9335**	**0.0440**	**55.7071**	**0.0512**	**55.7583**	**13.9095**	**0.0484**	**13.9579**		**4,472.237 7**	**4,472.237 7**	**0.1687**		**4,476.455 5**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1840	6.9273	1.3117	0.0176	41.2040	0.0161	41.2201	4.1893	0.0154	4.2047		1,837.764 3	1,837.764 3	0.0967		1,840.181 0
Worker	1.3230	0.9004	8.5546	0.0254	336.5022	0.0179	336.5200	34.0326	0.0165	34.0491		2,527.975 8	2,527.975 8	0.0603		2,529.482 5
Total	**1.5070**	**7.8277**	**9.8664**	**0.0429**	**377.7061**	**0.0340**	**377.7401**	**38.2219**	**0.0319**	**38.2538**		**4,365.740 1**	**4,365.740 1**	**0.1569**		**4,369.663 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1840	6.9273	1.3117	0.0176	6.1347	0.0161	6.1509	1.5414	0.0154	1.5568		1,837.764 3	1,837.764 3	0.0967		1,840.181 0
Worker	1.3230	0.9004	8.5546	0.0254	49.5723	0.0179	49.5901	12.3681	0.0165	12.3846		2,527.975 8	2,527.975 8	0.0603		2,529.482 5
Total	**1.5070**	**7.8277**	**9.8664**	**0.0429**	**55.7070**	**0.0340**	**55.7410**	**13.9095**	**0.0319**	**13.9414**		**4,365.740 1**	**4,365.740 1**	**0.1569**		**4,369.663 5**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1706	6.5916	1.2042	0.0174	41.2039	0.0139	41.2178	4.1892	0.0133	4.2025		1,820.209 5	1,820.209 5	0.0921		1,822.511 4
Worker	1.2377	0.8080	7.8340	0.0245	336.5022	0.0174	336.5196	34.0326	0.0160	34.0486		2,437.036 9	2,437.036 9	0.0540		2,438.386 8
Total	**1.4083**	**7.3996**	**9.0382**	**0.0418**	**377.7061**	**0.0312**	**377.7373**	**38.2219**	**0.0293**	**38.2511**		**4,257.246 4**	**4,257.246 4**	**0.1461**		**4,260.898 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1706	6.5916	1.2042	0.0174	6.1347	0.0139	6.1486	1.5414	0.0133	1.5546		1,820.209 5	1,820.209 5	0.0921		1,822.511 4
Worker	1.2377	0.8080	7.8340	0.0245	49.5723	0.0174	49.5896	12.3681	0.0160	12.3841		2,437.036 9	2,437.036 9	0.0540		2,438.386 8
Total	**1.4083**	**7.3996**	**9.0382**	**0.0418**	**55.7070**	**0.0312**	**55.7382**	**13.9095**	**0.0293**	**13.9388**		**4,257.246 4**	**4,257.246 4**	**0.1461**		**4,260.898 2**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1253	5.4619	0.9973	0.0170	41.2039	5.5000e-003	41.2094	4.1892	5.2600e-003	4.1945		1,782.6505	1,782.6505	0.0680		1,784.3503
Worker	1.1598	0.7259	7.1684	0.0235	336.5022	0.0170	336.5192	34.0326	0.0156	34.0483		2,345.1124	2,345.1124	0.0483		2,346.3186
Total	**1.2851**	**6.1878**	**8.1657**	**0.0405**	**377.7060**	**0.0225**	**377.7285**	**38.2218**	**0.0209**	**38.2427**		**4,127.7628**	**4,127.7628**	**0.1163**		**4,130.6690**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1253	5.4619	0.9973	0.0170	6.1346	5.5000e-003	6.1401	1.5413	5.2600e-003	1.5466		1,782.650 5	1,782.650 5	0.0680		1,784.350 3
Worker	1.1598	0.7259	7.1684	0.0235	49.5723	0.0170	49.5892	12.3681	0.0156	12.3838		2,345.112 4	2,345.112 4	0.0483		2,346.318 6
Total	**1.2851**	**6.1878**	**8.1657**	**0.0405**	**55.7069**	**0.0225**	**55.7294**	**13.9095**	**0.0209**	**13.9304**		**4,127.762 8**	**4,127.762 8**	**0.1163**		**4,130.669 0**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.584 1	2,207.584 1	0.7140		2,225.433 6
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.584 1**	**2,207.584 1**	**0.7140**		**2,225.433 6**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0288	0.2845	9.3000e-004	13.3533	6.7000e-004	13.3539	1.3505	6.2000e-004	1.3511		93.0600	93.0600	1.9100e-003		93.1079
Total	**0.0460**	**0.0288**	**0.2845**	**9.3000e-004**	**13.3533**	**6.7000e-004**	**13.3539**	**1.3505**	**6.2000e-004**	**1.3511**		**93.0600**	**93.0600**	**1.9100e-003**		**93.1079**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0288	0.2845	9.3000e-004	1.9672	6.7000e-004	1.9678	0.4908	6.2000e-004	0.4914		93.0600	93.0600	1.9100e-003		93.1079
Total	**0.0460**	**0.0288**	**0.2845**	**9.3000e-004**	**1.9672**	**6.7000e-004**	**1.9678**	**0.4908**	**6.2000e-004**	**0.4914**		**93.0600**	**93.0600**	**1.9100e-003**		**93.1079**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**15.0411**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2660	0.1810	1.7200	5.1000e-003	67.6565	3.5900e-003	67.6601	6.8425	3.3100e-003	6.8458		508.2703	508.2703	0.0121		508.5732
Total	**0.2660**	**0.1810**	**1.7200**	**5.1000e-003**	**67.6565**	**3.5900e-003**	**67.6601**	**6.8425**	**3.3100e-003**	**6.8458**		**508.2703**	**508.2703**	**0.0121**		**508.5732**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**15.0411**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2660	0.1810	1.7200	5.1000e-003	9.9669	3.5900e-003	9.9705	2.4867	3.3100e-003	2.4900		508.2703	508.2703	0.0121		508.5732
Total	**0.2660**	**0.1810**	**1.7200**	**5.1000e-003**	**9.9669**	**3.5900e-003**	**9.9705**	**2.4867**	**3.3100e-003**	**2.4900**		**508.2703**	**508.2703**	**0.0121**		**508.5732**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**15.0267**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2488	0.1625	1.5751	4.9200e-003	67.6565	3.4900e-003	67.6600	6.8425	3.2200e-003	6.8458		489.9863	489.9863	0.0109		490.2577
Total	**0.2488**	**0.1625**	**1.5751**	**4.9200e-003**	**67.6565**	**3.4900e-003**	**67.6600**	**6.8425**	**3.2200e-003**	**6.8458**		**489.9863**	**489.9863**	**0.0109**		**490.2577**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**15.0267**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2488	0.1625	1.5751	4.9200e-003	9.9669	3.4900e-003	9.9704	2.4867	3.2200e-003	2.4899		489.9863	489.9863	0.0109		490.2577
Total	**0.2488**	**0.1625**	**1.5751**	**4.9200e-003**	**9.9669**	**3.4900e-003**	**9.9704**	**2.4867**	**3.2200e-003**	**2.4899**		**489.9863**	**489.9863**	**0.0109**		**490.2577**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**15.0138**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2332	0.1459	1.4413	4.7300e-003	67.6565	3.4100e-003	67.6599	6.8425	3.1400e-003	6.8457		471.5041	471.5041	9.7000e-003		471.7466
Total	**0.2332**	**0.1459**	**1.4413**	**4.7300e-003**	**67.6565**	**3.4100e-003**	**67.6599**	**6.8425**	**3.1400e-003**	**6.8457**		**471.5041**	**471.5041**	**9.7000e-003**		**471.7466**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.8222					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**15.0138**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2332	0.1459	1.4413	4.7300e-003	9.9669	3.4100e-003	9.9703	2.4867	3.1400e-003	2.4899		471.5041	471.5041	9.7000e-003		471.7466
Total	**0.2332**	**0.1459**	**1.4413**	**4.7300e-003**	**9.9669**	**3.4100e-003**	**9.9703**	**2.4867**	**3.1400e-003**	**2.4899**		**471.5041**	**471.5041**	**9.7000e-003**		**471.7466**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.9798	39.1424	53.9500	0.1954	857.3128	0.1697	857.4825	87.7723	0.1595	87.9318		19,902.2344	19,902.2344	0.9974		19,927.1702
Unmitigated	5.1992	41.2342	58.4776	0.2187	972.0100	0.1884	972.1984	99.5151	0.1772	99.6922		22,279.4161	22,279.4161	1.0650		22,306.0419

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	516.00	516.00	516.00	1,354,117	1,194,331
Health Club	263.44	166.96	213.84	340,199	300,055
High Turnover (Sit Down Restaurant)	635.75	791.85	659.20	597,324	526,840
City Park	2.08	25.03	18.41	14,383	12,686
Congregate Care (Assisted Living)	103.20	103.20	103.20	270,823	238,866
Retirement Community	488.48	488.48	488.48	1,281,898	1,130,634
Retirement Community	443.76	443.76	443.76	1,164,541	1,027,125
Single Family Housing	987.14	987.14	987.14	2,590,510	2,284,830
Total	3,439.85	3,522.42	3,430.03	7,613,795	6,715,367

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Health Club	10.00	5.00	7.00	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	10.00	5.00	7.00	8.50	72.50	19.00	37	20	43
City Park	10.00	5.00	7.00	33.00	48.00	19.00	66	28	6
Congregate Care (Assisted	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Retirement Community	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Single Family Housing	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Health Club	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
High Turnover (Sit Down Restaurant)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
City Park	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Congregate Care (Assisted Living)	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Retirement Community	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791
Single Family Housing	0.492305	0.039568	0.208718	0.119283	0.022760	0.005403	0.060505	0.041350	0.001014	0.001744	0.005799	0.000759	0.000791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2070	1.7790	0.8279	0.0113		0.1430	0.1430		0.1430	0.1430		2,257.979 0	2,257.979 0	0.0433	0.0414	2,271.397 0
NaturalGas Unmitigated	0.2385	2.0491	0.9495	0.0130		0.1648	0.1648		0.1648	0.1648		2,601.594 0	2,601.594 0	0.0499	0.0477	2,617.053 9

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4972.08	0.0536	0.4582	0.1950	2.9200e-003		0.0371	0.0371		0.0371	0.0371		584.9502	584.9502	0.0112	0.0107	588.4263
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	801.214	8.6400e-003	0.0738	0.0314	4.7000e-004		5.9700e-003	5.9700e-003		5.9700e-003	5.9700e-003		94.2604	94.2604	1.8100e-003	1.7300e-003	94.8206
Health Club	408.548	4.4100e-003	0.0401	0.0337	2.4000e-004		3.0400e-003	3.0400e-003		3.0400e-003	3.0400e-003		48.0645	48.0645	9.2000e-004	8.8000e-004	48.3501
High Turnover (Sit Down Restaurant)	1498.77	0.0162	0.1469	0.1234	8.8000e-004		0.0112	0.0112		0.0112	0.0112		176.3255	176.3255	3.3800e-003	3.2300e-003	177.3734
Retirement Community	4275.99	0.0461	0.3941	0.1677	2.5200e-003		0.0319	0.0319		0.0319	0.0319		503.0572	503.0572	9.6400e-003	9.2200e-003	506.0466
Retirement Community	4706.9	0.0508	0.4338	0.1846	2.7700e-003		0.0351	0.0351		0.0351	0.0351		553.7529	553.7529	0.0106	0.0102	557.0435
Single Family Housing	5450.06	0.0588	0.5023	0.2137	3.2100e-003		0.0406	0.0406		0.0406	0.0406		641.1833	641.1833	0.0123	0.0118	644.9935
Total		**0.2385**	**2.0491**	**0.9495**	**0.0130**		**0.1648**	**0.1648**		**0.1648**	**0.1648**		**2,601.5940**	**2,601.5940**	**0.0499**	**0.0477**	**2,617.0539**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4.31841	0.0466	0.3980	0.1694	2.5400e-003		0.0322	0.0322		0.0322	0.0322		508.0486	508.0486	9.7400e-003	9.3100e-003	511.0677
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)	0.703132	7.5800e-003	0.0648	0.0276	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7214	82.7214	1.5900e-003	1.5200e-003	83.2130
Health Club	0.339726	3.6600e-003	0.0333	0.0280	2.0000e-004		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003		39.9677	39.9677	7.7000e-004	7.3000e-004	40.2052
High Turnover (Sit Down Restaurant)	1.40482	0.0152	0.1377	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105		165.2731	165.2731	3.1700e-003	3.0300e-003	166.2553
Retirement Community	3.71384	0.0401	0.3423	0.1456	2.1800e-003		0.0277	0.0277		0.0277	0.0277		436.9218	436.9218	8.3700e-003	8.0100e-003	439.5182
Retirement Community	4.0881	0.0441	0.3768	0.1603	2.4000e-003		0.0305	0.0305		0.0305	0.0305		480.9527	480.9527	9.2200e-003	8.8200e-003	483.8108
Single Family Housing	4.6248	0.0499	0.4262	0.1814	2.7200e-003		0.0345	0.0345		0.0345	0.0345		544.0936	544.0936	0.0104	9.9800e-003	547.3268
Total		**0.2070**	**1.7790**	**0.8279**	**0.0113**		**0.1430**	**0.1430**		**0.1430**	**0.1430**		**2,257.9790**	**2,257.9790**	**0.0433**	**0.0414**	**2,271.3971**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.2864	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410	0.0000	78.4387	78.4387	0.0757	0.0000	80.3307
Unmitigated	1,670.9289	29.7093	2,094.7866	3.7163		288.0215	288.0215		288.0215	288.0215	30,279.2174	8,487.6152	38,766.8326	28.9442	2.2840	40,171.0760

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8981					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,654.642 5	29.2064	2,051.177 6	3.7140		287.7806	287.7806		287.7806	287.7806	30,279.21 74	8,409.176 5	38,688.39 38	28.8685	2.2840	40,090.74 53
Landscaping	1.3173	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410		78.4387	78.4387	0.0757		80.3307
Total	**1,670.928 9**	**29.7094**	**2,094.786 6**	**3.7163**		**288.0215**	**288.0215**		**288.0215**	**288.0215**	**30,279.21 74**	**8,487.615 2**	**38,766.83 26**	**28.9442**	**2.2840**	**40,171.07 60**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8981					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3173	0.5029	43.6090	2.3000e-003		0.2410	0.2410		0.2410	0.2410		78.4387	78.4387	0.0757		80.3307
Total	**16.2864**	**0.5029**	**43.6090**	**2.3000e-003**		**0.2410**	**0.2410**		**0.2410**	**0.2410**	**0.0000**	**78.4387**	**78.4387**	**0.0757**	**0.0000**	**80.3307**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Given Factor:	**254.83**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**
Conversion Factor:	2204.62	pounds	per metric ton	
Intermediate Result:	**561,813**	**pounds**	**CO2**	
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel	(Source: U.S. EIA, 2016.
Final Result:	**25,103.36**	**gallons**	**diesel fuel**	Website: http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11)

On-road Mobile (Operational) Energy Usage

Note: For the sake of simplicity, it was assumed that passenger vehicles, light duty trucks, motorcycles, and mobile homes use gasoline, and all medium-duty trucks, heavy-duty trucks, and buses use diesel fuel.

Unmitigated:

Step 1: **Total Net Daily Trips (conservatively estimated)**

3,586

	Res H-W	*Res H-S*	*Res H-O*
Trip Length (miles) (provided by CalEEMod)	10	5	7
Trip % (conservatively estimated)	46.00%	13.00%	41.00%

Average Trip Length (weighted average)

8.1200

Therefore:

Average Daily VMT:

29,118

Step 2: Given:

Fleet Mix (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
48.7%	4.2%	20.7%	12.7%	2.7%	0.6%	5.5%	3.9%	0.1%	0.2%	0.6%	0.1%	0.1%

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2	MDV	MCY	MH	OBUS
27.17699651	22.89247	20.66278	15.20374012	36.82950412	6.496305857	6.448382

Diesel MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LHD1	LHD2	MHD	HHD	UBUS	SBUS
17.00271661	15.30257	8.140403	5.408755733	4.706134817	7.178678959

Therefore:

Weighted Average MPG Factors

Gasoline: **23.7** Diesel: **9.4**

Step 3: **Therefore:**

1,069 daily gallons of gasoline **404 daily gallons of diesel**

or

390,032 annual gallons of gasoline	**147,345 annual gallons of diesel**

On-road Mobile (Construction) Energy Usage - Site Preparation

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

18

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

180

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	**LDT1**	**LDT2**
27.176997	22.89247	20.66278

Therefore:

Weighted Average Worker MPG Factor

23.6

Step 3: **Therefore:**

7.6 **Worker daily gallons of gasoline**

Step 4: 29 **# of Days (see CalEEMod)**

Therefore:

Result: **221** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

20

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

200

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	**LDT1**	**LDT2**
27.176997	22.89247	20.66278

Therefore:

Weighted Average Worker MPG Factor

23.6

Step 3: **Therefore:**

8.5 **Worker daily gallons of gasoline**

Step 4: 75 **# of Days (see CalEEMod)**

Therefore:

Result: **636** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Building Construction

	Worker	Vendor	Hauling
Step 1:	**Total Daily Worker Trips (provided by CalEEMod)**	**Total Daily Vendor Trips (provided by CalEEMod)**	**Total Daily Hauler Trips (provided by CalEEMod)**
	378	66	0
	Worker Trip Length (miles) (provided by CalEEMod)	**Vendor Trip Length (miles) (provided by CalEEMod)**	**Hauling Trip Length (miles) (provided by CalEEMod)**
	10.0	**7.0**	0
	Therefore:		
	Average Worker Daily VMT:	**Average Vendor Daily VMT:**	**Average Hauling Daily VMT:**
	3,780.00	**462**	**-**

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors (provided by CalEEMod v2016.3.1)

MHD	HHD
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

Gasoline:

LDA	LDT1	LDT2
27.1769965	22.89247	20.66278

Diesel:

MHD	HHD
8.140403493	5.408756

	Worker	Vendor	Hauling
	Therefore:		
	Weighted Average Worker (Gasoline) MPG Factor	**Weighted Average Vendor (Diesel) MPG Factor**	**Weighted Average Hauling MPG Factor**
	23.6	**6.8**	**0.0**
Step 3:	**Therefore:**	**Therefore:**	**Therefore:**
	160 **Worker daily gallons of gasoline**	**68** **Vendor daily gallons of diesel**	**0.0**
Step 4:	**740** **# of Days (see CalEEMod)**		
	Therefore:	Therefore:	
	118,639 **Total gallons of gasoline**	**50,465** **Total gallons of diesel**	

On-road Mobile (Construction) Energy Usage - Paving

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

15

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

150

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	**LDT1**	**LDT2**
27.176997	22.89247	20.66278

Therefore:

Weighted Average Worker MPG Factor

23.6

Step 3: **Therefore:**

6.4 **Worker daily gallons of gasoline**

Step 4: 55 **# of Days (see CalEEMod)**

Therefore:

Result: **350** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Architectural Coating

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

76

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

760

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2
27.176997	22.89247	20.66278

Therefore:

Weighted Average Worker MPG Factor

23.6

Step 3: **Therefore:**

32.2 **Worker daily gallons of gasoline**

Step 4: 510 **# of Days (see CalEEMod)**

Therefore:

Result: **16,439** **Total gallons of gasoline**

Appendix C

Arborist Report and Addendum

TREE
ASSOCIATES

1654 Colusa Avenue
Davis, CA 95616
treeassociates.net

June 12, 2017

Melanie Matthews

RE: Arborist Report: WDAAC Project, Davis, CA

Dear Melanie,

Attached is the report you requested. I appreciate the opportunity to work with you. Please do not hesitate to contact me should you have questions regarding this report.

Sincerely,

John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

ARBORIST REPORT
WEST DAVIS ACTIVE ADULT COMMUNITY
DAVIS, CALIFORNIA

Prepared for
TAORMINO AND ASSOCIATES, INC.
Davis, California

Prepared by
TREE ASSOCIATES
John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

June 12, 2017

Assignment

Melanie Matthews contacted me requesting an Arborist Report for the West Davis Active Adult Community Project in Davis, California. The project is located on 74 acres of land west of and adjacent to Sutter Memorial Hospital. The site is bounded by Covell Boulevard and Risling Court on its southern and eastern boundaries.

This Arborist Report was to include an evaluation, appraisal, development impact assessment, mitigation requirements and preservation guidelines for all on site trees of significance (those greater than 5" diameter) as defined by the City of Davis Municipal Code Chapter 37.

Limits of the Assignment

- This report does not include trees located to the east of the project site as Engineer Brian Foster with Cunningham Engineering indicated that there would be no disturbance within the driplines of the trees located to the south of the proposed retention basin and drainage features in this area and, therefore, possible development impacts would not be significant.
- This evaluation reports on the condition of the subject trees at the time of my site visit. Tree conditions change over time and, as they change, this report may need to be revised.
- The evaluation was based on a visual inspection from the ground. The result of the evaluations for trees for which risk assessment was recommended is provisional, pending the outcome of these studies.
- This appraisal utilized Arborist-standard methods based on guidelines found in the Guide for Plant Appraisal, 9th Edition, authored by the Council of Tree and Landscape Appraisers (CTLA).

Tree Evaluation

I identified, tagged in the field and evaluated the trees between June 6 and June 10, 2017.

For each of the trees meeting the City of Davis's criteria (trunks >5"diameter), the following data were provided (see tree location map below). Tree Number – corresponds to a round aluminum tag affixed to each tree.

- Species – common and Latin name of tree.
- Trunk Diameter – the diameter of the tree (in inches) at 4.5' above grade, unless measurement at another location between 1 and 5 feet above grade provided a more accurate reflection of the size of the tree.
- Dripline – the approximate maximum (wheel measured) distance from the trunk to the edge of the branches, in feet.
- Tree Protection Zone (TPZ) – the radius in feet of a circular tree protection zone recommended by the author.
- Comments – comments regarding tree and landscape features that influenced health, structure and condition ratings.
- Health Rating – rating between poor and good considering the overall health of the tree. A rating of fair-good or good indicates no significant health concerns.
- Structural Rating– rating between poor and good considering the overall structure of the tree. A rating of fair-good or good indicates no significant structural concerns.
- Condition Rating – rating of the condition of the tree on a scale of 0-100% as described in the Guide for Plant Appraisal, p. 34-35.
- Recommendations – recommendations for tree work or treatments to improve tree structure or health or for further evaluation, where necessary. Note: recommendations are indicated in red where removal was recommended or green where risk assessment was indicated.

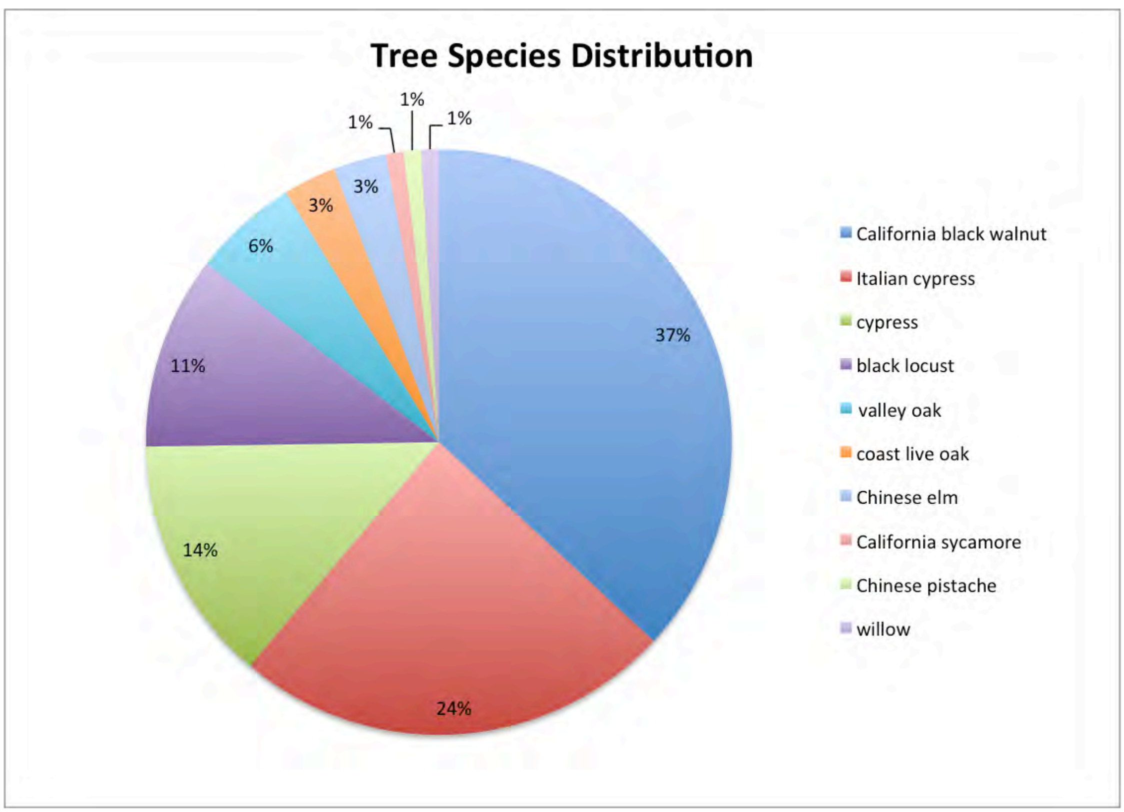
Exhibit 1, entitled "Tree Evaluation" summarizes the results of the tree evaluation. The approximate locations of trees are shown on portions of an aerial photo of the site (attached).

Summary of Tree Evaluation

Number of Trees, Species Makeup, Locations

The site contained 103 trees of significance. Ten species were represented on site, including planted and naturalized California native trees (California black walnut, valley oak, coast live oak and California sycamore) as well as exotic species (Italian cypress, cypress, black locust, Chinese elm, Chinese pistache and willow). The most common species were the walnut and cypress, which together comprised 75% of the trees on site (see chart below and Exhibit 1).

The vast majority of the existing site is an agricultural field. There is a past home site (structures removed) that is currently utilized for hospital parking. Cypress line the parking lot along with black locust. Trees (mostly California black walnut) line the southwest corner and the eastern boundary of the field. Volunteer trees are located along Covell Blvd. Trees had been planted along a fitness course adjacent and east of the field.



Tree Condition

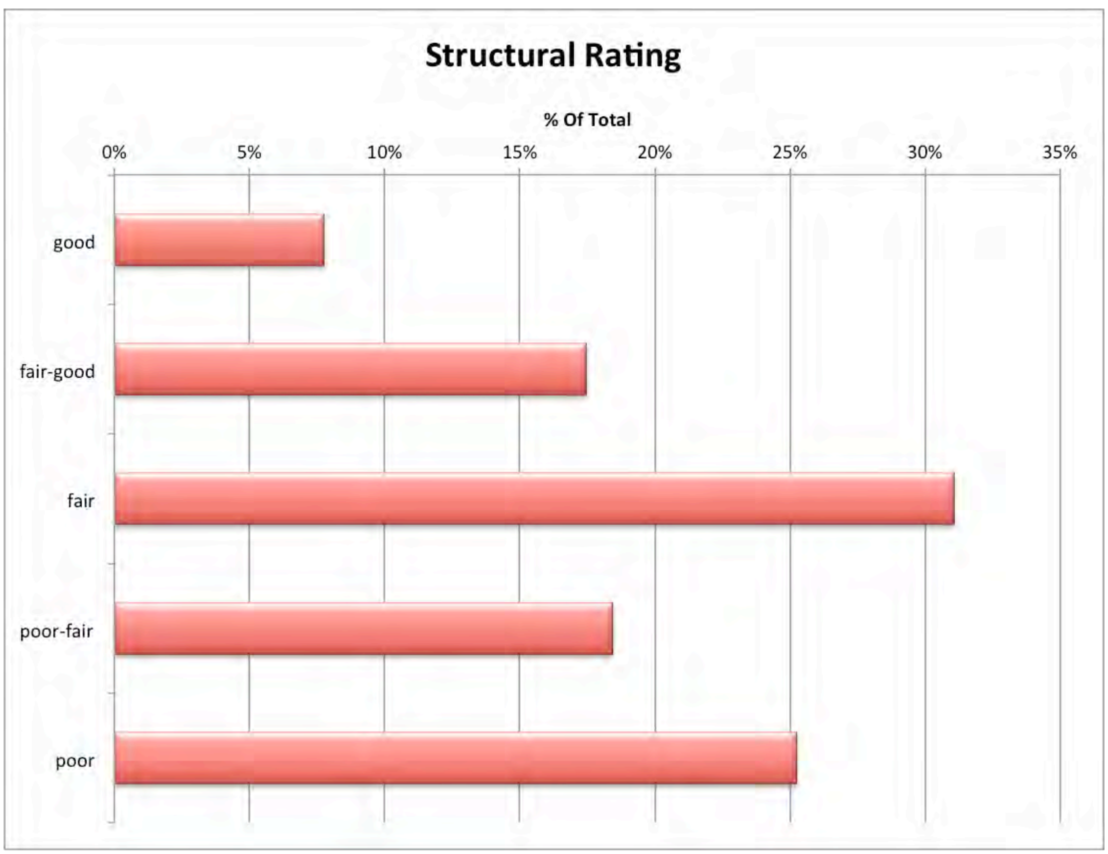
The vast majority of the trees had not been irrigated, pruned or otherwise maintained. The lack of maintenance severe drought and possibly disease had compromised the health of many of the subject trees.

Many of the California black walnut trees exhibited symptoms of thousand cankers disease (limb dieback), which has killed many black walnut trees in the area. Thousand cankers is a fungal disease, spread by a beetle, which can kill a tree within a few years once the limbs start to die back. A pathologist would be needed to diagnose which trees are infected.

I rated both the health and structure of the trees from poor to good. The majority of the trees (59%) had no significant health issues (ratings of fair-good or good). Twenty one percent of the trees were in poor or poor-fair health while 20% were in fair health (see chart below and Exhibit 1).

Only 21% of the trees had no significant structural concerns, while 43% were in poor or poor-fair structural condition (see chart, below and Exhibit 1). I also rated the overall condition of the trees on a percentage basis, for appraisal purposes as the value of the trees is depreciated by their condition rating.


Health Rating
% of Total
0
5
10
15
20
25
30
35
40
45
Health Rating
Good
Fair-Good
Fair
Poor-Fair
Poor
18
41
20
13
8


Structural Rating
% Of Total
0%
5%
10%
15%
20%
25%
30%
35%
good
fair-good
fair
poor-fair
poor

Removal Recommendations

A total of 34 trees (33% of the total) were recommended for removal due to their poor health or structural condition or their close proximity to existing roadways. A list of Arborist-recommended removals is attached (Exhibit 2).

Development Impact Assessment

I reviewed the conceptual master plan, dated 4/25/17. The trunk locations had not been surveyed so I could not evaluate development impacts to individual trees. However, it appears that all of the remaining trees (69 total) will need to be removed to accommodate the development as currently planned.

Tree Impact Mitigation

The City of Davis has adopted a tree ordinance designed to address the environmental benefits of the City's community forest in addition to its social and economic benefits (Davis Municipal Code, § 37.01.010). Among other requirements, the ordinance generally requires one or more of the following measures where a development project requires removal of trees: (1) onsite replacement, (2) offsite replacement, and/or (3) payment of in lieu fees (Davis Municipal Code, § 37.01.070(d)(2)).

Pursuant to the ordinance, the total replacement trees or in lieu fees must equal 1,004 inches (the combined trunk diameter of the trees proposed for removal to develop the proposed project – not including Arborist-recommended removals). Note for trunks measured below 4.5 feet, the diameter was adjusted to estimate the size at 4.5 feet. For multiple trunked trees, the diameter used was the nearest diameter with an area similar the combined areas of the trunks (Exhibit 3).

Tree Appraisal

Trees were appraised following guidelines found in the Council of Tree and Landscape Appraisers Guide for Plant Appraisal, 9th Edition. The guide suggests utilizing the Trunk Formula Method to estimate the value of trees larger than those that can be replaced with commonly available trees (regionally accepted as 24-inch boxed trees).

Appraised values derived with the Trunk Formula Method add the installed cost of the largest commonly available transplantable tree (assumed to be a 24-inch boxed tree) to the increase in value of the tree due to its larger than 24" box size (calculated as a regionally determined unit price per square inch of trunk multiplied by the difference between the area of the subject tree and the area of a 24-inch boxed tree). This "basic" value is then adjusted by regionally accepted species and arborist determined condition and location ratings (CTLA, p. 70).

Exhibit 4 provides the values of trees to be removed as a result of site layout conflicts (does not include Arborist-recommended removals). The total appraised value of these trees equals $126,420.00.

Arborist Disclosure Statement

The following statement pertains to my work and this report.

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the Arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the Arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the Arborist. An Arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Tree Preservation Guidelines

The guidelines presented below should be followed for all trees to be preserved to ensure the least impact considering the proposed site plan.

- Indicate surveyed trunk locations and tree protection zones (TPZ's) as described in attached table on all construction plans for trees to be preserved. Note, where infrastructure is located within protection zones, indicate modified tee protection zones (MTPZ's) and fencing as close to infrastructure as possible (minimize overbuild).
- Engage the Consulting Arborist to revise the development impact assessment (as needed) for trees to be preserved once construction plans are drafted.
- Tree preservation measures should be indicated on all construction plans.
- Avoid grading, compaction, trenching, rototilling, vehicle traffic, material storage, spoil, waste or washout or any other disturbance within TPZ's or MTPZ's.
- Conduct a meeting to discuss tree preservation guidelines with the Consulting Arborist and all contractors, subcontractors and project managers prior to the initiation of demolition and construction.
- Prior to any demolition activity on site, identify (tagged) trees to be preserved and install tree protection fencing as indicated on construction plans.
- Tree protection fences should be made of chain link with posts sunk into the ground. These fences should not be removed or moved until construction is complete. Avoid soil or above ground disturbances within the fenced area.
- Any pruning required for construction or recommended in this report should be performed by an ISA Certified Arborist or Tree Worker. Pruning for necessary clearance should be the minimum required to build the project and performed prior to demolition by an ISA Certified Arborist.
- Any work that is to occur within the protection zones of the trees should be monitored by the Consulting Arborist.
- If roots larger than 1.5 inches or limbs larger than 3 inches in diameter are cut or damaged during construction, contact Consulting Arborist as soon as possible to inspect and recommend appropriate remedial treatments.
- All trees to be preserved should be irrigated once every week during non-Winter months to uniformly wet the soil to a depth of at least 18 inches under and beyond their canopies.

Glossary[1]

Bow – the gradual curve of a branch or stem.

Callus – growth resulting from and found at the margin of wounds.

Canker – a localized area of dead tissue on a stem or branch, caused by fungal or bacterial organisms.

Central Leader – the main stem of the tree.

Chlorotic – yellow.

Codominant – equal in size and relative importance.

Crown – parts of the tree above the trunk.

Crown Clean – the removal of dead, dying, diseased, broken, and weakly attached branches and watersprouts from a tree's crown.

Decay – process of degradation of woody tissues by fungi and bacteria.

Dieback – death of shoots and branches, generally from tip to base.

Dropcrotch – the process of shortening trunks or limbs by pruning back to dominant lateral limbs.

End Weight – the concentration of foliage at the distal ends of branches.

Epicormic – shoots which result from adventitious or latent buds; often indicates poor vigor.

Included bark – pattern of development at branch junctions where bark is turned inward rather than pushed out.

Primary limb – limb attached directly to the trunk.

Reduction cut – shortening the length of a branch or stem by cutting it back to a lateral branch of at least one-third the diameter of the cut stem.

Root crown – area at the base of a tree where the roots and stem merge.

Secondary limb – limb attached directly to a primary limb.

Sound wood – undecayed wood.

Suppressed – trees which have been overtopped and whose crown development is restricted from above.

Target – people or property potentially affected by tree failure.

Topped – Pruned to reduce height by cutting large branches back to stubs.

Train – to prune a young tree to establish a strong structure.

Vigor – overall health.

Watersprouts – vigorous, upright, epicormic shoots that grow from latent buds in older wood.

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1 Definitions from author or Matheny and Clark, Evaluation of Hazard Trees in Urban Areas, 2nd Edition c 1994, ISA.

Certification of Performance

I, John M. Lichter, certify:

- That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and the Terms and Conditions;
- That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;
- That the analysis, opinions and conclusions stated herein are my own, and are based on current scientific procedures and facts;
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events;
- That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;
- That no one provided significant professional assistance to the consultant, except as indicated within the report.

John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

ASSUMPTIONS AND LIMITING CONDITIONS: John M. Lichter dba TREE ASSOCIATES, INC.

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes or other governmental regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5. Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

6. Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser -- particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in his qualifications.

7. This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

8. Sketches, drawings, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is for the express purpose or coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by John M. Lichter or TREE ASSOCIATES as to the sufficiency or accuracy of said information.

9. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

10. Loss or alteration of any part of this report invalidates the entire report.


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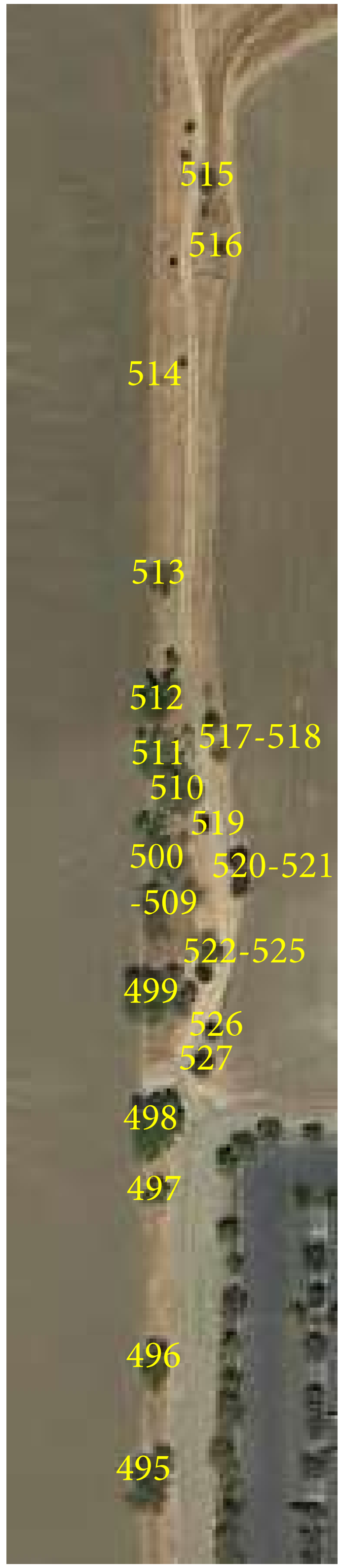
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Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
430	Chinese elm	6	14	6	1' from 431; possible herbicide injury; adjacent to roadway; unbalanced crown	fair	poor	0	remove tree due to poor structure.
431	Chinese elm	7	13	7	1' from 430; possible herbicide injury; adjacent to roadway; codominant trunks with included bark; unbalanced crown	poor-fair	poor	0	remove tree due to poor structure.
432	Chinese pistache	4,4	8	6	codominant trunks with included bark; verticillium wilt symptoms; adjacent to roadway and irrigation ditch	fair	poor-fair	47	remove tree due to poor structure and proximity to Covell Blvd.
433	Chinese elm	5,5,4,3,3, 4,2,5,4,5	19	14	apparently stump sprouts; multiple trunks from base; adj to road	fair-good	poor	0	remove tree due to poor structure.
434	valley oak	10,7	14	17	primary limbs with excessive end weight; limb attachments with included bark; adjacent to roadway	good	poor-fair	78	remove tree due to proximity to Covell Blvd.
435	willow	7,6,7,6,8, 5,7,3,8	18	18	multiple trunks from base; codominant trunks with included bark	fair-good	poor	0	remove tree due to poor structure.
436	California black walnut	18,21,13	37	31	multiple trunks from base; unbalanced crown; primary limbs with excessive end weight	fair-good	poor-fair	66	perform crown reduction.
437	California black walnut	5,4,8,6	25	12	unbalanced crown; adjacent to another tree; unbalanced crown; primary limbs with excessive end weight	fair-good	poor-fair	66	remove low primary limbs
438	California black walnut	7	20	7	adjacent to another tree; extreme bow	fair-good	poor	0	remove tree due to poor structure.
439	California black walnut	5,7	18	9	limb dieback	poor-fair	poor-fair	41	remove tree due to poor health and structure.
440	California black walnut	14@3'	20	14	twig dieback; unbalanced crown; primary limbs with excessive end weight	fair	fair	63	

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
441	California black walnut	21,19,21	30	35	Trunk decay at base; bee hive; multiple trunks from base; limb dieback; limb wounds	fair-good	poor	56	perform risk assessment including decay mapping. crown clean.
442	California black walnut	21,18,21	30	35	trunk and root decay; large diameter dieback	poor	poor	0	remove tree due to poor health and structure.
443	California black walnut	19,12,19, 21	27	37	trunk and root decay; root loss; large old wound between trunks; limb dieback	fair	poor	0	remove tree due to poor structure.
444	California black walnut	22,19,28	35	39	multiple trunks; limb dieback; trunk wounds; root dead	fair	poor-fair	59	perform risk assessment including root crown examination. crown clean.
445	California black walnut	24,22,18	35	37	limb dieback; multiple trunks from base	fair-good	fair	63	crown clean. crown reduction.
446	California black walnut	7	12	7	limb dieback	fair-good	fair-good	84	
447	California black walnut	21,14	29	26	trunk decay; limb dieback; primary limbs with excessive end weight; mistletoe	fair-good	poor-fair	59	perform risk assessment including decay mapping. crown clean.
448	California black walnut	6,4,4	16	8	multiple trunks from base	fair-good	poor-fair	69	select leader, drop crotch competing trunks or primary limbs.
449	California black walnut	11@2.5'	13	11	primary limbs with excessive end weight; low vigor	fair	fair-good	69	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
450	cypress	17	11	17	twig dieback; trunk wound	fair	good	84	

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
451	cypress	22	17	22	low vigor; trunk wound	fair-good	good	88	
452	cypress	10	12	10	trunk wounds; codominant trunks	fair	fair	69	
453	Italian cypress	19@1'	8	17	codominant trunks with included bark	fair-good	fair	81	
454	Italian cypress	20@1'	8	18		good	good	94	
455	Italian cypress	12@1'	7	11	codominant trunks; top dead	fair	fair	69	
456	cypress	15	13	15	twig dieback; trunk wounds	fair-good	good	88	
457	Italian cypress	16@1'	7	14	codominant trunks with included bark	good	fair	78	
458	Italian cypress	16@1'	6	14	codominant trunks with included bark	fair-good	fair	69	
459	Italian cypress	16@1'	10	14	top dead; limb dieback; codominant trunks with included bark	poor-fair	poor-fair	56	crown clean.
460	Italian cypress	15@1'	8	13		fair-good	fair-good	88	
461	Italian cypress	17@1'	6	15		good	good	94	
462	Italian cypress	11,9	9	14	codominant trunks with included bark	good	fair	84	
463	Italian cypress	16@1'	9	14	codominant trunks with included bark	good	fair	81	
464	Italian cypress	7	4	7	girdling roots	good	fair-good	88	
465	Italian cypress	17@1'	6	15	codominant trunks with included bark; trunk wound	good	fair	84	
466	cypress	20	16	20	twig dieback	fair	fair-good	78	

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
467	Italian cypress	18@1'	8	16	codominant trunks with included bark	good	fair	84	
468	Italian cypress	9	6	9		fair-good	good	91	
469	cypress	14	18	14	primary limbs with slightly excessive end weight	fair-good	fair-good	88	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
470	Italian cypress	11	7	11	Trunk broke at 10'	fair-good	poor	25	remove tree due to poor structure.
471	cypress	12	12	12	low vigor; twig dieback	fair	good	81	
472	Italian cypress	14	6	12		fair-good	fair-good	84	
473	Italian cypress	14	6	12		good	good	91	
474	cypress	14	15	14	primary limbs with slightly excessive end weight	fair-good	fair-good	84	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
475	Italian cypress	8	7	8		fair	fair-good	81	
476	cypress	12	12	12		fair	fair-good	81	
477	cypress	14	15	14		fair-good	fair-good	78	
478	cypress	14	13	14		fair-good	fair-good	91	
479	cypress	14	14	14	top broke out	fair-good	poor-fair	40	select leader, drop crotch competing trunks or primary limbs.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
480	Italian cypress	10	5	10	low vigor	fair-good	fair-good	78	
481	Italian cypress	6	6	6	trunk wound; declining health; limb dieback	poor	poor-fair	0	remove tree due to poor health.
482	cypress	21	18	21	codominant trunks with included bark	good	poor-fair	50	cable trunks.
483	Italian cypress	9@1'	5	8	limbs attachments with included bark	fair-good	fair	69	
484	cypress	6	8	6	trunk wound; limb dieback; low vigor	poor-fair	fair	35	remove tree due to poor health.
485	Italian cypress	18@1'	7	16	codominant trunks with included bark	good	fair	88	cable trunks.
486	Italian cypress	17@1	8	15	top dead; codominant trunks with included bark	poor-fair	fair	50	crown clean. select leader, drop crotch competing trunks or primary limbs.
487	Italian cypress	13@1	7	12	top dead; limbs attachments with included bark	fair	fair-good	63	crown clean.
488	Italian cypress	15	8	15		good	fair-good	88	
489	black locust	7	15	7	codominant trunks; poorly attached primary limb; adjacent to roadway	good	fair	75	remove lowest primary limb. use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
490	black locust	6	15	6	primary limbs with excessive end weight; limbs attachments with included bark; adjacent to roadway	good	fair	81	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
491	black locust	4,3	14	5	multiple trunks from base; poor structure; adjacent to roadway	fair-good	poor	25	remove tree due to poor structure.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
492	black locust	6	15	6	1' away from #493; primary limbs with excessive end weight; unbalanced crown; poor root architecture; adjacent to roadway	fair-good	poor	0	remove tree due to poor structure.
493	black locust	6	12	6	1' away from #492; primary limbs with excessive end weight; unbalanced crown; poor root architecture; adjacent to roadway	fair-good	poor	0	remove tree due to poor structure.
494	California black walnut	7	14	7	primary limbs with excessive end weight; limbs attachments with included bark;	good	fair	81	use reduction cuts to remove 25% foliage of primary limbs with > 1/3 trunk dia.
495	California black walnut	30	26	30	limb dieback; limb decay; primary limbs with excessive end weight; trunk decay	fair-good	poor-fair	59	Perform risk assessment including aerial inspection, root crown examination and decay mapping. crown reduction. use reduction cuts to remove 25% foliage of primary limbs with > 1/3 trunk dia.
496	California black walnut	18@1'	23	16	limb dieback; multiple trunks	fair-good	fair	66	crown clean. crown reduction
497	California black walnut	11	14	11	limb wounds; trunk wounds; codominant trunks	fair-good	fair	81	select leader, drop crotch competing trunks or primary limbs.
498	California black walnut	20,24	32	32	2 of 3 trunks remain; trunk decay; root decay and loss; decay at trunk attachment; topped	fair-good	poor	0	remove tree due to poor structure.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
499	California black walnut	20,23,21	32	37	limb dieback; multiple trunks; trunk wounds; root loss	fair-good	fair	66	perform risk assessment including root crown examination and aerial inspection. crown clean. crown reduction.
500	California black walnut	6	12	6	adjacent to another tree; trunk bowed; limb dieback	fair	poor	0	remove tree; due to poor structure.
501	California black walnut	36	20	36	all dead but stump sprouts	poor	poor	0	remove tree due to poor health and structure.
502	California black walnut	8	20	8	codominant trunks; limb dieback;	fair	fair	69	select leader, drop crotch competing trunks or primary limbs.
503	California black walnut	10,12	23	16	codominant trunks; top dead	poor	poor	0	remove tree due to poor health and structure.
504	California black walnut	5	6	5	limb dieback; codominant trunks	poor-fair	poor-fair	35	
505	California black walnut	15	26	15	primary limbs with excessive end weight; limb dieback	poor-fair	poor	0	remove tree due to poor health and structure.
506	California black walnut	8	5	8	only watersprouts on lower trunk live; immed adj to #507	poor	poor	0	remove tree due to poor health and structure.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
507	California black walnut	11,12,12	24	21	limb dieback; multiple trunks	fair	fair	66	crown clean. select leader, drop crotch competing trunks or primary limbs.
508	California black walnut	7	10	7	trunk bowed; adjacent to another tree; limb dieback; trunk wound; poor root architecture	poor-fair	poor	20	remove tree due to poor structure.
509	California black walnut	20	7	20	Almost dead	poor	poor	0	remove tree due to poor health and structure.
510	California black walnut	24	26	24	limb dieback; multiple trunks	fair	fair	72	crown clean.
511	California black walnut	16	25	16	codominant trunks with included bark; limb dieback	fair-good	fair	81	crown clean.
512	California black walnut	15,18	24	24	codominant trunks; limb dieback; primary limbs with excessive end weight	fair	fair	75	crown clean. crown reduction.
513	California black walnut	10,8	18	13	multiple trunks from base; trunk wound; limb dieback; low vigor	poor-fair	poor-fair	30	remove tree due to poor health and structure.
514	black locust	5	5	5	nearly dead	poor	poor	0	remove tree due to poor health.
515	valley oak	7	10	7	low vigor; twig dieback	fair	fair-good	72	irrigate.
516	valley oak	5	6	5	low vigor; twig dieback	poor-fair	fair	72	select leader, drop crotch competing trunks or primary limbs. Irrigate.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
517	California sycamore	5	10	5	anthracnose; low vigor; twig dieback; drought stressed	poor-fair	fair-good	59	irrigate. crown clean.
518	California black walnut	5,6	9	8	codominant trunks with included bark; low vigor	fair	poor-fair	56	select leader, drop crotch competing trunks or primary limbs. irrigate.
519	valley oak	7	8	7		fair-good	fair	84	select leader, drop crotch competing trunks or primary limbs.
520	valley oak	9	13	9	powdery mildew; codominant trunks; twig dieback	fair-good	fair	69	select leader, drop crotch competing trunks or primary limbs.
521	valley oak	9	11	9	codominant trunks with included bark	fair-good	fair	81	select leader, drop crotch competing trunks or primary limbs.
522	California black walnut	5	10	5	trunk bowed; adjacent to another tree	poor	poor	0	remove tree due to poor health and structure.
523	California black walnut	5,6	12	8	adjacent to another tree; unbalanced crown; codominant trunks; limb dieback	poor-fair	poor-fair	34	remove tree due to poor health and structure.
524	California black walnut	5,7	17	9	trunk bowed; unbalanced crown; limb dieback; primary limbs with excessive end weight; adjacent to another tree; poor root architecture	fair-good	poor-fair	40	remove tree due to poor structure.
525	coast live oak	5,4	8	7	codominant trunks with included bark	good	fair	81	select leader, drop crotch competing trunks or primary limbs.

Exhibit 1.

Tree Evaluation
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
526	coast live oak	7	8	7	trunk and limb wounds from rat; codominant trunks	good	fair	88	select leader, drop crotch competing trunks or primary limbs.
527	coast live oak	10	14	10	codominant trunks	good	fair-good	91	select leader, drop crotch competing trunks or primary limbs.
528	black locust	5	15	5	one of several tree's abutting one another; trunk bowed; unbalanced crown	fair-good	poor	0	remove tree due to poor structure.
529	black locust	5	15	5	one of several tree's abutting one another; trunk bowed; unbalanced crown	fair-good	poor	0	remove tree due to poor structure.
530	black locust	5	14	5	In thicket of locust; unbalanced crown; codominant trunks	fair-good	poor-fair	20	remove tree due to poor structure.
531	black locust	5,4,5	15	8	Two trunks have split apart; will fail	poor-fair	poor	0	remove tree due to poor structure.
532	black locust	6,5,5@1'	13	9	multiple trunks from base with included bark	fair-good	poor	0	remove tree due to poor structure.

Exhibit 2.

Removal Recommendations
West Davis Active Adult Community Project

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
430	Chinese elm	6	1' from 431; possible herbicide injury; adjacent to roadway; unbalanced crown	fair	poor	0	remove tree due to poor structure.
431	Chinese elm	7	1' from 430; possible herbicide injury; adjacent to roadway; codominant trunks with included bark; unbalanced crown	poor-fair	poor	0	remove tree due to poor structure.
432	Chinese pistache	4,4	codominant trunks with included bark; verticillium wilt symptoms; adjacent to roadway and irrigation ditch	fair	poor-fair	47	remove tree due to poor structure and proximity to Covell Blvd.
433	Chinese elm	5,5,4,3,3, 4,2,5,4,5	apparently stump sprouts; multiple trunks from base; adj to road	fair-good	poor	0	remove tree due to poor structure.
434	valley oak	10,7	primary limbs with excessive end weight; limb attachments with included bark; adjacent to roadway	good	poor-fair	78	remove tree due to proximity to Covell Blvd.
435	willow	7,6,7,6,8, 5,7,3,8	multiple trunks from base; codominant trunks with included bark	fair-good	poor	0	remove tree due to poor structure.
438	California black walnut	7	adjacent to another tree; extreme bow	fair-good	poor	0	remove tree due to poor structure.
439	California black walnut	5,7	limb dieback	poor-fair	poor-fair	41	remove tree due to poor health and structure.
442	California black walnut	21,18,21	trunk and root decay; large diameter dieback	poor	poor	0	remove tree due to poor health and structure.
443	California black walnut	19,12,19, 21	trunk and root decay; root loss; large old wound between trunks; limb dieback	fair	poor	0	remove tree due to poor structure.
470	Italian cypress	11	Trunk broke at 10'	fair-good	poor	25	remove tree due to poor structure.
481	Italian cypress	6	trunk wound; declining health; limb dieback	poor	poor-fair	0	remove tree due to poor health.
484	cypress	6	trunk wound; limb dieback; low vigor	poor-fair	fair	35	remove tree due to poor health.

Exhibit 2.

Removal Recommendations
West Davis Active Adult Community Project

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
491	black locust	4,3	multiple trunks from base; poor structure; adjacent to roadway	fair-good	poor	25	remove tree due to poor structure.
492	black locust	6	1' away from #493; primary limbs with excessive end weight; unbalanced crown; poor root architecture; adjacent to roadway	fair-good	poor	0	remove tree due to poor structure.
493	black locust	6	1' away from #492; primary limbs with excessive end weight; unbalanced crown; poor root architecture; adjacent to roadway	fair-good	poor	0	remove tree due to poor structure.
498	California black walnut	20,24	2 of 3 trunks remain; trunk decay; root decay and loss; decay at trunk attachment; topped	fair-good	poor	0	remove tree due to poor structure.
500	California black walnut	6	adjacent to another tree; trunk bowed; limb dieback	fair	poor	0	remove tree; due to poor structure.
501	California black walnut	36	all dead but stump sprouts	poor	poor	0	remove tree due to poor health and structure.
503	California black walnut	10,12	codominant trunks; top dead	poor	poor	0	remove tree due to poor health and structure.
505	California black walnut	15	primary limbs with excessive end weight; limb dieback	poor-fair	poor	0	remove tree due to poor health and structure.
506	California black walnut	8	only watersprouts on lower trunk live; immed adj to #507	poor	poor	0	remove tree due to poor health and structure.
508	California black walnut	7	trunk bowed; adjacent to another tree; limb dieback; trunk wound; poor root architecture	poor-fair	poor	20	remove tree due to poor structure.
509	California black walnut	20	Almost dead	poor	poor	0	remove tree due to poor health and structure.

Exhibit 2.

Removal Recommendations
West Davis Active Adult Community Project

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Comments	Health Rating	Structural Rating	Condition Rating (%)	Recommendations
513	California black walnut	10,8	multiple trunks from base; trunk wound; limb dieback; low vigor	poor-fair	poor-fair	30	remove tree due to poor health and structure.
514	black locust	5	nearly dead	poor	poor	0	remove tree due to poor health.
522	California black walnut	5	trunk bowed; adjacent to another tree	poor	poor	0	remove tree due to poor health and structure.
523	California black walnut	5,6	adjacent to another tree; unbalanced crown; codominant trunks; limb dieback	poor-fair	poor-fair	34	remove tree due to poor health and structure.
524	California black walnut	5,7	trunk bowed; unbalanced crown; limb dieback; primary limbs with excessive end weight; adjacent to another tree; poor root architecture	fair-good	poor-fair	40	remove tree due to poor structure.
528	black locust	5	one of several tree's abutting one another; trunk bowed; unbalanced crown	fair-good	poor	0	remove tree due to poor structure.
529	black locust	5	one of several tree's abutting one another; trunk bowed; unbalanced crown	fair-good	poor	0	remove tree due to poor structure.
530	black locust	5	In thicket of locust; unbalanced crown; codominant trunks	fair-good	poor-fair	20	remove tree due to poor structure.
531	black locust	5,4,5	Two trunks have split apart; will fail	poor-fair	poor	0	remove tree due to poor structure.
532	black locust	6,5,5@1'	multiple trunks from base with included bark	fair-good	poor	0	remove tree due to poor structure.

Exhibit 3.

Tree Removals
Due to Site Conflicts
West Davis Active Adult Community Project

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Adjusted Diameter at 4.5'
436	California black walnut	18,21,13	31
437	California black walnut	5,4,8,6	12
440	California black walnut	14@3'	14
441	California black walnut	21,19,21	35
444	California black walnut	22,19,28	39
445	California black walnut	24,22,18	37
446	California black walnut	7	7
447	California black walnut	21,14	26
448	California black walnut	6,4,4	8
449	California black walnut	11@2.5'	11
450	cypress	17	17
451	cypress	22	22
452	cypress	10	10
453	Italian cypress	19@1'	17
454	Italian cypress	20@1'	18
455	Italian cypress	12@1'	11
456	cypress	15	15
457	Italian cypress	16@1'	14
458	Italian cypress	16@1'	14
459	Italian cypress	16@1'	14
460	Italian cypress	15@1'	13
461	Italian cypress	17@1'	15
462	Italian cypress	11,9	14
463	Italian cypress	16@1'	14
464	Italian cypress	7	7
465	Italian cypress	17@1'	15
466	cypress	20	20
467	Italian cypress	18@1'	16
468	Italian cypress	9	9
469	cypress	14	14
471	cypress	12	12
472	Italian cypress	14	12
473	Italian cypress	14	12
474	cypress	14	14
475	Italian cypress	8	8
476	cypress	12	12
477	cypress	14	14
478	cypress	14	14
479	cypress	14	14

Exhibit 3.

Tree Removals
Due to Site Conflicts
West Davis Active Adult Community Project

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.)	Adjusted Diameter at 4.5'
480	Italian cypress	10	10
482	cypress	21	21
483	Italian cypress	9@1'	8
485	Italian cypress	18@1'	16
486	Italian cypress	17@1	15
487	Italian cypress	13@1	12
488	Italian cypress	15	15
489	black locust	7	7
490	black locust	6	6
494	California black walnut	7	7
495	California black walnut	30	30
496	California black walnut	18@1'	16
497	California black walnut	11	11
499	California black walnut	20,23,21	37
502	California black walnut	8	8
504	California black walnut	5	5
507	California black walnut	11,12,12	21
510	California black walnut	24	24
511	California black walnut	16	16
512	California black walnut	15,18	24
515	valley oak	7	7
516	valley oak	5	5
517	California sycamore	5	5
518	California black walnut	5,6	8
519	valley oak	7	7
520	valley oak	9	9
521	valley oak	9	9
525	coast live oak	5,4	7
526	coast live oak	7	7
527	coast live oak	10	10
		TOTAL	**1004**

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
436	California black walnut	18,21,13	31	70%	66%	47%	$345.46	45.46	733	3.8	729.20	$33,494.89	$7,231.76	$ 7,200.00
437	California black walnut	5,4,8,6	12	70%	66%	30%	$345.46	45.46	111	3.8	107.20	$5,218.77	$719.21	$ 720.00
440	California black walnut	14@3'	14	70%	63%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,161.22	$ 1,160.00
441	California black walnut	21,19,21	35	70%	56%	47%	$345.46	45.46	975	3.8	971.20	$44,496.21	$8,234.58	$ 8,200.00
444	California black walnut	22,19,28	39	70%	59%	47%	$345.46	45.46	1278	3.8	1,274.20	$58,270.59	$11,382.80	$ 11,400.00
445	California black walnut	24,22,18	37	70%	63%	47%	$345.46	45.46	1086	3.8	1,082.20	$49,542.27	$10,187.13	$ 10,200.00
446	California black walnut	7	7	70%	84%	37%	$345.46	45.46	38	3.8	34.20	$1,900.19	$415.25	$ 420.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
447	California black walnut	21,14	26	70%	59%	47%	$345.46	45.46	500	3.8	496.20	$22,902.71	$4,473.90	$ 4,470.00
448	California black walnut	6,4,4	8	70%	69%	37%	$345.46	45.46	54	3.8	50.20	$2,627.55	$467.87	$ 470.00
449	California black walnut	11@2.5'	11	70%	69%	37%	$345.46	45.46	79	3.8	75.20	$3,764.05	$670.24	$ 670.00
450	cypress	17	17	50%	84%	37%	$345.46	45.46	227	3.8	223.20	$10,492.13	$1,637.76	$ 1,640.00
451	cypress	22	22	50%	88%	37%	$345.46	45.46	380	3.8	376.20	$17,447.51	$2,824.32	$ 2,820.00
452	cypress	10	10	50%	69%	37%	$345.46	45.46	79	3.8	75.20	$3,764.05	$478.74	$ 480.00
453	Italian cypress	19@1'	17	50%	81%	37%	$345.46	45.46	227	3.8	223.20	$10,492.13	$1,577.10	$ 1,580.00
454	Italian cypress	20@1'	18	50%	94%	37%	$345.46	45.46	254	3.8	250.20	$11,719.55	$2,032.61	$ 2,030.00
455	Italian cypress	12@1'	11	50%	69%	37%	$345.46	45.46	95	3.8	91.20	$4,491.41	$571.25	$ 570.00
456	cypress	15	15	50%	88%	37%	$345.46	45.46	177	3.8	173.20	$8,219.13	$1,330.47	$ 1,330.00
457	Italian cypress	16@1'	14	50%	78%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,036.80	$ 1,040.00
458	Italian cypress	16@1'	14	50%	69%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$912.39	$ 910.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
459	Italian cypress	16@1'	14	50%	56%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$746.50	$ 750.00
460	Italian cypress	15@1'	13	50%	88%	37%	$345.46	45.46	133	3.8	129.20	$6,218.89	$1,006.68	$ 1,010.00
461	Italian cypress	17@1'	15	50%	94%	37%	$345.46	45.46	177	3.8	173.20	$8,219.13	$1,425.51	$ 1,430.00
462	Italian cypress	11,9	14	50%	84%	37%	$345.46	45.46	159	3.8	155.20	$7,400.85	$1,155.23	$ 1,160.00
463	Italian cypress	16@1'	14	50%	81%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,078.27	$ 1,080.00
464	Italian cypress	7	7	50%	88%	37%	$345.46	45.46	38	3.8	34.20	$1,900.19	$307.59	$ 310.00
465	Italian cypress	17@1'	15	50%	84%	37%	$345.46	45.46	177	3.8	173.20	$8,219.13	$1,282.96	$ 1,280.00
466	cypress	20	20	50%	78%	37%	$345.46	45.46	314	3.8	310.20	$14,447.15	$2,088.06	$ 2,090.00
467	Italian cypress	18@1'	16	50%	84%	37%	$345.46	45.46	201	3.8	197.20	$9,310.17	$1,453.26	$ 1,450.00
468	Italian cypress	9	9	50%	91%	37%	$345.46	45.46	64	3.8	60.20	$3,082.15	$516.74	$ 520.00
469	cypress	14	14	50%	88%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,161.22	$ 1,160.00
471	cypress	12	12	50%	81%	37%	$345.46	45.46	113	3.8	109.20	$5,309.69	$798.11	$ 800.00
472	Italian cypress	14	12	50%	84%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,119.75	$ 1,120.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
473	Italian cypress	14	12	50%	91%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,202.69	$ 1,200.00
474	cypress	14	14	50%	84%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,119.75	$ 1,120.00
475	Italian cypress	8	8	50%	81%	37%	$345.46	45.46	50	3.8	46.20	$2,445.71	$367.62	$ 370.00
476	cypress	12	12	50%	81%	37%	$345.46	45.46	113	3.8	109.20	$5,309.69	$798.11	$ 800.00
477	cypress	14	14	50%	78%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,036.80	$ 1,040.00
478	cypress	14	14	50%	91%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$1,202.69	$ 1,200.00
479	cypress	14	14	50%	40%	37%	$345.46	45.46	154	3.8	150.20	$7,173.55	$530.84	$ 530.00
480	Italian cypress	10	10	50%	78%	37%	$345.46	45.46	79	3.8	75.20	$3,764.05	$544.02	$ 540.00
482	cypress	21	21	50%	50%	37%	$345.46	45.46	346	3.8	342.20	$15,901.87	$1,470.92	$ 1,470.00
483	Italian cypress	9@1'	8	50%	69%	37%	$345.46	45.46	50	3.8	46.20	$2,445.71	$311.06	$ 310.00
485	Italian cypress	18@1'	16	50%	88%	37%	$345.46	45.46	201	3.8	197.20	$9,310.17	$1,507.08	$ 1,510.00
486	Italian cypress	17@1	15	50%	50%	37%	$345.46	45.46	177	3.8	173.20	$8,219.13	$760.27	$ 760.00
487	Italian cypress	13@1	12	50%	63%	37%	$345.46	45.46	113	3.8	109.20	$5,309.69	$613.93	$ 610.00
488	Italian cypress	15	15	50%	88%	37%	$345.46	45.46	177	3.8	173.20	$8,219.13	$1,330.47	$ 1,330.00
489	black	7	7	30%	75%	30%	$345.46	77.04	38	2.24	35.76	$3,100.41	$209.28	$ 210.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
490	black	6	6	30%	81%	30%	$345.46	77.04	28	2.24	25.76	$2,330.01	$170.38	$ 170.00
494	California black walnut	7	7	70%	81%	37%	$345.46	45.46	38	3.8	34.20	$1,900.19	$399.87	$ 400.00
495	California black walnut	30	30	70%	59%	47%	$345.46	45.46	707	3.8	703.20	$32,312.93	$6,312.13	$ 6,300.00
496	California black walnut	18@1'	16	70%	66%	47%	$345.46	45.46	201	3.8	197.20	$9,310.17	$2,010.12	$ 2,010.00
497	California black walnut	11	11	70%	81%	37%	$345.46	45.46	95	3.8	91.20	$4,491.41	$945.16	$ 950.00
499	California black walnut	20,23,21	37	70%	66%	47%	$345.46	45.46	1075	3.8	1,071.20	$49,042.21	$10,588.52	$ 10,600.00
502	California black walnut	8	8	70%	69%	37%	$345.46	45.46	50	3.8	46.20	$2,445.71	$435.49	$ 440.00
504	California black walnut	5	5	70%	35%	37%	$345.46	45.46	20	3.8	16.20	$1,081.91	$98.08	$ 100.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
507	California black walnut	11,12,12	21	70%	66%	37%	$345.46	45.46	321	3.8	317.20	$14,765.37	$2,509.65	$ 2,510.00
510	California black walnut	24	24	70%	72%	47%	$345.46	45.46	452	3.8	448.20	$20,720.63	$4,899.78	$ 4,900.00
511	California black walnut	16	16	70%	81%	37%	$345.46	45.46	201	3.8	197.20	$9,310.17	$1,959.21	$ 1,960.00
512	California black walnut	15,18	24	70%	75%	47%	$345.46	45.46	431	3.8	427.20	$19,765.97	$4,877.25	$ 4,880.00
515	valley oak	7	7	90%	72%	37%	$345.46	77.04	38	2.4	35.60	$3,088.08	$739.11	$ 740.00
516	valley oak	5	5	90%	72%	37%	$345.46	77.04	20	2.4	17.60	$1,701.36	$407.92	$ 410.00
517	California sycamore	5	5	50%	59%	37%	$345.46	45.46	20	3.8	16.20	$1,081.91	$118.84	$ 120.00
518	California black walnut	5,6	8	70%	56%	37%	$345.46	45.46	48	3.8	44.20	$2,354.79	$343.06	$ 340.00
519	valley oak	7	7	90%	84%	37%	$345.46	77.04	38	2.4	35.60	$3,088.08	$867.66	$ 870.00
520	valley oak	9	9	90%	69%	37%	$345.46	77.04	64	2.4	61.60	$5,091.12	$1,165.55	$ 1,170.00
521	valley oak	9	9	90%	81%	37%	$345.46	77.04	64	2.4	61.60	$5,091.12	$1,377.47	$ 1,380.00

Exhibit 4.

Appraisal Calculations
Trees to be Removed
due to Site Conflicts
West Davis Active Adult Community

To Accompany
Tree Associates Report
Dated 6/12/17

Tree #	Species	Diameter (in.) at 4.5' unless noted	Adjusted Diameter at 4.5'	Species Rating	Condition Rating	Location Rating	Installed Tree Cost (installed cost of largest commonly available nursery tree)	Basic Price (cost/ sq. in trunk)	Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
525	coast live oak	5,4	7	90%	81%	37%	$345.46	45.46	33	3.8	29.20	$1,672.89	$452.62	$ 450.00
526	coast live oak	7	7	90%	88%	37%	$345.46	45.46	38	3.8	34.20	$1,900.19	$553.67	$ 550.00
527	coast live oak	10	10	90%	91%	37%	$345.46	45.46	79	3.8	75.20	$3,764.05	$1,135.92	$ 1,140.00
													TOTAL	$ 126,860.00

TREE
ASSOCIATES

1654 Colusa Avenue
Davis, CA 95616
treeassociates.net

August 3, 2017

Melanie Matthews

RE: Arborist Report Addendum: WDAAC Project, Davis, CA

Dear Melanie,

Attached is the report addendum you requested. I appreciate the opportunity to work with you. Please do not hesitate to contact me should you have questions regarding this report.

Sincerely,

John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

ARBORIST REPORT ADDENDUM
WEST DAVIS ACTIVE ADULT COMMUNITY
DAVIS, CALIFORNIA

Prepared for
TAORMINO AND ASSOCIATES, INC.
Davis, California

Prepared by
TREE ASSOCIATES
John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

August 3, 2017

Assignment

I previously prepared an Arborist Report for the West Davis Active Adult Community Project in Davis, California (dated May 16, 2017). The project is located on 74 acres of land west of and adjacent to Sutter Memorial Hospital. I recently was asked by Melanie Matthews to prepare an addendum to my report, which was to include trees located inside the project but outside of the construction zone.

I understand this area is not to be developed and no trees are to be removed. However, some additional plantings and possibly a bench will be installed in this location.

This addendum was to include an evaluation, appraisal, and preservation guidelines for all on site trees of significance (those greater than 5" diameter) as defined by the City of Davis Municipal Code Chapter 37.

Limits of the Assignment

- This evaluation reports on the condition of the subject trees at the time of my site visit. Tree conditions change over time and, as they change, this report may need to be revised.
- The evaluation was based on a visual inspection from the ground. The result of the evaluations for trees for which risk assessment was recommended is provisional, pending the outcome of these studies.
- If soil any disturbance (scarification, grading, trenching, compaction, etc.) is to occur within this area, I should prepare a development impact assessment and provide tree specific design modifications, treatments and preservation specifications once construction plans are drafted.
- This appraisal utilized Arborist-standard methods based on guidelines found in the Guide for Plant Appraisal, 9th Edition, authored by the Council of Tree and Landscape Appraisers (CTLA).
- While I have placed a value on trees I recommend be removed, I recommend that there should be no mitigation for them.

Tree Evaluation

I identified, tagged in the field and evaluated the trees July 27, 2017.

For each of the trees meeting the City of Davis's criteria (trunks >5"diameter), the following data were provided (see tree location map below). Tree Number – corresponds to a round aluminum tag affixed to each tree.

- Species – common and Latin name of tree.
- Trunk Diameter – the diameter of the tree (in inches) at 4.5' above grade, unless measurement at another location between 1 and 5 feet above grade provided a more accurate reflection of the size of the tree.
- Dripline – the approximate maximum (wheel measured) distance from the trunk to the edge of the branches, in feet.
- Tree Protection Zone (TPZ) – the radius in feet of a circular tree protection zone recommended by the author.
- Comments – comments regarding tree and landscape features that influenced health, structure and condition ratings.
- Health Rating – rating between poor and good considering the overall health of the tree. A rating of fair-good or good indicates no significant health concerns.
- Structural Rating– rating between poor and good considering the overall structure of the tree. A rating of fair-good or good indicates no significant structural concerns.
- Condition Rating – rating of the condition of the tree on a scale of 0-100% as described in the Guide for Plant Appraisal, p. 34-35.
- Recommendations – recommendations for tree work or treatments to improve tree structure or health or for further evaluation, where necessary. Note: recommendations are indicated in red where removal was recommended or green where risk assessment was indicated.

Exhibit 1 summarizes the results of the tree evaluation. The approximate locations of trees are shown on portions of an aerial photo of the site (attached).

Tree Evaluation Summary

Number of Trees, Species Makeup, Locations

This area contained 31 trees of significance. Nine species were represented on site, including planted and naturalized California native trees (willow, coast live oak and California sycamore) as well as exotic species (Chinese pistache, golden rain tree, Chinese tallow, olive, fig, cork oak). The most common species were golden rain tree, willow and Chinese pistache, which together comprised 74% of the trees in this area.

This area is located south of the hospital parking lot and adjacent businesses. A drainage ditch, which was full of water at the time of my site visit, runs along the length of the area. All but three trees were located to the west of John Jones Road. Some of trees were planted as street or landscape trees. Many of the trees appear to be volunteers, which grew in or near the drainage ditch.

Some of the trees on either side of the bike path were receiving irrigation. Trees on the north side of the irrigation ditch were apparently not irrigated. Trees in or near the ditch received water from the ditch. However, I do not know how often the ditch is filled.

Tree Condition, Removal Recommendations

Tree health varied from poor to good. Five of the trees (16% of the total) were in poor or poor-fair health. Fifteen trees (48% of the total) had poor or poor-fair structure. I recommended eleven trees be removed due to their poor health, structure or both (see Exhibit 1), assuming that a high likelihood of failure or death was not acceptable. The risk that these trees present is dependent upon the likelihood of failure, likelihood of hitting a target and potential consequences of such a failure. A risk assessment would provide this information but was not part of my assignment.

Figure 1. Tree Location Map

Development Impact Assessment

My understanding is that there will be no construction in this area, other than to perhaps plant some plants and perhaps install a bench. If there is to be no soil disturbance within the protection zones of the trees, the impact of the development to the subject trees would be low or absent. If, however, there is any construction or landscape work proposed within the protection zones of the trees, I should prepare an impact assessment for those trees once plans are drafted.

Since there are trees within the drainage ditch that require regular irrigation, if these are to remain, either the creek should be full year round or they should be irrigated regularly. Trees outside of the ditch should be irrigated as described in the tree preservation guidelines, below.

Tree Appraisal

Trees were appraised following guidelines found in the Council of Tree and Landscape Appraisers Guide for Plant Appraisal, 9th Edition. The guide suggests utilizing the Trunk Formula Method to estimate the value of trees larger than those that can be replaced with commonly available trees (regionally accepted as 24-inch boxed trees).

Appraised values derived with the Trunk Formula Method add the installed cost of the largest commonly available transplantable tree (assumed to be a 24-inch boxed tree) to the increase in value of the tree due to its larger than 24" box size (calculated as a regionally determined unit price per square inch of trunk multiplied by the difference between the area of the subject tree and the area of a 24-inch boxed tree). This "basic" value is then adjusted by regionally accepted species and arborist determined condition and location ratings (CTLA, p. 70).

Exhibit 2 provides appraised values of all protected trees on this portion of the site.

Tree Impact Mitigation

My assumption was that no trees would be removed nor would there be any disturbance within TPZ's in this area to accommodate development. Therefore, there would be no mitigation requirements for trees in this area. If this changes, this report should be updated.

Tree Preservation Guidelines

The guidelines presented below should be followed for all trees to be preserved to ensure the least impact considering the proposed site plan.

- Indicate surveyed trunk locations and tree protection zones (TPZ's) as described in attached table on all construction plans for trees to be preserved. Note, where infrastructure is located within protection zones, indicate modified tee protection zones (MTPZ's) and fencing as close to infrastructure as possible (minimize overbuild).
- Engage the Consulting Arborist to revise the development impact assessment and mitigation requirements (as needed) for trees to be preserved once construction plans are drafted.
- Tree preservation measures should be indicated on all construction plans.
- Avoid grading, compaction, trenching, rototilling, vehicle traffic, material storage, spoil, waste or washout or any other disturbance within TPZ's or MTPZ's.
- Conduct a meeting to discuss tree preservation guidelines with the Consulting Arborist and all contractors, subcontractors and project managers prior to the initiation of demolition and construction.
- Prior to any demolition activity on site, identify (tagged) trees to be preserved and install tree protection fencing as indicated on construction plans.
- Tree protection fences should be made of chain link with posts sunk into the ground. These fences should not be removed or moved until construction is complete. Avoid soil or above ground disturbances within the fenced area.
- Any pruning required for construction or recommended in this report should be performed by an ISA Certified Arborist or Tree Worker. Pruning for necessary clearance should be the minimum required to build the project and performed prior to demolition by an ISA Certified Arborist.
- Any work that is to occur within the protection zones of the trees should be monitored by the Consulting Arborist.
- If roots larger than 1.5 inches or limbs larger than 3 inches in diameter are cut or damaged during construction, contact Consulting Arborist as soon as possible to inspect and recommend appropriate remedial treatments.
- All trees to be preserved should be irrigated once every week during non-Winter months to uniformly wet the soil to a depth of at least 18 inches under and beyond their canopies.

Glossary[1]

Bow – the gradual curve of a branch or stem.

Callus – growth resulting from and found at the margin of wounds.

Canker – a localized area of dead tissue on a stem or branch, caused by fungal or bacterial organisms.

Central Leader – the main stem of the tree.

Chlorotic – yellow.

Codominant – equal in size and relative importance.

Crown – parts of the tree above the trunk.

Crown Clean – the removal of dead, dying, diseased, broken, and weakly attached branches and watersprouts from a tree's crown.

Decay – process of degradation of woody tissues by fungi and bacteria.

Dieback – death of shoots and branches, generally from tip to base.

Dropcrotch – the process of shortening trunks or limbs by pruning back to dominant lateral limbs.

End Weight – the concentration of foliage at the distal ends of branches.

Epicormic – shoots which result from adventitious or latent buds; often indicates poor vigor.

Included bark – pattern of development at branch junctions where bark is turned inward rather than pushed out.

Primary limb – limb attached directly to the trunk.

Reduction cut – shortening the length of a branch or stem by cutting it back to a lateral branch of at least one-third the diameter of the cut stem.

Root crown – area at the base of a tree where the roots and stem merge.

Secondary limb – limb attached directly to a primary limb.

Sound wood – undecayed wood.

Suppressed – trees which have been overtopped and whose crown development is restricted from above.

Target – people or property potentially affected by tree failure.

Topped – Pruned to reduce height by cutting large branches back to stubs.

Train – to prune a young tree to establish a strong structure.

Vigor – overall health.

Watersprouts – vigorous, upright, epicormic shoots that grow from latent buds in older wood.

1 Definitions from author or Matheny and Clark, Evaluation of Hazard Trees in Urban Areas, 2nd Edition c 1994, ISA.

Arborist Disclosure Statement

The following statement pertains to my work and this report.

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the Arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the Arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the Arborist. An Arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Certification of Performance

I, John M. Lichter, certify:

- That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and the Terms and Conditions;
- That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;
- That the analysis, opinions and conclusions stated herein are my own, and are based on current scientific procedures and facts;
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events;
- That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;
- That no one provided significant professional assistance to the consultant, except as indicated within the report.

John M. Lichter, M.S.
ASCA Registered Consulting Arborist #375
ISA Board Certified Master Arborist #863
ISA Qualified Tree Risk Assessor

1654 COLUSA AVENUE, DAVIS, CA 95616
530.231.5586
www.treeassociates.net

ASSUMPTIONS AND LIMITING CONDITIONS: John M. Lichter dba TREE ASSOCIATES, INC.

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes or other governmental regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5. Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

6. Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser -- particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in his qualifications.

7. This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

8. Sketches, drawings, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is for the express purpose or coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by John M. Lichter or TREE ASSOCIATES as to the sufficiency or accuracy of said information.

9. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

10. Loss or alteration of any part of this report invalidates the entire report.

Exhibit 1

West Davis Adult Active Community
Tree Evaluation Addendum

To Accompany
Tree Associates Report
Dated: 8/3/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating	Recommendations
533	California sycamore	15	23	15	adjacent to wall; primary limbs with excessive end weight; limb attachments with included bark; codominant trunks	good	fair	75%	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
534	golden rain	8	16	8	low vigor; sparse canopy; codominant trunks; limb dieback	poor-fair	fair	53%	crown clean. irrigate.
535	California sycamore	6	12	6	anthracnose; twig dieback; unbalanced crown	fair	fair	78%	
536	golden rain	5	9	5	low vigor; declining health; large shrub at base	poor-fair	fair	53%	irrigate. remove shrub.
537	golden rain	8	12	8	trunk wounds; codominant trunks; primary limbs with excessive end weight; limb dieback	fair	fair	59%	crown clean. irrigate. use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
538	golden rain	5	9	5	low vigor; trunk wounds; codominant trunks	fair	fair	63%	train to strong form.
539	willow	4,3,3,3	14	7	multiple trunks from base; multiple trunks with included bark; in ditch	fair-good	poor	30%	remove tree.
540	willow	13,11,13	22	22	multiple trunks from base;multiple trunks with included bark;	fair-good	poor	30%	remove tree.
541	willow	13	19	13	in drainage ditch; codominant trunks with included bark	good	fair	78%	select leader, drop crotch competing trunks or primary limbs.
542	fig	2,3,2,3	5	5	multiple trunks from base; in drainage ditch	good	poor	63%	remove tree.
543	Chinese tallow	4,4	10	6	codominant trunks with included bark; in drainage ditch	fair-good	poor-fair	30%	remove tree.
544	coast live oak	5,4	10	7	declining health; limb dieback	poor	poor-fair	0%	remove tree.
545	olive	5	8	5		good	fair	81%	train to strong form.

Exhibit 1

West Davis Adult Active Community
Tree Evaluation Addendum

To Accompany
Tree Associates Report
Dated: 8/3/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating	Recommendations
546	willow	Adj 10	15	10	borer injury; multiple trunks with included bark; multiple trunks from base; in drainage ditch	fair	poor-fair	40%	remove tree.
547	willow	10	20	10	in drainage ditch; borer injury	fair-good	fair-good	69%	
548	cork oak	5	8	5	in drainage ditch	fair-good	good	81%	
549	golden rain	6	18	6	Trunk 2' from 550; trunk bowed; unbalanced crown; poor root architecture	fair-good	poor-fair	20%	remove tree.
550	golden rain	6	12	6	Trunk 2' from 549; unbalanced crown; poor root architecture	fair-good	poor-fair	30%	remove tree.
551	golden rain	12	19	12	codominant trunks; limb dieback	fair	fair	63%	crown clean.
552	willow	13	14	13	limb dieback; top dead	poor	poor	10%	remove tree.
553	California sycamore	10	19	10	trunk lean; anthracnose; twig dieback	fair	fair-good	75%	
554	Chinese tallow	4,4,3	17	7	multiple trunks from base; in drainage ditch	fair-good	poor	10%	remove tree.
555	willow	9,6,6,5,8, 5,6,6,10, 9,10,6	28	28	tree uprooted; trunks were primary limbs; trunk dieback	poor-fair	poor	0%	remove tree.
556	Chinese pistache	7	19	7	primary limbs with excessive end weight; low vigor	fair	fair	72%	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.
557	Chinese pistache	8	14	8	multiple trunks; verticillium wilt	fair	poor-fair	56%	train to strong form.
558	golden rain	12	15	12	limbs attachments with included bark; multiple trunks with included bark; low vigor; twig dieback	fair	poor-fair	56%	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.

Exhibit 1

West Davis Adult Active Community
Tree Evaluation Addendum

To Accompany
Tree Associates Report
Dated: 8/3/17

Tree #	Species	Diameter (in.)	Dripline (ft.)	TPZ (ft.)	Comments	Health Rating	Structural Rating	Condition Rating	Recommendations
559	Chinese pistache	8	14	8	street tree; multiple trunks	fair-good	fair	75%	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.select leader, drop crotch competing trunks or primary limbs.
560	Chinese pistache	9	17	9	multiple trunks; primary limbs with excessive end weight	fair-good	fair	75%	select leader, drop crotch competing trunks or primary limbs.
561	Chinese pistache	11	17	11	multiple trunks with included bark	fair-good	fair	69%	use reduction cuts to remove 25% of the foliage of primary limbs with > 1/3 trunk diameter at their attachment.select leader, drop crotch competing trunks or primary limbs.
562	golden rain	8	10	8	low vigor; multiple trunks; poor root architecture; trunk lean	fair	fair-good	53%	perform root crown examination.
563	golden rain	12	16	12	multiple trunks with included bark; twig dieback	fair	poor	56%	use reduction cuts to remove 40% of the foliage of the south trunk
564	golden rain	10	13	10	limb dieback; multiple trunks; primary limbs with excessive end weight	fair	poor-fair	53%	crown reduction.

Exhibit 2.

West Davis Adult Active Community
Tree Appraisal Calculations

To Accompany
Tree Associates Report
Dated 8/3/17

Tree #	Species	Species Rating	Diameter (in.) at 4.5' height	Condition Rating (%)	Location Rating	Installed Tree Cost (installed cost of largest commonly replaced tree)	Unit Tree Cost (cost/trunk sq. in)	Trunk or Adjusted Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
533	California sycamore	50%	15	75%	80%	$ 345.46	$ 45.46	177	3.80	173.20	$ 8,219.13	$ 2,465.74	$ 2,470.00
534	golden rain	70%	8	53%	53%	$ 345.46	$ 77.04	50	2.24	47.76	$ 4,024.89	$ 793.28	$ 790.00
535	California sycamore	50%	6	78%	53%	$ 345.46	$ 45.46	28	3.80	24.20	$ 1,445.59	$ 299.28	$ 300.00
536	golden rain	70%	5	53%	53%	$ 345.46	$ 77.04	20	2.24	17.76	$ 1,713.69	$ 337.76	$ 340.00
537	golden rain	70%	8	59%	53%	$ 345.46	$ 77.04	50	2.24	47.76	$ 4,024.89	$ 886.61	$ 890.00
538	golden rain	70%	5	63%	53%	$ 345.46	$ 77.04	20	2.24	17.76	$ 1,713.69	$ 397.36	$ 400.00
539	willow	30%	4,3,3,3	30%	53%	$ 345.46	$ 36.36	34	4.75	29.25	$ 1,408.99	$ 67.21	$ 70.00
540	willow	30%	13,11,13	30%	53%	$ 345.46	$ 36.36	494	4.75	489.25	$ 18,134.59	$ 865.02	$ 870.00
541	willow	30%	13	78%	53%	$ 345.46	$ 36.36	133	4.75	128.25	$ 5,008.63	$ 622.17	$ 620.00
542	fig	70%	2,3,2,3	63%	53%	$ 345.46	$ 45.46	20	3.80	16.20	$ 1,081.91	$ 250.87	$ 250.00
543	Chinese tallow	70%	4,4	30%	53%	$ 345.46	$ 77.04	26	2.24	23.76	$ 2,175.93	$ 242.18	$ 240.00
544	coast live oak	90%	5,4	0%	80%	$ 345.46	$ 45.46	33	3.80	29.20	$ 1,672.89	$ -	$ -
545	olive	90%	5	81%	80%	$ 345.46	$ 45.46	20	3.80	16.20	$ 1,081.91	$ 632.92	$ 630.00
546	willow	30%	Adj 10	40%	53%	$ 345.46	$ 36.36	79	4.75	74.25	$ 3,045.19	$ 193.67	$ 190.00
547	willow	30%	10	69%	53%	$ 345.46	$ 36.36	79	4.75	74.25	$ 3,045.19	$ 332.88	$ 330.00
548	cork oak	90%	5	81%	53%	$ 345.46	$ 77.04	20	2.24	17.76	$ 1,713.69	$ 664.16	$ 660.00
549	golden rain	70%	6	20%	53%	$ 345.46	$ 77.04	28	2.24	25.76	$ 2,330.01	$ 172.89	$ 170.00
550	golden rain	70%	6	30%	53%	$ 345.46	$ 77.04	28	2.24	25.76	$ 2,330.01	$ 259.33	$ 260.00
551	golden rain	70%	12	63%	53%	$ 345.46	$ 77.04	113	2.24	110.76	$ 8,878.41	$ 2,058.68	$ 2,060.00
552	willow	30%	13	10%	53%	$ 345.46	$ 36.36	133	4.75	128.25	$ 5,008.63	$ 79.64	$ 80.00
553	California sycamore	50%	10	75%	53%	$ 345.46	$ 45.46	79	3.80	75.20	$ 3,764.05	$ 748.11	$ 750.00
554	Chinese tallow	70%	4,4,3	10%	53%	$ 345.46	$ 77.04	33	2.24	30.76	$ 2,715.21	$ 100.73	$ 100.00
555	willow	30%	9,6,6,5,8, 5,6,6,10, 9,10,6	0%	53%	$ 345.46	$ 36.36	388	4.75	383.25	$ 14,280.43	$ -	$ -

Exhibit 2.

West Davis Adult Active Community
Tree Appraisal Calculations

To Accompany
Tree Associates Report
Dated 8/3/17

Tree #	Species	Species Rating	Diameter (in.) at 4.5' height	Condition Rating (%)	Location Rating	Installed Tree Cost (installed cost of largest commonly replaced tree)	Unit Tree Cost (cost/trunk sq. in)	Trunk or Adjusted Trunk Area (sq. in.)	Replace-ment Tree Trunk Area (sq. in.)	Appraised Tree Trunk Increase (sq. in.)	Basic Tree Cost (Appraised Tree Trunk Increase X Unit Tree Cost + Installed Tree Cost)	Appraised Value (Basic Tree Cost X Species Rating X Condition X Location)	Appraised Value (Rounded to $100.00 if over $5,000; to $10.00 if < $5000)
556	Chinese pistache	90%	7	72%	80%	$ 345.46	$ 77.04	38	2.24	35.76	$ 3,100.41	$ 1,604.46	$ 1,600.00
557	Chinese pistache	90%	8	56%	80%	$ 345.46	$ 77.04	50	2.24	47.76	$ 4,024.89	$ 1,630.08	$ 1,630.00
558	golden rain	70%	12	56%	80%	$ 345.46	$ 77.04	113	2.24	110.76	$ 8,878.41	$ 2,796.70	$ 2,800.00
559	Chinese pistache	90%	8	75%	80%	$ 345.46	$ 77.04	50	2.24	47.76	$ 4,024.89	$ 2,173.44	$ 2,170.00
560	Chinese pistache	90%	9	75%	80%	$ 345.46	$ 77.04	64	2.24	61.76	$ 5,103.45	$ 2,755.86	$ 2,760.00
561	Chinese pistache	90%	11	69%	80%	$ 345.46	$ 77.04	95	2.24	92.76	$ 7,491.69	$ 3,708.39	$ 3,710.00
562	golden rain	70%	8	53%	80%	$ 345.46	$ 77.04	50	2.24	47.76	$ 4,024.89	$ 1,197.40	$ 1,200.00
563	golden rain	70%	12	56%	80%	$ 345.46	$ 77.04	113	2.24	110.76	$ 8,878.41	$ 2,796.70	$ 2,800.00
564	golden rain	70%	10	53%	80%	$ 345.46	$ 77.04	79	2.24	76.76	$ 6,259.05	$ 1,862.07	$ 1,860.00

Appendix D

Cultural Resources Assessment

CULTURAL RESOURCE ASSESSMENT

FOR THE WEST DAVIS ACTIVE

ADULT COMMUNITY EIR PROJECT,

CITY OF DAVIS AND YOLO COUNTY, CALIFORNIA

Prepared by

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Prepared for

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December 2017
(Job #16-103)

INTRODUCTION

The project site consists of approximately 74 acres located northwest and adjacent to the City of Davis within the City of Davis Sphere of Influence (SOI) of unincorporated Yolo County. The project site is bounded by existing agricultural land within unincorporated Yolo County (within the City's SOI) to the west, a mapped rural residential subdivision lots to the north, the Sutter Davis Hospital and Risling Court to the east, and West Covell Boulevard to the south. The project site can be identified by Yolo County Assessor's Parcel Number (APN) 036-060-05.

The project area is located in the southeast quarter of section 5, Township 8 North, Range 2 East, mapped on the United States Geological Survey (USGS) Merritt 7.5-minute topographic quadrangle (Figure 1).

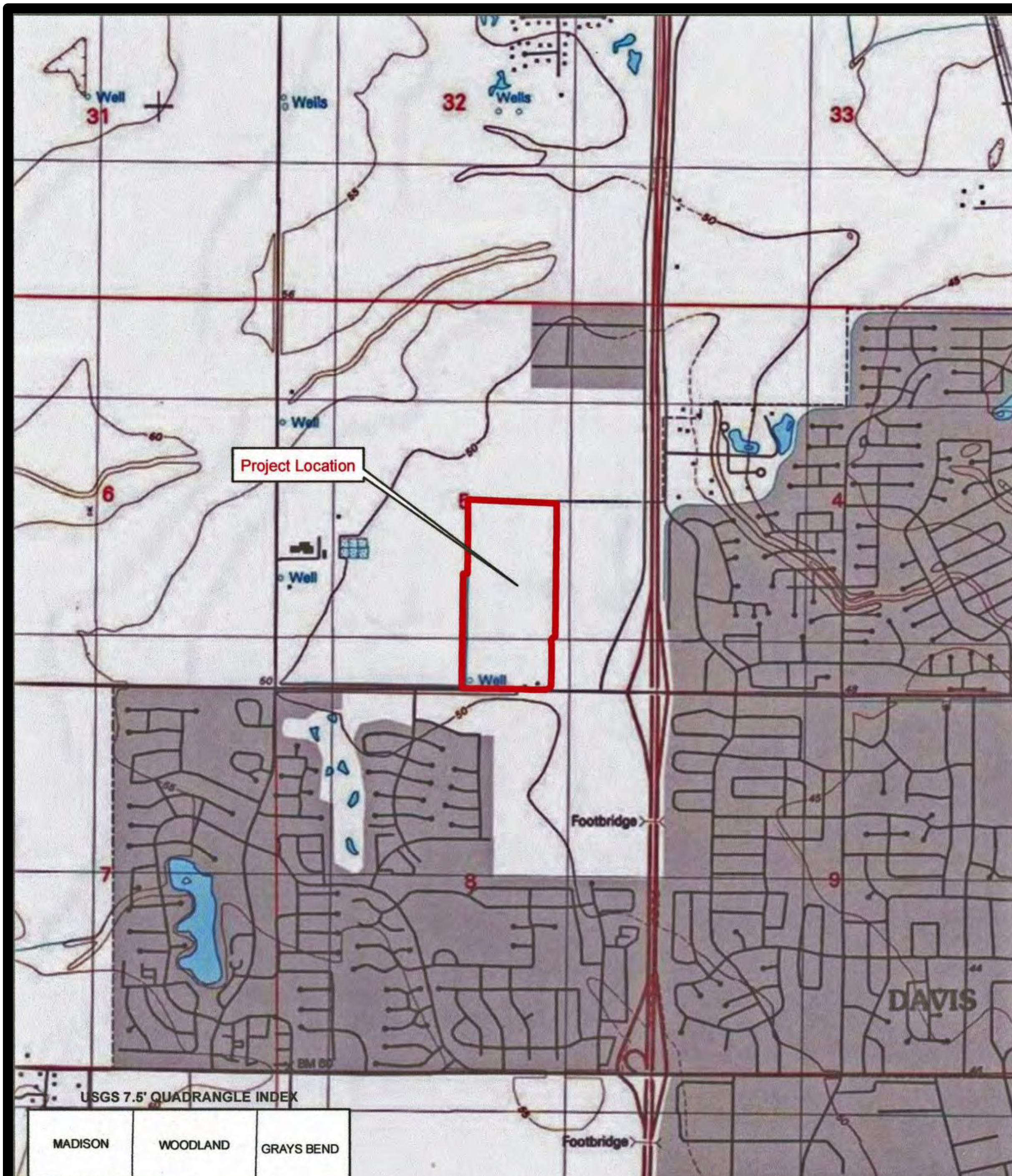
Melinda A. Peak, senior historian/archeologist with Peak & Associates, Inc. served as principal investigator for the study with Neal Neuenschwander (resumes, Appendix 1), completing the field survey.

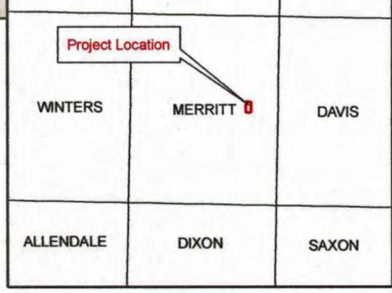
PROJECT DESCRIPTION

The project includes development of: 150 affordable, age-restricted apartments; 32 attached, age-restricted cottages; 92 attached, age-restricted units; 129 single-family detached, age-restricted units; 77 single-family detached, non-age-restricted units; an approximately three-acre continuing care retirement community, which would likely consist of 30 assisted living, age-restricted detached units; an approximately 5.3-acre mixed use area, which would likely consist of a health club, restaurant, clubhouse, and 50 attached, age-restricted units; small dog park; associated greenways, drainage, agricultural buffers; and off-site stormwater detention facilities. Upon completion of the project, the approximately 74-acre site would provide up to 560 dwelling units and 3.1 miles of off street biking and walking paths within the project area and an additional 0.25 miles of off street biking and walking paths offsite (Figure 2).

REGULATORY CONTEXT

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further cites: A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.





CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 1: USGS Topographic Map

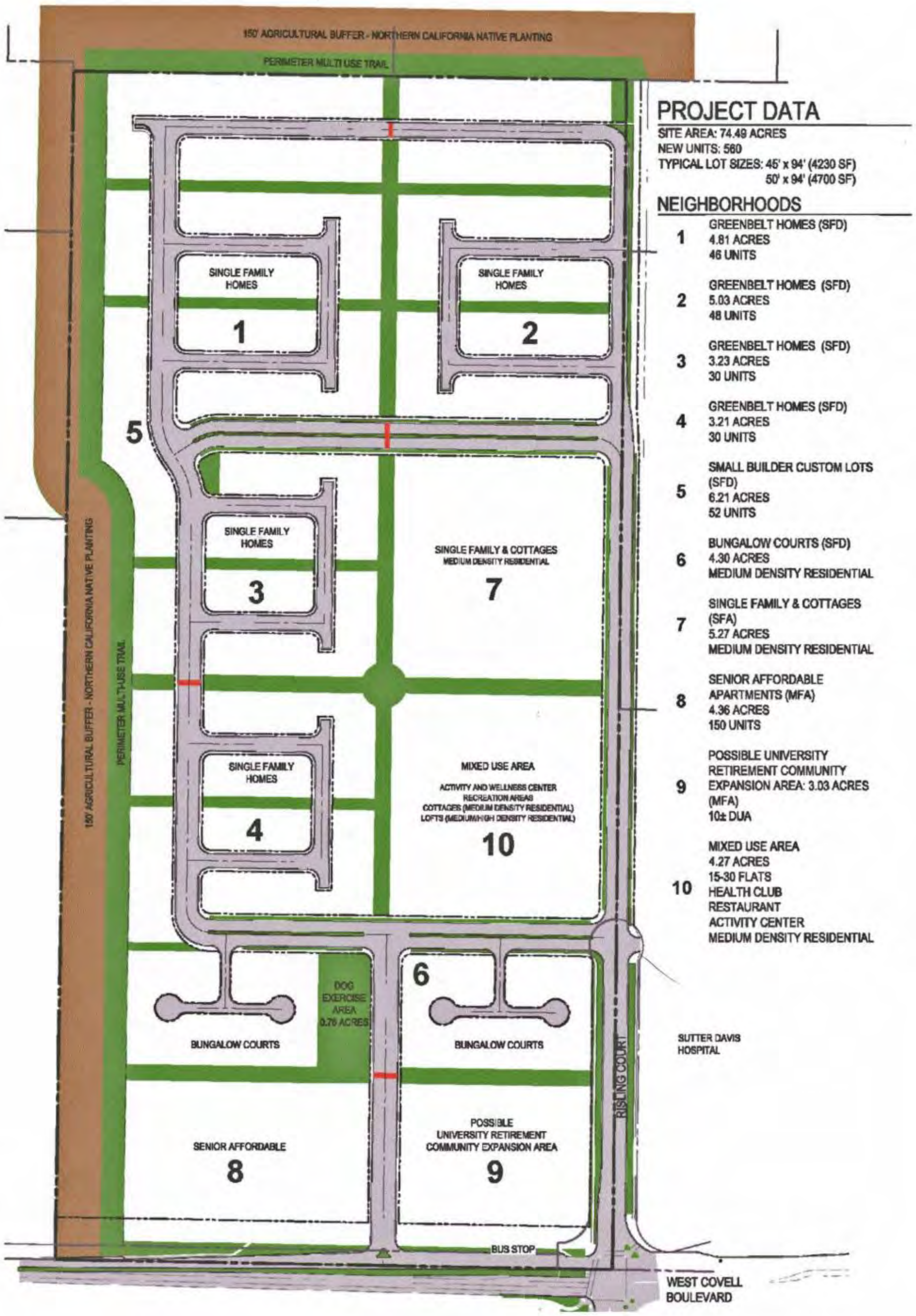
MERRITT QUADRANGLE

N

0 500 1,000
Feet
1:24,000

Data sources: Yolo County GIS; ArcGIS Online USGS Topographic Map Service. Map date: February 20, 2017.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



Legend

- Property Line
- Right of Way
- Raised Crosswalk

N

0 100 200

Feet

1:4,500

CITY OF DAVIS
WEST DAVIS ACTIVE ADULT COMMUNITY

Figure 2: Conceptual Master Plan

Source: Cunningham Engineering. Map date: May 9, 2017.

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A Land Use Planning, Design, and Environmental Firm

An “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor’s Office of Planning and Research (OPR), *CEQA and Archaeological Resources,* 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a) (3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a) (4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, And 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

Assembly Bill 52

Assembly Bill (AB) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts. AB 52 defines a "California Native American Tribe" as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource.

CULTURAL SETTING

Archeological Background

Although the project area is not technically within the Central Valley, the chronological sequence for the region is suitable for the project area.

The Central Valley region was among the first in the state to attract intensive fieldwork and research has continued to the present day. This has resulted in substantial accumulation of data. In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and exploration were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmiller site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California enabled the investigators to identify a third cultural tradition intermediate between the previously postulated early and late horizons. The three-horizon sequence was based on discrete changes in ornamental artifacts and mortuary practices as well as an observed difference in soils within sites (Lillard, Heizer and Fenenga 1939). This sequence was later refined by Beardsley (1954), with an expanded definition of artifacts diagnostic of each time period and was extended to parts of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads, a high percentage of burials with gravegoods, frequent presence of red ochre in graves, large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types Ala and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Early Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There is a lower percentage of burials with grave goods, and ochre staining is common in graves. *Olivella* beads of type C1, F and G predominate, and there is abundant use of green *Haliotis sp.* rather than red *Haliotis sp.* Other characteristic artifacts include perforated canid teeth, asymmetrical and "fishtail" charmstones, usually perforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is widespread evidence of cremation, lesser use of red ochre, heavy use of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clamshell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnetite (Moratto 1984:181-183).

Schulz (1981), in an extensive examination of the use of acorns in central California, used the terms Early, Middle and Late complexes, but the defining attributes remain generally the same. While it is not altogether clear, Schulz seemingly substituted the term “Complex” to refer to the particular archeological entities formally called “Horizons.”

More recently, Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the Horizons to reflect what is seen as cultural/temporal changes within the three horizons and compression of the temporal span.

There have been other chronologies proposed for this region. Fredrickson (1973) has correlated his research with Bennyhoff's (1977) work, and has defined, based upon the work of Bennyhoff, patterns, phases and aspects. Fredrickson also proposed periods of time associated heavily with economic modes, which provide a temporal term for comparing contemporary cultural entities.

Ethnological Background

The Patwin occupied the southern Sacramento Valley west of the Sacramento river from the town of Princeton, north to Colusa, south to San Pablo and Suisun bays. Patwin territory extended approximately 90 miles north to south and 40 miles east to west. Distinction is made between the River Patwin, who resided in large villages near the Sacramento River, especially between Colusa and Knights Landing, and the Hill Patwin, whose villages were situated in the small valleys along the lower hills of the Vaca Mountains and Coast Range, with concentrations in Long, Indian, Bear, Capay, Cortina and Napa valleys (Johnson 1978:350; Powers 1877:218). The term "Patwin" refers to the people belonging to the many small contiguous independent political entities in this area who shared linguistic and cultural similarities. Hill and River Patwin dialects are grouped into a North Patwin language, separate from South Patwin, spoken by people who live near present-day Knight's Landing and Suisun. Together, these are classified as southern Wintuan and belonging to the Penutian language family as do the languages of the Miwok and Costanoan peoples (Johnson 1978:350-359; Kroeber 1925:351-354).

Politically, the Patwin were organized in small tribes or tribelets, each consisting of a primary village with satellite villages. Tribelets were autonomous and differed from other such units in minor cultural variations. Dialects might encompass several tribelets. Territories were vaguely defined, but included fishing and gathering areas used by the group. In each village, the leader or chief administered subsistence ventures, such as hunting or gathering, and presided over ceremonies. Social and economic activities were divided among families within a village, with certain families responsible for different specialties such as trapping ducks, collecting salt, making foot drums, or performing particular dances or shamanistic rituals (Johnson 1978:354-355).

Patwin territory includes the riverine environment of tule marshes, vines and brush near the Sacramento River, the flat grasslands dotted with oak groves, and the hills and small valleys of the Coast ranges. The villages situated on low bluffs near the river were often very large; in 1848, General Bidwell estimated at least 1000 residents at *Koru*, near Colusa (Powers 1877:219). In the hills, the Patwin settled in the small valleys, particularly along Cache and Putah creeks, where large populations were reported. The plains were least hospitable; there, villages were sparse because of winter flooding and lack of reliable water sources during the dry months. As Powers described:

> *In winter, there was too much water on them, in summer none at all, and the aborigines had no means of procuring an artificial supply. Besides there was no wood on them, and the overflowed portions in early summer breed millions of accursed gnats, which render human life a burden and a weariness. Hence, they were compelled to live beside water-sources, except during certain limited periods in the winter, then they established hunting-camps out on the plains* (Powers 1877:219).

Kroeber noted that the Patwin responded to these seasonal changes by shifting their habitation sites:

> *The valley people evidently had their permanent villages on the river itself -- that is, in the marsh belt -- but appear to have left this during the dry half of the year to live on the adjacent plains, mostly by the side of tributaries. The upland people built their winter homes where the streams issue on these creeks, and in summer moved away from the main water courses into the hills or mountains* (Kroeber 1925:354).

Within a village, the Patwin constructed earth-covered semi-subterranean structures. The Hill Patwin used a circular floor plan while the River Patwin favored an elliptical shape. Four types of building occurred in a predictable pattern: the ceremonial dance house was placed a short distance to the north or south of the village, the sudatory or sweat house was positioned to the east or west of the dance house, and the menstrual hut was built on the edge of the village, farthest from the dance house. Family dwellings could be erected anywhere within the community. Family lodges were built by one's paternal relatives while the other structures were the product of a communal effort. They used readily available materials, forming a framework of saplings, and covering the walls and roof with mud and brush (Johnson 1978:357-358; Powers 1877:220-221).

Natural resources flourished in Patwin territory. They gathered seeds and plant foods and hunted game animals on the plains, shot or netted ducks and other migratory water fowl in the thick tule marshes, and netted salmon and other fish in the rivers and streams. Some of these activities were conducted by groups or families assigned to particular resource areas by a village chief. Acorns were a staple in the Patwin diet. Two types of Valley oak and rarely, live oak acorns, were gathered at communally-owned groves (Johnson 1978:355). Common practice was to store abundant quantities of acorns in tall granaries to assure against hunger in years of poor harvest. Kroeber observed a Patwin granary more than eight feet tall and three feet in diameter (Heizer and Elsasser 1980:99). Women prepared the bitter crop by pulverizing the acorns, then leaching out the bitter tannic acid before making bread or acorn soup. At privately-owned gathering tracts on the plains, families gathered seeds, including sunflower, alfilaria, clover, bunchgrass, wild oat and yellow-blossom. The Patwin also collected a variety of bulbs, nuts, roots and berries. These included buckeye, pine nuts, juniper berries, manzanita berries, blackberries, wild grapes, brodiaea bulbs, and tule roots. To obtain salt, the Patwin scraped off rocks that were found near Cortina, burned a grass that grew on the plains, or obtained it in trade from the neighboring Pomo (Johnson 1978:355).

King salmon, silver salmon and steelhead trout that run from the ocean to freshwater rivers and streams were an important diet item. Explorers observed Patwin fishing for salmon with a boom net in 1854 (Heizer and Elsasser 1980: Figure 37). The Patwin also caught smaller fish and collected mussels from the river bottom. They attracted wild ducks by setting out realistic decoys, then drove the fowl into large nets stretched above the marshes. Hunters also netted mud hens, geese and quail. The Suisun tribelet pursued waterfowl in tule rafts (Powers 1877:220). The Patwin hunted large game, such as tule elk, deer, antelope and bear, and took many varieties of small animals, reptiles, insects and birds either to eat or to use for ceremonial and practical materials (Johnson 1978:355).

The ceremonial life of the Patwin was centered on the Kuksu cult system, which features one or more secret societies, each with its own dances and rituals. The Kuksu cult occurs among several north central California tribes, but it was more elaborate among the Patwin who possessed three secret societies: the Kuksu, ghost and Hesi types, each with a slightly different purpose. The ghost society stressed initiation, the Kuksu emphasized curing and shamanistic functions, and the Hesi elaborated on ceremonial dance (Johnson 1978:353). In addition to ritual duties, shamans were called upon to heal the sick by applying native medicines or by sucking out the offending spiritual cause of the illness. The Patwin generally buried their dead, although the tribelets furthest south may have cremated the deceased. The Patwin near Colusa bent the body, wrapped it with strings of shell money, and covered it with an animal skin secured with ropes. they interred the corpse with material goods in a grave situated within a village or within 100 yards of a dwelling or dance house (Kroeber 1925:359-361).

Historical accounts of the Patwin include the early mission registers of baptisms, marriages and deaths of Indians taken to Mission Dolores and Mission San Jose as early as 1800. In 1823, Mission San Francisco Solano was established in nearby Sonoma and it continued the missions' work until about 1832-1836, when all the missions were secularized. During this time, several Mexican land grants were awarded and large ranchos were established on Putah and Cache creeks (Johnson 1978 :351).

Pre-contact population is difficult to estimate, but a survey of various sources seems to indicate that the Patwin may have numbered 4000 before their first encounter with non-Indians. The Patwin suffered from a succession of devastating impacts to their numbers: missionization, punitive military expeditions, and fatal confrontations with ranchers took their toll on the populace. John Work's party of trappers from the Hudsons Bay Company came down the Sacramento River in 1832, returning up the river in 1833. They unintentionally introduced a deadly decease to native California and, in their wake, a malaria epidemic swept through the Sacramento Valley. Just four years later, in 1837, smallpox raged through the villages and, as a result of these diseases, up to 75 percent of the Patwin died (Cook 1955). Those who survived these tragedies eventually settled on small reservations or worked as ranch laborers. Throughout the 1800s and 1900s, the population decreased; in 1972, the Bureau of Indian Affairs counted only 11 Patwin in the entire territory. Three reservations--Colusa, Cortina and Rumsey--remain active; they are occupied primarily by descendants of Wintun and other groups (Johnson 1978:352).

Historical Background

The first settler in the Davis vicinity, Jerome Davis, settled on his land in the early 1850s. By 1856, Davis had 8000 acres of land, 1000 of which were enclosed. Davis irrigated portions of his land by pumping water from Putah Creek with a steam engine. Davis raised livestock, peaches, grapes, wheat and barley. By 1864, his ranch totaled about 13,000 acres, with 8000 acres fenced.

In 1867, William Dresbach leased the Davis home, using it as a hotel, the "Yolo House." A settlement grew up in the vicinity, and Dresbach named it Davisville. This name persisted until 1907 when the University was established and the post office name was shortened to Davis.

In 1905, the State Legislature established the University Farm and the first buildings for the University were built in 1907. In 1922, the school was officially organized as a branch of the College of Agriculture of the University of California at Berkeley. More classes were added, and a College of Letters and Science organized in 1951. In 1959, Davis was authorized as a general campus of the University of California (Kyle 1990:537).

The rich agricultural lands surrounding Davis continued to be developed and the railroad siding at Chiles became a busy shipping point. The mainline in this area was first constructed by the Central Pacific Railroad just after the Civil War. It was acquired by the Southern Pacific in 1884 and was their mainline from the Bay Area until the Union Pacific acquired the Southern Pacific in 1996.

Site Specific History

The 1915 Official Map for Yolo County shows Henry C. Liggett as the owner of the property, originally 175 acres. The property changed hands several times until it was acquired by Joseph F. Silva in 1929. Silva was a Portugese immigrant. Between 1929 and 1937, Silva built the improvements on the property. One building appears to have been built on the site before 1907, but apparently removed in the 1930s by Silva. Silva owned and operated the dairy on the property until 1951. He sold the project area to Antony Machado (Supernowicz 1994).

Machado owned the property until 1958. He sold it to Ben and Victoria Williams, who retained the property until 1985 (Derr 1991). At the time Supernowicz visited the property to record and evaluate the resource in 1994, there were four buildings and two structures as well as farm machinery (Supernowicz 1994).

Environmental Setting

Present at the project area are four soil series: Pescadero silty clay; Willows clay; Marvin silty clay loam; and, Brentwood silty clay loam. Pescadero silty clay occupies the extreme northwest portion of the project area, or about two percent overall. Pescadero silty clay is an alluvial deposit of decomposed sedimentary rock. It can be as deep as 95 inches, but has poor permeability. Willows clay is located in a band across the northern portion of the project area. Willows clay is also a deep soil with poor permeability as was deposit as alluvium from mixed sources. Marvin silty clay loam is located in the center and northern third of the project area. It is a slightly better drained soil that originated from mixed clays and silts. It can be as much as five feet deep. Brentwood silty clay loam occupies the southern portion of the project area. This sediment is considered to have high permeability and is also about five feet deep (www.usgs.gov).

The project area is located in a featureless plain about two miles north of the North Fork of Putah Creek. Although the sediments have sufficient depth to possess buried deposits of prehistoric period material, the setting, roughly two miles north of the closest water source, would suggest otherwise. Prehistoric period settlement in this region was focused on areas with elevated terrain closer to permanent water sources. The likelihood of encountering buried prehistoric period deposits is therefore low.

A review of the USGS 1915 Merritt 1:31,680 topographic quadrangle, based on a 1905 survey, shows one structure present in the southeast corner and a road that would later become West Covell Boulevard. The structure shown on the 1915 USGS topographic quadrangle corresponds to the location of the later farm/dairy complex, P-57-000138 (CA-YOL-173H). Outside of the southeast corner of the project area, there is little likelihood that buried deposits of historic period remain.

RESEARCH

A record search was conducted for the project area at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on May 1, 2017 (NWIC File No. 16-1569, Appendix 2). According to NWIC files, three previous cultural resource studies have been conducted within portions of the project area. The earliest of these was in 1991 with an inspection of the southeastern portion of the project area (Derr 1991). During that study, Derr recorded a farm complex, P-57-000138 (CA-YOL-173H) within the project area and recommended further research be conducted as the proposed project at that time would have resulted in the demolition of the resource.

The evaluation of P-57-000138 (CA-YOL-173H) was conducted in 1994 for the Sutter-Davis Hospital in anticipation of the Covell Boulevard realignment and relocation of an irrigation canal by Dana Supernowicz (1994). He concluded that the site was a significant resource as a Point of Historic Interest, and thought that the Point of Historic Interest might be considered for listing in the California Register of Historical Resources.

The reviewer felt that the dairy farm complex should be preserved or restored. If that could not happen and the complex had to be demolished, the researcher recommended taking archival large format photos of the complex. The 1994 document recommended that the photographs be placed with two facilities—Yolo County Archives and University of California, Davis (UCD) Special Collections.

Peak & Associates, Inc. checked with the Yolo County Archives and UCD Special Collections; neither facility had any documentation or photographs for P-57-000138 (CA-YOL-173H). Kathleen Hess, AICP, Community Development Administrator for the City of Davis, reported that "the ADEIR for DIC describes the record and just says 'the buildings were demolished'." In addition, she concluded that apparently, Far Western found a slab on the site that was likely part of the Silva Dairy Ranch."

The Far Western report and site form for the slab were not on file with the NWIC at the time we completed the record search for the project. Yolo County did not return our calls about the demolition of the complex.

The barn was removed by 2003; the house removed between August 2005 and August 2006. We must assume that there was no mitigation work for the significant building complex, and it was demolished for a proposed undertaking on the project site.

The third survey of the project area on file with NWIC was for a small cell tower site located in the west central portion of the project area (Billet 2007). No resources were identified during the 2007 investigation.

CONSULTATION

Peak & Associates, Inc. sent a letter by email on August 8, 2017 to the Yolo County Historical Society and to the Davis Historical Society, relating the history of the cultural resource efforts regarding the significant historical site, and requesting information on any concerns their groups might have about the project site (Appendix 3). John Lofland responded by email on August 9, 2017, that the Davis Historical Society has suspended operations at this time, and suggested that Peak & Associates, Inc. contact the Davis Representative of the Yolo County Historical Society regarding this issue. No response has been received from either group.

FIELD ASSESSMENT

Neal Neuenschwander (resume, Appendix 1) conducted an intensive pedestrian field survey of the entire project area on May 12, 2017, with transect spacing of fifteen meters or less (Figure 3). The project area was planted in hay that had just been cut and swept into rows for baling. The ground visibility was therefore very good. The area had also been disturbed by burrowing animals, and the mounds of turned up earth could also be inspected. Where necessary, the surveyor dug small holes dug to clear vegetation and to examine the sediments.

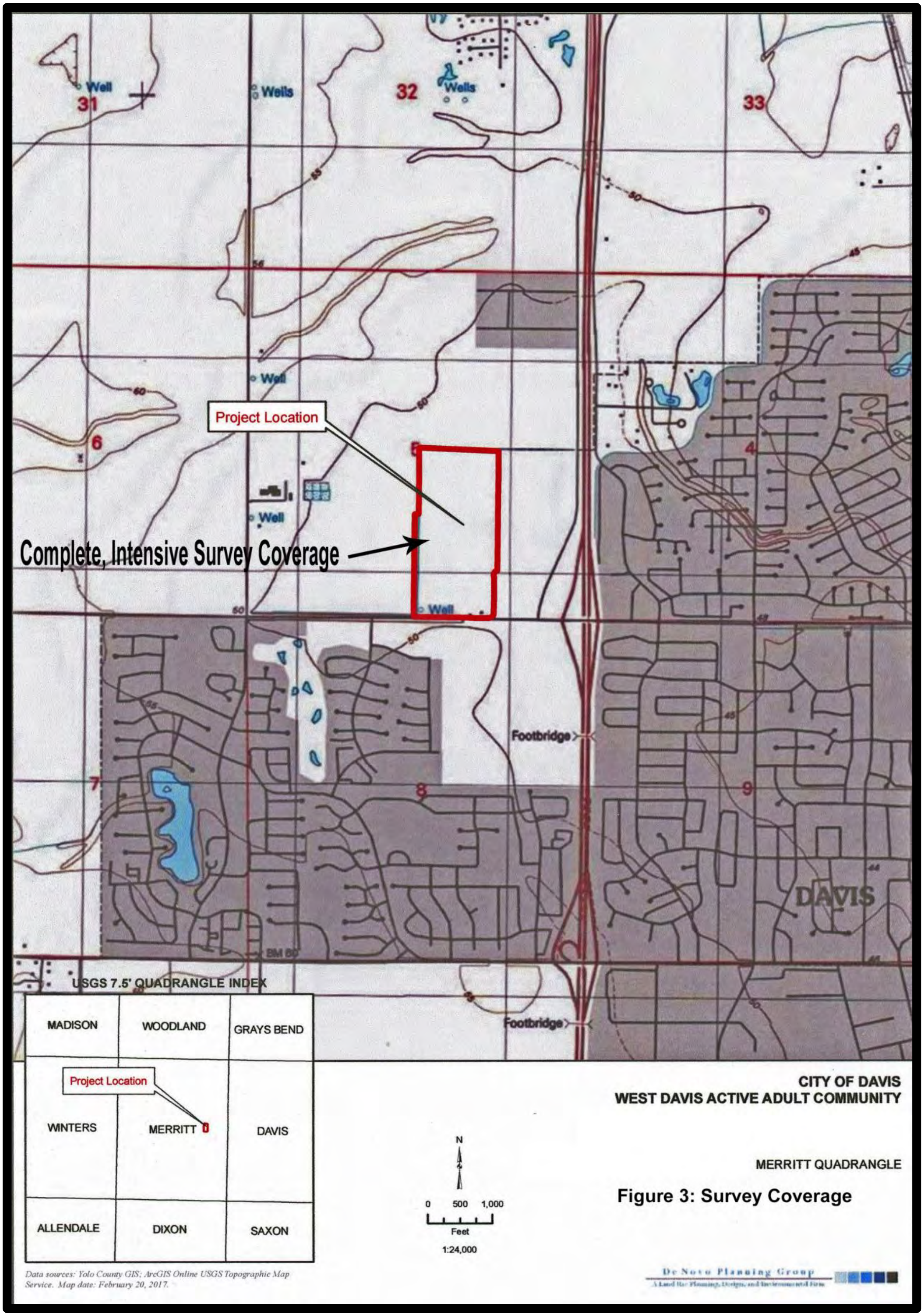

Figure 3: Survey Coverage

Two historic period cultural resources are located within the project area.

P-57-000138 (CA-YOL-173H)

The site, recorded as P-57-000138 (CA-YOL-173H), is no longer present except for two rows of introduced cypress and Italian cypress trees. The original complex had a residence, barn, and several outbuildings. The former ranch/dairy complex is now mostly covered with gravel and is in use as a parking area. A small portion has exposed sediment, but other than some very small concrete fragments, nothing else associated with the buildings remain. A supplemental Department of Parks and Recreation (DPR) 523 series form is presented in Appendix 4.

PA-17-22

This site is an above ground well pump, concrete standpipe, and scatter of sheet metal and concrete fragments located near the southwestern corner of the project area. The appearance of the pump, painted turquoise, implies an approximate date of manufacture of 1960. The pump was manufactured by U.S. Electrical Motors, Los Angeles, California. The pump rests on a base with a plate indicating that a former pump, manufactured by Bryon Jackson Pump Company, was present at one time prior to replacement. The resource was assigned a temporary field designation PA-17-22, and a DPR 523 series form for the resource is presented in Appendix 4.

RESOURCE EVALUATIONS

P-57-000138 (CA-YOL-173H)

The resource no longer retains any integrity as the buildings have been removed. The only physical remains are the introduced landscaping of cypress and Italian cypress trees that border the former complex.

PA-17-22

The current above ground irrigation pump, concrete standpipe, and scattering of sheet metal and concrete are most likely associated with the post-1958 ownership and use of the property by Ben and Victoria Williams. The couple were reported to have raised row crops in the southern portion of the project area near where the pump and standpipe are located (Derr 1991:3). The above ground pump and standpipe are not associated with important events or people, nor is it distinctive in any way. This feature is not eligible for the CRHR.

RECOMMMENDATIONS

There is always a possibility that a site may exist in the Project and be obscured by vegetation, siltation or historic activities, leaving no surface evidence. In order to assist in the recognition of cultural resources, a training session for all workers should be conducted in advance of the initiation of construction activities at the site. The training session will provide information on recognition of artifacts, human remains, and cultural deposits to help in the recognition of potential issues.

If artifacts, exotic rock, shell or bone are uncovered during the construction, work should stop in that area immediately. A qualified archeologist should be contacted to examine and evaluate the deposit.

Discovery of Human Remains

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the Yolo County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the Yolo County Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC).

After notification, the NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, that include notification of most likely descendants (MLDs), and recommendations for treatment of the remains. The MLDs will have 24 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98).

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APPENDIX 1

Resumes

PEAK & ASSOCIATES, INC.
RESUME

MELINDA A. PEAK **January 2017**
Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey, Native American consultation and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site-specific research for historic period resources. She is a registered professional historian and has completed a number of historical research projects for a wide variety of site types.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989
Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*
B.A. - Anthropology - University of California, Berkeley

PROJECTS

In recent months, Ms. Peak has completed a number of determinations of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places.

She has also completed historical research projects on a wide variety of topics for a number of projects including the development of a winery in a ranch in Folsom, commercial buildings in the City of Davis, a lumber mill in Clovis, older farmhouses dating to the 1860s, an early roadhouse, bridges, canals, a former town site, and a section of an electric railway line.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

Ms. Peak completed the cultural resource research and contributed to the text prepared for the DeSabla-Centerville PAD for the initial stage of the FERC relicensing. She also served cultural resource project manager for the FERC relicensing of the Beardsley-Donnells Project. For the South Feather Power Project and the Woodleaf-Palermo and Sly Creek Transmission Lines, her team completing the technical work for the project.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project, and served as principal investigator for a major coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and conducted emergency recovery excavations for sites found during monitoring. She has directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of a published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She served as the consultant for a children's book on California, published by Capstone Press in 2003 in the land of Liberty series.

PEAK & ASSOCIATES, INC.
RESUME

NEAL J. NEUENSCHWANDER **January 2017**
Staff Archeologist

3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95672
(916) 939-2405

3161 Godman Ave., Suite A
Chico, CA 95973
(530) 342-2800

PROFESSIONAL EXPERIENCE

Mr. Neuenschwander has compiled an excellent record of supervision of excavation and survey projects for both the public and private sectors over the past thirty-eight years. He has supervised the fieldwork of over 1,800 projects throughout California, Oregon, Nevada, and southern Idaho.

EDUCATION

M.A. candidate - Anthropology - California State University, Chico
B.A. - Anthropology - California State University, Chico (with distinction)
B.A. - Geography - California State University, Chico (with distinction)

RECENT PROJECTS

Mr. Neuenschwander manages the North Valley office of Peak & Associates, located in Chico, California.

Neuenschwander's duties at Peak & Associates have included the field direction for multiple site excavations and surveys throughout northern, central, and southern California, Nevada, Oregon and Idaho. In this capacity, he has been responsible for the planning and implementation of every aspect of the fieldwork, analysis, and report production phases. During his twenty-nine years with the company, he has developed a reputation for his ability to complete projects on-time and within budget parameters, while at the same time maximizing the recovery and analysis of data for the professional community.

Notable projects under Neuenschwander's direction include the nine-week excavation at Clarks Flat in Calaveras County, eleven weeks with a crew of over twenty technicians at the Upper Mountain locale (a remote camp, six miles from the nearest road), ten weeks of an over 9,000-acre survey at Elk Hills Naval Petroleum Reserve, and a two-phase excavation at CA-PLU-88, a site that contained radiocarbon evidence of the some of the earliest inhabitation of the Sierra Nevada Mountains.

Mr. Neuenschwander also served as the field director for multiple phases of recordation, testing and evaluation for the 172-mile-long Pacific Pipeline Project proposed for construction in Santa Barbara, Ventura, and Los Angeles counties. He also has served as field director or co-director on a number of AT&T fiber optic projects throughout California, Oregon and Idaho.

APPENDIX 2

Record Search

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

5/1/2017 NWIC File No.: 16-1569

Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue
Chico, CA 95973

Re: West Davis Active Adult Community EIR

The Northwest Information Center received your record search request for the project area referenced above, located on the Merritt USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a 500 ft. radius:

Resources within project area:	P-57-000138
Resources within 500 ft. radius:	None listed
Reports within project area:	S-13549, 16933, 33853
Reports within 500 ft. radius:	S-10092, 45573
Other Reports within records search radius:	S-595, 9795, 17835, 30204, 32596. These reports are classified as Other Reports; reports with little or no field work or missing maps. The electronic maps do not depict study areas for these reports, however a list of these reports has been provided. In addition, you have not been charged any fees associated with these studies.

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Resource Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Historic Properties Directory: ☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: ☐ enclosed ☐ not requested ☒ nothing listed

CA Inventory of Historic Resources (1976): ☒ enclosed ☐ not requested ☐ nothing listed

Caltrans Bridge Survey: ** ☐ enclosed ☒ not requested ☐ nothing listed

Ethnographic Information: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Literature: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed

Local Inventories: ☐ enclosed ☐ not requested ☒ nothing listed

GLO and/or Rancho Plat Maps: ☐ enclosed ☒ not requested ☐ nothing listed

Shipwreck Inventory: ** ☐ enclosed ☒ not requested ☐ nothing listed

*Notes:
** Current versions of these resources are available on-line:
Caltrans Bridge Survey: http://www.dot.ca.gov/hq/structur/strmaint/historic.htm
Soil Survey: http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=CA
Shipwreck Inventory: http://www.slc.ca.gov/Info/Shipwrecks.html

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

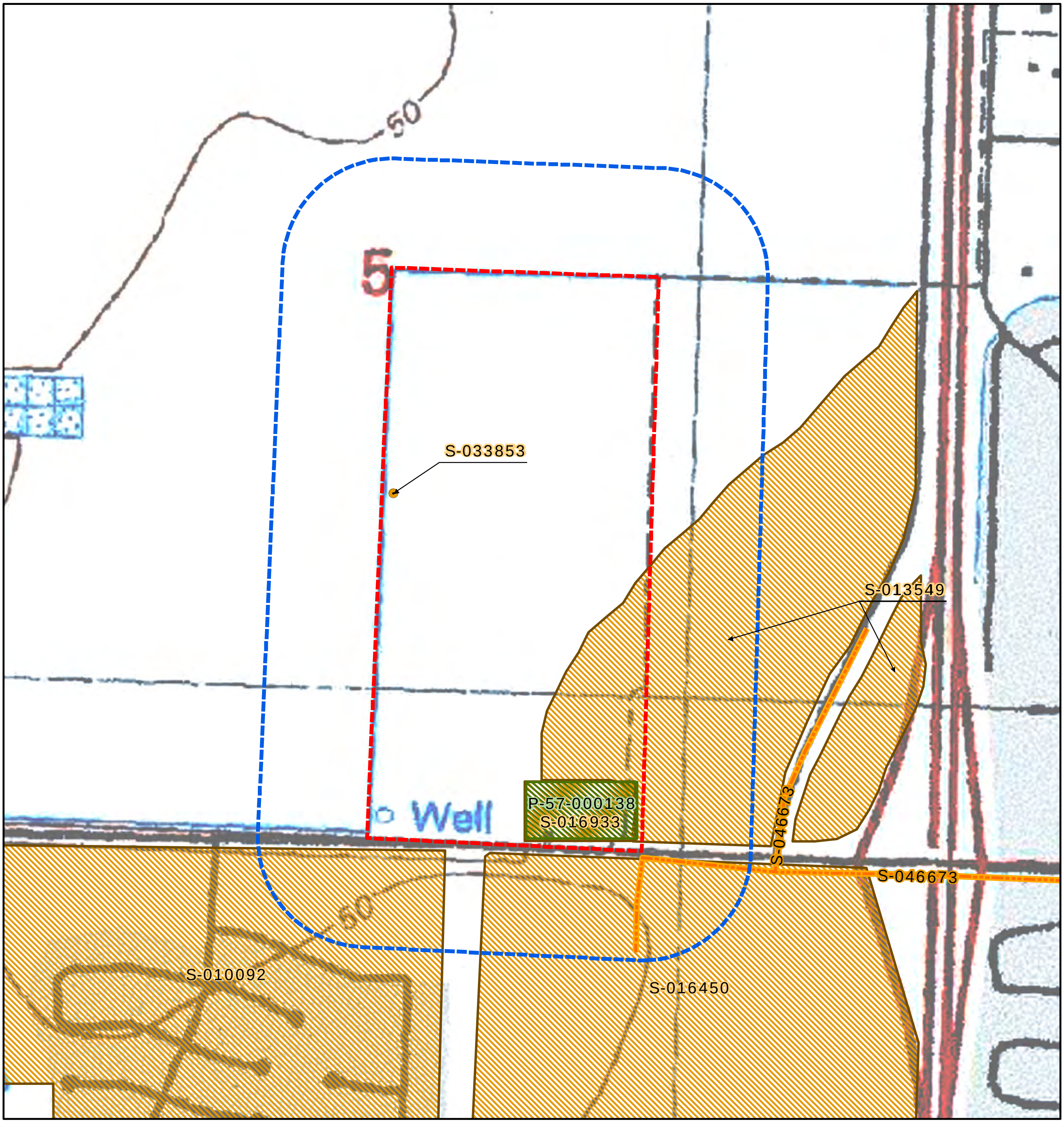
Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

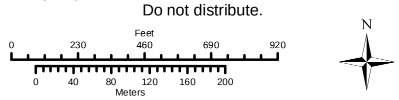
Annette Neal

Researcher

Reports & Resources Map
West Davis Active Adult Community EIR



Northwest Information Center
File #16-1569 1/May 2017 A.Neal
May depict confidential cultural resource locations.
Do not distribute.



500'_buffer
West Davis Active Adult Community EIR
Resources (polygons)
Reports (points)
Reports (lines)
Reports (polygons)

APPENDIX 3

Historical Society Consultation

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

August 8, 2017

Yolo County Historical Society
P O Box 1447
Woodland, CA 95776

Subject: West Davis Active Adult Community

YCHS members,

We are working on the cultural resource studies for an 80-acre piece of land at the corner of Covell Boulevard and Risling Court, in Yolo County adjacent to the City of Davis. A study completed by Dana Supernowicz of Historic Resource Associates in 1994 recorded the building complex in the southeastern corner of the project site (assigned primary number 57-000138).

Supernowicz determined that the Joseph F. Silva Dairy Farm was a significant resource. The reviewer felt that the dairy farm complex should be preserved or restored. If that could not happen and the complex had to be demolished, the researcher recommended taking archival large format photos of the complex. The 1994 document recommended that the photographs be placed with two facilities—Yolo County Archives and UCD Special Collections.

After discovering that the complex had been demolished, we assumed that the recordation must have been conducted. We checked with the Yolo County Archives and UCD Special Collections; neither facility had any documentation or photographs for the Dairy Farm. Kathleen Hess, AICP, Community Development Administrator for the City of Davis reported that "the ADEIR for DIC describes the record and just says 'the buildings were demolished'." In addition, she concluded that apparently, Far Western found a slab on the site that was likely part of the Silva Dairy Ranch.

The Far Western report and site form for the slab were not on file with the NWIC at the time we completed the record search for the project. Yolo County offices did not return our calls about the demolition permit for the complex.

The barn was removed by 2003; the house removed between August 2005 and August 2006. We must assume that there was no mitigation work for the significant building complex, and it was demolished for a proposed undertaking on the project site.
All that remains of the dairy complex is a row of Italian cypress and a ca. 1960 irrigation pump.

- 3941 Park Drive, Suite 20#329, El Dorado Hills, CA 95762/Phone: (916)939-2405/peakinc@sbcglobal.net
- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/peakinc@yahoo.com

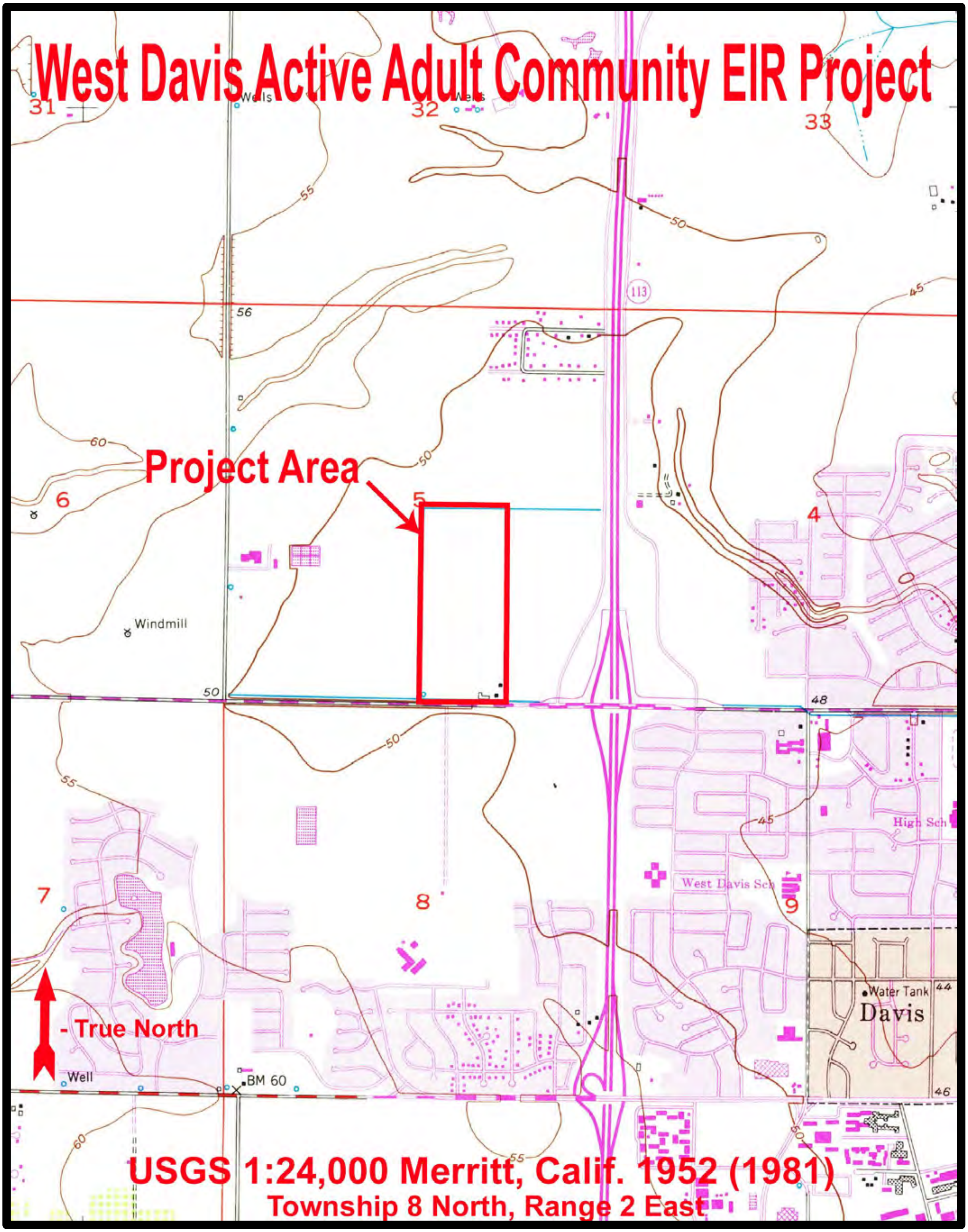
Does your group have concerns about the property? A map is attached for your review.

Sincerely,

Melinda A. Peak

Melinda A. Peak
Principal

- 3941 Park Drive, Suite 20#329, El Dorado Hills, CA 95762/Phone: (916)939-2405/peakinc@sbcglobal.net
- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/peakinc@yahoo.com


West Davis Active Adult Community EIR Project
Project Area
- True North
USGS 1:24,000 Merritt, Calif. 1952 (1981)
Township 8 North, Range 2 East
Wells
Windmill
Well
BM 60
West Davis Sch
High Sch
Water Tank
Davis
31
32
33
6
5
4
7
8
9
113
55
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44
46

APPENDIX 4

DPR Forms: P-57-000138 (CA-YOL-173H) and PA-17-22

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD
Supplement

Primary # 57-000138
HRI #
Trinomial CA-YOL-173H
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

    *Resource Name or #:

P1. Other Identifier:
***P2. Location:** ☐ Not for Publication X **Unrestricted** ***a. County:** Yolo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Merritt, Calif. **Date:** 1952/1981 **T** 8N; **R** 2E; SW **¼ of** SE¼ **of Sec** 5 **;** M.D. B.M.
c. Address: City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 51 feet. The remaining rows of introduced cypress and Italian Cypress trees are located to the northwest of the intersection of Risling Place and West Covell Boulevard.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This is a supplemental record to the 1991 recordation by Eleanor Derr and the 1994 supplement prepared by Dana Supernowicz. All that currently remains of the former building complex are two rows of introduced cypress and Italian Cypress trees that bordered the complex to the north and west. Based on aerial photographs, the barn was removed by 2003 and the residence and associated outbuildings demolished between August 2005 and August 2006.

***P3b. Resource Attributes:** (List attributes and codes) HP 30 - Trees
***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) View looking southeast of the two rows of trees. East-west row to left, north-south row in center of photo. 6-12-17. Acc. # 2019615fr51

***P6. Date Constructed/Age and Sources:** X Historic ☐Prehistoric ☐Both
The exact age of the cypress trees is not known, but a residence was shown at this location on the 1915 USGS quadrangle (based on a 1905 survey).

***P7. Owner and Address:**
Unknown

***P8. Recorded by:** (Name, affiliation, and address) Neal Neuenschwander Peak & Associates, Inc. 3161 Godman Avenue, Chico, CA 95973

***P9. Date Recorded:** 8-12-17

***P10. Survey Type:** (Describe) Complete, intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *Cultural Resource Assessment for the West Davis Active Adult Community EIR Project, City of Davis and Yolo County, California.* Peak & Associates, Inc. 2017

***Attachments:** ☐NONE X Location Map X Sketch Map X Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Resource Name or #** (Assigned by recorder)

***Recorded by:** Neal Neuenschwander ***Date:** May 12, 2017 Continuation **X** Update

A) View of the north-south row of introduced cypress and Italian Cypress looking southwest. 6-12-17. Acc.20170615fr118

B) View of the north-south row of introduced cypress and Italian Cypress looking east. 6-12-17. Acc. #20170615fr121

C View of the east-west row of introduced cypress and Italian Cypress looking northeast. 6-12-17. Acc.20170615fr97

D) View of the western portion of the east-west row of introduced cypress and Italian Cypress looking southwest. 6-12-17. Acc. #20170615fr50

*Recorded by: Neal Neuenschwander *Date: May 12, 2017 Continuation X Update

E) View of the north-south row of introduced cypress and Italian Cypress, former barn site, looking northeast. 6-12-17. Acc.20170615fr133

F) View of the former farm/dairy complex, introduced trees, looking west. 6-12-17. Acc. #20170615fr107

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # 57-000138
HRI#
Trinomial CA-YOL-173H

Page 5 of 6 | *Resource Name or # (Assigned by recorder)

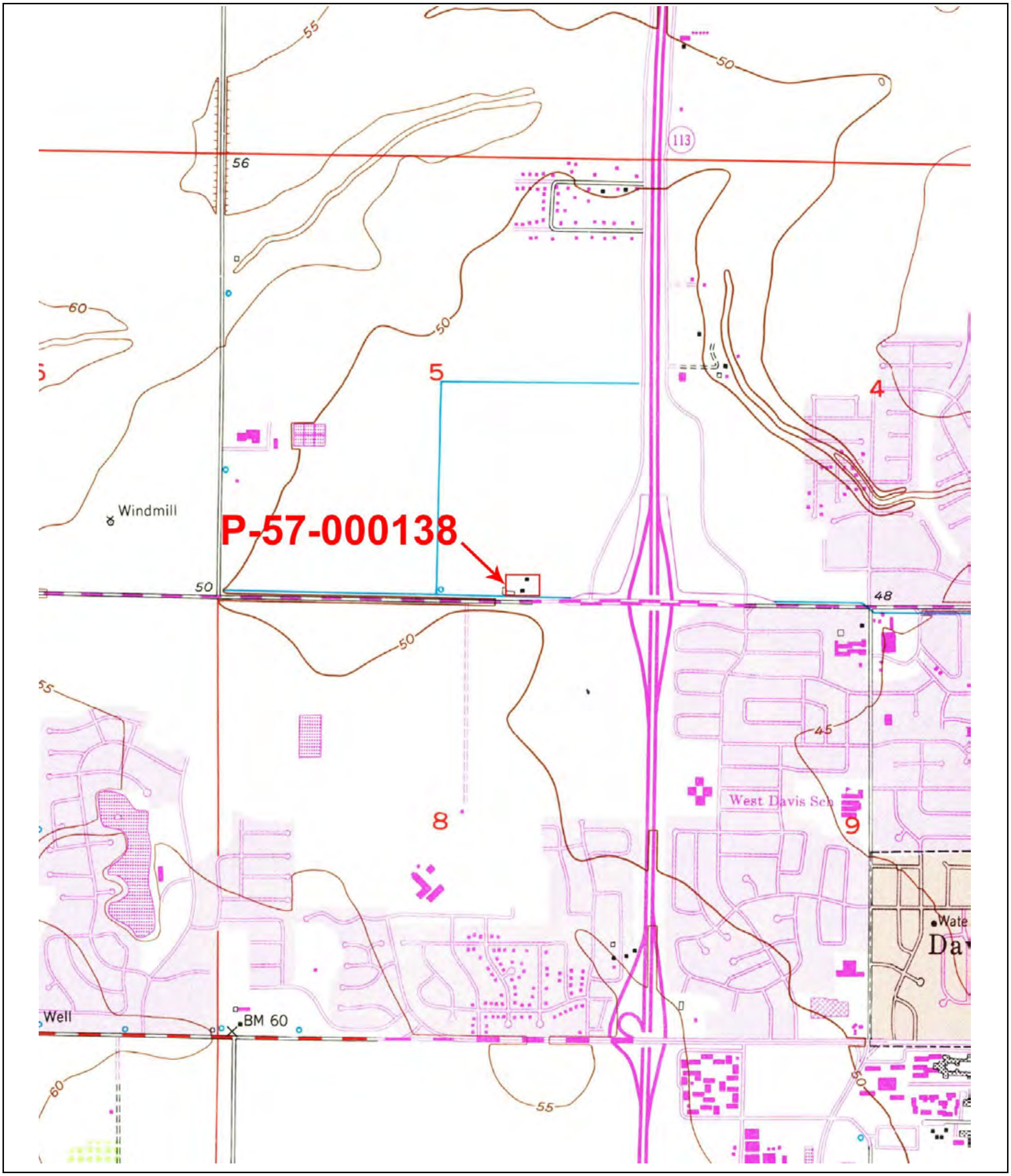
*Drawn By: Aerial base provided by De Novo Planning Group | *Date

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # 57-000138
HRI#
Trinomial CA-YOL-174H

 *Resource Name or #:

*Map Name: Merritt, Calif. *Scale: 1:24,000 *Date of Map: 1952 (1981)



 *Required information

PRIMARY RECORD
CALIFORNIA Department of Parks and Recreation
Office of Historic Preservation

Primary # P-57-000138
HRI #
Trinomial CA-YOL-173H
NRHP Status Code

Other Listings: Silva Dairy Ranch
Review Code ______ Reviewer ______ Date ______

P1. Property Name/Temporary No.: Silva Dairy Ranch

P2. Location: County - Yolo
a. Address: Route 1, Box 1943
City: Davis, CA **Zip:** 95616 (T8S;R2E;SW¼;SE¼;Sec.5; MDBM)
b. UTM: USGS Quad: Merritt (7.5') **Date:** 1975 (#5144)
Zone (10 , 606940 mE/ 4268640) mN
c. Other Locational Data: (Enter parcel #, legal description, directions to resource, and/or other locational data if appropriate)

The property lies between County Road 99, State Highway 113, and Covell Boulevard on the south.

P3. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The property consists of four buildings, two structures, and numerous objects. The Joseph F. Silva dairy was constructed between 1929 and 1937 on the northwest edge of the community of Davis. The property lies west of County Road 99 and east of County Road 98, and north of Covell Boulevard. The property lies within an 80 acre parcel, although the improvements evaluated in this report lie within only 5 acres of the total parcel area. There is no known improvements within the subject 80 acre property believed to be outside the scope of this study.

The Joseph F. Silva Ranch once contained 175 acres, having been created from two side-by-side parcels during the first decade of the twentieth century. Although the exact date is uncertain, by the early 1900s a small building had been constructed on the subject property (refer to Attached USGS Map, 1907). The disposition of this early building is also uncertain, but is clear that by the 1930s it had been removed to make room for the construction of a more modern house and dairy barn. Like other farmsteads in the Sacramento Valley, the Silva Dairy Farm is organized in a clustered pattern, allowing maximum use of the remaining land for cultivation of feed grains such as barley. The house and improvements were easily accessible from the major automobile road between Davis and Winters, today's Covell Boulevard. Covell Boulevard provided easy access for materials, feed, and dairy products being transported to nearby markets.

Today, the Silva Dairy Farm consists of four buildings, two structures, and a variety of objects most of which include farm machinery or tools commonly found on farms or ranches of the twentieth century. The following are detailed descriptions of each building, structure and object found within the property:

Main House or Residence: Believed to have been built between 1930 and 1935, the main residence is a single-story, hipped roof dwelling with an attached two-car garage, believed to have been built in the 1960s by the Machado family when they occupied the property. The structural characteristics of the house include a low concrete perimeter

S-16933

6

foundation, walls built of hollow concrete block and finished with stucco on the exterior and plaster on the interior, an asphalt shingle roof atop a wood shingle roof, and a three-quarter, wrap-around shed style veranda supported by wrought-iron columns and divided screened muntins in the style of post 1960s Mexican Revival style designs. The veranda rests on a poured concrete slab inlaid with flagstone (refer to Photographs #8-9).

The front entry of the residence faces south to Covell Boulevard. The original front doorway has been removed and a new divided light, wood doorway has been added in recent years. The windows along the west and south elevation of the house are industrial metal sash divided light with casements. Most of the original windows on the east side of the house have been upgraded to aluminum windows. Atop the roof is a brick chimney and a modern swamp-cooler. The base color of the house is a pinkish-tan and has been sprayed or blown-on in recent years.

The interior of the house is composed of 3 bedrooms and 1 1/2 bathrooms, characterized by tongue and groove 4" random wood floors and plastered walls. Many of the fixtures in the bathrooms date to the 1930s, including the original claw foot bathtubs. The doors in the house are solid wood with their original hardware, including glass door-knobs. The kitchen includes period (1930s-40s) wood cabinetry and a large pantry. The first bedroom located in the southeast corner of the house includes a built-in, knotty-pine paneled wet bar believed to be contemporaneous with J.F. Silva.

Dairy Barn: Built between 1930 and 1935 the 1 and 1 1/2 story dairy barn is characterized by a cross-gable design, one bank or gable designed for milking and tending the dairy cattle, and the other module or wing being used for storage of feed, grains, and calving (refer to Photograph #1-2).

The easternmost gable runs parallel with Covell Boulevard in an east-west direction, while the second gable runs in a north-south direction perpendicular to Covell Boulevard. The easternmost gable measures 100′ x 65′, while the westernmost gable measures 20′ x 60′ (refer to Photographs #1-2, 12, 13, and 15).

The easternmost gable is built on a mud-sill and partial concrete foundation. The barn is built of milled lumber, round nails with multiple vertical columns, horizontal beams, and knee-braces for shearwall strength. The strucural members of the barn are nailed together with wire nails and simple joints were used to tie the bracing and cross-members to one another. The exterior of the barn is finished with stucco similar to the main residence. The roof is built of purloins and rafters which are held together by single layers of corrugated metal roof sheets. The floor is concrete with double troughs created in the original pour to afford property drainage and sanitary removal of waste and debris. The principal source of air and light in the eastermost gable is afforded by a series of open-air windows on the building′s northernmost side-wall. The northermost sidewall embraces a concrete courtyard with a full-length pergola that abuts the a corral where horses are kept (refer to Photographs #11, 13, 14, 15, 18, 19, and 22).

The westernmost gable is slightly higher than the easternment, permitting a second-story loft where hay and feed can be stored. This attached gable is also constructed of milled lumber with a similar multiple column and beam structural system, further supported by knee-braces, square bracing on the gable-ends, and a roof structure of purloins and rafters held together by corrugated metal roof sheets. The exterior walls of the gable are clad with vertical 1" x 12" boards, many of which have either been badly damaged or entirely removed. The floor of the barn is dirt.

Easternmost Laborer's Cottage #1: North of the main residence are two worker's or laborer's cottages both aligned with one another from east to west. These two buildings do not appear on the 1937 aerial photograph and are believed to have been built in the 1940s. The easternmost cottage measures 12' x 35', rests on a mud-sill foundation, and unlike the main residence is believed to be a standard stick-frame structure, and is dressed on the exterior with stucco. The building has double-hung wood-sash windows and a relatively new shed roof porch with wood columns providing shelter over a low stoop and front door entrance. The roof is clad with rolled composition roofing (refer to Photographs #4-5).

Westernmost Laborer's Cottage #2: The westernmost laborer's cottage echoes the architectural elements of cottage number #1, although it is 5' shorter on its main axis. The cottage rests on a mud-sill foundation, is believed to be of standard stick-frame construction, and is dressed on the exterior with stucco. The building has double hung, wood-sash windows and a short shed-portico style veranda above the main-entrance door, with decorative Mexican iron railing (refer to Photographs #6-7).

Outhouse: In the rear or north side of the property is a wood-frame single-hole outhouse, which has been moved from its original location near the main residence.

Shed: A rectangular shed lies directly north of the far eastern laborer's cottage. The wooden shed is of board construction and has a simple shed roof.

Landscape: The property retains a designed landscape that exhibits ethnic affiliation with Portuguese immigrants. Of importance is a row of quinces, locust trees, and other shrubs running east-west along Covell Boulevard. The original access road, now blocked by the drainage ditch, is aligned with a row of mature olive trees running north-south. Along the west and north perimeters of the property are a row of mature juniper and cypress trees (refer to Photographs #1-2, 15). Surrounding the main residence are locust trees, rose bushes, Vinca major, and grapes.

Objects: Along the west side of the old access road between the house and the barn is a concrete incinerator which reads "PACIFIC COAST INCINERATORS BERKELEY SACRAMENTO" (refer to Photographs #26-27). The concrete incinerator is shaped like an oblisk and probabaly dates to the 1930s. To the south of the incinerator is an old cast-iron school bell, patented in the 1880s (refer to Photographs #24-25). It has been re-hung and its original provenace is unknown. Behind the school bell is an old metal and wood horse drawn hay rake from the early 1900s (refer to Photograph #20). An old tractor from the 1940s rests next to the dairy barn (refer to Photograph #22). A green-painted gas pump from the 1940s sits in front of the main residence (refer to Photograph #23). Its provenance is uncertain, since the pump has been moved. Near the pump is a grinding wheel apparatus from the early 1900s (refer to Photograph #21).

P4. Resources Present: [x] Building [x] Structure [x] Object [ ] Site [ ] Element of District

P5. Resource Attributes: (List relevant attributes and codes) ____________

P6. Photograph or Drawing (Photograph required for buildings, structures, and objects)

See attached photographs.

P7. Date Constructed/Age: [ ] Prehistoric [x] Historic [ ] Both
1929-1960 (Approximate dates of construction)

P8. Owner and Address: Northwest Partners, Davis, CA

P9. Recorded by: Dana E. Supernowicz, Historic Resource Associates, 5441 Rolling Rock Road, Placerville, CA 95667

P10. Date Recorded: December 17, 1993 and January 7, 1994

P11. Type of Survey: [ ] Intensive [ ] Reconnaissance [ ] Other
Describe: Architectural

P12. Report Citation: An Architectural Analysis and Evaluation of Significance for the Silva Dairy Farm, Davis, California. January 1994.

Attachments: [ ] NONE [x] Location Map [ ] Continuation Sheet [x] Building, Structure, and Object Record [ ] Linear Resource Record [ ] Archaeological Record [ ] District Record [ ] Milling Station Record [ ] Rock Art Record [ ] Artifact Record [ ] Photograph Record [ ] Other:

BUILDING, STRUCTURE, AND OBJECT RECORD
CALIFORNIA Department of Parks and Recreation
Office of Historic Preservation

Primary #
HRI #

B1. Property Name: Silva Dairy Farm

B2. Address: Route 1, Box 1943
City: Davis **County:** Yolo **Zip:** 95616

B3. Original Use: Dairy Farm

B4. Present Use: Residential rental

B5. Zoning: Unknown **B6. Threats:** Demolition of barn projected for the spring of 1994.

B7. Architectural Style: Vernacular - California ranch bungalow/cross-gable wood-frame and stucco barn.

B8. Alterations and Date(s): Two-car concrete block garage added in the 1960s to the main residence; wrought-iron porch columns and railing added in the 1960s; Flagstone and concrete deck or patio surrounding the main residence added in the 1960s; sprayed stucco paint added in the 1980s; Water tower and possible grain silo removed in the 1960s; Interior of the barn stanchions or stalls removed in the 1980s.

B9. Moved? [x] No [ ] Yes [ ] Unknown
Date: N/A Original Location:

B10. Related Features: Refer to Primary Site Record P3, Description.

B11. Architect: Unknown **Builder:** Unknown, possibly Joseph Silva.

B12. Significance: Period of Significance 1929-1944
Property Types: Ranch/Diary Farm. The subject property has been determined to be a good candidate for listing as a California Point of Historical Interest. It is believed that the improvements on the property, including the historic landscape, have local importance in providing information on the development of "sanitary" dairy barn construction during the twentieth century and immigrant Portuguese farmers in Yolo County. The ethnic affiliation of the property is centered on the exotic species indiginous to Portugal throughout the site, including olive trees, cypress, and juniper trees.

B13. Evaluator: Dana E. Supernowicz, Historic Resource Associates, Placerville, CA 95667.

B14. Date of Evaluation: January 1994

B15. Sources:

Secondary Sources

Bailey, L.H. 1917 — Cyclopedia of American Agriculture. Volume 1: Farms. New York: MacMillan Company.

Cronise, Titus F. 1868 — The Natural Wealth of California . . . San Francisco: H.H. Bancroft and Company.

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Gottfried, Herbert and Jan Jennings 1988 — American Vernacular Design 1870-1940. Iowa State University Press.

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Noble, Allen G. 1984 — Wood, Brick, and Stone: The North American Settlement Landscape. Vol. 1 Amherst: University of Massachusetts Press.

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Sears Roebuck and Co. 1979 — Consumers Guide Fall 1909 Catalog. New York: Ventura Books, Inc.

State of California 1979 — California Historical Landmarks. Dept. of Parks and Recreation. Sacramento, CA.

State of California 1976 — California Inventory of Historic Resources. Dept. of Parks and Recreation. Sacramento, CA.

Upton, Dell and Vlach, Michael 1986 — Common Places: Readings in American Vernacular Architecture. Athens: University of Georgia Press.

Woodbridge, Sally B. 1988 — California Architecture: Historic American Buildings Survey. San Francisco, Chronicle Books.

Primary Sources

Yolo County Archives, 226 Buckeye Street, Woodland, CA

Yolo County Recorder's Office, Woodland, CA

Yolo County Historical Museum, Woodland, CA

U.C. Davis Special Collections, Davis, CA

U.C. Davis Main Library, Maps and Documents, Davis, CA

California State Library, Sacramento, CA

Maps

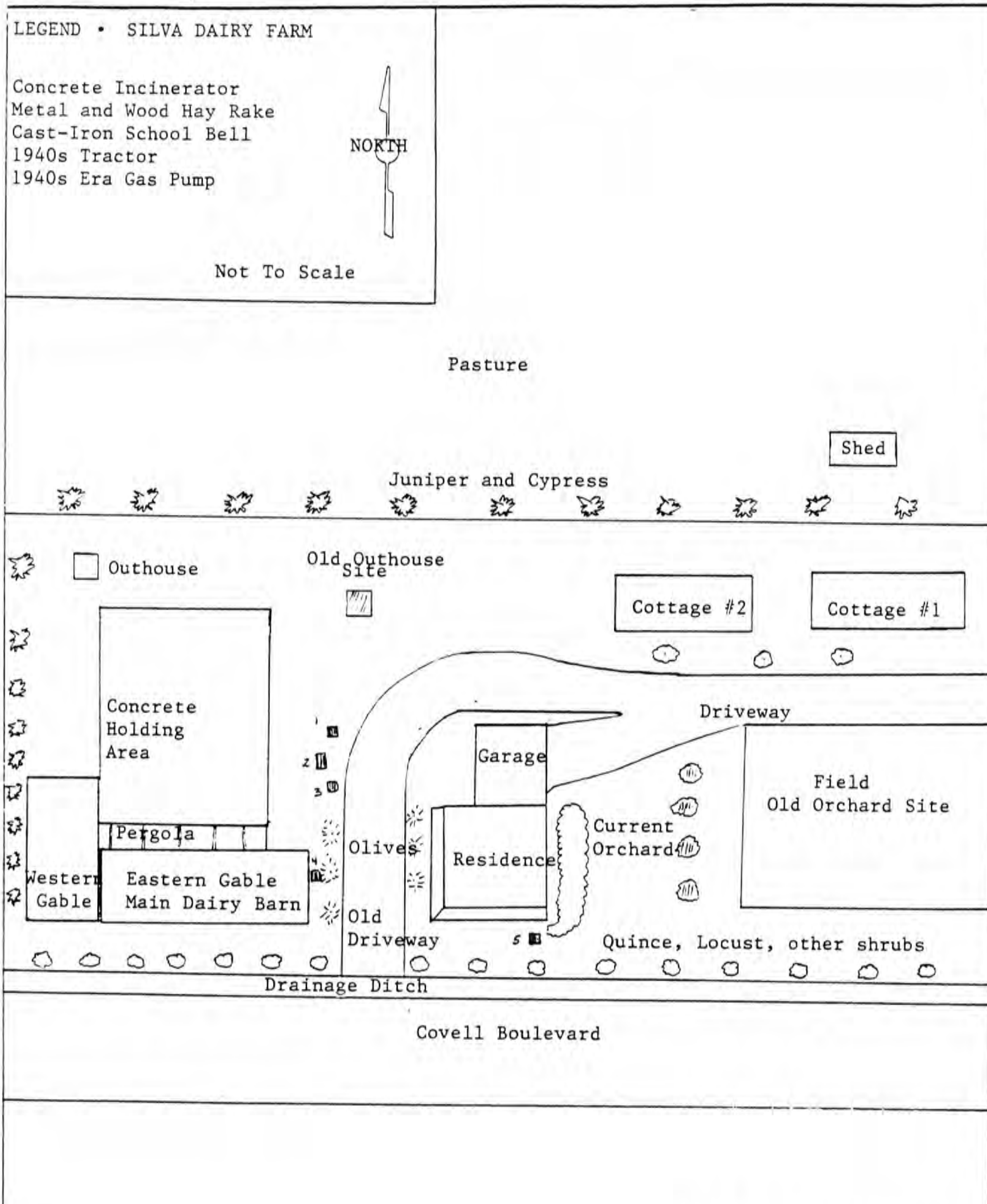
USGS 7.5 Davis, CA 1952, photorevised 1968 and 1975
USGS 7.5 Merritt, CA 1952, photorevised 1975
USGS 1/125,000 Davisville, 1905
USGS 1/125,000 Woodland, 1907
Official Map of Yolo County 1900
Official Map of Yolo County 1915
Official Map of Yolo County 1926
Official Map of Yolo County 1939
Map of Yolo County 1940
Davis, Dixon and Vicinity 1979

Oral Interviews

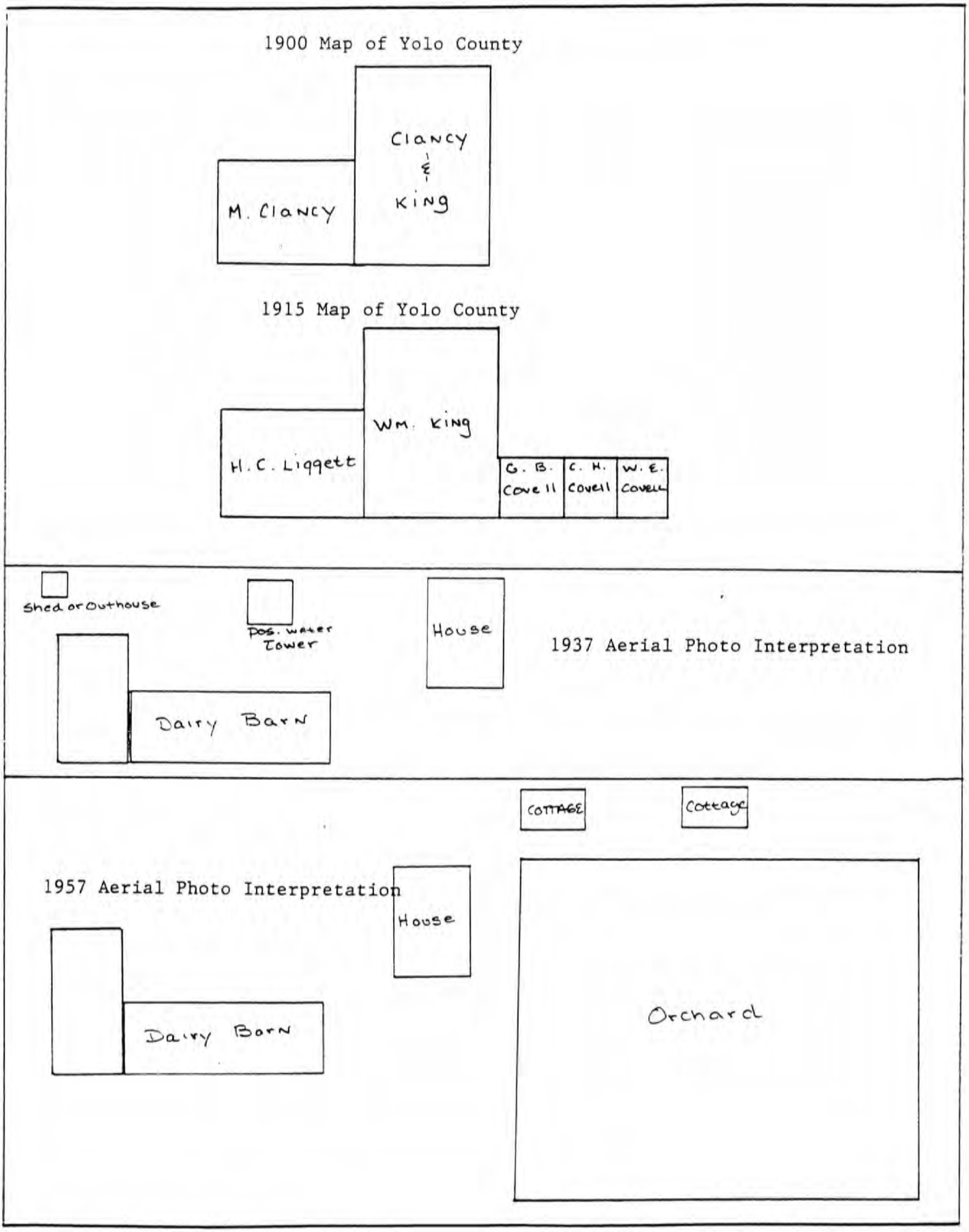
Richard "Dick" Ricci
3731 El Segundo Ave.
Davis, CA 95616

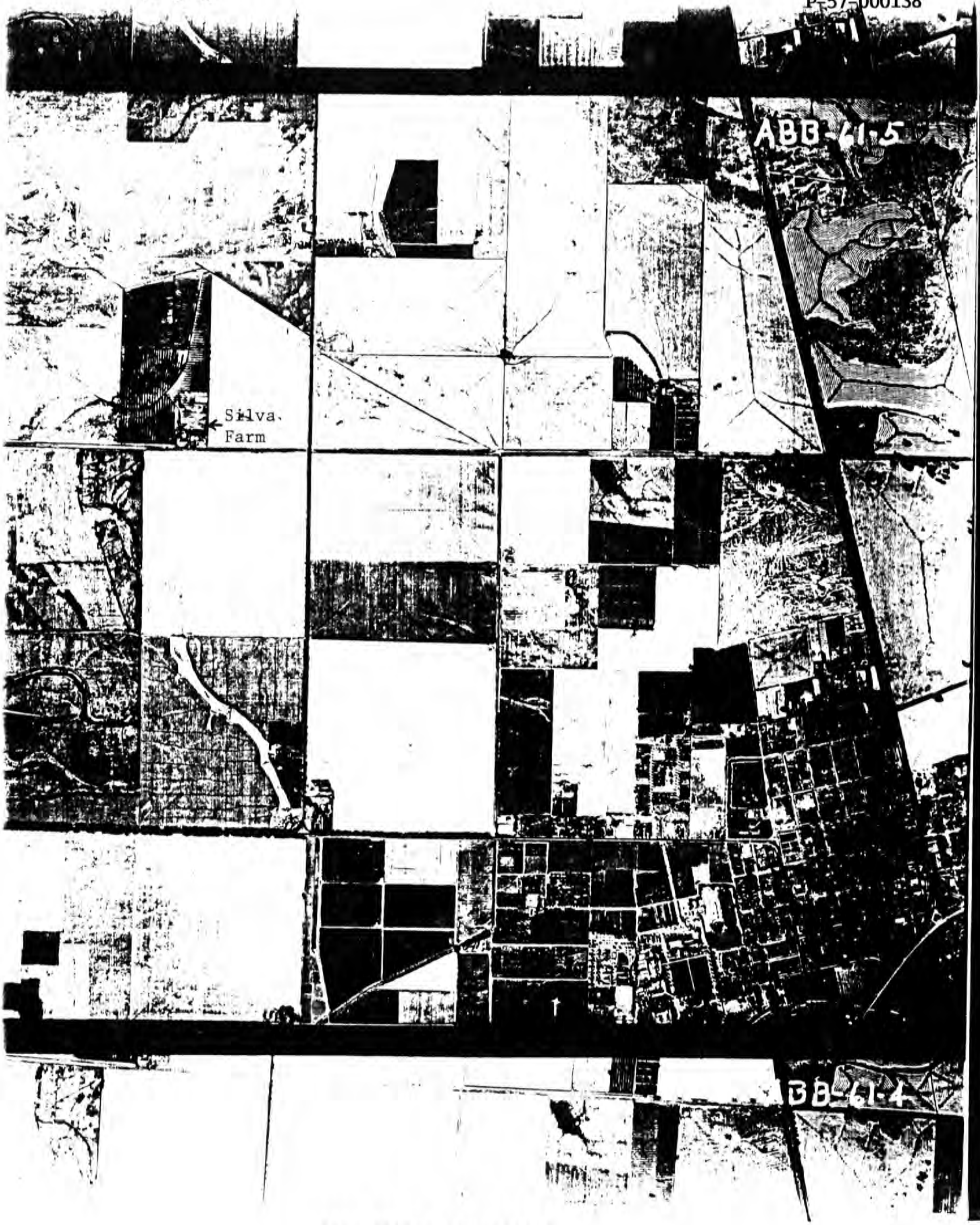
Chuck York
Route 1, Box 1943
Davis, CA 95616

P-57-000138
CA-YOL-173H



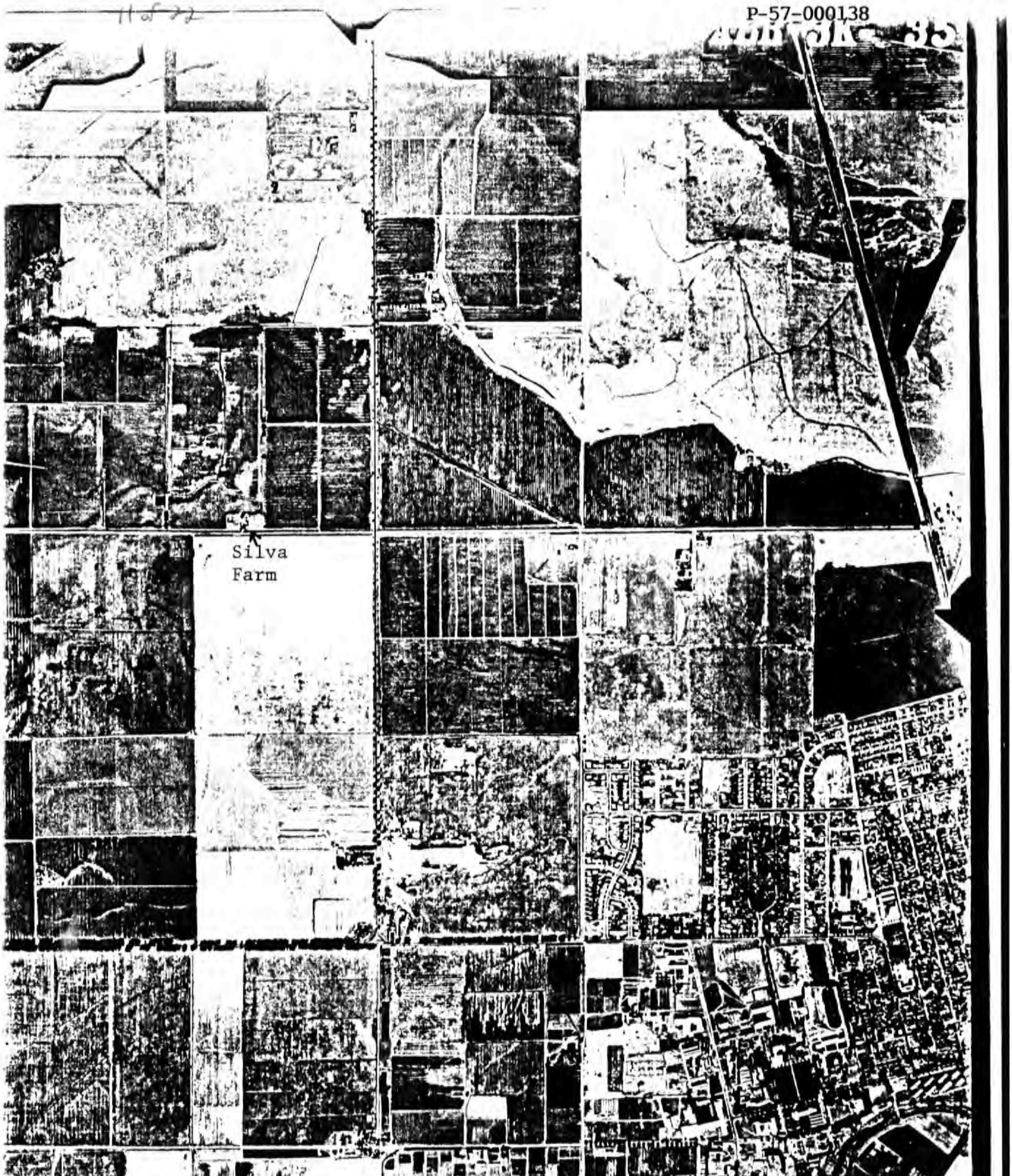
Dana E. Supernowicz 1994


1900 Map of Yolo County
M. Clancy
Clancy & King
1915 Map of Yolo County
H. C. Liggett
Wm. King
G. B. Covell
C. H. Covell
W. E. Covell
Shed or Outhouse
Pos. water Tower
House
1937 Aerial Photo Interpretation
Dairy Barn
COTTAGE
Cottage
1957 Aerial Photo Interpretation
House
Dairy Barn
Orchard



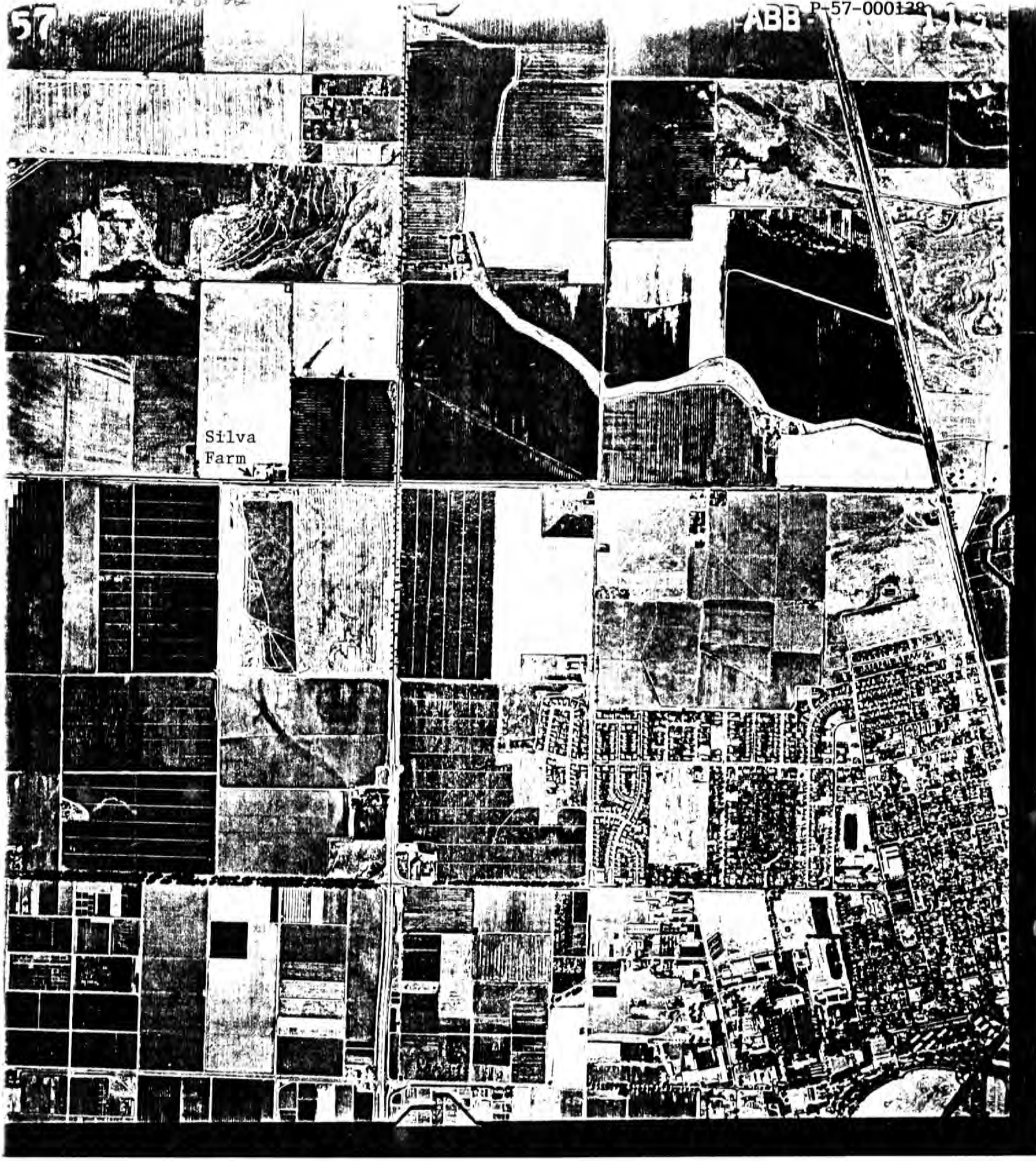
1937 Aerial Photograph

P-57-000138

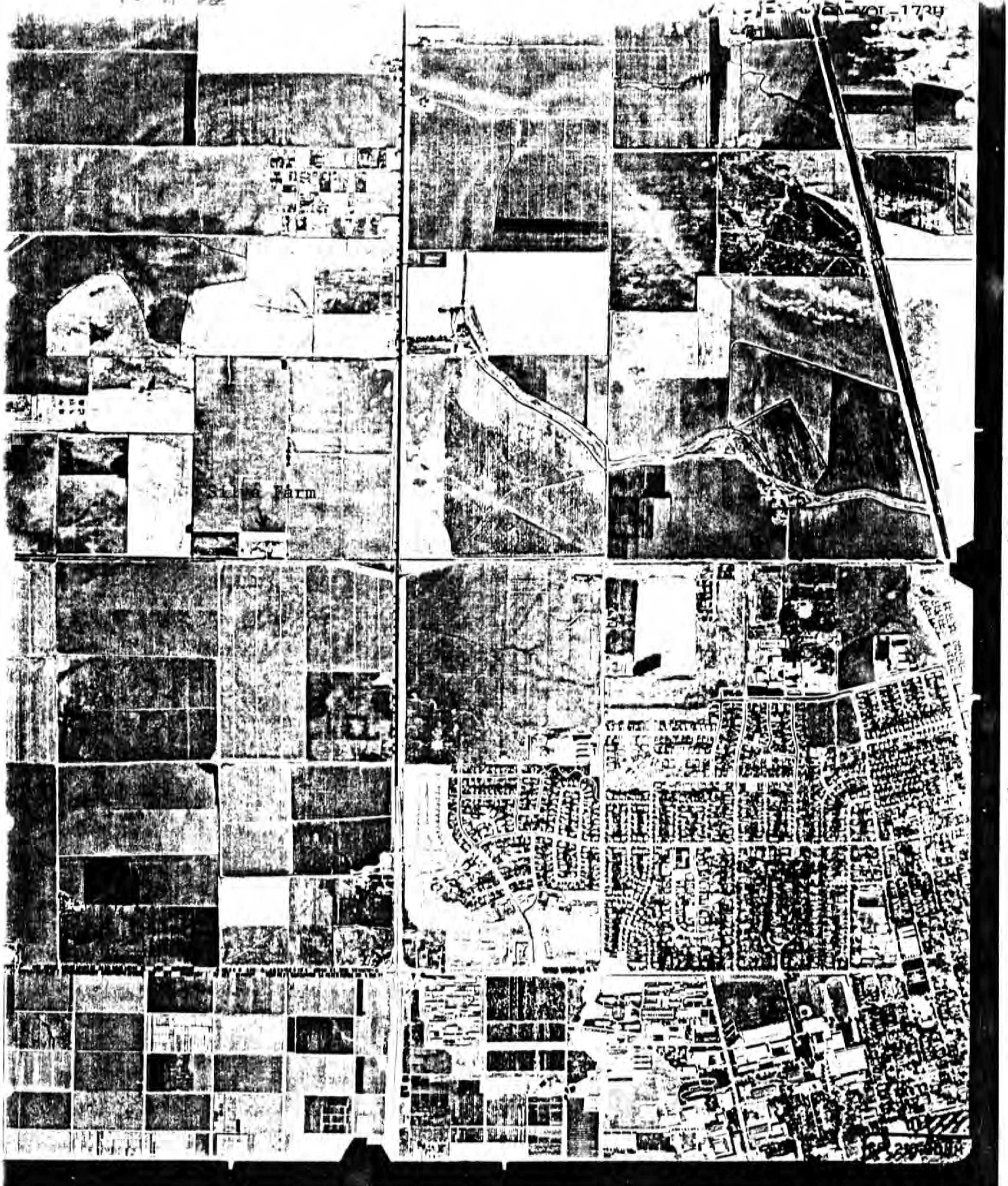


1952 Aerial Photograph

P-57-000128



1957 Aerial Photograph



1964 Aerial Photograph

PHOTOGRAPHIC INVENTORY/Joseph F. Silva Dairy Farm
ASA 200 Color Prints 35 mm
Photographer: Dana E. Supernowicz
December 1994

Page 1 of 2

1. Overview of the property looking eastward at the dairy barn from Covell Boulevard.

2. Overview of the property looking eastward at the dairy barn from Covell Boulevard, with a closer view of the west gable of the dairy barn. Note loss of historic fabric.

3. Overview of landscaping between the main residence and dairy barn, looking southwest with locust trees in foreground.

4. Easternmost #1 laborers cottage looking north.

5. Easternmost #1 laborers cottage looking west.

6. Westernmost #2 laborers cottage looking northwest.

7. Westernmost #2 laborers cottage looking east.

8. Overview of front elevation of main residence looking north. Note modern screen porch and new front door.

9. Overview of west side elevation of main residence looking southeast. Note two-car garage addition in rear.

10. Overview of east wing of stucco dairy barn looking northwest.

11. Looking west through wooden pergola alongside north elevation of stucco dairy barn.

12. Overview of north elevation of easternmost gable, dairy barn looking south.

13. Overview of dairy barn looking southeast.

14. Overview of dairy barn looking southwest.

15. Overview of dairy barn and corral looking southwest.

16. Overview of interior of easternmost wood, stick frame barn looking south.

17. Overview of interior truss and roof structure of easternmost wood, stick-frame barn looking south.

18. Overview of interior truss of stucco westernmost dairy barn gable.

19. Overview of interior truss of stucco westernmost dairy barn gable.

20. Close-up of metal and wood early 1900s horse drawn hay rake.

21. Close-up of iron grinding bench and wheel.

22. Overview of 1940s tractor and east gable end of stucco dairy barn.

23. Close-up of old 1940s era gas pump in front of main residence.

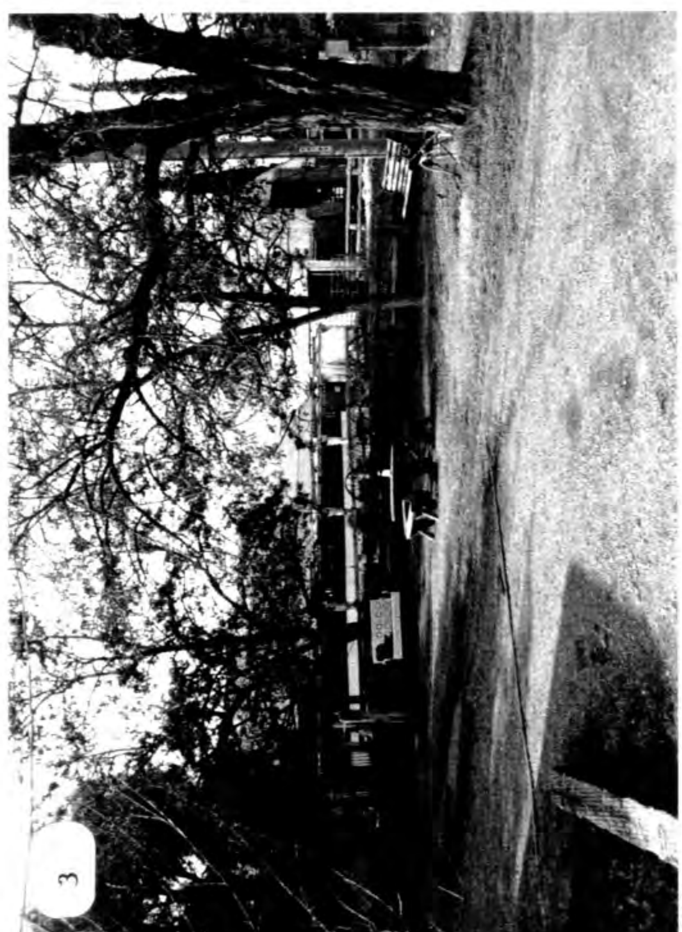
24. Close-up of cast iron 1880s school bell.

25. Close-up of cast iron 1880s school bell.

26. Overview of concrete incinerator.

27. Close-up of impressed logo on concrete incinerator.

P-57-000138
CA-Yol-173H



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CA-YOL-173H

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CA-YOL-173H

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CA-YOL-173H

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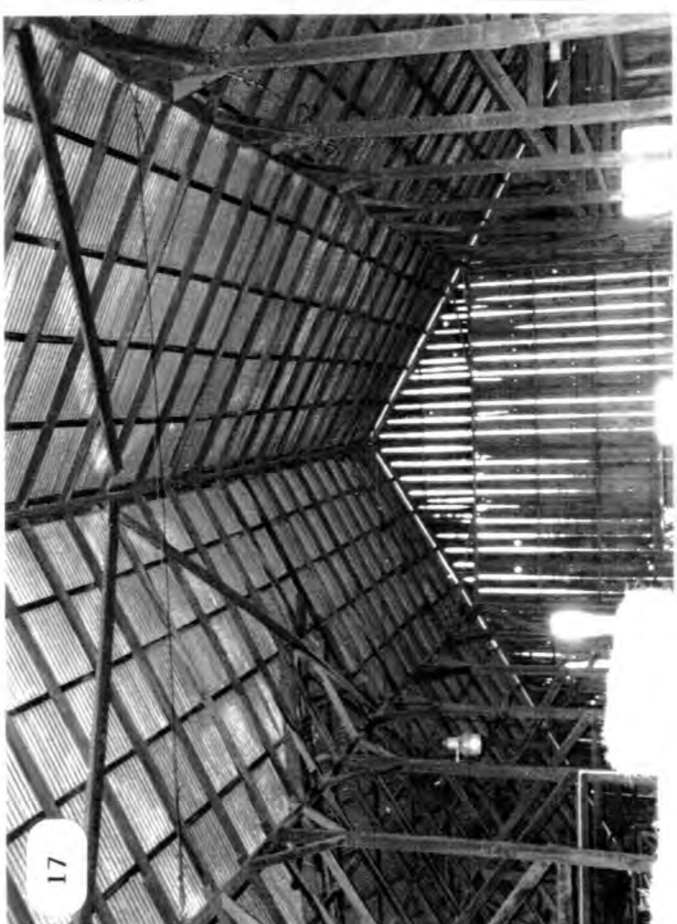
CA-YO1-173H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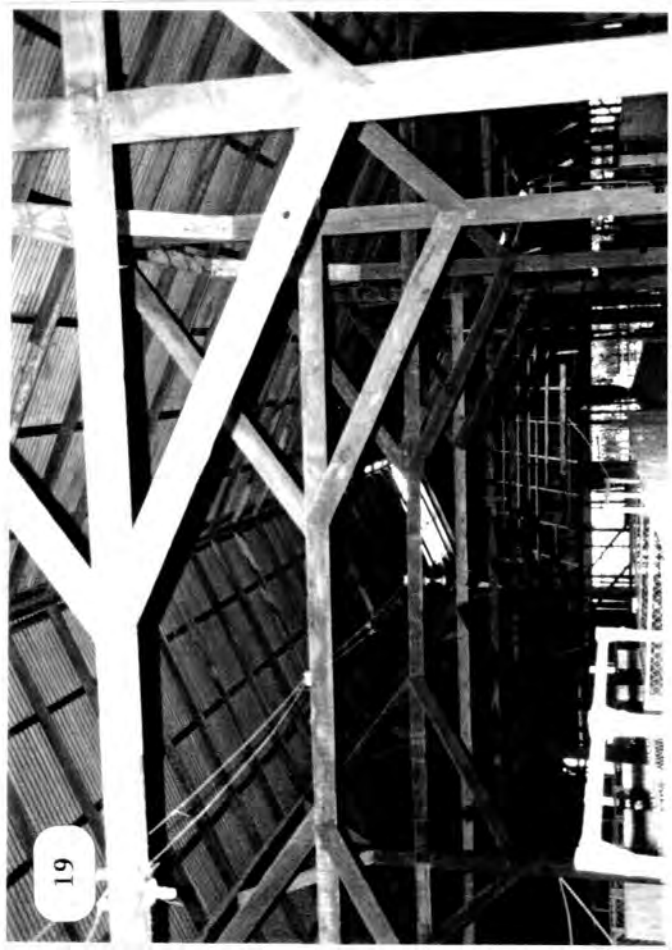
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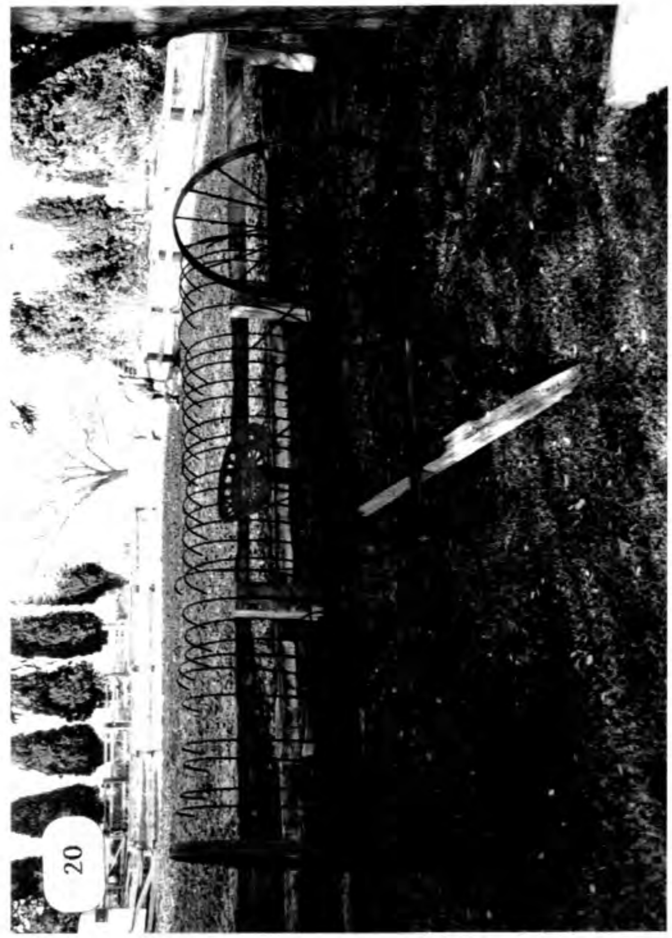
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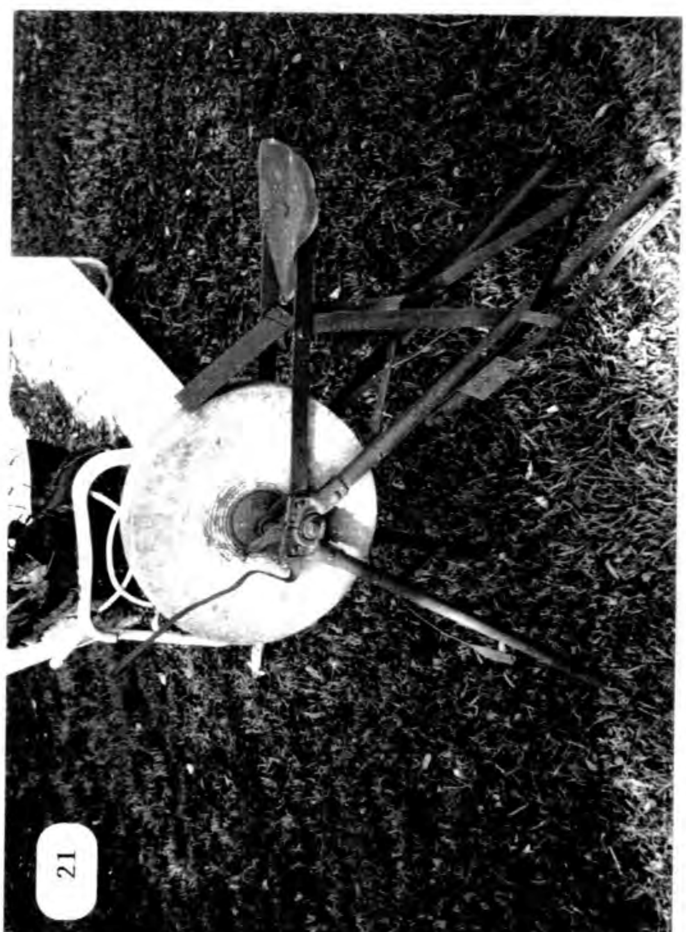
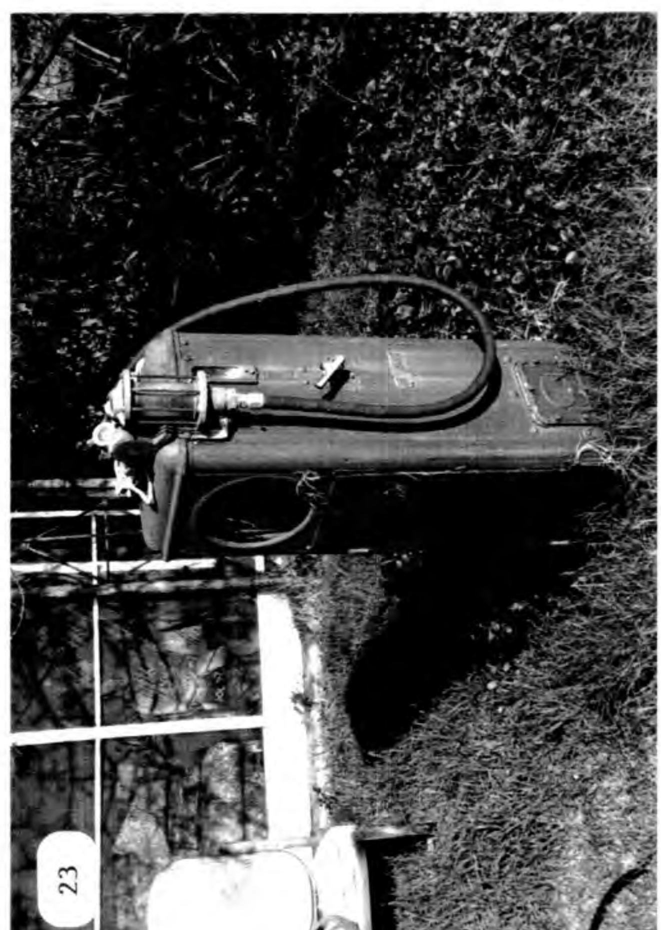
P-57-000138
CA-YOL-173H





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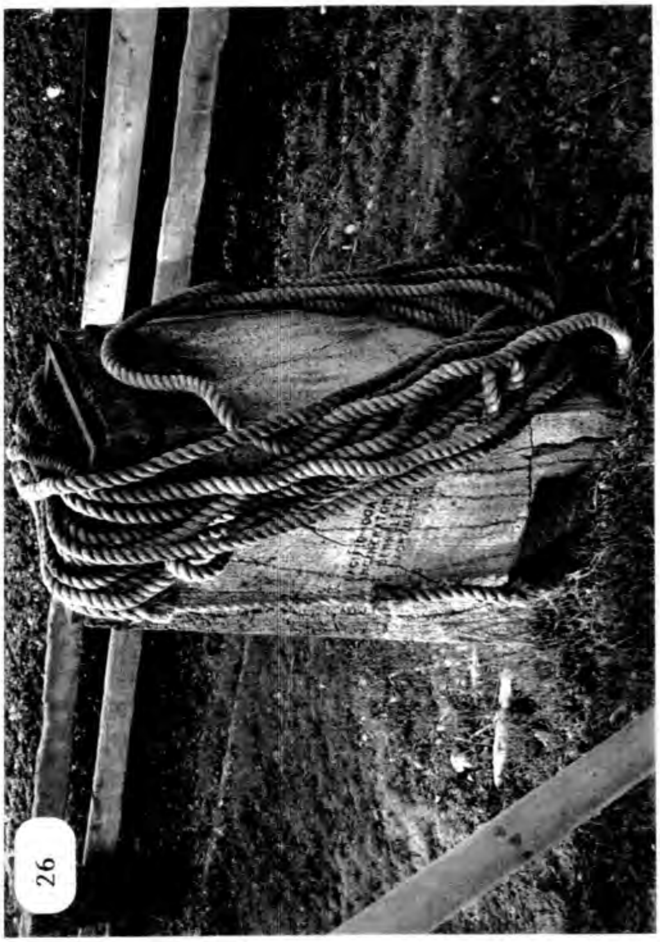
CA-YOL-173H



b

P-57-000138

Trinomial __CA-YOL-173H______/_____ Supp. [X]

ARCHAEOLOGICAL SITE RECORD

Other Designations CRU-91-Yol-1H______

_Clancy Ranch (?)__________

1. County: Yolo________________________________

(Map 514D, '62, '68, '72)

2. USGS Quad: Merritt____________________(7.5') 1952__ (15')______ Photorevised 1981_

3. UTM Coord: Zone |10| |6|0|6|9|4|0| m Easting |4|2|6|8|6|4|0 m Northing(_)

4. Township 8B Range _2E;_S 1/2 of SE 1/4 of SW 1/4 of SE 1/4 of Sect _5_ Base Mer. MDM (_)

5. Map Coord: __291-294___mmS __371-375___mmE (from NW corner of map) 6. Elevation:_45'__ (_)

7. Location: On the north side of Covell Road, 1600' west of Highway 113 (northwest__ corner of intersection), just outside the northwest boundary of the City of Davis.

____ (_)

8. Prehistoric_____Historic__X__Protohistoric_____ 9. Site Description A complex of farm buildings on farming property once a portion of the Jerome Davis Ranch, later owned by Mathew Clancy, an early Davis rancher. A house is shown here on the 1907 map, may have been built by Mr. Clancy who reportedly acquired the property in 1901.__ (X)

10. Area__400'______________m(length)X____200'__________m(width)___7,478__________ m²

Method of Determination: Map interpolation_________________________________ (_)

11. Depth: _N/A________ cm Method of Determination: ________________________ (_)

12. Features: House; large wooden barn; rectangular building adjacent to barn--now ___ appears to be horse stable, may have originally been a milking barn; _______ (X)

13. Artifacts: As the ranch is currently in use, artifacts were not enumerated._______

____ (_)

14. Non-Artifactual Constituents and Faunal Remains: None noted.________________

____ (_)

15. Date Recorded: 10/22/91_____ 16. Recorded By:_Eleanor H. Derr, Richard Derr______ (_)

17. Affiliation and Address: Cultural Resources Unlimited, 2614 Aramon Drive,__________ Rancho Cordova, CA 95670____ (_)

MAR 12 1992

See Continuation Sheet (X)

S-13549

a

ARCHAEOLOGICAL SITE RECORD

Other Designations CRU-91-Yol-1H

Clancy Ranch

18. **Human Remains:** None (_)

19. **Site Disturbance:** As a ranch, the property has suffered little disturbance except for a large drainage ditch along Covell Road that has closed the east and west driveways. The land has been levelled, eliminating any natural contours and (X)

20. **Nearest Water (type, distance and direction):** Dry Slough, approximately two miles to (X)

21. **Vegetation Community (site vicinity):** Flat grasslands/farmlands **Plant List** (_)

22. **Vegetation (on site):** Farmland (_)

23. **Site Soil:** Light grey-brown silty loam--Brentwood (BrA) well-drained at house (X)

24. **Surrounding Soil:** Similar (_)

25. **Geology:** Alluvial gravels (_)

26. **Landform:** Valley floor (_)

27. **Slope:** Less than 1% (_) 28. **Exposure:** Open (_)

29. **Landowner(s) (and/or tenants) and Address:** Dan Dowling, Davis. (Ranch is currently occupied by tenant farmers). (_)

30. **Remarks:** Further archival investigation is recommended prior to development. Proposed development of hospital and medical offices will destroy complex. (_)

31. **References:** Soil Survey of Yolo County, CA. USDA Soil Conservation Service, 1990. (_)

32. **Name of Project:** Sutter-Davis Hospital/Northwest Partners/Head Annexation E.I.R., for City of Davis 1991. EIR prepared by Environmental Science Assoc, Sacramento(_)

33. **Type of Investigation:** Field survey and archival research. (_)

34. **Site Accession Number:** N/A **Curated At:** (_)

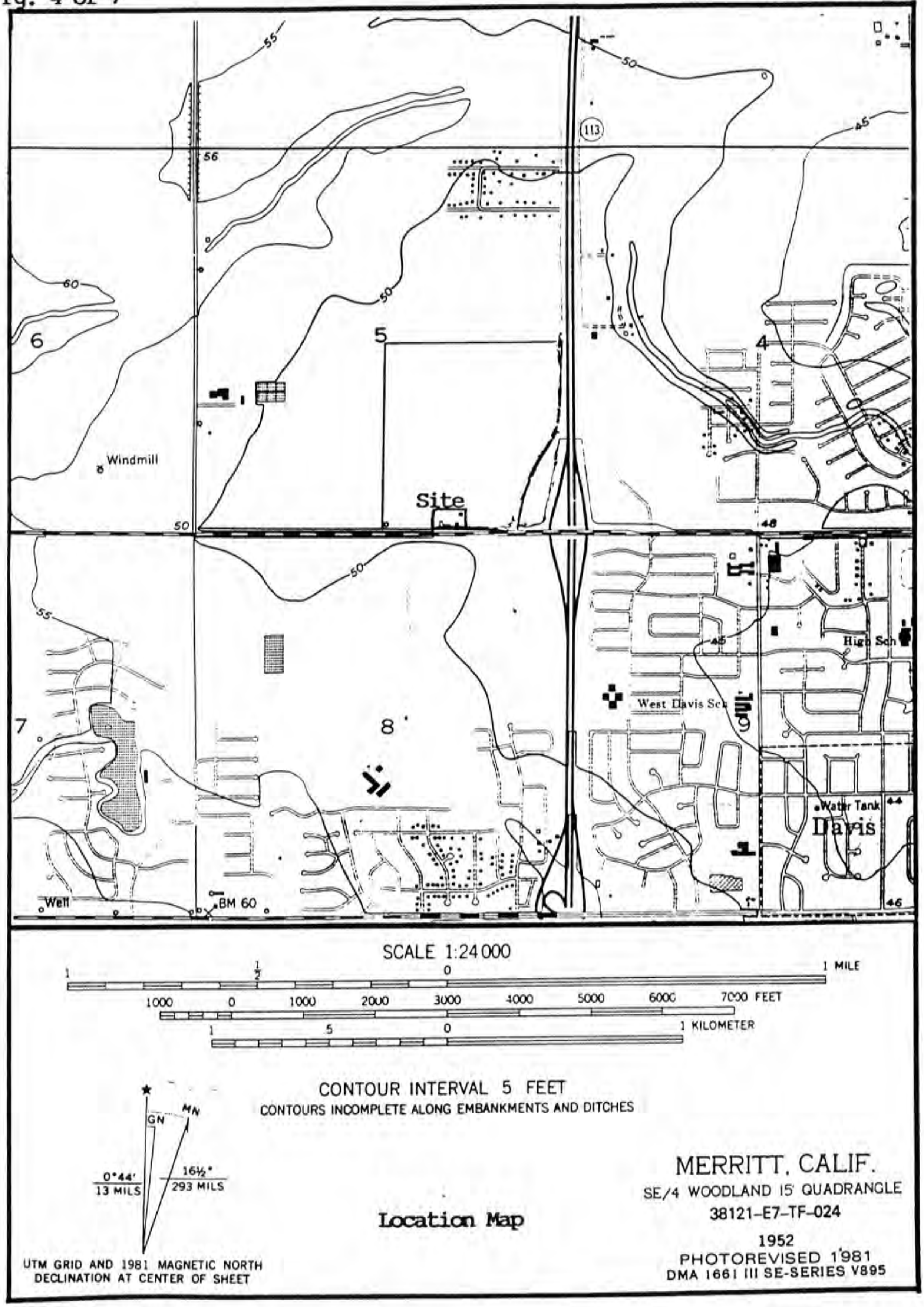
35. **Photos:** Attached (_)

See Continuation Sheet (X)

a

Item No.	Continuation
#9.	Isaac Davis, former Yolo Co. Judge, had a patent on this land in 1869. Subsequent owners reportedly include Mrs. Anna Tyron, an individual by the name of King, Tony and Rose Machado, the Van Sell family (land adjacent to the west), and Ben and Victoria Williams (1958-85). Ranch was reportedly used as a dairy originally, then a sheep ranch, more recently for row crops. Davis probably used it originally for stock raising (cattle and sheep were popular at that time), possibly also for wheat, another popular crop in the 1800s.
#12.	two cottages exist to the rear (north) of the house, possibly for farm workers. A pump house lies approximately 200' to the rear of the cottages along a large irrigation ditch/canal. Remains of pumps also exist along the dirt road leading east from the pump house to the current frontage road--probably originally extended to Highway 113 prior to its widening.
#19.	any previous drainages. A canal encompasses the southeast quadrant of Section 5 on the north and west sides, apparently constructed after 1947. However, older maps show no natural streams on this land, although Section 8 south of Covell Road appears to have had small small drainages that may have flowed onto Section 5.
#20.	the north, south fork of Willow Slough 2.5 miles north. These sloughs flowed onto the tule plains to the northeast. Putah Creek exists approximately 3 miles south.
#23.	and lands adjacent to the north, Capay (Ca) moderately well-drained to the east and Marvin (Mf) further north/northeast, somewhat poorly drained. These soils are reflective of alluvial fan/basin rim origins. A small basin of Willow clay (Wc) exists on the extreme northeast (alkali, poorly drained basin soil).

a



Location Map

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

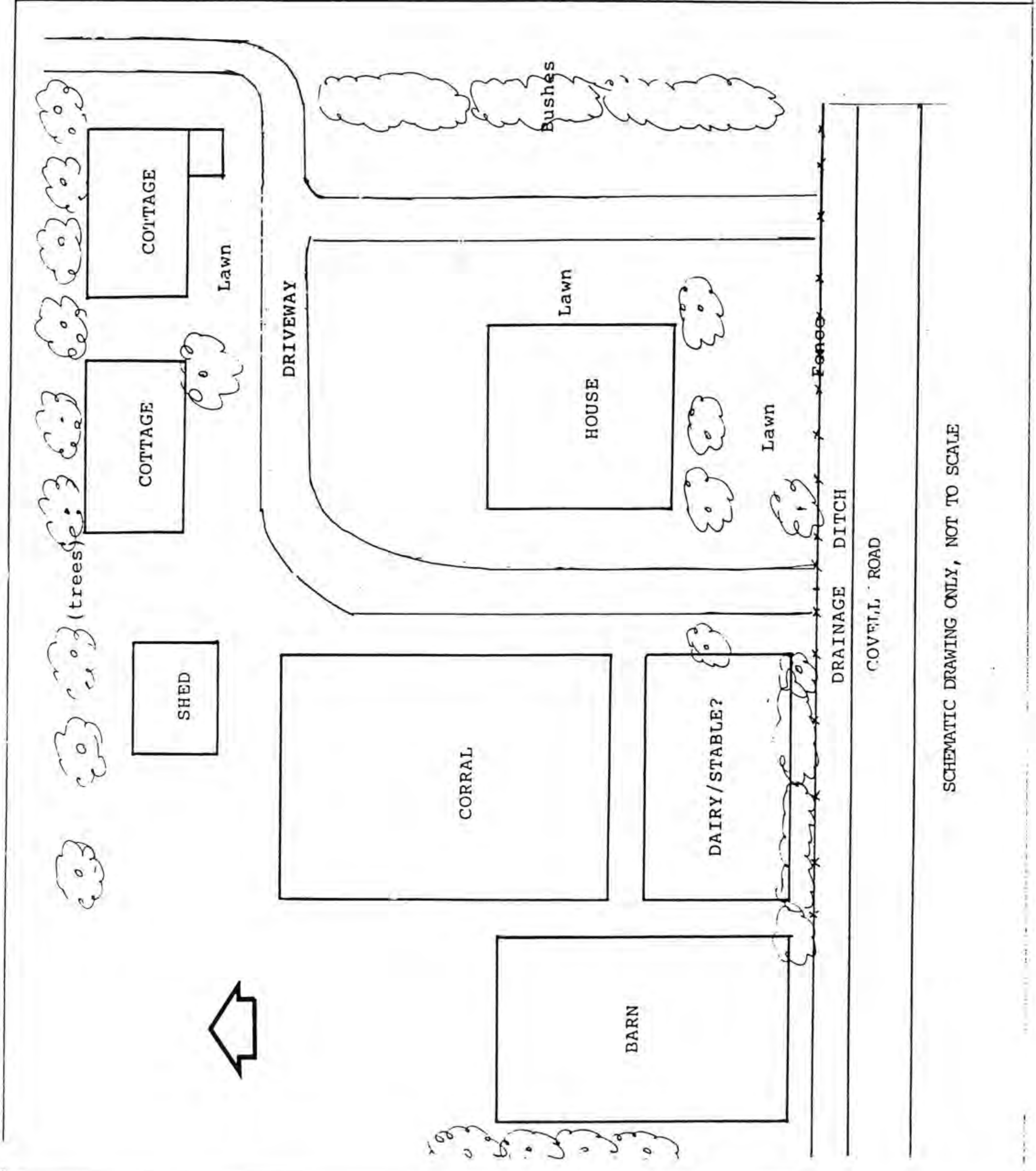
ARCHEOLOGICAL SITE MAP

P-57-000138

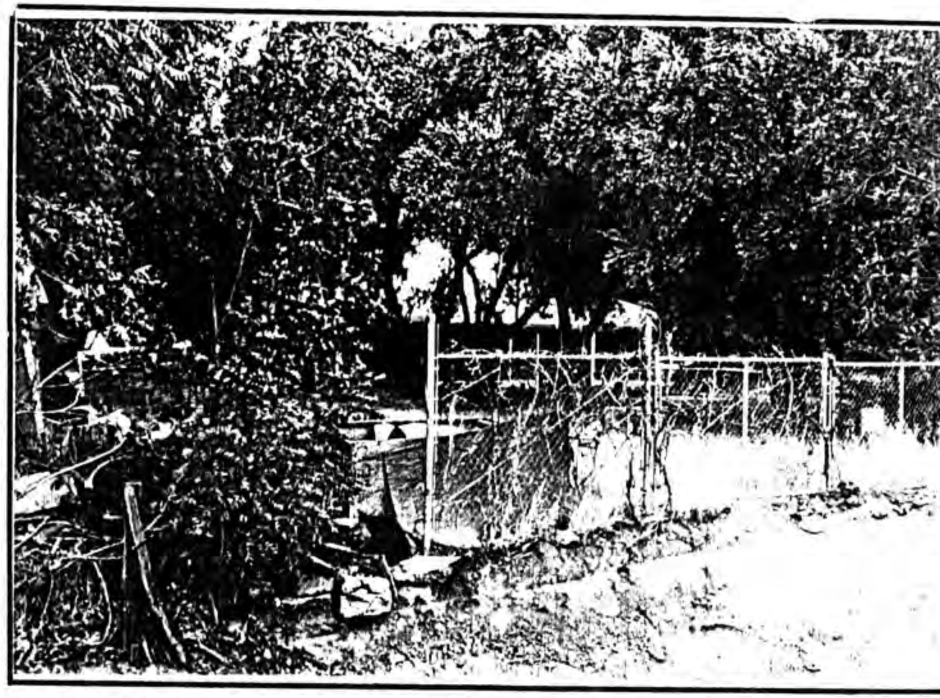
Permanent Trinomial: CA-YOL-173H

Mo. / Yr.

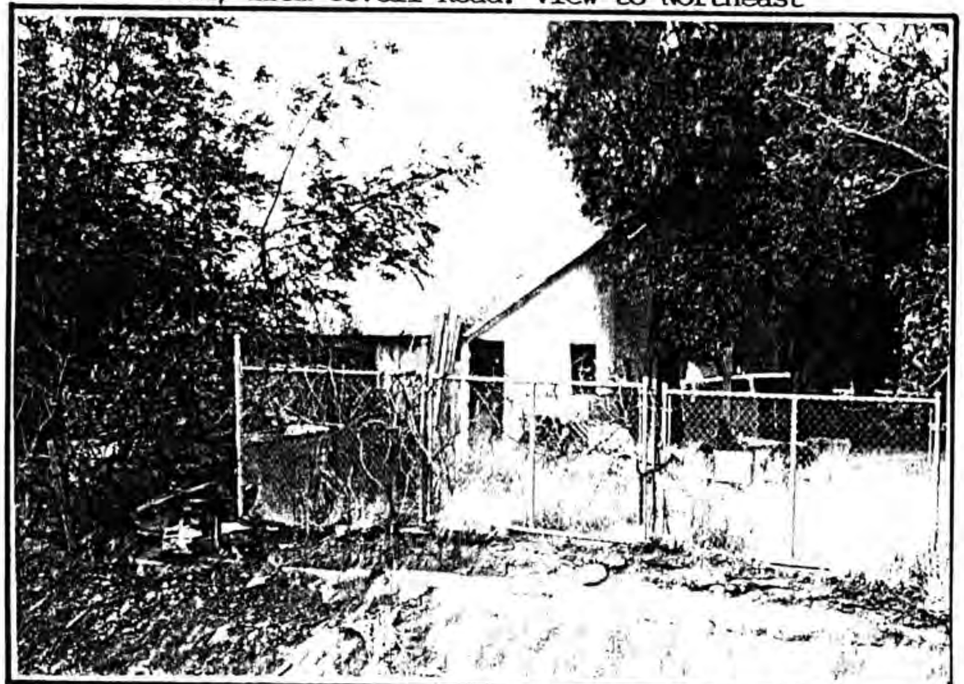
Other Designations: CRU-91-Yol-1H



Barn, from Covell Road. View to Northeast



House, from Covell Road just south of Stable. V. to NE.



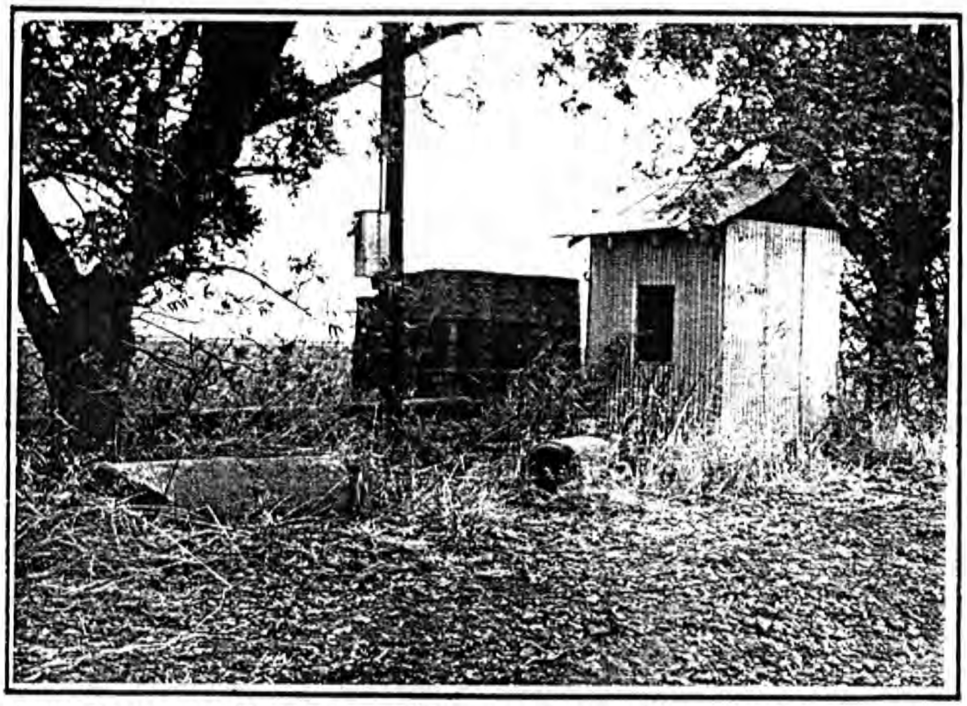
Building east of barn (Stable?). View to Northwest.
(from Covell Road)

Easternmost Cottage at rear of House. View to Northwest.

7.F7

CA-YOL-173H P-57-000138

CRU-91-Yol-1H



Pump House north of House/Barn complex. View to Northwest.

a

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 *Resource Name or #: **PA-17-22**

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** X **Unrestricted** ***a. County:** Yolo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Merritt, Calif. **Date:** 1952 (1981) **T** 8N; **R** 2E; SW¼ **of** SE¼ **of Sec 5;** M.D. B.M.
c. Address: City: Zip:
d. UTM: Zone: 10 ; 606670 mE/ 4268630 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: Approximately 50 feet. The resource is located approximately one-quarter mile west of the intersection of Risling Place and West Covell Boulevard.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The resource is an above ground well pump, pipe, concrete standpipe, and scatter of sheet metal and concrete post fragments located near the southwestern corner of the project area. The appearance of the pump, painted turquoise, implies an approximate date of manufacture of 1960. The pump was manufactured by U.S. Electrical Motors, Los Angeles, California. The pump rests on a base with a plate indicating that a former pump, manufactured by Bryon Jackson Pump Company, was present at one time prior to replacement.

***P3b. Resource Attributes:** (List attributes and codes) HP 39 - Other
***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) View of the above ground pump looking southeast. 6-12-17. Acc. # 20160615fr58

***P6. Date Constructed/Age and Sources:** **X** Historic ☐Prehistoric ☐Both
Original well may date to 1929, modern pump likely dates to circa. 1960

***P7. Owner and Address:**
Unknown

***P8. Recorded by:** (Name, affiliation, and address) Neal Neuenschwander Peak & Associates, Inc. 3161 Godman Avenue, Chico, CA 95973

***P9. Date Recorded:** 6-12-17

***P10. Survey Type:** (Describe)
Intensive, complete

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *Cultural Resource Assessment for the West Davis Active Adult Community EIR Project, City of Davis and Yolo County, California.* Peak & Associates, Inc. 2017

***Attachments:** ☐NONE X Location Map X Sketch Map X Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Resource Name or #** (Assigned by recorder) **PA-17-22**

***Recorded by:** Neal Neuenschwander ***Date:** May 12, 2017 Continuation **X** Update

A) View of the above ground pump, older pump base, looking southwest. 6-12-17. Acc.20170615fr60

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

 *Resource Name or # (Assigned by recorder) PA-17-22

*Recorded by: Neal Neuenschwander *Date: May 12, 2017 Continuation X Update

B) View of the above ground pump (left), pipe (center), stand pipe (right) looking southeast. 6-12-17. Acc.20170615fr62

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

 ***Resource Name or #** (Assigned by recorder) **PA-17-22**

***Recorded by:** Neal Neuenschwander ***Date:** May 12, 2017 Continuation **X** Update

C) View of the southern portion of the pipe, stand pipe, looking southeast. 6-12-17. Acc.20170615fr64

 ***Resource Name or #** (Assigned by recorder) **PA-17-22**

***Recorded by:** Neal Neuenschwander ***Date:** May 12, 2017 **X** Continuation Update

D) View of the above ground pump and electrical service drop/panel, looking west. 6-12-17. Acc.20170615fr65

E) View of scattered concrete posts, above ground pump and electrical service drop/panel in background, looking south. 6-12-17. Acc. #20170615fr77

F) View of scattered sheet metal panels located around the above ground pump (possible former structure?), looking south. 6-12-17. Acc. #20170615fr81

***Resource Name or #** (Assigned by recorder) **PA-17-22**

***Recorded by:** Neal Neuenschwander ***Date:** May 12, 2017 **X** Continuation Update

G) View of the plate located on the base of the above ground pump. 6-12-17. Acc. #20170615fr61

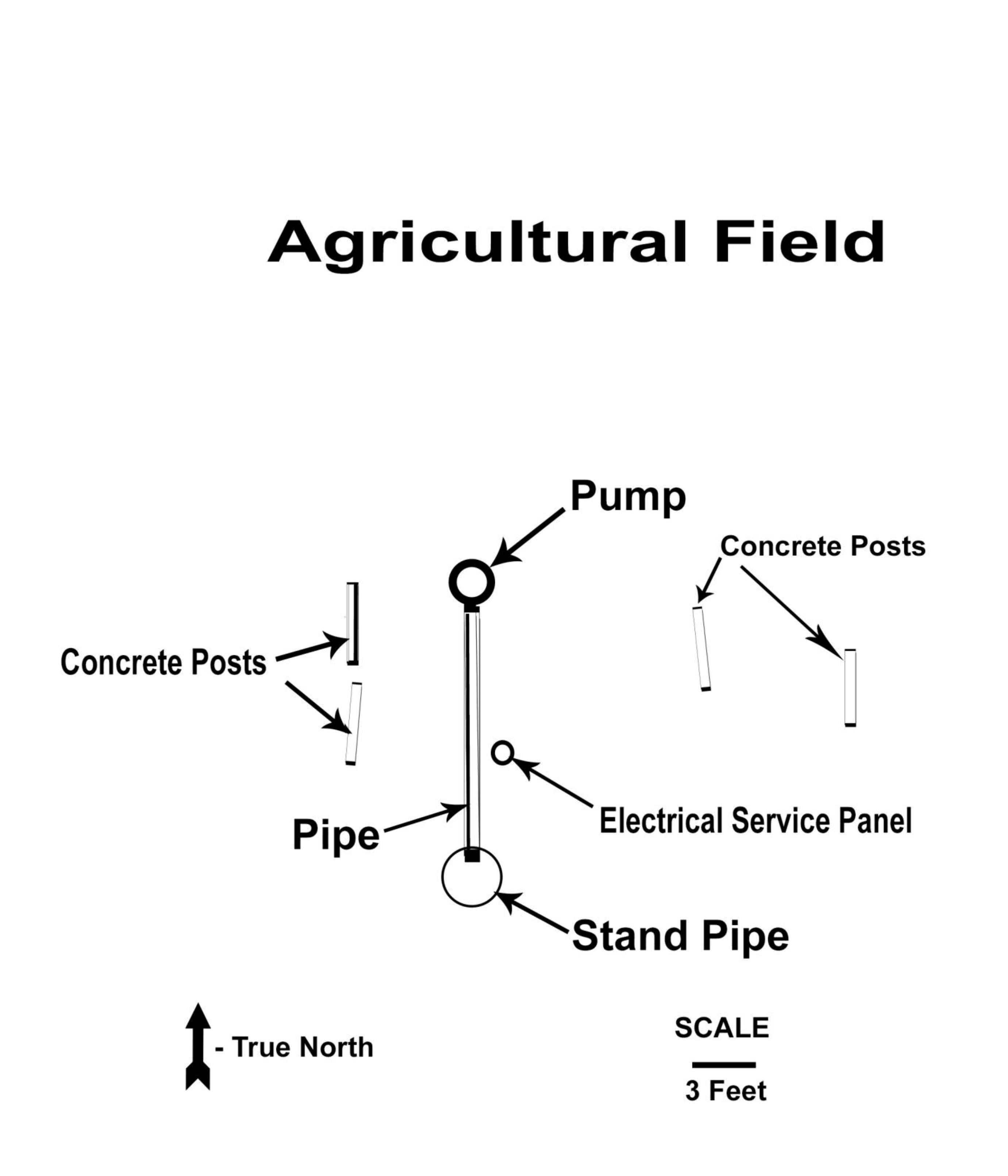
H) View of the plate located on the above ground pump. 6-12-17. Acc. #20170615fr63

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #** (Assigned by recorder) **PA-17-22**

***Drawn By:** Neal Neuenschwander ***Date 6-12-17**



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

 *Resource Name or #: PA-17-22

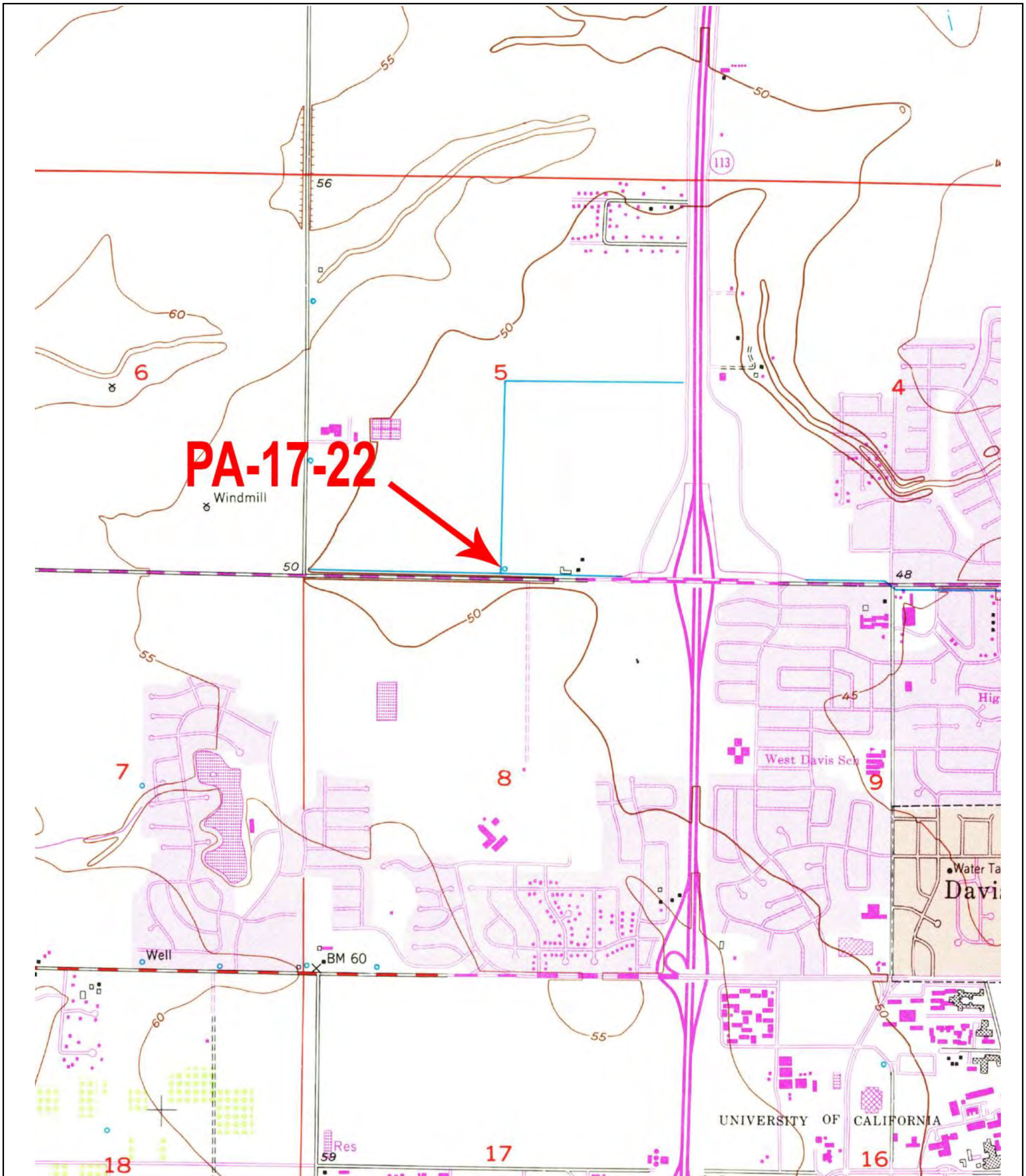
*Map Name: Aerial base provided by De Novo Planning Group *Scale: *Date of Map:

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** PA-17-22

***Map Name:** Merritt, Calif. ***Scale:** 1:24,000 ***Date of Map:** 1952 (1981)



Appendix E

Environmental Noise Assessment

West Davis Active Adult Community

City of Davis, California

October 30, 2017

jcb Project # 2017-112

Prepared for:

Attn:
Mr. Ben Ritchie
De Novo Planning Group
4630 Brand Ave.
Sacramento, CA 95819

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan, INCE
President
Member, Institute of Noise Control Engineering (INCE)

This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of noise.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

CNEL Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours (10 p.m. to 7 a.m.) weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second (Hertz.)

Impulsive Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.

Ldn Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

Leq Equivalent or energy-averaged sound level.

Lmax The highest root-mean-square (RMS) sound level measured over a given period of time.

L(n) The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to Ldn, but includes a +5 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

To quantify the existing ambient noise environment in the project vicinity, j.c. brennan & associates utilized noise level measurements previously conducted for the former West Davis Innovation Center (DIC) project on the same project site in January 2015. Short-term ambient noise level measurements and continuous (24-hour) noise level measurements were conducted at seven locations on the project site when schools, including UC Davis, were in session. The noise measurement locations are shown in Figure 3.11-1. Figure 3.11-2 shows the project site plan. The noise level measurement survey results are provided in Table 3.11-2. Appendix A shows the complete results of the noise monitoring survey.

TABLE 3.11-2: MEASURED AMBIENT NOISE LEVELS

SITE	*DATE*	*AVERAGE MEASURED HOURLY NOISE LEVELS, DBA*						
			DAYTIME			*NIGHTTIME (10:00 PM – 7:00 AM)*		
		LDN	*LEQ*	*L50*	*LMAX*	*LEQ*	*L50*	*LMAX*
Continuous 24-hour Noise Measurement Site								
A	January 7-8, 2015	65	63	61	78	57	49	75
B	January 7-8, 2015	68	64	62	76	61	57	73
Short-term Noise Measurement Sites						Notes:		
1	January 8, 2015 – 10:21 a.m.	N/A	50	49	53	SR-113 and CR 99 traffic noise.		
2	January 8, 2015 – 10:37 a.m	N/A	49	49	53	SR-113 and CR 99 traffic noise.		
3	January 8, 2015 – 10:55 a.m	N/A	50	49	56	SR-113 is primary noise source.		
4	January 8, 2015 – 11:33 a.m	N/A	48	47	57	SR-113 is primary noise source. Some parking lot noise audible.		
5	January 8, 2015 – 12:00 p.m	N/A	60	59	68	SR-113 is primary noise source.		

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. – 2017

j.c. brennan & associates, Inc. conducted continuous hourly ambient noise level measurements for a period of 24-hours on the DIC project site from January 7th to January 8th, 2015. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels, and to determine the effective day/night distribution of roadway traffic for inclusion in the traffic noise prediction methodology. Instrumentation consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter, which was calibrated in the field before and after use with an LDL Model CAL200 acoustical calibrator.

West Davis Active Adult Community

Figure : 3.11-1

Project Location and Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

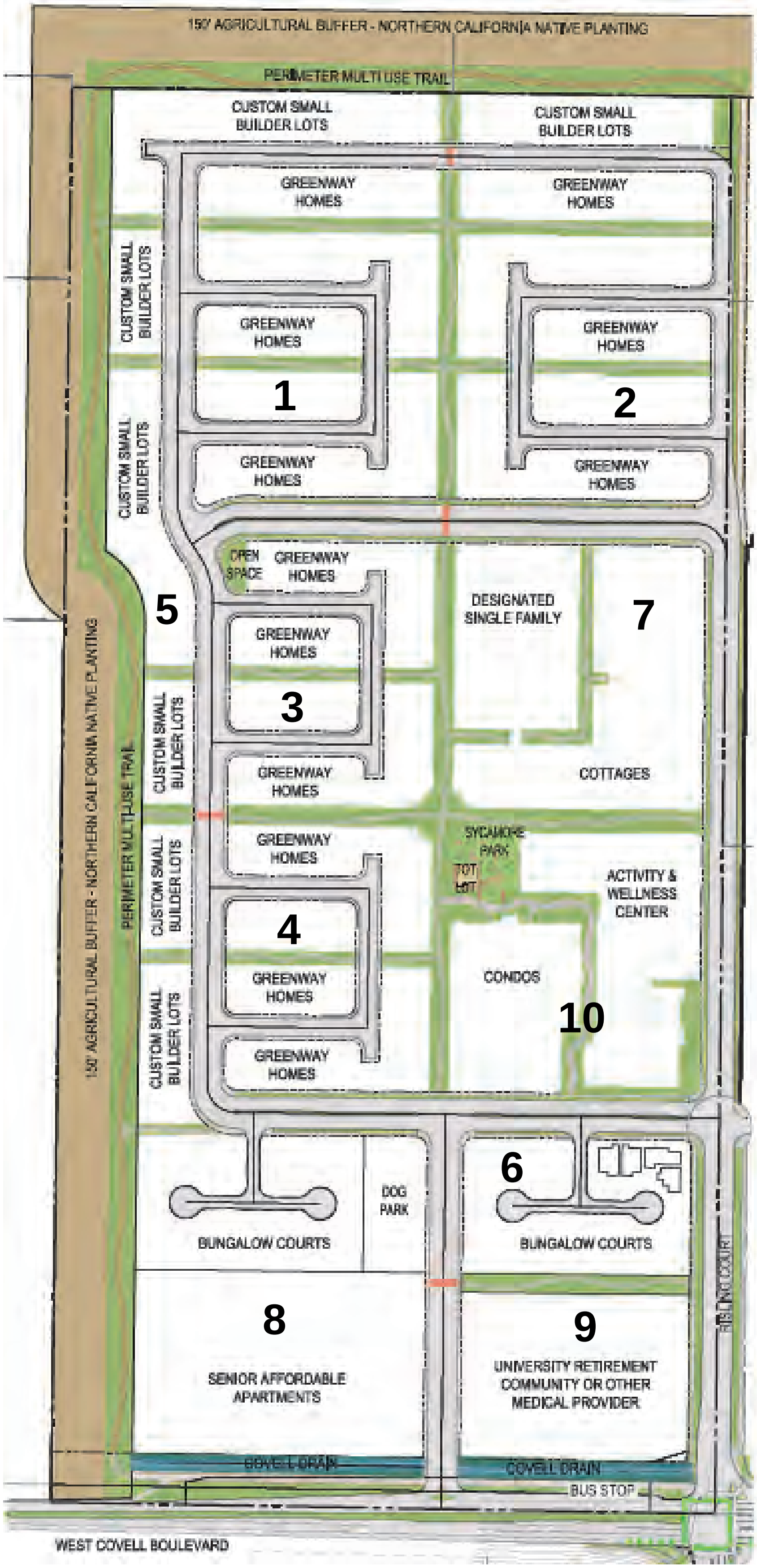
Figure Prepared: August 2017

: West Davis Active Adult Community (Current)

: West Davis Innovation Center (Former)

: 24-hr Noise Measurement Locations

: Short Term Noise Measurement Locations



PROJECT DATA

SITE AREA: 74.49 ACRES

CUSTOM SMALL BUILDER LOTS:
6.20 ACRES
52 UNITS
8.39± DUA

GREENWAY HOMES
16.20 ACRES
154 UNITS
9.51± DUA

BUNGALOW COURTS
4.30 ACRES
32 UNITS
7.44± DUA

COTTAGES
3.05 ACRES
33 UNITS
10.82± DUA

CONDOS
1.64 ACRES
48 UNITS
29.27± DUA

DESIGNATED SINGLE FAMILY
1.86 ACRES
61 UNITS
32.80± DUA

SENIOR AFFORDABLE APARTMENTS
4.26 ACRES
150 UNITS
35.21± DUA

UNIVERSITY RETIREMENT COMMUNITY OR OTHER MEDICAL PROVIDER
3.03 ACRES
30 UNITS
9.90± DUA

ACTIVITY & WELLNESS CENTER
2.66 ACRES

GREENWAY
5.21 ACRES
7267 LINEAR FEET OF TRAIL

PERIMETER MULTI-USE TRAIL
2.95 ACRES
2569 LINEAR FEET OF TRAIL

AGRICULTURAL BUFFER
4.24 ACRES

DOG PARK
0.68 ACRES

TOT LOT/SYCAMORE PARK/OPEN SPACE
0.42 ACRES
320 LINEAR FEET OF TRAIL

LOCAL RIGHT OF WAY
12.63 ACRES

RISLING COURT RIGHT OF WAY
1.67 ACRES

COVELL BLVD RIGHT OF WAY
1.61 ACRES

EXISTING RISLING COURT RIGHT OF WAY
0.95 ACRES

EXISTING COVELL BLVD RIGHT OF WAY
0.93 ACRES

TOTAL: 560 UNITS
TOTAL TRAIL LINEAR FOOTAGE: 10156 LF

LEGEND
PROPERTY LINE
RIGHT-OF-WAY
RAISED CROSSWALK

NOTES:
1. DENSITY CALCULATIONS ARE BASED ON NET AREA (EXCLUDE PUBLIC RIGHT-OF-WAY AND GREEN SPACE)

N

West Davis Active Adult Community
Figure: 3.11-2
Project Site Plan

j.c. brennan & associates
consultants in acoustics

Date:
10/24/2017

On Wednesday, January 7th, 2015 j.c. brennan & associates, Inc., staff conducted short-term noise level measurements on the DIC project site. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels during the daytime periods at the project site. Instrumentation consisted of a Larson Davis Laboratories (LDL) Model 824 precision integrating sound level meter which was calibrated in the field before use with an LDL CAL-200 acoustical calibrator. Table 3.11-2 shows the results of the short-term noise level measurements. Appendix A contains complete results of the noise monitoring.

Based upon field observations and the data in Table 3.11-2, the existing noise environment is primarily defined by traffic on State Route 113 (SR-113) and traffic on Covell Boulevard.

Existing Traffic Noise

Existing roadway noise levels were measured by J.C. Brennan & Associates, Inc. using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based on Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions.

Traffic volumes for existing conditions on the local street system were obtained from a traffic study conducted by Fehr & Peers for the project site. Truck percentages and vehicle speeds on the local area roadway were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at an estimated distance along each project-area roadway segment. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. The traffic noise analysis is representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed.

Land uses adjacent to some of the project-area roadways consist primarily of commercial and retail uses, which are generally not considered sensitive to traffic noise.

Table 3.11-3 shows the existing traffic noise levels in terms of Ldn along each roadway segment. This table also shows the distances to existing traffic noise contours. Appendix B shows the full inputs and results of the FHWA model.

TABLE 3.11-3: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT - LOCATION*	*DISTANCE (FEET)*	*EXTERIOR NOISE LEVEL, DBA LDN*	*DISTANCE TO LDN NOISE CONTOURS (FEET) EXISTING (LDN)*		
				70 DB	*65 DB*	*60 DB*
Anderson Rd	North of Covell Boulevard	100	56	11	25	53
Anderson Rd	South of Covell Boulevard	100	58	16	34	74
Covell Blvd	East of Anderson Road	100	62	28	61	132
Covell Blvd	West of Anderson Road	100	62	30	64	138
Covell Blvd	East of Denali Drive	100	63	36	78	167
Covell Blvd	West of Denali Drive	100	63	32	69	149
Covell Blvd	East of F Street	100	63	35	75	162
Covell Blvd	West of F Street	100	63	32	69	150
Covell Blvd	East of Lake Boulevard	100	62	31	66	142
Covell Blvd	West of Lake Boulevard	100	62	30	64	138
Covell Blvd	East of Sycamore Lane	100	62	30	65	140
Covell Blvd	West of J Street	100	63	35	75	162
F Street	North of Covell Boulevard	100	57	14	30	65
F Street	South of Covell Boulevard	100	57	14	30	64
Lake Blvd	North of Covell Boulevard	100	56	12	26	57
Lake Blvd	South of Covell Boulevard	100	56	12	26	57
Risling Ct	North of Covell Boulevard	100	48	4	8	16
Risling Ct	North of Sutter Hospital Dwy	100	47	3	6	13
Risling Ct	South of Sutter Hospital Dwy	100	48	4	8	16
Sycamore Ln	North of Covell Boulevard	100	55	10	22	47
SR-113	North of CR 31 / Covell Blvd.	180	68	142	307	1,423

NOTES:
1 DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
2 TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
SOURCE: FEHR & PEERS, CALTRANS & J.C. BRENNAN & ASSOCIATES, INC., 2017.

3.11.2 REGULATORY SETTING

STATE

Governor's Office of Planning and Research (OPR)

The *State of California General Plan Guidelines* (State of California 1998), published by OPR provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

LOCAL

City of Davis General Plan

The City of Davis General Plan contains the following goals, policies, and standards that are relevant to noise and vibration:

NOISE

Goal NOISE 1. Maintain community noise levels that meet health guidelines and allow for a high quality of life.

Policy NOISE 1.1 Minimize vehicular and stationary noise sources, and noise emanating from temporary activities.

Standards

a. The City shall strive to achieve the “normally acceptable” exterior noise levels shown in Table 19 of the General Plan [Table 3.11-4 of this report] and the target interior noise levels in Table 20 of the General Plan [Table 3.11-5 of this report] in future development areas and in currently developed areas.

b. New development shall generally be allowed only in areas where exterior and interior noise levels consistent with Table 19 of the General Plan [Table 3.11-5 of this report] and Table 20 of the General Plan [Table 3.11-6 of this report] can be achieved.

c. New development and changes in use shall generally be allowed only if they will not adversely impact attainment within the community of the exterior and interior noise standards shown in Table 19 of the General Plan [Table 3.11-4 of this report] and Table 20 of the General Plan [Table 3.11-5 of this report]. Cumulative and project specific impacts by new development on existing residential land uses shall be mitigated consistent with the standards in Table 19 of the General Plan [Table 3.11-4 of this report] and Table 20 of the General Plan [Table 3.11-5 of this report].

d. Required noise mitigation measures for new and existing housing shall be provided with the first stage and prior to completion of new developments or the completion of capacity-enhancing roadway changes wherever noise levels currently exceed or are projected within 5 years to exceed the normally acceptable exterior noise levels in Table 19 of the General Plan [Table 3.11-4 of this report].

TABLE 3.11-4: STANDARDS FOR EXTERIOR NOISE EXPOSURE (EXCERPT FROM CITY OF DAVIS GENERAL PLAN TABLE 19)

LAND USE CATEGORY	*COMMUNITY NOISE EXPOSURE LDN OR CNEL, DBA*			
	NORMALLY ACCEPTABLE	*CONDITIONALLY ACCEPTABLE*	*UNACCEPTABLE*	*CLEARLY UNACCEPTABLE*
Residential	Under 60	60-70*	70-75	Above 75
Transient Lodging – Motels, Hotels	Under 60	65-75	75-80	Above 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	Under 60	60-70	70-80	Above 80
Auditoriums, Concert Halls, Amphitheaters	Under 50	50-70	NA	Above 70
Sports Arenas, Outdoor Spectator Sports	NA	Under 75	NA	Above 75
Playgrounds, Neighborhood Parks	Under 70	NA	70-75	Above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Under 70	NA	70-80	Above 80
Office Buildings, Business Commercial and Professional	Under 65	65-75	Above 75	NA
Industrial, Manufacturing, Utilities, Agriculture	Under 65	70-80	Above 80	NA

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is conducted, and needed noise attenuation features are included in the construction or development.
Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be conducted and needed noise attenuation features shall be included in the construction or development.
Clearly Unacceptable: New construction or development shall not be undertaken.
NA: Not applicable
** The City Council shall have discretion within the "conditionally acceptable" range for residential use to allow levels in outdoor spaces to go up to 65 dBA if cost effective or aesthetically acceptable measures are not available to reduce noise levels in outdoor spaces to the "normally acceptable" levels. Outdoor spaces which are designed for visual use only (for example, streetside landscaping in an apartment project), rather than outdoor use space may be considered acceptable up to 70 dBA.*

SOURCE: CITY OF DAVIS, 2010

TABLE 3.11-5: STANDARDS FOR INTERIOR NOISE LEVELS (CITY OF DAVIS GENERAL PLAN TABLE 20)

USE	*NOISE LEVEL (DBA)*
Residences, schools through grade 12, hospitals and churches	45 Ldn
Offices	55 Leq

SOURCE: CITY OF DAVIS, 2010

Policy NOISE 1.2 Discourage the use of sound walls whenever alternative mitigation measures are feasible, while also facilitating the construction of sound walls where desired by the neighborhood and there is no other way to reduce noise to acceptable exterior levels shown in Table 19 of the General Plan [Table 3.11-4 of this report].

See the separate General Plan policy interpretation document titled "Major Arterial Landscaping, Noise Attenuation Design and Greenstreets".

Standards

a. Where sound walls are built, they should include dense landscaping along them to mitigate their visual impact, as illustrated in Figure 38 of the General Plan [Figure 3.11-3 of this report].

b. Where sound walls are built, they should provide adequate openings and visibility from surrounding areas to increase safety and access, as illustrated in Figure 38 of the General Plan [Figure 3.11-3 of this report]. Openings should be designed so as to maintain necessary noise attenuation.

c. Review sound walls and other noise mitigations through the design review process.

Figure 3.11-3
Sound Wall Design Concepts
(City of Davis General Plan Figure 38)

GOAL NOISE 2. Provide for indoor noise environments that are conducive to living and working.

Policy NOISE 2.1 Take all technically feasible steps to ensure that interior noise levels can be maintained at the levels shown in Table 20 of the General Plan [Table 3.11-5 of this report].

Standards

a. New residential development or construction shall include noise attenuation measures necessary to achieve acceptable interior noise levels shown in Table 20 of the General Plan [Table 3.11-5 of this report].

b. Existing areas that will be subjected to noise levels greater than the acceptable noise levels shown in Table 20 of the General Plan [Table 3.11-5 of this report] as a result of increased traffic on existing city streets (including streets remaining in existing configurations and streets being widened) shall be mitigated to the acceptable levels in Table 20 of the General Plan [Table 3.11-5 of this report]. If traffic increases are caused by specific projects, then the City shall be the lead agency in implementing cumulative noise mitigation projects. Project applicants shall pay their fair share for any mitigation.

City of Davis Noise Ordinance

Section 24 of the City of Davis City Code establishes a maximum noise level standard of 55 dB during the hours of 7:00 a.m. to 9:00 p.m., and 50 dB during the hours of 9:00 p.m. to 7:00 a.m. The ordinance defines maximum noise level as the "maximum continuous sound level or repetitive peak level produced by a sound source or group of sources. For the purposes of this analysis, J.C. Brennan & Associates, Inc. interpreted this definition to be equivalent to the average noise level descriptor, Leq. The City Code makes exemptions for certain typical activities which may occur within the city. These exemptions are listed in Article 24.02.040, Special Provisions, and are summarized below:

a) Normal operation of power tools for non-commercial purposes are typically exempted between the hours of 8 am and 8 pm unless the operation unreasonably disturbs the peace and quiet of any neighborhood.

b) Construction or landscape operations would be exempt during the hours of 7am to 7 pm Mondays through Fridays and between the hours of 8 am to 8 pm Saturdays and Sundays assuming that the operations are authorized by valid city permit or business license, or carried out by employees or contractors of the city and one of the following conditions apply (conditions summarized, please see section 24.02.040 of the City Code for the full text):

    1) No piece of equipment produces a noise level exceeding 83 dBA at 25-feet.

    2) The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

    3) Requires that impact equipment and tools be fitted with the best available silencing equipment.

    4) Limits individual powered blowers to a noise level of 70 dBA at 50-feet.

    5) Prohibits more than one blower from simultaneously operating within 100-feet of another blower.

    6) On single-family residential property, the 70 dBA at 50-feet requirement would not apply to blowers operated on single-family residential property.

c) The City Code also exempts air conditioners, pool pumps, and similar equipment from the noise regulations, provided that they are in good working order.

d) Work related to public health and safety is exempt from the noise requirements.

e) Safety devices are exempt from the noise requirements.

f) Emergencies are exempt from the noise requirements.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

NOISE STANDARDS

The noise standards applicable to the project include the relevant portions of the City of Davis General Plan, the City of Davis Noise Ordinance described in the Regulatory Framework section above (Section 3.11.2), and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.11-6 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the Ldn.

TABLE 3.11-6: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, LDN	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Davis does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are discussed in this report.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-7 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.11-7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY MM/SECOND	*PEAK PARTICLE VELOCITY IN/SECOND*	*HUMAN REACTION*	*EFFECT ON BUILDINGS*
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORNE VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: The proposed project may generate unacceptable traffic noise levels at existing receptors (Less than Significant)

Tables 3.11-8 and 3.11-9 show the increases in traffic noise levels due to the project. Table 3.11-8 shows the increases in traffic noise levels based upon the Existing and Existing Plus Approved Projects Plus Project Conditions, and Table 3.11-9 shows the increases in traffic noise levels based upon the Cumulative No Project and Cumulative Plus Project Conditions. Appendix B shows the full inputs and results of the FHWA model.

Based upon Tables 3.11-8 and 3.11-9, the overall predicted traffic noise levels will not exceed 65.1 dB Ldn/CNEL, which falls within the City of Davis "Conditionally Acceptable" noise level standard of 60-70 dB Ldn/CNEL. Furthermore, the predicted increases in traffic noise levels do not exceed the FICON standards for significance of changes in noise exposure in Table 3.11-6. The highest increase in traffic noise levels occurs on Risling Court under the Existing + Project conditions (+3.8 dB). However, this increase is not considered a significant increase in traffic noise levels. The highest predicted traffic noise levels are predicted along Covell Boulevard Court under the Cumulative +

Project conditions 65.1 dB). However, this increase is not considered a significant increase in traffic noise levels (+0.2 dB). At no point does the project result in an exceedance of the City of Davis exterior noise level standard. Therefore, this is a ***less than significant*** impact.

TABLE 3.11-8: PREDICTED EXISTING VS. EXISTING PLUS APPROVED PROJECTS PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA LDN			DISTANCE TO CONTOURS (FEET) EXISTING			DISTANCE TO CONTOURS (FEET) EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		
			EXISTING	EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	CHANGE	70 LDN	65 LDN	60 LDN	70 LDN	65 LDN	60 LDN
Anderson Rd	North of Covell Blvd	100	55.9	55.7	-0.2	11	25	53	11	24	51
Anderson Rd	South of Covell Blvd	100	58.0	58.2	+0.2	16	34	74	16	35	76
Covell Blvd	East of Anderson Rd	100	61.8	62.1	+0.3	28	61	132	30	64	139
Covell Blvd	West of Anderson Rd	100	62.1	62.4	+0.3	30	64	138	31	68	146
Covell Blvd	East of Denali Dr	100	63.3	63.6	+0.3	36	78	167	37	81	174
Covell Blvd	West of Denali Dr	100	62.6	62.8	+0.2	32	69	149	33	72	154
Covell Blvd	East of F St	100	63.2	63.4	+0.2	35	75	162	36	78	169
Covell Blvd	West of F St	100	62.6	63.0	+0.4	32	69	150	34	73	158
Covell Blvd	East of Lake Blvd	100	62.3	62.5	+0.2	31	66	142	32	68	146
Covell Blvd	East of Oak Avenue	100	62.1	62.5	+0.4	30	64	138	31	68	146
Covell Blvd	East of Sycamore Ln	100	62.2	62.5	+0.3	30	65	140	32	68	147
Covell Blvd	West of J St	100	63.2	63.4	+0.2	35	75	162	37	79	169
F Street	North of Covell Blvd	100	57.2	57.3	+0.1	14	30	65	14	31	66
F Street	South of Covell Blvd	100	57.1	57.5	+0.4	14	30	64	15	32	68
Lake Blvd	North of Covell Blvd	100	56.3	56.3	0	12	26	57	12	26	57
Lake Blvd	South of Covell Blvd	100	56.3	56.5	+0.2	12	26	57	13	27	59
Project Dwy	North of Covell Blvd	100	NA	47.4	NA	NA	NA	NA	3	7	14

NOTES:
[1] DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[2] TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
* ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.
SOURCE: CITY OF DAVIS, CALTRANS & J.C. BRENNAND & ASSOCIATES, INC., 2017.

TABLE 3.11-8: PREDICTED EXISTING VS. EXISTING PLUS APPROVED PROJECTS PLUS PROJECT TRAFFIC NOISE LEVELS (CONTINUED)

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA LDN			DISTANCE TO CONTOURS (FEET) EXISTING			DISTANCE TO CONTOURS (FEET) EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		
			EXISTING	EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	CHANGE	70 LDN	65 LDN	60 LDN	70 LDN	65 LDN	60 LDN
Risling Ct	North of Covell Blvd	100	48.2	52.1	+0.3	4	8	16	6	14	30
Risling Ct	North of Sutter H. Dwy	100	46.6	49.1	+2.5	3	6	13	4	9	19
Risling Ct	South of Sutter H. Dwy	100	48.2	52.0	+3.8	4	8	16	6	14	29
Sutter H. Dwy	West of Risling Ct.	100	NA	47.9	NA	NA	NA	NA	3	7	16
Sycamore Ln	North of Covell Blvd	100	55.1	55.5	+0.4	10	22	47	11	23	50

NOTES:
[1] *DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.*
[2] *TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.*
** ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.*
SOURCE: CITY OF DAVIS, CALTRANS & J.C. BRENNAND & ASSOCIATES, INC., 2017.

TABLE 3.11-9: PREDICTED CUMULATIVE NO PROJECT VS. CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA LDN			DISTANCE TO CONTOURS (FEET) CUMULATIVE NO PROJECT			DISTANCE TO CONTOURS (FEET) CUMULATIVE PLUS PROJECT		
			CUMULATIVE NO PROJECT	CUMULATIVE PLUS PROJECT	CHANGE	70 LDN	65 LDN	60 LDN	70 LDN	65 LDN	60 LDN
Anderson Rd	North of Covell Blvd	100	56.4	56.4	0	12	27	57	12	27	57
Anderson Rd	South of Covell Blvd	100	59.7	59.7	0	20	44	95	21	44	96
Covell Blvd	East of Anderson Rd	100	62.8	62.9	+0.1	33	72	155	34	73	157
Covell Blvd	West of Anderson Rd	100	63.3	63.4	+0.1	36	77	165	36	78	169
Covell Blvd	East of Denali Dr	100	64.9	65.1	+0.2	46	99	212	47	101	217
Covell Blvd	West of Denali Dr	100	64.1	64.2	+0.1	40	87	187	41	89	191
Covell Blvd	East of F St	100	64.6	64.6	0	43	93	201	44	94	202
Covell Blvd	West of F St	100	63.9	63.9	0	39	84	182	39	85	183
Covell Blvd	East of Lake Blvd	100	63.8	63.9	+0.1	38	83	178	39	84	182
Covell Blvd	East of Oak Avenue	100	63.2	63.3	+0.1	35	76	164	36	77	166
Covell Blvd	East of Sycamore Ln	100	63.5	63.6	+0.1	37	79	171	38	81	174
Covell Blvd	West of J St	100	64.5	64.6	+0.1	43	93	200	43	93	201
F Street	North of Covell Blvd	100	58.0	58.0	0	16	34	73	16	34	73
F Street	South of Covell Blvd	100	57.7	57.7	0	15	32	70	15	33	70
Lake Blvd	North of Covell Blvd	100	57.5	57.5	0	15	32	70	15	32	68
Lake Blvd	South of Covell Blvd	100	58.3	58.4	+0.1	17	36	77	17	36	79
Project Dwy	North of Covell Blvd	100	NA	47.4	NA	NA	NA	NA	3	7	14

NOTES:
[1] DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[2] TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
** ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.*
SOURCE: CITY OF DAVIS, CALTRANS & J.C. BRENNAND & ASSOCIATES, INC., 2017.

TABLE 3.11-9: PREDICTED CUMULATIVE NO PROJECT VS. CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS (CONTINUED)

ROADWAY	SEGMENT	DISTANCE (FEET)	EXTERIOR NOISE LEVEL, DBA LDN			DISTANCE TO CONTOURS (FEET) EXISTING			DISTANCE TO CONTOURS (FEET) EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		
			CUMULATIVE NO PROJECT	CUMULATIVE PLUS PROJECT	CHANGE	70 LDN	65 LDN	60 LDN	70 LDN	65 LDN	60 LDN
Risling Ct	North of Covell Blvd	100	52.9	54.4	+1.5	7	16	34	9	20	42
Risling Ct	North of Sutter H. Dwy	100	49.2	50.8	+1.6	4	9	19	5	11	24
Risling Ct	South of Sutter H. Dwy	100	52.9	54.3	+1.4	7	16	34	9	19	42
Sutter H. Dwy	West of Risling Ct.	100	NA	47.9	NA	NA	NA	NA	3	7	16
Sycamore Ln	North of Covell Blvd	100	56.6	56.6	0	13	28	59	13	28	59

[1] DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[2] TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.
* ACCOUNTS FOR SHIELDING DUE TO EXISTING INTERVENING STRUCTURES AT ELEVATED LOCATIONS AND EXISTING SOUND WALL AT GROUND FLOOR LOCATIONS.
SOURCE: CITY OF DAVIS, CALTRANS & J.C. BRENNAND & ASSOCIATES, INC., 2017.

Impact 3.11-2: Construction of the project may generate significant noise (Less than Significant)

The proposed new development, maintenance of roadways during construction, installation of public utilities, and infrastructure improvements associated with the project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 3.11-10 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

TABLE 3.11-10: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	PREDICTED NOISE LEVELS, LMAX DB				DISTANCES TO NOISE CONTOURS (FEET)	
	NOISE LEVEL AT 50'	NOISE LEVEL AT 100'	NOISE LEVEL AT 200'	NOISE LEVEL AT 400'	70 DB LMAX CONTOUR	65 DB LMAX CONTOUR
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006. J.C. BRENNAN & ASSOCIATES, INC. 2012.

Activities involved in project construction would typically generate maximum noise levels ranging from 76 to 90 dB at a distance of 50-feet. The nearest sensitive receptor would be located 80-feet to the south across Covell Boulevard from on-site construction activities. At 80-feet, construction related activities are predicted to generate maximum noise levels ranging between 72-86 dB Lmax.

Construction could result in periods of elevated ambient noise levels and the potential for annoyance. However, the City of Davis Noise Ordinance establishes allowable hours of operation and noise limits for construction activities as follows:

24.02.040 Special provisions.

(b) Construction and landscape maintenance equipment. Notwithstanding any other provision of this chapter, between the hours of 7:00 a.m. and 7:00 p.m. on Mondays through Fridays, and between the hours of 8:00 a.m. and 8:00 p.m. on Saturdays and Sundays, construction, alteration, repair or maintenance activities which are authorized by valid city permit or business license, or carried out by employees of contractors of the city shall be allowed if they meet at least one of the following noise limitations:

(1) No individual piece of equipment shall produce a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.

(2) The noise level at any point outside of the property plane of the project shall not exceed eighty-six dBA.

(3) The provisions of subdivisions (1) and (2) of this subsection shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he/she may determine to be in the public interest.

Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at six a.m. on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 a.m. The permit shall be revoked if any noise complaint is received by the police department.

(4) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.

(5) No powered blower shall be operated within one hundred feet radius of another powered blower simultaneously.

(6) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

Because all construction activities will be subject to the requirements of the City of Davis Municipal Code Section 24.02.040 with respect to limits on construction noise, this would be a ***less than significant*** impact.

Impact 3.11-3: Construction of the project may result in vibration impacts (Less than Significant)

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as demolition, grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 80-feet or further from the project site. At distances of over 50-feet, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-11 shows the typical vibration levels produced by construction equipment.

TABLE 3.11-11: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Table 3.11-11 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances of 50-feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors provided that the compactor/roller is located a minimum distance of 50-feet from other structures. Therefore, this impact would be considered ***less than significant*.**

Impact 3.11-4: The project may result in traffic noise at new sensitive receptors (Potentially Significant)

Figure 3.11-2 depicts the project site plan and proposed parcel designations. A finalized site plan depicting building elevations and floor plans is not currently available for the project site. Therefore, traffic noise levels at the typical building facades adjacent to Covell Boulevard are estimated at a typical setback of 20-feet from the right-of-way. Traffic noise levels from Risling Place do not exceed the noise level standards, and S.R. 113 does not contribute to the overall traffic noise levels.

Covell Boulevard

Table 3.11-12 shows the predicted Cumulative + Project noise levels at the building facades due to traffic on Covell Boulevard.

TABLE 3.11-12: PREDICTED CUMULATIVE + PROJECT TRAFFIC NOISE LEVELS – COVELL BOULEVARD

LOCATION	*PREDICTED NOISE LEVELS*	
	1ST FLOOR FACADES	*2ND FLOOR FACADES*
Parcels 8 & 9	64 dB Ldn	66 dB Ldn

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. – 2017.

Based upon the data in Table 3.11-12, the predicted Cumulative + Project traffic noise levels for parcels 8 and 9, which are adjacent to Covell Boulevard, fall within the "Conditionally Acceptable" range of City standards. However this would potentially exceed the normally acceptable level of 60 dB Ldn.

Mitigation Measures

Implementation of the following mitigation measures will reduce the traffic noise levels to less than significant:

Mitigation 3-11-1 - Since the 60 dB Ldn standard is applied at the outdoor activity areas, the project can shield the outdoor activity areas of Parcels 8 and 9 adjacent to Covell Boulevard using the building facades. As an alternative, a barrier 6-feet in height can be constructed along the property line of Covell Boulevard. No second floor balconies of multi-family dwellings should face Covell Boulevard.

This will result in a Less than Significant Impact.

A typical residential building facade can expect an exterior to inter noise level reduction of 25 dB with the windows and doors in the closed position and air conditioning to allow for the appropriate acoustical isolation. Therefore, interior noise levels are expected to comply with the interior noise level standard of 45 dB Ldn.

Impact 3.11-5: The project may result in noise from on-site activities at sensitive receptors (Potentially Significant)

Figure 3.11-3 depicts the project site plan and proposed parcel designations. A finalized site plan depicting building elevations and floor plans is not currently available for the project site. Therefore, building facades are estimated at the parcel boundaries in Figure 3.11-3.

On-site noise sources, which we have identified, are associated with the proposed Activity and Wellness Center located on Parcel 10. These on-site noise sources are generated by mechanical equipment, parking lot use, and swimming pool activities at the Activity and Wellness Center. Additional on-site noise sources are associated with activity at the proposed dog park on Parcel 6.

Mechanical Equipment

The proposed West Davis Active Adult Community (WDAAC) Project includes the construction of the Activity and Wellness Center on Parcel 10. See Figure 3.11-3. The Activity and Wellness Center is comprised of a health club, restaurant, and clubhouse, primarily for use by on-site residents. It is expected that the primary noise source associated with these uses will be due to heating, air conditioning, and ventilation equipment. These types of equipment are often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from these types of equipment can vary significantly and generally range between 45 dB to 70 dB at a distance of 50-feet. Shielding from rooftop parapets substantially reduces noise from these types of equipment. Based upon measurements conducted at various commercial and retail facilities, HVAC mechanical equipment is not expected to generate noise levels exceeding 45-50 dB Leq at distances beyond 50 feet from building facades.

For the purpose of this analysis, it is predicted that HVAC units are located on the rooftop of the Activity and Wellness Center, at a distance of 25 feet from the edge of the building. The rooftop is predicted to have an elevation of 20-feet, with parapets 3-feet in height along the perimeter of the rooftop for a total height of 23-feet. HVAC units are estimated to be 3-feet in height. The nearest noise sensitive receptor is predicted to be 50-feet from the Activity and Wellness Center. At this distance, HVAC noise levels would be approximately 35 dBA Leq, or less. This would comply with the City of Davis Noise Ordinance.

Swimming Pool

The proposed WDAAC Project includes the construction of an outdoor swimming pool as part of the proposed health club located on Parcel 10. The outdoor swimming pool is proposed primarily for use by on-site residents and the public. However, the pool is not intended for use in high attendance activities such as swim meets.

People using swimming pools generate noise, and additionally, pool equipment, such as electrical pumps, could be a significant noise source. To quantify likely noise levels from people using the pool facilities on the project site, j.c. brennan & associates, Inc. utilized noise level data collected for other pool facilities. The noise level measurements were conducted at a distance of 50-feet from the center of the pool. The results of the noise level measurements indicate that, during the busiest hour of operations, the measured sound level was 60 dB Leq. Because this noise level represents the busiest hour of pool activity, it is expected to approximately represent worst case noise levels associated with typical use of the proposed pool facilities. This could potentially exceed the City of Davis Noise Ordinance daytime standard of 55 dB Leq.

Mitigation Measures

Implementation of the following mitigation measures will reduce the swimming pool noise levels to less than significant.

Mitigation 3-11-3 - Pool use should be confined to the daytime hours of 7:00 a.m. to 9:00 a.m.

Implementation of the mitigation measures will reduce the pool noise levels to less than significant.

Dog Park

The proposed WDAAC Project also includes the construction of a dog park, intended for use by small dogs, adjacent to Parcel 6.

Interactions between dogs and humans at dog parks have the potential to generate significant noise levels at nearby sensitive receptors. To quantify likely noise levels from the dog park on the project site, j.c. brennan & associates, Inc. utilized noise level data collected at the Ashley Off-Leash Dog Park in Auburn, California. The primary noise sources at the dog park were caused by humans interacting with each other and with their pets. Dogs were observed to play quietly with other dogs, with occasional short barks or growls. The noise level measurements were conducted at a distance of 75-feet from the center of the dog park. The results of the noise level measurements indicate that, during the busiest hour of the day, the measured sound level was 53 dB Leq. Because this noise level represents the busiest hour of dog park activity, it is expected to approximately represent worst case noise levels associated with typical use of dog park facilities. This could potentially exceed the City of Davis Noise Ordinance daytime standard of 55 dB Leq.

Mitigation Measures

Implementation of the following mitigation measures will reduce the dog park noise levels to less than significant.

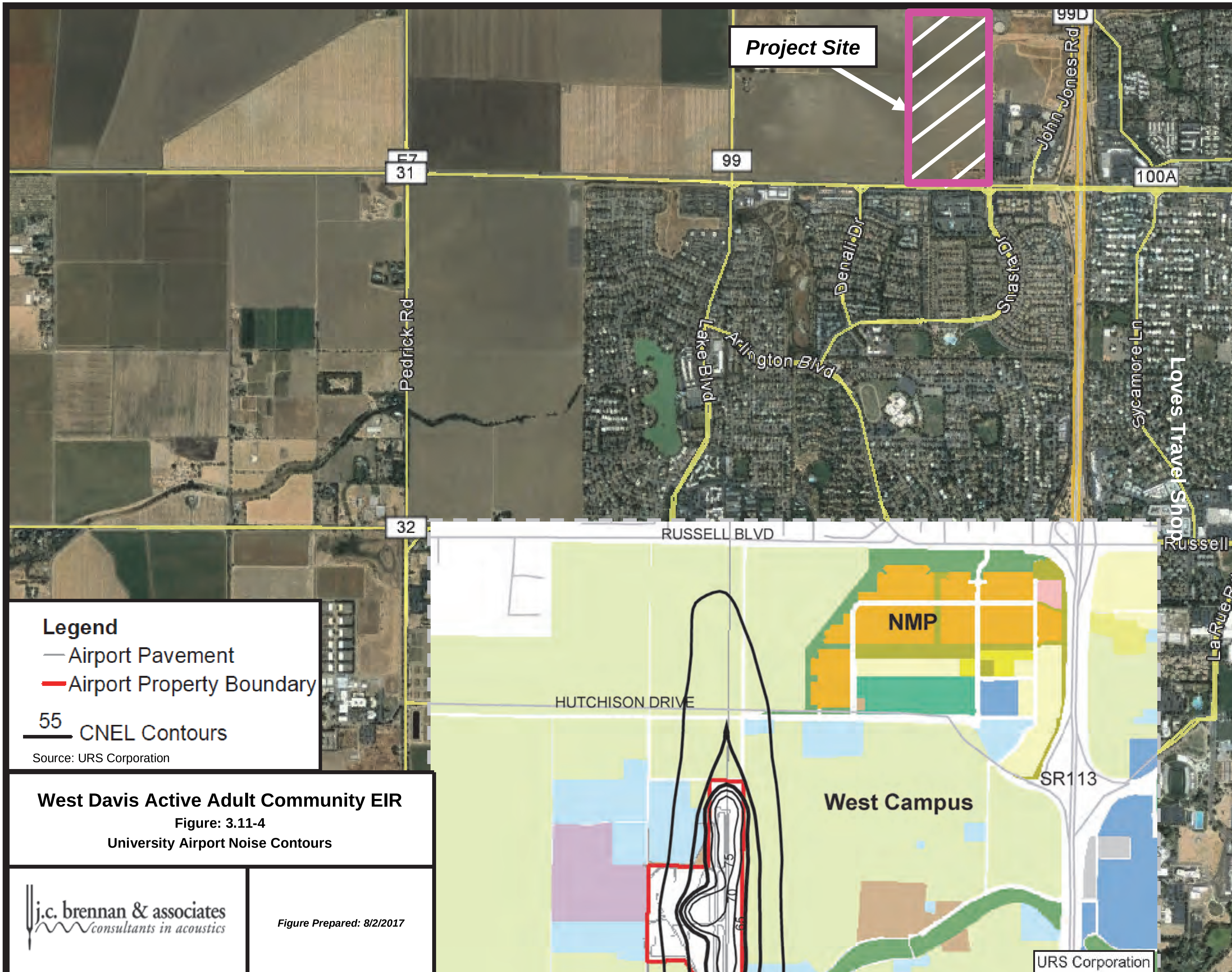
Mitigation 3-11-4 - Locating the center of the dog parkat a distance of 75-feet from the nearest building facade will reduce the dog park noise levels to within the daytime noise ordinance standard of 55 dB Leq.

Mitigation 3-11-5 - dog park use should be confined to the daytime hours of 7:00 a.m. to 9:00 a.m.

Implementation of the mitigation measures will reduce the pool noise levels to less than significant.

Impact 3.11-7: The project may be exposed to excessive noise levels due to aircraft noise (Less than Significant)

The proposed project is located within a two-mile radius of the University Airport. However, the project site is located outside of the 55 dB CNEL noise level contour, as shown in Figure 3.11-4. Therefore, this is a ***less than significant*** impact.



West Davis Active Adult Community EIR

Figure: 3.11-4

University Airport Noise Contours

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Figure Prepared: 8/2/2017

Appendix A
West Davis Innovation Center
24hr Continuous Noise Monitoring - Site A
1/7/2015 - 1/8/2015

Hour	Leq	Lmax	L50	L90
10:00	63	78	61	49
11:00	63	79	60	48
12:00	64	81	61	49
13:00	62	76	60	48
14:00	63	78	61	49
15:00	64	82	62	52
16:00	65	78	63	55
17:00	64	79	63	54
18:00	64	77	62	53
19:00	62	72	60	52
20:00	61	72	58	50
21:00	60	72	57	48
22:00	59	72	55	47
23:00	57	80	50	44
0:00	56	74	47	42
1:00	54	70	44	41
2:00	51	72	41	39
3:00	53	76	45	41
4:00	54	75	46	43
5:00	59	78	52	47
6:00	61	75	57	51
7:00	65	86	62	55
8:00	65	80	64	58
9:00	63	76	61	54

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	60	63	61	51	57
Lmax (Maximum)	86	72	78	80	70	75
L50 (Median)	64	57	61	57	41	49
L90 (Background)	58	48	52	51	39	44

Computed Ldn, dB	65
% Daytime Energy	88%
% Nighttime Energy	12%

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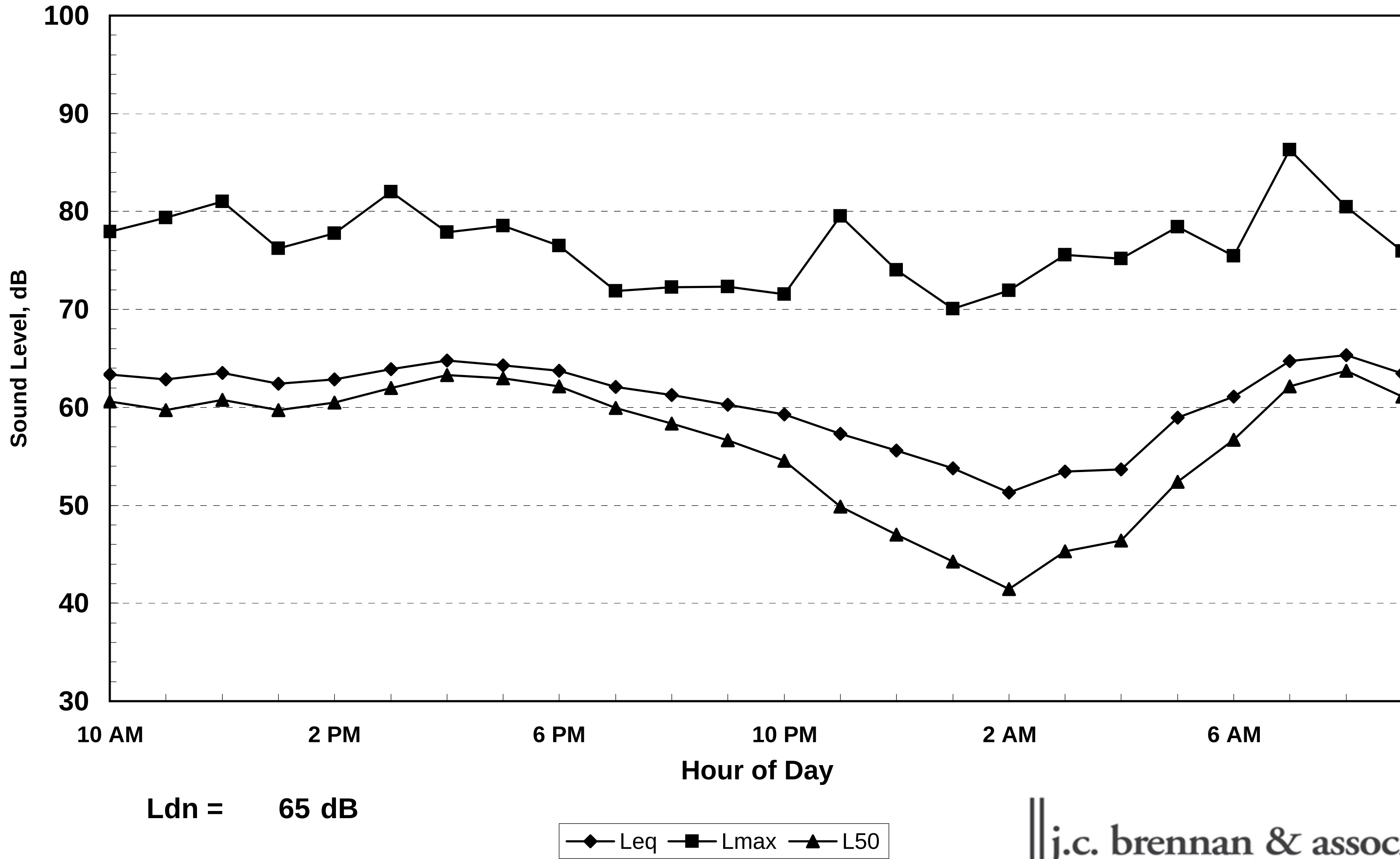
Appendix A

West Davis Innovation Center

24hr Continuous Noise Monitoring - Site A

1/7/2015 - 1/8/2015



Ldn = 65 dB

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Appendix A
West Davis Innovation Center
24hr Continuous Noise Monitoring - Site B
1/7/2015 - 1/8/2015

Hour	Leq	Lmax	L50	L90
11:00	63	77	60	54
12:00	63	74	61	54
13:00	62	74	60	55
14:00	63	78	61	56
15:00	63	86	62	57
16:00	64	74	63	60
17:00	66	79	65	62
18:00	65	75	64	61
19:00	62	73	61	55
20:00	61	71	60	56
21:00	60	71	59	54
22:00	59	73	58	53
23:00	58	71	56	49
0:00	57	70	54	46
1:00	56	77	51	43
2:00	56	72	52	44
3:00	59	72	55	45
4:00	61	74	59	54
5:00	65	77	63	57
6:00	64	73	63	58
7:00	66	82	65	60
8:00	66	77	65	61
9:00	64	72	62	57
10:00	63	83	61	56

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	66	60	64	65	56	61
Lmax (Maximum)	86	71	76	77	70	73
L50 (Median)	65	59	62	63	51	57
L90 (Background)	62	54	57	58	43	50

Computed Ldn, dB	68
% Daytime Energy	77%
% Nighttime Energy	23%

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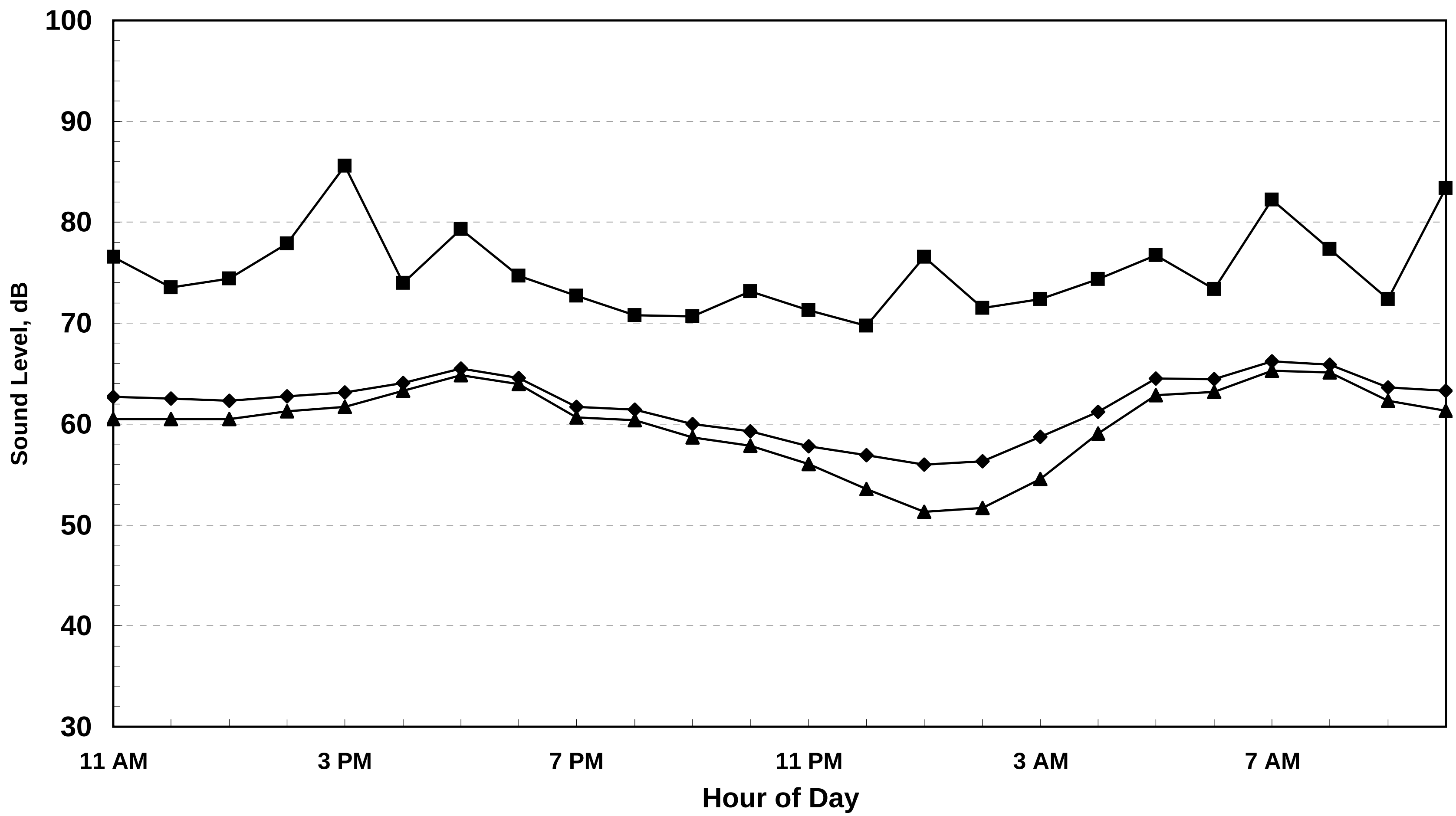
Appendix A
West Davis Innovation Center
24hr Continuous Noise Monitoring - Site B
1/7/2015 - 1/8/2015



Ldn = 68 dB

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Appendix A
Short-Term Noise Monitoring Summary

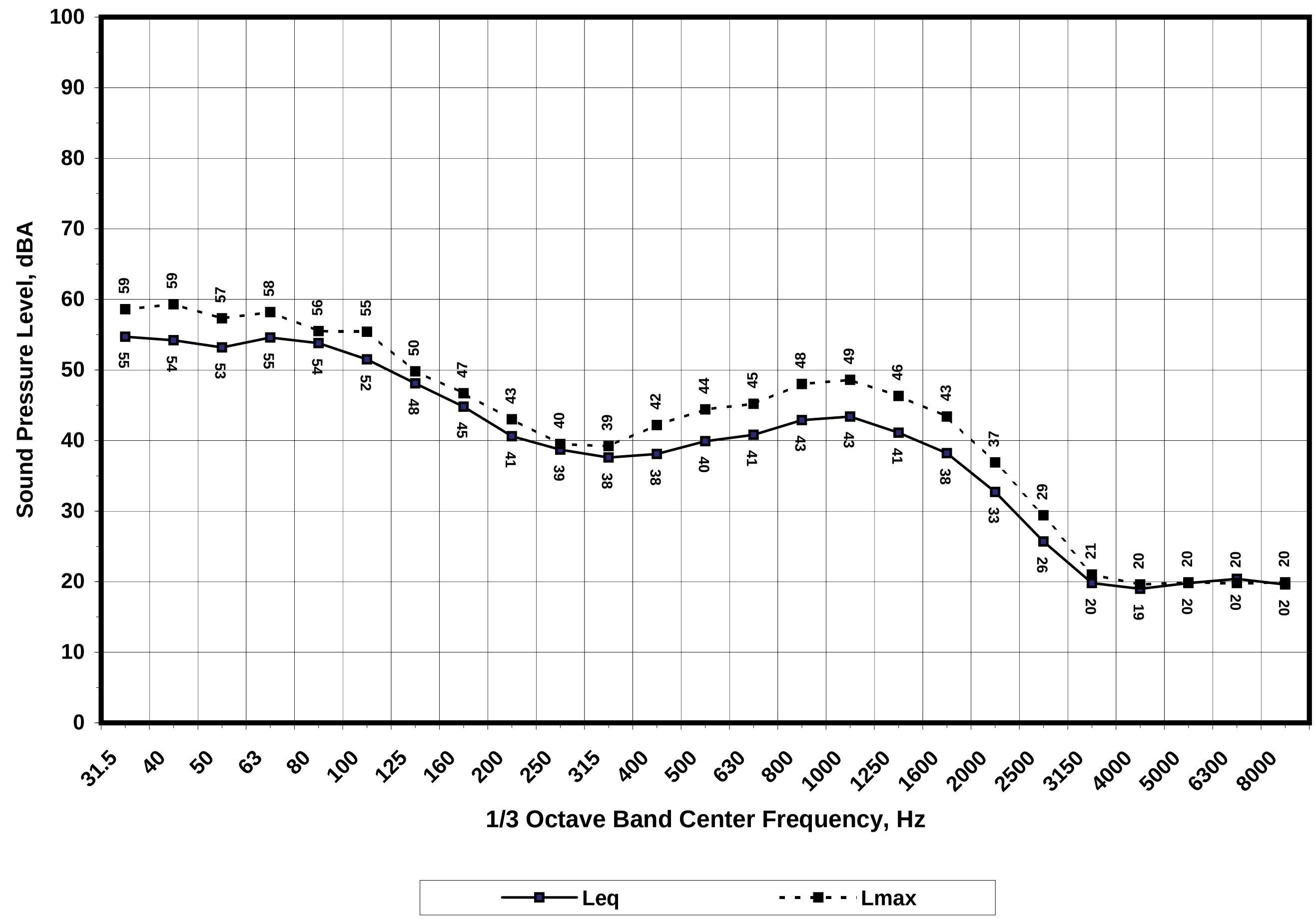
Project: 2017-112
Location: Site 1
Date: 1/8/2015
Time: 10:21 AM
SLM: 824-2

Calibrator: 200
Wind: Calm
Weather: 60F, Clear sky
Field Tech: WOO

Measurement Results, dBA

Duration:	10 minutes
L_{eq}:	50
L_{max}:	53
L_{min}:	46
L_{50}:	52
L_{90}:	48

Notes
Traffic from Hwy 113 is the dominant noise source.



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Appendix A
Short-Term Noise Monitoring Summary

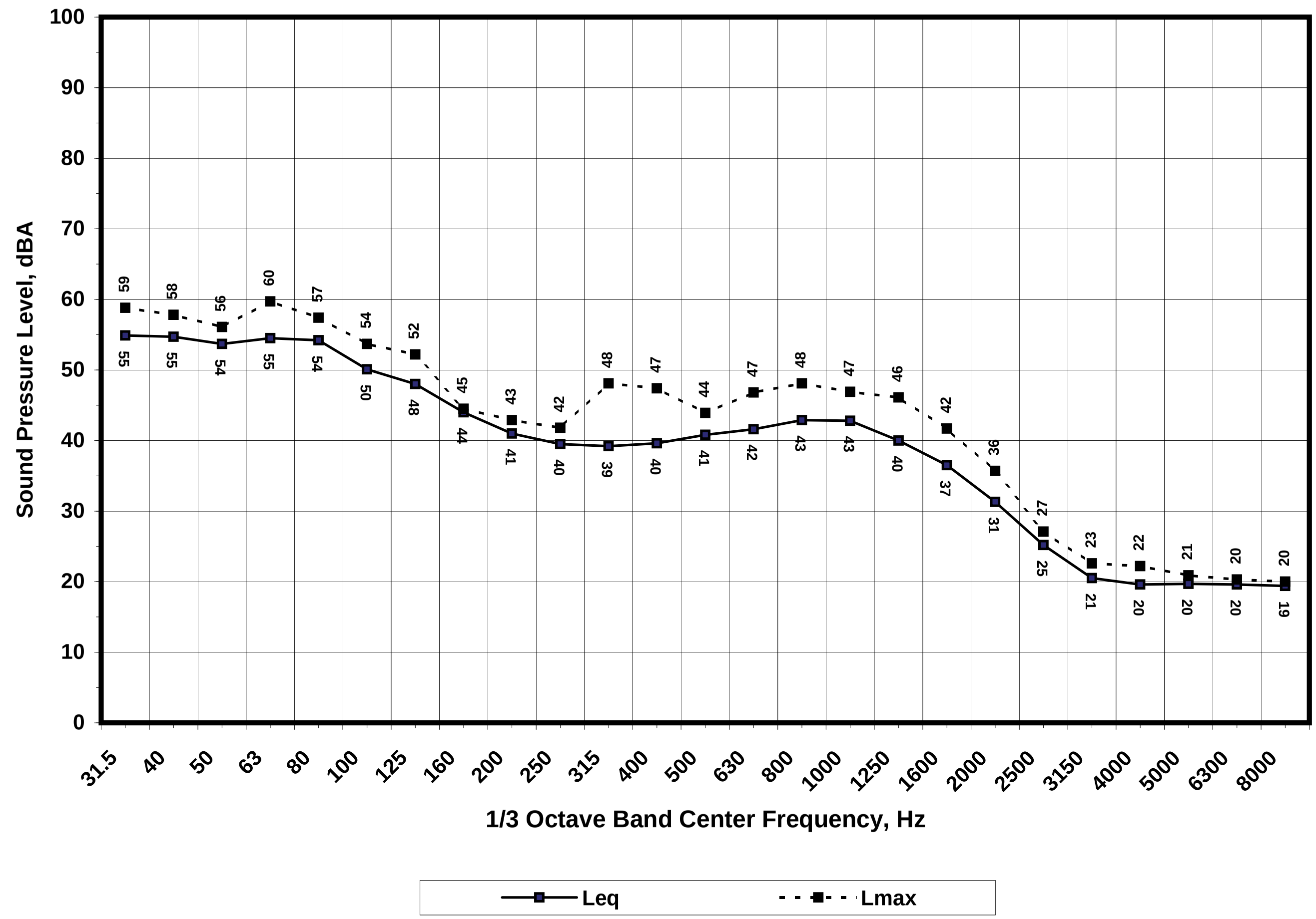
Project: 2017-112
Location: Site 2
Date: 1/8/2015
Time: 10:37 AM
SLM: 824-2

Calibrator: 200
Wind: Calm
Weather: 60F, Clear sky
Field Tech: WOO

Measurement Results, dBA

Duration: 10 minutes
L_{eq}: 49
L_{max}: 53
L_{min}: 46
L_{50}: 49
L_{90}: 47

Notes
Traffic from Hwy 113 is the dominant noise source.



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Appendix A
Short-Term Noise Monitoring Summary

Project: 2017-112
Location: Site 3
Date: 1/8/2015
Time: 10:55 AM
SLM: 824-2

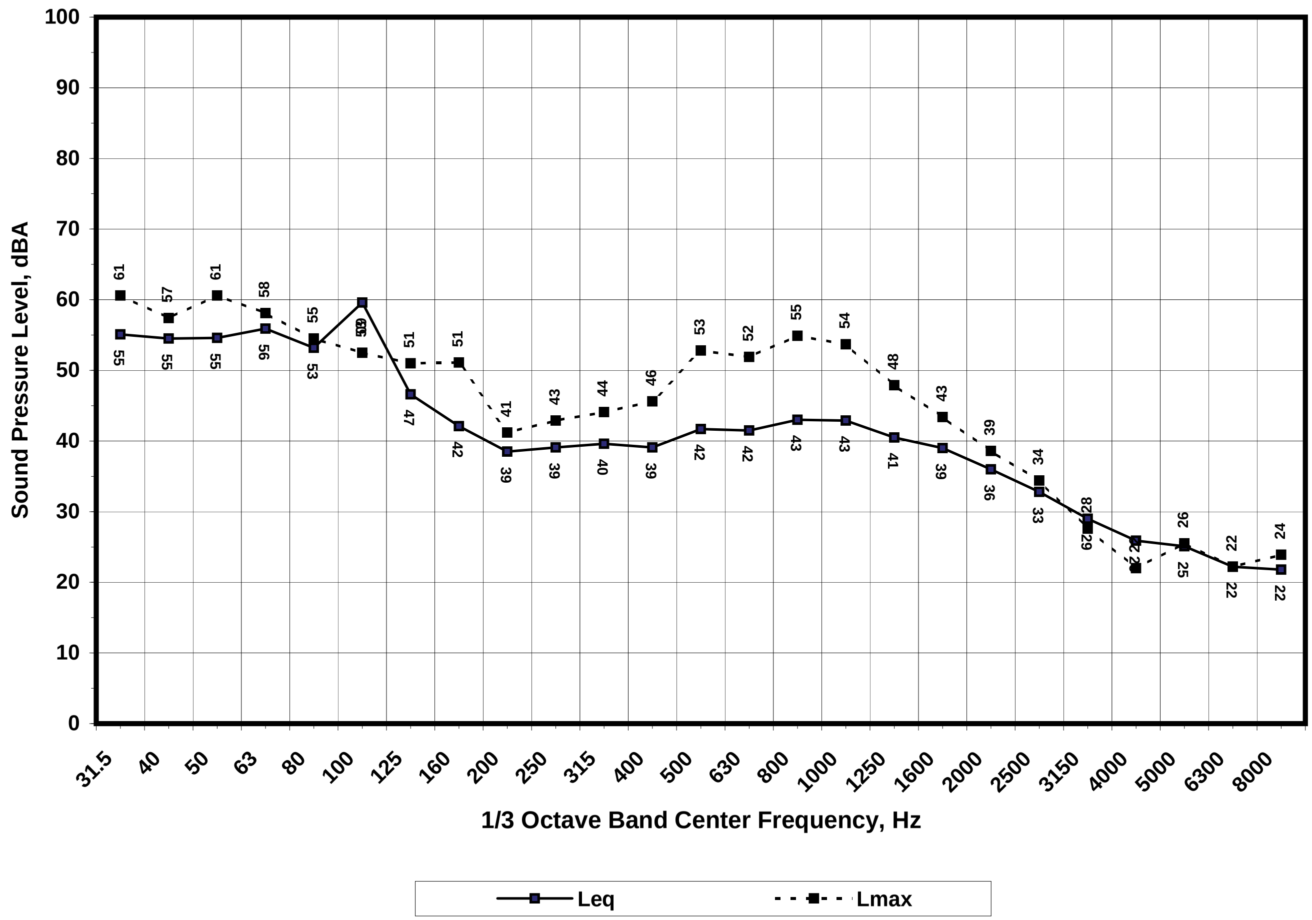
Calibrator: 200
Wind: Calm
Weather: 60F, Clear sky
Field Tech: WOO

Measurement Results, dBA

Duration:	10 minutes
L_{eq}:	50
L_{max}:	56
L_{min}:	46
L_{50}:	49
L_{90}:	47

Notes

Traffic from Hwy 113 is the dominant noise source.



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Appendix A
Short-Term Noise Monitoring Summary

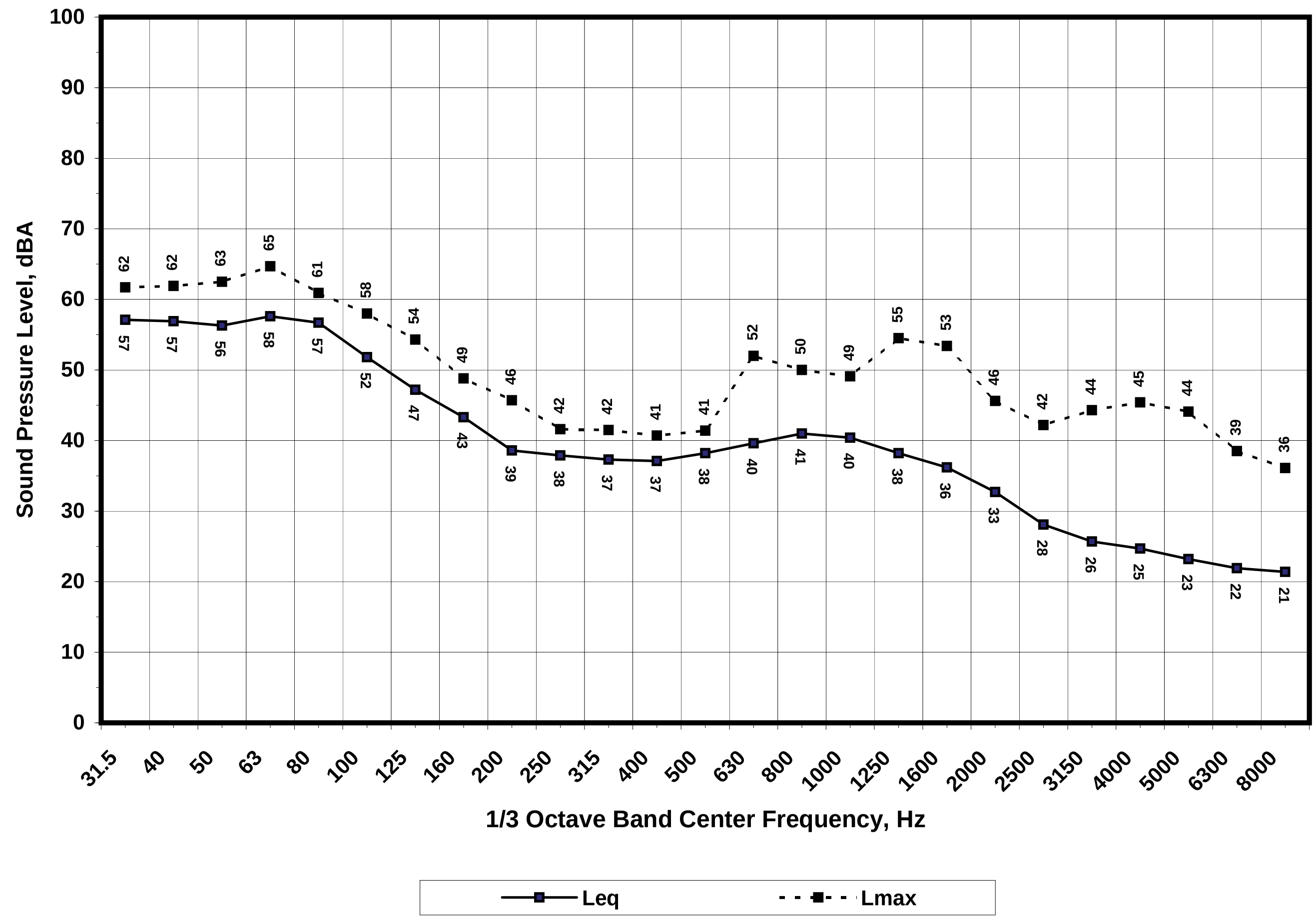
Project: 2017-112
Location: Site 4
Date: 1/8/2015
Time: 11:33 AM
SLM: 824-2

Calibrator: 200
Wind: Calm
Weather: 60F, Clear sky
Field Tech: WOO

Measurement Results, dBA

Duration: 10 minutes
L_{eq}: 48
L_{max}: 57
L_{min}: 44
L_{50}: 47
L_{90}: 45

Notes
Traffic from Hwy 113 is the dominant noise source. Traffic from parking lot is audible.



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Appendix A
Short-Term Noise Monitoring Summary

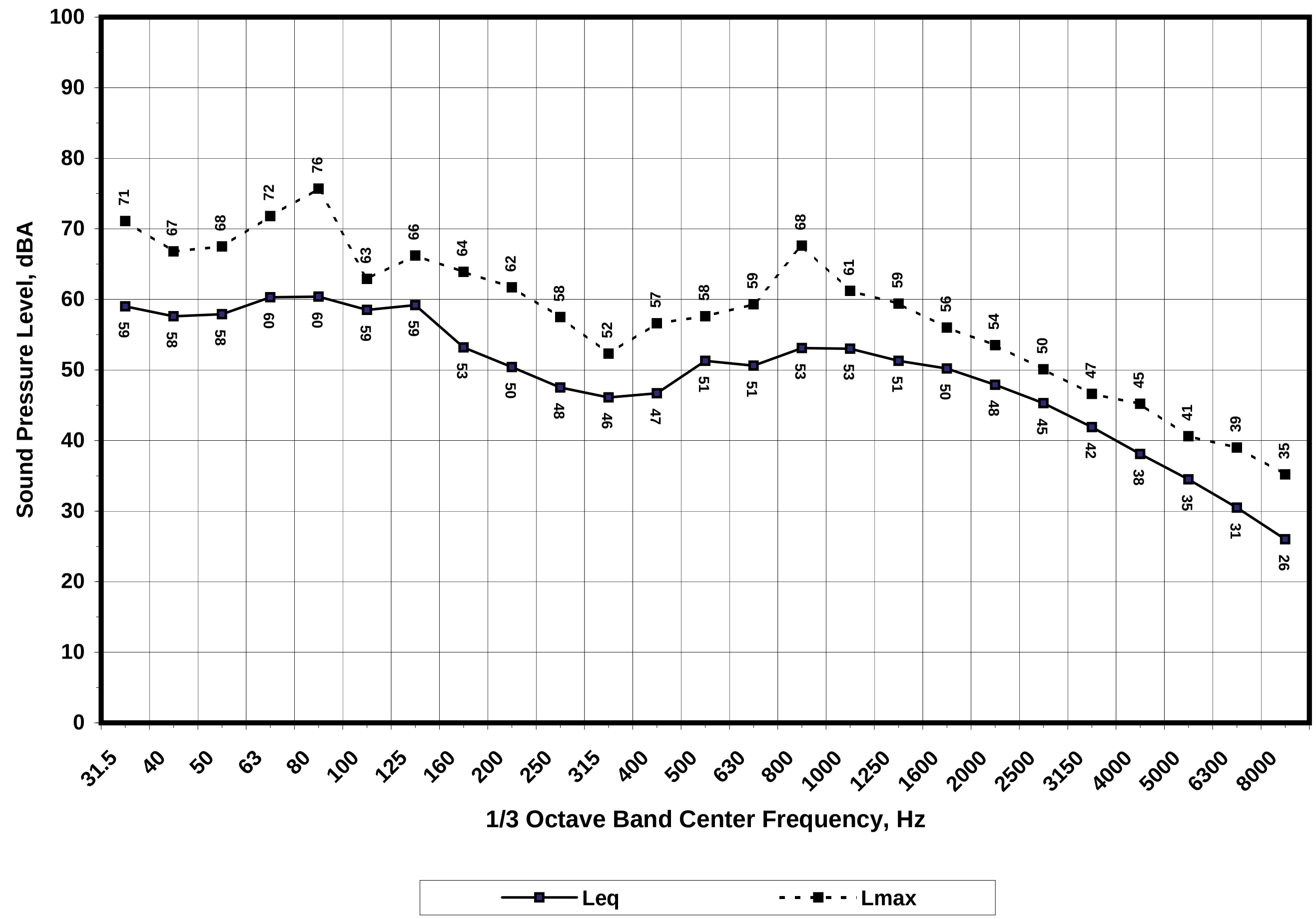
Project: 2017-112
Location: Site 5
Date: 1/8/2015
Time: 12:00 PM
SLM: 824-2

Calibrator: 200
Wind: Calm
Weather: 60F, Clear sky
Field Tech: WOO

Measurement Results, dBA

Duration: 10 minutes
L_{eq}: 60
L_{max}: 68
L_{min}: 45
L_{50}: 59
L_{90}: 53

Notes
Traffic from Hwy 113 is the dominant noise source.



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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-112
Description: Existing Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Anderson Road	North of Covell Boulevard	5,130	85		15	1	1	30	100	
2	Anderson Road	South of Covell Boulevard	8,360	85		15	1	1	30	100	
3	Covell Boulevard	East of Anderson Road	15,560	85		15	1	1	35	100	
4	Covell Boulevard	West of Anderson Road	16,670	85		15	1	1	35	100	
5	Covell Boulevard	East of Denali Drive	12,060	85		15	1	1	45	100	
6	Covell Boulevard	West of Denali Drive	10,190	85		15	1	1	45	100	
7	Covell Boulevard	East of F Street	21,280	85		15	1	1	35	100	
8	Covell Boulevard	West of F Street	18,830	85		15	1	1	35	100	
9	Covell Boulevard	East of Lake Boulevard	9,450	85		15	1	1	45	100	
10	Covell Boulevard	East of Oak Avenue	16,610	85		15	1	1	35	100	
11	Covell Boulevard	East of Sycamore Lane	16,980	85		15	1	1	35	100	
12	Covell Boulevard	West of J Street	21,280	85		15	1	1	35	100	
13	F Street	North of Covell Boulevard	6,960	85		15	1	1	30	100	
14	F Street	South of Covell Boulevard	9,730	85		15	1	1	25	100	
15	Lake Boulevard	North of Covell Boulevard	1,840	85		15	1	1	50	100	
16	Lake Boulevard	South of Covell Boulevard	5,670	85		15	1	1	30	100	
17	Risling Court	North of Covell Boulevard	1,250	85		15	1	1	25	100	
18	Risling Court	North of Sutter Hospital Driveway	880	85		15	1	1	25	100	
19	Risling Court	South of Sutter Hospital Driveway	1,250	85		15	1	1	25	100	
20	Sycamore Lane	North of Covell Boulevard	6,210	85		15	1	1	25	100	
21											
22											
23											
24											
25											
26											
27											
28											
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31											
32											
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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2017-112
Description: Existing Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Anderson Road	North of Covell Boulevard	53.6	44.2	51.3	55.9
2	Anderson Road	South of Covell Boulevard	55.7	46.3	53.5	58.0
3	Covell Boulevard	East of Anderson Road	60.3	50.1	55.3	61.8
4	Covell Boulevard	West of Anderson Road	60.6	50.4	55.6	62.1
5	Covell Boulevard	East of Denali Drive	62.3	50.7	55.2	63.3
6	Covell Boulevard	West of Denali Drive	61.6	49.9	54.4	62.6
7	Covell Boulevard	East of F Street	61.7	51.4	56.6	63.2
8	Covell Boulevard	West of F Street	61.1	50.9	56.1	62.6
9	Covell Boulevard	East of Lake Boulevard	61.3	49.6	54.1	62.3
10	Covell Boulevard	East of Oak Avenue	60.6	50.4	55.6	62.1
11	Covell Boulevard	East of Sycamore Lane	60.7	50.5	55.7	62.2
12	Covell Boulevard	West of J Street	61.7	51.4	56.6	63.2
13	F Street	North of Covell Boulevard	54.9	45.5	52.7	57.2
14	F Street	South of Covell Boulevard	54.1	45.8	53.4	57.1
15	Lake Boulevard	North of Covell Boulevard	55.5	43.2	47.4	56.3
16	Lake Boulevard	South of Covell Boulevard	54.0	44.7	51.8	56.3
17	Risling Court	North of Covell Boulevard	45.1	36.8	44.5	48.2
18	Risling Court	North of Sutter Hospital Driveway	43.6	35.3	43.0	46.6
19	Risling Court	South of Sutter Hospital Driveway	45.1	36.8	44.5	48.2
20	Sycamore Lane	North of Covell Boulevard	52.1	43.8	51.4	55.1

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2017-112
Description: Existing Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours --------				
			75	70	65	60	55
1	Anderson Road	North of Covell Boulevard	5	11	25	53	115
2	Anderson Road	South of Covell Boulevard	7	16	34	74	159
3	Covell Boulevard	East of Anderson Road	13	28	61	132	284
4	Covell Boulevard	West of Anderson Road	14	30	64	138	297
5	Covell Boulevard	East of Denali Drive	17	36	78	167	360
6	Covell Boulevard	West of Denali Drive	15	32	69	149	322
7	Covell Boulevard	East of F Street	16	35	75	162	349
8	Covell Boulevard	West of F Street	15	32	69	150	322
9	Covell Boulevard	East of Lake Boulevard	14	31	66	142	306
10	Covell Boulevard	East of Oak Avenue	14	30	64	138	296
11	Covell Boulevard	East of Sycamore Lane	14	30	65	140	301
12	Covell Boulevard	West of J Street	16	35	75	162	349
13	F Street	North of Covell Boulevard	7	14	30	65	141
14	F Street	South of Covell Boulevard	6	14	30	64	138
15	Lake Boulevard	North of Covell Boulevard	6	12	26	57	123
16	Lake Boulevard	South of Covell Boulevard	6	12	26	57	123
17	Risling Court	North of Covell Boulevard	2	4	8	16	35
18	Risling Court	North of Sutter Hospital Driveway	1	3	6	13	28
19	Risling Court	South of Sutter Hospital Driveway	2	4	8	16	35
20	Sycamore Lane	North of Covell Boulevard	5	10	22	47	102

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-112
Description: Existing + Approved Projects + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Anderson Road	North of Covell Boulevard	4,870	85		15	1	1	30	100	
2	Anderson Road	South of Covell Boulevard	8,700	85		15	1	1	30	100	
3	Covell Boulevard	East of Anderson Road	16,810	85		15	1	1	35	100	
4	Covell Boulevard	West of Anderson Road	18,080	85		15	1	1	35	100	
5	Covell Boulevard	East of Denali Drive	12,770	85		15	1	1	45	100	
6	Covell Boulevard	West of Denali Drive	10,700	85		15	1	1	45	100	
7	Covell Boulevard	East of F Street	22,620	85		15	1	1	35	100	
8	Covell Boulevard	West of F Street	20,410	85		15	1	1	35	100	
9	Covell Boulevard	East of Lake Boulevard	9,890	85		15	1	1	45	100	
10	Covell Boulevard	East of Oak Avenue	18,200	85		15	1	1	35	100	
11	Covell Boulevard	East of Sycamore Lane	18,290	85		15	1	1	35	100	
12	Covell Boulevard	West of J Street	22,720	85		15	1	1	35	100	
13	F Street	North of Covell Boulevard	7,040	85		15	1	1	30	100	
14	F Street	South of Covell Boulevard	10,730	85		15	1	1	25	100	
15	Lake Boulevard	North of Covell Boulevard	1,840	85		15	1	1	50	100	
16	Lake Boulevard	South of Covell Boulevard	5,930	85		15	1	1	30	100	
17	Project Driveway	North of Covell Boulevard	1,050	85		15	1	1	25	100	
18	Risling Court	North of Covell Boulevard	3,120	85		15	1	1	25	100	
19	Risling Court	North of Sutter Hospital Driveway	1,550	85		15	1	1	25	100	
20	Risling Court	South of Sutter Hospital Driveway	3,000	85		15	1	1	25	100	
21	Sutter Hospital Driveway	West of Risling Court	1,180	85		15	1	1	25	100	
22	Sycamore Lane	North of Covell Boulevard	6,780	85		15	1	1	25	100	
23											
24											
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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2017-112
Description: Existing + Approved Projects + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Anderson Road	North of Covell Boulevard	53.3	44.0	51.1	55.7
2	Anderson Road	South of Covell Boulevard	55.8	46.5	53.6	58.2
3	Covell Boulevard	East of Anderson Road	60.6	50.4	55.6	62.1
4	Covell Boulevard	West of Anderson Road	61.0	50.7	55.9	62.4
5	Covell Boulevard	East of Denali Drive	62.6	50.9	55.4	63.6
6	Covell Boulevard	West of Denali Drive	61.8	50.2	54.7	62.8
7	Covell Boulevard	East of F Street	61.9	51.7	56.9	63.4
8	Covell Boulevard	West of F Street	61.5	51.3	56.5	63.0
9	Covell Boulevard	East of Lake Boulevard	61.5	49.8	54.3	62.5
10	Covell Boulevard	East of Oak Avenue	61.0	50.8	56.0	62.5
11	Covell Boulevard	East of Sycamore Lane	61.0	50.8	56.0	62.5
12	Covell Boulevard	West of J Street	61.9	51.7	56.9	63.4
13	F Street	North of Covell Boulevard	54.9	45.6	52.7	57.3
14	F Street	South of Covell Boulevard	54.5	46.2	53.8	57.5
15	Lake Boulevard	North of Covell Boulevard	55.5	43.2	47.4	56.3
16	Lake Boulevard	South of Covell Boulevard	54.2	44.8	52.0	56.5
17	Project Driveway	North of Covell Boulevard	44.4	36.1	43.7	47.4
18	Risling Court	North of Covell Boulevard	49.1	40.8	48.5	52.1
19	Risling Court	North of Sutter Hospital Driveway	46.1	37.8	45.4	49.1
20	Risling Court	South of Sutter Hospital Driveway	48.9	40.7	48.3	52.0
21	Sutter Hospital Driveway	West of Risling Court	44.9	36.6	44.2	47.9
22	Sycamore Lane	North of Covell Boulevard	52.5	44.2	51.8	55.5

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2017-112

Description: Existing + Approved Projects + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Anderson Road	North of Covell Boulevard	5	11	24	51	111
2	Anderson Road	South of Covell Boulevard	8	16	35	76	163
3	Covell Boulevard	East of Anderson Road	14	30	64	139	299
4	Covell Boulevard	West of Anderson Road	15	31	68	146	313
5	Covell Boulevard	East of Denali Drive	17	37	81	174	374
6	Covell Boulevard	West of Denali Drive	15	33	72	154	332
7	Covell Boulevard	East of F Street	17	36	78	169	364
8	Covell Boulevard	West of F Street	16	34	73	158	340
9	Covell Boulevard	East of Lake Boulevard	15	32	68	146	315
10	Covell Boulevard	East of Oak Avenue	15	31	68	146	315
11	Covell Boulevard	East of Sycamore Lane	15	32	68	147	316
12	Covell Boulevard	West of J Street	17	37	79	169	365
13	F Street	North of Covell Boulevard	7	14	31	66	142
14	F Street	South of Covell Boulevard	7	15	32	68	147
15	Lake Boulevard	North of Covell Boulevard	6	12	26	57	123
16	Lake Boulevard	South of Covell Boulevard	6	13	27	59	127
17	Project Driveway	North of Covell Boulevard	1	3	7	14	31
18	Risling Court	North of Covell Boulevard	3	6	14	30	64
19	Risling Court	North of Sutter Hospital Driveway	2	4	9	19	40
20	Risling Court	South of Sutter Hospital Driveway	3	6	14	29	63
21	Sutter Hospital Driveway	West of Risling Court	2	3	7	16	34
22	Sycamore Lane	North of Covell Boulevard	5	11	23	50	108

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-112
Description: Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Anderson Road	North of Covell Boulevard	5,700	85		15	1	1	30	100	
2	Anderson Road	South of Covell Boulevard	12,200	85		15	1	1	30	100	
3	Covell Boulevard	East of Anderson Road	19,800	85		15	1	1	35	100	
4	Covell Boulevard	West of Anderson Road	21,900	85		15	1	1	35	100	
5	Covell Boulevard	East of Denali Drive	17,300	85		15	1	1	45	100	
6	Covell Boulevard	West of Denali Drive	14,300	85		15	1	1	45	100	
7	Covell Boulevard	East of F Street	29,400	85		15	1	1	35	100	
8	Covell Boulevard	West of F Street	25,200	85		15	1	1	35	100	
9	Covell Boulevard	East of Lake Boulevard	13,300	85		15	1	1	45	100	
10	Covell Boulevard	East of Oak Avenue	21,600	85		15	1	1	35	100	
11	Covell Boulevard	East of Sycamore Lane	23,000	85		15	1	1	35	100	
12	Covell Boulevard	West of J Street	29,200	85		15	1	1	35	100	
13	F Street	North of Covell Boulevard	8,300	85		15	1	1	30	100	
14	F Street	South of Covell Boulevard	11,100	85		15	1	1	25	100	
15	Lake Boulevard	North of Covell Boulevard	2,400	85		15	1	1	50	100	
16	Lake Boulevard	South of Covell Boulevard	8,900	85		15	1	1	30	100	
17	Risling Court	North of Covell Boulevard	3,700	85		15	1	1	25	100	
18	Risling Court	North of Sutter Hospital Driveway	1,600	85		15	1	1	25	100	
19	Risling Court	South of Sutter Hospital Driveway	3,700	85		15	1	1	25	100	
20	Sycamore Lane	North of Covell Boulevard	8,700	85		15	1	1	25	100	
21											
22											
23											
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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2017-112
Description: Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Anderson Road	North of Covell Boulevard	54.0	44.7	51.8	56.4
2	Anderson Road	South of Covell Boulevard	57.3	48.0	55.1	59.7
3	Covell Boulevard	East of Anderson Road	61.3	51.1	56.3	62.8
4	Covell Boulevard	West of Anderson Road	61.8	51.6	56.8	63.3
5	Covell Boulevard	East of Denali Drive	63.9	52.2	56.7	64.9
6	Covell Boulevard	West of Denali Drive	63.1	51.4	55.9	64.1
7	Covell Boulevard	East of F Street	63.1	52.8	58.0	64.6
8	Covell Boulevard	West of F Street	62.4	52.2	57.4	63.9
9	Covell Boulevard	East of Lake Boulevard	62.8	51.1	55.6	63.8
10	Covell Boulevard	East of Oak Avenue	61.7	51.5	56.7	63.2
11	Covell Boulevard	East of Sycamore Lane	62.0	51.8	57.0	63.5
12	Covell Boulevard	West of J Street	63.0	52.8	58.0	64.5
13	F Street	North of Covell Boulevard	55.6	46.3	53.4	58.0
14	F Street	South of Covell Boulevard	54.6	46.3	54.0	57.7
15	Lake Boulevard	North of Covell Boulevard	56.6	44.4	48.6	57.5
16	Lake Boulevard	South of Covell Boulevard	55.9	46.6	53.7	58.3
17	Risling Court	North of Covell Boulevard	49.9	41.6	49.2	52.9
18	Risling Court	North of Sutter Hospital Driveway	46.2	37.9	45.6	49.2
19	Risling Court	South of Sutter Hospital Driveway	49.9	41.6	49.2	52.9
20	Sycamore Lane	North of Covell Boulevard	53.6	45.3	52.9	56.6

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2017-112

Description: Cumulative No Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours --------				
			75	70	65	60	55
1	Anderson Road	North of Covell Boulevard	6	12	27	57	123
2	Anderson Road	South of Covell Boulevard	9	20	44	95	205
3	Covell Boulevard	East of Anderson Road	15	33	72	155	333
4	Covell Boulevard	West of Anderson Road	17	36	77	165	356
5	Covell Boulevard	East of Denali Drive	21	46	99	212	458
6	Covell Boulevard	West of Denali Drive	19	40	87	187	403
7	Covell Boulevard	East of F Street	20	43	93	201	434
8	Covell Boulevard	West of F Street	18	39	84	182	391
9	Covell Boulevard	East of Lake Boulevard	18	38	83	178	384
10	Covell Boulevard	East of Oak Avenue	16	35	76	164	353
11	Covell Boulevard	East of Sycamore Lane	17	37	79	171	368
12	Covell Boulevard	West of J Street	20	43	93	200	432
13	F Street	North of Covell Boulevard	7	16	34	73	158
14	F Street	South of Covell Boulevard	7	15	32	70	150
15	Lake Boulevard	North of Covell Boulevard	7	15	32	68	147
16	Lake Boulevard	South of Covell Boulevard	8	17	36	77	166
17	Risling Court	North of Covell Boulevard	3	7	16	34	72
18	Risling Court	North of Sutter Hospital Driveway	2	4	9	19	41
19	Risling Court	South of Sutter Hospital Driveway	3	7	16	34	72
20	Sycamore Lane	North of Covell Boulevard	6	13	28	59	128

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-112
Description: Cumulative + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Anderson Road	North of Covell Boulevard	5,740	85		15	1	1	30	100	
2	Anderson Road	South of Covell Boulevard	12,330	85		15	1	1	30	100	
3	Covell Boulevard	East of Anderson Road	20,300	85		15	1	1	35	100	
4	Covell Boulevard	West of Anderson Road	22,570	85		15	1	1	35	100	
5	Covell Boulevard	East of Denali Drive	17,910	85		15	1	1	45	100	
6	Covell Boulevard	West of Denali Drive	14,750	85		15	1	1	45	100	
7	Covell Boulevard	East of F Street	29,610	85		15	1	1	35	100	
8	Covell Boulevard	West of F Street	25,530	85		15	1	1	35	100	
9	Covell Boulevard	East of Lake Boulevard	13,690	85		15	1	1	45	100	
10	Covell Boulevard	East of Oak Avenue	21,950	85		15	1	1	35	100	
11	Covell Boulevard	East of Sycamore Lane	23,670	85		15	1	1	35	100	
12	Covell Boulevard	West of J Street	29,410	85		15	1	1	35	100	
13	F Street	North of Covell Boulevard	8,300	85		15	1	1	30	100	
14	F Street	South of Covell Boulevard	11,220	85		15	1	1	25	100	
15	Lake Boulevard	North of Covell Boulevard	2,400	85		15	1	1	50	100	
16	Lake Boulevard	South of Covell Boulevard	9,190	85		15	1	1	30	100	
17	Project Driveway	North of Covell Boulevard	1,050	85		15	1	1	25	100	
18	Risling Court	North of Covell Boulevard	5,280	85		15	1	1	25	100	
19	Risling Court	North of Sutter Hospital Driveway	2,270	85		15	1	1	25	100	
20	Risling Court	South of Sutter Hospital Driveway	5,160	85		15	1	1	25	100	
21	Sutter Hospital Driveway	West of Risling Court	1,180	85		15	1	1	25	100	
22	Sycamore Lane	North of Covell Boulevard	8,730	85		15	1	1	25	100	
23											
24											
25											
26											
27											
28											
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30											
31											
32											
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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2017-112
Description: Cumulative + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Anderson Road	North of Covell Boulevard	54.0	44.7	51.8	56.4
2	Anderson Road	South of Covell Boulevard	57.4	48.0	55.1	59.7
3	Covell Boulevard	East of Anderson Road	61.5	51.2	56.4	62.9
4	Covell Boulevard	West of Anderson Road	61.9	51.7	56.9	63.4
5	Covell Boulevard	East of Denali Drive	64.1	52.4	56.9	65.1
6	Covell Boulevard	West of Denali Drive	63.2	51.6	56.0	64.2
7	Covell Boulevard	East of F Street	63.1	52.9	58.1	64.6
8	Covell Boulevard	West of F Street	62.5	52.2	57.4	63.9
9	Covell Boulevard	East of Lake Boulevard	62.9	51.2	55.7	63.9
10	Covell Boulevard	East of Oak Avenue	61.8	51.6	56.8	63.3
11	Covell Boulevard	East of Sycamore Lane	62.1	51.9	57.1	63.6
12	Covell Boulevard	West of J Street	63.1	52.8	58.0	64.6
13	F Street	North of Covell Boulevard	55.6	46.3	53.4	58.0
14	F Street	South of Covell Boulevard	54.7	46.4	54.0	57.7
15	Lake Boulevard	North of Covell Boulevard	56.6	44.4	48.6	57.5
16	Lake Boulevard	South of Covell Boulevard	56.1	46.7	53.9	58.4
17	Project Driveway	North of Covell Boulevard	44.4	36.1	43.7	47.4
18	Risling Court	North of Covell Boulevard	51.4	43.1	50.7	54.4
19	Risling Court	North of Sutter Hospital Driveway	47.7	39.4	47.1	50.8
20	Risling Court	South of Sutter Hospital Driveway	51.3	43.0	50.6	54.3
21	Sutter Hospital Driveway	West of Risling Court	44.9	36.6	44.2	47.9
22	Sycamore Lane	North of Covell Boulevard	53.6	45.3	52.9	56.6

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2017-112

Description: Cumulative + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Anderson Road	North of Covell Boulevard	6	12	27	57	124
2	Anderson Road	South of Covell Boulevard	10	21	44	96	206
3	Covell Boulevard	East of Anderson Road	16	34	73	157	339
4	Covell Boulevard	West of Anderson Road	17	36	78	169	363
5	Covell Boulevard	East of Denali Drive	22	47	101	217	468
6	Covell Boulevard	West of Denali Drive	19	41	89	191	412
7	Covell Boulevard	East of F Street	20	44	94	202	436
8	Covell Boulevard	West of F Street	18	39	85	183	395
9	Covell Boulevard	East of Lake Boulevard	18	39	84	182	392
10	Covell Boulevard	East of Oak Avenue	17	36	77	166	357
11	Covell Boulevard	East of Sycamore Lane	17	38	81	174	375
12	Covell Boulevard	West of J Street	20	43	93	201	434
13	F Street	North of Covell Boulevard	7	16	34	73	158
14	F Street	South of Covell Boulevard	7	15	33	70	151
15	Lake Boulevard	North of Covell Boulevard	7	15	32	68	147
16	Lake Boulevard	South of Covell Boulevard	8	17	36	79	169
17	Project Driveway	North of Covell Boulevard	1	3	7	14	31
18	Risling Court	North of Covell Boulevard	4	9	20	42	92
19	Risling Court	North of Sutter Hospital Driveway	2	5	11	24	52
20	Risling Court	South of Sutter Hospital Driveway	4	9	19	42	90
21	Sutter Hospital Driveway	West of Risling Court	2	3	7	16	34
22	Sycamore Lane	North of Covell Boulevard	6	13	28	59	128

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Appendix F

Traffic Impact Analysis

Traffic Counts

Prepared by National Data & Surveying Services

MAX QUEUE STUDY

Location: Risling Ct/Shasta Dr (NS) & W Covell Blvd (EW)
City: Davis, CA
Day: Thursday
Date: 3/16/2017

TIME	MAX QUEUE LENGTH		
	EB Lane	SB Lane	SB Thru-Right
7:00 AM	1	1	1
7:15 AM	1	1	0
7:30 AM	3	2	1
7:45 AM	3	3	1
8:00 AM	2	1	1
8:15 AM	2	3	3
8:30 AM	2	2	1
8:45 AM	3	2	1
4:00 PM	2	5	1
4:15 PM	1	3	2
4:30 PM	2	9	2
4:45 PM	1	3	1
5:00 PM	1	3	3
5:15 PM	2	3	2
5:30 PM	0	3	1
5:45 PM	1	3	1

Notes:

Prepared by National Data & Surveying Services

MAX QUEUE STUDY

Location: John Jones Rd (NS) & W Covell Blvd (EW)
City: Davis, CA
Day: Thursday
Date: 3/16/2017

TIME	MAX QUEUE LENGTH			
	EB (Inside Lane)	EB (Outside Lane)	WB (Inside Lane)	WB (Outside Lane)
7:00 AM	4	3	2	4
7:15 AM	5	7	8	7
7:30 AM	5	11	8	7
7:45 AM	10	11	6	7
8:00 AM	12	12	7	5
8:15 AM	10	17	10	8
8:30 AM	7	14	7	5
8:45 AM	8	14	10	5
4:00 PM	7	12	11	4
4:15 PM	12	13	11	11
4:30 PM	9	7	5	5
4:45 PM	8	6	9	7
5:00 PM	11	10	11	8
5:15 PM	4	2	6	3
5:30 PM	3	2	8	6
5:45 PM	9	5	12	9

Notes:

Traffic backed up in EB Outside Lane for 8:15AM and 8:30 AM time segments

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7217-001 Lake Blvd & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	6	4	0	12	18	32	4	0	54	7	8	25	0	40	4	39	3	0	46	152	0
7:15	4	10	8	0	22	13	33	2	0	48	1	9	29	0	39	3	51	4	0	58	167	0
7:30	5	10	2	0	17	19	39	2	0	60	9	15	51	0	75	3	71	10	0	84	236	0
7:45	12	14	4	0	30	14	53	4	0	71	9	15	41	0	65	2	64	8	0	74	240	0
Total	23	40	18	0	81	64	157	12	0	233	26	47	146	0	219	12	225	25	0	262	795	0
8:00	9	15	2	0	26	17	36	3	0	56	6	15	60	0	81	2	60	12	0	74	237	0
8:15	10	14	2	0	26	43	46	2	0	91	10	16	50	0	76	2	63	9	0	74	267	0
8:30	11	8	3	0	22	32	44	1	0	77	8	9	63	0	80	3	42	8	0	53	232	0
8:45	10	8	3	0	21	26	28	4	0	58	5	9	35	0	49	2	48	6	0	56	184	0
Total	40	45	10	0	95	118	154	10	0	282	29	49	208	0	286	9	213	35	0	257	920	0
16:00	4	8	5	0	17	61	53	8	0	122	9	12	43	0	64	10	56	5	0	71	274	0
16:15	2	12	7	0	21	61	68	7	0	136	8	9	32	0	49	13	59	6	0	78	284	0
16:30	3	9	1	0	13	45	59	9	0	113	3	10	49	0	62	14	62	6	0	82	270	0
16:45	8	14	0	0	22	51	64	14	0	129	7	13	34	0	54	5	61	6	0	72	277	0
Total	17	43	13	0	73	218	244	38	0	500	27	44	158	0	229	42	238	23	0	303	1105	0
17:00	5	10	2	0	17	52	76	13	0	141	9	10	46	0	65	7	68	11	0	86	309	0
17:15	2	16	3	0	21	52	57	2	0	111	11	12	54	0	77	4	48	8	0	60	269	0
17:30	6	10	6	0	22	55	70	5	0	130	11	11	52	0	74	6	50	12	0	68	294	0
17:45	3	9	5	0	17	56	53	1	0	110	7	9	40	0	56	5	46	10	0	61	244	0
Total	16	45	16	0	77	215	256	21	0	492	38	42	192	0	272	22	212	41	0	275	1116	0
Grand Total	96	173	57	0	326	615	811	81	0	1507	120	182	704	0	1006	85	888	124	0	1097	3936	0
Apprch %	29.4%	53.1%	17.5%	0.0%		40.8%	53.8%	5.4%	0.0%		11.9%	18.1%	70.0%	0.0%		7.7%	80.9%	11.3%	0.0%			
Total %	2.4%	4.4%	1.4%	0.0%	8.3%	15.6%	20.6%	2.1%	0.0%	38.3%	3.0%	4.6%	17.9%	0.0%	25.6%	2.2%	22.6%	3.2%	0.0%	27.9%	100.0%	

AM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	5	10	2	0	17	19	39	2	0	60	9	15	51	0	75	3	71	10	0	84	236
7:45	12	14	4	0	30	14	53	4	0	71	9	15	41	0	65	2	64	8	0	74	240
8:00	9	15	2	0	26	17	36	3	0	56	6	15	60	0	81	2	60	12	0	74	237
8:15	10	14	2	0	26	43	46	2	0	91	10	16	50	0	76	2	63	9	0	74	267
Total Volume	36	53	10	0	99	93	174	11	0	278	34	61	202	0	297	9	258	39	0	306	980
% App Total	36.4%	53.5%	10.1%	0.0%		33.5%	62.6%	4.0%	0.0%		11.4%	20.5%	68.0%	0.0%		2.9%	84.3%	12.7%	0.0%		
PHF	.750	.883	.625	.000	.825	.541	.821	.688	.000	.764	.850	.953	.842	.000	.917	.750	.908	.813	.000	.911	.918

PM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	8	14	0	0	22	51	64	14	0	129	7	13	34	0	54	5	61	6	0	72	277
17:00	5	10	2	0	17	52	76	13	0	141	9	10	46	0	65	7	68	11	0	86	309
17:15	2	16	3	0	21	52	57	2	0	111	11	12	54	0	77	4	48	8	0	60	269
17:30	6	10	6	0	22	55	70	5	0	130	11	11	52	0	74	6	50	12	0	68	294
Total Volume	21	50	11	0	82	210	267	34	0	511	38	46	186	0	270	22	227	37	0	286	1149
% App Total	25.6%	61.0%	13.4%	0.0%		41.1%	52.3%	6.7%	0.0%		14.1%	17.0%	68.9%	0.0%		7.7%	79.4%	12.9%	0.0%		
PHF	.656	.781	.458	.000	.932	.955	.878	.607	.000	.906	.864	.885	.861	.000	.877	.786	.835	.771	.000	.831	.930

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-001 Lake Blvd & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0
Total	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	5	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	2	2
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	2	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0
Total	0	1	0	0	1	1	1	0	1	2	0	0	4	2	4	0	0	0	0	0	7	3
16:00	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
16:15	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	3	0
16:30	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	4	1	0	0	5	0	2	0	0	2	0	0	0	0	0	7	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0
17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	3	1
17:45	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	0	0	0	1	4
Total	0	0	0	0	0	1	0	0	0	1	0	3	2	5	5	0	0	0	0	0	6	5
Grand Total	0	4	0	0	4	6	2	0	1	8	0	5	8	7	13	0	0	0	0	0	25	8
Apprch %	0.0%	100.0%	0.0%			75.0%	25.0%	0.0%			0.0%	38.5%	61.5%			0.0%	0.0%	0.0%				
Total %	0.0%	16.0%	0.0%		16.0%	24.0%	8.0%	0.0%		32.0%	0.0%	20.0%	32.0%		52.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	2
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	0	2	0	0	0	0	0	0	0	4	2	4	0	0	0	0	0	6
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			
PHF	.000	.500	.000		.500	.000	.000	.000		.000	.000	.000	.500		.500	.000	.000	.000		.000	.500

PM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	1	0	0	1	0	3	2	1	5	0	0	0	0	0	6
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	60.0%	40.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.250	.250		.417	.000	.000	.000		.000	.500

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-001 Lake Blvd & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	6	4	0	12	18	32	4	0	54	7	8	25	0	40	4	39	3	0	46	152	0
7:15	4	10	8	0	22	13	33	2	0	48	1	9	29	0	39	3	51	4	0	58	167	0
7:30	5	10	2	0	17	19	39	2	0	60	9	15	51	0	75	3	71	10	0	84	236	0
7:45	12	14	4	0	30	14	53	4	0	71	9	15	41	0	65	2	64	8	0	74	240	0
Total	23	40	18	0	81	64	157	12	0	233	26	47	146	0	219	12	225	25	0	262	795	0
8:00	9	15	2	0	26	17	36	3	0	56	6	15	60	0	81	2	60	12	0	74	237	0
8:15	10	14	2	0	26	43	46	2	0	91	10	16	50	0	76	2	63	9	0	74	267	0
8:30	11	8	3	0	22	32	44	1	0	77	8	9	63	0	80	3	42	8	0	53	232	0
8:45	10	8	3	0	21	26	28	4	0	58	5	9	35	0	49	2	48	6	0	56	184	0
Total	40	45	10	0	95	118	154	10	0	282	29	49	208	0	286	9	213	35	0	257	920	0
16:00	4	8	5	0	17	61	53	8	0	122	9	12	43	0	64	10	56	5	0	71	274	0
16:15	2	12	7	0	21	61	68	7	0	136	8	9	32	0	49	13	59	6	0	78	284	0
16:30	3	9	1	0	13	45	59	9	0	113	3	10	49	0	62	14	62	6	0	82	270	0
16:45	8	14	0	0	22	51	64	14	0	129	7	13	34	0	54	5	61	6	0	72	277	0
Total	17	43	13	0	73	218	244	38	0	500	27	44	158	0	229	42	238	23	0	303	1105	0
17:00	5	10	2	0	17	52	76	13	0	141	9	10	46	0	65	7	68	11	0	86	309	0
17:15	2	16	3	0	21	52	57	2	0	111	11	12	54	0	77	4	48	8	0	60	269	0
17:30	6	10	6	0	22	55	70	5	0	130	11	11	52	0	74	6	50	12	0	68	294	0
17:45	3	9	5	0	17	56	53	1	0	110	7	9	40	0	56	5	46	10	0	61	244	0
Total	16	45	16	0	77	215	256	21	0	492	38	42	192	0	272	22	212	41	0	275	1116	0
Grand Total	96	173	57	0	326	615	811	81	0	1507	120	182	704	0	1006	85	888	124	0	1097	3936	0
Apprch %	29.4%	53.1%	17.5%	0.0%		40.8%	53.8%	5.4%	0.0%		11.9%	18.1%	70.0%	0.0%		7.7%	80.9%	11.3%	0.0%			
Total %	2.4%	4.4%	1.4%	0.0%	8.3%	15.6%	20.6%	2.1%	0.0%	38.3%	3.0%	4.6%	17.9%	0.0%	25.6%	2.2%	22.6%	3.2%	0.0%	27.9%	100.0%	

AM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	5	10	2	0	17	19	39	2	0	60	9	15	51	0	75	3	71	10	0	84	236
7:45	12	14	4	0	30	14	53	4	0	71	9	15	41	0	65	2	64	8	0	74	240
8:00	9	15	2	0	26	17	36	3	0	56	6	15	60	0	81	2	60	12	0	74	237
8:15	10	14	2	0	26	43	46	2	0	91	10	16	50	0	76	2	63	9	0	74	267
Total Volume	36	53	10	0	99	93	174	11	0	278	34	61	202	0	297	9	258	39	0	306	980
% App Total	36.4%	53.5%	10.1%	0.0%		33.5%	62.6%	4.0%	0.0%		11.4%	20.5%	68.0%	0.0%		2.9%	84.3%	12.7%	0.0%		
PHF	.750	.883	.625	.000	.825	.541	.821	.688	.000	.764	.850	.953	.842	.000	.917	.750	.908	.813	.000	.911	.918

PM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	8	14	0	0	22	51	64	14	0	129	7	13	34	0	54	5	61	6	0	72	277
17:00	5	10	2	0	17	52	76	13	0	141	9	10	46	0	65	7	68	11	0	86	309
17:15	2	16	3	0	21	52	57	2	0	111	11	12	54	0	77	4	48	8	0	60	269
17:30	6	10	6	0	22	55	70	5	0	130	11	11	52	0	74	6	50	12	0	68	294
Total Volume	21	50	11	0	82	210	267	34	0	511	38	46	186	0	270	22	227	37	0	286	1149
% App Total	25.6%	61.0%	13.4%	0.0%		41.1%	52.3%	6.7%	0.0%		14.1%	17.0%	68.9%	0.0%		7.7%	79.4%	12.9%	0.0%		
PHF	.656	.781	.458	.000	.932	.955	.878	.607	.000	.906	.864	.885	.861	.000	.877	.786	.835	.771	.000	.831	.930

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-001 Lake Blvd & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0
Total	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	5	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	2	2
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	2	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0
Total	0	1	0	0	1	1	1	0	1	2	0	0	4	2	4	0	0	0	0	0	7	3
16:00	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
16:15	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	3	0
16:30	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	4	1	0	0	5	0	2	0	0	2	0	0	0	0	0	7	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0
17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	3	1
17:45	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	0	0	0	1	4
Total	0	0	0	0	0	1	0	0	0	1	0	3	2	5	5	0	0	0	0	0	6	5
Grand Total	0	4	0	0	4	6	2	0	1	8	0	5	8	7	13	0	0	0	0	0	25	8
Apprch %	0.0%	100.0%	0.0%			75.0%	25.0%	0.0%			0.0%	38.5%	61.5%			0.0%	0.0%	0.0%				
Total %	0.0%	16.0%	0.0%		16.0%	24.0%	8.0%	0.0%		32.0%	0.0%	20.0%	32.0%		52.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	2
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	0	2	0	0	0	0	0	0	0	4	2	4	0	0	0	0	0	6
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			
PHF	.000	.500	.000		.500	.000	.000	.000		.000	.000	.000	.500		.500	.000	.000	.000		.000	.500

PM PEAK HOUR	Lake Blvd Southbound					W Covell Blvd Westbound					Lake Blvd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	1	0	0	1	0	3	2	1	5	0	0	0	0	0	6
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	60.0%	40.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.250	.250		.417	.000	.000	.000		.000	.500

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7217-003 Risling Ct & Sutter Hospital Dwy
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	1	0	0	1	1	0	0	0	1	0	13	5	0	18	0	0	0	0	0	20	0
7:15	0	6	0	0	6	3	0	0	0	3	0	15	5	0	20	0	0	0	0	0	29	0
7:30	0	4	0	0	4	2	0	0	0	2	0	11	11	0	22	0	0	0	0	0	28	0
7:45	0	7	0	0	7	3	0	0	0	3	0	28	10	0	38	0	0	0	0	0	48	0
Total	0	18	0	0	18	9	0	0	0	9	0	67	31	0	98	0	0	0	0	0	125	0
8:00	0	5	0	0	5	1	0	0	0	1	0	20	8	0	28	0	0	0	0	0	34	0
8:15	0	8	0	0	8	5	0	1	0	6	0	26	9	0	35	0	0	0	0	0	49	0
8:30	0	13	0	0	13	2	0	1	0	3	0	19	4	0	23	0	0	0	0	0	39	0
8:45	0	13	0	0	13	2	0	1	0	3	0	24	14	0	38	0	0	0	0	0	54	0
Total	0	39	0	0	39	10	0	3	0	13	0	89	35	0	124	0	0	0	0	0	176	0
16:00	0	22	0	0	22	3	0	0	0	3	0	2	6	0	8	0	0	0	0	0	33	0
16:15	0	15	0	0	15	8	0	0	0	8	0	5	3	0	8	0	0	0	0	0	31	0
16:30	0	28	0	0	28	10	0	0	0	10	0	7	4	0	11	0	0	0	0	0	49	0
16:45	1	15	0	0	16	9	0	0	0	9	0	7	4	0	11	0	0	0	0	0	36	0
Total	1	80	0	0	81	30	0	0	0	30	0	21	17	0	38	0	0	0	0	0	149	0
17:00	1	19	0	0	20	4	0	0	0	4	0	2	7	0	9	0	0	0	0	0	33	0
17:15	1	18	0	0	19	6	0	0	0	6	0	4	5	0	9	0	0	0	0	0	34	0
17:30	1	8	0	0	9	5	0	0	0	5	0	5	4	0	9	0	0	0	0	0	23	0
17:45	0	12	0	0	12	5	0	0	0	5	0	10	4	0	14	0	0	0	0	0	31	0
Total	3	57	0	0	60	20	0	0	0	20	0	21	20	0	41	0	0	0	0	0	121	0
Grand Total	4	194	0	0	198	69	0	3	0	72	0	198	103	0	301	0	0	0	0	0	571	0
Apprch %	2.0%	98.0%	0.0%	0.0%		95.8%	0.0%	4.2%	0.0%		0.0%	65.8%	34.2%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.7%	34.0%	0.0%	0.0%	34.7%	12.1%	0.0%	0.5%	0.0%	12.6%	0.0%	34.7%	18.0%	0.0%	52.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	5	0	0	5	1	0	0	0	1	0	20	8	0	28	0	0	0	0	0	34
8:15	0	8	0	0	8	5	0	1	0	6	0	26	9	0	35	0	0	0	0	0	49
8:30	0	13	0	0	13	2	0	1	0	3	0	19	4	0	23	0	0	0	0	0	39
8:45	0	13	0	0	13	2	0	1	0	3	0	24	14	0	38	0	0	0	0	0	54
Total Volume	0	39	0	0	39	10	0	3	0	13	0	89	35	0	124	0	0	0	0	0	176
% App Total	0.0%	100.0%	0.0%	0.0%		76.9%	0.0%	23.1%	0.0%		0.0%	71.8%	28.2%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.750	.000	.000	.750	.500	.000	.750	.000	.542	.000	.856	.625	.000	.816	.000	.000	.000	.000	.000	.815

PM PEAK HOUR	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	28	0	0	28	10	0	0	0	10	0	7	4	0	11	0	0	0	0	0	49
16:45	1	15	0	0	16	9	0	0	0	9	0	7	4	0	11	0	0	0	0	0	36
17:00	1	19	0	0	20	4	0	0	0	4	0	2	7	0	9	0	0	0	0	0	33
17:15	1	18	0	0	19	6	0	0	0	6	0	4	5	0	9	0	0	0	0	0	34
Total Volume	3	80	0	0	83	29	0	0	0	29	0	20	20	0	40	0	0	0	0	0	152
% App Total	3.6%	96.4%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	50.0%	50.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.750	.714	.000	.000	.741	.725	.000	.000	.000	.725	.000	.714	.714	.000	.909	.000	.000	.000	.000	.000	.776

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-003 Risling Ct & Sutter Hospital Dwy
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	6
Total	0	0	0	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	6
8:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	6	0	0	2	0	0	2	0	0	0	0	0	2	6
8:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	6	0	0	4	0	0	4	0	0	0	0	0	5	6
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
17:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	1	0	8	1	0	0	0	10	0	0	4	0	1	4	0	0	0	0	0	5	19
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	20.0%	0.0%		20.0%	0.0%	0.0%	0.0%		0.0%	0.0%	80.0%	0.0%		80.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	6	0	0	2	0	0	2	0	0	0	0	0	2
8:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	0	0	6	0	0	4	0	0	4	0	0	0	0	0	5
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.500	.000		.500	.000	.000	.000		.000	.625

PM PEAK HOUR	Risling Ct Southbound					Sutter Hospital Dwy Westbound					Risling Ct Northbound					Sutter Hospital Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-004 Risling Ct/Shasta Dr & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	1	1	1	0	3	11	59	15	0	85	3	0	21	0	24	2	72	1	0	75	187	0
7:15	5	1	1	0	7	21	59	10	0	90	3	1	51	0	55	3	101	2	0	106	258	0
7:30	3	2	1	0	6	18	81	22	0	121	2	1	70	0	73	6	162	2	0	170	370	0
7:45	8	0	0	0	8	29	107	28	0	164	0	3	47	0	50	11	138	3	0	152	374	0
Total	17	4	3	0	24	79	306	75	0	460	8	5	189	0	202	22	473	8	0	503	1189	0
8:00	4	2	1	0	7	25	94	16	1	136	5	2	74	0	81	6	151	6	0	163	387	1
8:15	6	2	4	0	12	44	123	20	1	188	3	4	85	0	92	11	154	0	0	165	457	1
8:30	10	0	5	0	15	29	102	16	2	149	2	3	67	0	72	9	156	5	0	170	406	2
8:45	11	2	4	0	17	25	90	28	0	143	1	5	50	0	56	7	133	2	0	142	358	0
Total	31	6	14	0	51	123	409	80	4	616	11	14	276	0	301	33	594	13	0	640	1608	4
16:00	16	0	9	0	25	49	141	3	0	193	3	1	36	0	40	5	138	4	0	147	405	0
16:15	15	4	7	0	26	45	161	5	2	213	4	1	34	0	39	1	112	3	0	116	394	2
16:30	26	1	11	0	38	35	140	8	0	183	3	0	51	0	54	6	134	6	0	146	421	0
16:45	10	1	10	0	21	36	137	6	0	179	3	1	44	0	48	2	139	3	0	144	392	0
Total	67	6	37	0	110	165	579	22	2	768	13	3	165	0	181	14	523	16	0	553	1612	2
17:00	16	2	10	0	28	45	152	4	0	201	1	1	56	0	58	3	141	3	0	147	434	0
17:15	10	1	9	0	20	59	142	5	2	208	3	1	44	0	48	3	124	2	0	129	405	2
17:30	11	1	7	0	19	44	153	9	1	207	4	1	40	0	45	0	114	6	0	120	391	1
17:45	15	0	2	0	17	45	142	6	1	194	3	0	44	0	47	4	127	4	0	135	393	1
Total	52	4	28	0	84	193	589	24	4	810	11	3	184	0	198	10	506	15	0	531	1623	4
Grand Total	167	20	82	0	269	560	1883	201	10	2654	43	25	814	0	882	79	2096	52	0	2227	6032	10
Apprch %	62.1%	7.4%	30.5%	0.0%		21.1%	70.9%	7.6%	0.4%		4.9%	2.8%	92.3%	0.0%		3.5%	94.1%	2.3%	0.0%			
Total %	2.8%	0.3%	1.4%	0.0%	4.5%	9.3%	31.2%	3.3%	0.2%	44.0%	0.7%	0.4%	13.5%	0.0%	14.6%	1.3%	34.7%	0.9%	0.0%	36.9%	100.0%	

AM PEAK HOUR	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	8	0	0	0	8	29	107	28	0	164	0	3	47	0	50	11	138	3	0	152	374
8:00	4	2	1	0	7	25	94	16	1	136	5	2	74	0	81	6	151	6	0	163	387
8:15	6	2	4	0	12	44	123	20	1	188	3	4	85	0	92	11	154	0	0	165	457
8:30	10	0	5	0	15	29	102	16	2	149	2	3	67	0	72	9	156	5	0	170	406
Total Volume	28	4	10	0	42	127	426	80	4	637	10	12	273	0	295	37	599	14	0	650	1624
% App Total	66.7%	9.5%	23.8%	0.0%		19.9%	66.9%	12.6%	0.6%		3.4%	4.1%	92.5%	0.0%		5.7%	92.2%	2.2%	0.0%		
PHF	.700	.500	.500	.000	.700	.722	.866	.714	.500	.847	.500	.750	.803	.000	.802	.841	.960	.583	.000	.956	.888

PM PEAK HOUR	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	26	1	11	0	38	35	140	8	0	183	3	0	51	0	54	6	134	6	0	146	421
16:45	10	1	10	0	21	36	137	6	0	179	3	1	44	0	48	2	139	3	0	144	392
17:00	16	2	10	0	28	45	152	4	0	201	1	1	56	0	58	3	141	3	0	147	434
17:15	10	1	9	0	20	59	142	5	2	208	3	1	44	0	48	3	124	2	0	129	405
Total Volume	62	5	40	0	107	175	571	23	2	771	10	3	195	0	208	14	538	14	0	566	1652
% App Total	57.9%	4.7%	37.4%	0.0%		22.7%	74.1%	3.0%	0.3%		4.8%	1.4%	93.8%	0.0%		2.5%	95.1%	2.5%	0.0%		
PHF	.596	.625	.909	.000	.704	.742	.939	.719	.250	.927	.833	.750	.871	.000	.897	.583	.954	.583	.000	.963	.952

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-004 Risling Ct/Shasta Dr & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	3
7:15	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	4	1	3	4
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	4	1	1	5
7:45	0	0	0	2	0	0	1	0	1	1	0	0	0	1	0	1	2	0	11	3	4	15
Total	0	0	0	3	0	0	2	0	3	2	0	0	1	1	1	1	5	0	20	6	9	27
8:00	0	0	0	1	0	0	0	0	3	0	0	0	0	3	0	0	3	0	7	3	3	14
8:15	0	0	0	1	0	0	1	0	1	1	0	1	0	1	1	0	0	0	3	0	2	6
8:30	0	0	1	0	1	0	0	1	1	1	0	0	0	2	0	0	1	1	12	2	4	15
8:45	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	4	1	2	5
Total	0	0	1	2	1	0	2	1	5	3	0	1	0	7	1	0	5	1	26	6	11	40
16:00	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	1	0	2	1	2	4
16:15	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	5	1	2	6
16:30	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	10	1	2	11
16:45	0	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	1	0	4	1	3	6
Total	0	0	0	4	0	2	3	0	0	5	0	0	0	2	0	0	4	0	21	4	9	27
17:00	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	1	2	1	3	3
17:15	0	0	0	2	0	1	1	0	0	2	0	0	0	2	0	0	2	0	2	2	4	6
17:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	9
17:45	0	0	0	0	0	0	3	0	0	3	0	0	0	4	0	0	0	1	1	1	4	5
Total	0	0	0	3	0	1	6	0	1	7	0	0	0	6	0	0	2	2	13	4	11	23
Grand Total	0	0	1	12	1	3	13	1	9	17	0	1	1	16	2	1	16	3	80	20	40	117
Apprch %	0.0%	0.0%	100.0%			17.6%	76.5%	5.9%			0.0%	50.0%	50.0%			5.0%	80.0%	15.0%				
Total %	0.0%	0.0%	2.5%		2.5%	7.5%	32.5%	2.5%		42.5%	0.0%	2.5%	2.5%		5.0%	2.5%	40.0%	7.5%		50.0%	100.0%	

AM PEAK HOUR	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	2	0	0	1	0	1	1	0	0	0	1	0	1	2	0	11	3	4
8:00	0	0	0	1	0	0	0	0	3	0	0	0	0	3	0	0	3	0	7	3	3
8:15	0	0	0	1	0	0	1	0	1	1	0	1	0	1	1	0	0	0	3	0	2
8:30	0	0	1	0	1	0	0	1	1	1	0	0	0	2	0	0	1	1	12	2	4
Total Volume	0	0	1	4	1	0	2	1	6	3	0	1	0	7	1	1	6	1	33	8	13
% App Total	0.0%	0.0%	100.0%			0.0%	66.7%	33.3%			0.0%	100.0%	0.0%			12.5%	75.0%	12.5%			
PHF	.000	.000	.250		.250	.000	.500	.250		.750	.000	.250	.000		.250	.250	.500	.250		.667	.813

PM PEAK HOUR	Risling Ct/Shasta Dr Southbound					W Covell Blvd Westbound					Risling Ct/Shasta Dr Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	10	1	2
16:45	0	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	1	0	4	1	3
17:00	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	1	2	1	3
17:15	0	0	0	2	0	1	1	0	0	2	0	0	0	2	0	0	2	0	2	2	4
Total Volume	0	0	0	5	0	3	4	0	1	7	0	0	0	2	0	0	4	1	18	5	12
% App Total	0.0%	0.0%	0.0%			42.9%	57.1%	0.0%			0.0%	0.0%	0.0%			0.0%	80.0%	20.0%			
PHF	.000	.000	.000		.000	.750	.500	.000		.875	.000	.000	.000		.000	.000	.500	.250		.625	.750

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-005 John Jones Rd & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	28	0	11	0	39	0	69	44	0	113	0	0	0	0	0	9	89	0	0	98	250	0
7:15	39	0	13	0	52	0	85	50	0	135	0	0	0	0	0	9	147	0	0	156	343	0
7:30	44	0	16	0	60	0	96	74	0	170	0	0	0	0	0	26	204	0	0	230	460	0
7:45	46	0	15	0	61	0	156	79	0	235	0	0	0	0	0	16	186	0	0	202	498	0
Total	157	0	55	0	212	0	406	247	0	653	0	0	0	0	0	60	626	0	0	686	1551	0
8:00	45	0	17	0	62	0	125	63	0	188	0	0	0	0	0	23	203	0	0	226	476	0
8:15	46	0	12	0	58	0	179	78	0	257	0	0	0	0	0	17	240	0	0	257	572	0
8:30	48	0	14	0	62	0	141	79	0	220	0	0	0	0	0	18	220	0	0	238	520	0
8:45	53	0	15	0	68	0	136	59	0	195	0	0	0	0	0	24	174	0	0	198	461	0
Total	192	0	58	0	250	0	581	279	0	860	0	0	0	0	0	82	837	0	0	919	2029	0
16:00	65	0	18	0	83	0	179	50	0	229	0	0	0	0	0	16	179	0	0	195	507	0
16:15	65	0	20	0	85	0	195	50	0	245	0	0	0	0	0	10	153	0	0	163	493	0
16:30	49	0	10	0	59	0	164	41	0	205	0	0	0	0	0	13	206	0	0	219	483	0
16:45	57	0	16	0	73	0	166	44	0	210	0	0	0	0	0	6	180	0	0	186	469	0
Total	236	0	64	0	300	0	704	185	0	889	0	0	0	0	0	45	718	0	0	763	1952	0
17:00	73	0	16	0	89	0	180	51	0	231	0	0	0	0	0	14	202	0	0	216	536	0
17:15	37	0	12	0	49	0	190	37	0	227	0	0	0	0	0	4	174	0	0	178	454	0
17:30	64	0	12	0	76	0	197	34	0	231	0	0	0	0	0	11	157	0	0	168	475	0
17:45	57	0	16	0	73	0	178	53	0	231	0	0	0	0	0	4	178	0	0	182	486	0
Total	231	0	56	0	287	0	745	175	0	920	0	0	0	0	0	33	711	0	0	744	1951	0
Grand Total	816	0	233	0	1049	0	2436	886	0	3322	0	0	0	0	0	220	2892	0	0	3112	7483	0
Apprch %	77.8%	0.0%	22.2%	0.0%		0.0%	73.3%	26.7%	0.0%		0.0%	0.0%	0.0%	0.0%		7.1%	92.9%	0.0%	0.0%			
Total %	10.9%	0.0%	3.1%	0.0%	14.0%	0.0%	32.6%	11.8%	0.0%	44.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	38.6%	0.0%	0.0%	41.6%	100.0%	

AM PEAK HOUR	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	46	0	15	0	61	0	156	79	0	235	0	0	0	0	0	16	186	0	0	202	498
8:00	45	0	17	0	62	0	125	63	0	188	0	0	0	0	0	23	203	0	0	226	476
8:15	46	0	12	0	58	0	179	78	0	257	0	0	0	0	0	17	240	0	0	257	572
8:30	48	0	14	0	62	0	141	79	0	220	0	0	0	0	0	18	220	0	0	238	520
Total Volume	185	0	58	0	243	0	601	299	0	900	0	0	0	0	0	74	849	0	0	923	2066
% App Total	76.1%	0.0%	23.9%	0.0%		0.0%	66.8%	33.2%	0.0%		0.0%	0.0%	0.0%	0.0%		8.0%	92.0%	0.0%	0.0%		
PHF	.964	.000	.853	.000	.980	.000	.839	.946	.000	.875	.000	.000	.000	.000	.000	.804	.884	.000	.000	.898	.903

PM PEAK HOUR	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	65	0	20	0	85	0	195	50	0	245	0	0	0	0	0	10	153	0	0	163	493
16:30	49	0	10	0	59	0	164	41	0	205	0	0	0	0	0	13	206	0	0	219	483
16:45	57	0	16	0	73	0	166	44	0	210	0	0	0	0	0	6	180	0	0	186	469
17:00	73	0	16	0	89	0	180	51	0	231	0	0	0	0	0	14	202	0	0	216	536
Total Volume	244	0	62	0	306	0	705	186	0	891	0	0	0	0	0	43	741	0	0	784	1981
% App Total	79.7%	0.0%	20.3%	0.0%		0.0%	79.1%	20.9%	0.0%		0.0%	0.0%	0.0%	0.0%		5.5%	94.5%	0.0%	0.0%		
PHF	.836	.000	.775	.000	.860	.000	.904	.912	.000	.909	.000	.000	.000	.000	.000	.768	.899	.000	.000	.895	.924

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-005 John Jones Rd & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	1	0	0	1	1	0	1	1	0	2	0	0	0	0	0	1	2	0	0	3	6	1
7:30	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	2	3
7:45	2	0	0	1	2	0	1	1	0	2	0	0	0	0	0	0	3	0	2	3	7	3
Total	4	0	0	3	4	0	2	2	0	4	0	0	0	0	0	1	6	0	4	7	15	7
8:00	3	0	0	2	3	0	0	1	0	1	0	0	0	0	0	0	2	0	7	2	6	9
8:15	1	0	0	3	1	0	2	2	0	4	0	0	0	0	0	0	0	0	2	0	5	5
8:30	1	0	0	0	1	0	1	2	0	3	0	0	0	0	0	0	0	0	8	0	4	8
8:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	3	2
Total	6	0	0	5	6	0	3	5	0	8	0	0	0	0	0	0	4	0	19	4	18	24
16:00	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	0	1	0	2	2
16:15	0	0	0	1	0	0	1	1	0	2	0	0	0	0	0	1	0	0	1	1	3	2
16:30	1	0	0	1	1	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	6	1
16:45	2	0	0	1	2	0	1	1	0	2	0	0	0	0	0	0	1	0	1	1	5	2
Total	3	0	0	3	3	0	6	3	1	9	0	0	0	0	0	1	3	0	3	4	16	7
17:00	2	0	0	2	2	0	2	2	0	4	0	0	0	0	0	0	0	0	1	0	6	3
17:15	1	0	0	4	1	0	2	2	0	4	0	0	0	0	0	0	2	0	1	2	7	5
17:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
17:45	1	0	0	2	1	0	2	1	0	3	0	0	0	0	0	0	0	0	2	0	4	4
Total	4	0	0	8	4	0	6	6	0	12	0	0	0	0	0	0	2	0	4	2	18	12
Grand Total	17	0	0	19	17	0	17	16	1	33	0	0	0	0	0	2	15	0	30	17	67	50
Apprch %	100.0%	0.0%	0.0%			0.0%	51.5%	48.5%			0.0%	0.0%	0.0%			11.8%	88.2%	0.0%				
Total %	25.4%	0.0%	0.0%		25.4%	0.0%	25.4%	23.9%		49.3%	0.0%	0.0%	0.0%		0.0%	3.0%	22.4%	0.0%		25.4%	100.0%	

AM PEAK HOUR	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	2	0	0	1	2	0	1	1	0	2	0	0	0	0	0	0	3	0	2	3	7
8:00	3	0	0	2	3	0	0	1	0	1	0	0	0	0	0	0	2	0	7	2	6
8:15	1	0	0	3	1	0	2	2	0	4	0	0	0	0	0	0	0	0	2	0	5
8:30	1	0	0	0	1	0	1	2	0	3	0	0	0	0	0	0	0	0	8	0	4
Total Volume	7	0	0	6	7	0	4	6	0	10	0	0	0	0	0	0	5	0	19	5	22
% App Total	100.0%	0.0%	0.0%			0.0%	40.0%	60.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.583	.000	.000		.583	.000	.500	.750		.625	.000	.000	.000		.000	.000	.417	.000		.417	.786

PM PEAK HOUR	John Jones Rd Southbound					W Covell Blvd Westbound					John Jones Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	1	0	0	1	1	0	2	0	0	0	0	0	1	0	0	1	1	3
16:30	1	0	0	1	1	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	6
16:45	2	0	0	1	2	0	1	1	0	2	0	0	0	0	0	0	1	0	1	1	5
17:00	2	0	0	2	2	0	2	2	0	4	0	0	0	0	0	0	0	0	1	0	6
Total Volume	5	0	0	5	5	0	6	5	0	11	0	0	0	0	0	1	3	0	3	4	20
% App Total	100.0%	0.0%	0.0%			0.0%	54.5%	45.5%			0.0%	0.0%	0.0%			25.0%	75.0%	0.0%			
PHF	.625	.000	.000		.625	.000	.750	.625		.688	.000	.000	.000		.000	.250	.375	.000		.500	.833

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-006 SR-113 SB Ramps & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	22	0	26	0	48	69	87	0	1	157	0	0	0	0	0	0	53	59	0	112	317	1
7:15	27	0	22	0	49	81	116	0	0	197	0	0	0	0	0	0	91	91	0	182	428	0
7:30	49	0	19	0	68	117	148	0	0	265	0	0	0	0	0	0	147	94	0	241	574	0
7:45	32	0	33	0	65	136	211	0	0	347	0	0	0	0	0	0	132	103	0	235	647	0
Total	130	0	100	0	230	403	562	0	1	966	0	0	0	0	0	0	423	347	0	770	1966	1
8:00	40	1	27	0	68	106	165	0	0	271	0	0	0	0	0	0	140	101	0	241	580	0
8:15	53	0	35	0	88	105	229	0	0	334	0	0	0	0	0	0	193	99	0	292	714	0
8:30	33	0	36	0	69	107	176	0	0	283	0	0	0	0	0	0	133	127	0	260	612	0
8:45	24	1	31	0	56	121	159	0	3	283	0	0	0	0	0	0	134	102	0	236	575	3
Total	150	2	129	0	281	439	729	0	3	1171	0	0	0	0	0	0	600	429	0	1029	2481	3
16:00	19	0	20	0	39	51	205	0	2	258	0	0	0	0	0	0	156	76	0	232	529	2
16:15	30	0	20	0	50	65	216	0	1	282	0	0	0	0	0	0	148	65	0	213	545	1
16:30	36	0	27	0	63	54	185	0	2	241	0	0	0	0	0	0	189	59	0	248	552	2
16:45	20	0	16	0	36	44	192	0	0	236	0	0	0	0	0	0	185	65	0	250	522	0
Total	105	0	83	0	188	214	798	0	5	1017	0	0	0	0	0	0	678	265	0	943	2148	5
17:00	33	0	24	0	57	57	214	0	1	272	0	0	0	0	0	0	213	61	0	274	603	1
17:15	38	0	18	0	56	50	211	0	2	263	0	0	0	0	0	0	162	62	0	224	543	2
17:30	19	0	19	0	38	60	215	0	1	276	0	0	0	0	0	0	159	63	0	222	536	1
17:45	35	1	20	0	56	67	210	0	2	279	0	0	0	0	0	0	180	59	0	239	574	2
Total	125	1	81	0	207	234	850	0	6	1090	0	0	0	0	0	0	714	245	0	959	2256	6
Grand Total	510	3	393	0	906	1290	2939	0	15	4244	0	0	0	0	0	0	2415	1286	0	3701	8851	15
Apprch %	56.3%	0.3%	43.4%	0.0%		30.4%	69.3%	0.0%	0.4%		0.0%	0.0%	0.0%	0.0%		0.0%	65.3%	34.7%	0.0%			
Total %	5.8%	0.0%	4.4%	0.0%	10.2%	14.6%	33.2%	0.0%	0.2%	47.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.3%	14.5%	0.0%	41.8%	100.0%	

AM PEAK HOUR	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	32	0	33	0	65	136	211	0	0	347	0	0	0	0	0	0	132	103	0	235	647
8:00	40	1	27	0	68	106	165	0	0	271	0	0	0	0	0	0	140	101	0	241	580
8:15	53	0	35	0	88	105	229	0	0	334	0	0	0	0	0	0	193	99	0	292	714
8:30	33	0	36	0	69	107	176	0	0	283	0	0	0	0	0	0	133	127	0	260	612
Total Volume	158	1	131	0	290	454	781	0	0	1235	0	0	0	0	0	0	598	430	0	1028	2553
% App Total	54.5%	0.3%	45.2%	0.0%		36.8%	63.2%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	58.2%	41.8%	0.0%		
PHF	.745	.250	.910	.000	.824	.835	.853	.000	.000	.890	.000	.000	.000	.000	.000	.000	.775	.846	.000	.880	.894

PM PEAK HOUR	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	33	0	24	0	57	57	214	0	1	272	0	0	0	0	0	0	213	61	0	274	603
17:15	38	0	18	0	56	50	211	0	2	263	0	0	0	0	0	0	162	62	0	224	543
17:30	19	0	19	0	38	60	215	0	1	276	0	0	0	0	0	0	159	63	0	222	536
17:45	35	1	20	0	56	67	210	0	2	279	0	0	0	0	0	0	180	59	0	239	574
Total Volume	125	1	81	0	207	234	850	0	6	1090	0	0	0	0	0	0	714	245	0	959	2256
% App Total	60.4%	0.5%	39.1%	0.0%		21.5%	78.0%	0.0%	0.6%		0.0%	0.0%	0.0%	0.0%		0.0%	74.5%	25.5%	0.0%		
PHF	.822	.250	.844	.000	.908	.873	.988	.000	.750	.977	.000	.000	.000	.000	.000	.000	.838	.972	.000	.875	.935

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-006 SR-113 SB Ramps & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
7:15	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	0	0	2	3	1
7:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6	1
7:45	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	4
Total	0	0	0	5	0	0	3	0	0	3	0	0	0	1	0	0	12	0	0	12	15	6
8:00	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	0	1	2	3	2
8:15	0	0	0	2	0	0	4	0	0	4	0	0	0	0	0	0	1	0	1	1	5	3
8:30	0	0	0	0	0	0	1	0	0	1	1	0	0	2	1	0	1	0	0	1	3	2
8:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	0
Total	0	0	0	2	0	0	7	0	0	7	1	0	0	3	1	0	7	0	2	7	15	7
16:00	0	0	0	1	0	0	3	0	0	3	0	0	0	1	0	0	1	0	0	1	4	2
16:15	0	0	0	6	0	0	1	0	0	1	0	0	0	0	0	0	1	0	4	1	2	10
16:30	0	0	0	4	0	0	3	0	0	3	0	0	0	2	0	0	1	0	1	1	4	7
16:45	0	0	0	2	0	0	4	0	1	4	0	0	0	0	0	0	3	0	1	3	7	4
Total	0	0	0	13	0	0	11	0	1	11	0	0	0	3	0	0	6	0	6	6	17	23
17:00	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	4	0	1	4	7	3
17:15	0	0	0	7	0	0	3	0	0	3	0	0	0	3	0	0	2	0	2	2	5	12
17:30	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	2
17:45	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	3	3
Total	0	0	0	12	0	0	10	0	0	10	0	0	0	3	0	0	6	0	5	6	16	20
Grand Total	0	0	0	32	0	0	31	0	1	31	1	0	0	10	1	0	31	0	13	31	63	56
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	49.2%	0.0%		49.2%	1.6%	0.0%	0.0%		1.6%	0.0%	49.2%	0.0%		49.2%	100.0%	

AM PEAK HOUR	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
8:00	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	0	1	2	3
8:15	0	0	0	2	0	0	4	0	0	4	0	0	0	0	0	0	1	0	1	1	5
8:30	0	0	0	0	0	0	1	0	0	1	1	0	0	2	1	0	1	0	0	1	3
Total Volume	0	0	0	6	0	0	7	0	0	7	1	0	0	3	1	0	7	0	2	7	15
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.438	.000		.438	.250	.000	.000		.250	.000	.583	.000		.583	.750

PM PEAK HOUR	SR-113 SB Ramps Southbound					W Covell Blvd Westbound					SR-113 SB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	4	0	1	4	7
17:15	0	0	0	7	0	0	3	0	0	3	0	0	0	3	0	0	2	0	2	2	5
17:30	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	3
Total Volume	0	0	0	12	0	0	10	0	0	10	0	0	0	3	0	0	6	0	5	6	16
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.833	.000		.833	.000	.000	.000		.000	.000	.375	.000		.375	.571

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-007 SR-113 NB Ramps & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	108	16	0	124	42	0	38	0	80	5	68	0	0	73	277	0
7:15	0	0	0	0	0	0	158	16	0	174	47	0	49	0	96	12	107	0	0	119	389	0
7:30	0	0	0	0	0	0	176	33	0	209	95	0	60	0	155	17	184	0	0	201	565	0
7:45	0	0	0	0	0	0	248	39	0	287	96	0	76	0	172	14	153	0	1	168	627	1
Total	0	0	0	0	0	0	690	104	0	794	280	0	223	0	503	48	512	0	1	561	1858	1
8:00	0	0	0	0	0	0	204	21	0	225	71	0	63	0	134	16	162	0	0	178	537	0
8:15	0	0	0	0	0	0	253	47	0	300	76	1	85	0	162	18	224	0	0	242	704	0
8:30	0	0	0	0	0	0	225	33	0	258	60	0	65	0	125	27	138	0	0	165	548	0
8:45	0	0	0	0	0	0	204	20	0	224	73	0	59	0	132	13	142	0	0	155	511	0
Total	0	0	0	0	0	0	886	121	0	1007	280	1	272	0	553	74	666	0	0	740	2300	0
16:00	0	0	0	0	0	0	178	36	0	214	73	0	97	0	170	33	145	0	0	178	562	0
16:15	0	0	0	0	0	0	193	46	0	239	92	0	117	0	209	24	157	0	0	181	629	0
16:30	0	0	0	0	0	0	168	27	0	195	71	0	115	0	186	26	196	0	1	223	604	1
16:45	0	0	0	0	0	0	169	36	0	205	74	0	140	0	214	39	172	0	0	211	630	0
Total	0	0	0	0	0	0	708	145	0	853	310	0	469	0	779	122	670	0	1	793	2425	1
17:00	0	0	0	0	0	0	182	48	0	230	93	0	135	0	228	34	209	0	2	245	703	2
17:15	0	0	0	0	0	0	170	40	0	210	98	0	139	0	237	23	178	0	0	201	648	0
17:30	0	0	0	0	0	0	199	34	0	233	77	0	119	0	196	14	169	0	0	183	612	0
17:45	0	0	0	0	0	0	190	30	0	220	80	0	139	0	219	25	185	0	0	210	649	0
Total	0	0	0	0	0	0	741	152	0	893	348	0	532	0	880	96	741	0	2	839	2612	2
Grand Total	0	0	0	0	0	0	3025	522	0	3547	1218	1	1496	0	2715	340	2589	0	4	2933	9195	4
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	85.3%	14.7%	0.0%		44.9%	0.0%	55.1%	0.0%		11.6%	88.3%	0.0%	0.1%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.9%	5.7%	0.0%	38.6%	13.2%	0.0%	16.3%	0.0%	29.5%	3.7%	28.2%	0.0%	0.0%	31.9%	100.0%	

AM PEAK HOUR	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	176	33	0	209	95	0	60	0	155	17	184	0	0	201	565
7:45	0	0	0	0	0	0	248	39	0	287	96	0	76	0	172	14	153	0	1	168	627
8:00	0	0	0	0	0	0	204	21	0	225	71	0	63	0	134	16	162	0	0	178	537
8:15	0	0	0	0	0	0	253	47	0	300	76	1	85	0	162	18	224	0	0	242	704
Total Volume	0	0	0	0	0	0	881	140	0	1021	338	1	284	0	623	65	723	0	1	789	2433
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	86.3%	13.7%	0.0%		54.3%	0.2%	45.6%	0.0%		8.2%	91.6%	0.0%	0.1%		
PHF	.000	.000	.000	.000	.000	.000	.871	.745	.000	.851	.880	.250	.835	.000	.906	.903	.807	.000	.250	.815	.864

PM PEAK HOUR	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	182	48	0	230	93	0	135	0	228	34	209	0	2	245	703
17:15	0	0	0	0	0	0	170	40	0	210	98	0	139	0	237	23	178	0	0	201	648
17:30	0	0	0	0	0	0	199	34	0	233	77	0	119	0	196	14	169	0	0	183	612
17:45	0	0	0	0	0	0	190	30	0	220	80	0	139	0	219	25	185	0	0	210	649
Total Volume	0	0	0	0	0	0	741	152	0	893	348	0	532	0	880	96	741	0	2	839	2612
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	83.0%	17.0%	0.0%		39.5%	0.0%	60.5%	0.0%		11.4%	88.3%	0.0%	0.2%		
PHF	.000	.000	.000	.000	.000	.000	.931	.792	.000	.958	.888	.000	.957	.000	.928	.706	.886	.000	.250	.856	.929

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-007 SR-113 NB Ramps & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3	0
7:15	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	0	0	2	3	1
7:30	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5	2
7:45	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	3
Total	0	0	0	5	0	0	3	0	0	3	0	0	0	1	0	0	12	0	0	12	15	6
8:00	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3	2
8:15	0	0	0	2	0	0	4	0	0	4	0	0	0	1	0	0	1	0	0	1	5	3
8:30	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	0
Total	0	0	0	4	0	0	6	0	0	6	0	0	0	2	0	0	6	0	0	6	12	6
16:00	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	2
16:15	0	0	0	7	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	7
16:30	0	0	0	4	0	0	3	0	0	3	0	0	0	1	0	0	1	0	0	1	4	5
16:45	0	0	0	3	0	0	3	0	0	3	0	0	0	2	0	0	3	0	0	3	6	5
Total	0	0	0	16	0	0	11	0	0	11	0	0	0	3	0	0	6	0	0	6	17	19
17:00	0	0	0	6	0	0	2	0	0	2	0	0	0	1	0	0	3	0	0	3	5	7
17:15	0	0	0	5	0	0	3	0	0	3	0	0	0	1	0	0	3	0	0	3	6	6
17:30	0	0	0	2	0	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	2	3
17:45	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	15	0	0	9	0	0	9	0	0	0	3	0	0	6	0	0	6	15	18
Grand Total	0	0	0	40	0	0	29	0	0	29	0	0	0	9	0	0	30	0	0	30	59	49
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	49.2%	0.0%		49.2%	0.0%	0.0%	0.0%		0.0%	0.0%	50.8%	0.0%		50.8%	100.0%	

AM PEAK HOUR	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
7:45	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
8:00	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
8:15	0	0	0	2	0	0	4	0	0	4	0	0	0	1	0	0	1	0	0	1	5
Total Volume	0	0	0	9	0	0	6	0	0	6	0	0	0	1	0	0	11	0	0	11	17
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.375	.000		.375	.000	.000	.000		.000	.000	.550	.000		.550	.850

PM PEAK HOUR	SR-113 NB Ramps Southbound					W Covell Blvd Westbound					SR-113 NB Ramps Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	6	0	0	2	0	0	2	0	0	0	1	0	0	3	0	0	3	5
17:15	0	0	0	5	0	0	3	0	0	3	0	0	0	1	0	0	3	0	0	3	6
17:30	0	0	0	2	0	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	2
17:45	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	15	0	0	9	0	0	9	0	0	0	3	0	0	6	0	0	6	15
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.750	.000		.750	.000	.000	.000		.000	.000	.500	.000		.500	.625

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-008 Sycamore Ln & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	9	6	32	0	47	0	70	5	0	75	16	2	3	0	21	10	49	11	0	70	213	0
7:15	11	8	31	0	50	1	91	7	0	99	27	2	1	0	30	13	101	20	0	134	313	0
7:30	15	11	47	0	73	4	128	4	0	136	42	8	4	0	54	19	138	50	0	207	470	0
7:45	18	11	65	0	94	9	147	12	0	168	40	10	5	0	55	33	121	32	0	186	503	0
Total	53	36	175	0	264	14	436	28	0	478	125	22	13	0	160	75	409	113	0	597	1499	0
8:00	22	23	57	0	102	5	153	21	0	179	35	6	9	0	50	35	141	34	0	210	541	0
8:15	16	13	46	0	75	12	148	13	0	173	66	9	17	0	92	25	166	81	0	272	612	0
8:30	22	14	43	0	79	4	153	14	0	171	52	9	4	0	65	23	123	24	0	170	485	0
8:45	11	7	50	0	68	4	127	8	0	139	38	12	7	0	57	35	132	26	0	193	457	0
Total	71	57	196	0	324	25	581	56	0	662	191	36	37	0	264	118	562	165	0	845	2095	0
16:00	27	12	19	0	58	5	122	28	0	155	26	16	18	0	60	20	148	25	0	193	466	0
16:15	33	14	31	0	78	5	164	20	0	189	27	15	12	0	54	33	173	26	0	232	553	0
16:30	31	11	15	0	57	7	113	20	0	140	42	13	20	0	75	37	202	28	0	267	539	0
16:45	32	14	18	0	64	6	137	24	0	167	39	18	10	0	67	34	177	38	0	249	547	0
Total	123	51	83	0	257	23	536	92	0	651	134	62	60	0	256	124	700	117	0	941	2105	0
17:00	33	21	26	0	80	3	142	22	0	167	31	12	11	0	54	27	195	40	0	262	563	0
17:15	37	16	23	0	76	5	149	27	0	181	32	17	12	0	61	33	203	30	0	266	584	0
17:30	39	20	22	0	81	6	160	20	0	186	21	15	9	0	45	36	185	32	0	253	565	0
17:45	40	20	28	0	88	11	150	27	0	188	33	16	13	0	62	44	199	25	0	268	606	0
Total	149	77	99	0	325	25	601	96	0	722	117	60	45	0	222	140	782	127	0	1049	2318	0
Grand Total	396	221	553	0	1170	87	2154	272	0	2513	567	180	155	0	902	457	2453	522	0	3432	8017	0
Apprch %	33.8%	18.9%	47.3%	0.0%		3.5%	85.7%	10.8%	0.0%		62.9%	20.0%	17.2%	0.0%		13.3%	71.5%	15.2%	0.0%			
Total %	4.9%	2.8%	6.9%	0.0%	14.6%	1.1%	26.9%	3.4%	0.0%	31.3%	7.1%	2.2%	1.9%	0.0%	11.3%	5.7%	30.6%	6.5%	0.0%	42.8%	100.0%	

AM PEAK HOUR	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	18	11	65	0	94	9	147	12	0	168	40	10	5	0	55	33	121	32	0	186	503
8:00	22	23	57	0	102	5	153	21	0	179	35	6	9	0	50	35	141	34	0	210	541
8:15	16	13	46	0	75	12	148	13	0	173	66	9	17	0	92	25	166	81	0	272	612
8:30	22	14	43	0	79	4	153	14	0	171	52	9	4	0	65	23	123	24	0	170	485
Total Volume	78	61	211	0	350	30	601	60	0	691	193	34	35	0	262	116	551	171	0	838	2141
% App Total	22.3%	17.4%	60.3%	0.0%		4.3%	87.0%	8.7%	0.0%		73.7%	13.0%	13.4%	0.0%		13.8%	65.8%	20.4%	0.0%		
PHF	.886	.663	.812	.000	.858	.625	.982	.714	.000	.965	.731	.850	.515	.000	.712	.829	.830	.528	.000	.770	.875

PM PEAK HOUR	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	33	21	26	0	80	3	142	22	0	167	31	12	11	0	54	27	195	40	0	262	563
17:15	37	16	23	0	76	5	149	27	0	181	32	17	12	0	61	33	203	30	0	266	584
17:30	39	20	22	0	81	6	160	20	0	186	21	15	9	0	45	36	185	32	0	253	565
17:45	40	20	28	0	88	11	150	27	0	188	33	16	13	0	62	44	199	25	0	268	606
Total Volume	149	77	99	0	325	25	601	96	0	722	117	60	45	0	222	140	782	127	0	1049	2318
% App Total	45.8%	23.7%	30.5%	0.0%		3.5%	83.2%	13.3%	0.0%		52.7%	27.0%	20.3%	0.0%		13.3%	74.5%	12.1%	0.0%		
PHF	.931	.917	.884	.000	.923	.568	.939	.889	.000	.960	.886	.882	.865	.000	.895	.795	.963	.794	.000	.979	.956

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-008 Sycamore Ln & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	5	0	0	5	0	0	0	1	0	1	0	0	1	1	0	2	0	0	2	8	2
7:15	0	7	0	0	7	0	0	0	0	0	1	2	0	0	3	0	1	0	1	1	11	1
7:30	0	10	0	1	10	1	0	1	0	2	1	2	0	0	3	1	1	0	4	2	17	5
7:45	0	8	0	0	8	0	1	0	0	1	1	4	0	0	5	0	1	0	3	1	15	3
Total	0	30	0	1	30	1	1	1	1	3	4	8	0	1	12	1	5	0	8	6	51	11
8:00	0	21	0	1	21	0	1	0	2	1	0	1	0	1	1	1	2	0	4	3	26	8
8:15	0	22	2	0	24	1	1	0	0	2	0	3	0	0	3	0	1	0	4	1	30	4
8:30	1	14	2	0	17	3	0	0	1	3	1	0	0	2	1	0	1	0	6	1	22	9
8:45	1	11	0	0	12	3	0	0	0	3	0	1	0	0	1	1	2	0	4	3	19	4
Total	2	68	4	1	74	7	2	0	3	9	1	5	0	3	6	2	6	0	18	8	97	25
16:00	0	5	1	3	6	0	1	1	5	2	0	8	1	0	9	0	1	0	8	1	18	16
16:15	0	7	0	0	7	0	4	0	0	4	0	6	0	1	6	0	2	0	4	2	19	5
16:30	0	3	0	4	3	0	4	0	2	4	0	8	0	0	8	0	0	0	11	0	15	17
16:45	1	7	1	2	9	0	0	0	0	0	2	3	1	1	6	0	3	0	11	3	18	14
Total	1	22	2	9	25	0	9	1	7	10	2	25	2	2	29	0	6	0	34	6	70	52
17:00	0	2	0	2	2	0	1	0	2	1	2	11	0	0	13	1	0	1	7	2	18	11
17:15	0	7	1	1	8	1	3	0	1	4	1	10	0	0	11	0	2	0	7	2	25	9
17:30	1	2	0	2	3	0	2	0	1	2	2	14	0	0	16	0	2	2	2	4	25	5
17:45	0	6	0	2	6	0	0	0	2	0	0	9	1	0	10	0	0	2	4	2	18	8
Total	1	17	1	7	19	1	6	0	6	7	5	44	1	0	50	1	4	5	20	10	86	33
Grand Total	4	137	7	18	148	9	18	2	17	29	12	82	3	6	97	4	21	5	80	30	304	121
Apprch %	2.7%	92.6%	4.7%			31.0%	62.1%	6.9%			12.4%	84.5%	3.1%			13.3%	70.0%	16.7%				
Total %	1.3%	45.1%	2.3%		48.7%	3.0%	5.9%	0.7%		9.5%	3.9%	27.0%	1.0%		31.9%	1.3%	6.9%	1.6%		9.9%	100.0%	

AM PEAK HOUR	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	8	0	0	8	0	1	0	0	1	1	4	0	0	5	0	1	0	3	1	15
8:00	0	21	0	1	21	0	1	0	2	1	0	1	0	1	1	1	2	0	4	3	26
8:15	0	22	2	0	24	1	1	0	0	2	0	3	0	0	3	0	1	0	4	1	30
8:30	1	14	2	0	17	3	0	0	1	3	1	0	0	2	1	0	1	0	6	1	22
Total Volume	1	65	4	1	70	4	3	0	3	7	2	8	0	3	10	1	5	0	17	6	93
% App Total	1.4%	92.9%	5.7%			57.1%	42.9%	0.0%			20.0%	80.0%	0.0%			16.7%	83.3%	0.0%			
PHF	.250	.739	.500		.729	.333	.750	.000		.583	.500	.500	.000		.500	.250	.625	.000		.500	.775

PM PEAK HOUR	Sycamore Ln Southbound					W Covell Blvd Westbound					Sycamore Ln Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	2	0	2	2	0	1	0	2	1	2	11	0	0	13	1	0	1	7	2	18
17:15	0	7	1	1	8	1	3	0	1	4	1	10	0	0	11	0	2	0	7	2	25
17:30	1	2	0	2	3	0	2	0	1	2	2	14	0	0	16	0	2	2	2	4	25
17:45	0	6	0	2	6	0	0	0	2	0	0	9	1	0	10	0	0	2	4	2	18
Total Volume	1	17	1	7	19	1	6	0	6	7	5	44	1	0	50	1	4	5	20	10	86
% App Total	5.3%	89.5%	5.3%			14.3%	85.7%	0.0%			10.0%	88.0%	2.0%			10.0%	40.0%	50.0%			
PHF	.250	.607	.250		.594	.250	.500	.000		.438	.625	.786	.250		.781	.250	.500	.625		.625	.860

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-009 Anderson Rd & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	4	5	17	0	26	8	44	4	0	56	19	6	0	0	25	5	36	11	2	54	161	2
7:15	7	20	13	0	40	13	51	3	0	67	22	5	7	0	34	4	82	40	1	127	268	1
7:30	9	46	12	0	67	27	108	11	0	146	42	7	12	0	61	6	110	57	1	174	448	1
7:45	8	26	22	0	56	32	104	10	0	146	43	9	7	0	59	3	84	36	1	124	385	1
Total	28	97	64	0	189	80	307	28	0	415	126	27	26	0	179	18	312	144	5	479	1262	5
8:00	11	40	32	0	83	32	85	8	0	125	45	9	8	0	62	8	114	35	0	157	427	0
8:15	11	43	27	0	81	48	114	8	0	170	46	14	24	0	84	6	146	55	1	208	543	1
8:30	15	30	15	0	60	30	116	11	0	157	42	21	21	0	84	6	116	42	1	165	466	1
8:45	14	38	26	0	78	26	92	10	0	128	30	14	16	0	60	9	117	25	1	152	418	1
Total	51	151	100	0	302	136	407	37	0	580	163	58	69	0	290	29	493	157	3	682	1854	3
16:00	18	24	12	0	54	23	88	12	0	123	52	22	24	0	98	12	157	33	0	202	477	0
16:15	6	20	16	0	42	15	116	13	0	144	51	24	33	0	108	23	178	32	1	234	528	1
16:30	18	25	3	0	46	23	83	16	1	123	48	20	32	1	101	19	173	28	0	220	490	2
16:45	16	23	9	0	48	17	104	12	0	133	60	29	47	0	136	6	204	36	0	246	563	0
Total	58	92	40	0	190	78	391	53	1	523	211	95	136	1	443	60	712	129	1	902	2058	3
17:00	17	22	17	0	56	17	86	12	1	116	55	39	45	1	140	14	171	27	1	213	525	3
17:15	21	18	16	0	55	21	124	18	0	163	66	39	42	0	147	9	221	25	0	255	620	0
17:30	22	49	10	0	81	24	114	16	1	155	49	38	30	0	117	15	175	30	0	220	573	1
17:45	19	22	14	0	55	23	124	16	0	163	53	30	19	0	102	20	179	53	3	255	575	3
Total	79	111	57	0	247	85	448	62	2	597	223	146	136	1	506	58	746	135	4	943	2293	7
Grand Total	216	451	261	0	928	379	1553	180	3	2115	723	326	367	2	1418	165	2263	565	13	3006	7467	18
Apprch %	23.3%	48.6%	28.1%	0.0%		17.9%	73.4%	8.5%	0.1%		51.0%	23.0%	25.9%	0.1%		5.5%	75.3%	18.8%	0.4%			
Total %	2.9%	6.0%	3.5%	0.0%	12.4%	5.1%	20.8%	2.4%	0.0%	28.3%	9.7%	4.4%	4.9%	0.0%	19.0%	2.2%	30.3%	7.6%	0.2%	40.3%	100.0%	

AM PEAK HOUR	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	11	40	32	0	83	32	85	8	0	125	45	9	8	0	62	8	114	35	0	157	427
8:15	11	43	27	0	81	48	114	8	0	170	46	14	24	0	84	6	146	55	1	208	543
8:30	15	30	15	0	60	30	116	11	0	157	42	21	21	0	84	6	116	42	1	165	466
8:45	14	38	26	0	78	26	92	10	0	128	30	14	16	0	60	9	117	25	1	152	418
Total Volume	51	151	100	0	302	136	407	37	0	580	163	58	69	0	290	29	493	157	3	682	1854
% App Total	16.9%	50.0%	33.1%	0.0%		23.4%	70.2%	6.4%	0.0%		56.2%	20.0%	23.8%	0.0%		4.3%	72.3%	23.0%	0.4%		
PHF	.850	.878	.781	.000	.910	.708	.877	.841	.000	.853	.886	.690	.719	.000	.863	.806	.844	.714	.750	.820	.854

PM PEAK HOUR	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	17	22	17	0	56	17	86	12	1	116	55	39	45	1	140	14	171	27	1	213	525
17:15	21	18	16	0	55	21	124	18	0	163	66	39	42	0	147	9	221	25	0	255	620
17:30	22	49	10	0	81	24	114	16	1	155	49	38	30	0	117	15	175	30	0	220	573
17:45	19	22	14	0	55	23	124	16	0	163	53	30	19	0	102	20	179	53	3	255	575
Total Volume	79	111	57	0	247	85	448	62	2	597	223	146	136	1	506	58	746	135	4	943	2293
% App Total	32.0%	44.9%	23.1%	0.0%		14.2%	75.0%	10.4%	0.3%		44.1%	28.9%	26.9%	0.2%		6.2%	79.1%	14.3%	0.4%		
PHF	.898	.566	.838	.000	.762	.885	.903	.861	.500	.916	.845	.936	.756	.250	.861	.725	.844	.637	.333	.925	.925

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-009 Anderson Rd & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	1	3	0	1	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	5	1
7:15	1	2	0	0	3	0	2	0	1	2	0	0	0	1	0	0	1	0	0	1	6	2
7:30	0	0	0	0	0	0	1	0	5	1	1	0	0	1	1	0	4	0	0	4	6	6
7:45	1	9	0	1	10	0	1	0	2	1	0	0	0	0	0	0	0	0	1	0	11	4
Total	3	14	0	2	17	0	4	0	8	4	1	0	0	2	1	0	6	0	1	6	28	13
8:00	1	2	0	0	3	1	1	0	4	2	0	0	0	0	0	0	1	0	0	1	6	4
8:15	2	2	0	0	4	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	7	0
8:30	0	3	0	2	3	0	1	0	3	1	0	1	0	2	1	0	2	0	5	2	7	12
8:45	1	6	0	1	7	0	0	0	2	0	0	0	0	2	0	0	1	2	1	3	10	6
Total	4	13	0	3	17	1	2	0	9	3	0	2	0	4	2	0	6	2	6	8	30	22
16:00	0	0	0	1	0	0	2	1	2	3	1	15	0	0	16	0	0	1	5	1	20	8
16:15	1	3	0	3	4	0	1	1	3	2	2	13	0	3	15	0	0	0	4	0	21	13
16:30	0	8	1	4	9	0	1	1	11	2	3	15	0	2	18	0	2	0	1	2	31	18
16:45	1	6	0	0	7	0	0	0	5	0	2	5	0	3	7	0	3	1	2	4	18	10
Total	2	17	1	8	20	0	4	3	21	7	8	48	0	8	56	0	5	2	12	7	90	49
17:00	0	1	0	5	1	0	1	1	8	2	0	14	0	1	14	0	0	0	2	0	17	16
17:15	1	3	0	3	4	0	1	2	12	3	1	17	0	3	18	0	1	0	2	1	26	20
17:30	0	2	0	1	2	0	0	1	7	1	0	15	0	1	15	0	0	0	4	0	18	13
17:45	0	5	1	0	6	0	1	0	10	1	1	13	0	5	14	0	0	0	7	0	21	22
Total	1	11	1	9	13	0	3	4	37	7	2	59	0	10	61	0	1	0	15	1	82	71
Grand Total	10	55	2	22	67	1	13	7	75	21	11	109	0	24	120	0	18	4	34	22	230	155
Apprch %	14.9%	82.1%	3.0%			4.8%	61.9%	33.3%			9.2%	90.8%	0.0%			0.0%	81.8%	18.2%				
Total %	4.3%	23.9%	0.9%		29.1%	0.4%	5.7%	3.0%		9.1%	4.8%	47.4%	0.0%		52.2%	0.0%	7.8%	1.7%		9.6%	100.0%	

AM PEAK HOUR	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	1	2	0	0	3	1	1	0	4	2	0	0	0	0	0	0	1	0	0	1	6
8:15	2	2	0	0	4	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	7
8:30	0	3	0	2	3	0	1	0	3	1	0	1	0	2	1	0	2	0	5	2	7
8:45	1	6	0	1	7	0	0	0	2	0	0	0	0	2	0	0	1	2	1	3	10
Total Volume	4	13	0	3	17	1	2	0	9	3	0	2	0	4	2	0	6	2	6	8	30
% App Total	23.5%	76.5%	0.0%			33.3%	66.7%	0.0%			0.0%	100.0%	0.0%			0.0%	75.0%	25.0%			
PHF	.500	.542	.000		.607	.250	.500	.000		.375	.000	.500	.000		.500	.000	.750	.250		.667	.750

PM PEAK HOUR	Anderson Rd Southbound					W Covell Blvd Westbound					Anderson Rd Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	1	0	5	1	0	1	1	8	2	0	14	0	1	14	0	0	0	2	0	17
17:15	1	3	0	3	4	0	1	2	12	3	1	17	0	3	18	0	1	0	2	1	26
17:30	0	2	0	1	2	0	0	1	7	1	0	15	0	1	15	0	0	0	4	0	18
17:45	0	5	1	0	6	0	1	0	10	1	1	13	0	5	14	0	0	0	7	0	21
Total Volume	1	11	1	9	13	0	3	4	37	7	2	59	0	10	61	0	1	0	15	1	82
% App Total	7.7%	84.6%	7.7%			0.0%	42.9%	57.1%			3.3%	96.7%	0.0%			0.0%	100.0%	0.0%			
PHF	.250	.550	.250		.542	.000	.750	.500		.583	.500	.868	.000		.847	.000	.250	.000		.250	.788

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-010 Oak Ave & W Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	8	43	0	0	51	8	0	10	0	18	0	42	19	0	61	130	0
7:15	0	0	0	0	0	38	71	0	0	109	9	0	19	0	28	0	38	27	0	65	202	0
7:30	0	0	0	0	0	64	102	0	0	166	44	0	68	0	112	0	57	62	0	119	397	0
7:45	0	0	0	0	0	25	155	0	0	180	26	0	40	0	66	0	95	23	0	118	364	0
Total	0	0	0	0	0	135	371	0	0	506	87	0	137	0	224	0	232	131	0	363	1093	0
8:00	0	0	0	0	0	22	131	0	0	153	12	0	24	0	36	0	114	26	0	140	329	0
8:15	0	0	0	0	0	34	159	0	0	193	21	0	38	0	59	0	140	36	0	176	428	0
8:30	0	0	0	0	0	35	128	0	0	163	24	0	36	0	60	0	110	36	0	146	369	0
8:45	0	0	0	0	0	30	108	0	0	138	22	0	25	0	47	0	108	28	0	136	321	0
Total	0	0	0	0	0	121	526	0	0	647	79	0	123	0	202	0	472	126	0	598	1447	0
16:00	0	0	0	0	0	23	106	0	0	129	26	0	30	0	56	0	175	29	0	204	389	0
16:15	0	0	0	0	0	19	122	0	0	141	27	0	22	0	49	0	188	15	0	203	393	0
16:30	0	0	0	0	0	11	116	0	0	127	27	0	32	0	59	0	211	36	0	247	433	0
16:45	0	0	0	0	0	11	120	0	0	131	27	0	26	0	53	0	231	28	0	259	443	0
Total	0	0	0	0	0	64	464	0	0	528	107	0	110	0	217	0	805	108	0	913	1658	0
17:00	0	0	0	0	0	12	120	0	0	132	28	0	31	0	59	0	238	18	0	256	447	0
17:15	0	0	0	0	0	24	140	0	0	164	23	0	38	0	61	0	235	25	0	260	485	0
17:30	0	0	0	0	0	19	148	0	0	167	28	0	32	0	60	0	236	28	0	264	491	0
17:45	0	0	0	0	0	24	147	0	0	171	30	0	29	0	59	0	174	28	0	202	432	0
Total	0	0	0	0	0	79	555	0	0	634	109	0	130	0	239	0	883	99	0	982	1855	0
Grand Total	0	0	0	0	0	399	1916	0	0	2315	382	0	500	0	882	0	2392	464	0	2856	6053	0
Apprch %	0.0%	0.0%	0.0%	0.0%		17.2%	82.8%	0.0%	0.0%		43.3%	0.0%	56.7%	0.0%		0.0%	83.8%	16.2%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	6.6%	31.7%	0.0%	0.0%	38.2%	6.3%	0.0%	8.3%	0.0%	14.6%	0.0%	39.5%	7.7%	0.0%	47.2%	100.0%	

AM PEAK HOUR	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	64	102	0	0	166	44	0	68	0	112	0	57	62	0	119	397
7:45	0	0	0	0	0	25	155	0	0	180	26	0	40	0	66	0	95	23	0	118	364
8:00	0	0	0	0	0	22	131	0	0	153	12	0	24	0	36	0	114	26	0	140	329
8:15	0	0	0	0	0	34	159	0	0	193	21	0	38	0	59	0	140	36	0	176	428
Total Volume	0	0	0	0	0	145	547	0	0	692	103	0	170	0	273	0	406	147	0	553	1518
% App Total	0.0%	0.0%	0.0%	0.0%		21.0%	79.0%	0.0%	0.0%		37.7%	0.0%	62.3%	0.0%		0.0%	73.4%	26.6%	0.0%		
PHF	.000	.000	.000	.000	.000	.566	.860	.000	.000	.896	.585	.000	.625	.000	.609	.000	.725	.593	.000	.786	.887

PM PEAK HOUR	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	11	120	0	0	131	27	0	26	0	53	0	231	28	0	259	443
17:00	0	0	0	0	0	12	120	0	0	132	28	0	31	0	59	0	238	18	0	256	447
17:15	0	0	0	0	0	24	140	0	0	164	23	0	38	0	61	0	235	25	0	260	485
17:30	0	0	0	0	0	19	148	0	0	167	28	0	32	0	60	0	236	28	0	264	491
Total Volume	0	0	0	0	0	66	528	0	0	594	106	0	127	0	233	0	940	99	0	1039	1866
% App Total	0.0%	0.0%	0.0%	0.0%		11.1%	88.9%	0.0%	0.0%		45.5%	0.0%	54.5%	0.0%		0.0%	90.5%	9.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.688	.892	.000	.000	.889	.946	.000	.836	.000	.955	.000	.987	.884	.000	.984	.950

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7217-010 Oak Ave & W Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
7:15	0	0	0	0	0	2	0	0	3	2	1	0	0	1	1	0	1	4	2	5	8	6
7:30	0	0	0	0	0	5	3	0	3	8	0	0	0	0	0	0	1	8	2	9	17	5
7:45	0	0	0	0	0	3	3	0	0	6	0	0	0	0	0	0	2	3	1	5	11	1
Total	0	0	0	0	0	11	6	0	7	17	1	0	0	1	1	0	4	15	5	19	37	13
8:00	0	0	0	0	0	4	0	0	0	4	2	0	0	0	2	0	2	4	0	6	12	0
8:15	0	0	0	0	0	6	1	0	0	7	0	0	0	0	0	0	2	7	1	9	16	1
8:30	0	0	0	0	0	7	1	0	1	8	1	0	0	0	1	0	1	6	2	7	16	3
8:45	0	0	0	0	0	13	4	0	0	17	1	0	1	1	2	0	0	6	0	6	25	1
Total	0	0	0	0	0	30	6	0	1	36	4	0	1	1	5	0	5	23	3	28	69	5
16:00	0	0	0	0	0	2	2	0	0	4	1	0	1	0	2	0	1	0	0	1	7	0
16:15	0	0	0	0	0	0	3	0	1	3	3	0	3	0	6	0	1	3	0	4	13	1
16:30	0	0	0	0	0	1	3	0	1	4	2	0	4	0	6	0	2	0	1	2	12	2
16:45	0	0	0	0	0	1	1	0	0	2	2	0	2	0	4	0	1	4	2	5	11	2
Total	0	0	0	0	0	4	9	0	2	13	8	0	10	0	18	0	5	7	3	12	43	5
17:00	0	0	0	0	0	0	1	0	1	1	7	0	3	1	10	0	0	1	0	1	12	2
17:15	0	0	0	0	0	0	1	0	0	1	4	0	2	0	6	0	3	1	0	4	11	0
17:30	0	0	0	0	0	1	0	0	1	1	6	0	1	2	7	0	3	2	1	5	13	4
17:45	0	0	0	0	0	0	2	0	1	2	2	0	2	0	4	0	0	6	0	6	12	1
Total	0	0	0	0	0	1	4	0	3	5	19	0	8	3	27	0	6	10	1	16	48	7
Grand Total	0	0	0	0	0	46	25	0	13	71	32	0	19	5	51	0	20	55	12	75	197	30
Apprch %	0.0%	0.0%	0.0%			64.8%	35.2%	0.0%			62.7%	0.0%	37.3%			0.0%	26.7%	73.3%				
Total %	0.0%	0.0%	0.0%		0.0%	23.4%	12.7%	0.0%		36.0%	16.2%	0.0%	9.6%		25.9%	0.0%	10.2%	27.9%		38.1%	100.0%	

AM PEAK HOUR	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	5	3	0	3	8	0	0	0	0	0	0	1	8	2	9	17
7:45	0	0	0	0	0	3	3	0	0	6	0	0	0	0	0	0	2	3	1	5	11
8:00	0	0	0	0	0	4	0	0	0	4	2	0	0	0	2	0	2	4	0	6	12
8:15	0	0	0	0	0	6	1	0	0	7	0	0	0	0	0	0	2	7	1	9	16
Total Volume	0	0	0	0	0	18	7	0	3	25	2	0	0	0	2	0	7	22	4	29	56
% App Total	0.0%	0.0%	0.0%			72.0%	28.0%	0.0%			100.0%	0.0%	0.0%			0.0%	24.1%	75.9%			
PHF	.000	.000	.000		.000	.750	.583	.000		.781	.250	.000	.000		.250	.000	.875	.688		.806	.824

PM PEAK HOUR	Oak Ave Southbound					W Covell Blvd Westbound					Oak Ave Northbound					W Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	1	1	0	0	2	2	0	2	0	4	0	1	4	2	5	11
17:00	0	0	0	0	0	0	1	0	1	1	7	0	3	1	10	0	0	1	0	1	12
17:15	0	0	0	0	0	0	1	0	0	1	4	0	2	0	6	0	3	1	0	4	11
17:30	0	0	0	0	0	1	0	0	1	1	6	0	1	2	7	0	3	2	1	5	13
Total Volume	0	0	0	0	0	2	3	0	2	5	19	0	8	3	27	0	7	8	3	15	47
% App Total	0.0%	0.0%	0.0%			40.0%	60.0%	0.0%			70.4%	0.0%	29.6%			0.0%	46.7%	53.3%			
PHF	.000	.000	.000		.000	.500	.750	.000		.625	.679	.000	.667		.675	.000	.583	.500		.750	.904

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

File Name : 17-7217-011 F St & E Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	29	19	4	0	52	7	51	16	0	74	8	10	4	0	22	1	51	6	0	58	206	0
7:15	35	27	9	0	71	60	89	6	0	155	6	13	19	0	38	2	52	11	0	65	329	0
7:30	42	46	29	0	117	68	140	19	0	227	10	18	24	0	52	6	103	28	0	137	533	0
7:45	51	45	23	0	119	30	145	24	0	199	13	11	34	0	58	13	155	22	0	190	566	0
Total	157	137	65	0	359	165	425	65	0	655	37	52	81	0	170	22	361	67	0	450	1634	0
8:00	54	67	16	0	137	39	138	16	0	193	14	15	29	0	58	4	142	26	0	172	560	0
8:15	61	59	16	0	136	77	156	26	0	259	13	27	45	0	85	9	173	24	0	206	686	0
8:30	38	37	20	0	95	58	145	22	0	225	15	27	33	0	75	14	129	24	0	167	562	0
8:45	30	49	11	0	90	36	108	31	0	175	11	14	26	0	51	7	113	31	0	151	467	0
Total	183	212	63	0	458	210	547	95	0	852	53	83	133	0	269	34	557	105	0	696	2275	0
16:00	14	39	10	0	63	29	118	32	0	179	35	35	33	0	103	9	186	35	0	230	575	0
16:15	28	34	10	0	72	36	116	45	0	197	18	38	35	0	91	20	195	27	0	242	602	0
16:30	39	39	12	0	90	32	117	40	0	189	31	21	35	0	87	10	187	36	0	233	599	0
16:45	29	23	13	0	65	32	133	40	0	205	23	37	48	0	108	19	225	43	0	287	665	0
Total	110	135	45	0	290	129	484	157	0	770	107	131	151	0	389	58	793	141	0	992	2441	0
17:00	33	38	6	0	77	49	122	46	0	217	42	41	33	0	116	15	215	35	0	265	675	0
17:15	32	33	20	0	85	54	135	34	0	223	34	48	57	0	139	15	244	62	0	321	768	0
17:30	28	28	12	0	68	47	152	52	0	251	36	34	61	0	131	20	227	35	0	282	732	0
17:45	22	31	19	0	72	45	143	50	0	238	28	41	47	0	116	11	171	52	0	234	660	0
Total	115	130	57	0	302	195	552	182	0	929	140	164	198	0	502	61	857	184	0	1102	2835	0
Grand Total	565	614	230	0	1409	699	2008	499	0	3206	337	430	563	0	1330	175	2568	497	0	3240	9185	0
Apprch %	40.1%	43.6%	16.3%	0.0%		21.8%	62.6%	15.6%	0.0%		25.3%	32.3%	42.3%	0.0%		5.4%	79.3%	15.3%	0.0%			
Total %	6.2%	6.7%	2.5%	0.0%	15.3%	7.6%	21.9%	5.4%	0.0%	34.9%	3.7%	4.7%	6.1%	0.0%	14.5%	1.9%	28.0%	5.4%	0.0%	35.3%	100.0%	

AM PEAK HOUR	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	51	45	23	0	119	30	145	24	0	199	13	11	34	0	58	13	155	22	0	190	566
8:00	54	67	16	0	137	39	138	16	0	193	14	15	29	0	58	4	142	26	0	172	560
8:15	61	59	16	0	136	77	156	26	0	259	13	27	45	0	85	9	173	24	0	206	686
8:30	38	37	20	0	95	58	145	22	0	225	15	27	33	0	75	14	129	24	0	167	562
Total Volume	204	208	75	0	487	204	584	88	0	876	55	80	141	0	276	40	599	96	0	735	2374
% App Total	41.9%	42.7%	15.4%	0.0%		23.3%	66.7%	10.0%	0.0%		19.9%	29.0%	51.1%	0.0%		5.4%	81.5%	13.1%	0.0%		
PHF	.836	.776	.815	.000	.889	.662	.936	.846	.000	.846	.917	.741	.783	.000	.812	.714	.866	.923	.000	.892	.865

PM PEAK HOUR	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	29	23	13	0	65	32	133	40	0	205	23	37	48	0	108	19	225	43	0	287	665
17:00	33	38	6	0	77	49	122	46	0	217	42	41	33	0	116	15	215	35	0	265	675
17:15	32	33	20	0	85	54	135	34	0	223	34	48	57	0	139	15	244	62	0	321	768
17:30	28	28	12	0	68	47	152	52	0	251	36	34	61	0	131	20	227	35	0	282	732
Total Volume	122	122	51	0	295	182	542	172	0	896	135	160	199	0	494	69	911	175	0	1155	2840
% App Total	41.4%	41.4%	17.3%	0.0%		20.3%	60.5%	19.2%	0.0%		27.3%	32.4%	40.3%	0.0%		6.0%	78.9%	15.2%	0.0%		
PHF	.924	.803	.638	.000	.868	.843	.891	.827	.000	.892	.804	.833	.816	.000	.888	.863	.933	.706	.000	.900	.924

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-011 F St & E Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	0	1	0	1	0	3	1	0	1	0	1	1	0	0	0	0	0	3	4
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	3	0	1	3	6	4	0	2	10	1	0	0	1	1	0	2	2	2	4	18	6
7:45	0	0	0	4	0	0	0	1	4	1	0	0	0	2	0	0	1	3	2	4	5	12
Total	0	4	0	5	4	6	5	1	9	12	1	1	0	4	2	0	3	5	4	8	26	22
8:00	2	2	0	0	4	5	1	0	0	6	0	1	0	1	1	0	1	1	0	2	13	1
8:15	0	3	0	0	3	0	1	0	1	1	0	0	0	0	0	0	2	1	2	3	7	3
8:30	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4	0
8:45	0	2	0	0	2	0	6	0	2	6	0	0	1	1	1	0	0	0	2	0	9	5
Total	2	9	0	0	11	5	9	0	3	14	0	1	1	2	2	0	4	2	4	6	33	9
16:00	0	0	0	0	0	0	1	0	1	1	0	1	0	0	1	0	1	0	1	1	3	2
16:15	0	4	3	0	7	0	2	0	0	2	0	1	0	0	1	0	2	0	1	2	12	1
16:30	1	1	0	0	2	0	0	1	3	1	1	1	0	0	2	0	3	0	0	3	8	3
16:45	0	0	0	4	0	0	1	0	2	1	0	1	1	0	2	0	3	2	0	5	8	6
Total	1	5	3	4	9	0	4	1	6	5	1	4	1	0	6	0	9	2	2	11	31	12
17:00	0	0	1	0	1	1	1	2	0	4	1	1	0	0	2	0	1	0	1	1	8	1
17:15	0	0	0	2	0	2	0	0	2	2	0	1	0	1	1	0	1	0	0	1	4	5
17:30	0	2	0	0	2	0	1	0	0	1	0	2	5	1	7	0	1	1	7	2	12	8
17:45	0	1	1	0	2	1	1	1	0	3	0	1	1	3	2	0	1	0	3	1	8	6
Total	0	3	2	2	5	4	3	3	2	10	1	5	6	5	12	0	4	1	11	5	32	20
Grand Total	3	21	5	11	29	15	21	5	20	41	3	11	8	11	22	0	20	10	21	30	122	63
Apprch %	10.3%	72.4%	17.2%			36.6%	51.2%	12.2%			13.6%	50.0%	36.4%			0.0%	66.7%	33.3%				
Total %	2.5%	17.2%	4.1%		23.8%	12.3%	17.2%	4.1%		33.6%	2.5%	9.0%	6.6%		18.0%	0.0%	16.4%	8.2%		24.6%	100.0%	

AM PEAK HOUR	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	4	0	0	0	1	4	1	0	0	0	2	0	0	1	3	2	4	5
8:00	2	2	0	0	4	5	1	0	0	6	0	1	0	1	1	0	1	1	0	2	13
8:15	0	3	0	0	3	0	1	0	1	1	0	0	0	0	0	0	2	1	2	3	7
8:30	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4
Total Volume	2	7	0	4	9	5	3	1	5	9	0	1	0	3	1	0	5	5	4	10	29
% App Total	22.2%	77.8%	0.0%			55.6%	33.3%	11.1%			0.0%	100.0%	0.0%			0.0%	50.0%	50.0%			
PHF	.250	.583	.000		.563	.250	.750	.250		.375	.000	.250	.000		.250	.000	.625	.417		.625	.558

PM PEAK HOUR	F St Southbound					E Covell Blvd Westbound					F St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	4	0	0	1	0	2	1	0	1	1	0	2	0	3	2	0	5	8
17:00	0	0	1	0	1	1	1	2	0	4	1	1	0	0	2	0	1	0	1	1	8
17:15	0	0	0	2	0	2	0	0	2	2	0	1	0	1	1	0	1	0	0	1	4
17:30	0	2	0	0	2	0	1	0	0	1	0	2	5	1	7	0	1	1	7	2	12
Total Volume	0	2	1	6	3	3	3	2	4	8	1	5	6	2	12	0	6	3	8	9	32
% App Total	0.0%	66.7%	33.3%			37.5%	37.5%	25.0%			8.3%	41.7%	50.0%			0.0%	66.7%	33.3%			
PHF	.000	.250	.250		.375	.375	.750	.250		.500	.250	.625	.300		.429	.000	.500	.375		.450	.667

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-012 J St & E Covell Blvd
Date : 3/16/2017

Unshifted Count = All Vehicles & Uturns

	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	6	1	2	0	9	3	82	20	1	106	6	0	11	0	17	13	60	6	0	79	211	1
7:15	6	1	6	0	13	3	147	12	0	162	15	2	11	0	28	4	89	3	0	96	299	0
7:30	9	2	4	1	16	5	178	11	0	194	33	0	8	0	41	5	155	22	0	182	433	1
7:45	11	2	5	0	18	11	148	11	0	170	25	0	13	0	38	2	201	32	0	235	461	0
Total	32	6	17	1	56	22	555	54	1	632	79	2	43	0	124	24	505	63	0	592	1404	2
8:00	8	2	3	0	13	13	152	2	0	167	37	0	25	0	62	2	156	45	0	203	445	0
8:15	6	5	4	0	15	21	196	8	1	226	52	0	32	0	84	4	214	78	0	296	621	1
8:30	9	1	4	0	14	13	182	7	0	202	23	3	24	0	50	2	169	35	0	206	472	0
8:45	8	2	5	0	15	10	135	3	0	148	24	1	11	0	36	4	142	18	0	164	363	0
Total	31	10	16	0	57	57	665	20	1	743	136	4	92	0	232	12	681	176	0	869	1901	1
16:00	12	2	0	0	14	17	163	3	0	183	23	2	18	0	43	7	200	20	0	227	467	0
16:15	13	0	2	0	15	16	175	5	1	197	25	1	14	0	40	10	218	24	1	253	505	2
16:30	2	3	0	0	5	10	174	8	0	192	19	2	18	0	39	1	237	18	1	257	493	1
16:45	15	1	3	0	19	24	167	6	2	199	21	1	26	0	48	7	258	27	0	292	558	2
Total	42	6	5	0	53	67	679	22	3	771	88	6	76	0	170	25	913	89	2	1029	2023	5
17:00	9	4	7	0	20	15	171	8	1	195	29	2	28	0	59	6	249	18	0	273	547	1
17:15	9	2	3	0	14	14	214	10	1	239	17	5	23	0	45	9	314	35	0	358	656	1
17:30	8	2	3	0	13	20	199	11	0	230	24	2	22	0	48	8	270	20	0	298	589	0
17:45	9	4	2	0	15	22	198	6	0	226	34	4	13	0	51	4	215	22	0	241	533	0
Total	35	12	15	0	62	71	782	35	2	890	104	13	86	0	203	27	1048	95	0	1170	2325	2
Grand Total	140	34	53	1	228	217	2681	131	7	3036	407	25	297	0	729	88	3147	423	2	3660	7653	10
Apprch %	61.4%	14.9%	23.2%	0.4%		7.1%	88.3%	4.3%	0.2%		55.8%	3.4%	40.7%	0.0%		2.4%	86.0%	11.6%	0.1%			
Total %	1.8%	0.4%	0.7%	0.0%	3.0%	2.8%	35.0%	1.7%	0.1%	39.7%	5.3%	0.3%	3.9%	0.0%	9.5%	1.1%	41.1%	5.5%	0.0%	47.8%	100.0%	

AM PEAK HOUR	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	11	2	5	0	18	11	148	11	0	170	25	0	13	0	38	2	201	32	0	235	461
8:00	8	2	3	0	13	13	152	2	0	167	37	0	25	0	62	2	156	45	0	203	445
8:15	6	5	4	0	15	21	196	8	1	226	52	0	32	0	84	4	214	78	0	296	621
8:30	9	1	4	0	14	13	182	7	0	202	23	3	24	0	50	2	169	35	0	206	472
Total Volume	34	10	16	0	60	58	678	28	1	765	137	3	94	0	234	10	740	190	0	940	1999
% App Total	56.7%	16.7%	26.7%	0.0%		7.6%	88.6%	3.7%	0.1%		58.5%	1.3%	40.2%	0.0%		1.1%	78.7%	20.2%	0.0%		
PHF	.773	.500	.800	.000	.833	.690	.865	.636	.250	.846	.659	.250	.734	.000	.696	.625	.864	.609	.000	.794	.805

PM PEAK HOUR	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	15	1	3	0	19	24	167	6	2	199	21	1	26	0	48	7	258	27	0	292	558
17:00	9	4	7	0	20	15	171	8	1	195	29	2	28	0	59	6	249	18	0	273	547
17:15	9	2	3	0	14	14	214	10	1	239	17	5	23	0	45	9	314	35	0	358	656
17:30	8	2	3	0	13	20	199	11	0	230	24	2	22	0	48	8	270	20	0	298	589
Total Volume	41	9	16	0	66	73	751	35	4	863	91	10	99	0	200	30	1091	100	0	1221	2350
% App Total	62.1%	13.6%	24.2%	0.0%		8.5%	87.0%	4.1%	0.5%		45.5%	5.0%	49.5%	0.0%		2.5%	89.4%	8.2%	0.0%		
PHF	.683	.563	.571	.000	.825	.760	.877	.795	.500	.903	.784	.500	.884	.000	.847	.833	.869	.714	.000	.853	.896

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7217-012 J St & E Covell Blvd
Date : 3/16/2017

Bank 1 Count = Bikes & Peds

	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	4
7:15	0	3	0	0	3	1	3	0	1	4	1	0	0	0	1	0	1	0	2	1	9	3
7:30	0	4	1	0	5	7	22	0	1	29	1	1	1	1	3	0	2	1	1	3	40	3
7:45	0	5	4	0	9	2	5	0	2	7	0	0	0	3	0	0	2	0	1	2	18	6
Total	0	13	5	1	18	10	30	0	4	40	2	1	1	5	4	0	5	1	6	6	68	16
8:00	0	2	3	0	5	5	8	0	3	13	0	1	1	4	2	0	2	0	6	2	22	13
8:15	0	2	0	1	2	1	4	0	0	5	0	0	0	2	0	0	2	0	6	2	9	9
8:30	0	2	0	0	2	1	3	0	0	4	1	0	0	0	1	0	2	0	0	2	9	0
8:45	0	0	0	0	0	1	5	0	1	6	1	1	0	1	2	0	1	0	0	1	9	2
Total	0	6	3	1	9	8	20	0	4	28	2	2	1	7	5	0	7	0	12	7	49	24
16:00	0	0	1	0	1	2	1	0	2	3	0	0	0	2	0	0	0	0	1	0	4	5
16:15	0	0	0	0	0	0	2	1	1	3	0	3	1	5	4	0	2	0	3	2	9	9
16:30	0	0	0	1	0	1	0	1	3	2	1	3	3	3	7	0	6	0	0	6	15	7
16:45	0	2	1	0	3	1	1	1	0	3	1	1	0	6	2	0	5	0	2	5	13	8
Total	0	2	2	1	4	4	4	3	6	11	2	7	4	16	13	0	13	0	6	13	41	29
17:00	0	0	0	0	0	0	2	0	1	2	1	0	0	3	1	0	1	0	1	1	4	5
17:15	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3	1
17:30	2	1	0	0	3	1	2	0	2	3	0	3	0	8	3	0	3	0	1	3	12	11
17:45	0	0	1	0	1	6	3	1	1	10	1	0	2	1	3	0	4	0	0	4	18	2
Total	4	1	1	0	6	7	7	1	4	15	2	3	2	13	7	0	9	0	2	9	37	19
Grand Total	4	22	11	3	37	29	61	4	18	94	8	13	8	41	29	0	34	1	26	35	195	88
Apprch %	10.8%	59.5%	29.7%			30.9%	64.9%	4.3%			27.6%	44.8%	27.6%			0.0%	97.1%	2.9%				
Total %	2.1%	11.3%	5.6%		19.0%	14.9%	31.3%	2.1%		48.2%	4.1%	6.7%	4.1%		14.9%	0.0%	17.4%	0.5%		17.9%	100.0%	

AM PEAK HOUR	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	5	4	0	9	2	5	0	2	7	0	0	0	3	0	0	2	0	1	2	18
8:00	0	2	3	0	5	5	8	0	3	13	0	1	1	4	2	0	2	0	6	2	22
8:15	0	2	0	1	2	1	4	0	0	5	0	0	0	2	0	0	2	0	6	2	9
8:30	0	2	0	0	2	1	3	0	0	4	1	0	0	0	1	0	2	0	0	2	9
Total Volume	0	11	7	1	18	9	20	0	5	29	1	1	1	9	3	0	8	0	13	8	58
% App Total	0.0%	61.1%	38.9%			31.0%	69.0%	0.0%			33.3%	33.3%	33.3%			0.0%	100.0%	0.0%			
PHF	.000	.550	.438		.500	.450	.625	.000		.558	.250	.250	.250		.375	.000	1.000	.000		1.000	.659

PM PEAK HOUR	J St Southbound					E Covell Blvd Westbound					J St Northbound					E Covell Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	2	1	0	3	1	1	1	0	3	1	1	0	6	2	0	5	0	2	5	13
17:00	0	0	0	0	0	0	2	0	1	2	1	0	0	3	1	0	1	0	1	1	4
17:15	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3
17:30	2	1	0	0	3	1	2	0	2	3	0	3	0	8	3	0	3	0	1	3	12
Total Volume	4	3	1	0	8	2	5	1	3	8	2	4	0	18	6	0	10	0	4	10	32
% App Total	50.0%	37.5%	12.5%			25.0%	62.5%	12.5%			33.3%	66.7%	0.0%			0.0%	100.0%	0.0%			
PHF	.500	.375	.250		.667	.500	.625	.250		.667	.500	.333	.000		.500	.000	.500	.000		.500	.615

Existing Level of Service (LOS) Calculations

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	9	258	39	0	93	174	11	0	34	61	202
Future Vol, veh/h	0	9	258	39	0	93	174	11	0	34	61	202
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.76	0.76	0.76	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	277	42	0	122	229	14	0	37	66	220
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	18.2	13.9	15.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	36%
Vol Thru, %	0%	23%	0%	87%	0%	94%	54%
Vol Right, %	0%	77%	0%	13%	0%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	263	9	297	93	185	99
LT Vol	34	0	9	0	93	0	36
Through Vol	0	61	0	258	0	174	53
RT Vol	0	202	0	39	0	11	10
Lane Flow Rate	37	286	10	319	122	243	119
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.077	0.509	0.019	0.587	0.244	0.448	0.248
Departure Headway (Hd)	7.467	6.41	7.221	6.616	7.181	6.627	7.485
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	563	496	546	500	543	479
Service Time	5.205	4.146	4.959	4.354	4.919	4.366	5.533
HCM Lane V/C Ratio	0.077	0.508	0.02	0.584	0.244	0.448	0.248
HCM Control Delay	10.8	15.6	10.1	18.4	12.2	14.7	13
HCM Lane LOS	B	C	B	C	B	B	B
HCM 95th-tile Q	0.2	2.9	0.1	3.8	0.9	2.3	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	53	10
Future Vol, veh/h	0	36	53	10
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	64	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	479	26	97	353	22	170
Future Volume (veh/h)	479	26	97	353	22	170
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	532	0	104	380	26	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.90	0.90	0.93	0.93	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	854	0	164	1248	57	0
Arrive On Green	0.46	0.00	0.09	0.67	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1711	0
Grp Volume(v), veh/h	532	0	104	380	27	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	7.3	0.0	1.9	2.8	0.5	0.0
Cycle Q Clear(g_c), s	7.3	0.0	1.9	2.8	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	854	0	164	1248	59	0
V/C Ratio(X)	0.62	0.00	0.63	0.30	0.46	0.00
Avail Cap(c_a), veh/h	1937	0	1054	1937	1056	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	14.7	2.3	16.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	4.0	0.1	11.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	1.1	1.4	0.4	0.0
LnGrp Delay(d),s/veh	7.7	0.0	18.8	2.4	27.4	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	532			484	27	
Approach Delay, s/veh	7.7			5.9	27.4	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.1	21.4				28.6		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	3.9	9.3				4.8		2.5
Green Ext Time (p_c), s	0.2	6.2				6.4		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		7.4
HCM 2010 LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	98	96	97.4%	3.3	0.5	A
	Right Turn	31	32	103.9%	3.1	0.9	A
	Subtotal	129	128	99.0%	3.2	0.4	A
SB	Left Turn						
	Through	33	35	105.2%	0.0	0.0	A
	Right Turn						
	Subtotal	33	35	105.2%	0.0	0.0	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	11	10	92.7%	3.9	0.8	A
	Through						
	Right Turn	2	3	130.0%	1.8	1.6	A
	Subtotal	13	13	98.5%	3.7	0.7	A
	Total	175	175	100.1%	2.6	0.5	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	9	86.0%	59.2	37.9	E
	Through	12	13	104.2%	37.2	15.6	D
	Right Turn	273	279	102.2%	5.3	0.8	A
	Subtotal	295	300	101.7%	8.5	1.7	A
SB	Left Turn	28	28	100.0%	42.6	9.5	D
	Through	6	7	120.0%	38.0	22.1	D
	Right Turn	10	11	106.0%	11.1	15.2	B
	Subtotal	44	46	104.1%	35.8	6.6	D
EB	Left Turn	37	32	86.5%	56.4	12.7	E
	Through	618	622	100.7%	15.7	1.6	B
	Right Turn	14	12	87.1%	6.6	3.1	A
	Subtotal	669	667	99.6%	17.6	1.6	B
WB	Left Turn	131	127	97.0%	50.2	6.3	D
	Through	460	462	100.3%	10.1	1.4	B
	Right Turn	80	82	102.9%	6.8	0.6	A
	Subtotal	671	671	100.0%	17.8	2.3	B
	Total	1,679	1,683	100.3%	16.5	1.5	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Conditions
AM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	185	186	100.3%	28.6	4.2	C
	Through						
	Right Turn	58	55	94.8%	6.0	2.4	A
	Subtotal	243	241	99.0%	23.0	2.8	C
EB	Left Turn	74	75	101.1%	59.9	12.1	E
	Through	849	861	101.4%	26.0	10.6	C
	Right Turn						
	Subtotal	923	936	101.4%	28.9	10.0	C
WB	Left Turn						
	Through	613	617	100.7%	13.4	3.2	B
	Right Turn	299	302	100.9%	8.7	2.4	A
	Subtotal	912	919	100.8%	11.9	2.8	B
Total		2,078	2,095	100.8%	20.7	4.6	C

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	158	153	96.9%	38.8	4.1	D
	Through	1	1	60.0%	4.0	10.0	A
	Right Turn	131	133	101.7%	38.8	5.2	D
	Subtotal	290	287	98.9%	38.8	4.1	D
EB	Left Turn						
	Through	604	606	100.4%	33.8	5.6	C
	Right Turn	430	438	101.9%	35.8	7.5	D
	Subtotal	1,034	1,045	101.0%	34.7	6.3	C
WB	Left Turn	454	452	99.4%	65.7	6.7	E
	Through	781	784	100.4%	11.8	2.3	B
	Right Turn						
	Subtotal	1,235	1,236	100.1%	30.8	3.6	C
Total		2,559	2,567	100.3%	33.3	3.1	C

Intersection 7 | **SR 113 NB Ramps/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	303	297	98.0%	43.7	15.6	D
	Through	1	1	140.0%	12.0	21.7	B
	Right Turn	289	294	101.7%	9.0	1.7	A
	Subtotal	593	592	99.9%	25.6	5.5	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	76	74	97.1%	48.2	10.4	D
	Through	686	687	100.2%	15.5	2.1	B
	Right Turn						
	Subtotal	762	761	99.9%	19.2	2.1	B
WB	Left Turn						
	Through	931	938	100.8%	26.5	22.5	C
	Right Turn	140	137	97.7%	14.1	12.5	B
	Subtotal	1,071	1,075	100.4%	24.9	21.3	C
Total		2,426	2,428	100.1%	23.6	11.7	C

Intersection 8 | **Sycamore Ln/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	193	191	99.1%	47.7	15.0	D
	Through	34	35	103.2%	45.9	16.2	D
	Right Turn	35	35	99.1%	13.6	17.5	B
	Subtotal	262	261	99.7%	42.8	15.3	D
SB	Left Turn	78	77	98.2%	42.0	9.5	D
	Through	61	60	98.7%	43.0	10.9	D
	Right Turn	211	208	98.6%	17.2	9.4	B
	Subtotal	350	345	98.5%	26.4	9.5	C
EB	Left Turn	116	114	98.4%	49.2	3.1	D
	Through	551	566	102.8%	29.9	4.3	C
	Right Turn	171	173	101.4%	17.6	3.5	B
	Subtotal	838	854	101.9%	30.2	2.7	C
WB	Left Turn	30	29	95.3%	57.0	9.7	E
	Through	601	610	101.4%	27.1	5.3	C
	Right Turn	60	65	108.5%	18.4	3.7	B
	Subtotal	691	703	101.8%	27.6	5.1	C
Total		2,141	2,163	101.0%	30.5	5.1	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	493	157	136	407	37	163	58	69	51	151	100
Future Volume (veh/h)	29	493	157	136	407	37	163	58	69	51	151	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1854	1900	1863	1863	1727	1792	1814	1900	1863	1799	1900
Adj Flow Rate, veh/h	35	601	0	160	479	0	190	67	0	56	166	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	60	1259	0	207	1552	644	241	391	0	85	418	0
Arrive On Green	0.04	0.36	0.00	0.12	0.44	0.00	0.14	0.22	0.00	0.05	0.12	0.00
Sat Flow, veh/h	1691	3615	0	1774	3539	1468	1707	1814	0	1774	3508	0
Grp Volume(v), veh/h	35	601	0	160	479	0	190	67	0	56	166	0
Grp Sat Flow(s),veh/h/ln	1691	1761	0	1774	1770	1468	1707	1814	0	1774	1709	0
Q Serve(g_s), s	1.4	9.1	0.0	6.0	6.0	0.0	7.4	2.1	0.0	2.1	3.1	0.0
Cycle Q Clear(g_c), s	1.4	9.1	0.0	6.0	6.0	0.0	7.4	2.1	0.0	2.1	3.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	60	1259	0	207	1552	644	241	391	0	85	418	0
V/C Ratio(X)	0.58	0.48	0.00	0.77	0.31	0.00	0.79	0.17	0.00	0.66	0.40	0.00
Avail Cap(c_a), veh/h	987	2314	0	777	2325	964	997	1059	0	1036	1996	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.5	17.1	0.0	29.4	12.5	0.0	28.4	21.9	0.0	32.1	27.7	0.0
Incr Delay (d2), s/veh	8.7	0.3	0.0	6.0	0.4	0.0	5.7	0.2	0.0	8.4	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.4	0.0	3.3	3.0	0.0	3.9	1.0	0.0	1.2	1.5	0.0
LnGrp Delay(d),s/veh	41.2	17.3	0.0	35.4	12.9	0.0	34.2	22.1	0.0	40.5	28.3	0.0
LnGrp LOS	D	B		D	B		C	C		D	C	
Approach Vol, veh/h		636			639			257			222	
Approach Delay, s/veh		18.7			18.5			31.0			31.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	29.5	13.7	12.4	7.4	35.0	7.3	18.8
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	8.0	11.1	9.4	5.1	3.4	8.0	4.1	4.1
Green Ext Time (p_c), s	0.4	13.4	0.5	1.5	0.1	13.9	0.1	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	406	147	145	547	0	103	0	170	0	0	0
Future Volume (veh/h)	0	406	147	145	547	0	103	0	170	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	534	0	177	667	0	184	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.76	0.76	0.82	0.82	0.92	0.56	0.92	0.56	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1381	0	235	2218	0	248	0	0	0	5	0
Arrive On Green	0.00	0.39	0.00	0.13	0.63	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	184		0	-93137	0
Grp Volume(v), veh/h	0	534	0	177	667	0	184	20.3		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	4.2	0.0	3.7	3.3	0.0	3.8			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.2	0.0	3.7	3.3	0.0	3.8			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1381	0	235	2218	0	248			0	5	0
V/C Ratio(X)	0.00	0.39	0.00	0.75	0.30	0.00	0.74			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2849	0	691	2941	0	921			0	725	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.4	0.0	16.1	3.3	0.0	15.9			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.8	0.1	0.0	4.4			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	0.0	2.1	1.6	0.0	2.1			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.6	0.0	20.9	3.4	0.0	20.3			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		534			844						0	
Approach Delay, s/veh		8.6			7.1						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		29.1	9.4	0.0	9.1	20.0		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		5.3	5.8	0.0	5.7	6.2		
Green Ext Time (p_c), s		9.1	0.4	0.0	0.3	8.9		

Intersection Summary			
HCM 2010 Ctrl Delay			9.1
HCM 2010 LOS			A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	599	96	204	584	88	55	80	141	204	208	75
Future Volume (veh/h)	40	599	96	204	584	88	55	80	141	204	208	75
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1844	1900
Adj Flow Rate, veh/h	53	799	0	265	758	0	71	103	0	246	251	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.78	0.78	0.78	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	81	1200	537	371	1425	0	93	264	0	305	483	0
Arrive On Green	0.05	0.34	0.00	0.11	0.40	0.00	0.05	0.14	0.00	0.17	0.26	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1844	0
Grp Volume(v), veh/h	53	799	0	265	758	0	71	103	0	246	251	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1844	0
Q Serve(g_s), s	2.1	13.8	0.0	5.4	11.7	0.0	2.9	3.6	0.0	9.6	8.3	0.0
Cycle Q Clear(g_c), s	2.1	13.8	0.0	5.4	11.7	0.0	2.9	3.6	0.0	9.6	8.3	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	81	1200	537	371	1425	0	93	264	0	305	483	0
V/C Ratio(X)	0.66	0.67	0.00	0.71	0.53	0.00	0.76	0.39	0.00	0.81	0.52	0.00
Avail Cap(c_a), veh/h	742	2221	994	1426	2221	0	735	774	0	742	771	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.7	20.2	0.0	30.9	16.3	0.0	33.5	27.9	0.0	28.5	22.6	0.0
Incr Delay (d2), s/veh	3.4	0.2	0.0	1.0	0.1	0.0	12.1	0.9	0.0	6.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.7	0.0	2.6	5.7	0.0	1.7	1.9	0.0	5.2	4.4	0.0
LnGrp Delay(d),s/veh	37.0	20.5	0.0	31.8	16.4	0.0	45.6	28.8	0.0	34.5	23.7	0.0
LnGrp LOS	D	C		C	B		D	C		C	C	
Approach Vol, veh/h		852			1023			174			497	
Approach Delay, s/veh		21.5			20.4			35.7			29.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	33.9	7.8	22.8	11.8	29.3	16.3	14.2
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.1	13.7	4.9	10.3	7.4	15.8	11.6	5.6
Green Ext Time (p_c), s	0.1	8.6	0.2	2.3	0.5	8.4	0.9	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	744	190	58	723	28	137	3	94	34	10	16
Future Volume (veh/h)	10	744	190	58	723	28	137	3	94	34	10	16
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	13	942	168	78	977	37	171	4	1	37	11	0
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	29	1589	684	101	1716	65	224	190	48	68	85	0
Arrive On Green	0.02	0.45	0.45	0.06	0.49	0.49	0.13	0.13	0.13	0.04	0.05	0.00
Sat Flow, veh/h	1774	3539	1523	1660	3476	132	1774	1425	356	1774	1863	0
Grp Volume(v), veh/h	13	942	168	78	497	517	171	0	5	37	11	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1523	1660	1770	1838	1774	0	1781	1774	1863	0
Q Serve(g_s), s	0.4	11.9	4.1	2.8	11.8	11.8	5.6	0.0	0.1	1.2	0.3	0.0
Cycle Q Clear(g_c), s	0.4	11.9	4.1	2.8	11.8	11.8	5.6	0.0	0.1	1.2	0.3	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	29	1589	684	101	873	907	224	0	238	68	85	0
V/C Ratio(X)	0.45	0.59	0.25	0.77	0.57	0.57	0.76	0.00	0.02	0.54	0.13	0.00
Avail Cap(c_a), veh/h	594	1778	765	556	889	924	594	0	1193	594	1248	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.1	12.4	10.2	27.6	10.7	10.7	25.2	0.0	22.5	28.2	27.4	0.0
Incr Delay (d2), s/veh	12.7	0.5	0.2	13.9	0.9	0.9	6.4	0.0	0.0	12.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.9	1.7	1.6	5.9	6.1	3.1	0.0	0.1	0.8	0.2	0.0
LnGrp Delay(d),s/veh	41.8	12.9	10.4	41.6	11.6	11.6	31.6	0.0	22.5	40.2	28.6	0.0
LnGrp LOS	D	B	B	D	B	B	C		C	D	C	
Approach Vol, veh/h		1123			1092			176			48	
Approach Delay, s/veh		12.8			13.7			31.3			37.5	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	8.2	5.5	34.0	6.8	13.5	8.1	31.3
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.6	2.3	2.4	13.8	3.2	2.1	4.8	13.9
Green Ext Time (p_c), s	0.4	0.1	0.0	12.7	0.1	0.1	0.2	12.6

Intersection Summary		
HCM 2010 Ctrl Delay		15.0
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	22	227	37	0	210	267	34	0	38	46	186
Future Vol, veh/h	0	22	227	37	0	210	267	34	0	38	46	186
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.91	0.91	0.91	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	273	45	0	231	293	37	0	43	52	211
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	18.6	17.4	15.4
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	26%
Vol Thru, %	0%	20%	0%	86%	0%	89%	61%
Vol Right, %	0%	80%	0%	14%	0%	11%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	232	22	264	210	301	82
LT Vol	38	0	22	0	210	0	21
Through Vol	0	46	0	227	0	267	50
RT Vol	0	186	0	37	0	34	11
Lane Flow Rate	43	264	27	318	231	331	88
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.094	0.495	0.055	0.601	0.456	0.599	0.194
Departure Headway (Hd)	7.847	6.763	7.417	6.805	7.106	6.514	7.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	457	533	483	531	508	556	453
Service Time	5.585	4.5	5.157	4.545	4.843	4.251	5.962
HCM Lane V/C Ratio	0.094	0.495	0.056	0.599	0.455	0.595	0.194
HCM Control Delay	11.4	16	10.6	19.3	15.7	18.6	12.9
HCM Lane LOS	B	C	B	C	C	C	B
HCM 95th-tile Q	0.3	2.7	0.2	3.9	2.4	3.9	0.7

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Lane Configurations			✥	
Traffic Vol, veh/h	0	21	50	11
Future Vol, veh/h	0	21	50	11
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	54	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.9
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	466	27	136	505	21	99
Future Volume (veh/h)	466	27	136	505	21	99
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	524	0	142	526	25	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.89	0.89	0.96	0.96	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	874	0	190	1283	54	0
Arrive On Green	0.47	0.00	0.11	0.69	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1709	0
Grp Volume(v), veh/h	524	0	142	526	26	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	7.4	0.0	2.8	4.4	0.5	0.0
Cycle Q Clear(g_c), s	7.4	0.0	2.8	4.4	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	874	0	190	1283	57	0
V/C Ratio(X)	0.60	0.00	0.75	0.41	0.46	0.00
Avail Cap(c_a), veh/h	1823	0	992	1823	994	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	15.5	2.4	17.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	5.7	0.2	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	1.6	2.3	0.4	0.0
LnGrp Delay(d),s/veh	7.7	0.0	21.2	2.6	28.9	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	524			668	26	
Approach Delay, s/veh	7.7			6.6	28.9	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.8	22.8				30.6		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.8	9.4				6.4		2.5
Green Ext Time (p_c), s	0.3	7.4				7.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	21	25	116.7%	2.6	0.6	A
	Right Turn	20	22	111.0%	2.5	0.6	A
	Subtotal	41	47	113.9%	2.6	0.4	A
SB	Left Turn	3	3	100.0%	1.1	1.3	A
	Through	64	64	100.6%	0.1	0.2	A
	Right Turn						
	Subtotal	67	67	100.6%	0.2	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	20	100.0%	3.7	0.3	A
	Through						
	Right Turn						
	Subtotal	20	20	100.0%	3.7	0.3	A
Total		128	134	104.8%	1.7	0.4	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	11	11	101.8%	53.1	22.4	D
	Through	7	8	120.0%	57.4	11.6	E
	Right Turn	184	181	98.2%	2.9	0.4	A
	Subtotal	202	200	99.1%	7.8	1.2	A
SB	Left Turn	52	53	101.5%	38.8	7.4	D
	Through	4	5	117.5%	19.8	24.9	B
	Right Turn	28	28	100.4%	8.3	3.3	A
	Subtotal	84	86	101.9%	27.5	5.6	C
EB	Left Turn	10	12	121.0%	48.3	13.0	D
	Through	521	528	101.4%	13.1	2.0	B
	Right Turn	15	13	88.7%	3.6	1.4	A
	Subtotal	546	554	101.4%	13.9	1.5	B
WB	Left Turn	197	200	101.6%	48.8	5.3	D
	Through	592	592	100.0%	7.5	2.1	A
	Right Turn	24	26	107.5%	5.7	3.3	A
	Subtotal	813	818	100.6%	17.7	2.3	B
Total		1,645	1,657	100.8%	15.7	1.4	B

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Existing Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 5 | **John Jones Rd/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	231	230	99.5%	36.6	5.1	D
	Through						
	Right Turn	56	61	108.2%	5.7	0.8	A
	Subtotal	287	290	101.2%	29.8	4.5	C
EB	Left Turn	33	32	98.2%	44.1	12.3	D
	Through	728	730	100.3%	9.8	1.6	A
	Right Turn						
	Subtotal	761	763	100.2%	11.6	2.0	B
WB	Left Turn						
	Through	757	761	100.5%	9.1	2.6	A
	Right Turn	175	179	102.1%	5.9	1.8	A
	Subtotal	932	939	100.8%	8.5	2.4	A
Total		1,980	1,992	100.6%	12.9	2.0	B

Intersection 6 | **SR 113 SB Ramps/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	125	118	94.6%	36.7	8.7	D
	Through	1	1	80.0%	0.3	1.0	A
	Right Turn	81	86	106.2%	37.9	6.2	D
	Subtotal	207	205	99.1%	37.5	6.5	D
EB	Left Turn						
	Through	714	707	99.0%	19.2	2.5	B
	Right Turn	245	252	102.7%	14.9	2.6	B
	Subtotal	959	959	100.0%	18.0	2.1	B
WB	Left Turn	240	237	98.6%	48.5	5.2	D
	Through	851	854	100.3%	6.0	1.0	A
	Right Turn						
	Subtotal	1,091	1,090	99.9%	15.0	1.9	B
Total		2,257	2,254	99.9%	18.3	1.6	B

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	348	350	100.5%	38.1	5.4	D
	Through						
	Right Turn	532	547	102.8%	25.3	4.8	C
	Subtotal	880	897	101.9%	30.6	4.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	98	99	100.5%	68.9	11.6	E
	Through	747	738	98.8%	10.6	1.8	B
	Right Turn						
	Subtotal	845	836	99.0%	18.3	2.6	B
WB	Left Turn						
	Through	741	742	100.1%	14.6	1.7	B
	Right Turn	152	156	102.3%	6.7	0.8	A
	Subtotal	893	897	100.5%	13.2	1.4	B
Total		2,618	2,630	100.5%	20.8	2.3	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	117	113	96.8%	41.1	5.2	D
	Through	60	62	103.0%	40.6	8.8	D
	Right Turn	45	44	98.0%	7.8	3.2	A
	Subtotal	222	219	98.7%	34.1	4.1	C
SB	Left Turn	149	139	93.3%	45.4	10.1	D
	Through	77	82	106.4%	38.2	5.3	D
	Right Turn	99	98	99.4%	13.8	6.7	B
	Subtotal	325	319	98.2%	33.1	7.6	C
EB	Left Turn	140	139	98.9%	50.1	3.7	D
	Through	782	788	100.8%	18.6	2.6	B
	Right Turn	127	130	102.6%	11.5	2.9	B
	Subtotal	1,049	1,057	100.7%	22.0	2.4	C
WB	Left Turn	25	21	85.6%	50.2	16.6	D
	Through	601	609	101.3%	24.1	2.1	C
	Right Turn	96	98	101.6%	16.1	3.8	B
	Subtotal	722	728	100.8%	23.8	2.2	C
Total		2,318	2,323	100.2%	25.4	2.1	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	746	135	85	448	62	223	146	136	79	111	57
Future Volume (veh/h)	58	746	135	85	448	62	223	146	136	79	111	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1857	1900	1863	1863	1727	1792	1808	1900	1863	1793	1900
Adj Flow Rate, veh/h	63	811	0	93	492	0	259	170	0	104	146	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.86	0.86	0.86	0.76	0.76	0.76
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	81	1302	0	122	1379	572	304	509	0	136	615	0
Arrive On Green	0.05	0.37	0.00	0.07	0.39	0.00	0.18	0.28	0.00	0.08	0.18	0.00
Sat Flow, veh/h	1691	3621	0	1774	3539	1468	1707	1808	0	1774	3496	0
Grp Volume(v), veh/h	63	811	0	93	492	0	259	170	0	104	146	0
Grp Sat Flow(s),veh/h/ln	1691	1764	0	1774	1770	1468	1707	1808	0	1774	1703	0
Q Serve(g_s), s	3.3	16.6	0.0	4.6	8.7	0.0	13.0	6.6	0.0	5.1	3.2	0.0
Cycle Q Clear(g_c), s	3.3	16.6	0.0	4.6	8.7	0.0	13.0	6.6	0.0	5.1	3.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	81	1302	0	122	1379	572	304	509	0	136	615	0
V/C Ratio(X)	0.77	0.62	0.00	0.76	0.36	0.00	0.85	0.33	0.00	0.76	0.24	0.00
Avail Cap(c_a), veh/h	766	1797	0	602	1802	748	773	818	0	803	1542	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.6	22.8	0.0	40.4	19.1	0.0	35.2	25.2	0.0	40.0	31.0	0.0
Incr Delay (d2), s/veh	14.3	0.5	0.0	9.4	0.6	0.0	6.7	0.4	0.0	8.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.2	0.0	2.5	4.3	0.0	6.7	3.3	0.0	2.8	1.5	0.0
LnGrp Delay(d),s/veh	55.9	23.3	0.0	49.9	19.7	0.0	41.9	25.5	0.0	48.6	31.2	0.0
LnGrp LOS	E	C		D	B		D	C		D	C	
Approach Vol, veh/h		874			585			429			250	
Approach Delay, s/veh		25.7			24.5			35.4			38.4	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	37.6	19.7	20.0	9.3	39.4	10.8	28.9
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	6.6	18.6	15.0	5.2	5.3	10.7	7.1	8.6
Green Ext Time (p_c), s	0.2	14.0	0.8	2.1	0.1	16.0	0.3	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱		↰	↑↑		↰		↱		✥	
Traffic Volume (veh/h)	0	940	99	66	528	0	106	0	127	0	0	0
Future Volume (veh/h)	0	940	99	66	528	0	106	0	127	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	959	0	74	593	0	112	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.89	0.89	0.89	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1820	0	125	2424	0	158	0	0	0	5	0
Arrive On Green	0.00	0.51	0.00	0.07	0.68	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	112		0	-93137	0
Grp Volume(v), veh/h	0	959	0	74	593	0	112	23.3		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	7.2	0.0	1.6	2.5	0.0	2.4			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.2	0.0	1.6	2.5	0.0	2.4			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1820	0	125	2424	0	158			0	5	0
V/C Ratio(X)	0.00	0.53	0.00	0.59	0.24	0.00	0.71			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2755	0	668	2844	0	891			0	702	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.4	0.0	18.0	2.4	0.0	17.6			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.5	0.1	0.0	5.7			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	0.0	0.9	1.2	0.0	1.4			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	6.7	0.0	22.4	2.4	0.0	23.3			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		959			667						0	
Approach Delay, s/veh		6.7			4.6						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		32.3	7.6	0.0	6.8	25.5		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		4.5	4.4	0.0	3.6	9.2		
Green Ext Time (p_c), s		12.7	0.2	0.0	0.1	11.3		

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	911	175	182	542	172	135	160	199	122	122	51
Future Volume (veh/h)	69	911	175	182	542	172	135	160	199	122	122	51
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1853	1900	1863	1841	1900
Adj Flow Rate, veh/h	77	1012	0	204	609	0	152	180	0	140	140	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	100	1381	618	302	1495	0	196	341	0	185	325	0
Arrive On Green	0.06	0.39	0.00	0.09	0.42	0.00	0.11	0.18	0.00	0.10	0.18	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1853	0	1774	1841	0
Grp Volume(v), veh/h	77	1012	0	204	609	0	152	180	0	140	140	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1853	0	1774	1841	0
Q Serve(g_s), s	3.1	17.8	0.0	4.2	8.8	0.0	6.1	6.4	0.0	5.6	4.9	0.0
Cycle Q Clear(g_c), s	3.1	17.8	0.0	4.2	8.8	0.0	6.1	6.4	0.0	5.6	4.9	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	100	1381	618	302	1495	0	196	341	0	185	325	0
V/C Ratio(X)	0.77	0.73	0.00	0.67	0.41	0.00	0.78	0.53	0.00	0.76	0.43	0.00
Avail Cap(c_a), veh/h	730	2184	977	1402	2184	0	723	762	0	730	758	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.9	19.0	0.0	32.2	14.7	0.0	31.5	26.9	0.0	31.8	26.8	0.0
Incr Delay (d2), s/veh	4.6	0.3	0.0	1.0	0.1	0.0	6.4	1.3	0.0	7.4	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.6	0.0	2.0	4.2	0.0	3.3	3.4	0.0	3.1	2.6	0.0
LnGrp Delay(d),s/veh	38.6	19.3	0.0	33.2	14.8	0.0	37.9	28.2	0.0	39.2	27.9	0.0
LnGrp LOS	D	B		C	B		D	C		D	C	
Approach Vol, veh/h		1089			813			332			280	
Approach Delay, s/veh		20.6			19.4			32.6			33.5	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	35.8	12.1	16.9	10.5	33.4	11.6	17.4
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.1	10.8	8.1	6.9	6.2	19.8	7.6	8.4
Green Ext Time (p_c), s	0.1	9.4	0.4	2.1	0.3	8.6	0.5	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1102	100	73	789	35	91	10	99	41	9	16
Future Volume (veh/h)	30	1102	100	73	789	35	91	10	99	41	9	16
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	1224	51	82	887	38	107	12	0	49	11	0
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.85	0.85	0.85	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	63	1694	706	105	1748	75	143	171	0	83	108	0
Arrive On Green	0.04	0.48	0.48	0.06	0.51	0.51	0.08	0.09	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1774	3539	1475	1660	3451	148	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	33	1224	51	82	455	470	107	12	0	49	11	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1475	1660	1770	1830	1774	1863	0	1774	1863	0
Q Serve(g_s), s	1.1	16.4	1.1	2.9	10.1	10.1	3.5	0.4	0.0	1.6	0.3	0.0
Cycle Q Clear(g_c), s	1.1	16.4	1.1	2.9	10.1	10.1	3.5	0.4	0.0	1.6	0.3	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	63	1694	706	105	896	927	143	171	0	83	108	0
V/C Ratio(X)	0.53	0.72	0.07	0.78	0.51	0.51	0.75	0.07	0.00	0.59	0.10	0.00
Avail Cap(c_a), veh/h	597	1786	744	558	896	927	597	1253	0	597	1253	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	12.4	8.4	27.4	9.7	9.7	26.8	24.7	0.0	27.8	26.5	0.0
Incr Delay (d2), s/veh	8.0	1.5	0.1	13.9	0.6	0.5	9.1	0.2	0.0	11.9	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.3	0.5	1.7	5.1	5.2	2.1	0.2	0.0	1.1	0.2	0.0
LnGrp Delay(d),s/veh	36.2	13.8	8.4	41.3	10.3	10.3	35.9	24.9	0.0	39.7	27.3	0.0
LnGrp LOS	D	B	A	D	B	B	D	C		D	C	
Approach Vol, veh/h		1308			1007			119			60	
Approach Delay, s/veh		14.2			12.8			34.8			37.5	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	9.0	6.6	34.6	7.3	11.0	8.3	33.0
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	5.5	2.3	3.1	12.1	3.6	2.4	4.9	18.4
Green Ext Time (p_c), s	0.3	0.1	0.1	14.4	0.2	0.1	0.2	9.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Major Street	Covell Blvd		Project	West Davis AAC EIR
Minor Street	Lake Blvd		Scenario	Existing Conditions
			Peak Hour	AM Peak Hour

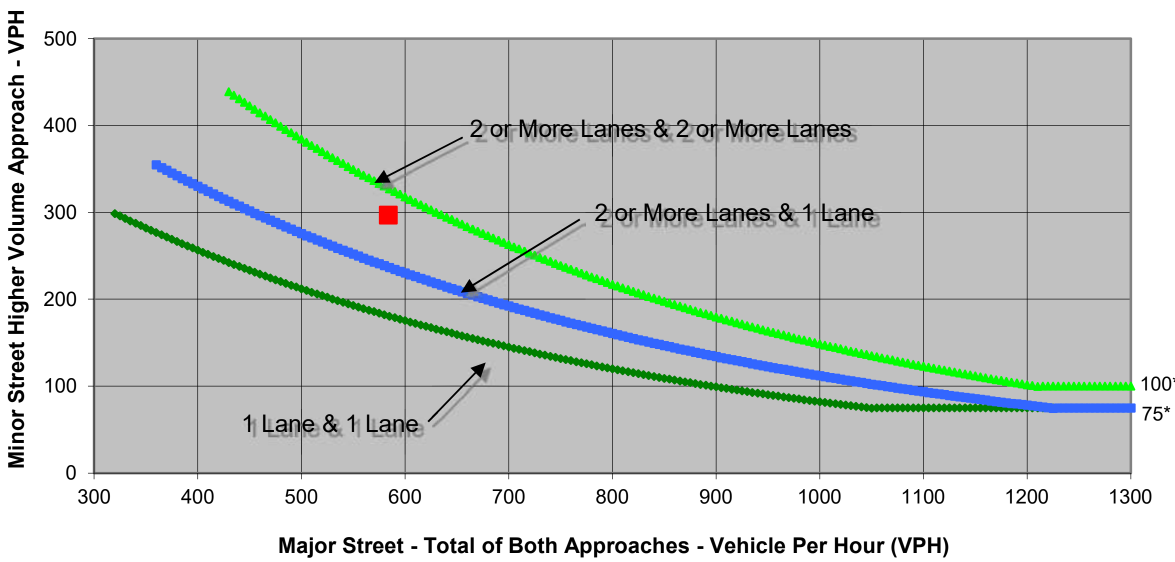
Turn Movement Volumes

	NB	SB	EB	WB
Left	34	36	9	93
Through	61	53	258	174
Right	202	10	39	11
Total	297	99	306	278

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR
ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**584**	**297**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	34	36	9	93
Through	61	53	258	174
Right	202	10	39	11
Total	297	99	306	278

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15.6
Approach with Worst Case Delay	NB
Total Vehicles on Approach	297

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**1.3**	**297**	**980**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

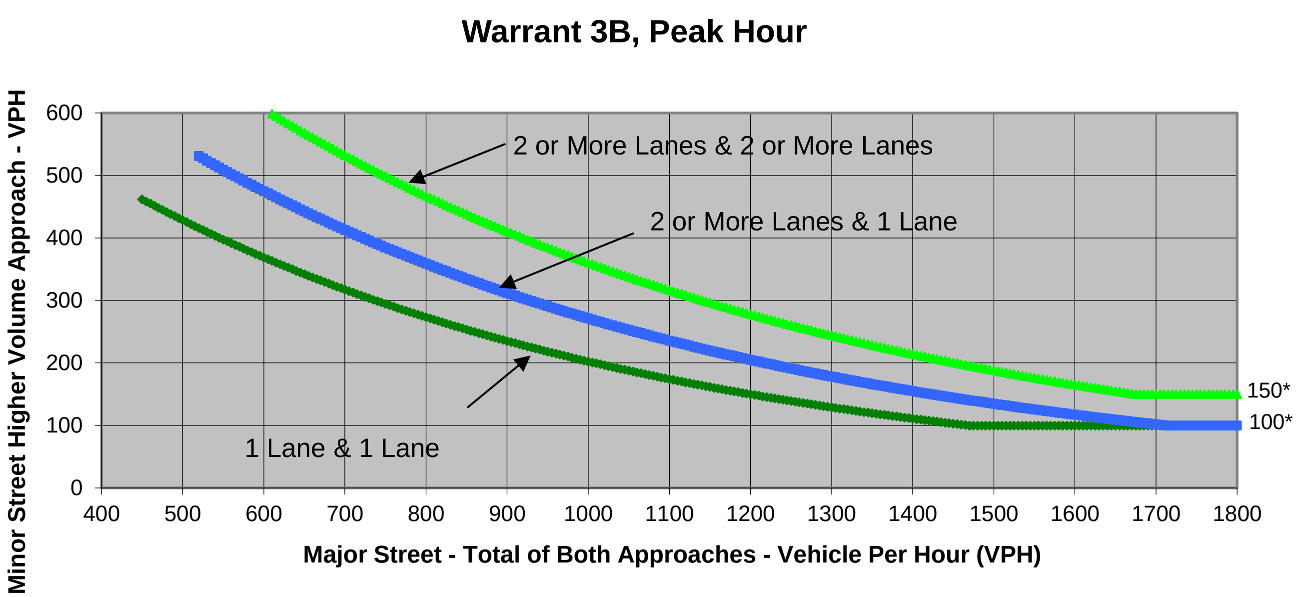
			Project	West Davis AAC EIR
Major Street	Risling Ct		Scenario	Existing Conditions
Minor Street	Hospital Dwy		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	2
Through	98	33	0	0
Right	31	0	0	11
Total	129	33	0	13

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**162**	**13**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Existing Conditions
			Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	2
Through	98	33	0	0
Right	31	0	0	11
Total	129	33	0	13

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	9.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	13

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**0**	**13**	**175**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

Major Street	Covell Blvd		Project	West Davis AAC EIR
Minor Street	Lake Blvd		Scenario	Existing Conditions
			Peak Hour	PM Peak Hour

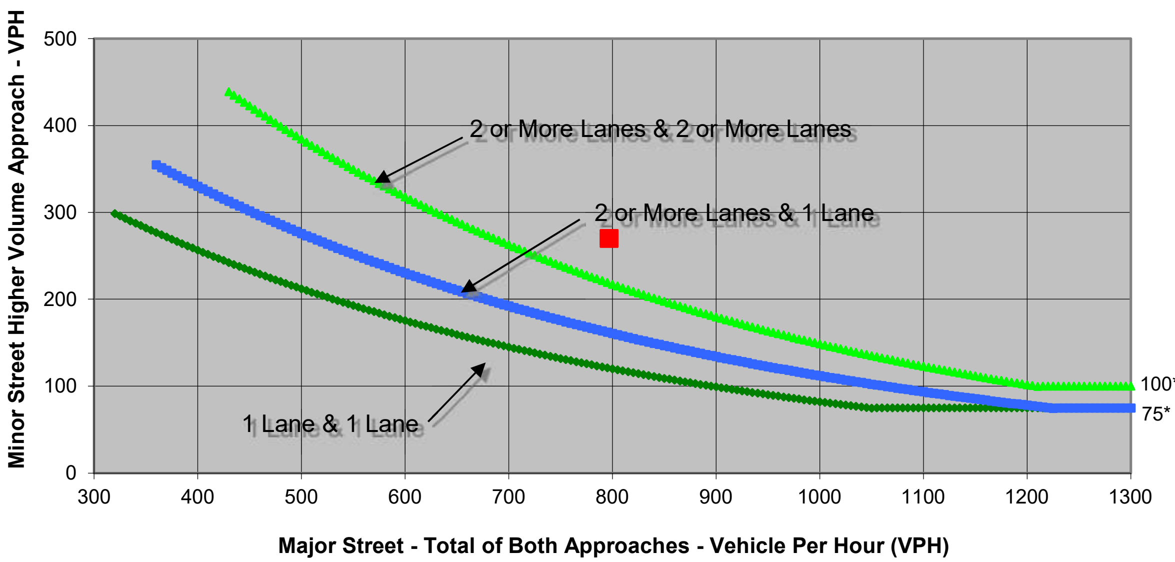
Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	210
Through	46	50	227	267
Right	186	11	37	34
Total	270	82	286	511

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR
ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**797**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Covell Blvd		Project	West Davis AAC EIR
Minor Street	Lake Blvd		Scenario	Existing Conditions
			Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	210
Through	46	50	227	267
Right	186	11	37	34
Total	270	82	286	511

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16
Approach with Worst Case Delay	NB
Total Vehicles on Approach	270

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**1.2**	**270**	**1,149**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

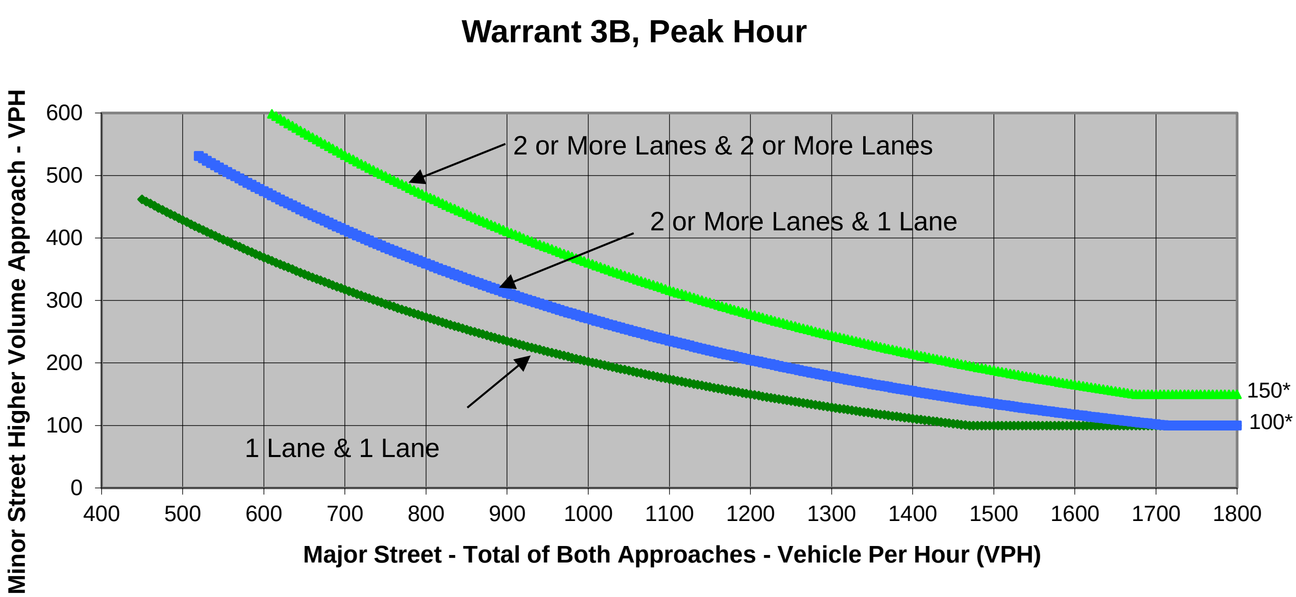
Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Existing Conditions
			Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	20
Through	21	64	0	0
Right	20	0	0	0
Total	41	67	0	20

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**108**	**20**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	West Davis AAC EIR
Major Street	Risling Ct	Scenario	Existing Conditions
Minor Street	Hospital Dwy	Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	20
Through	21	64	0	0
Right	20	0	0	0
Total	41	67	0	20

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	9.2
Approach with Worst Case Delay	WB
Total Vehicles on Approach	20

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**0.1**	**20**	**128**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

Arterial Level of Service: EB Route 1, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
SR 113 SB Ramps	6	-	-	0.1	-
Route 2	7	-	-	0.1	-
Total		-	-	0.4	-

Arterial Level of Service: EB Route 1, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.5	19.9	0.1	16
	5	17.7	29.8	0.1	14
SR 113 SB Ramps	6	21.8	29.6	0.1	9
Route 2	7	15.5	25.4	0.1	15
Total		68.5	104.7	0.4	13

Arterial Level of Service: EB Route 1, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.6	21.0	0.1	15
	5	24.2	36.1	0.1	12
SR 113 SB Ramps	6	30.8	38.3	0.1	7
Route 2	7	15.0	25.1	0.1	15
Total		84.5	120.5	0.4	11

Arterial Level of Service: EB Route 1, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.4	19.7	0.1	16
	5	19.1	31.0	0.1	14
SR 113 SB Ramps	6	26.2	33.7	0.1	8
Route 2	7	15.6	25.7	0.1	14
Total		74.3	110.1	0.4	13

Arterial Level of Service: EB Route 1, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.0	19.4	0.1	16
	5	16.3	28.5	0.1	15
SR 113 SB Ramps	6	23.9	31.7	0.1	9
Route 2	7	13.0	23.1	0.1	16
Total		66.2	102.7	0.4	13

Arterial Level of Service: EB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.0	20.6	0.1	15
	5	20.1	32.6	0.1	13
SR 113 SB Ramps	6	27.0	35.0	0.1	8
Route 2	7	15.4	25.9	0.1	14
Total		76.6	114.0	0.4	12

Arterial Level of Service: WB Route 1, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	-	-	0.3	-
SR 113 SB Ramps	6	-	-	0.1	-
Route 3	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	301	-	-	0.1	-
Total		-	-	0.7	-

Arterial Level of Service: WB Route 1, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	40.0	67.1	0.3	17
SR 113 SB Ramps	6	5.0	18.1	0.1	20
Route 3	5	13.1	20.6	0.1	13
Risling Ct	4	10.1	21.7	0.1	20
	301	2.1	9.8	0.1	32
Total		70.3	137.5	0.7	19

Arterial Level of Service: WB Route 1, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	39.5	66.9	0.3	18
SR 113 SB Ramps	6	6.8	19.7	0.1	19
Route 3	5	14.8	22.4	0.1	12
Risling Ct	4	10.6	22.4	0.1	19
	301	2.1	9.8	0.1	32
Total		73.8	141.2	0.7	18

Arterial Level of Service: WB Route 1, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	39.9	66.9	0.3	18
SR 113 SB Ramps	6	7.2	20.6	0.1	18
Route 3	5	12.2	19.8	0.1	14
Risling Ct	4	11.1	22.7	0.1	19
	301	2.1	9.8	0.1	32
Total		72.6	139.9	0.7	18

Arterial Level of Service: WB Route 1, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	38.2	65.4	0.3	18
SR 113 SB Ramps	6	4.6	18.0	0.1	21
Route 3	5	12.9	20.5	0.1	13
Risling Ct	4	10.5	22.3	0.1	19
	301	2.0	9.8	0.1	32
Total		68.3	136.0	0.7	19

Arterial Level of Service: WB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	42.0	70.9	0.3	17
SR 113 SB Ramps	6	6.4	20.6	0.1	18
Route 3	5	13.4	21.1	0.1	13
Risling Ct	4	10.9	23.1	0.1	19
	301	2.1	9.9	0.1	32
Total		74.9	145.6	0.7	18

Arterial Level of Service: EB Route 2, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
Route 4	6	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: EB Route 2, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.5	19.9	0.1	16
	5	17.7	29.8	0.1	14
Route 4	6	23.3	35.2	0.1	8
Total		54.5	84.9	0.3	12

Arterial Level of Service: EB Route 2, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.6	21.0	0.1	15
	5	24.2	36.1	0.1	12
Route 4	6	34.2	45.8	0.1	6
Total		73.0	102.9	0.3	10

Arterial Level of Service: EB Route 2, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.4	19.7	0.1	16
	5	19.1	31.0	0.1	14
Route 4	6	27.9	39.5	0.1	7
Total		60.4	90.2	0.3	11

Arterial Level of Service: EB Route 2, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.0	19.4	0.1	16
	5	16.3	28.5	0.1	15
Route 4	6	25.1	36.9	0.1	7
Total		54.4	84.9	0.3	12

Arterial Level of Service: EB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.0	20.6	0.1	15
	5	20.1	32.6	0.1	13
Route 4	6	29.2	41.5	0.1	7
Total		63.4	94.7	0.3	11

Arterial Level of Service: WB Route 2, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	301	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: WB Route 2, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	10.1	21.7	0.1	20
	301	2.1	9.8	0.1	32
Total		12.2	31.6	0.3	32

Arterial Level of Service: WB Route 2, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	10.6	22.4	0.1	19
	301	2.1	9.8	0.1	32
Total		12.8	32.3	0.3	31

Arterial Level of Service: WB Route 2, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	11.1	22.7	0.1	19
	301	2.1	9.8	0.1	32
Total		13.2	32.6	0.3	31

Arterial Level of Service: WB Route 2, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	10.5	22.3	0.1	19
	301	2.0	9.8	0.1	32
Total		12.5	32.1	0.3	32

Arterial Level of Service: WB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Route 3	5	-	-	0.1	-
Risling Ct	4	10.9	23.1	0.1	19
	301	2.1	9.9	0.1	32
Total		13.1	33.0	0.3	31

Arterial Level of Service: EB Route 1, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
SR 113 SB Ramps	6	-	-	0.1	-
Route 2	7	-	-	0.1	-
Total		-	-	0.4	-

Arterial Level of Service: EB Route 1, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	9.9	16.3	0.1	19
	5	8.1	20.1	0.1	21
SR 113 SB Ramps	6	20.3	28.2	0.1	10
Route 2	7	7.7	18.2	0.1	20
Total		46.0	82.8	0.4	17

Arterial Level of Service: EB Route 1, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.4	18.8	0.1	17
	5	10.7	22.7	0.1	19
SR 113 SB Ramps	6	22.8	30.6	0.1	9
Route 2	7	9.2	19.7	0.1	19
Total		55.0	91.8	0.4	15

Arterial Level of Service: EB Route 1, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	11.0	17.5	0.1	18
	5	9.7	21.9	0.1	20
SR 113 SB Ramps	6	18.7	26.5	0.1	10
Route 2	7	7.6	18.0	0.1	21
Total		47.0	84.0	0.4	16

Arterial Level of Service: EB Route 1, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	10.9	17.5	0.1	18
	5	9.5	21.6	0.1	20
SR 113 SB Ramps	6	19.4	27.2	0.1	10
Route 2	7	8.1	18.5	0.1	20
Total		47.9	84.8	0.4	16

Arterial Level of Service: EB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	11.2	17.8	0.1	18
	5	9.9	22.3	0.1	19
SR 113 SB Ramps	6	20.9	28.9	0.1	9
Route 2	7	8.3	18.9	0.1	20
Total		50.2	87.9	0.4	16

Arterial Level of Service: WB Route 1, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	-	-	0.3	-
SR 113 SB Ramps	6	-	-	0.1	-
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	301	-	-	0.1	-
Total		-	-	0.7	-

Arterial Level of Service: WB Route 1, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	37.3	65.0	0.3	18
SR 113 SB Ramps	6	5.5	19.4	0.1	19
John Jones Rd	5	9.4	17.0	0.1	16
Risling Ct	4	6.9	19.0	0.1	23
	301	1.4	9.2	0.1	34
Total		60.5	129.6	0.7	20

Arterial Level of Service: WB Route 1, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	38.9	66.4	0.3	18
SR 113 SB Ramps	6	7.4	21.2	0.1	17
John Jones Rd	5	9.6	17.2	0.1	16
Risling Ct	4	7.9	19.8	0.1	22
	301	1.6	9.3	0.1	34
Total		65.3	134.0	0.7	19

Arterial Level of Service: WB Route 1, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	37.1	64.9	0.3	18
SR 113 SB Ramps	6	6.2	20.2	0.1	18
John Jones Rd	5	8.6	16.2	0.1	17
Risling Ct	4	8.1	20.0	0.1	21
	301	1.5	9.3	0.1	34
Total		61.4	130.6	0.7	20

Arterial Level of Service: WB Route 1, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	36.7	64.5	0.3	18
SR 113 SB Ramps	6	6.7	20.5	0.1	18
John Jones Rd	5	9.6	17.1	0.1	16
Risling Ct	4	7.9	19.9	0.1	22
	301	1.5	9.3	0.1	34
Total		62.5	131.3	0.7	19

Arterial Level of Service: WB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	39.3	68.4	0.3	17
SR 113 SB Ramps	6	6.6	20.8	0.1	18
John Jones Rd	5	9.3	17.0	0.1	16
Risling Ct	4	7.9	20.1	0.1	21
	301	1.5	9.4	0.1	33
Total		64.7	135.7	0.7	19

Arterial Level of Service: EB Route 2, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
Route 4	6	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: EB Route 2, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	9.9	16.3	0.1	19
	5	8.1	20.1	0.1	21
Route 4	6	15.7	27.5	0.1	10
Total		33.7	64.0	0.3	16

Arterial Level of Service: EB Route 2, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.4	18.8	0.1	17
	5	10.7	22.7	0.1	19
Route 4	6	17.5	29.2	0.1	9
Total		40.5	70.7	0.3	14

Arterial Level of Service: EB Route 2, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	11.0	17.5	0.1	18
	5	9.7	21.9	0.1	20
Route 4	6	15.2	26.9	0.1	10
Total		36.0	66.3	0.3	15

Arterial Level of Service: EB Route 2, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	10.9	17.5	0.1	18
	5	9.5	21.6	0.1	20
Route 4	6	16.6	28.3	0.1	10
Total		37.1	67.4	0.3	15

Arterial Level of Service: EB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	11.2	17.8	0.1	18
	5	9.9	22.3	0.1	19
Route 4	6	16.8	28.9	0.1	9
Total		37.9	68.9	0.3	15

Arterial Level of Service: WB Route 2, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	301	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: WB Route 2, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	6.9	19.0	0.1	23
	301	1.4	9.2	0.1	34
Total		8.3	28.2	0.3	36

Arterial Level of Service: WB Route 2, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	7.9	19.8	0.1	22
	301	1.6	9.3	0.1	34
Total		9.4	29.2	0.3	35

Arterial Level of Service: WB Route 2, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	8.1	20.0	0.1	21
	301	1.5	9.3	0.1	34
Total		9.6	29.3	0.3	35

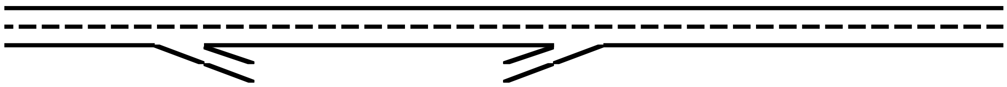
Arterial Level of Service: WB Route 2, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	7.9	19.9	0.1	22
	301	1.5	9.3	0.1	34
Total		9.5	29.2	0.3	35

Arterial Level of Service: WB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	7.9	20.1	0.1	21
	301	1.5	9.4	0.1	33
Total		9.4	29.5	0.3	34

Location	1	2	3	4



Key

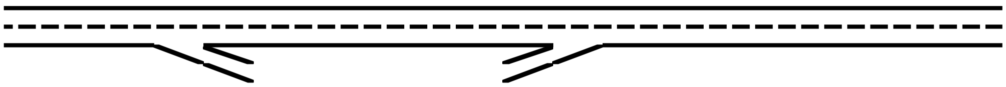
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,022	429	429	645
On Ramp Volume			216	
Off Ramp Volume	593			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,022	429	429	645
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,403	589	589	885
Flow (pcphpl)	701	294	294	443

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

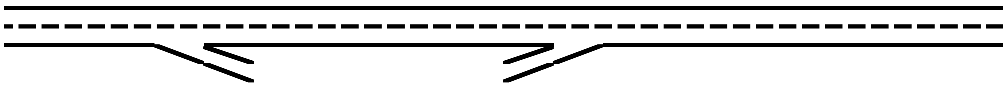


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.29	0.12	0.12	0.18
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	10.0	4.2	4.2	6.3
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			838	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.17	
Flow Rate (pcphpl)			419	
Speed (mph)			70.0	
Density (pcphpl)			6.0	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	719			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.15			
Flow Rate (pcphpl)	359			
Speed (mph)	70.0			
Density (pcphpl)	5.1			
LOS	A			

Location	1	2	3	4



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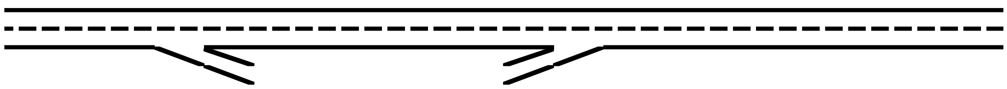
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			216	
PHF			0.88	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			249	
Flow Rate (pcphpl)			249	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.12	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

<> Express Lane (HOV)

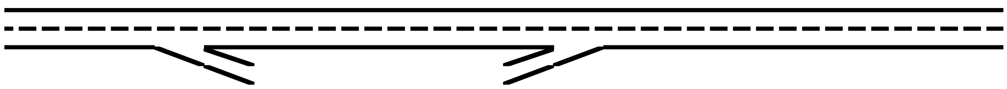
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	593			
PHF	0.88			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	684			
Flow Rate (pcphpl)	684			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.33			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



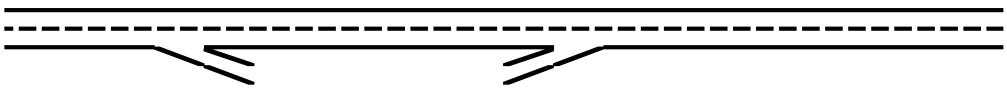
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			589	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			589	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			589	
v_{R12a} (pcph)			838	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.18	
Density			9.6	
LOS			A	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

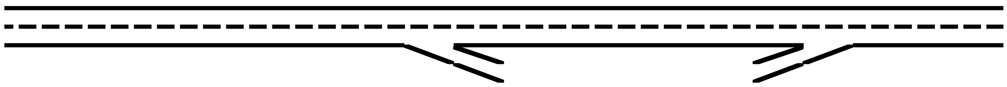


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,403			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.693			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,403			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,403			
Speed Index	0.36			
Area Speed	59.9			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.9			
v/c ratio	0.32			
Density	15.0			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.32	0.12	0.18	0.18
Segment Density	15.0	4.2	9.6	6.3
Segment LOS	B	A	A	A
Over Capacity				

Location	1	2	3	4



Key

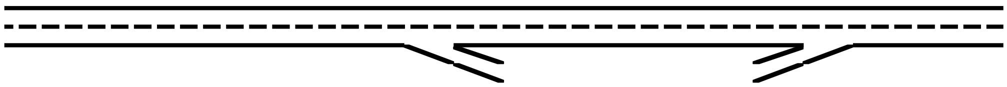
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,833	1,833	1,543	1,543
On Ramp Volume				885
Off Ramp Volume		290		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,833	1,833	1,543	1,543
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,247	2,247	1,891	1,891
Flow (pcphpl)	1,123	1,123	946	946

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

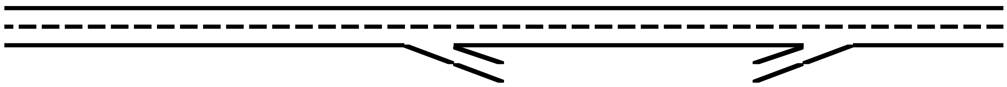


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.47	0.47	0.39	0.39
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.0	16.0	13.5	13.5
LOS	B	B	B	B
Operations for Segment GP Lanes				
Flow (pcph)				2,907
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.61
Flow Rate (pcphpl)				1,453
Speed (mph)				69.3
Density (pcphpl)				21.0
LOS				C

Location	1	2	3	4



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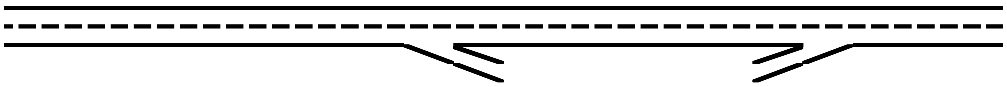
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Operations for Exiting GP Lanes				
Flow (pcph)		1,914		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.40		
Flow Rate (pcphpl)		957		
Speed (mph)		70.0		
Density (pcphpl)		13.7		
LOS		B		
Flow Rate in Express Lanes				
Operations in Express Lanes				
FFS	65	65	65	65
Capacity (pcph)				
v/c ratio				
On Ramp Flow Rate				
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.48

Location	1	2	3	4



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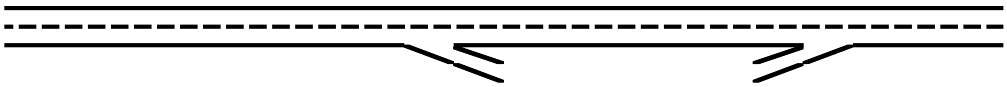
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		290		
PHF		0.88		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		333		
Flow Rate (pcphpl)		333		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.16		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

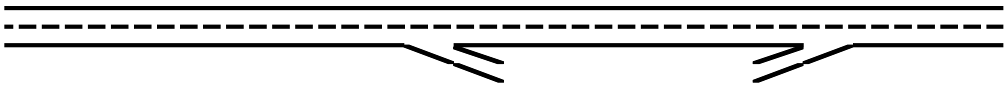
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,891
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,891
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,891
v_{R12a} (pcph)				2,907
Speed Index				0.36
Area Speed				59.8
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				59.8
v/c ratio				0.63
Density				25.6
LOS				C

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

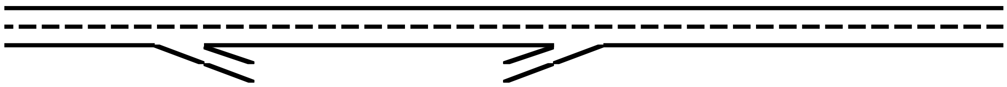
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,247		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.689		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,247		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,247		
Speed Index		0.33		
Area Speed		60.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.8		
v/c ratio		0.51		
Density		22.0		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.47	0.51	0.39	0.63
Segment Density	16.0	22.0	13.5	25.6
Segment LOS	B	C	B	C
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

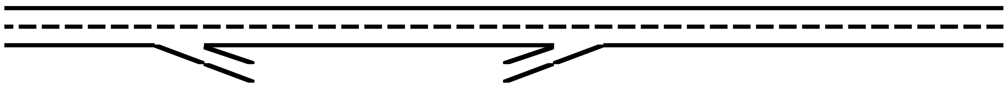
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,875	995	995	1,243
On Ramp Volume			248	
Off Ramp Volume	880			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,875	995	995	1,243
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,245	1,191	1,191	1,488
Flow (pcphpl)	1,122	596	596	744

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

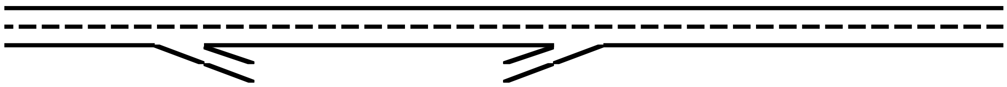
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.47	0.25	0.25	0.31
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.0	8.5	8.5	10.6
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			1,462	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.30	
Flow Rate (pcphpl)			731	
Speed (mph)			70.0	
Density (pcphpl)			10.4	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	1,284			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.27			
Flow Rate (pcphpl)	642			
Speed (mph)	70.0			
Density (pcphpl)	9.2			
LOS	A			

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

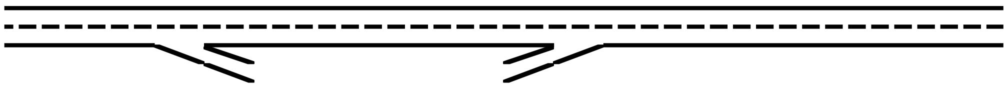


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			248	
PHF			0.93	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			271	
Flow Rate (pcphpl)			271	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.13	

Location	1	2	3	4



Key

<> Express Lane (HOV)

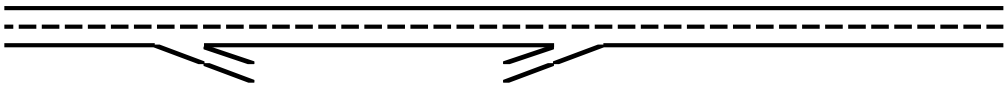
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	880			
PHF	0.93			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	960			
Flow Rate (pcphpl)	960			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.46			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

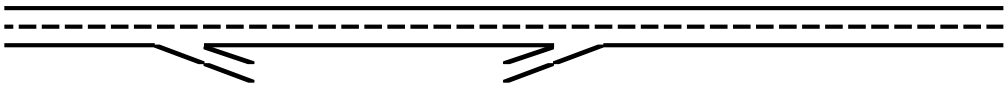
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,191	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,191	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,191	
v_{R12a} (pcph)			1,462	
Speed Index			0.30	
Area Speed			61.5	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.5	
v/c ratio			0.32	
Density			14.4	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

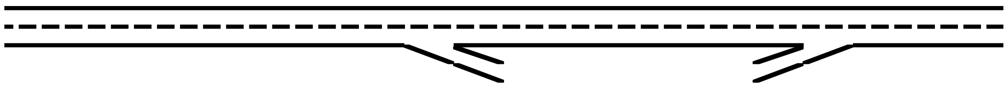


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	2,245			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.660			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	2,245			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	2,245			
Speed Index	0.38			
Area Speed	59.2			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.2			
v/c ratio	0.51			
Density	22.2			
LOS	C			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.51	0.25	0.32	0.31
Segment Density	22.2	8.5	14.4	10.6
Segment LOS	C	A	B	A
Over Capacity				

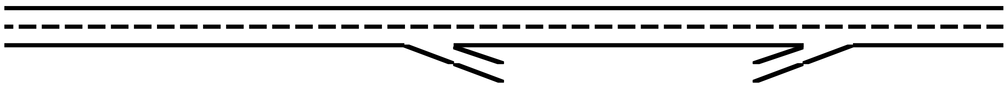
Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,085	1,085	878	878
On Ramp Volume				480
Off Ramp Volume		207		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,085	1,085	878	878
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,201	1,201	972	972
Flow (pcphpl)	601	601	486	486

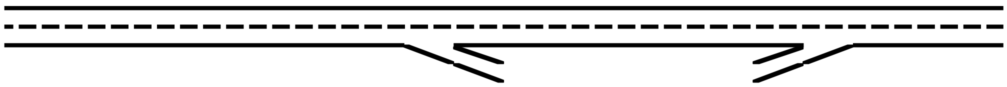


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.25	0.25	0.20	0.20
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	8.6	8.6	6.9	6.9
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,493
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.31
Flow Rate (pcphpl)				747
Speed (mph)				70.0
Density (pcphpl)				10.7
LOS				A
Operations for Exiting GP Lanes				
Flow (pcph)		976		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.20		
Flow Rate (pcphpl)		488		
Speed (mph)		70.0		
Density (pcphpl)		7.0		
LOS		A		

Location	1	2	3	4



Key

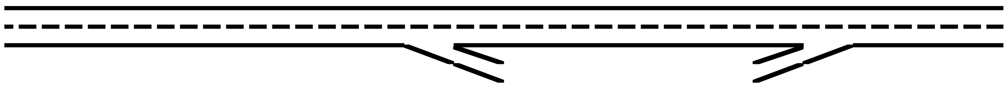
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				480
PHF				0.93
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				521
Flow Rate (pcphpl)				521
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.25

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



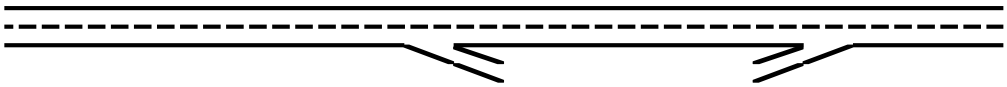
Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		207		
PHF		0.93		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		225		
Flow Rate (pcphpl)		225		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.11		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4



Key

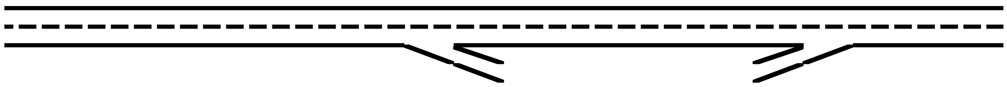
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				972
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				972
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				972
v_{R12a} (pcph)				1,493
Speed Index				0.31
Area Speed				61.4
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.4
v/c ratio				0.32
Density				14.8
LOS				B

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,201		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.720		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,201		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,201		
Speed Index		0.32		
Area Speed		61.1		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		61.1		
v/c ratio		0.27		
Density		13.1		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.25	0.27	0.20	0.32
Segment Density	8.6	13.1	6.9	14.8
Segment LOS	A	B	A	B
Over Capacity				

Trip Generation Counts

Prepared by NDS/ATD

VOLUME

N Diameter Dr S/O E 8th St

Day: Tuesday
Date: 4/11/2017

City: Davis
Project #: CA17_7291_001

DAILY TOTALS	NB	SB	EB	WB	Total
	222	176	0	0	398

AM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0	
00:15	0		0				0	
00:30	0		0				0	
00:45	0		0				0	
01:00	0		0				0	
01:15	0		0				0	
01:30	0		0				0	
01:45	0		0				0	
02:00	0		0				0	
02:15	0		1				1	
02:30	0		0				0	
02:45	0		0	1			0	1
03:00	0		0				0	
03:15	1		0				1	
03:30	0		0				0	
03:45	0	1	0				0	1
04:00	0		0				0	
04:15	0		0				0	
04:30	1		1				2	
04:45	0	1	0	1			0	2
05:00	0		0				0	
05:15	0		0				0	
05:30	0		0				0	
05:45	1	1	0				1	1
06:00	3		1				4	
06:15	1		0				1	
06:30	0		1				1	
06:45	3	7	0	2			3	9
07:00	1		0				1	
07:15	2		3				5	
07:30	5		2				7	
07:45	4	12	2	7			6	19
08:00	1		2				3	
08:15	6		1				7	
08:30	2		1				3	
08:45	2	11	1	5			3	16
09:00	5		0				5	
09:15	5		1				6	
09:30	1		2				3	
09:45	5	16	1	4			6	20
10:00	5		4				9	
10:15	2		1				3	
10:30	3		3				6	
10:45	5	15	4	12			9	27
11:00	5		2				7	
11:15	7		5				12	
11:30	4		1				5	
11:45	7	23	4	12			11	35
TOTALS		87		44				**131**
SPLIT %		66.4%		33.6%				**32.9%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	4		4				8	
12:15	6		5				11	
12:30	5		5				10	
12:45	2	17	5	19			7	36
13:00	2		2				4	
13:15	7		3				10	
13:30	6		6				12	
13:45	3	18	3	14			6	32
14:00	5		5				10	
14:15	7		4				11	
14:30	6		4				10	
14:45	2	20	4	17			6	37
15:00	5		4				9	
15:15	6		4				10	
15:30	3		4				7	
15:45	4	18	3	15			7	33
16:00	6		5				11	
16:15	8		1				9	
16:30	3		7				10	
16:45	1	18	5	18			6	36
17:00	3		3				6	
17:15	5		2				7	
17:30	1		2				3	
17:45	3	12	5	12			8	24
18:00	4		4				8	
18:15	3		1				4	
18:30	5		3				8	
18:45	1	13	6	14			7	27
19:00	2		1				3	
19:15	2		0				2	
19:30	1		1				2	
19:45	1	6	1	3			2	9
20:00	1		2				3	
20:15	0		2				2	
20:30	1		1				2	
20:45	1	3	5	10			6	13
21:00	2		2				4	
21:15	3		2				5	
21:30	0		0				0	
21:45	0	5	1	5			1	10
22:00	0		0				0	
22:15	2		1				3	
22:30	0		2				2	
22:45	1	3	2	5			3	8
23:00	2		0				2	
23:15	0		0				0	
23:30	0		0				0	
23:45	0	2	0				0	2
TOTALS		135		132				**267**
SPLIT %		50.6%		49.4%				**67.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	222	176	0	0	398

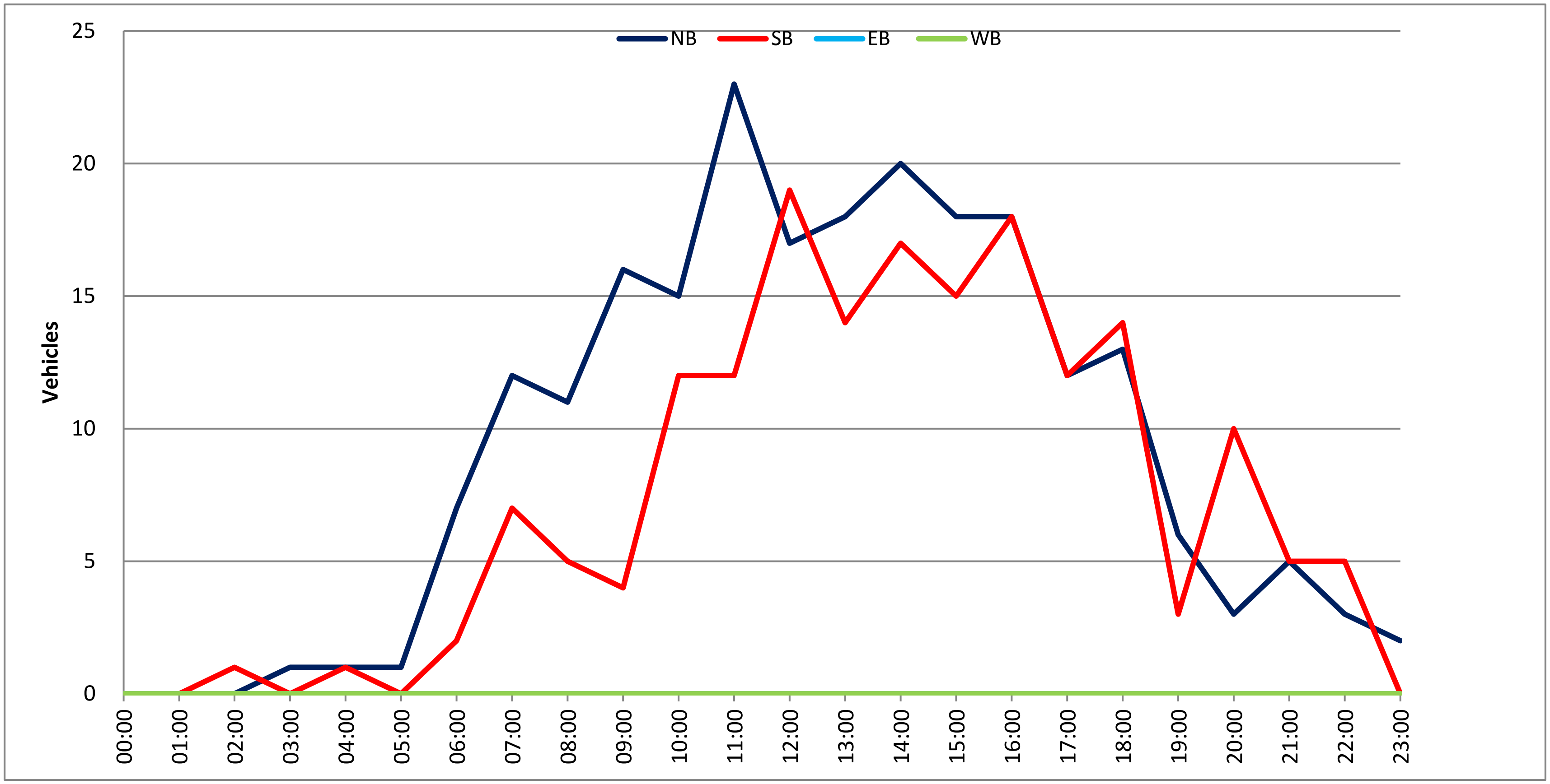
	NB	SB	EB	WB	Total
AM Peak Hour	11:00	11:45			**11:45**
AM Pk Volume	23	18			**40**
Pk Hr Factor	0.821	0.900			**0.909**
7 - 9 Volume	23	12	0	0	**35**
7 - 9 Peak Hour	07:30	07:15			**07:30**
7 - 9 Pk Volume	16	9	0	0	**23**
Pk Hr Factor	0.667	0.750	0.000	0.000	**0.821**

	NB	SB	EB	WB	Total
PM Peak Hour	13:15	12:00			**13:30**
PM Pk Volume	21	19			**39**
Pk Hr Factor	0.750	0.950			**0.813**
4 - 6 Volume	30	30	0	0	**60**
4 - 6 Peak Hour	16:00	16:00			**16:00**
4 - 6 Pk Volume	18	18	0	0	**36**
Pk Hr Factor	0.563	0.643	0.000	0.000	**0.818**

Prepared by NDS/ATD

Project #: CA17_7291_001 **City:** Davis

Location: N Diameter Dr S/O E 8th St **Date:** 4/11/2017



National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/11/2017

Unshifted Count = All Vehicles & Uturns

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	15	0	0	15	1	0	0	0	1	0	2	0	0	2	18	0
7:15	0	0	0	0	0	1	29	0	0	30	1	0	1	0	2	0	10	2	0	12	44	0
7:30	0	0	0	0	0	0	34	0	0	34	3	0	2	0	5	0	14	2	0	16	55	0
7:45	0	0	0	0	0	0	24	0	0	24	1	0	3	0	4	0	22	2	1	25	53	1
Total	0	0	0	0	0	1	102	0	0	103	6	0	6	0	12	0	48	6	1	55	170	1
8:00	0	0	0	0	0	0	42	0	0	42	1	0	0	0	1	0	20	2	0	22	65	0
8:15	0	0	0	0	0	1	32	0	0	33	6	0	0	0	6	0	14	0	0	14	53	0
8:30	0	0	0	0	0	1	30	0	1	32	2	0	0	0	2	0	23	0	0	23	57	1
8:45	0	0	0	0	0	0	24	0	0	24	2	0	0	0	2	0	14	1	0	15	41	0
Total	0	0	0	0	0	2	128	0	1	131	11	0	0	0	11	0	71	3	0	74	216	1
16:00	0	0	0	0	0	2	29	0	0	31	5	0	1	0	6	0	31	3	0	34	71	0
16:15	0	0	0	0	0	0	28	0	0	28	6	0	2	0	8	0	33	1	0	34	70	0
16:30	0	0	0	0	0	1	15	0	0	16	3	0	0	0	3	0	26	6	0	32	51	0
16:45	0	0	0	0	0	0	26	0	0	26	1	0	0	0	1	0	51	5	0	56	83	0
Total	0	0	0	0	0	3	98	0	0	101	15	0	3	0	18	0	141	15	0	156	275	0
17:00	0	0	0	0	0	0	25	0	0	25	2	0	1	0	3	0	38	3	1	42	70	1
17:15	0	0	0	0	0	1	37	0	0	38	4	0	1	0	5	0	64	1	2	67	110	2
17:30	0	0	0	0	0	1	35	0	0	36	1	0	0	0	1	0	38	1	0	39	76	0
17:45	0	0	0	0	0	1	25	0	0	26	3	0	0	0	3	0	35	4	0	39	68	0
Total	0	0	0	0	0	3	122	0	0	125	10	0	2	0	12	0	175	9	3	187	324	3
Grand Total	0	0	0	0	0	9	450	0	1	460	42	0	11	0	53	0	435	33	4	472	985	5
Apprch %	0.0%	0.0%	0.0%	0.0%		2.0%	97.8%	0.0%	0.2%		79.2%	0.0%	20.8%	0.0%		0.0%	92.2%	7.0%	0.8%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	45.7%	0.0%	0.1%	46.7%	4.3%	0.0%	1.1%	0.0%	5.4%	0.0%	44.2%	3.4%	0.4%	47.9%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	24	0	0	24	1	0	3	0	4	0	22	2	1	25	53
8:00	0	0	0	0	0	0	42	0	0	42	1	0	0	0	1	0	20	2	0	22	65
8:15	0	0	0	0	0	1	32	0	0	33	6	0	0	0	6	0	14	0	0	14	53
8:30	0	0	0	0	0	1	30	0	1	32	2	0	0	0	2	0	23	0	0	23	57
Total Volume	0	0	0	0	0	2	128	0	1	131	10	0	3	0	13	0	79	4	1	84	228
% App Total	0.0%	0.0%	0.0%	0.0%		1.5%	97.7%	0.0%	0.8%		76.9%	0.0%	23.1%	0.0%		0.0%	94.0%	4.8%	1.2%		
PHF	.000	.000	.000	.000	.000	.500	.762	.000	.250	.780	.417	.000	.250	.000	.542	.000	.859	.500	.250	.840	.877

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	26	0	0	26	1	0	0	0	1	0	51	5	0	56	83
17:00	0	0	0	0	0	0	25	0	0	25	2	0	1	0	3	0	38	3	1	42	70
17:15	0	0	0	0	0	1	37	0	0	38	4	0	1	0	5	0	64	1	2	67	110
17:30	0	0	0	0	0	1	35	0	0	36	1	0	0	0	1	0	38	1	0	39	76
Total Volume	0	0	0	0	0	2	123	0	0	125	8	0	2	0	10	0	191	10	3	204	339
% App Total	0.0%	0.0%	0.0%	0.0%		1.6%	98.4%	0.0%	0.0%		80.0%	0.0%	20.0%	0.0%		0.0%	93.6%	4.9%	1.5%		
PHF	.000	.000	.000	.000	.000	.500	.831	.000	.000	.822	.500	.000	.500	.000	.500	.000	.746	.500	.375	.761	.770

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/11/2017

Bank 1 Count = Peds & Bikes

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0
7:15	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	7	0
7:30	0	0	0	0	0	0	7	0	0	7	0	0	0	2	0	0	2	0	0	2	9	2
7:45	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6	0
Total	0	0	0	0	0	0	20	0	0	20	0	0	0	2	0	0	5	0	0	5	25	2
8:00	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	13	0
8:15	0	0	0	0	0	0	6	0	1	6	0	0	0	1	0	0	0	0	0	0	6	2
8:30	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	0	1	0	0	1	8	0
8:45	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	2	1
Total	0	0	0	0	0	0	22	0	1	22	2	0	0	2	2	0	5	0	0	5	29	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5	0	0	5	5	2
16:15	0	0	0	0	0	0	2	0	0	2	0	0	0	3	0	0	6	0	0	6	8	3
16:30	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	4	0	0	4	7	0
16:45	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	0	2	1	0	3	6	1
Total	0	0	0	0	0	0	7	0	0	7	1	0	0	6	1	0	17	1	0	18	26	6
17:00	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	1	0	3	4	1
17:15	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1	0	5	0	0	5	7	1
17:30	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	12	0	0	12	15	0
17:45	0	0	0	0	0	0	4	0	0	4	0	0	0	4	0	0	7	0	0	7	11	4
Total	0	0	0	0	0	0	9	0	0	9	0	0	1	6	1	0	26	1	0	27	37	6
Grand Total	0	0	0	0	0	0	58	0	1	58	3	0	1	16	4	0	53	2	0	55	117	17
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			75.0%	0.0%	25.0%			0.0%	96.4%	3.6%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	49.6%	0.0%		49.6%	2.6%	0.0%	0.9%		3.4%	0.0%	45.3%	1.7%		47.0%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
8:00	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	13
8:15	0	0	0	0	0	0	6	0	1	6	0	0	0	1	0	0	0	0	0	0	6
8:30	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	0	1	0	0	1	8
Total Volume	0	0	0	0	0	0	24	0	1	24	2	0	0	1	2	0	7	0	0	7	33
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.667	.000		.667	.250	.000	.000		.250	.000	.438	.000		.438	.635

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	0	2	1	0	3	6
17:00	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	2	1	0	3	4
17:15	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1	0	5	0	0	5	7
17:30	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	12	0	0	12	15
Total Volume	0	0	0	0	0	0	8	0	0	8	0	0	1	3	1	0	21	2	0	23	32
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			0.0%	91.3%	8.7%			
PHF	.000	.000	.000		.000	.000	.667	.000		.667	.000	.000	.250		.250	.000	.438	.500		.479	.533

PROJECT#: 17-7290-001
N/S Street: N Diameter Dr
E/W Street: E 8th St
DATE: 4/11/2017
CITY: Davis

A M

PEDESTRIANS

T I M E	IN	OUT
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	1
8:15 AM	0	1
8:30 AM	1	0
8:45 AM	0	0
TOTALS	**1**	**2**

P M

PEDESTRIANS

T I M E	IN	OUT
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	3	3
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	2
TOTALS	**3**	**5**

Prepared by NDS/ATD

VOLUME

S Diameter Dr E/O Pole Line Rd

Day: Tuesday **City:** Davis
Date: 4/11/2017 **Project #:** CA17_7291_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	422	378	800

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			9		8		17	
00:15			0		0		0		12:15			12		6		18	
00:30			1		0		1		12:30			12		12		24	
00:45			0	1	0		0	1	12:45			4	37	7	33	11	70
01:00			0		0		0		13:00			10		12		22	
01:15			0		0		0		13:15			19		8		27	
01:30			0		0		0		13:30			6		8		14	
01:45			0		0		0		13:45			10	45	7	35	17	80
02:00			0		0		0		14:00			11		8		19	
02:15			0		0		0		14:15			8		6		14	
02:30			1		2		3		14:30			5		5		10	
02:45			0	1	0	2	0	3	14:45			8	32	7	26	15	58
03:00			0		0		0		15:00			7		6		13	
03:15			0		0		0		15:15			8		8		16	
03:30			0		0		0		15:30			10		5		15	
03:45			0		0		0		15:45			10	35	4	23	14	58
04:00			0		0		0		16:00			12		12		24	
04:15			0		0		0		16:15			12		5		17	
04:30			0		0		0		16:30			13		7		20	
04:45			0		0		0		16:45			9	46	5	29	14	75
05:00			0		0		0		17:00			7		5		12	
05:15			0		1		1		17:15			4		9		13	
05:30			0		0		0		17:30			13		2		15	
05:45			0		3	4	3	4	17:45			5	29	6	22	11	51
06:00			1		2		3		18:00			9		7		16	
06:15			0		2		2		18:15			7		8		15	
06:30			1		2		3		18:30			10		2		12	
06:45			4	6	2	8	6	14	18:45			11	37	7	24	18	61
07:00			1		3		4		19:00			5		1		6	
07:15			5		5		10		19:15			6		5		11	
07:30			3		4		7		19:30			4		4		8	
07:45			2	11	4	16	6	27	19:45			4	19	2	12	6	31
08:00			5		5		10		20:00			4		7		11	
08:15			5		7		12		20:15			3		1		4	
08:30			2		8		10		20:30			4		2		6	
08:45			4	16	6	26	10	42	20:45			1	12	2	12	3	24
09:00			6		5		11		21:00			4		2		6	
09:15			5		6		11		21:15			3		2		5	
09:30			7		6		13		21:30			3		1		4	
09:45			3	21	9	26	12	47	21:45			5	15	1	6	6	21
10:00			5		7		12		22:00			0		1		1	
10:15			9		13		22		22:15			2		0		2	
10:30			11		8		19		22:30			0		0		0	
10:45			5	30	7	35	12	65	22:45			1	3	2	3	3	6
11:00			3		12		15		23:00			1		1		2	
11:15			8		8		16		23:15			0		0		0	
11:30			7		9		16		23:30			0		1		1	
11:45			7	25	5	34	12	59	23:45			0	1	0	2	0	3
TOTALS				111		151		262	TOTALS				311		227		538
SPLIT %				42.4%		57.6%		32.8%	SPLIT %				57.8%		42.2%		67.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	422	378	800

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:45	10:15	11:45	PM Peak Hour			15:45	12:30	12:30
AM Pk Volume			40	40	71	PM Pk Volume			47	39	84
Pk Hr Factor			0.833	0.769	0.740	Pk Hr Factor			0.904	0.813	0.778
7 - 9 Volume	0	0	27	42	69	4 - 6 Volume	0	0	75	51	126
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	16	26	42	4 - 6 Pk Volume	0	0	46	29	75
Pk Hr Factor	0.000	0.000	0.800	0.813	0.875	Pk Hr Factor	0.000	0.000	0.885	0.604	0.781

Prepared by NDS/ATD

Project #: CA17_7291_002 **City:** Davis

Location: S Diameter Dr E/O Pole Line Rd **Date:** 4/11/2017

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/11/2017

Unshifted Count = All Vehicles & Uturns

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	53	0	0	53	2	0	1	0	3	0	28	1	0	29	0	0	0	0	0	85	0
7:15	3	82	0	0	85	3	0	2	0	5	0	59	2	0	61	0	0	0	0	0	151	0
7:30	2	90	0	0	92	3	0	1	0	4	0	60	1	0	61	0	0	0	0	0	157	0
7:45	1	141	0	0	142	4	0	0	0	4	0	60	1	0	61	0	0	0	0	0	207	0
Total	6	366	0	0	372	12	0	4	0	16	0	207	5	0	212	0	0	0	0	0	600	0
8:00	1	144	0	0	145	4	0	1	0	5	0	77	4	1	82	0	0	0	0	0	232	1
8:15	1	152	0	0	153	2	0	5	0	7	0	105	4	0	109	0	0	0	0	0	269	0
8:30	0	190	0	0	190	4	0	4	0	8	0	70	2	0	72	0	0	0	0	0	270	0
8:45	1	151	0	0	152	5	0	1	0	6	0	77	3	0	80	0	0	0	0	0	238	0
Total	3	637	0	0	640	15	0	11	0	26	0	329	13	1	343	0	0	0	0	0	1009	1
16:00	3	145	0	0	148	9	0	3	0	12	0	124	9	0	133	0	0	0	0	0	293	0
16:15	8	133	0	0	141	1	0	4	0	5	0	140	4	0	144	0	0	0	0	0	290	0
16:30	3	129	0	0	132	5	0	2	0	7	0	139	10	0	149	0	0	0	0	0	288	0
16:45	3	140	0	0	143	4	0	1	0	5	0	165	6	0	171	0	0	0	0	0	319	0
Total	17	547	0	0	564	19	0	10	0	29	0	568	29	0	597	0	0	0	0	0	1190	0
17:00	0	127	0	0	127	2	0	3	0	5	0	185	7	0	192	0	0	0	0	0	324	0
17:15	1	138	0	0	139	6	0	3	0	9	0	155	3	0	158	0	0	0	0	0	306	0
17:30	5	153	0	0	158	1	0	1	0	2	0	159	8	0	167	0	0	0	0	0	327	0
17:45	2	112	0	0	114	5	0	1	0	6	0	139	3	0	142	0	0	0	0	0	262	0
Total	8	530	0	0	538	14	0	8	0	22	0	638	21	0	659	0	0	0	0	0	1219	0
Grand Total	34	2080	0	0	2114	60	0	33	0	93	0	1742	68	1	1811	0	0	0	0	0	4018	1
Apprch %	1.6%	98.4%	0.0%	0.0%		64.5%	0.0%	35.5%	0.0%		0.0%	96.2%	3.8%	0.1%		0.0%	0.0%	0.0%	0.0%			
Total %	0.8%	51.8%	0.0%	0.0%	52.6%	1.5%	0.0%	0.8%	0.0%	2.3%	0.0%	43.4%	1.7%	0.0%	45.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	1	144	0	0	145	4	0	1	0	5	0	77	4	1	82	0	0	0	0	0	232
8:15	1	152	0	0	153	2	0	5	0	7	0	105	4	0	109	0	0	0	0	0	269
8:30	0	190	0	0	190	4	0	4	0	8	0	70	2	0	72	0	0	0	0	0	270
8:45	1	151	0	0	152	5	0	1	0	6	0	77	3	0	80	0	0	0	0	0	238
Total Volume	3	637	0	0	640	15	0	11	0	26	0	329	13	1	343	0	0	0	0	0	1009
% App Total	0.5%	99.5%	0.0%	0.0%		57.7%	0.0%	42.3%	0.0%		0.0%	95.9%	3.8%	0.3%		0.0%	0.0%	0.0%	0.0%		
PHF	.750	.838	.000	.000	.842	.750	.000	.550	.000	.813	.000	.783	.813	.250	.787	.000	.000	.000	.000	.000	.934

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	3	140	0	0	143	4	0	1	0	5	0	165	6	0	171	0	0	0	0	0	319
17:00	0	127	0	0	127	2	0	3	0	5	0	185	7	0	192	0	0	0	0	0	324
17:15	1	138	0	0	139	6	0	3	0	9	0	155	3	0	158	0	0	0	0	0	306
17:30	5	153	0	0	158	1	0	1	0	2	0	159	8	0	167	0	0	0	0	0	327
Total Volume	9	558	0	0	567	13	0	8	0	21	0	664	24	0	688	0	0	0	0	0	1276
% App Total	1.6%	98.4%	0.0%	0.0%		61.9%	0.0%	38.1%	0.0%		0.0%	96.5%	3.5%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.450	.912	.000	.000	.897	.542	.000	.667	.000	.583	.000	.897	.750	.000	.896	.000	.000	.000	.000	.000	.976

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/11/2017

Bank 1 Count = Peds & Bikes

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
7:15	0	0	0	1	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	3	1
7:30	0	2	0	0	2	0	0	0	0	0	0	4	0	1	4	0	0	0	0	0	6	1
7:45	0	3	0	0	3	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	4	2
Total	0	5	0	1	5	1	0	0	2	1	0	8	0	1	8	0	0	0	0	0	14	4
8:00	0	1	0	0	1	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	2	2
8:15	0	9	0	0	9	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	10	1
8:30	1	7	0	0	8	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	9	2
8:45	0	1	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	4
Total	1	18	0	2	19	0	0	1	7	1	0	2	0	0	2	0	0	0	0	0	22	9
16:00	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	1	2
16:15	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6	0
16:30	0	5	0	0	5	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	9	1
16:45	0	3	0	0	3	0	0	0	3	0	0	3	0	0	3	0	0	0	0	0	6	3
Total	0	12	0	0	12	0	0	0	5	0	0	10	0	1	10	0	0	0	0	0	22	6
17:00	0	2	0	0	2	0	0	1	1	1	0	3	0	0	3	0	0	0	0	0	6	1
17:15	0	1	0	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	6	1
17:30	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9	0
17:45	0	2	0	0	2	0	0	0	10	0	0	5	1	1	6	0	0	0	0	0	8	11
Total	2	8	0	0	10	0	0	1	12	1	0	17	1	1	18	0	0	0	0	0	29	13
Grand Total	3	43	0	3	46	1	0	2	26	3	0	37	1	3	38	0	0	0	0	0	87	32
Apprch %	6.5%	93.5%	0.0%			33.3%	0.0%	66.7%			0.0%	97.4%	2.6%			0.0%	0.0%	0.0%				
Total %	3.4%	49.4%	0.0%		52.9%	1.1%	0.0%	2.3%		3.4%	0.0%	42.5%	1.1%		43.7%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	1	0	0	1	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	2
8:15	0	9	0	0	9	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	10
8:30	1	7	0	0	8	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	9
8:45	0	1	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	18	0	2	19	0	0	1	7	1	0	2	0	0	2	0	0	0	0	0	22
% App Total	5.3%	94.7%	0.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.250	.500	.000		.528	.000	.000	.250		.250	.000	.500	.000		.500	.000	.000	.000		.000	.550

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	3	0	0	3	0	0	0	3	0	0	3	0	0	3	0	0	0	0	0	6
17:00	0	2	0	0	2	0	0	1	1	1	0	3	0	0	3	0	0	0	0	0	6
17:15	0	1	0	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	6
17:30	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
Total Volume	2	9	0	0	11	0	0	1	5	1	0	15	0	0	15	0	0	0	0	0	27
% App Total	18.2%	81.8%	0.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.250	.750	.000		.550	.000	.000	.250		.250	.000	.750	.000		.750	.000	.000	.000		.000	.750

PROJECT#: 17-7290-002
N/S Street: Pole Line Rd
E/W Street: South Diameter Dr
DATE: 4/11/2017
CITY: Davis

A M

PEDESTRIANS

T I M E	IN	OUT
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	1
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
TOTALS	**0**	**1**

P M

PEDESTRIANS

T I M E	IN	OUT
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	1	0
5:30 PM	2	0
5:45 PM	1	0
TOTALS	**4**	**0**

Prepared by NDS/ATD

VOLUME

N Diameter Dr S/O E 8th St

Day: Wednesday
Date: 4/19/2017

City: Davis
Project #: CA17_7291_001

DAILY TOTALS	NB	SB	EB	WB	Total
	222	189	0	0	411

AM Period	NB		SB		EB	WB	TOTAL	
00:00	0		3				3	
00:15	0		1				1	
00:30	0		1				1	
00:45	0		0	5			0	5
01:00	0		1				1	
01:15	0		0				0	
01:30	0		0				0	
01:45	0		0	1			0	1
02:00	0		0				0	
02:15	0		0				0	
02:30	0		0				0	
02:45	1	1	0				1	1
03:00	0		0				0	
03:15	0		0				0	
03:30	0		0				0	
03:45	0		0				0	
04:00	0		0				0	
04:15	0		0				0	
04:30	1		1				2	
04:45	0	1	0	1			0	2
05:00	0		0				0	
05:15	1		0				1	
05:30	0		0				0	
05:45	0	1	0				0	1
06:00	1		0				1	
06:15	6		1				7	
06:30	0		0				0	
06:45	1	8	1	2			2	10
07:00	3		0				3	
07:15	0		2				2	
07:30	4		1				5	
07:45	7	14	2	5			9	19
08:00	4		2				6	
08:15	3		0				3	
08:30	2		2				4	
08:45	1	10	2	6			3	16
09:00	10		1				11	
09:15	8		5				13	
09:30	3		2				5	
09:45	10	31	3	11			13	42
10:00	3		2				5	
10:15	7		4				11	
10:30	2		2				4	
10:45	5	17	2	10			7	27
11:00	3		7				10	
11:15	8		0				8	
11:30	6		1				7	
11:45	3	20	3	11			6	31
TOTALS		103		52				**155**
SPLIT %		66.5%		33.5%				**37.7%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	0		10				10	
12:15	2		3				5	
12:30	5		0				5	
12:45	4	11	4	17			8	28
13:00	4		7				11	
13:15	9		5				14	
13:30	3		6				9	
13:45	2	18	3	21			5	39
14:00	6		5				11	
14:15	8		4				12	
14:30	4		2				6	
14:45	5	23	3	14			8	37
15:00	2		7				9	
15:15	2		5				7	
15:30	6		2				8	
15:45	1	11	3	17			4	28
16:00	2		7				9	
16:15	10		6				16	
16:30	4		6				10	
16:45	2	18	3	22			5	40
17:00	2		2				4	
17:15	6		3				9	
17:30	2		2				4	
17:45	2	12	5	12			7	24
18:00	1		3				4	
18:15	0		2				2	
18:30	5		3				8	
18:45	3	9	3	11			6	20
19:00	4		4				8	
19:15	2		2				4	
19:30	1		0				1	
19:45	1	8	2	8			3	16
20:00	0		1				1	
20:15	0		1				1	
20:30	0		3				3	
20:45	2	2	0	5			2	7
21:00	1		2				3	
21:15	1		2				3	
21:30	1		0				1	
21:45	1	4	1	5			2	9
22:00	1		2				3	
22:15	0		0				0	
22:30	1		2				3	
22:45	0	2	0	4			0	6
23:00	0		0				0	
23:15	1		1				2	
23:30	0		0				0	
23:45	0	1	0	1			0	2
TOTALS		119		137				**256**
SPLIT %		46.5%		53.5%				**62.3%**

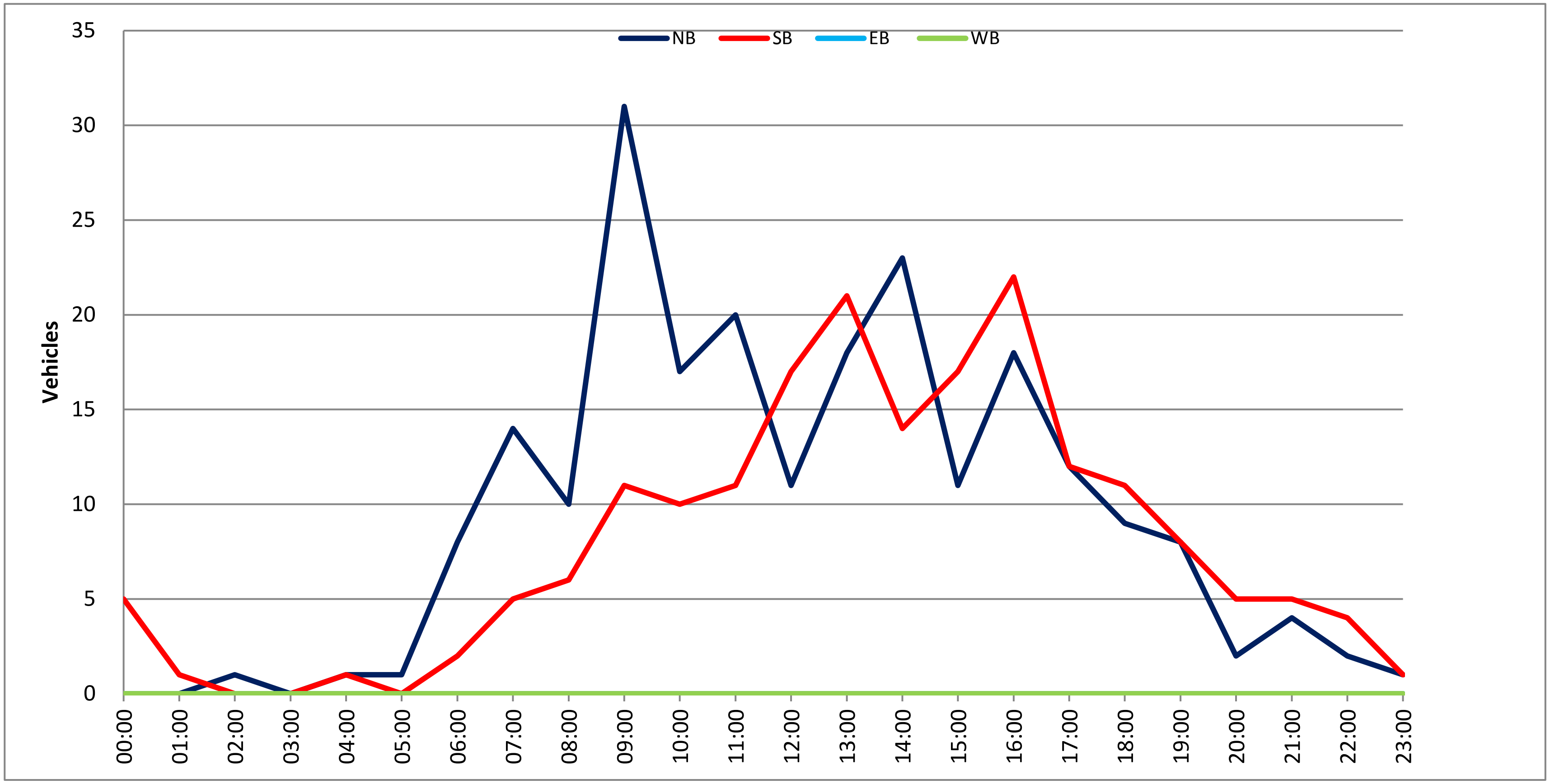
DAILY TOTALS	NB	SB	EB	WB	Total
	222	189	0	0	411

	NB	SB	EB	WB	Total
AM Peak Hour	09:00	11:30			**09:00**
AM Pk Volume	31	17			**42**
Pk Hr Factor	0.775	0.425			**0.808**
7 - 9 Volume	24	11	0	0	**35**
7 - 9 Peak Hour	07:30	07:15			**07:30**
7 - 9 Pk Volume	18	7	0	0	**23**
Pk Hr Factor	0.643	0.875	0.000	0.000	**0.639**

	NB	SB	EB	WB	Total
PM Peak Hour	14:00	12:45			**12:45**
PM Pk Volume	23	22			**42**
Pk Hr Factor	0.719	0.786			**0.750**
4 - 6 Volume	30	34	0	0	**64**
4 - 6 Peak Hour	16:00	16:00			**16:00**
4 - 6 Pk Volume	18	22	0	0	**40**
Pk Hr Factor	0.450	0.786	0.000	0.000	**0.625**

Prepared by NDS/ATD

Project #:	CA17_7291_001	**City:**	Davis
Location:	N Diameter Dr S/O E 8th St	**Date:**	4/19/2017



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/19/2017

Unshifted Count = All Vehicles & Uturns

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	11	0	0	11	3	0	0	0	3	0	3	0	0	3	17	0
7:15	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	10	2	0	12	21	0
7:30	0	0	0	0	0	0	20	0	0	20	2	0	2	0	4	0	5	1	0	6	30	0
7:45	0	0	0	0	0	1	22	0	0	23	6	0	1	0	7	1	14	1	1	17	47	1
Total	0	0	0	0	0	1	62	0	0	63	11	0	3	0	14	1	32	4	1	38	115	1
8:00	0	0	0	0	0	1	33	0	0	34	3	0	1	0	4	0	14	1	0	15	53	0
8:15	0	0	0	0	0	0	42	0	0	42	2	0	1	0	3	0	17	0	0	17	62	0
8:30	0	0	0	0	0	1	38	0	0	39	1	0	1	0	2	0	20	1	0	21	62	0
8:45	0	0	0	0	0	1	28	0	0	29	1	0	0	0	1	0	27	1	0	28	58	0
Total	0	0	0	0	0	3	141	0	0	144	7	0	3	0	10	0	78	3	0	81	235	0
16:00	0	0	0	0	0	0	32	0	0	32	2	0	0	0	2	0	39	7	1	47	81	1
16:15	0	0	0	0	0	0	35	0	0	35	8	0	2	0	10	0	32	6	0	38	83	0
16:30	0	0	0	0	0	2	29	0	0	31	3	0	1	0	4	0	36	4	0	40	75	0
16:45	0	0	0	0	0	0	28	0	0	28	2	0	0	0	2	0	38	3	0	41	71	0
Total	0	0	0	0	0	2	124	0	0	126	15	0	3	0	18	0	145	20	1	166	310	1
17:00	0	0	0	0	0	1	27	0	0	28	2	0	0	0	2	0	48	1	1	50	80	1
17:15	0	0	0	0	0	1	33	0	0	34	4	0	2	0	6	0	41	2	0	43	83	0
17:30	0	0	0	0	0	0	17	0	0	17	2	0	0	0	2	0	42	2	0	44	63	0
17:45	0	0	0	0	0	2	25	0	0	27	2	0	0	0	2	0	35	3	0	38	67	0
Total	0	0	0	0	0	4	102	0	0	106	10	0	2	0	12	0	166	8	1	175	293	1
Grand Total	0	0	0	0	0	10	429	0	0	439	43	0	11	0	54	1	421	35	3	460	953	3
Apprch %	0.0%	0.0%	0.0%	0.0%		2.3%	97.7%	0.0%	0.0%		79.6%	0.0%	20.4%	0.0%		0.2%	91.5%	7.6%	0.7%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	45.0%	0.0%	0.0%	46.1%	4.5%	0.0%	1.2%	0.0%	5.7%	0.1%	44.2%	3.7%	0.3%	48.3%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	1	33	0	0	34	3	0	1	0	4	0	14	1	0	15	53
8:15	0	0	0	0	0	0	42	0	0	42	2	0	1	0	3	0	17	0	0	17	62
8:30	0	0	0	0	0	1	38	0	0	39	1	0	1	0	2	0	20	1	0	21	62
8:45	0	0	0	0	0	1	28	0	0	29	1	0	0	0	1	0	27	1	0	28	58
Total Volume	0	0	0	0	0	3	141	0	0	144	7	0	3	0	10	0	78	3	0	81	235
% App Total	0.0%	0.0%	0.0%	0.0%		2.1%	97.9%	0.0%	0.0%		70.0%	0.0%	30.0%	0.0%		0.0%	96.3%	3.7%	0.0%		
PHF	.000	.000	.000	.000	.000	.750	.839	.000	.000	.857	.583	.000	.750	.000	.625	.000	.722	.750	.000	.723	.948

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	32	0	0	32	2	0	0	0	2	0	39	7	1	47	81
16:15	0	0	0	0	0	0	35	0	0	35	8	0	2	0	10	0	32	6	0	38	83
16:30	0	0	0	0	0	2	29	0	0	31	3	0	1	0	4	0	36	4	0	40	75
16:45	0	0	0	0	0	0	28	0	0	28	2	0	0	0	2	0	38	3	0	41	71
Total Volume	0	0	0	0	0	2	124	0	0	126	15	0	3	0	18	0	145	20	1	166	310
% App Total	0.0%	0.0%	0.0%	0.0%		1.6%	98.4%	0.0%	0.0%		83.3%	0.0%	16.7%	0.0%		0.0%	87.3%	12.0%	0.6%		
PHF	.000	.000	.000	.000	.000	.250	.886	.000	.000	.900	.469	.000	.375	.000	.450	.000	.929	.714	.250	.883	.934

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/19/2017

Bank 1 Count = Peds & Bikes

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	3	0	0	3	0	0	0	2	0	0	0	0	0	0	3	2
7:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
7:30	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	9	0
7:45	0	0	0	0	0	0	8	0	1	8	0	0	0	0	0	0	2	0	0	2	10	1
Total	0	0	0	0	0	0	21	0	1	21	0	0	0	2	0	0	3	0	0	3	24	3
8:00	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	12	0
8:15	0	0	0	0	0	0	9	0	0	9	0	0	0	1	0	0	2	0	0	2	11	1
8:30	0	0	0	0	0	0	9	0	0	9	3	0	0	0	3	0	0	0	0	0	12	0
8:45	0	0	0	0	0	0	11	0	0	11	0	0	0	3	0	0	1	0	0	1	12	3
Total	0	0	0	0	0	0	38	0	0	38	3	0	0	4	3	0	6	0	0	6	47	4
16:00	0	0	0	0	0	0	2	0	0	2	0	0	0	2	0	0	5	0	0	5	7	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	1	0	4	4	2
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	5	0	0	2	0	0	2	3	5
16:45	0	0	0	0	0	0	7	0	0	7	0	0	0	2	0	0	6	0	0	6	13	2
Total	0	0	0	0	0	0	10	0	0	10	0	0	0	11	0	0	16	1	0	17	27	11
17:00	0	0	0	0	0	0	3	0	0	3	0	0	0	2	0	0	4	0	0	4	7	2
17:15	0	0	0	0	0	0	3	0	0	3	1	0	0	2	1	0	4	0	0	4	8	2
17:30	0	0	0	0	0	0	2	0	0	2	0	0	0	4	0	0	8	0	0	8	10	4
17:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7	1	0	8	11	0
Total	0	0	0	0	0	0	11	0	0	11	1	0	0	8	1	0	23	1	0	24	36	8
Grand Total	0	0	0	0	0	0	80	0	1	80	4	0	0	25	4	0	48	2	0	50	134	26
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	96.0%	4.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	59.7%	0.0%		59.7%	3.0%	0.0%	0.0%		3.0%	0.0%	35.8%	1.5%		37.3%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	12
8:15	0	0	0	0	0	0	9	0	0	9	0	0	0	1	0	0	2	0	0	2	11
8:30	0	0	0	0	0	0	9	0	0	9	3	0	0	0	3	0	0	0	0	0	12
8:45	0	0	0	0	0	0	11	0	0	11	0	0	0	3	0	0	1	0	0	1	12
Total Volume	0	0	0	0	0	0	38	0	0	38	3	0	0	4	3	0	6	0	0	6	47
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.864	.000		.864	.250	.000	.000		.250	.000	.500	.000		.500	.979

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	2	0	0	2	0	0	0	2	0	0	5	0	0	5	7
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	1	0	4	4
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	5	0	0	2	0	0	2	3
16:45	0	0	0	0	0	0	7	0	0	7	0	0	0	2	0	0	6	0	0	6	13
Total Volume	0	0	0	0	0	0	10	0	0	10	0	0	0	11	0	0	16	1	0	17	27
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	94.1%	5.9%			
PHF	.000	.000	.000		.000	.000	.357	.000		.357	.000	.000	.000		.000	.000	.667	.250		.708	.519

PROJECT#: 17-7290-001
N/S Street: N Diameter Dr
E/W Street: E 8th St
DATE: 4/19/2017
CITY: Davis

A M

PEDESTRIANS

T I M E	IN	OUT
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	1	0
8:30 AM	0	0
8:45 AM	0	0
TOTALS	**1**	**0**

P M

PEDESTRIANS

T I M E	IN	OUT
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	1	0
5:45 PM	0	0
TOTALS	**1**	**0**

Prepared by NDS/ATD

VOLUME

S Diameter Dr E/O Pole Line Rd

Day: Wednesday
Date: 4/19/2017

City: Davis
Project #: CA17_7291_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	423	384	807

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		0		3		12:00			11		4		15	
00:15			2		0		2		12:15			6		14		20	
00:30			0		0		0		12:30			13		7		20	
00:45			0	5	0		0	5	12:45			12	42	10	35	22	77
01:00			0		2		2		13:00			8		9		17	
01:15			0		1		1		13:15			6		9		15	
01:30			0		0		0		13:30			11		13		24	
01:45			0		0	3	0	3	13:45			9	34	10	41	19	75
02:00			0		0		0		14:00			8		6		14	
02:15			1		0		1		14:15			7		6		13	
02:30			0		1		1		14:30			13		8		21	
02:45			0	1	0	1	0	2	14:45			8	36	2	22	10	58
03:00			0		0		0		15:00			7		7		14	
03:15			0		0		0		15:15			8		8		16	
03:30			0		0		0		15:30			10		7		17	
03:45			0		0		0		15:45			7	32	5	27	12	59
04:00			0		0		0		16:00			7		8		15	
04:15			0		0		0		16:15			5		6		11	
04:30			0		0		0		16:30			11		4		15	
04:45			1	1	1	1	2	2	16:45			8	31	2	20	10	51
05:00			0		0		0		17:00			9		5		14	
05:15			1		0		1		17:15			8		5		13	
05:30			0		2		2		17:30			3		5		8	
05:45			0	1	1	3	1	4	17:45			8	28	8	23	16	51
06:00			0		3		3		18:00			10		10		20	
06:15			0		1		1		18:15			3		1		4	
06:30			4		2		6		18:30			11		7		18	
06:45			3	7	1	7	4	14	18:45			7	31	5	23	12	54
07:00			1		5		6		19:00			3		4		7	
07:15			9		6		15		19:15			6		3		9	
07:30			1		3		4		19:30			1		2		3	
07:45			4	15	5	19	9	34	19:45			4	14	2	11	6	25
08:00			3		6		9		20:00			4		1		5	
08:15			5		5		10		20:15			2		3		5	
08:30			4		8		12		20:30			2		1		3	
08:45			6	18	7	26	13	44	20:45			3	11	3	8	6	19
09:00			8		14		22		21:00			6		0		6	
09:15			8		3		11		21:15			4		1		5	
09:30			5		7		12		21:30			6		4		10	
09:45			6	27	8	32	14	59	21:45			1	17	1	6	2	23
10:00			14		10		24		22:00			1		2		3	
10:15			7		9		16		22:15			2		2		4	
10:30			7		3		10		22:30			2		0		2	
10:45			3	31	10	32	13	63	22:45			0	5	0	4	0	9
11:00			9		11		20		23:00			0		0		0	
11:15			6		7		13		23:15			3		0		3	
11:30			9		13		22		23:30			1		3		4	
11:45			7	31	6	37	13	68	23:45			1	5	0	3	1	8
TOTALS				137		161		**298**	**TOTALS**				286		223		**509**
SPLIT %				46.0%		54.0%		**36.9%**	**SPLIT %**				56.2%		43.8%		**63.1%**

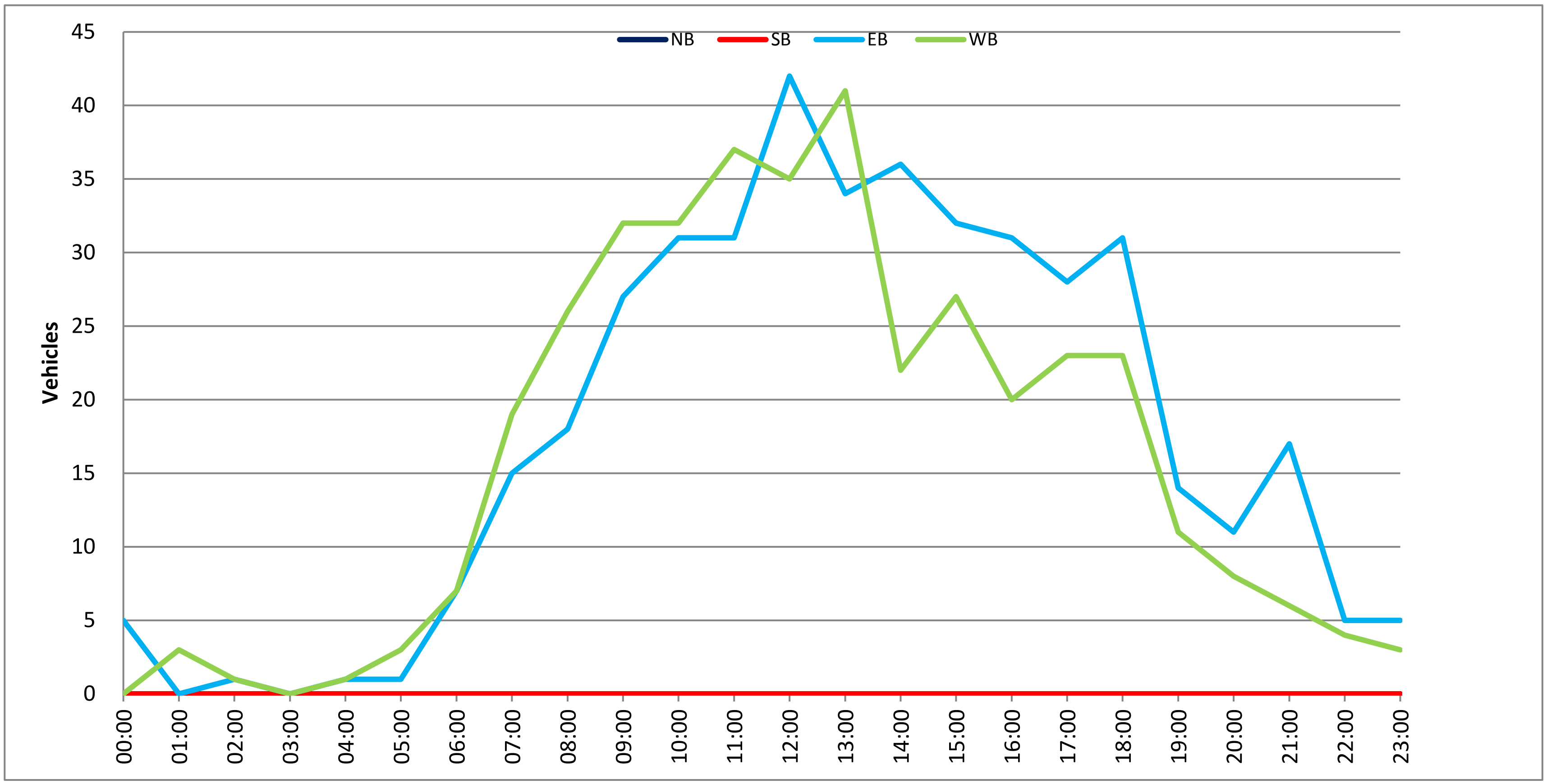
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	423	384	807

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			11:45	10:45	**11:30**	**PM Peak Hour**			12:00	12:45	**12:15**
AM Pk Volume			37	41	**70**	**PM Pk Volume**			42	41	**79**
Pk Hr Factor			0.712	0.788	**0.795**	**Pk Hr Factor**			0.808	0.788	**0.898**
7 - 9 Volume	0	0	33	45	**78**	**4 - 6 Volume**	0	0	59	43	**102**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			16:30	17:00	**16:30**
7 - 9 Pk Volume	0	0	18	26	**44**	**4 - 6 Pk Volume**	0	0	36	23	**52**
Pk Hr Factor	0.000	0.000	0.750	0.813	**0.846**	**Pk Hr Factor**	0.000	0.000	0.818	0.719	**0.867**

Prepared by NDS/ATD

Project #: CA17_7291_002 **City:** Davis

Location: S Diameter Dr E/O Pole Line Rd **Date:** 4/19/2017



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/19/2017

Unshifted Count = All Vehicles & Uturns

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	78	0	0	78	4	0	1	0	5	0	34	1	0	35	0	0	0	0	0	118	0
7:15	4	85	0	0	89	4	0	2	0	6	0	38	5	0	43	0	0	0	0	0	138	0
7:30	1	86	0	0	87	2	0	1	0	3	0	40	0	0	40	0	0	0	0	0	130	0
7:45	2	108	0	0	110	4	0	1	0	5	0	58	2	0	60	0	0	0	0	0	175	0
Total	7	357	0	0	364	14	0	5	0	19	0	170	8	0	178	0	0	0	0	0	561	0
8:00	1	134	0	0	135	4	0	2	0	6	0	75	2	0	77	0	0	0	0	0	218	0
8:15	4	158	0	0	162	1	0	4	0	5	0	97	1	0	98	0	0	0	0	0	265	0
8:30	1	159	0	0	160	5	0	3	0	8	0	117	3	0	120	0	0	0	0	0	288	0
8:45	4	166	0	0	170	4	0	3	0	7	0	83	2	1	86	0	0	0	0	0	263	1
Total	10	617	0	0	627	14	0	12	0	26	0	372	8	1	381	0	0	0	0	0	1034	1
16:00	5	127	0	0	132	7	0	1	0	8	0	148	2	0	150	0	0	0	0	0	290	0
16:15	3	125	0	0	128	4	0	2	0	6	0	131	2	0	133	0	0	0	0	0	267	0
16:30	4	113	0	0	117	3	0	1	0	4	0	169	7	0	176	0	0	0	0	0	297	0
16:45	3	122	0	0	125	2	0	0	0	2	0	131	5	0	136	0	0	0	0	0	263	0
Total	15	487	0	0	502	16	0	4	0	20	0	579	16	0	595	0	0	0	0	0	1117	0
17:00	2	141	0	0	143	3	0	2	0	5	0	150	7	0	157	0	0	0	0	0	305	0
17:15	3	144	0	0	147	2	0	3	0	5	0	151	5	0	156	0	0	0	0	0	308	0
17:30	3	156	0	1	160	3	0	2	0	5	0	142	0	0	142	0	0	0	0	0	307	1
17:45	4	131	0	0	135	5	0	3	0	8	0	112	4	0	116	0	0	0	0	0	259	0
Total	12	572	0	1	585	13	0	10	0	23	0	555	16	0	571	0	0	0	0	0	1179	1
Grand Total	44	2033	0	1	2078	57	0	31	0	88	0	1676	48	1	1725	0	0	0	0	0	3891	2
Apprch %	2.1%	97.8%	0.0%	0.0%		64.8%	0.0%	35.2%	0.0%		0.0%	97.2%	2.8%	0.1%		0.0%	0.0%	0.0%	0.0%			
Total %	1.1%	52.2%	0.0%	0.0%	53.4%	1.5%	0.0%	0.8%	0.0%	2.3%	0.0%	43.1%	1.2%	0.0%	44.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	1	134	0	0	135	4	0	2	0	6	0	75	2	0	77	0	0	0	0	0	218
8:15	4	158	0	0	162	1	0	4	0	5	0	97	1	0	98	0	0	0	0	0	265
8:30	1	159	0	0	160	5	0	3	0	8	0	117	3	0	120	0	0	0	0	0	288
8:45	4	166	0	0	170	4	0	3	0	7	0	83	2	1	86	0	0	0	0	0	263
Total Volume	10	617	0	0	627	14	0	12	0	26	0	372	8	1	381	0	0	0	0	0	1034
% App Total	1.6%	98.4%	0.0%	0.0%		53.8%	0.0%	46.2%	0.0%		0.0%	97.6%	2.1%	0.3%		0.0%	0.0%	0.0%	0.0%		
PHF	.625	.929	.000	.000	.922	.700	.000	.750	.000	.813	.000	.795	.667	.250	.794	.000	.000	.000	.000	.000	.898

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	3	122	0	0	125	2	0	0	0	2	0	131	5	0	136	0	0	0	0	0	263
17:00	2	141	0	0	143	3	0	2	0	5	0	150	7	0	157	0	0	0	0	0	305
17:15	3	144	0	0	147	2	0	3	0	5	0	151	5	0	156	0	0	0	0	0	308
17:30	3	156	0	1	160	3	0	2	0	5	0	142	0	0	142	0	0	0	0	0	307
Total Volume	11	563	0	1	575	10	0	7	0	17	0	574	17	0	591	0	0	0	0	0	1183
% App Total	1.9%	97.9%	0.0%	0.2%		58.8%	0.0%	41.2%	0.0%		0.0%	97.1%	2.9%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.917	.902	.000	.250	.898	.833	.000	.583	.000	.850	.000	.950	.607	.000	.941	.000	.000	.000	.000	.000	.960

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/19/2017

Bank 1 Count = Peds & Bikes

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	0	1	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	4	1
7:15	0	7	0	0	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7	1
7:30	0	2	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
7:45	0	3	0	3	3	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	5	5
Total	0	13	0	3	13	0	0	0	6	0	0	5	0	0	5	0	0	0	0	0	18	9
8:00	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13	0
8:15	0	5	0	0	5	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	8	0
8:30	0	6	0	0	6	0	0	0	3	0	0	3	0	0	3	0	0	0	0	0	9	3
8:45	0	5	0	0	5	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	9	1
Total	0	24	0	0	24	1	0	0	4	1	0	14	0	0	14	0	0	0	0	0	39	4
16:00	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	4	0
16:30	0	1	0	1	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	5	2
16:45	0	0	0	0	0	0	0	0	4	0	0	3	0	0	3	0	0	0	0	0	3	4
Total	0	3	0	1	3	0	0	0	6	0	0	9	1	0	10	0	0	0	0	0	13	7
17:00	0	2	0	0	2	0	0	0	2	0	0	4	0	0	4	0	0	0	0	0	6	2
17:15	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	0
17:30	0	2	0	0	2	0	0	0	3	0	0	6	0	0	6	0	0	0	0	0	8	3
17:45	0	3	0	0	3	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	9	1
Total	0	10	0	0	10	0	0	0	6	0	0	20	0	0	20	0	0	0	0	0	30	6
Grand Total	0	50	0	4	50	1	0	0	22	1	0	48	1	0	49	0	0	0	0	0	100	26
Apprch %	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	98.0%	2.0%			0.0%	0.0%	0.0%				
Total %	0.0%	50.0%	0.0%		50.0%	1.0%	0.0%	0.0%		1.0%	0.0%	48.0%	1.0%		49.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
8:15	0	5	0	0	5	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	8
8:30	0	6	0	0	6	0	0	0	3	0	0	3	0	0	3	0	0	0	0	0	9
8:45	0	5	0	0	5	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	9
Total Volume	0	24	0	0	24	1	0	0	4	1	0	14	0	0	14	0	0	0	0	0	39
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.750	.000		.750	.250	.000	.000		.250	.000	.700	.000		.700	.000	.000	.000		.000	.750

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	4	0	0	3	0	0	3	0	0	0	0	0	3
17:00	0	2	0	0	2	0	0	0	2	0	0	4	0	0	4	0	0	0	0	0	6
17:15	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
17:30	0	2	0	0	2	0	0	0	3	0	0	6	0	0	6	0	0	0	0	0	8
Total Volume	0	7	0	0	7	0	0	0	9	0	0	17	0	0	17	0	0	0	0	0	24
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.583	.000		.583	.000	.000	.000		.000	.000	.708	.000		.708	.000	.000	.000		.000	.750

PROJECT#: 17-7290-002
N/S Street: Pole Line Rd
E/W Street: South Diameter Dr
DATE: 4/19/2017
CITY: Davis

A M

PEDESTRIANS

T I M E	IN	OUT
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	5	0
8:00 AM	0	2
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	1	0
TOTALS	**6**	**2**

P M

PEDESTRIANS

T I M E	IN	OUT
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	1	2
4:45 PM	1	1
5:00 PM	0	0
5:15 PM	1	0
5:30 PM	0	0
5:45 PM	0	0
TOTALS	**3**	**3**

Prepared by NDS/ATD

VOLUME

N Diameter Dr S/O E 8th St

Day: Thursday
Date: 4/20/2017

City: Davis
Project #: CA17_7291_001

DAILY TOTALS	NB	SB	EB	WB	Total
	226	184	0	0	410

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	2		5				7	
00:15	0		0				0		12:15	0		8				8	
00:30	0		0				0		12:30	3		3				6	
00:45	0		0				0		12:45	4	9	3	19			7	28
01:00	0		0				0		13:00	8		3				11	
01:15	0		0				0		13:15	5		0				5	
01:30	1		0				1		13:30	4		3				7	
01:45	0	1	0				0	1	13:45	4	21	8	14			12	35
02:00	0		0				0		14:00	5		4				9	
02:15	0		0				0		14:15	3		1				4	
02:30	0		2				2		14:30	0		3				3	
02:45	0		0	2			0	2	14:45	3	11	5	13			8	24
03:00	0		0				0		15:00	4		5				9	
03:15	0		0				0		15:15	4		7				11	
03:30	0		0				0		15:30	5		3				8	
03:45	0		0				0		15:45	2	15	1	16			3	31
04:00	0		0				0		16:00	5		6				11	
04:15	0		0				0		16:15	7		3				10	
04:30	1		2				3		16:30	4		7				11	
04:45	0	1	0	2			0	3	16:45	1	17	1	17			2	34
05:00	0		0				0		17:00	2		5				7	
05:15	0		0				0		17:15	4		3				7	
05:30	0		0				0		17:30	6		1				7	
05:45	0		0				0		17:45	2	14	2	11			4	25
06:00	2		0				2		18:00	5		4				9	
06:15	3		1				4		18:15	6		1				7	
06:30	0		0				0		18:30	4		6				10	
06:45	2	7	1	2			3	9	18:45	5	20	3	14			8	34
07:00	2		1				3		19:00	3		1				4	
07:15	1		3				4		19:15	2		2				4	
07:30	4		2				6		19:30	2		4				6	
07:45	5	12	1	7			6	19	19:45	0	7	4	11			4	18
08:00	5		0				5		20:00	1		2				3	
08:15	3		3				6		20:15	1		4				5	
08:30	3		7				10		20:30	2		2				4	
08:45	3	14	0	10			3	24	20:45	1	5	1	9			2	14
09:00	6		1				7		21:00	1		3				4	
09:15	8		1				9		21:15	1		2				3	
09:30	6		2				8		21:30	2		0				2	
09:45	9	29	4	8			13	37	21:45	2	6	1	6			3	12
10:00	5		3				8		22:00	1		1				2	
10:15	3		3				6		22:15	0		0				0	
10:30	2		2				4		22:30	0		0				0	
10:45	7	17	2	10			9	27	22:45	1	2	0	1			1	3
11:00	3		2				5		23:00	0		0				0	
11:15	6		0				6		23:15	0		0				0	
11:30	3		4				7		23:30	0		0				0	
11:45	6	18	6	12			12	30	23:45	0		0				0	
TOTALS		99		53				**152**	**TOTALS**		127		131				**258**
SPLIT %		65.1%		34.9%				**37.1%**	**SPLIT %**		49.2%		50.8%				**62.9%**

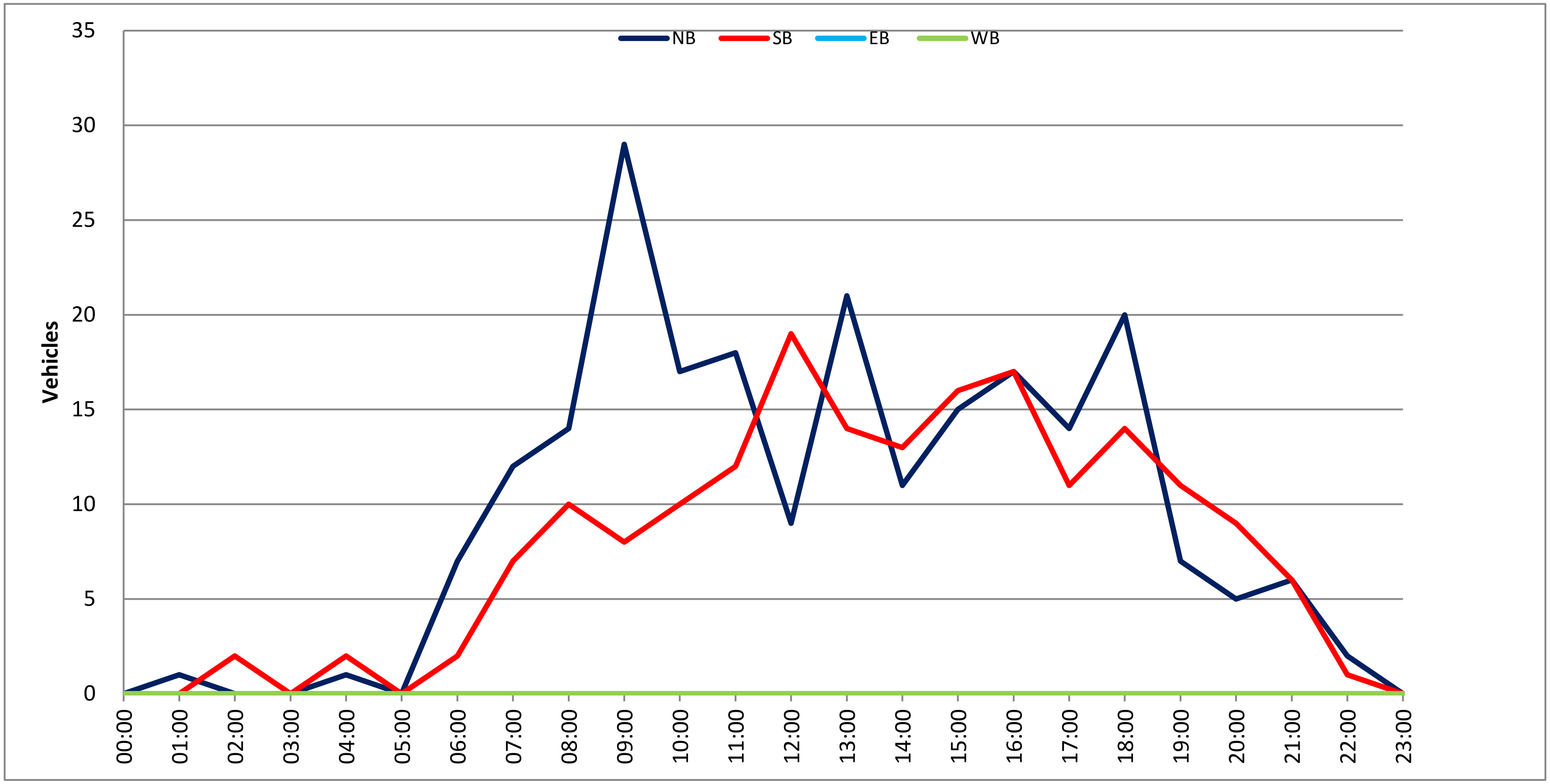
DAILY TOTALS	NB	SB	EB	WB	Total
	226	184	0	0	410

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	09:00	11:30			**09:15**	**PM Peak Hour**	12:45	14:30			**14:45**
AM Pk Volume	29	23			**38**	**PM Pk Volume**	21	20			**36**
Pk Hr Factor	0.806	0.719			**0.731**	**Pk Hr Factor**	0.656	0.714			**0.818**
7 - 9 Volume	26	17	0	0	**43**	**4 - 6 Volume**	31	28	0	0	**59**
7 - 9 Peak Hour	07:30	07:45			**07:45**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	17	11	0	0	**27**	**4 - 6 Pk Volume**	17	17	0	0	**34**
Pk Hr Factor	0.850	0.393	0.000	0.000	**0.675**	**Pk Hr Factor**	0.607	0.607	0.000	0.000	**0.773**

Prepared by NDS/ATD

Project #: CA17_7291_001 **City:** Davis

Location: N Diameter Dr S/O E 8th St **Date:** 4/20/2017



National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/20/2017

Unshifted Count = All Vehicles & Uturns

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	10	0	0	10	2	0	0	0	2	0	6	1	0	7	19	0
7:15	0	0	0	0	0	1	8	0	0	9	1	0	0	0	1	0	5	2	0	7	17	0
7:30	0	0	0	0	0	0	28	0	0	28	2	0	2	0	4	0	7	2	0	9	41	0
7:45	0	0	0	0	0	1	24	0	0	25	4	0	1	0	5	0	15	0	0	15	45	0
Total	0	0	0	0	0	2	70	0	0	72	9	0	3	0	12	0	33	5	0	38	122	0
8:00	0	0	0	0	0	0	30	0	0	30	4	0	1	0	5	0	19	0	0	19	54	0
8:15	0	0	0	0	0	0	35	0	0	35	2	0	1	0	3	0	23	3	0	26	64	0
8:30	0	0	0	0	0	2	50	0	0	52	2	0	1	0	3	0	24	5	0	29	84	0
8:45	0	0	0	0	0	0	48	0	0	48	3	0	0	0	3	0	17	0	0	17	68	0
Total	0	0	0	0	0	2	163	0	0	165	11	0	3	0	14	0	83	8	0	91	270	0
16:00	0	0	0	0	0	1	16	0	0	17	4	0	1	0	5	0	27	5	0	32	54	0
16:15	0	0	0	0	0	1	18	0	0	19	4	0	3	0	7	0	29	2	0	31	57	0
16:30	0	0	0	0	0	2	20	0	0	22	1	0	3	0	4	0	47	5	1	53	79	1
16:45	0	0	0	0	0	0	32	0	1	33	1	0	0	0	1	0	41	1	1	43	77	2
Total	0	0	0	0	0	4	86	0	1	91	10	0	7	0	17	0	144	13	2	159	267	3
17:00	0	0	0	0	0	1	27	0	0	28	1	0	1	0	2	0	39	3	1	43	73	1
17:15	0	0	0	0	0	2	28	0	0	30	3	0	1	0	4	0	49	2	1	52	86	1
17:30	0	0	0	0	0	0	25	0	0	25	6	0	0	0	6	0	31	1	1	33	64	1
17:45	0	0	0	0	0	0	22	0	0	22	2	0	0	0	2	0	31	2	0	33	57	0
Total	0	0	0	0	0	3	102	0	0	105	12	0	2	0	14	0	150	8	3	161	280	3
Grand Total	0	0	0	0	0	11	421	0	1	433	42	0	15	0	57	0	410	34	5	449	939	6
Apprch %	0.0%	0.0%	0.0%	0.0%		2.5%	97.2%	0.0%	0.2%		73.7%	0.0%	26.3%	0.0%		0.0%	91.3%	7.6%	1.1%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	44.8%	0.0%	0.1%	46.1%	4.5%	0.0%	1.6%	0.0%	6.1%	0.0%	43.7%	3.6%	0.5%	47.8%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	30	0	0	30	4	0	1	0	5	0	19	0	0	19	54
8:15	0	0	0	0	0	0	35	0	0	35	2	0	1	0	3	0	23	3	0	26	64
8:30	0	0	0	0	0	2	50	0	0	52	2	0	1	0	3	0	24	5	0	29	84
8:45	0	0	0	0	0	0	48	0	0	48	3	0	0	0	3	0	17	0	0	17	68
Total Volume	0	0	0	0	0	2	163	0	0	165	11	0	3	0	14	0	83	8	0	91	270
% App Total	0.0%	0.0%	0.0%	0.0%		1.2%	98.8%	0.0%	0.0%		78.6%	0.0%	21.4%	0.0%		0.0%	91.2%	8.8%	0.0%		
PHF	.000	.000	.000	.000	.000	.250	.815	.000	.000	.793	.688	.000	.750	.000	.700	.000	.865	.400	.000	.784	.804

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	2	20	0	0	22	1	0	3	0	4	0	47	5	1	53	79
16:45	0	0	0	0	0	0	32	0	1	33	1	0	0	0	1	0	41	1	1	43	77
17:00	0	0	0	0	0	1	27	0	0	28	1	0	1	0	2	0	39	3	1	43	73
17:15	0	0	0	0	0	2	28	0	0	30	3	0	1	0	4	0	49	2	1	52	86
Total Volume	0	0	0	0	0	5	107	0	1	113	6	0	5	0	11	0	176	11	4	191	315
% App Total	0.0%	0.0%	0.0%	0.0%		4.4%	94.7%	0.0%	0.9%		54.5%	0.0%	45.5%	0.0%		0.0%	92.1%	5.8%	2.1%		
PHF	.000	.000	.000	.000	.000	.625	.836	.000	.250	.856	.500	.000	.417	.000	.688	.000	.898	.550	1.000	.901	.916

National Data and Surveying Services

(323) 782-0090
info@ndsdata.com

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

File Name : 17-7290-001 N Diameter Dr & S/O E 8th St
Date : 4/20/2017

Bank 1 Count = Peds & Bikes

	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	1	0	0	1	1	0	0	1	1	0	0	0	0	0	2	2
7:15	0	0	0	2	0	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	2	3
7:30	0	0	0	1	0	0	8	0	0	8	0	0	0	1	0	0	0	0	0	0	8	2
7:45	0	0	0	0	0	0	7	0	0	7	0	0	0	1	0	0	2	0	0	2	9	1
Total	0	0	0	4	0	0	18	0	0	18	1	0	0	4	1	0	2	0	0	2	21	8
8:00	0	0	0	0	0	0	8	0	0	8	1	0	0	3	1	0	2	0	0	2	11	3
8:15	0	0	0	3	0	0	9	0	1	9	0	0	1	1	1	0	1	0	0	1	11	5
8:30	0	0	0	1	0	0	12	0	0	12	2	0	0	1	2	0	0	0	0	0	14	2
8:45	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	2	1	0	3	12	0
Total	0	0	0	4	0	0	37	0	1	37	4	0	1	5	5	0	5	1	0	6	48	10
16:00	0	0	0	0	0	0	6	0	0	6	0	0	0	5	0	0	7	0	0	7	13	5
16:15	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	11	2
16:30	0	0	0	3	0	0	2	0	0	2	0	0	0	2	0	0	7	0	0	7	9	5
16:45	0	0	0	1	0	0	6	0	0	6	1	0	0	2	1	0	7	1	0	8	15	3
Total	0	0	0	6	0	0	17	0	0	17	1	0	0	9	1	0	29	1	0	30	48	15
17:00	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	8	0	0	8	10	2
17:15	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	0	4	0	0	4	7	1
17:30	0	0	0	0	0	0	4	0	0	4	0	0	0	2	0	0	12	0	0	12	16	2
17:45	0	0	0	0	0	0	5	0	0	5	0	0	0	6	0	0	7	0	0	7	12	6
Total	0	0	0	2	0	0	14	0	0	14	0	0	0	9	0	0	31	0	0	31	45	11
Grand Total	0	0	0	16	0	0	86	0	1	86	6	0	1	27	7	0	67	2	0	69	162	44
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			85.7%	0.0%	14.3%			0.0%	97.1%	2.9%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	53.1%	0.0%		53.1%	3.7%	0.0%	0.6%		4.3%	0.0%	41.4%	1.2%		42.6%	100.0%	

AM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	8	0	0	8	1	0	0	3	1	0	2	0	0	2	11
8:15	0	0	0	3	0	0	9	0	1	9	0	0	1	1	1	0	1	0	0	1	11
8:30	0	0	0	1	0	0	12	0	0	12	2	0	0	1	2	0	0	0	0	0	14
8:45	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	2	1	0	3	12
Total Volume	0	0	0	4	0	0	37	0	1	37	4	0	1	5	5	0	5	1	0	6	48
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			80.0%	0.0%	20.0%			0.0%	83.3%	16.7%			
PHF	.000	.000	.000		.000	.000	.771	.000		.771	.500	.000	.250		.625	.000	.625	.250		.500	.857

PM PEAK HOUR	N Diameter Dr Southbound					S/O E 8th St Westbound					N Diameter Dr Northbound					S/O E 8th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	3	0	0	2	0	0	2	0	0	0	2	0	0	7	0	0	7	9
16:45	0	0	0	1	0	0	6	0	0	6	1	0	0	2	1	0	7	1	0	8	15
17:00	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	8	0	0	8	10
17:15	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	0	4	0	0	4	7
Total Volume	0	0	0	6	0	0	13	0	0	13	1	0	0	5	1	0	26	1	0	27	41
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	96.3%	3.7%			
PHF	.000	.000	.000		.000	.000	.542	.000		.542	.250	.000	.000		.250	.000	.813	.250		.844	.683

PROJECT#: 17-7290-001
N/S Street: N Diameter Dr
E/W Street: E 8th St
DATE: 4/20/2017
CITY: Davis

A M

PEDESTRIANS

T I M E	IN	OUT
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	1	0
8:00 AM	0	0
8:15 AM	0	1
8:30 AM	1	0
8:45 AM	0	0
TOTALS	**2**	**1**

P M

PEDESTRIANS

T I M E	IN	OUT
4:00 PM	1	0
4:15 PM	0	0
4:30 PM	0	1
4:45 PM	1	0
5:00 PM	0	1
5:15 PM	0	0
5:30 PM	1	0
5:45 PM	0	0
TOTALS	**3**	**2**

Prepared by NDS/ATD

VOLUME

S Diameter Dr E/O Pole Line Rd

Day: Thursday
Date: 4/20/2017

City: Davis
Project #: CA17_7291_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	415	374	789

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		0		1		12:00			12		4		16	
00:15			0		0		0		12:15			13		13		26	
00:30			0		0		0		12:30			10		9		19	
00:45			4	5	1	1	5	6	12:45			8	43	10	36	18	79
01:00			0		0		0		13:00			9		11		20	
01:15			0		0		0		13:15			12		9		21	
01:30			1		2		3		13:30			4		5		9	
01:45			0	1	0	2	0	3	13:45			14	39	7	32	21	71
02:00			0		0		0		14:00			9		9		18	
02:15			0		0		0		14:15			7		7		14	
02:30			0		1		1		14:30			8		4		12	
02:45			0		0	1	0	1	14:45			8	32	2	22	10	54
03:00			0		0		0		15:00			6		4		10	
03:15			0		0		0		15:15			7		5		12	
03:30			0		0		0		15:30			9		6		15	
03:45			0		0		0		15:45			11	33	5	20	16	53
04:00			0		0		0		16:00			5		3		8	
04:15			1		0		1		16:15			5		4		9	
04:30			0		0		0		16:30			9		9		18	
04:45			0	1	3	3	3	4	16:45			7	26	4	20	11	46
05:00			0		0		0		17:00			6		3		9	
05:15			0		0		0		17:15			11		2		13	
05:30			1		0		1		17:30			5		5		10	
05:45			0	1	1	1	1	2	17:45			4	26	5	15	9	41
06:00			0		2		2		18:00			9		9		18	
06:15			0		2		2		18:15			11		7		18	
06:30			4		1		5		18:30			7		5		12	
06:45			2	6	4	9	6	15	18:45			7	34	5	26	12	60
07:00			2		6		8		19:00			1		5		6	
07:15			5		2		7		19:15			5		1		6	
07:30			4		8		12		19:30			2		2		4	
07:45			3	14	6	22	9	36	19:45			4	12	2	10	6	22
08:00			3		7		10		20:00			4		1		5	
08:15			3		2		5		20:15			5		5		10	
08:30			3		8		11		20:30			3		1		4	
08:45			6	15	7	24	13	39	20:45			3	15	4	11	7	26
09:00			2		4		6		21:00			4		2		6	
09:15			5		6		11		21:15			4		1		5	
09:30			7		7		14		21:30			5		2		7	
09:45			12	26	9	26	21	52	21:45			2	15	0	5	2	20
10:00			11		8		19		22:00			2		0		2	
10:15			5		9		14		22:15			1		2		3	
10:30			7		10		17		22:30			1		0		1	
10:45			9	32	16	43	25	75	22:45			1	5	0	2	1	7
11:00			3		15		18		23:00			2		1		3	
11:15			7		7		14		23:15			2		1		3	
11:30			9		12		21		23:30			1		0		1	
11:45			9	28	7	41	16	69	23:45			1	6	0	2	1	8
TOTALS				129		173		**302**	**TOTALS**				286		201		**487**
SPLIT %				42.7%		57.3%		**38.3%**	**SPLIT %**				58.7%		41.3%		**61.7%**

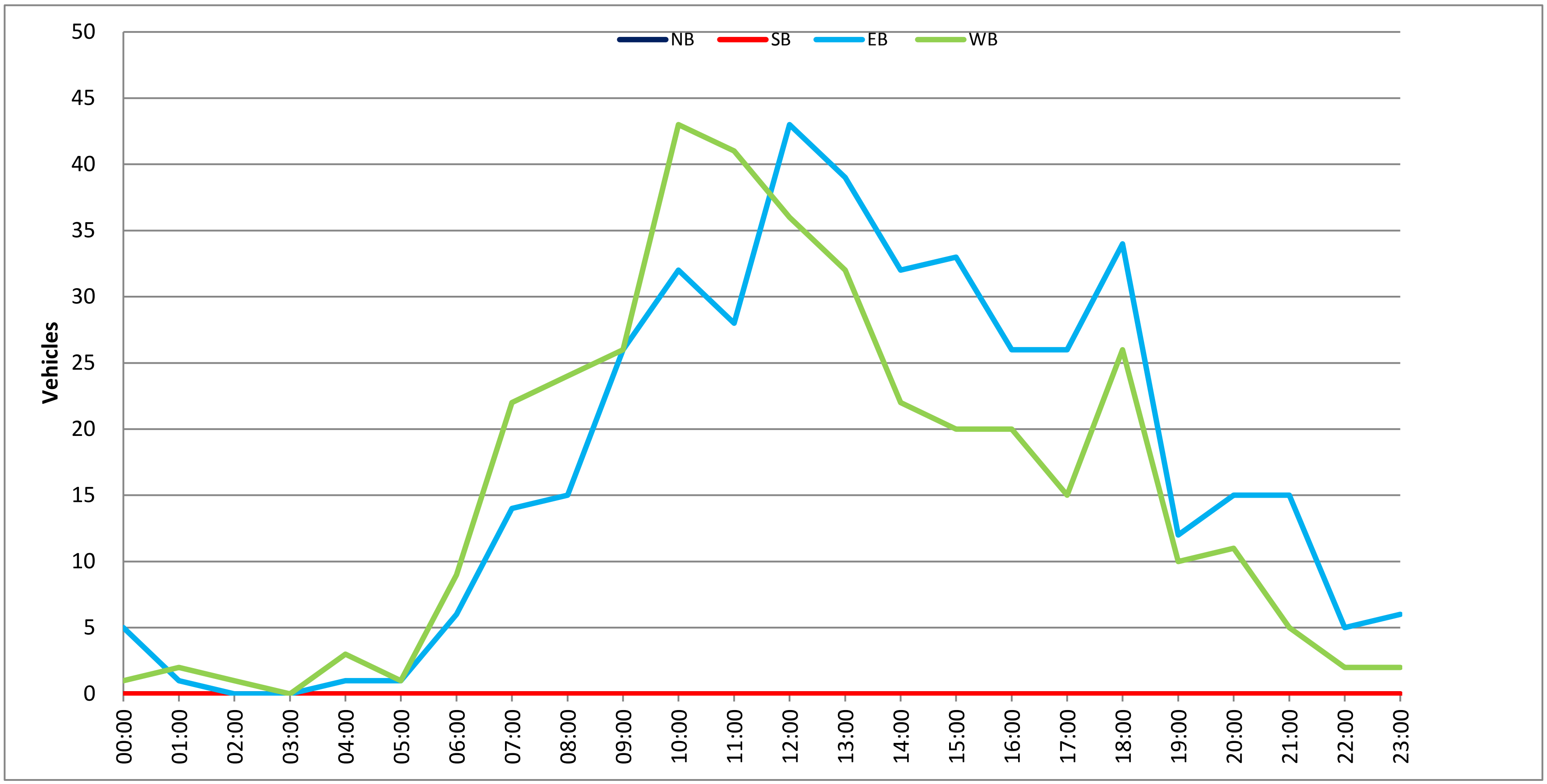
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	415	374	789

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:45	10:15	**11:30**	**PM Peak Hour**			12:00	12:15	**12:15**
AM Pk Volume			44	50	**79**	**PM Pk Volume**			43	43	**83**
Pk Hr Factor			0.846	0.781	**0.760**	**Pk Hr Factor**			0.827	0.827	**0.798**
7 - 9 Volume	0	0	29	46	**75**	**4 - 6 Volume**	0	0	52	35	**87**
7 - 9 Peak Hour			07:15	08:00	**08:00**	**4 - 6 Peak Hour**			16:30	16:00	**16:30**
7 - 9 Pk Volume	0	0	15	24	**39**	**4 - 6 Pk Volume**	0	0	33	20	**51**
Pk Hr Factor	0.000	0.000	0.750	0.750	**0.750**	**Pk Hr Factor**	0.000	0.000	0.750	0.556	**0.708**

Prepared by NDS/ATD

Project #: CA17_7291_002 **City:** Davis

Location: S Diameter Dr E/O Pole Line Rd **Date:** 4/20/2017



National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/20/2017

Unshifted Count = All Vehicles & Uturns

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	1	60	0	0	61	5	0	1	0	6	0	18	1	0	19	0	0	0	0	0	86	0
7:15	3	68	0	0	71	1	0	1	0	2	0	29	2	0	31	0	0	0	0	0	104	0
7:30	2	103	0	0	105	7	0	1	0	8	0	42	2	0	44	0	0	0	0	0	157	0
7:45	0	139	0	0	139	5	0	1	0	6	0	53	3	1	57	0	0	0	0	0	202	1
Total	6	370	0	0	376	18	0	4	0	22	0	142	8	1	151	0	0	0	0	0	549	1
8:00	1	122	0	0	123	4	0	3	0	7	0	85	2	0	87	0	0	0	0	0	217	0
8:15	1	170	0	0	171	0	0	2	0	2	0	117	2	0	119	0	0	0	0	0	292	0
8:30	0	173	0	0	173	5	0	3	0	8	0	107	3	0	110	0	0	0	0	0	291	0
8:45	4	178	0	0	182	5	0	2	0	7	0	84	2	0	86	0	0	0	0	0	275	0
Total	6	643	0	0	649	14	0	10	0	24	0	393	9	0	402	0	0	0	0	0	1075	0
16:00	3	101	0	0	104	2	0	1	0	3	0	125	2	0	127	0	0	0	0	0	234	0
16:15	2	112	0	0	114	3	0	1	0	4	0	133	3	0	136	0	0	0	0	0	254	0
16:30	6	132	0	0	138	5	0	4	0	9	0	146	3	0	149	0	0	0	0	0	296	0
16:45	2	145	0	0	147	4	0	0	0	4	0	130	5	0	135	0	0	0	0	0	286	0
Total	13	490	0	0	503	14	0	6	0	20	0	534	13	0	547	0	0	0	0	0	1070	0
17:00	1	131	0	0	132	3	0	0	0	3	0	167	5	0	172	0	0	0	0	0	307	0
17:15	6	144	0	0	150	0	0	2	0	2	0	172	5	0	177	0	0	0	0	0	329	0
17:30	2	142	0	0	144	2	0	3	0	5	0	141	3	0	144	0	0	0	0	0	293	0
17:45	2	150	0	0	152	3	0	2	0	5	0	123	2	0	125	0	0	0	0	0	282	0
Total	11	567	0	0	578	8	0	7	0	15	0	603	15	0	618	0	0	0	0	0	1211	0
Grand Total	36	2070	0	0	2106	54	0	27	0	81	0	1672	45	1	1718	0	0	0	0	0	3905	1
Apprch %	1.7%	98.3%	0.0%	0.0%		66.7%	0.0%	33.3%	0.0%		0.0%	97.3%	2.6%	0.1%		0.0%	0.0%	0.0%	0.0%			
Total %	0.9%	53.0%	0.0%	0.0%	53.9%	1.4%	0.0%	0.7%	0.0%	2.1%	0.0%	42.8%	1.2%	0.0%	44.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	1	122	0	0	123	4	0	3	0	7	0	85	2	0	87	0	0	0	0	0	217
8:15	1	170	0	0	171	0	0	2	0	2	0	117	2	0	119	0	0	0	0	0	292
8:30	0	173	0	0	173	5	0	3	0	8	0	107	3	0	110	0	0	0	0	0	291
8:45	4	178	0	0	182	5	0	2	0	7	0	84	2	0	86	0	0	0	0	0	275
Total Volume	6	643	0	0	649	14	0	10	0	24	0	393	9	0	402	0	0	0	0	0	1075
% App Total	0.9%	99.1%	0.0%	0.0%		58.3%	0.0%	41.7%	0.0%		0.0%	97.8%	2.2%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.375	.903	.000	.000	.891	.700	.000	.833	.000	.750	.000	.840	.750	.000	.845	.000	.000	.000	.000	.000	.920

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	6	132	0	0	138	5	0	4	0	9	0	146	3	0	149	0	0	0	0	0	296
16:45	2	145	0	0	147	4	0	0	0	4	0	130	5	0	135	0	0	0	0	0	286
17:00	1	131	0	0	132	3	0	0	0	3	0	167	5	0	172	0	0	0	0	0	307
17:15	6	144	0	0	150	0	0	2	0	2	0	172	5	0	177	0	0	0	0	0	329
Total Volume	15	552	0	0	567	12	0	6	0	18	0	615	18	0	633	0	0	0	0	0	1218
% App Total	2.6%	97.4%	0.0%	0.0%		66.7%	0.0%	33.3%	0.0%		0.0%	97.2%	2.8%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.625	.952	.000	.000	.945	.600	.000	.375	.000	.500	.000	.894	.900	.000	.894	.000	.000	.000	.000	.000	.926

National Data and Surveying Services

City of Davis
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

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File Name : 17-7290-002 E/O Pole Line Rd & S Diameter Dr
Date : 4/20/2017

Bank 1 Count = Peds & Bikes

	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	3	1
7:15	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
7:30	0	2	0	2	2	0	0	0	6	0	0	0	0	1	0	0	0	0	0	0	2	9
7:45	0	4	0	0	4	0	0	0	2	0	0	1	0	2	1	0	0	0	0	0	5	4
Total	0	8	0	2	8	0	0	0	9	0	0	4	0	3	4	0	0	0	0	0	12	14
8:00	0	3	0	0	3	1	0	0	6	1	0	3	0	1	3	0	0	0	0	0	7	7
8:15	0	4	0	0	4	0	0	0	1	0	1	4	0	0	5	0	0	1	0	1	10	1
8:30	0	6	0	0	6	0	0	0	3	0	0	6	0	0	6	0	0	1	0	1	13	3
8:45	0	4	0	0	4	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	7	2
Total	0	17	0	0	17	1	0	0	12	1	1	16	0	1	17	0	0	2	0	2	37	13
16:00	0	1	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	3	1
16:15	0	3	0	0	3	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	6	1
16:30	0	2	0	0	2	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	6	0
16:45	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8	0
Total	0	10	0	0	10	2	0	0	2	2	0	11	0	0	11	0	0	0	0	0	23	2
17:00	0	3	0	0	3	0	0	0	3	0	0	10	0	0	10	0	0	0	0	0	13	3
17:15	0	2	0	0	2	0	0	0	2	0	0	7	0	0	7	0	0	0	0	0	9	2
17:30	1	3	0	0	4	s	0	0	1	0	0	5	0	0	5	0	0	0	0	0	9	1
17:45	0	4	0	0	4	0	0	0	5	0	0	7	0	0	7	0	0	0	0	0	11	5
Total	1	12	0	0	13	0	0	0	11	0	0	29	0	0	29	0	0	0	0	0	42	11
Grand Total	1	47	0	2	48	3	0	0	34	3	1	60	0	4	61	0	0	2	0	2	114	40
Apprch %	2.1%	97.9%	0.0%			100.0%	0.0%	0.0%			1.6%	98.4%	0.0%			0.0%	0.0%	100.0%				
Total %	0.9%	41.2%	0.0%		42.1%	2.6%	0.0%	0.0%		2.6%	0.9%	52.6%	0.0%		53.5%	0.0%	0.0%	1.8%		1.8%	100.0%	

AM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	3	0	0	3	1	0	0	6	1	0	3	0	1	3	0	0	0	0	0	7
8:15	0	4	0	0	4	0	0	0	1	0	1	4	0	0	5	0	0	1	0	1	10
8:30	0	6	0	0	6	0	0	0	3	0	0	6	0	0	6	0	0	1	0	1	13
8:45	0	4	0	0	4	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	7
Total Volume	0	17	0	0	17	1	0	0	12	1	1	16	0	1	17	0	0	2	0	2	37
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			5.9%	94.1%	0.0%			0.0%	0.0%	100.0%			
PHF	.000	.708	.000		.708	.250	.000	.000		.250	.250	.667	.000		.708	.000	.000	.500		.500	.712

PM PEAK HOUR	E/O Pole Line Rd Southbound					S Diameter Dr Westbound					E/O Pole Line Rd Northbound					S Diameter Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	2	0	0	2	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	6
16:45	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
17:00	0	3	0	0	3	0	0	0	3	0	0	10	0	0	10	0	0	0	0	0	13
17:15	0	2	0	0	2	0	0	0	2	0	0	7	0	0	7	0	0	0	0	0	9
Total Volume	0	11	0	0	11	2	0	0	5	2	0	23	0	0	23	0	0	0	0	0	36
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.688	.000		.688	.250	.000	.000		.250	.000	.575	.000		.575	.000	.000	.000		.000	.692

MXD+ Output

Land Use	Units1	ITE Code	Quantity	Daily	In	Out	Total	In	Out	Total
Net New Uses										
(932) - High-Turnover Restaurant (Adj Streets, 7-9A, 4-6P)	1000 sq ft gross floor area	9322	5	636	30	24	54	29	20	49
(492) - Health/Fitness Club (Adj Streets, 7-9A, 4-6P)	1000 sq ft gross floor area	4923	8	263	6	6	11	17	13	30
Custom (SF age restricted detached)	Custom	0004	129	593	11	19	30	26	20	46
(252) - Senior Adult Housing - Attached (Adj Streets, 7-9A, 4-6P)	Dwelling Units	2525	324	1,115	22	43	65	44	37	81
Custom (SF non age restricted detached)	Custom	0006	77	987	12	66	78	56	24	80
Custom (Age restricted detached units)	Custom	0007	30	138	3	4	7	6	5	11
Net Raw Project Trips (Excluding Life Long Classes)				3,732	84	162	245	178	119	297
Reductions										
Internal Capture				-200	-8	-14	-22	-19	-13	-32

OUTPUT FROM MAINSTREET SHOWING INTERNALIZATION

Existing Plus Project Level of Service (LOS) Calculations

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	9	262	39	0	106	179	11	0	34	61	214
Future Vol, veh/h	0	9	262	39	0	106	179	11	0	34	61	214
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.76	0.76	0.76	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	282	42	0	139	236	14	0	37	66	233
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	19.1	14.4	16.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	36%
Vol Thru, %	0%	22%	0%	87%	0%	94%	54%
Vol Right, %	0%	78%	0%	13%	0%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	275	9	301	106	190	99
LT Vol	34	0	9	0	106	0	36
Through Vol	0	61	0	262	0	179	53
RT Vol	0	214	0	39	0	11	10
Lane Flow Rate	37	299	10	324	139	250	119
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.078	0.54	0.02	0.606	0.282	0.467	0.253
Departure Headway (Hd)	7.573	6.507	7.344	6.74	7.277	6.724	7.642
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	553	488	537	494	535	470
Service Time	5.314	4.248	5.086	4.482	5.02	4.467	5.697
HCM Lane V/C Ratio	0.078	0.541	0.02	0.603	0.281	0.467	0.253
HCM Control Delay	11	16.7	10.2	19.4	12.9	15.3	13.3
HCM Lane LOS	B	C	B	C	B	C	B
HCM 95th-tile Q	0.3	3.2	0.1	4	1.1	2.5	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	53	10
Future Vol, veh/h	0	36	53	10
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	64	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.3
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	497	26	102	375	22	179		
Future Volume (veh/h)	497	26	102	375	22	179		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900		
Adj Flow Rate, veh/h	552	0	110	403	26	0		
Adj No. of Lanes	1	0	1	1	0	0		
Peak Hour Factor	0.90	0.90	0.93	0.93	0.86	0.86		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	873	0	167	1264	57	0		
Arrive On Green	0.47	0.00	0.09	0.68	0.03	0.00		
Sat Flow, veh/h	1863	0	1774	1863	1711	0		
Grp Volume(v), veh/h	552	0	110	403	27	0		
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0		
Q Serve(g_s), s	7.8	0.0	2.1	3.1	0.5	0.0		
Cycle Q Clear(g_c), s	7.8	0.0	2.1	3.1	0.5	0.0		
Prop In Lane		0.00	1.00		0.96	0.00		
Lane Grp Cap(c), veh/h	873	0	167	1264	59	0		
V/C Ratio(X)	0.63	0.00	0.66	0.32	0.46	0.00		
Avail Cap(c_a), veh/h	1881	0	1023	1881	1025	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	6.9	0.0	15.2	2.3	16.5	0.0		
Incr Delay (d2), s/veh	0.8	0.0	4.4	0.1	11.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.0	0.0	1.2	1.6	0.4	0.0		
LnGrp Delay(d),s/veh	7.7	0.0	19.5	2.4	28.0	0.0		
LnGrp LOS	A		B	A	C			
Approach Vol, veh/h	552			513	27			
Approach Delay, s/veh	7.7			6.1	28.0			
Approach LOS	A			A	C			
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	22.3				29.5		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.1	9.8				5.1		2.5
Green Ext Time (p_c), s	0.2	6.5				6.8		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					
Notes								

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	57	54	94.2%	5.2	0.9	A
	Through	106	113	106.5%	4.2	0.6	A
	Right Turn	31	31	99.7%	3.9	1.3	A
	Subtotal	194	198	101.8%	4.5	0.4	A
SB	Left Turn	1	1	60.0%	0.4	0.8	A
	Through	101	107	105.6%	1.2	2.8	A
	Right Turn						
	Subtotal	102	107	105.2%	1.2	2.8	A
EB	Left Turn						
	Through	4	4	100.0%	4.7	5.3	A
	Right Turn	57	59	103.7%	3.9	1.9	A
	Subtotal	61	63	103.4%	4.2	2.1	A
WB	Left Turn	11	10	94.5%	6.9	5.4	A
	Through	3	4	120.0%	2.4	2.7	A
	Right Turn	2	2	110.0%	1.3	1.8	A
	Subtotal	16	16	101.3%	7.0	4.8	A
Total		373	384	103.0%	3.7	1.3	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	12	11	92.5%	80.1	28.6	F
	Through	19	21	108.4%	46.2	19.1	D
	Right Turn	273	271	99.3%	5.5	1.4	A
	Subtotal	304	303	99.6%	11.2	2.5	B
SB	Left Turn	136	143	104.8%	82.0	40.2	F
	Through	12	14	117.5%	55.4	23.6	E
	Right Turn	21	21	100.5%	36.2	32.9	D
	Subtotal	169	178	105.1%	73.9	36.5	E
EB	Left Turn	64	64	100.5%	86.4	32.8	F
	Through	618	630	101.9%	17.3	2.5	B
	Right Turn	14	15	104.3%	8.9	6.4	A
	Subtotal	696	709	101.9%	23.5	2.8	C
WB	Left Turn	131	138	105.6%	54.9	8.1	D
	Through	485	490	100.9%	13.2	2.2	B
	Right Turn	116	118	101.3%	5.2	0.6	A
	Subtotal	732	746	101.8%	19.4	2.2	B
Total		1,901	1,935	101.8%	24.3	2.7	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	185	186	100.6%	30.2	4.3	C
	Through						
	Right Turn	59	61	102.5%	6.4	0.9	A
	Subtotal	244	247	101.1%	24.1	3.2	C
EB	Left Turn	76	79	104.1%	62.3	8.8	E
	Through	955	969	101.4%	26.9	8.3	C
	Right Turn						
	Subtotal	1,031	1,048	101.6%	29.7	7.6	C
WB	Left Turn						
	Through	673	684	101.7%	13.0	2.7	B
	Right Turn	299	280	93.6%	9.7	2.4	A
	Subtotal	972	964	99.2%	12.0	2.6	B
Total		2,247	2,258	100.5%	21.6	3.9	C

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	158	158	100.3%	37.4	4.9	D
	Through	1	1	90.0%	9.0	19.1	A
	Right Turn	140	138	98.8%	36.7	4.5	D
	Subtotal	299	298	99.5%	37.2	3.5	D
EB	Left Turn						
	Through	667	673	101.0%	34.3	4.0	C
	Right Turn	473	480	101.4%	37.1	4.1	D
	Subtotal	1,140	1,153	101.2%	35.5	4.0	D
WB	Left Turn	454	453	99.7%	70.6	5.1	E
	Through	832	828	99.5%	13.0	2.2	B
	Right Turn						
	Subtotal	1,286	1,281	99.6%	33.2	2.7	C
Total		2,725	2,732	100.2%	34.6	1.8	C

Intersection 7 | **SR 113 NB Ramps/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	327	330	100.8%	45.6	15.2	D
	Through	1	1	110.0%	9.7	15.8	A
	Right Turn	289	282	97.4%	11.5	2.0	B
	Subtotal	617	612	99.2%	29.5	9.5	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	90	89	98.9%	55.2	12.2	E
	Through	735	741	100.8%	17.0	3.2	B
	Right Turn						
	Subtotal	825	830	100.6%	21.0	3.8	C
WB	Left Turn						
	Through	958	951	99.3%	25.4	6.0	C
	Right Turn	140	143	101.8%	13.0	3.7	B
	Subtotal	1,098	1,094	99.6%	23.7	5.7	C
Total		2,540	2,536	99.9%	24.3	5.5	C

Intersection 8 | **Sycamore Ln/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	197	195	98.8%	45.1	7.5	D
	Through	34	34	98.5%	42.4	8.4	D
	Right Turn	35	32	91.1%	13.9	5.8	B
	Subtotal	266	260	97.7%	41.2	6.5	D
SB	Left Turn	78	80	102.9%	44.0	13.2	D
	Through	61	61	99.2%	37.0	7.8	D
	Right Turn	213	216	101.4%	12.6	3.8	B
	Subtotal	352	357	101.3%	24.1	5.4	C
EB	Left Turn	117	113	96.4%	51.1	8.8	D
	Through	585	592	101.2%	31.0	2.7	C
	Right Turn	177	179	101.2%	21.9	4.0	C
	Subtotal	879	884	100.6%	31.9	2.7	C
WB	Left Turn	30	30	99.3%	48.4	8.7	D
	Through	618	615	99.4%	24.4	2.6	C
	Right Turn	60	60	100.2%	17.8	4.3	B
	Subtotal	708	705	99.5%	24.8	2.5	C
Total		2,205	2,205	100.0%	29.5	1.5	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	518	164	136	419	37	167	58	69	51	151	101
Future Volume (veh/h)	31	518	164	136	419	37	167	58	69	51	151	101
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1854	1900	1863	1863	1727	1792	1814	1900	1863	1799	1900
Adj Flow Rate, veh/h	38	632	0	160	493	0	194	67	0	56	166	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	63	1283	0	206	1569	651	244	393	0	84	414	0
Arrive On Green	0.04	0.36	0.00	0.12	0.44	0.00	0.14	0.22	0.00	0.05	0.12	0.00
Sat Flow, veh/h	1691	3615	0	1774	3539	1468	1707	1814	0	1774	3509	0
Grp Volume(v), veh/h	38	632	0	160	493	0	194	67	0	56	166	0
Grp Sat Flow(s),veh/h/ln	1691	1761	0	1774	1770	1468	1707	1814	0	1774	1709	0
Q Serve(g_s), s	1.6	9.8	0.0	6.2	6.4	0.0	7.7	2.1	0.0	2.2	3.2	0.0
Cycle Q Clear(g_c), s	1.6	9.8	0.0	6.2	6.4	0.0	7.7	2.1	0.0	2.2	3.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	63	1283	0	206	1569	651	244	393	0	84	414	0
V/C Ratio(X)	0.60	0.49	0.00	0.78	0.31	0.00	0.80	0.17	0.00	0.67	0.40	0.00
Avail Cap(c_a), veh/h	960	2248	0	755	2259	937	969	1029	0	1007	1940	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.4	17.4	0.0	30.3	12.7	0.0	29.2	22.5	0.0	33.0	28.6	0.0
Incr Delay (d2), s/veh	9.0	0.3	0.0	6.1	0.4	0.0	5.8	0.2	0.0	8.8	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.8	0.0	3.4	3.2	0.0	4.1	1.1	0.0	1.3	1.5	0.0
LnGrp Delay(d),s/veh	42.4	17.7	0.0	36.4	13.1	0.0	35.0	22.7	0.0	41.9	29.2	0.0
LnGrp LOS	D	B		D	B		D	C		D	C	
Approach Vol, veh/h		670			653			261			222	
Approach Delay, s/veh		19.1			18.8			31.9			32.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	30.7	14.1	12.5	7.6	36.3	7.3	19.3
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	8.2	11.8	9.7	5.2	3.6	8.4	4.2	4.1
Green Ext Time (p_c), s	0.4	13.9	0.6	1.5	0.1	14.5	0.1	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	424	152	145	556	0	105	0	170	0	0	0
Future Volume (veh/h)	0	424	152	145	556	0	105	0	170	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	558	0	177	678	0	188	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.76	0.76	0.82	0.82	0.92	0.56	0.92	0.56	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1400	0	235	2227	0	253	0	0	0	5	0
Arrive On Green	0.00	0.40	0.00	0.13	0.63	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	188		0	-93137	0
Grp Volume(v), veh/h	0	558	0	177	678	0	188	20.5		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	4.5	0.0	3.8	3.5	0.0	4.0			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.5	0.0	3.8	3.5	0.0	4.0			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1400	0	235	2227	0	253			0	5	0
V/C Ratio(X)	0.00	0.40	0.00	0.75	0.30	0.00	0.74			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2784	0	675	2873	0	900			0	709	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.6	0.0	16.5	3.4	0.0	16.2			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.9	0.1	0.0	4.3			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.0	2.1	1.6	0.0	2.2			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.7	0.0	21.4	3.4	0.0	20.5			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		558			855						0	
Approach Delay, s/veh		8.7			7.1						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		29.8	9.6	0.0	9.2	20.6		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		5.5	6.0	0.0	5.8	6.5		
Green Ext Time (p_c), s		9.4	0.4	0.0	0.3	9.1		

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	610	102	204	589	88	59	80	141	204	208	75
Future Volume (veh/h)	40	610	102	204	589	88	59	80	141	204	208	75
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1844	1900
Adj Flow Rate, veh/h	53	813	0	265	765	0	76	103	0	246	251	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.78	0.78	0.78	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	80	1212	542	370	1436	0	100	263	0	305	474	0
Arrive On Green	0.05	0.34	0.00	0.11	0.41	0.00	0.06	0.14	0.00	0.17	0.26	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1844	0
Grp Volume(v), veh/h	53	813	0	265	765	0	76	103	0	246	251	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1844	0
Q Serve(g_s), s	2.1	14.2	0.0	5.4	11.9	0.0	3.1	3.7	0.0	9.6	8.5	0.0
Cycle Q Clear(g_c), s	2.1	14.2	0.0	5.4	11.9	0.0	3.1	3.7	0.0	9.6	8.5	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	80	1212	542	370	1436	0	100	263	0	305	474	0
V/C Ratio(X)	0.66	0.67	0.00	0.72	0.53	0.00	0.76	0.39	0.00	0.81	0.53	0.00
Avail Cap(c_a), veh/h	735	2201	984	1413	2201	0	728	767	0	735	764	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.0	20.3	0.0	31.2	16.3	0.0	33.6	28.2	0.0	28.8	23.1	0.0
Incr Delay (d2), s/veh	3.4	0.2	0.0	1.0	0.1	0.0	11.2	0.9	0.0	6.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.9	0.0	2.6	5.8	0.0	1.8	1.9	0.0	5.2	4.5	0.0
LnGrp Delay(d),s/veh	37.4	20.5	0.0	32.2	16.4	0.0	44.8	29.1	0.0	34.8	24.2	0.0
LnGrp LOS	D	C		C	B		D	C		C	C	
Approach Vol, veh/h		866			1030			179			497	
Approach Delay, s/veh		21.6			20.5			35.8			29.5	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	34.4	8.1	22.6	11.9	29.8	16.4	14.3
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.1	13.9	5.1	10.5	7.4	16.2	11.6	5.7
Green Ext Time (p_c), s	0.1	8.7	0.2	2.3	0.5	8.6	0.9	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	752	192	58	727	28	138	3	94	34	10	16
Future Volume (veh/h)	11	752	192	58	727	28	138	3	94	34	10	16
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	14	952	170	78	982	37	172	4	1	37	11	0
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	31	1591	685	101	1714	65	225	191	48	68	85	0
Arrive On Green	0.02	0.45	0.45	0.06	0.49	0.49	0.13	0.13	0.13	0.04	0.05	0.00
Sat Flow, veh/h	1774	3539	1523	1660	3477	131	1774	1425	356	1774	1863	0
Grp Volume(v), veh/h	14	952	170	78	500	519	172	0	5	37	11	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1523	1660	1770	1838	1774	0	1781	1774	1863	0
Q Serve(g_s), s	0.5	12.1	4.1	2.8	12.0	12.0	5.6	0.0	0.1	1.2	0.3	0.0
Cycle Q Clear(g_c), s	0.5	12.1	4.1	2.8	12.0	12.0	5.6	0.0	0.1	1.2	0.3	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	31	1591	685	101	872	906	225	0	239	68	85	0
V/C Ratio(X)	0.45	0.60	0.25	0.77	0.57	0.57	0.76	0.00	0.02	0.54	0.13	0.00
Avail Cap(c_a), veh/h	592	1772	762	554	886	920	592	0	1189	592	1244	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.2	12.4	10.2	27.7	10.7	10.7	25.3	0.0	22.5	28.3	27.4	0.0
Incr Delay (d2), s/veh	12.1	0.5	0.2	14.1	1.0	0.9	6.4	0.0	0.0	12.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.9	1.8	1.7	5.9	6.2	3.1	0.0	0.1	0.8	0.2	0.0
LnGrp Delay(d),s/veh	41.3	12.9	10.4	41.8	11.7	11.7	31.6	0.0	22.6	40.3	28.7	0.0
LnGrp LOS	D	B	B	D	B	B	C		C	D	C	
Approach Vol, veh/h		1136			1097			177			48	
Approach Delay, s/veh		12.9			13.8			31.4			37.6	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	8.2	5.5	34.0	6.8	13.5	8.1	31.4
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.6	2.3	2.5	14.0	3.2	2.1	4.8	14.1
Green Ext Time (p_c), s	0.5	0.1	0.0	12.7	0.1	0.1	0.2	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	16	15	95.6%	3.9	1.5	A
	Subtotal	16	15	95.6%	3.9	1.5	A
EB	Left Turn						
	Through	696	707	101.6%	1.2	0.2	A
	Right Turn						
	Subtotal	696	707	101.6%	1.2	0.2	A
WB	Left Turn						
	Through	491	495	100.8%	2.6	0.5	A
	Right Turn	32	32	99.4%	2.1	0.8	A
	Subtotal	523	527	100.7%	2.5	0.5	A
Total		1,235	1,249	101.1%	1.8	0.2	A

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	22	233	37	0	224	271	34	0	38	46	201
Future Vol, veh/h	0	22	233	37	0	224	271	34	0	38	46	201
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.91	0.91	0.91	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	281	45	0	246	298	37	0	43	52	228
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	19.9	18.4	16.4
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	26%
Vol Thru, %	0%	19%	0%	86%	0%	89%	61%
Vol Right, %	0%	81%	0%	14%	0%	11%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	247	22	270	224	305	82
LT Vol	38	0	22	0	224	0	21
Through Vol	0	46	0	233	0	271	50
RT Vol	0	201	0	37	0	34	11
Lane Flow Rate	43	281	27	325	246	335	88
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.095	0.534	0.056	0.627	0.494	0.617	0.198
Departure Headway (Hd)	7.942	6.848	7.55	6.939	7.223	6.632	8.08
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	528	474	520	500	543	444
Service Time	5.683	4.588	5.293	4.682	4.965	4.374	6.137
HCM Lane V/C Ratio	0.095	0.532	0.057	0.625	0.492	0.617	0.198
HCM Control Delay	11.5	17.2	10.7	20.7	16.8	19.5	13.1
HCM Lane LOS	B	C	B	C	C	C	B
HCM 95th-tile Q	0.3	3.1	0.2	4.3	2.7	4.2	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			✥	
Traffic Vol, veh/h	0	21	50	11
Future Vol, veh/h	0	21	50	11
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	54	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.1
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	490	27	144	526	21	107
Future Volume (veh/h)	490	27	144	526	21	107
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	551	0	150	548	25	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.89	0.89	0.96	0.96	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	894	0	201	1305	54	0
Arrive On Green	0.48	0.00	0.11	0.70	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1709	0
Grp Volume(v), veh/h	551	0	150	548	26	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	8.2	0.0	3.1	4.7	0.5	0.0
Cycle Q Clear(g_c), s	8.2	0.0	3.1	4.7	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	894	0	201	1305	56	0
V/C Ratio(X)	0.62	0.00	0.74	0.42	0.46	0.00
Avail Cap(c_a), veh/h	1746	0	950	1746	952	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	16.0	2.4	17.8	0.0
Incr Delay (d2), s/veh	0.7	0.0	5.4	0.2	12.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	1.8	2.4	0.4	0.0
LnGrp Delay(d),s/veh	7.9	0.0	21.4	2.6	29.9	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	551			698	26	
Approach Delay, s/veh	7.9			6.6	29.9	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.2	23.9				32.2		5.2
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	5.1	10.2				6.7		2.5
Green Ext Time (p_c), s	0.3	7.8				8.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	47	41	88.1%	4.6	0.6	A
	Through	44	46	104.3%	3.6	0.6	A
	Right Turn	20	20	102.0%	3.4	0.9	A
	Subtotal	111	108	97.0%	4.0	0.4	A
SB	Left Turn	3	3	96.7%	1.2	1.3	A
	Through	107	105	97.9%	0.3	0.2	A
	Right Turn	1	1	90.0%	0.0	0.0	A
	Subtotal	111	109	97.7%	0.3	0.2	A
EB	Left Turn						
	Through	3	3	96.7%	4.3	5.2	A
	Right Turn	63	62	98.9%	3.3	0.6	A
	Subtotal	66	65	98.8%	3.4	0.7	A
WB	Left Turn	20	18	90.5%	4.6	1.4	A
	Through	4	4	100.0%	1.8	2.6	A
	Right Turn						
	Subtotal	24	22	92.1%	4.7	1.4	A
Total		312	304	97.3%	2.7	0.2	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	13	12	94.6%	58.0	16.3	E
	Through	13	12	88.5%	44.2	18.1	D
	Right Turn	184	185	100.8%	3.4	0.8	A
	Subtotal	210	209	99.6%	8.0	1.9	A
SB	Left Turn	139	135	97.4%	38.8	6.6	D
	Through	13	14	105.4%	29.1	11.8	C
	Right Turn	38	37	97.4%	14.0	6.6	B
	Subtotal	190	186	97.9%	33.0	5.6	C
EB	Left Turn	42	41	97.9%	58.8	17.0	E
	Through	521	514	98.6%	13.8	2.2	B
	Right Turn	15	15	98.7%	5.6	5.0	A
	Subtotal	578	570	98.6%	17.5	3.5	B
WB	Left Turn	197	205	103.8%	50.0	7.2	D
	Through	664	673	101.4%	11.3	3.3	B
	Right Turn	68	67	98.8%	5.5	1.5	A
	Subtotal	929	945	101.7%	19.0	2.2	B
Total		1,907	1,910	100.2%	18.7	1.5	B

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	231	241	104.4%	33.5	3.5	C
	Through						
	Right Turn	58	60	104.0%	8.3	2.7	A
	Subtotal	289	302	104.3%	28.2	2.7	C
EB	Left Turn	35	32	90.9%	50.4	9.3	D
	Through	813	808	99.4%	10.8	1.3	B
	Right Turn						
	Subtotal	848	840	99.1%	12.3	1.4	B
WB	Left Turn						
	Through	871	885	101.6%	11.5	1.7	B
	Right Turn	175	174	99.1%	8.8	2.0	A
	Subtotal	1,046	1,059	101.2%	11.0	1.7	B
Total		2,183	2,200	100.8%	13.9	1.2	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	125	126	100.6%	36.0	3.9	D
	Through	1	2	160.0%	7.4	12.9	A
	Right Turn	96	97	101.4%	35.4	6.8	D
	Subtotal	222	225	101.2%	35.5	3.5	D
EB	Left Turn						
	Through	770	770	100.0%	21.2	3.9	C
	Right Turn	274	278	101.4%	17.3	2.8	B
	Subtotal	1,044	1,048	100.4%	20.2	3.6	C
WB	Left Turn	240	232	96.7%	48.9	4.0	D
	Through	950	960	101.0%	7.2	1.3	A
	Right Turn						
	Subtotal	1,190	1,192	100.2%	14.8	1.6	B
Total		2,456	2,465	100.3%	19.0	1.7	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	392	396	100.9%	35.1	5.3	D
	Through						
	Right Turn	532	542	101.8%	28.4	12.9	C
	Subtotal	924	937	101.4%	31.3	8.2	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	110	108	98.3%	66.7	8.9	E
	Through	791	790	99.8%	11.9	1.7	B
	Right Turn						
	Subtotal	901	898	99.6%	18.4	2.1	B
WB	Left Turn						
	Through	796	795	99.9%	15.6	1.5	B
	Right Turn	152	157	103.0%	7.1	0.6	A
	Subtotal	948	951	100.4%	14.2	1.3	B
Total		2,773	2,786	100.5%	21.4	2.7	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	123	119	96.8%	41.3	5.8	D
	Through	60	58	97.3%	32.4	7.5	C
	Right Turn	45	46	102.2%	7.5	6.0	A
	Subtotal	228	224	98.0%	32.2	4.9	C
SB	Left Turn	149	146	97.7%	42.4	5.2	D
	Through	77	81	105.1%	38.8	4.2	D
	Right Turn	100	99	99.4%	13.1	5.4	B
	Subtotal	326	326	99.9%	31.6	4.3	C
EB	Left Turn	142	140	98.5%	56.4	9.8	E
	Through	812	830	102.3%	20.4	3.5	C
	Right Turn	132	130	98.2%	12.1	1.9	B
	Subtotal	1,086	1,100	101.3%	24.0	2.9	C
WB	Left Turn	25	23	90.8%	55.5	15.9	E
	Through	638	645	101.1%	23.9	3.2	C
	Right Turn	96	93	96.7%	18.4	5.8	B
	Subtotal	759	760	100.2%	24.1	3.5	C
Total		2,399	2,409	100.4%	26.0	2.3	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	767	141	85	477	62	230	146	136	79	111	58
Future Volume (veh/h)	61	767	141	85	477	62	230	146	136	79	111	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1857	1900	1863	1863	1727	1792	1808	1900	1863	1793	1900
Adj Flow Rate, veh/h	66	834	0	93	524	0	267	170	0	104	146	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.86	0.86	0.86	0.76	0.76	0.76
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	85	1323	0	122	1391	577	311	507	0	136	596	0
Arrive On Green	0.05	0.37	0.00	0.07	0.39	0.00	0.18	0.28	0.00	0.08	0.17	0.00
Sat Flow, veh/h	1691	3621	0	1774	3539	1468	1707	1808	0	1774	3497	0
Grp Volume(v), veh/h	66	834	0	93	524	0	267	170	0	104	146	0
Grp Sat Flow(s),veh/h/ln	1691	1764	0	1774	1770	1468	1707	1808	0	1774	1704	0
Q Serve(g_s), s	3.5	17.5	0.0	4.7	9.5	0.0	13.7	6.7	0.0	5.2	3.3	0.0
Cycle Q Clear(g_c), s	3.5	17.5	0.0	4.7	9.5	0.0	13.7	6.7	0.0	5.2	3.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	85	1323	0	122	1391	577	311	507	0	136	596	0
V/C Ratio(X)	0.77	0.63	0.00	0.76	0.38	0.00	0.86	0.34	0.00	0.77	0.24	0.00
Avail Cap(c_a), veh/h	749	1758	0	589	1763	732	756	801	0	786	1509	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.4	23.1	0.0	41.3	19.5	0.0	35.8	25.8	0.0	40.9	32.1	0.0
Incr Delay (d2), s/veh	13.6	0.5	0.0	9.5	0.6	0.0	6.8	0.4	0.0	8.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	8.5	0.0	2.6	4.8	0.0	7.0	3.4	0.0	2.9	1.6	0.0
LnGrp Delay(d),s/veh	56.0	23.6	0.0	50.8	20.1	0.0	42.7	26.2	0.0	49.5	32.3	0.0
LnGrp LOS	E	C		D	C		D	C		D	C	
Approach Vol, veh/h		900			617			437			250	
Approach Delay, s/veh		26.0			24.8			36.2			39.5	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	38.9	20.5	19.8	9.6	40.5	10.9	29.3				
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0				
Max Q Clear Time (g_c+I1), s	6.7	19.5	15.7	5.3	5.5	11.5	7.2	8.7				
Green Ext Time (p_c), s	0.2	14.4	0.8	2.1	0.2	16.8	0.3	2.0				
Intersection Summary												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	956	102	66	547	0	111	0	127	0	0	0
Future Volume (veh/h)	0	956	102	66	547	0	111	0	127	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	976	0	74	615	0	117	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.89	0.89	0.89	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1834	0	124	2431	0	160	0	0	0	5	0
Arrive On Green	0.00	0.52	0.00	0.07	0.69	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	117		0	-93137	0
Grp Volume(v), veh/h	0	976	0	74	615	0	117	24.1		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	7.4	0.0	1.6	2.7	0.0	2.6			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.4	0.0	1.6	2.7	0.0	2.6			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1834	0	124	2431	0	160			0	5	0
V/C Ratio(X)	0.00	0.53	0.00	0.60	0.25	0.00	0.73			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2715	0	658	2802	0	878			0	691	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	0.0	18.2	2.4	0.0	17.9			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.5	0.1	0.0	6.2			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	1.0	1.3	0.0	1.5			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	6.7	0.0	22.8	2.5	0.0	24.1			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		976			689						0	
Approach Delay, s/veh		6.7			4.6						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		32.8	7.7	0.0	6.8	25.9		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		4.7	4.6	0.0	3.6	9.4		
Green Ext Time (p_c), s		13.1	0.2	0.0	0.1	11.5		

Intersection Summary		
HCM 2010 Ctrl Delay		7.1
HCM 2010 LOS		A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	921	180	182	553	172	142	160	199	122	122	51
Future Volume (veh/h)	69	921	180	182	553	172	142	160	199	122	122	51
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1853	1900	1863	1841	1900
Adj Flow Rate, veh/h	77	1023	0	204	621	0	160	180	0	140	140	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	100	1391	622	302	1505	0	205	340	0	185	314	0
Arrive On Green	0.06	0.39	0.00	0.09	0.43	0.00	0.12	0.18	0.00	0.10	0.17	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1853	0	1774	1841	0
Grp Volume(v), veh/h	77	1023	0	204	621	0	160	180	0	140	140	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1853	0	1774	1841	0
Q Serve(g_s), s	3.1	18.2	0.0	4.3	9.0	0.0	6.5	6.5	0.0	5.6	5.0	0.0
Cycle Q Clear(g_c), s	3.1	18.2	0.0	4.3	9.0	0.0	6.5	6.5	0.0	5.6	5.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	100	1391	622	302	1505	0	205	340	0	185	314	0
V/C Ratio(X)	0.77	0.74	0.00	0.68	0.41	0.00	0.78	0.53	0.00	0.76	0.45	0.00
Avail Cap(c_a), veh/h	723	2165	969	1390	2165	0	716	756	0	723	751	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.2	19.1	0.0	32.5	14.7	0.0	31.6	27.2	0.0	32.1	27.4	0.0
Incr Delay (d2), s/veh	4.6	0.3	0.0	1.0	0.1	0.0	6.3	1.3	0.0	7.5	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.9	0.0	2.1	4.4	0.0	3.5	3.4	0.0	3.1	2.7	0.0
LnGrp Delay(d),s/veh	38.9	19.3	0.0	33.5	14.8	0.0	37.9	28.5	0.0	39.5	28.6	0.0
LnGrp LOS	D	B		C	B		D	C		D	C	
Approach Vol, veh/h		1100			825			340			280	
Approach Delay, s/veh		20.7			19.4			32.9			34.1	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	36.3	12.6	16.5	10.5	33.9	11.7	17.5
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.1	11.0	8.5	7.0	6.3	20.2	7.6	8.5
Green Ext Time (p_c), s	0.1	9.6	0.4	2.1	0.3	8.8	0.5	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1109	102	73	797	35	93	10	99	41	9	17
Future Volume (veh/h)	31	1109	102	73	797	35	93	10	99	41	9	17
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	34	1232	52	82	896	37	109	12	0	49	11	0
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.85	0.85	0.85	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	64	1695	707	105	1750	72	145	171	0	83	105	0
Arrive On Green	0.04	0.48	0.48	0.06	0.51	0.51	0.08	0.09	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1774	3539	1476	1660	3458	143	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	34	1232	52	82	459	474	109	12	0	49	11	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1476	1660	1770	1831	1774	1863	0	1774	1863	0
Q Serve(g_s), s	1.1	16.6	1.1	2.9	10.3	10.3	3.6	0.4	0.0	1.6	0.3	0.0
Cycle Q Clear(g_c), s	1.1	16.6	1.1	2.9	10.3	10.3	3.6	0.4	0.0	1.6	0.3	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	64	1695	707	105	896	927	145	171	0	83	105	0
V/C Ratio(X)	0.53	0.73	0.07	0.78	0.51	0.51	0.75	0.07	0.00	0.59	0.10	0.00
Avail Cap(c_a), veh/h	596	1784	744	558	896	927	596	1252	0	596	1252	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	12.4	8.4	27.5	9.8	9.8	26.7	24.7	0.0	27.8	26.7	0.0
Incr Delay (d2), s/veh	8.0	1.5	0.1	13.9	0.6	0.6	8.9	0.2	0.0	12.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.4	0.5	1.7	5.1	5.3	2.1	0.2	0.0	1.1	0.2	0.0
LnGrp Delay(d),s/veh	36.2	13.9	8.4	41.3	10.4	10.4	35.7	24.9	0.0	39.8	27.5	0.0
LnGrp LOS	D	B	A	D	B	B	D	C		D	C	
Approach Vol, veh/h		1318			1015			121			60	
Approach Delay, s/veh		14.3			12.9			34.6			37.5	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	8.9	6.7	34.6	7.3	11.0	8.3	33.0
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	5.6	2.3	3.1	12.3	3.6	2.4	4.9	18.6
Green Ext Time (p_c), s	0.3	0.1	0.1	14.4	0.2	0.1	0.2	9.7

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	19	18	95.8%	3.9	1.4	A
	Subtotal	19	18	95.8%	3.9	1.4	A
EB	Left Turn						
	Through	578	568	98.2%	0.9	0.2	A
	Right Turn						
	Subtotal	578	568	98.2%	0.9	0.2	A
WB	Left Turn						
	Through	641	649	101.3%	2.8	0.5	A
	Right Turn	86	87	100.7%	2.0	0.7	A
	Subtotal	727	736	101.2%	2.7	0.5	A
Total		1,324	1,322	99.8%	1.9	0.3	A

Major Street	Covell Blvd
Minor Street	Lake Blvd

Project	West Davis AAC EIR
Scenario	Existing Plus Project Conditions
Peak Hour	AM Peak Hour

Turn Movement Volumes

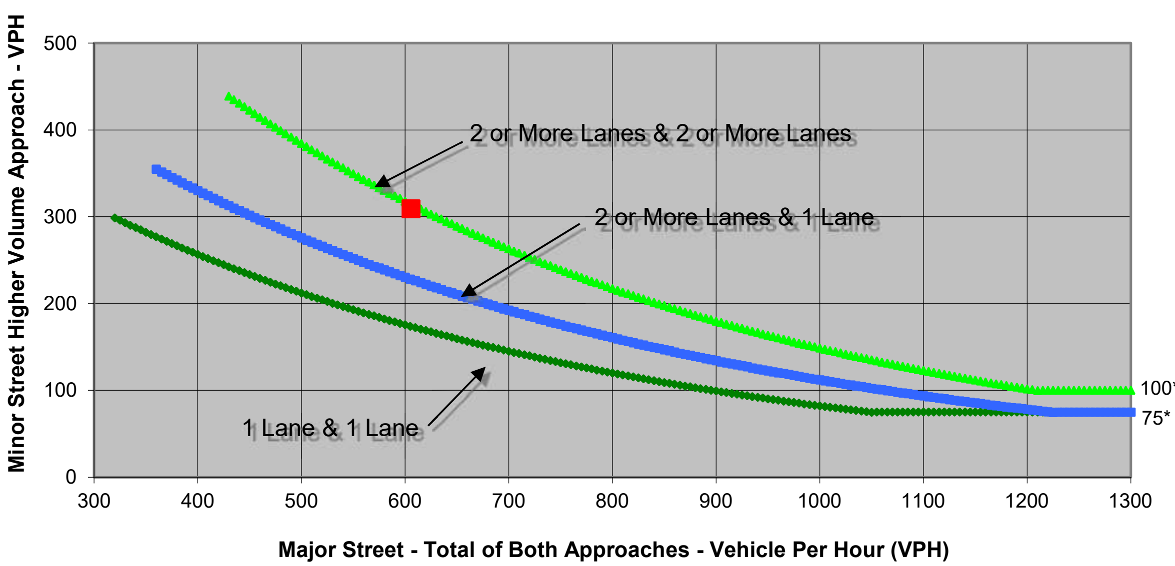
	NB	SB	EB	WB
Left	34	36	9	106
Through	61	53	262	179
Right	214	10	39	11
Total	309	99	310	296

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR

ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**606**	**309**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Project	West Davis AAC EIR			
Major Street	Covell Blvd		Scenario	Existing Plus Project Conditions
Minor Street	Lake Blvd		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	34	36	9	106
Through	61	53	262	179
Right	214	10	39	11
Total	309	99	310	296

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16.7
Approach with Worst Case Delay	NB
Total Vehicles on Approach	309

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Plus Project Conditions	**1.4**	**309**	**1,014**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

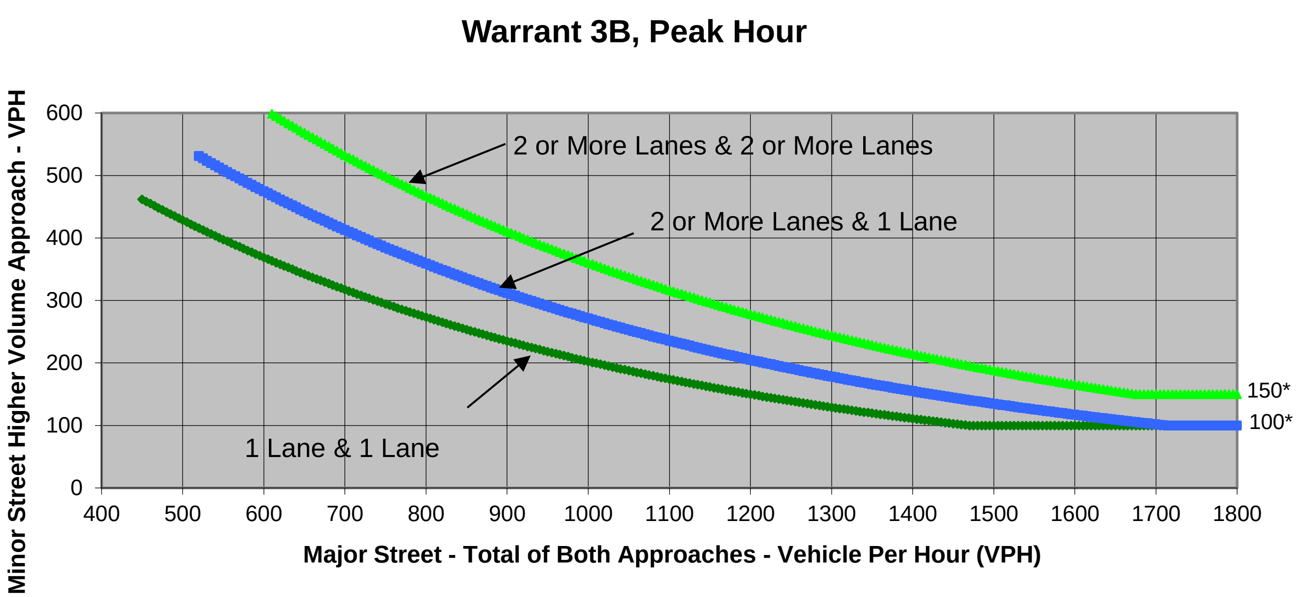
Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Project Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	11
Through	106	101	4	3
Right	31	0	57	2
Total	194	102	61	16

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**296**	**61**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Risling Ct
Minor Street	Hospital Dwy

Project	West Davis AAC EIR
Scenario	Existing Plus Project Conditions
Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	11
Through	106	101	4	3
Right	31	0	57	2
Total	194	102	61	16

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	16

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing PlusProject Conditions	**0.1**	**61**	**373**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Project Conditions
		Peak Hour	PM Peak Hour

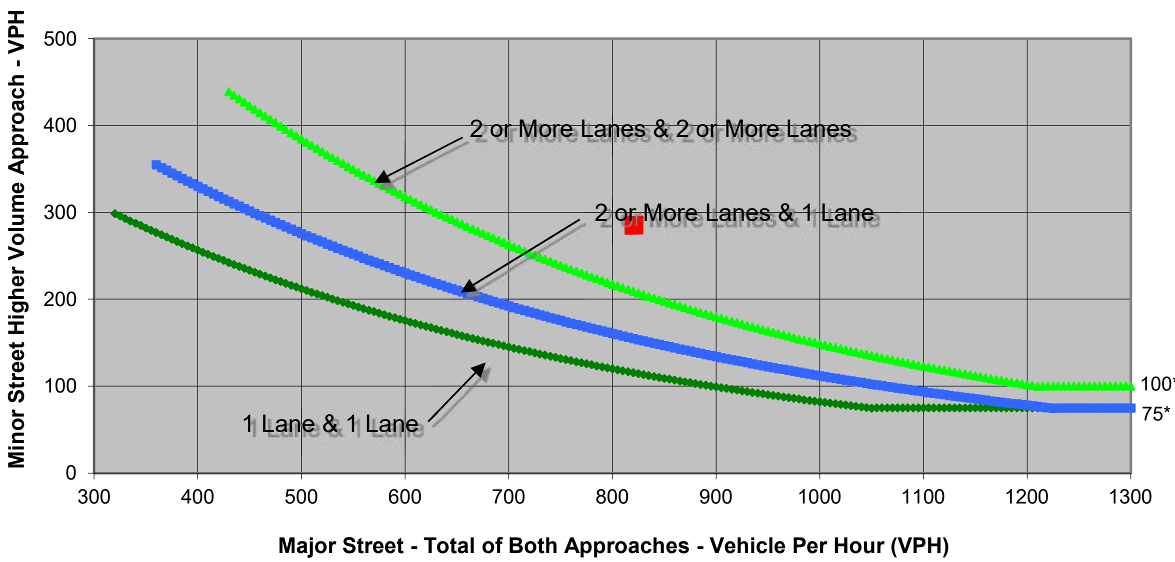
Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	224
Through	46	50	233	271
Right	201	11	37	34
Total	285	82	292	529

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR
ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**821**	**285**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Project Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	224
Through	46	50	233	271
Right	201	11	37	34
Total	285	82	292	529

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	17.2
Approach with Worst Case Delay	NB
Total Vehicles on Approach	285

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Plus Project Conditions	**1.4**	**285**	**1,188**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

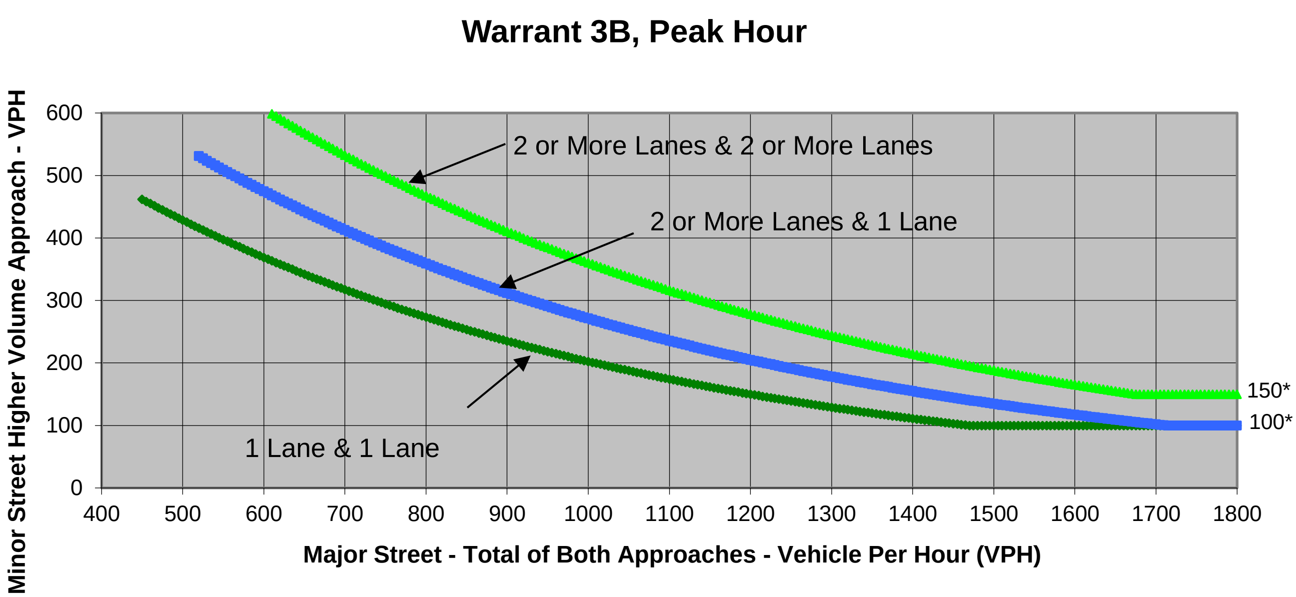
Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Project Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	3	0	20
Through	44	107	3	4
Right	20	1	63	0
Total	111	111	66	24

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**222**	**66**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Project Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	3	0	20
Through	44	107	3	4
Right	20	1	63	0
Total	111	111	66	24

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	11.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	24

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing PlusProject Conditions	**0.1**	**66**	**312**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Shared	900	50	3	75	5	75	15	0%	0%
NB	Shared	350	25	3	50	9	50	13	0%	0%
SB	Shared	2,000	25	1	25	10	25	26	0%	0%
WB	Shared	950	25	3	50	4	50	12	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	75	9	150	24	175	39	0%	0%
	Through	400	125	9	225	21	275	40	1%	0%
	Through/Right	400	125	12	225	15	250	24	0%	0%
NB	Left Turn	125	25	5	50	18	75	41	0%	0%
	Through	1,725	100	15	175	56	250	94	6%	0%
	Right Turn	75	75	1	75	4	75	3	3%	0%
SB	Left Turn	350	175	24	275	54	325	50	36%	1%
	Through/Right	125	50	10	125	17	150	0	0%	0%
WB	U/Left Turns	325	100	9	150	12	150	17	0%	0%
	Left Turn	325	50	9	125	15	150	32	0%	0%
	Through	575	125	12	200	21	225	27	3%	0%
	Right Turn	150	25	13	100	48	175	54	0%	0%

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	100	12	150	16	175	3	1%	0%
	Through	575	200	20	400	54	500	103	9%	0%
SB	Left Turn	250	125	10	200	19	225	25	0%	0%
	Through/Right	1,600	50	8	75	41	125	100	0%	0%
WB	Through	350	150	14	275	20	325	54	26%	0%
	Right Turn	75	75	4	100	3	100	0	4%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	250	15	400	13	350	8	0%	4%
	Through/Right	350	300	18	425	14	375	3	0%	7%
SB	Left/Through	1,425	125	11	175	15	200	23	0%	0%
	Right Turn	1,425	100	7	175	15	225	28	0%	0%
WB	Left Turn	225	225	4	250	7	225	0	43%	0%
	Through	500	375	24	600	64	525	86	15%	4%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	100	11	200	24	200	0	1%	0%
	Through	500	175	18	275	41	325	70	4%	0%
NB	Left/Through	1,675	225	33	350	89	425	130	0%	0%
	Right Turn	1,675	100	9	150	19	175	35	0%	0%
WB	Through	825	200	27	375	55	425	67	7%	0%
	Right Turn	150	75	8	150	19	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	100	8	200	12	200	0	1%	0%
	Through	400	175	11	275	20	325	34	9%	0%
	Through/Right	400	200	11	325	21	350	35	0%	0%
NB	Left Turn	125	125	3	175	5	150	0	19%	0%
	Through/Right	1,125	100	16	250	36	325	56	1%	0%
SB	Left Turn	125	75	9	150	13	150	1	2%	0%
	Through/Right	1,775	125	17	275	33	325	28	12%	0%
WB	Left Turn	125	50	6	125	12	150	0	0%	0%
	Through	5,800	150	11	250	20	275	40	12%	0%
	Through/Right	5,800	175	13	275	24	300	46	0%	0%

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

West Davis Active Adult Community Project EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	3	50	4	50	8	0%	0%
EB	Through	1,400	25	0	25	0	25	0	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Shared	900	50	2	75	5	75	8	0%	0%
NB	Shared	350	25	3	25	11	50	14	0%	0%
SB	Shared	2,000	25	0	25	5	25	16	0%	0%
WB	Shared	950	25	2	50	2	50	11	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	50	5	100	10	100	26	0%	0%
	Through	400	100	9	175	14	200	26	0%	0%
	Through/Right	400	75	8	150	12	200	26	0%	0%
NB	Left Turn	125	25	3	50	5	75	14	0%	0%
	Through	350	50	5	100	13	100	46	1%	0%
	Right Turn	75	75	1	75	5	75	3	2%	0%
SB	Left Turn	350	125	17	200	31	250	62	15%	0%
	Through/Right	125	50	9	125	22	125	1	0%	0%
WB	U/Left Turns	325	100	8	175	17	200	32	0%	0%
	Left Turn	325	75	6	150	20	225	78	0%	0%
	Through	575	100	12	250	28	300	77	4%	0%
	Right Turn	150	25	8	100	26	175	0	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	150	50	5	100	18	125	40	0%	0%
	Through	575	100	11	200	23	250	68	3%	0%
SB	Left Turn	250	175	6	250	14	275	7	2%	0%
	Through/Right	1,600	50	9	125	50	250	116	0%	0%
WB	Through	350	150	11	275	25	325	41	18%	0%
	Right Turn	75	50	5	100	6	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	350	175	23	325	27	350	19	0%	0%
	Through/Right	350	200	28	325	30	350	31	0%	1%
SB	Left/Through	1,425	100	9	175	13	200	23	0%	0%
	Right Turn	1,425	75	5	125	13	150	22	0%	0%
WB	U/Left Turns	225	175	9	225	11	225	5	5%	0%
	Through	500	125	21	275	47	350	75	3%	0%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	175	100	11	175	19	175	13	3%	0%
	Through	500	125	11	200	24	250	51	2%	0%
NB	Left/Through	1,675	225	16	350	39	400	58	0%	0%
	Right Turn	1,675	225	55	400	168	475	238	0%	0%
WB	Through	425	125	8	200	15	225	32	3%	0%
	Right Turn	150	50	4	100	13	175	3	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	175	125	8	200	11	200	0	4%	0%
	Through	400	175	15	275	26	300	29	6%	0%
	Through/Right	400	200	15	300	25	325	34	0%	0%
NB	Left Turn	125	100	3	150	6	150	0	7%	0%
	Through/Right	1,125	75	7	175	21	250	43	2%	0%
SB	Left Turn	125	125	6	175	5	150	0	12%	0%
	Through/Right	1,775	125	23	275	49	325	67	8%	0%
WB	Left Turn	125	50	8	100	21	150	37	0%	0%
	Through	5,800	150	17	250	30	275	40	12%	0%
	Through/Right	5,800	175	21	275	29	325	39	0%	0%

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Queue Length | **PM Peak Hour**

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	1	50	2	50	10	0%	0%
EB	Through	1,400	25	0	25	0	25	0	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										

Arterial Level of Service: EB Route 1, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
SR 113 SB Ramps	6	-	-	0.1	-
Route 2	7	-	-	0.1	-
Total		-	-	0.4	-

Arterial Level of Service: EB Route 1, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.2	22.8	0.1	14
	5	19.9	32.0	0.1	13
SR 113 SB Ramps	6	22.9	30.6	0.1	9
Route 2	7	15.5	25.6	0.1	14
Total		74.6	111.0	0.4	12

Arterial Level of Service: EB Route 1, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.3	22.8	0.1	14
	5	26.1	37.6	0.1	11
SR 113 SB Ramps	6	30.9	38.4	0.1	7
Route 2	7	17.5	27.6	0.1	13
Total		90.9	126.4	0.4	11

Arterial Level of Service: EB Route 1, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.5	20.9	0.1	15
	5	21.1	33.0	0.1	13
SR 113 SB Ramps	6	29.3	36.9	0.1	7
Route 2	7	16.5	26.6	0.1	14
Total		81.4	117.4	0.4	12

Arterial Level of Service: EB Route 1, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.8	21.2	0.1	15
	5	17.5	29.7	0.1	14
SR 113 SB Ramps	6	21.9	29.6	0.1	9
Route 2	7	15.7	25.9	0.1	14
Total		69.9	106.3	0.4	13

Arterial Level of Service: EB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	15.9	22.6	0.1	14
	5	22.3	34.8	0.1	12
SR 113 SB Ramps	6	27.8	35.7	0.1	8
Route 2	7	17.1	27.6	0.1	13
Total		83.1	120.7	0.4	11

Arterial Level of Service: WB Route 1, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	-	-	0.3	-
SR 113 SB Ramps	6	-	-	0.1	-
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	13	-	-	0.1	-
Total		-	-	0.7	-

Arterial Level of Service: WB Route 1, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	39.0	65.9	0.3	18
SR 113 SB Ramps	6	4.2	17.7	0.1	21
John Jones Rd	5	13.9	21.5	0.1	13
Risling Ct	4	13.3	24.9	0.1	17
	13	2.6	10.2	0.1	31
Total		72.9	140.2	0.7	18

Arterial Level of Service: WB Route 1, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	47.3	75.0	0.3	16
SR 113 SB Ramps	6	7.4	20.6	0.1	18
John Jones Rd	5	14.9	22.5	0.1	12
Risling Ct	4	13.4	25.1	0.1	17
	13	2.6	10.2	0.1	31
Total		85.6	153.2	0.7	17

Arterial Level of Service: WB Route 1, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	44.8	71.4	0.3	16
SR 113 SB Ramps	6	8.2	21.7	0.1	17
John Jones Rd	5	12.3	19.9	0.1	14
Risling Ct	4	13.3	25.0	0.1	17
	13	2.4	10.0	0.1	31
Total		81.0	148.0	0.7	17

Arterial Level of Service: WB Route 1, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	38.1	65.1	0.3	18
SR 113 SB Ramps	6	4.7	18.0	0.1	20
John Jones Rd	5	14.0	21.5	0.1	13
Risling Ct	4	11.9	23.2	0.1	18
	13	2.6	10.3	0.1	30
Total		71.3	138.2	0.7	18

Arterial Level of Service: WB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	45.4	74.2	0.3	16
SR 113 SB Ramps	6	6.6	20.7	0.1	18
John Jones Rd	5	13.9	21.6	0.1	13
Risling Ct	4	13.5	25.6	0.1	17
	13	2.6	10.3	0.1	31
Total		82.0	152.5	0.7	17

Arterial Level of Service: EB Route 2, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
Route 4	6	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: EB Route 2, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.2	22.8	0.1	14
	5	19.9	32.0	0.1	13
Route 4	6	24.9	36.6	0.1	7
Total		61.1	91.4	0.3	11

Arterial Level of Service: EB Route 2, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.3	22.8	0.1	14
	5	26.1	37.6	0.1	11
Route 4	6	35.2	46.9	0.1	6
Total		77.5	107.3	0.3	9

Arterial Level of Service: EB Route 2, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.5	20.9	0.1	15
	5	21.1	33.0	0.1	13
Route 4	6	32.1	43.9	0.1	6
Total		67.7	97.8	0.3	10

Arterial Level of Service: EB Route 2, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.8	21.2	0.1	15
	5	17.5	29.7	0.1	14
Route 4	6	23.4	35.1	0.1	8
Total		55.6	86.0	0.3	12

Arterial Level of Service: EB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	15.9	22.6	0.1	14
	5	22.3	34.8	0.1	12
Route 4	6	30.5	42.8	0.1	6
Total		68.8	100.2	0.3	10

Arterial Level of Service: WB Route 2, Interval #0 7:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	13	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: WB Route 2, Interval #1 7:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.3	24.9	0.1	17
	13	2.6	10.2	0.1	31
Total		15.8	35.1	0.3	29

Arterial Level of Service: WB Route 2, Interval #2 8:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.4	25.1	0.1	17
	13	2.6	10.2	0.1	31
Total		16.0	35.2	0.3	29

Arterial Level of Service: WB Route 2, Interval #3 8:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.3	25.0	0.1	17
	13	2.4	10.0	0.1	31
Total		15.7	35.0	0.3	29

Arterial Level of Service: WB Route 2, Interval #4 8:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	11.9	23.2	0.1	18
	13	2.6	10.3	0.1	30
Total		14.5	33.5	0.3	30

Arterial Level of Service: WB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.5	25.6	0.1	17
	13	2.6	10.3	0.1	31
Total		16.1	35.9	0.3	28

Arterial Level of Service: EB Route 1, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
SR 113 SB Ramps	6	-	-	0.1	-
Route 2	7	-	-	0.1	-
Total		-	-	0.4	-

Arterial Level of Service: EB Route 1, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.4	19.0	0.1	16
	5	10.1	22.2	0.1	19
SR 113 SB Ramps	6	19.2	27.0	0.1	10
Route 2	7	9.4	19.7	0.1	19
Total		51.0	87.9	0.4	16

Arterial Level of Service: EB Route 1, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.3	19.0	0.1	17
	5	11.6	23.7	0.1	18
SR 113 SB Ramps	6	24.5	32.2	0.1	8
Route 2	7	9.7	20.1	0.1	18
Total		58.1	94.9	0.4	15

Arterial Level of Service: EB Route 1, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	14.4	20.9	0.1	15
	5	11.4	23.5	0.1	18
SR 113 SB Ramps	6	22.0	29.6	0.1	9
Route 2	7	10.0	20.5	0.1	18
Total		57.8	94.5	0.4	15

Arterial Level of Service: EB Route 1, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.2	19.8	0.1	16
	5	9.2	21.2	0.1	20
SR 113 SB Ramps	6	19.8	27.6	0.1	10
Route 2	7	9.2	19.6	0.1	19
Total		51.5	88.2	0.4	16

Arterial Level of Service: EB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.3	20.1	0.1	16
	5	10.9	23.3	0.1	18
SR 113 SB Ramps	6	22.3	30.3	0.1	9
Route 2	7	9.8	20.4	0.1	18
Total		56.4	94.2	0.4	15

Arterial Level of Service: WB Route 1, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	-	-	0.3	-
SR 113 SB Ramps	6	-	-	0.1	-
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	13	-	-	0.1	-
Total		-	-	0.7	-

Arterial Level of Service: WB Route 1, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	37.8	65.7	0.3	18
SR 113 SB Ramps	6	6.2	19.8	0.1	19
John Jones Rd	5	9.2	16.7	0.1	16
Risling Ct	4	10.6	22.6	0.1	19
	13	2.6	10.2	0.1	31
Total		66.3	135.0	0.7	19

Arterial Level of Service: WB Route 1, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	36.1	64.3	0.3	18
SR 113 SB Ramps	6	6.7	20.6	0.1	18
John Jones Rd	5	12.4	19.9	0.1	14
Risling Ct	4	11.0	22.8	0.1	19
	13	2.8	10.4	0.1	30
Total		69.0	138.1	0.7	19

Arterial Level of Service: WB Route 1, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	35.2	63.4	0.3	19
SR 113 SB Ramps	6	7.6	21.6	0.1	17
John Jones Rd	5	10.5	18.1	0.1	15
Risling Ct	4	9.6	21.3	0.1	20
	13	2.9	10.5	0.1	30
Total		65.8	134.9	0.7	19

Arterial Level of Service: WB Route 1, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	34.3	62.4	0.3	19
SR 113 SB Ramps	6	7.3	21.1	0.1	18
John Jones Rd	5	10.2	17.8	0.1	15
Risling Ct	4	9.6	21.5	0.1	20
	13	2.8	10.4	0.1	30
Total		64.1	133.2	0.7	19

Arterial Level of Service: WB Route 1, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	37.2	66.4	0.3	18
SR 113 SB Ramps	6	7.1	21.3	0.1	17
John Jones Rd	5	10.7	18.4	0.1	15
Risling Ct	4	10.5	22.7	0.1	19
	13	2.8	10.6	0.1	30
Total		68.3	139.3	0.7	18

Arterial Level of Service: EB Route 2, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	-	-	0.1	-
	5	-	-	0.1	-
Route 4	6	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: EB Route 2, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.8	19.4	0.1	16
	5	10.7	22.7	0.1	19
Route 4	6	16.7	28.5	0.1	10
Total		40.2	70.6	0.3	14

Arterial Level of Service: EB Route 2, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.9	19.5	0.1	16
	5	11.4	23.5	0.1	18
Route 4	6	20.3	32.1	0.1	8
Total		44.5	75.1	0.3	13

Arterial Level of Service: EB Route 2, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.6	20.3	0.1	15
	5	10.8	22.9	0.1	19
Route 4	6	18.0	29.6	0.1	9
Total		42.4	72.7	0.3	14

Arterial Level of Service: EB Route 2, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	12.1	18.7	0.1	17
	5	8.6	20.6	0.1	21
Route 4	6	15.1	26.9	0.1	10
Total		35.8	66.3	0.3	15

Arterial Level of Service: EB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.1	19.8	0.1	16
	5	10.7	23.1	0.1	19
Route 4	6	18.1	30.2	0.1	9
Total		41.8	73.1	0.3	14

Arterial Level of Service: WB Route 2, Interval #0 4:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	-	-	0.1	-
	13	-	-	0.1	-
Total		-	-	0.3	-

Arterial Level of Service: WB Route 2, Interval #1 5:00

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	10.1	22.1	0.1	19
	13	2.6	10.2	0.1	31
Total		12.7	32.2	0.3	31

Arterial Level of Service: WB Route 2, Interval #2 5:15

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	10.4	22.4	0.1	19
	13	2.7	10.3	0.1	30
Total		13.2	32.7	0.3	31

Arterial Level of Service: WB Route 2, Interval #3 5:30

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	10.1	22.0	0.1	19
	13	2.9	10.5	0.1	30
Total		12.9	32.5	0.3	31

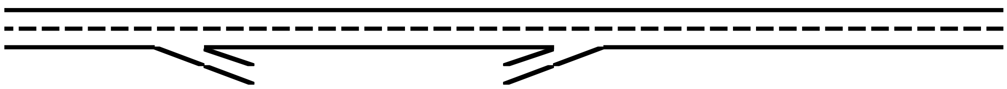
Arterial Level of Service: WB Route 2, Interval #4 5:45

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	9.2	21.2	0.1	20
	13	2.6	10.3	0.1	30
Total		11.9	31.5	0.3	32

Arterial Level of Service: WB Route 2, Entire Run

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	10.2	22.4	0.1	19
	13	2.8	10.5	0.1	30
Total		13.0	32.9	0.3	31

Location	1	2	3	4



Key

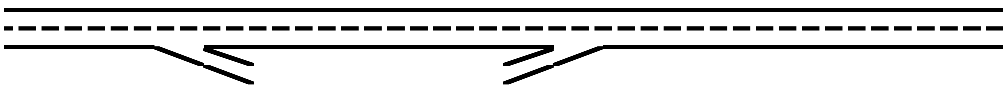
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,046	429	429	659
On Ramp Volume			230	
Off Ramp Volume	617			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,046	429	429	659
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,436	589	589	905
Flow (pcphpl)	718	294	294	452

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

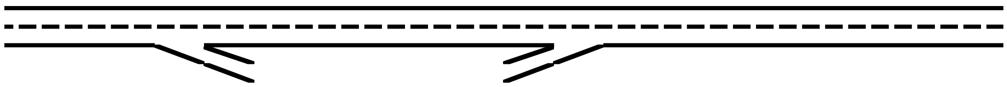
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.30	0.12	0.12	0.19
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	10.3	4.2	4.2	6.5
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			854	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.18	
Flow Rate (pcphpl)			427	
Speed (mph)			70.0	
Density (pcphpl)			6.1	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	724			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.15			
Flow Rate (pcphpl)	362			
Speed (mph)	70.0			
Density (pcphpl)	5.2			
LOS	A			

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



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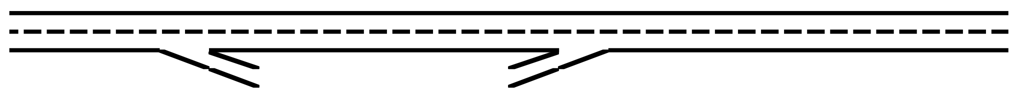
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			230	
PHF			0.88	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			265	
Flow Rate (pcphpl)			265	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.13	

Location	1	2	3	4



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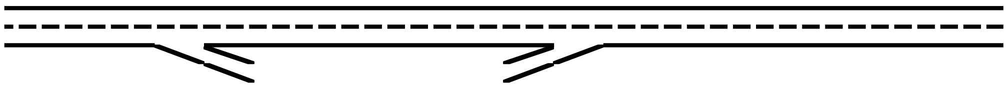
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	617			
PHF	0.88			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	712			
Flow Rate (pcphpl)	712			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.34			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

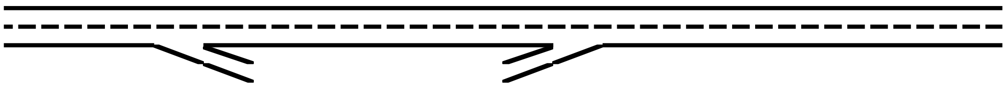


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			589	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			589	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			589	
v_{R12a} (pcph)			854	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.19	
Density			9.7	
LOS			A	

Location	1	2	3	4



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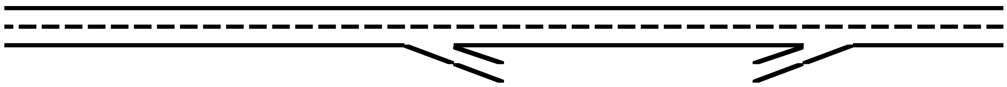
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,436			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.691			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,436			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,436			
Speed Index	0.36			
Area Speed	59.9			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.9			
v/c ratio	0.33			
Density	15.2			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.33	0.12	0.19	0.19
Segment Density	15.2	4.2	9.7	6.5
Segment LOS	B	A	A	A
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

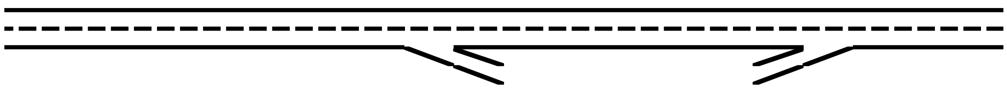
Location	1	2	3	4



Key
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,842	1,842	1,543	1,543
On Ramp Volume				928
Off Ramp Volume		299		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,842	1,842	1,543	1,543
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,258	2,258	1,891	1,891
Flow (pcphpl)	1,129	1,129	946	946

Location	1	2	3	4



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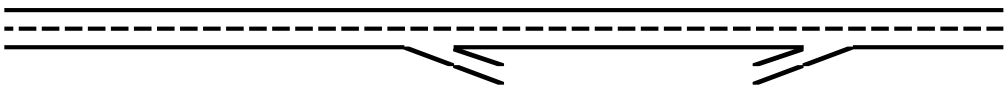
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.47	0.47	0.39	0.39
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.1	16.1	13.5	13.5
LOS	B	B	B	B
Operations for Segment GP Lanes				
Flow (pcph)				2,956
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.62
Flow Rate (pcphpl)				1,478
Speed (mph)				69.1
Density (pcphpl)				21.4
LOS				C
Operations for Exiting GP Lanes				
Flow (pcph)		1,914		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.40		
Flow Rate (pcphpl)		957		
Speed (mph)		70.0		
Density (pcphpl)		13.7		
LOS		B		

Location	1	2	3	4

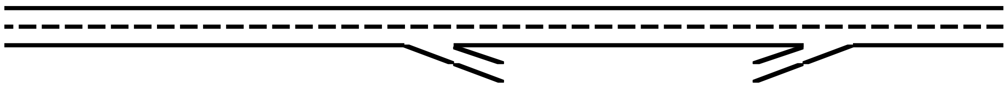


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				928
PHF				0.88
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				1,065
Flow Rate (pcphpl)				1,065
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.51

Location	1	2	3	4



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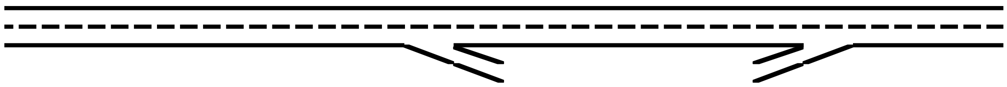
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		299		
PHF		0.88		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		343		
Flow Rate (pcphpl)		343		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.16		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

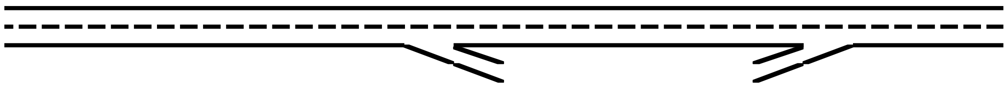


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,891
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,891
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,891
v_{R12a} (pcph)				2,956
Speed Index				0.37
Area Speed				59.7
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				59.7
v/c ratio				0.64
Density				26.0
LOS				C

Location	1	2	3	4



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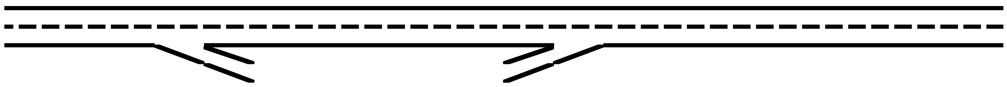
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,258		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.688		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,258		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,258		
Speed Index		0.33		
Area Speed		60.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.8		
v/c ratio		0.51		
Density		22.1		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.47	0.51	0.39	0.64
Segment Density	16.1	22.1	13.5	26.0
Segment LOS	B	C	B	C
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



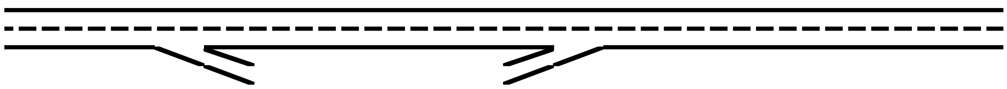
Key
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,919	995	995	1,255
On Ramp Volume			260	
Off Ramp Volume	924			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,919	995	995	1,255
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,297	1,191	1,191	1,502
Flow (pcphpl)	1,149	596	596	751

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

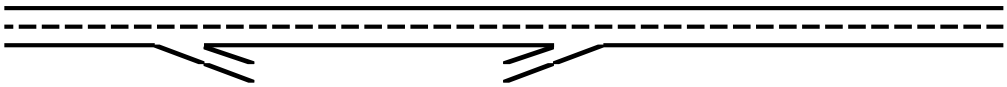


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.48	0.25	0.25	0.31
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.4	8.5	8.5	10.7
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			1,475	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.31	
Flow Rate (pcphpl)			737	
Speed (mph)			70.0	
Density (pcphpl)			10.5	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	1,289			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.27			
Flow Rate (pcphpl)	644			
Speed (mph)	70.0			
Density (pcphpl)	9.2			
LOS	A			

Location	1	2	3	4

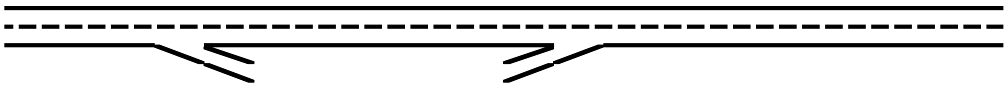


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			260	
PHF			0.93	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			284	
Flow Rate (pcphpl)			284	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.14	

Location	1	2	3	4

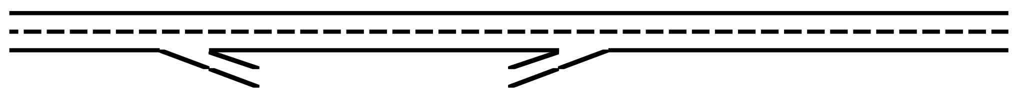


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	924			
PHF	0.93			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	1,008			
Flow Rate (pcphpl)	1,008			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.48			
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4



Key

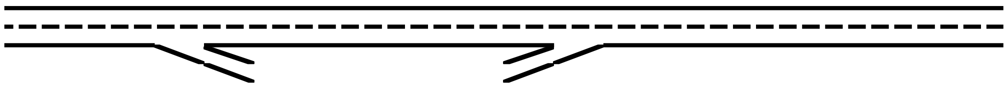
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,191	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,191	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,191	
v_{R12a} (pcph)			1,475	
Speed Index			0.30	
Area Speed			61.5	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.5	
v/c ratio			0.32	
Density			14.5	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



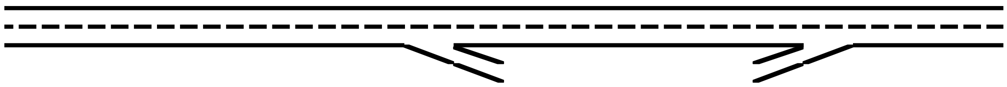
Key
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	2,297			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.656			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	2,297			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	2,297			
Speed Index	0.39			
Area Speed	59.1			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.1			
v/c ratio	0.52			
Density	22.7			
LOS	C			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.52	0.25	0.32	0.31
Segment Density	22.7	8.5	14.5	10.7
Segment LOS	C	A	B	A
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

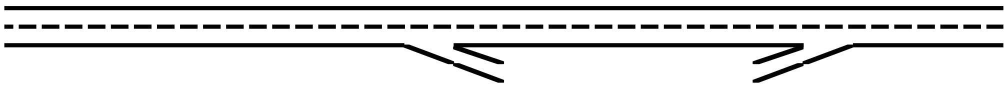
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,100	1,100	878	878
On Ramp Volume				508
Off Ramp Volume		222		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,100	1,100	878	878
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,218	1,218	972	972
Flow (pcphpl)	609	609	486	486

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.25	0.25	0.20	0.20
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	8.7	8.7	6.9	6.9
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,524
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.32
Flow Rate (pcphpl)				762
Speed (mph)				70.0
Density (pcphpl)				10.9
LOS				A
Operations for Exiting GP Lanes				
Flow (pcph)		977		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.20		
Flow Rate (pcphpl)		488		
Speed (mph)		70.0		
Density (pcphpl)		7.0		
LOS		A		

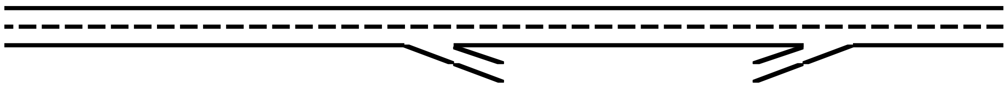
Location	1	2	3	4

Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				508
PHF				0.93
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				552
Flow Rate (pcphpl)				552
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.26

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		222		
PHF		0.93		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		241		
Flow Rate (pcphpl)		241		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.11		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4

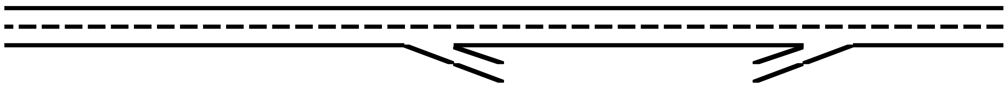
Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				972
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				972
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				972
v_{R12a} (pcph)				1,524
Speed Index				0.31
Area Speed				61.3
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.3
v/c ratio				0.33
Density				15.0
LOS				B

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Project Conditions
Time Period: PM Peak Hour



Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,218		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.718		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,218		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,218		
Speed Index		0.32		
Area Speed		61.0		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		61.0		
v/c ratio		0.28		
Density		13.2		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.25	0.28	0.20	0.33
Segment Density	8.7	13.2	6.9	15.0
Segment LOS	A	B	A	B
Over Capacity				

Existing Plus Approved Projects Level of Service (LOS) Calculations

FEHR & PEERS

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	9	263	39	0	100	174	11	0	40	62	192
Future Vol, veh/h	0	9	263	39	0	100	174	11	0	40	62	192
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.76	0.76	0.76	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	283	42	0	132	229	14	0	43	67	209
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	18.5	13.9	14.8
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	36%
Vol Thru, %	0%	24%	0%	87%	0%	94%	54%
Vol Right, %	0%	76%	0%	13%	0%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	254	9	302	100	185	99
LT Vol	40	0	9	0	100	0	36
Through Vol	0	62	0	263	0	174	53
RT Vol	0	192	0	39	0	11	10
Lane Flow Rate	43	276	10	325	132	243	119
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.091	0.495	0.019	0.598	0.263	0.449	0.249
Departure Headway (Hd)	7.511	6.461	7.232	6.629	7.187	6.633	7.521
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	558	495	546	500	543	477
Service Time	5.248	4.198	4.969	4.365	4.923	4.369	5.569
HCM Lane V/C Ratio	0.09	0.495	0.02	0.595	0.264	0.448	0.249
HCM Control Delay	11	15.4	10.1	18.8	12.5	14.7	13.1
HCM Lane LOS	B	C	B	C	B	B	B
HCM 95th-tile Q	0.3	2.7	0.1	3.9	1	2.3	1

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	53	10
Future Vol, veh/h	0	36	53	10
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	64	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.1
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	474	26	98	362	22	167
Future Volume (veh/h)	474	26	98	362	22	167
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	527	0	105	389	26	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.90	0.90	0.93	0.93	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	852	0	165	1247	57	0
Arrive On Green	0.46	0.00	0.09	0.67	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1711	0
Grp Volume(v), veh/h	527	0	105	389	27	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	7.2	0.0	1.9	2.9	0.5	0.0
Cycle Q Clear(g_c), s	7.2	0.0	1.9	2.9	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	852	0	165	1247	59	0
V/C Ratio(X)	0.62	0.00	0.64	0.31	0.46	0.00
Avail Cap(c_a), veh/h	1939	0	1055	1939	1057	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	14.7	2.3	16.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	4.0	0.1	11.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	1.1	1.5	0.4	0.0
LnGrp Delay(d),s/veh	7.6	0.0	18.7	2.5	27.4	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	527			494	27	
Approach Delay, s/veh	7.6			5.9	27.4	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.1	21.4				28.5		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	3.9	9.2				4.9		2.5
Green Ext Time (p_c), s	0.2	6.2				6.4		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		7.3
HCM 2010 LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 | **Risling Ct/Sutter Hospital Dwy** | **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	98	96	98.2%	3.1	0.4	A
	Right Turn	31	34	110.6%	2.9	0.8	A
	Subtotal	129	131	101.2%	3.0	0.5	A
SB	Left Turn						
	Through	33	31	92.7%	0.0	0.1	A
	Right Turn						
	Subtotal	33	31	92.7%	0.0	0.1	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	11	11	101.8%	4.1	1.7	A
	Through						
	Right Turn	2	3	145.0%	1.0	1.3	A
	Subtotal	13	14	108.5%	3.9	1.7	A
Total		175	175	100.1%	2.6	0.5	A

Intersection 4 | **Risling Ct-Shasta Dr/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	11	114.0%	73.4	37.2	E
	Through	12	13	106.7%	36.0	22.9	D
	Right Turn	269	264	98.1%	4.6	1.1	A
	Subtotal	291	288	99.0%	8.9	2.2	A
SB	Left Turn	28	25	87.5%	56.6	17.1	E
	Through	6	7	108.3%	39.5	42.6	D
	Right Turn	10	11	114.0%	6.8	6.8	A
	Subtotal	44	42	96.4%	41.3	10.9	D
EB	Left Turn	37	35	94.3%	61.7	13.8	E
	Through	616	619	100.5%	15.3	3.5	B
	Right Turn	14	14	101.4%	6.6	3.1	A
	Subtotal	667	668	100.2%	17.7	3.7	B
WB	Left Turn	131	127	96.9%	64.8	12.1	E
	Through	471	464	98.4%	11.2	2.6	B
	Right Turn	80	83	103.6%	6.4	1.6	A
	Subtotal	682	674	98.8%	20.9	3.0	C
Total		1,684	1,672	99.3%	18.0	2.2	B

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Existing Plus Approved Projects No Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	185	187	101.1%	30.4	7.0	C
	Through						
	Right Turn	58	60	103.1%	5.7	1.0	A
	Subtotal	243	247	101.6%	24.1	5.1	C
EB	Left Turn	74	69	93.5%	60.4	19.3	E
	Through	843	843	100.0%	23.5	8.9	C
	Right Turn						
	Subtotal	917	912	99.5%	26.2	9.8	C
WB	Left Turn						
	Through	624	615	98.6%	12.3	2.6	B
	Right Turn	301	304	101.1%	8.8	2.0	A
	Subtotal	925	920	99.4%	11.2	2.4	B
Total		2,085	2,079	99.7%	19.4	4.7	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	158	154	97.4%	39.3	4.6	D
	Through	1	1	140.0%	2.9	7.3	A
	Right Turn	131	126	96.0%	36.0	5.2	D
	Subtotal	290	281	96.9%	37.9	3.6	D
EB	Left Turn						
	Through	594	593	99.8%	32.1	8.2	C
	Right Turn	434	437	100.6%	33.4	6.9	C
	Subtotal	1,028	1,030	100.2%	32.7	7.5	C
WB	Left Turn	478	461	96.5%	70.5	6.3	E
	Through	794	796	100.3%	12.1	2.1	B
	Right Turn						
	Subtotal	1,272	1,257	98.9%	32.9	3.6	C
Total		2,590	2,568	99.2%	33.3	4.5	C

SimTraffic Post-Processor **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs **Existing Plus Approved Projects No Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	307	306	99.8%	38.2	3.9	D
	Through	1	1	120.0%	2.0	4.3	A
	Right Turn	315	312	98.9%	11.3	2.0	B
	Subtotal	623	619	99.4%	24.4	2.2	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	76	69	91.1%	48.6	7.1	D
	Through	676	676	100.0%	16.0	2.3	B
	Right Turn						
	Subtotal	752	745	99.1%	19.4	2.3	B
WB	Left Turn						
	Through	964	954	99.0%	24.7	5.7	C
	Right Turn	151	152	100.8%	11.8	2.8	B
	Subtotal	1,115	1,106	99.2%	22.9	5.1	C
Total		2,490	2,470	99.2%	22.2	3.0	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	193	190	98.3%	45.2	9.0	D
	Through	35	31	88.6%	48.6	19.7	D
	Right Turn	39	40	102.6%	12.2	5.8	B
	Subtotal	267	261	97.7%	40.1	10.4	D
SB	Left Turn	71	70	97.9%	41.8	8.8	D
	Through	81	84	103.8%	41.9	12.4	D
	Right Turn	214	209	97.8%	20.9	11.8	C
	Subtotal	366	363	99.2%	29.6	10.8	C
EB	Left Turn	117	110	93.8%	51.4	5.4	D
	Through	540	548	101.4%	30.5	4.1	C
	Right Turn	162	157	96.6%	18.4	3.6	B
	Subtotal	819	814	99.4%	31.1	3.7	C
WB	Left Turn	30	28	92.3%	57.0	13.7	E
	Through	640	640	100.0%	27.3	2.9	C
	Right Turn	58	61	104.8%	20.8	6.0	C
	Subtotal	728	729	100.1%	28.1	3.0	C
Total		2,180	2,166	99.4%	31.0	3.2	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	486	141	189	439	37	162	57	71	52	158	106
Future Volume (veh/h)	28	486	141	189	439	37	162	57	71	52	158	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1855	1900	1863	1863	1727	1792	1815	1900	1863	1799	1900
Adj Flow Rate, veh/h	34	593	0	222	516	0	188	66	0	57	174	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	57	1218	0	273	1648	684	235	387	0	82	416	0
Arrive On Green	0.03	0.35	0.00	0.15	0.47	0.00	0.14	0.21	0.00	0.05	0.12	0.00
Sat Flow, veh/h	1691	3616	0	1774	3539	1468	1707	1815	0	1774	3509	0
Grp Volume(v), veh/h	34	593	0	222	516	0	188	66	0	57	174	0
Grp Sat Flow(s),veh/h/ln	1691	1762	0	1774	1770	1468	1707	1815	0	1774	1709	0
Q Serve(g_s), s	1.5	9.9	0.0	9.0	6.8	0.0	8.0	2.2	0.0	2.4	3.5	0.0
Cycle Q Clear(g_c), s	1.5	9.9	0.0	9.0	6.8	0.0	8.0	2.2	0.0	2.4	3.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	57	1218	0	273	1648	684	235	387	0	82	416	0
V/C Ratio(X)	0.59	0.49	0.00	0.81	0.31	0.00	0.80	0.17	0.00	0.69	0.42	0.00
Avail Cap(c_a), veh/h	905	2122	0	712	2132	884	914	972	0	950	1830	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.6	19.2	0.0	30.6	12.5	0.0	31.2	24.0	0.0	35.1	30.4	0.0
Incr Delay (d2), s/veh	9.4	0.3	0.0	5.8	0.4	0.0	6.1	0.2	0.0	9.9	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.8	0.0	4.9	3.4	0.0	4.2	1.1	0.0	1.4	1.7	0.0
LnGrp Delay(d),s/veh	45.0	19.5	0.0	36.4	12.9	0.0	37.4	24.2	0.0	45.0	31.0	0.0
LnGrp LOS	D	B		D	B		D	C		D	C	
Approach Vol, veh/h		627			738			254			231	
Approach Delay, s/veh		20.9			19.9			33.9			34.5	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	30.8	14.3	13.1	7.5	39.8	7.5	19.9
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	11.0	11.9	10.0	5.5	3.5	8.8	4.4	4.2
Green Ext Time (p_c), s	0.6	13.9	0.5	1.6	0.1	14.5	0.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	479	79	100	641	0	101	0	183	0	0	0
Future Volume (veh/h)	0	479	79	100	641	0	101	0	183	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	630	0	122	782	0	180	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.76	0.76	0.82	0.82	0.92	0.56	0.92	0.56	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1561	0	166	2250	0	242	0	0	0	5	0
Arrive On Green	0.00	0.44	0.00	0.09	0.64	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	180		0	-93137	0
Grp Volume(v), veh/h	0	630	0	122	782	0	180	20.9		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	4.8	0.0	2.6	4.1	0.0	3.9			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.8	0.0	2.6	4.1	0.0	3.9			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1561	0	166	2250	0	242			0	5	0
V/C Ratio(X)	0.00	0.40	0.00	0.74	0.35	0.00	0.74			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2778	0	674	2867	0	898			0	707	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.5	0.0	17.4	3.4	0.0	16.4			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	6.2	0.1	0.0	4.5			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	0.0	1.6	2.0	0.0	2.2			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.7	0.0	23.7	3.5	0.0	20.9			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		630			904						0	
Approach Delay, s/veh		7.7			6.2						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		30.1	9.4	0.0	7.7	22.4		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		6.1	5.9	0.0	4.6	6.8		
Green Ext Time (p_c), s		11.0	0.4	0.0	0.2	10.6		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	703	88	238	629	96	55	77	146	201	218	69
Future Volume (veh/h)	38	703	88	238	629	96	55	77	146	201	218	69
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1845	1900
Adj Flow Rate, veh/h	51	937	0	309	817	0	71	99	0	242	263	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.78	0.78	0.78	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	75	1307	585	406	1579	0	93	249	0	295	457	0
Arrive On Green	0.04	0.37	0.00	0.12	0.45	0.00	0.05	0.13	0.00	0.17	0.25	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1845	0
Grp Volume(v), veh/h	51	937	0	309	817	0	71	99	0	242	263	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1845	0
Q Serve(g_s), s	2.3	18.3	0.0	7.1	13.4	0.0	3.2	3.9	0.0	10.6	10.1	0.0
Cycle Q Clear(g_c), s	2.3	18.3	0.0	7.1	13.4	0.0	3.2	3.9	0.0	10.6	10.1	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	75	1307	585	406	1579	0	93	249	0	295	457	0
V/C Ratio(X)	0.68	0.72	0.00	0.76	0.52	0.00	0.76	0.40	0.00	0.82	0.58	0.00
Avail Cap(c_a), veh/h	660	1976	884	1269	1976	0	654	689	0	660	687	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.1	21.8	0.0	34.4	16.1	0.0	37.7	31.9	0.0	32.4	26.6	0.0
Incr Delay (d2), s/veh	4.0	0.3	0.0	1.1	0.1	0.0	12.0	1.0	0.0	6.7	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.9	0.0	3.4	6.5	0.0	1.9	2.1	0.0	5.7	5.3	0.0
LnGrp Delay(d),s/veh	42.1	22.1	0.0	35.5	16.2	0.0	49.6	32.9	0.0	39.2	28.0	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		988			1126			170			505	
Approach Delay, s/veh		23.1			21.5			39.9			33.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	41.0	8.3	24.0	13.6	34.8	17.4	14.8
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.3	15.4	5.2	12.1	9.1	20.3	12.6	5.9
Green Ext Time (p_c), s	0.0	10.0	0.2	2.3	0.5	9.5	0.8	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	672	221	49	737	128	153	45	72	196	121	60
Future Volume (veh/h)	157	672	221	49	737	128	153	45	72	196	121	60
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	199	851	179	66	996	159	191	56	21	213	132	47
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	242	1536	660	84	1062	169	234	182	68	262	205	73
Arrive On Green	0.14	0.43	0.43	0.05	0.35	0.35	0.13	0.14	0.14	0.15	0.16	0.16
Sat Flow, veh/h	1774	3539	1522	1660	3052	487	1774	1276	479	1774	1295	461
Grp Volume(v), veh/h	199	851	179	66	577	578	191	0	77	213	0	179
Grp Sat Flow(s),veh/h/ln	1774	1770	1522	1660	1770	1769	1774	0	1755	1774	0	1755
Q Serve(g_s), s	9.2	15.1	6.4	3.3	26.6	26.7	8.8	0.0	3.3	9.8	0.0	8.1
Cycle Q Clear(g_c), s	9.2	15.1	6.4	3.3	26.6	26.7	8.8	0.0	3.3	9.8	0.0	8.1
Prop In Lane	1.00		1.00	1.00		0.28	1.00		0.27	1.00		0.26
Lane Grp Cap(c), veh/h	242	1536	660	84	616	616	234	0	250	262	0	277
V/C Ratio(X)	0.82	0.55	0.27	0.78	0.94	0.94	0.82	0.00	0.31	0.81	0.00	0.65
Avail Cap(c_a), veh/h	421	1536	660	394	629	629	421	0	832	421	0	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	17.8	15.3	39.6	26.6	26.6	35.6	0.0	32.4	34.8	0.0	33.3
Incr Delay (d2), s/veh	8.1	0.5	0.3	17.0	21.6	21.9	8.1	0.0	0.8	10.9	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.4	2.7	1.9	16.7	16.8	4.9	0.0	1.7	5.6	0.0	4.3
LnGrp Delay(d),s/veh	43.5	18.3	15.6	56.6	48.2	48.6	43.7	0.0	33.3	45.7	0.0	37.9
LnGrp LOS	D	B	B	E	D	D	D		C	D		D
Approach Vol, veh/h		1229			1221			268			392	
Approach Delay, s/veh		22.0			48.8			40.7			42.1	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	18.8	16.0	33.9	17.0	17.5	8.8	41.1
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	10.8	10.1	11.2	28.7	11.8	5.3	5.3	17.1
Green Ext Time (p_c), s	0.4	2.5	0.4	0.7	0.7	2.6	0.1	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	22	231	38	0	221	272	34	0	38	46	171
Future Vol, veh/h	0	22	231	38	0	221	272	34	0	38	46	171
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.91	0.91	0.91	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	278	46	0	243	299	37	0	43	52	194
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	18.8	17.6	14.8
HCM LOS	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	26%
Vol Thru, %	0%	21%	0%	86%	0%	89%	61%
Vol Right, %	0%	79%	0%	14%	0%	11%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	217	22	269	221	306	82
LT Vol	38	0	22	0	221	0	21
Through Vol	0	46	0	231	0	272	50
RT Vol	0	171	0	38	0	34	11
Lane Flow Rate	43	247	27	324	243	336	88
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.095	0.466	0.054	0.609	0.478	0.607	0.194
Departure Headway (Hd)	7.884	6.808	7.379	6.767	7.09	6.5	7.901
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	530	485	535	512	558	454
Service Time	5.624	4.548	5.123	4.51	4.79	4.2	5.954
HCM Lane V/C Ratio	0.095	0.466	0.056	0.606	0.475	0.602	0.194
HCM Control Delay	11.5	15.4	10.5	19.5	16.1	18.7	12.9
HCM Lane LOS	B	C	B	C	C	C	B
HCM 95th-tile Q	0.3	2.4	0.2	4	2.6	4	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	21	50	11
Future Vol, veh/h	0	21	50	11
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	54	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.9
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	456	27	142	521	21	97
Future Volume (veh/h)	456	27	142	521	21	97
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	512	0	148	543	25	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.89	0.89	0.96	0.96	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	867	0	199	1284	54	0
Arrive On Green	0.47	0.00	0.11	0.69	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1709	0
Grp Volume(v), veh/h	512	0	148	543	26	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	7.3	0.0	2.9	4.6	0.5	0.0
Cycle Q Clear(g_c), s	7.3	0.0	2.9	4.6	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	867	0	199	1284	57	0
V/C Ratio(X)	0.59	0.00	0.74	0.42	0.46	0.00
Avail Cap(c_a), veh/h	1819	0	990	1819	992	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	15.4	2.4	17.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	5.4	0.2	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	1.7	2.3	0.4	0.0
LnGrp Delay(d),s/veh	7.7	0.0	20.9	2.7	29.0	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	512			691	26	
Approach Delay, s/veh	7.7			6.6	29.0	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.0	22.7				30.7		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.9	9.3				6.6		2.5
Green Ext Time (p_c), s	0.3	7.4				7.6		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		7.5
HCM 2010 LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Conditions
PM Peak Hour

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	21	21	99.5%	3.1	0.8	A
	Right Turn	19	19	102.1%	3.1	0.5	A
	Subtotal	40	40	100.8%	3.1	0.3	A
SB	Left Turn	3	3	90.0%	0.8	0.9	A
	Through	64	63	97.7%	0.1	0.2	A
	Right Turn						
	Subtotal	67	65	97.3%	0.2	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	21	103.0%	3.3	0.7	A
	Through						
	Right Turn						
	Subtotal	20	21	103.0%	3.3	0.7	A
Total		127	126	99.3%	1.8	0.3	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	12	13	108.3%	41.5	20.5	D
	Through	7	8	112.9%	42.5	25.5	D
	Right Turn	185	192	103.7%	3.0	0.6	A
	Subtotal	204	213	104.3%	7.2	3.1	A
SB	Left Turn	52	52	99.8%	42.4	10.0	D
	Through	4	5	120.0%	25.1	19.6	C
	Right Turn	28	28	101.1%	7.0	2.4	A
	Subtotal	84	85	101.2%	27.9	5.6	C
EB	Left Turn	9	9	103.3%	61.3	36.5	E
	Through	515	520	101.0%	11.3	2.2	B
	Right Turn	15	18	117.3%	3.4	1.4	A
	Subtotal	539	547	101.5%	11.9	2.1	B
WB	Left Turn	201	200	99.7%	48.3	6.0	D
	Through	614	620	100.9%	7.1	2.0	A
	Right Turn	24	23	97.5%	6.3	3.3	A
	Subtotal	839	844	100.5%	17.3	3.1	B
Total		1,666	1,688	101.3%	14.9	2.2	B

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	233	236	101.4%	35.8	3.4	D
	Through						
	Right Turn	56	62	110.0%	7.8	2.3	A
	Subtotal	289	298	103.0%	30.3	2.5	C
EB	Left Turn	34	32	93.2%	43.6	13.0	D
	Through	722	732	101.4%	9.7	1.7	A
	Right Turn						
	Subtotal	756	764	101.0%	11.0	2.1	B
WB	Left Turn						
	Through	783	786	100.3%	10.7	1.9	B
	Right Turn	175	174	99.6%	6.9	2.3	A
	Subtotal	958	960	100.2%	10.0	1.8	B
Total		2,003	2,021	100.9%	13.5	0.9	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	130	124	95.6%	36.3	6.0	D
	Through	1	1	80.0%	4.3	13.7	A
	Right Turn	81	87	107.8%	32.4	4.2	C
	Subtotal	212	212	100.2%	34.8	4.2	C
EB	Left Turn						
	Through	712	725	101.8%	17.0	3.1	B
	Right Turn	243	242	99.5%	14.1	2.7	B
	Subtotal	955	967	101.2%	16.3	2.8	B
WB	Left Turn	245	233	95.0%	51.7	5.1	D
	Through	877	871	99.4%	7.0	1.2	A
	Right Turn						
	Subtotal	1,122	1,104	98.4%	16.5	2.4	B
Total		2,289	2,283	99.7%	18.2	2.1	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Conditions
PM Peak Hour

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	350	348	99.4%	33.4	3.7	C
	Through						
	Right Turn	592	590	99.6%	29.1	6.2	C
	Subtotal	942	938	99.5%	30.8	3.7	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	98	98	100.2%	59.0	10.8	E
	Through	750	752	100.2%	11.5	1.9	B
	Right Turn						
	Subtotal	848	850	100.2%	17.2	3.0	B
WB	Left Turn						
	Through	770	756	98.1%	15.5	1.3	B
	Right Turn	170	173	101.5%	7.0	0.7	A
	Subtotal	940	928	98.7%	13.9	1.1	B
Total		2,730	2,716	99.5%	20.9	2.1	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	117	115	98.0%	40.0	8.4	D
	Through	51	50	97.5%	40.6	8.6	D
	Right Turn	46	43	93.5%	10.6	9.0	B
	Subtotal	214	207	96.9%	33.7	7.8	C
SB	Left Turn	153	150	97.9%	46.9	8.2	D
	Through	77	79	103.0%	36.4	10.4	D
	Right Turn	124	126	101.3%	13.8	5.1	B
	Subtotal	354	355	100.2%	33.4	4.5	C
EB	Left Turn	168	171	101.7%	57.0	16.5	E
	Through	809	804	99.4%	18.0	3.4	B
	Right Turn	127	128	100.4%	11.2	3.3	B
	Subtotal	1,104	1,103	99.9%	23.0	4.4	C
WB	Left Turn	27	25	93.3%	48.6	15.7	D
	Through	625	619	99.1%	22.6	3.1	C
	Right Turn	102	100	97.8%	15.9	2.9	B
	Subtotal	754	744	98.7%	22.8	2.4	C
Total		2,426	2,409	99.3%	25.5	2.7	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	793	136	92	476	74	250	134	126	70	119	44
Future Volume (veh/h)	42	793	136	92	476	74	250	134	126	70	119	44
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1857	1900	1863	1863	1727	1792	1808	1900	1863	1786	1900
Adj Flow Rate, veh/h	46	862	0	101	523	0	291	156	0	92	157	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.86	0.86	0.86	0.76	0.76	0.76
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	62	1300	0	131	1434	595	333	548	0	120	598	0
Arrive On Green	0.04	0.37	0.00	0.07	0.41	0.00	0.19	0.30	0.00	0.07	0.18	0.00
Sat Flow, veh/h	1691	3622	0	1774	3539	1468	1707	1808	0	1774	3483	0
Grp Volume(v), veh/h	46	862	0	101	523	0	291	156	0	92	157	0
Grp Sat Flow(s),veh/h/ln	1691	1765	0	1774	1770	1468	1707	1808	0	1774	1697	0
Q Serve(g_s), s	2.6	19.7	0.0	5.4	9.9	0.0	15.9	6.3	0.0	4.9	3.9	0.0
Cycle Q Clear(g_c), s	2.6	19.7	0.0	5.4	9.9	0.0	15.9	6.3	0.0	4.9	3.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	62	1300	0	131	1434	595	333	548	0	120	598	0
V/C Ratio(X)	0.74	0.66	0.00	0.77	0.36	0.00	0.87	0.28	0.00	0.76	0.26	0.00
Avail Cap(c_a), veh/h	702	1648	0	552	1653	686	709	751	0	736	1409	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.0	25.4	0.0	43.8	20.0	0.0	37.6	25.6	0.0	44.1	34.3	0.0
Incr Delay (d2), s/veh	15.7	0.7	0.0	9.2	0.6	0.0	7.2	0.3	0.0	9.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.7	0.0	3.0	5.0	0.0	8.2	3.2	0.0	2.7	1.8	0.0
LnGrp Delay(d),s/veh	61.7	26.1	0.0	53.1	20.6	0.0	44.9	25.9	0.0	53.7	34.5	0.0
LnGrp LOS	E	C		D	C		D	C		D	C	
Approach Vol, veh/h		908			624			447			249	
Approach Delay, s/veh		27.9			25.8			38.2			41.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	40.5	22.8	21.0	8.5	44.0	10.5	33.2
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	7.4	21.7	17.9	5.9	4.6	11.9	6.9	8.3
Green Ext Time (p_c), s	0.2	13.8	0.8	2.0	0.1	16.9	0.2	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱		↰	↑↑		↰		↱		✥	
Traffic Volume (veh/h)	0	986	79	77	556	0	135	0	166	0	0	0
Future Volume (veh/h)	0	986	79	77	556	0	135	0	166	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1006	0	87	625	0	142	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.89	0.89	0.89	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1813	0	134	2412	0	190	0	0	0	4	0
Arrive On Green	0.00	0.51	0.00	0.08	0.68	0.00	0.11	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	142		0	-93137	0
Grp Volume(v), veh/h	0	1006	0	87	625	0	142	24.2		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	8.3	0.0	2.0	2.9	0.0	3.3			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.3	0.0	2.0	2.9	0.0	3.3			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1813	0	134	2412	0	190			0	4	0
V/C Ratio(X)	0.00	0.55	0.00	0.65	0.26	0.00	0.75			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2575	0	625	2658	0	833			0	656	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	0.0	19.1	2.6	0.0	18.5			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	5.2	0.1	0.0	5.7			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.0	0.0	1.2	1.4	0.0	1.9			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.3	0.0	24.4	2.7	0.0	24.2			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		1006			712						0	
Approach Delay, s/veh		7.3			5.3						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		34.0	8.6	0.0	7.2	26.8		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		4.9	5.3	0.0	4.0	10.3		
Green Ext Time (p_c), s		13.4	0.3	0.0	0.1	11.6		

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	915	252	188	609	185	115	151	224	120	131	49
Future Volume (veh/h)	68	915	252	188	609	185	115	151	224	120	131	49
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1852	1900	1863	1843	1900
Adj Flow Rate, veh/h	76	1017	0	211	684	0	129	170	0	138	151	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	99	1400	626	310	1525	0	168	333	0	182	343	0
Arrive On Green	0.06	0.40	0.00	0.09	0.43	0.00	0.10	0.18	0.00	0.10	0.19	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1852	0	1774	1843	0
Grp Volume(v), veh/h	76	1017	0	211	684	0	129	170	0	138	151	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1852	0	1774	1843	0
Q Serve(g_s), s	3.1	17.9	0.0	4.4	10.0	0.0	5.3	6.1	0.0	5.6	5.3	0.0
Cycle Q Clear(g_c), s	3.1	17.9	0.0	4.4	10.0	0.0	5.3	6.1	0.0	5.6	5.3	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	99	1400	626	310	1525	0	168	333	0	182	343	0
V/C Ratio(X)	0.77	0.73	0.00	0.68	0.45	0.00	0.77	0.51	0.00	0.76	0.44	0.00
Avail Cap(c_a), veh/h	724	2167	969	1391	2167	0	717	756	0	724	752	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.2	18.8	0.0	32.4	14.8	0.0	32.4	27.2	0.0	32.1	26.5	0.0
Incr Delay (d2), s/veh	4.7	0.3	0.0	1.0	0.1	0.0	7.1	1.2	0.0	7.5	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.8	0.0	2.1	4.9	0.0	2.9	3.2	0.0	3.1	2.8	0.0
LnGrp Delay(d),s/veh	38.9	19.1	0.0	33.4	14.8	0.0	39.5	28.5	0.0	39.6	27.6	0.0
LnGrp LOS	D	B		C	B		D	C		D	C	
Approach Vol, veh/h		1093			895			299			289	
Approach Delay, s/veh		20.5			19.2			33.2			33.3	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	36.7	11.0	17.7	10.7	34.1	11.5	17.2
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.1	12.0	7.3	7.3	6.4	19.9	7.6	8.1
Green Ext Time (p_c), s	0.1	9.9	0.3	2.1	0.4	9.2	0.5	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1016	79	74	773	169	130	90	55	218	101	89
Future Volume (veh/h)	164	1016	79	74	773	169	130	90	55	218	101	89
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	182	1129	27	83	869	175	153	106	40	263	122	73
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.85	0.85	0.85	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	224	1386	575	107	958	193	193	184	70	312	229	137
Arrive On Green	0.13	0.39	0.39	0.06	0.33	0.33	0.11	0.14	0.14	0.18	0.21	0.21
Sat Flow, veh/h	1774	3539	1468	1660	2908	585	1774	1278	482	1774	1085	649
Grp Volume(v), veh/h	182	1129	27	83	529	515	153	0	146	263	0	195
Grp Sat Flow(s),veh/h/ln	1774	1770	1468	1660	1770	1724	1774	0	1761	1774	0	1734
Q Serve(g_s), s	8.5	24.1	1.0	4.2	24.2	24.2	7.1	0.0	6.6	12.2	0.0	8.5
Cycle Q Clear(g_c), s	8.5	24.1	1.0	4.2	24.2	24.2	7.1	0.0	6.6	12.2	0.0	8.5
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.27	1.00		0.37
Lane Grp Cap(c), veh/h	224	1386	575	107	583	568	193	0	254	312	0	366
V/C Ratio(X)	0.81	0.81	0.05	0.78	0.91	0.91	0.79	0.00	0.57	0.84	0.00	0.53
Avail Cap(c_a), veh/h	419	1386	575	392	627	610	419	0	831	419	0	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	23.0	16.0	39.0	27.2	27.2	36.8	0.0	33.8	33.8	0.0	29.7
Incr Delay (d2), s/veh	8.2	4.0	0.0	13.5	16.6	17.0	8.5	0.0	2.5	14.4	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	12.5	0.4	2.3	14.4	14.1	3.9	0.0	3.4	7.2	0.0	4.3
LnGrp Delay(d),s/veh	44.2	27.0	16.0	52.6	43.8	44.2	45.3	0.0	36.3	48.2	0.0	31.9
LnGrp LOS	D	C	B	D	D	D	D		D	D		C
Approach Vol, veh/h		1338			1127			299			458	
Approach Delay, s/veh		29.1			44.6			40.9			41.3	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	23.4	15.2	32.4	19.4	17.7	9.9	37.7
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	9.1	10.5	10.5	26.2	14.2	8.6	6.2	26.1
Green Ext Time (p_c), s	0.4	3.3	0.4	1.7	0.8	3.3	0.2	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

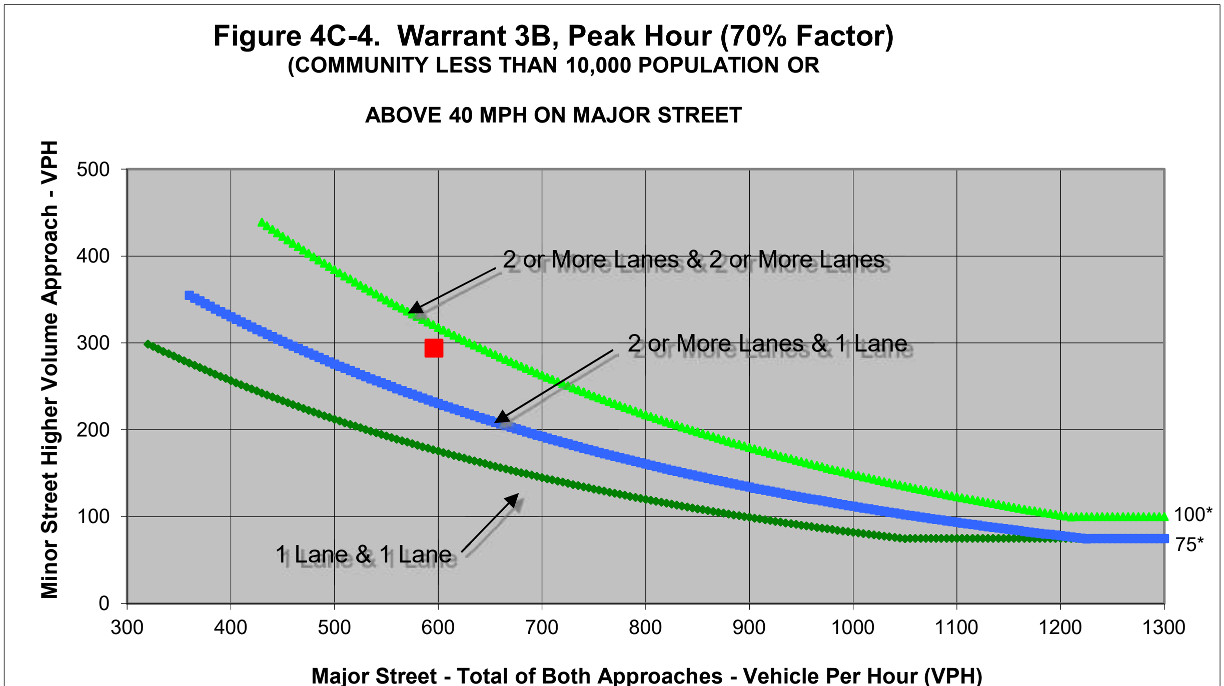
Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Approved Projects Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	36	9	100
Through	62	53	263	174
Right	192	10	39	11
Total	294	99	311	285

Major Street Direction

	North/South
x	East/West



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**596**	**294**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Approved Projects Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	36	9	100
Through	62	53	263	174
Right	192	10	39	11
Total	294	99	311	285

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	294

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
ting Plus Approved Project Conditi	**1.3**	**294**	**989**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

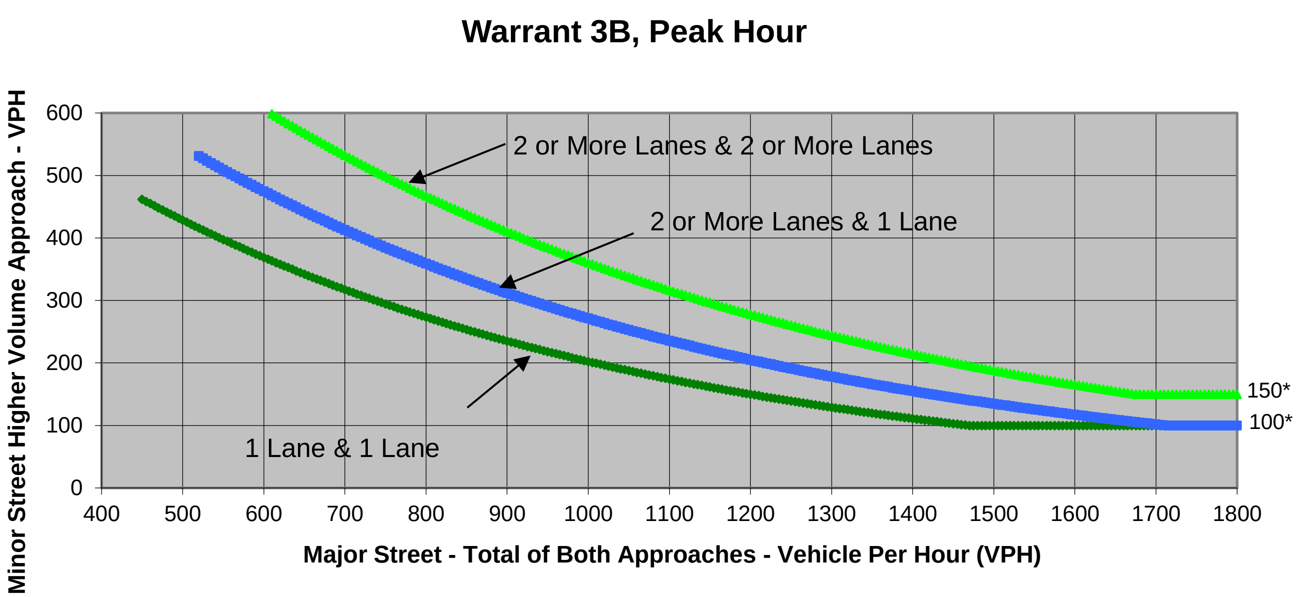
Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Existing Plus Approved Projects Conditions
			Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	11
Through	98	33	0	0
Right	31	0	0	2
Total	129	33	0	13

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**162**	**13**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Approved Projects Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	11
Through	98	33	0	0
Right	31	0	0	2
Total	129	33	0	13

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	9.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	13

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
ing Plus Approved Projects Condi	**0**	**13**	**175**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

Project	West Davis AAC EIR
Scenario	Existing Plus Approved Projects Conditions
Peak Hour	PM Peak Hour

Major Street	Covell Blvd
Minor Street	Lake Blvd

Turn Movement Volumes

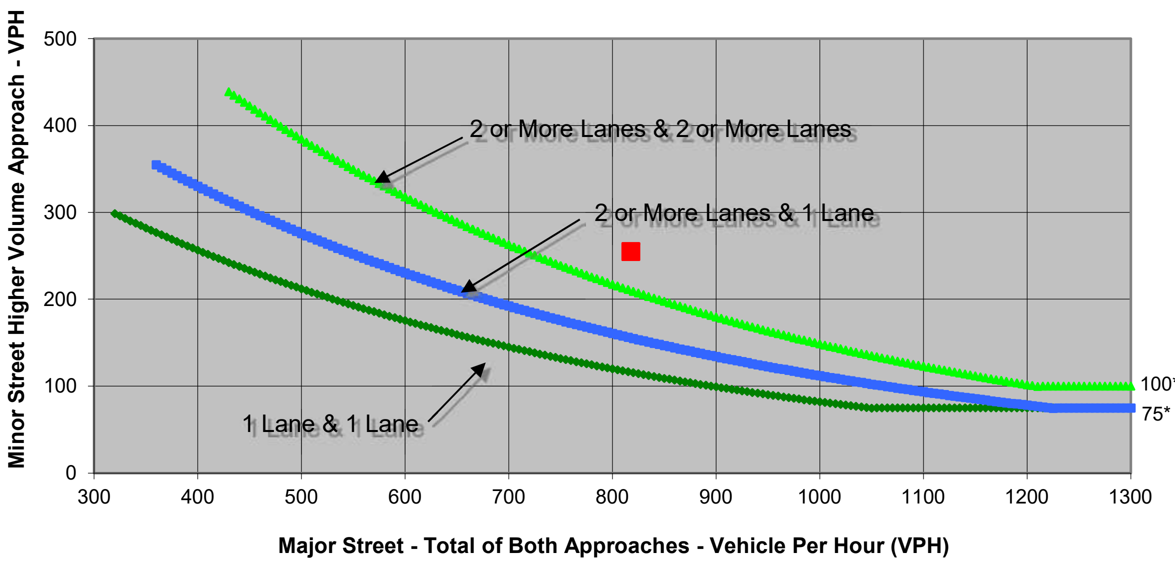
	NB	SB	EB	WB
Left	38	21	22	221
Through	46	50	231	272
Right	171	11	38	34
Total	255	82	291	527

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR

ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	Minor Street Lake Blvd	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**818**	**255**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project	West Davis AAC EIR
Scenario	Existing Plus Approved Projects Conditions
Peak Hour	PM Peak Hour

Major Street	Covell Blvd
Minor Street	Lake Blvd

Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	221
Through	46	50	231	272
Right	171	11	38	34
Total	255	82	291	527

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	255

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
ting Plus Approved Project Conditi	**1.1**	**255**	**1,155**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

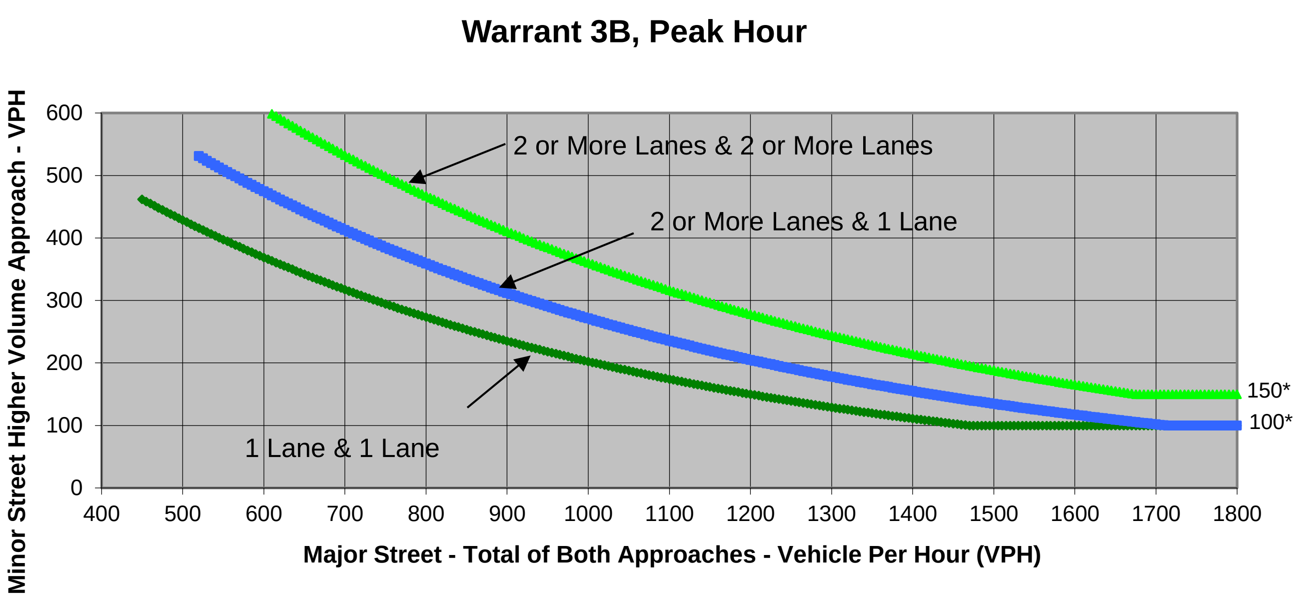
Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Approved Projects Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	20
Through	21	64	0	0
Right	19	0	0	0
Total	40	67	0	20

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**107**	**20**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Approved Projects Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	0	20
Through	21	64	0	0
Right	19	0	0	0
Total	40	67	0	20

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	9.2
Approach with Worst Case Delay	WB
Total Vehicles on Approach	20

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
ting Plus Approved Projects Condit	**0.1**	**20**	**127**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
WB	Shared	925	25	4	50	6	50	12	0%	0%
NB	Through/Right	25	25	0	25	0	25	0	0%	0%
SB	Left/Through	1,025	25	0	25	0	25	0	0%	0%
0										

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	225	50	8	100	20	125	58	0%	0%
	Through	400	125	13	200	18	225	32	15%	0%
	Right Turn	100	25	5	50	30	75	50	0%	0%
NB	Left Turn	125	25	4	50	8	75	11	0%	0%
	Through	350	50	5	100	10	150	34	1%	0%
	Right Turn	75	75	1	75	4	75	1	3%	0%
SB	Left Turn	125	50	7	75	11	100	16	0%	0%
	Through/Right	350	25	2	50	4	75	17	0%	0%
WB	U/Left Turns	325	75	5	150	14	175	21	0%	0%
	Left Turn	325	50	6	100	17	150	29	0%	0%
	Through	575	75	12	175	19	200	22	0%	0%
	Through/Right	575	100	13	200	17	225	27	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	75	11	150	18	175	0	1%	0%
	Through	575	175	17	325	39	375	78	7%	0%
SB	Left Turn	250	125	9	200	15	250	23	0%	0%
	Through/Right	1,600	25	5	75	39	125	121	0%	0%
WB	Through	350	125	10	250	21	300	41	22%	0%
	Right Turn	75	75	4	100	3	100	0	5%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	250	20	375	26	350	6	0%	2%
	Through/Right	350	275	21	400	10	350	7	0%	5%
SB	Left/Through	1,425	125	8	175	18	225	42	0%	0%
	Right Turn	1,425	100	9	175	19	200	28	0%	0%
WB	U/Left Turns	225	225	5	250	10	225	0	45%	0%
	Through	500	350	34	625	63	525	56	14%	5%
0										

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects No Project Conditions
AM Peak Hour

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	100	12	175	16	200	0	0%	0%
	Through	500	150	13	250	20	300	43	4%	0%
NB	Left/Through	1,675	200	18	325	35	400	72	0%	0%
	Right Turn	1,675	100	7	150	22	175	43	0%	0%
WB	Through	425	200	21	375	41	425	54	7%	1%
	Right Turn	150	75	8	150	11	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	100	9	175	18	200	0	1%	0%
	Through	400	150	9	250	17	275	22	5%	0%
	Through/Right	400	175	9	275	20	325	27	0%	0%
NB	Left Turn	125	125	7	175	5	150	1	19%	0%
	Through/Right	1,125	100	20	250	48	300	59	0%	0%
SB	Left Turn	125	75	5	150	11	150	0	2%	0%
	Through/Right	1,775	150	18	325	45	400	68	16%	0%
WB	Left Turn	125	50	6	125	20	150	15	0%	0%
	Through	5,800	150	9	250	17	275	34	14%	0%
	Through/Right	5,800	175	11	275	23	300	42	0%	0%

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
WB	Shared	925	25	3	50	3	50	7	0%	0%
NB	Through/Right	25	25	0	25	0	25	0	0%	0%
SB	Left/Through	1,025	25	0	25	0	25	0	0%	0%
0										

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	225	25	2	50	6	50	14	0%	0%
	Through	400	75	9	150	16	175	30	7%	0%
	Right Turn	100	25	3	25	21	75	52	0%	0%
NB	Left Turn	125	25	4	50	7	75	7	0%	0%
	Through	350	50	5	100	12	125	44	1%	0%
	Right Turn	75	75	1	75	2	75	2	2%	0%
SB	Left Turn	125	50	5	100	7	125	11	1%	0%
	Through/Right	350	25	5	75	10	100	35	0%	0%
WB	U/Left Turns	325	100	7	175	11	175	15	0%	0%
	Left Turn	325	75	7	150	12	175	24	0%	0%
	Through	575	50	12	150	27	200	39	0%	0%
	Through/Right	575	75	13	175	24	225	29	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	150	50	5	75	11	125	38	0%	0%
	Through	575	100	12	200	25	250	47	2%	0%
SB	Left Turn	250	150	10	250	14	250	14	2%	0%
	Through/Right	1,600	50	16	100	67	200	135	0%	0%
WB	Through	350	125	15	250	30	300	47	16%	0%
	Right Turn	75	50	3	100	4	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	350	150	15	275	23	325	31	0%	0%
	Through/Right	350	175	18	300	25	325	29	0%	0%
SB	Left/Through	1,425	100	7	150	16	200	33	0%	0%
	Right Turn	1,425	75	4	125	7	150	13	0%	0%
WB	U/Left Turns	225	175	8	225	13	225	1	6%	0%
	Through	500	125	19	250	29	350	71	2%	0%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	100	9	150	13	175	19	2%	0%
	Through	500	100	12	175	22	225	30	2%	0%
NB	Left/Through	1,675	200	15	300	29	375	58	0%	0%
	Right Turn	1,675	225	10	400	25	475	82	0%	0%
WB	Through	425	125	12	200	27	250	56	2%	0%
	Right Turn	150	50	7	100	19	150	24	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	150	9	200	13	200	1	8%	0%
	Through	400	175	21	275	27	325	29	4%	0%
	Through/Right	400	175	19	275	26	300	45	0%	0%
NB	Left Turn	125	100	9	150	9	150	1	6%	0%
	Through/Right	1,125	75	12	175	27	225	37	2%	0%
SB	Left Turn	125	125	7	175	5	150	1	12%	0%
	Through/Right	1,775	150	24	275	57	325	72	8%	0%
WB	Left Turn	125	50	4	100	11	150	0	0%	0%
	Through	5,800	150	10	250	20	275	25	12%	0%
	Through/Right	5,800	175	7	275	14	300	24	0%	0%

Arterial Level of Service: EB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.5	20.1	0.1	16
	5	18.7	31.2	0.1	14
SR 113 SB Ramps	6	26.5	34.5	0.1	8
Route 1	7	16.0	26.6	0.1	14
Total		74.8	112.3	0.4	12

Arterial Level of Service: WB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	40.4	69.3	0.3	17
SR 113 SB Ramps	6	6.6	20.8	0.1	18
John Jones Rd	5	13.1	20.8	0.1	13
Risling Ct	4	11.0	23.2	0.1	18
	301	2.1	10.0	0.1	32
Total		73.2	144.0	0.7	18

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.3	19.9	0.1	16
	5	18.5	30.9	0.1	14
Route 2	6	30.0	42.3	0.1	6
Total		61.9	93.1	0.3	11

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	11.4	23.6	0.1	18
	301	2.1	10.0	0.1	31
Total		13.5	33.5	0.3	30

Arterial Level of Service: EB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	10.5	17.1	0.1	18
	5	9.6	21.9	0.1	20
SR 113 SB Ramps	6	20.5	28.5	0.1	10
Route 1	7	9.3	20.0	0.1	19
Total		49.9	87.5	0.4	16

Arterial Level of Service: WB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	34.7	63.9	0.3	18
SR 113 SB Ramps	6	7.7	21.9	0.1	17
John Jones Rd	5	10.3	18.0	0.1	15
Risling Ct	4	6.7	19.0	0.1	23
	301	1.4	9.3	0.1	34
Total		60.8	132.0	0.7	19

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	10.5	17.1	0.1	18
	5	9.6	21.9	0.1	20
Route 2	6	15.6	27.7	0.1	10
Total		35.7	66.8	0.3	15

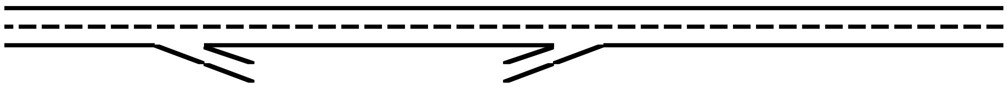
Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	6.7	19.0	0.1	23
	301	1.4	9.3	0.1	34
Total		8.1	28.2	0.3	36

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

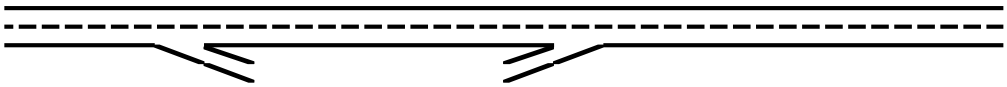


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,052	430	430	656
On Ramp Volume			226	
Off Ramp Volume	622			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,052	430	430	656
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,444	590	590	900
Flow (pcphpl)	722	295	295	450

Location	1	2	3	4



Key

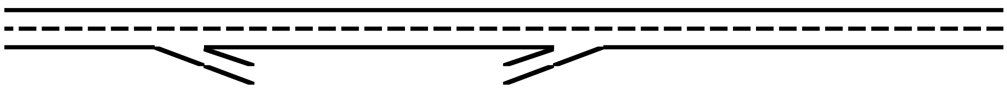
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.30	0.12	0.12	0.19
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	10.3	4.2	4.2	6.4
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			851	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.18	
Flow Rate (pcphpl)			425	
Speed (mph)			70.0	
Density (pcphpl)			6.1	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	727			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.15			
Flow Rate (pcphpl)	363			
Speed (mph)	70.0			
Density (pcphpl)	5.2			
LOS	A			

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

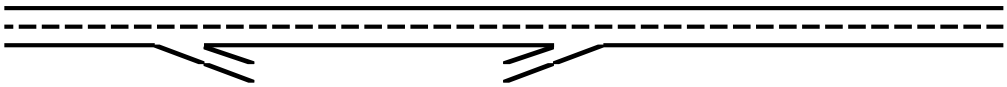
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			226	
PHF			0.88	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			261	
Flow Rate (pcphpl)			261	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.12	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

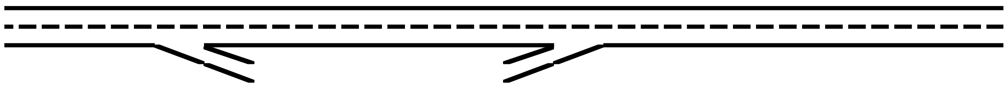


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	622			
PHF	0.88			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	717			
Flow Rate (pcphpl)	717			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.34			
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4

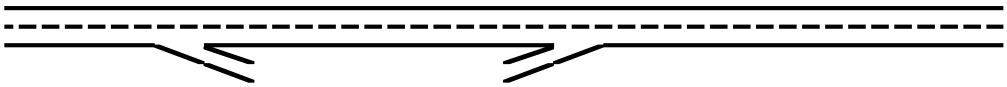


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			590	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			590	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			590	
v_{R12a} (pcph)			851	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.18	
Density			9.7	
LOS			A	

Location	1	2	3	4

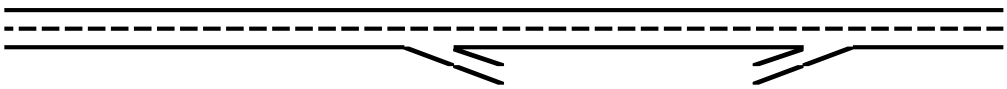


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,444			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.691			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,444			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,444			
Speed Index	0.36			
Area Speed	59.8			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.8			
v/c ratio	0.33			
Density	15.3			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.33	0.12	0.18	0.19
Segment Density	15.3	4.2	9.7	6.4
Segment LOS	B	A	A	A
Over Capacity				

Location	1	2	3	4

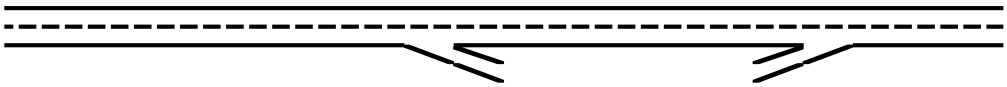


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,864	1,864	1,574	1,574
On Ramp Volume				912
Off Ramp Volume		290		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,864	1,864	1,574	1,574
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,285	2,285	1,929	1,929
Flow (pcphpl)	1,142	1,142	965	965

Location	1	2	3	4



Key

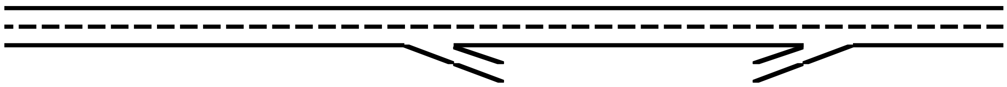
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.48	0.48	0.40	0.40
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.3	16.3	13.8	13.8
LOS	B	B	B	B
Operations for Segment GP Lanes				
Flow (pcph)				2,976
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.62
Flow Rate (pcphpl)				1,488
Speed (mph)				69.0
Density (pcphpl)				21.6
LOS				C

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

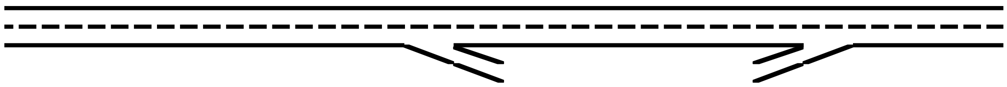


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Operations for Exiting GP Lanes				
Flow (pcph)		1,952		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.41		
Flow Rate (pcphpl)		976		
Speed (mph)		70.0		
Density (pcphpl)		13.9		
LOS		B		

Location	1	2	3	4

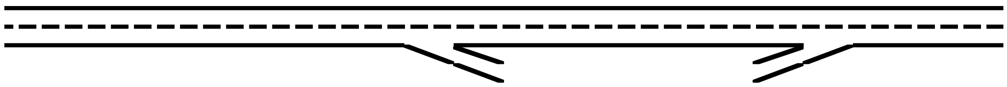


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				912
PHF				0.88
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				1,047
Flow Rate (pcphpl)				1,047
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.50

Location	1	2	3	4



Key

<> Express Lane (HOV)

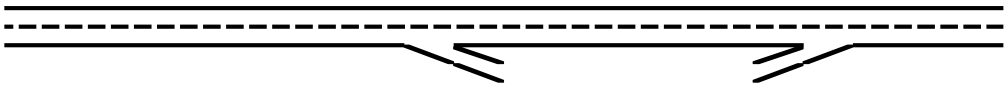
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		290		
PHF		0.88		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		333		
Flow Rate (pcphpl)		333		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.16		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

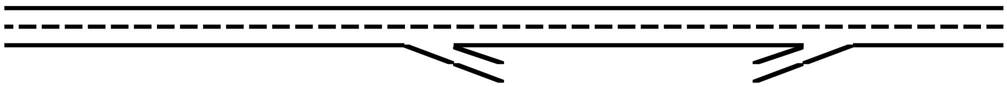
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,929
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,929
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,929
v_{R12a} (pcph)				2,976
Speed Index				0.37
Area Speed				59.7
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				59.7
v/c ratio				0.65
Density				26.1
LOS				C

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

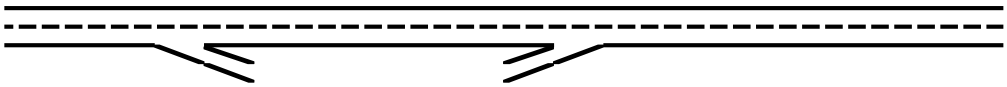


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,285		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.688		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,285		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,285		
Speed Index		0.33		
Area Speed		60.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.8		
v/c ratio		0.52		
Density		22.4		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.48	0.52	0.40	0.65
Segment Density	16.3	22.4	13.8	26.1
Segment LOS	B	C	B	C
Over Capacity				

Location	1	2	3	4

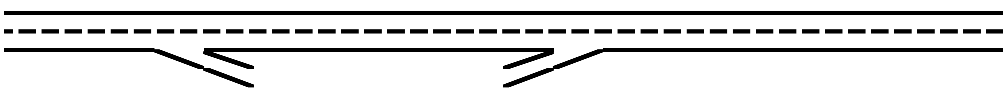


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,920	978	978	1,244
On Ramp Volume			266	
Off Ramp Volume	942			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,920	978	978	1,244
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,298	1,171	1,171	1,489
Flow (pcphpl)	1,149	585	585	745

Location	1	2	3	4

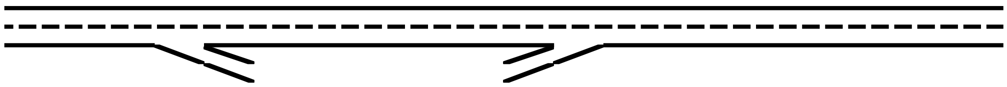


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.48	0.24	0.24	0.31
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.4	8.4	8.4	10.6
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			1,461	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.30	
Flow Rate (pcphpl)			731	
Speed (mph)			70.0	
Density (pcphpl)			10.4	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	1,270			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.26			
Flow Rate (pcphpl)	635			
Speed (mph)	70.0			
Density (pcphpl)	9.1			
LOS	A			

Location	1	2	3	4



Key

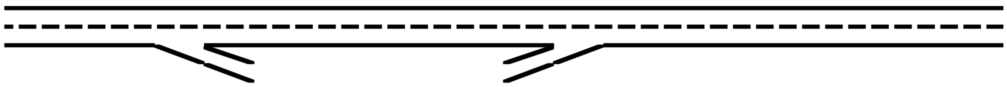
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			266	
PHF			0.93	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			290	
Flow Rate (pcphpl)			290	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.14	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



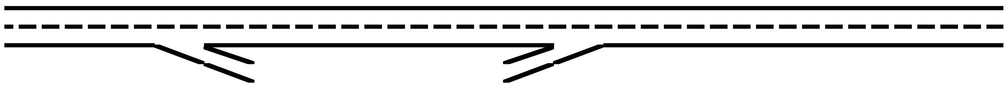
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	942			
PHF	0.93			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	1,028			
Flow Rate (pcphpl)	1,028			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.49			
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour



Key

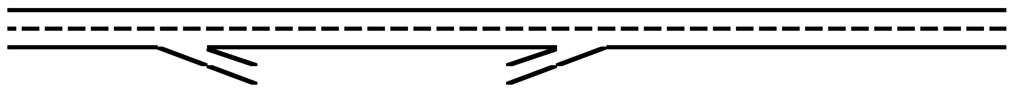
<> Express Lane (HOV)

Location	1	2	3	4
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,171	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,171	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,171	
v_{R12a} (pcph)			1,461	
Speed Index			0.30	
Area Speed			61.5	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.5	
v/c ratio			0.32	
Density			14.4	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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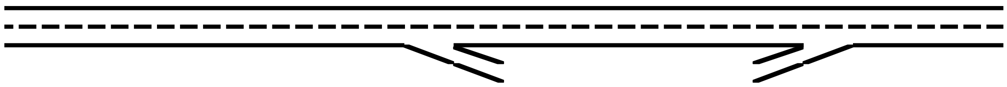
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	2,298			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.655			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	2,298			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	2,298			
Speed Index	0.39			
Area Speed	59.1			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.1			
v/c ratio	0.52			
Density	22.7			
LOS	C			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.52	0.24	0.32	0.31
Segment Density	22.7	8.4	14.4	10.6
Segment LOS	C	A	B	A
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour



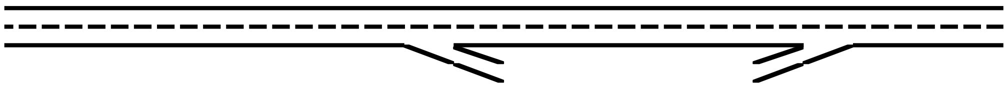
Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,085	1,085	878	878
On Ramp Volume				480
Off Ramp Volume		207		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,085	1,085	878	878
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,201	1,201	972	972
Flow (pcphpl)	601	601	486	486

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour

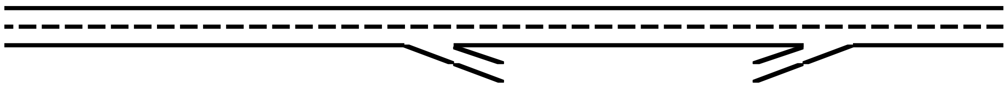


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.25	0.25	0.20	0.20
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	8.6	8.6	6.9	6.9
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,493
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.31
Flow Rate (pcphpl)				747
Speed (mph)				70.0
Density (pcphpl)				10.7
LOS				A
Operations for Exiting GP Lanes				
Flow (pcph)		976		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.20		
Flow Rate (pcphpl)		488		
Speed (mph)		70.0		
Density (pcphpl)		7.0		
LOS		A		

Location	1	2	3	4



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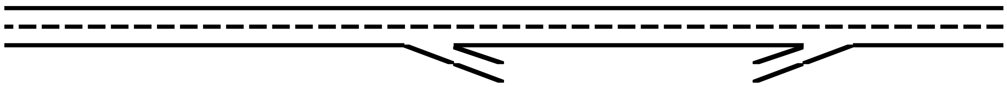
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
FFS	65	65	65	65
Capacity (pcph)				
v/c ratio				
On Ramp Flow Rate				
Volume (vph)				480
PHF				0.93
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				521
Flow Rate (pcphpl)				521
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.25

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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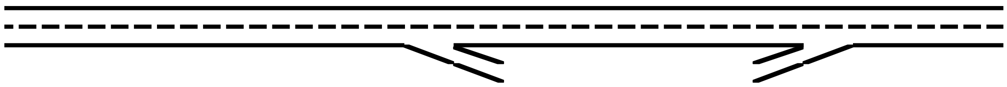
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		207		
PHF		0.93		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		225		
Flow Rate (pcphpl)		225		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.11		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4

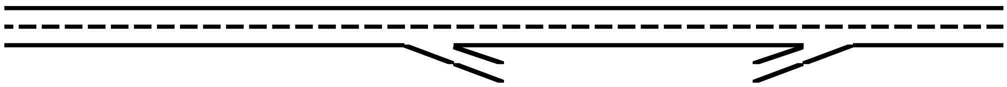


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				972
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				972
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				972
v_{R12a} (pcph)				1,493
Speed Index				0.31
Area Speed				61.4
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.4
v/c ratio				0.32
Density				14.8
LOS				B

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,201		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.720		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,201		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,201		
Speed Index		0.32		
Area Speed		61.1		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		61.1		
v/c ratio		0.27		
Density		13.1		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.25	0.27	0.20	0.32
Segment Density	8.6	13.1	6.9	14.8
Segment LOS	A	B	A	B
Over Capacity				

Existing Plus Approved Projects Plus Project Level of Service (LOS) Calculations

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	9	267	39	0	113	179	11	0	40	62	204
Future Vol, veh/h	0	9	267	39	0	113	179	11	0	40	62	204
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.76	0.76	0.76	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	287	42	0	149	236	14	0	43	67	222
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	19.5	14.5	15.7
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	36%
Vol Thru, %	0%	23%	0%	87%	0%	94%	54%
Vol Right, %	0%	77%	0%	13%	0%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	266	9	306	113	190	99
LT Vol	40	0	9	0	113	0	36
Through Vol	0	62	0	267	0	179	53
RT Vol	0	204	0	39	0	11	10
Lane Flow Rate	43	289	10	329	149	250	119
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.092	0.526	0.02	0.617	0.301	0.467	0.254
Departure Headway (Hd)	7.614	6.555	7.352	6.749	7.279	6.727	7.676
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	549	487	536	494	535	468
Service Time	5.355	4.296	5.094	4.491	5.023	4.47	5.731
HCM Lane V/C Ratio	0.091	0.526	0.021	0.614	0.302	0.467	0.254
HCM Control Delay	11.1	16.4	10.2	19.8	13.1	15.3	13.3
HCM Lane LOS	B	C	B	C	B	C	B
HCM 95th-tile Q	0.3	3	0.1	4.2	1.3	2.5	1

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Lane Configurations			✥	
Traffic Vol, veh/h	0	36	53	10
Future Vol, veh/h	0	36	53	10
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	64	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.3
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	492	26	103	384	22	176
Future Volume (veh/h)	492	26	103	384	22	176
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	547	0	111	413	26	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.90	0.90	0.93	0.93	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	872	0	168	1263	57	0
Arrive On Green	0.47	0.00	0.09	0.68	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1711	0
Grp Volume(v), veh/h	547	0	111	413	27	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	7.7	0.0	2.1	3.2	0.5	0.0
Cycle Q Clear(g_c), s	7.7	0.0	2.1	3.2	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	872	0	168	1263	59	0
V/C Ratio(X)	0.63	0.00	0.66	0.33	0.46	0.00
Avail Cap(c_a), veh/h	1883	0	1025	1883	1026	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	15.1	2.3	16.4	0.0
Incr Delay (d2), s/veh	0.7	0.0	4.4	0.1	11.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	1.2	1.7	0.4	0.0
LnGrp Delay(d),s/veh	7.7	0.0	19.5	2.5	28.0	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	547			524	27	
Approach Delay, s/veh	7.7			6.1	28.0	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	22.2				29.5		5.1
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.1	9.7				5.2		2.5
Green Ext Time (p_c), s	0.2	6.5				6.8		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			7.4
HCM 2010 LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	57	59	102.8%	5.4	1.2	A
	Through	106	113	106.6%	4.8	0.8	A
	Right Turn	31	31	100.0%	3.3	1.0	A
	Subtotal	194	203	104.4%	4.8	0.6	A
SB	Left Turn	1	0	40.0%	0.2	0.5	A
	Through	101	103	101.7%	1.6	2.9	A
	Right Turn						
	Subtotal	102	103	101.1%	1.6	2.9	A
EB	Left Turn						
	Through	4	5	115.0%	3.8	4.3	A
	Right Turn	57	57	100.7%	9.2	13.4	A
	Subtotal	61	62	101.6%	9.1	12.6	A
WB	Left Turn	11	10	94.5%	5.4	3.7	A
	Through	3	3	103.3%	3.0	3.1	A
	Right Turn	2	2	105.0%	1.4	2.1	A
	Subtotal	16	16	97.5%	5.6	2.8	A
Total		373	383	102.8%	4.5	2.4	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	12	10	83.3%	61.7	36.8	E
	Through	19	22	115.8%	48.7	15.1	D
	Right Turn	269	269	99.8%	5.8	4.9	A
	Subtotal	300	301	100.2%	11.3	6.7	B
SB	Left Turn	136	134	98.8%	88.3	48.4	F
	Through	12	11	94.2%	58.4	36.6	E
	Right Turn	21	24	112.4%	48.3	52.0	D
	Subtotal	169	169	100.1%	79.9	47.1	E
EB	Left Turn	64	65	102.2%	71.6	22.1	E
	Through	616	614	99.7%	18.6	4.4	B
	Right Turn	14	13	95.0%	11.7	6.0	B
	Subtotal	694	693	99.9%	24.0	4.8	C
WB	Left Turn	131	129	98.6%	57.1	9.9	E
	Through	496	497	100.3%	12.6	0.9	B
	Right Turn	116	121	104.1%	5.5	0.8	A
	Subtotal	743	747	100.6%	19.6	2.7	B
Total		1,906	1,910	100.2%	25.4	6.1	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
AM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	185	189	102.3%	30.1	4.0	C
	Through						
	Right Turn	59	60	102.0%	6.3	1.7	A
	Subtotal	244	250	102.3%	24.2	3.3	C
EB	Left Turn	76	76	99.7%	62.2	12.2	E
	Through	949	946	99.6%	31.9	14.7	C
	Right Turn						
	Subtotal	1,025	1,021	99.6%	34.3	14.0	C
WB	Left Turn						
	Through	684	686	100.3%	13.1	2.1	B
	Right Turn	301	298	98.9%	9.2	1.4	A
	Subtotal	985	984	99.8%	11.9	1.8	B
Total		2,254	2,254	100.0%	23.4	5.8	C

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	158	169	107.0%	42.8	4.1	D
	Through	1	1	100.0%	6.7	14.4	A
	Right Turn	140	139	99.4%	43.2	6.6	D
	Subtotal	299	309	103.4%	42.9	4.4	D
EB	Left Turn						
	Through	657	651	99.0%	33.7	6.9	C
	Right Turn	477	483	101.2%	37.7	7.5	D
	Subtotal	1,134	1,133	99.9%	35.5	7.2	D
WB	Left Turn	478	471	98.5%	75.7	7.5	E
	Through	845	843	99.8%	13.2	1.2	B
	Right Turn						
	Subtotal	1,323	1,314	99.3%	35.9	5.0	D
Total		2,756	2,756	100.0%	36.4	4.4	D

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	331	330	99.8%	41.0	6.2	D
	Through	1	0	40.0%	21.8	47.9	C
	Right Turn	315	316	100.3%	12.0	1.4	B
	Subtotal	647	647	100.0%	27.0	4.2	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	90	81	89.9%	54.5	15.7	D
	Through	725	738	101.8%	17.6	1.8	B
	Right Turn						
	Subtotal	815	819	100.5%	21.5	1.2	C
WB	Left Turn						
	Through	991	987	99.6%	32.7	11.3	C
	Right Turn	151	159	105.2%	18.2	7.2	B
	Subtotal	1,142	1,146	100.4%	30.6	10.7	C
Total		2,604	2,612	100.3%	26.8	5.0	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	197	202	102.3%	45.1	5.9	D
	Through	35	37	104.6%	35.3	8.9	D
	Right Turn	39	40	102.1%	11.7	7.8	B
	Subtotal	271	278	102.5%	39.0	5.2	D
SB	Left Turn	71	72	101.3%	47.3	10.9	D
	Through	81	78	96.3%	40.8	7.9	D
	Right Turn	216	216	100.0%	18.6	6.5	B
	Subtotal	368	366	99.4%	29.2	6.9	C
EB	Left Turn	118	121	102.2%	52.5	7.6	D
	Through	574	572	99.7%	32.3	3.4	C
	Right Turn	168	175	104.2%	19.7	2.3	B
	Subtotal	860	868	100.9%	32.5	2.8	C
WB	Left Turn	30	30	98.7%	55.5	10.2	E
	Through	657	655	99.6%	27.5	3.8	C
	Right Turn	58	57	98.3%	18.7	4.6	B
	Subtotal	745	741	99.5%	27.9	3.6	C
Total		2,244	2,253	100.4%	31.3	2.5	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	511	148	189	451	37	166	57	71	52	158	107
Future Volume (veh/h)	30	511	148	189	451	37	166	57	71	52	158	107
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1855	1900	1863	1863	1727	1792	1815	1900	1863	1800	1900
Adj Flow Rate, veh/h	37	623	0	222	531	0	193	66	0	57	174	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	60	1241	0	272	1662	690	240	391	0	81	412	0
Arrive On Green	0.04	0.35	0.00	0.15	0.47	0.00	0.14	0.22	0.00	0.05	0.12	0.00
Sat Flow, veh/h	1691	3616	0	1774	3539	1468	1707	1815	0	1774	3509	0
Grp Volume(v), veh/h	37	623	0	222	531	0	193	66	0	57	174	0
Grp Sat Flow(s),veh/h/ln	1691	1762	0	1774	1770	1468	1707	1815	0	1774	1710	0
Q Serve(g_s), s	1.7	10.7	0.0	9.3	7.2	0.0	8.4	2.3	0.0	2.4	3.6	0.0
Cycle Q Clear(g_c), s	1.7	10.7	0.0	9.3	7.2	0.0	8.4	2.3	0.0	2.4	3.6	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	60	1241	0	272	1662	690	240	391	0	81	412	0
V/C Ratio(X)	0.62	0.50	0.00	0.82	0.32	0.00	0.80	0.17	0.00	0.70	0.42	0.00
Avail Cap(c_a), veh/h	879	2060	0	692	2069	858	887	944	0	922	1777	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.6	19.6	0.0	31.5	12.7	0.0	32.1	24.6	0.0	36.2	31.4	0.0
Incr Delay (d2), s/veh	9.8	0.3	0.0	6.0	0.4	0.0	6.2	0.2	0.0	10.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.2	0.0	5.0	3.6	0.0	4.4	1.2	0.0	1.4	1.8	0.0
LnGrp Delay(d),s/veh	46.4	19.9	0.0	37.5	13.1	0.0	38.3	24.8	0.0	46.7	32.1	0.0
LnGrp LOS	D	B		D	B		D	C		D	C	
Approach Vol, veh/h		660			753			259			231	
Approach Delay, s/veh		21.4			20.3			34.9			35.7	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	32.1	14.8	13.3	7.7	41.1	7.5	20.6				
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0				
Max Q Clear Time (g_c+I1), s	11.3	12.7	10.4	5.6	3.7	9.2	4.4	4.3				
Green Ext Time (p_c), s	0.6	14.4	0.6	1.6	0.1	15.1	0.1	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			24.5									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	497	84	100	650	0	103	0	183	0	0	0
Future Volume (veh/h)	0	497	84	100	650	0	103	0	183	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	654	0	122	793	0	184	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.76	0.76	0.82	0.82	0.92	0.56	0.92	0.56	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1577	0	164	2255	0	247	0	0	0	5	0
Arrive On Green	0.00	0.45	0.00	0.09	0.64	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	184		0	-93137	0
Grp Volume(v), veh/h	0	654	0	122	793	0	184	21.1		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	5.1	0.0	2.7	4.2	0.0	4.0			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.1	0.0	2.7	4.2	0.0	4.0			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1577	0	164	2255	0	247			0	5	0
V/C Ratio(X)	0.00	0.41	0.00	0.74	0.35	0.00	0.74			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2724	0	661	2812	0	881			0	694	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.6	0.0	17.8	3.4	0.0	16.6			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	6.5	0.1	0.0	4.4			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	1.6	2.0	0.0	2.2			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.8	0.0	24.3	3.5	0.0	21.1			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		654			915						0	
Approach Delay, s/veh		7.8			6.3						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		30.7	9.6	0.0	7.7	22.9		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		6.2	6.0	0.0	4.7	7.1		
Green Ext Time (p_c), s		11.3	0.4	0.0	0.2	10.9		

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	714	94	238	634	96	59	77	146	201	218	69
Future Volume (veh/h)	38	714	94	238	634	96	59	77	146	201	218	69
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1845	1900
Adj Flow Rate, veh/h	51	952	0	309	823	0	76	99	0	242	263	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.78	0.78	0.78	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	75	1318	590	405	1591	0	100	248	0	294	448	0
Arrive On Green	0.04	0.37	0.00	0.12	0.45	0.00	0.06	0.13	0.00	0.17	0.24	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1845	0
Grp Volume(v), veh/h	51	952	0	309	823	0	76	99	0	242	263	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1845	0
Q Serve(g_s), s	2.3	18.8	0.0	7.2	13.6	0.0	3.5	4.0	0.0	10.7	10.2	0.0
Cycle Q Clear(g_c), s	2.3	18.8	0.0	7.2	13.6	0.0	3.5	4.0	0.0	10.7	10.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	75	1318	590	405	1591	0	100	248	0	294	448	0
V/C Ratio(X)	0.68	0.72	0.00	0.76	0.52	0.00	0.76	0.40	0.00	0.82	0.59	0.00
Avail Cap(c_a), veh/h	654	1956	875	1256	1956	0	647	682	0	654	680	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.5	21.9	0.0	34.7	16.1	0.0	37.8	32.3	0.0	32.8	27.2	0.0
Incr Delay (d2), s/veh	4.1	0.3	0.0	1.1	0.1	0.0	11.2	1.0	0.0	6.8	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	9.2	0.0	3.4	6.7	0.0	2.0	2.1	0.0	5.8	5.4	0.0
LnGrp Delay(d),s/veh	42.5	22.2	0.0	35.9	16.2	0.0	49.0	33.3	0.0	39.6	28.7	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		1003			1132			175			505	
Approach Delay, s/veh		23.2			21.6			40.1			33.9	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	41.6	8.6	23.8	13.7	35.3	17.5	14.9
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.3	15.6	5.5	12.2	9.2	20.8	12.7	6.0
Green Ext Time (p_c), s	0.0	10.2	0.2	2.3	0.5	9.5	0.8	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	680	223	49	741	128	154	45	72	196	121	60
Future Volume (veh/h)	158	680	223	49	741	128	154	45	72	196	121	60
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	200	861	182	66	1001	159	192	56	21	213	132	47
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.80	0.80	0.80	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	243	1538	661	84	1064	169	235	182	68	262	204	73
Arrive On Green	0.14	0.43	0.43	0.05	0.35	0.35	0.13	0.14	0.14	0.15	0.16	0.16
Sat Flow, veh/h	1774	3539	1522	1660	3055	485	1774	1276	479	1774	1295	461
Grp Volume(v), veh/h	200	861	182	66	579	581	192	0	77	213	0	179
Grp Sat Flow(s),veh/h/ln	1774	1770	1522	1660	1770	1770	1774	0	1755	1774	0	1755
Q Serve(g_s), s	9.3	15.4	6.5	3.3	26.9	27.0	8.9	0.0	3.3	9.9	0.0	8.1
Cycle Q Clear(g_c), s	9.3	15.4	6.5	3.3	26.9	27.0	8.9	0.0	3.3	9.9	0.0	8.1
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.27	1.00		0.26
Lane Grp Cap(c), veh/h	243	1538	661	84	616	616	235	0	250	262	0	277
V/C Ratio(X)	0.82	0.56	0.28	0.78	0.94	0.94	0.82	0.00	0.31	0.81	0.00	0.65
Avail Cap(c_a), veh/h	419	1538	661	392	627	627	419	0	829	419	0	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	17.9	15.4	39.7	26.8	26.8	35.7	0.0	32.6	35.0	0.0	33.5
Incr Delay (d2), s/veh	8.1	0.5	0.3	17.0	22.4	22.7	8.1	0.0	0.8	11.0	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.5	2.8	1.9	16.9	16.9	4.9	0.0	1.7	5.6	0.0	4.3
LnGrp Delay(d),s/veh	43.6	18.4	15.7	56.8	49.1	49.5	43.8	0.0	33.4	45.9	0.0	38.1
LnGrp LOS	D	B	B	E	D	D	D		C	D		D
Approach Vol, veh/h		1243			1226			269			392	
Approach Delay, s/veh		22.1			49.7			40.8			42.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	18.9	16.1	34.0	17.0	17.6	8.8	41.3
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	10.9	10.1	11.3	29.0	11.9	5.3	5.3	17.4
Green Ext Time (p_c), s	0.4	2.5	0.4	0.5	0.7	2.6	0.1	10.5

Intersection Summary		
HCM 2010 Ctrl Delay		37.0
HCM 2010 LOS		D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
AM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	16	14	90.0%	3.9	1.5	A
	Subtotal	16	14	90.0%	3.9	1.5	A
EB	Left Turn						
	Through	694	691	99.6%	1.2	0.2	A
	Right Turn						
	Subtotal	694	691	99.6%	1.2	0.2	A
WB	Left Turn						
	Through	502	504	100.4%	2.6	0.3	A
	Right Turn	32	34	105.3%	2.3	0.7	A
	Subtotal	534	538	100.7%	2.6	0.3	A
Total		1,244	1,243	99.9%	1.8	0.2	A

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	22	237	38	0	235	276	34	0	38	46	186
Future Vol, veh/h	0	22	237	38	0	235	276	34	0	38	46	186
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.91	0.91	0.91	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	286	46	0	258	303	37	0	43	52	211
Number of Lanes	0	1	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	2
HCM Control Delay	20.1	18.6	15.8
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	26%
Vol Thru, %	0%	20%	0%	86%	0%	89%	61%
Vol Right, %	0%	80%	0%	14%	0%	11%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	232	22	275	235	310	82
LT Vol	38	0	22	0	235	0	21
Through Vol	0	46	0	237	0	276	50
RT Vol	0	186	0	38	0	34	11
Lane Flow Rate	43	264	27	331	258	341	88
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.096	0.504	0.055	0.635	0.514	0.623	0.198
Departure Headway (Hd)	7.976	6.889	7.51	6.899	7.169	6.579	8.064
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	450	525	477	523	504	548	444
Service Time	5.716	4.63	5.253	4.642	4.909	4.32	6.121
HCM Lane V/C Ratio	0.096	0.503	0.057	0.633	0.512	0.622	0.198
HCM Control Delay	11.6	16.5	10.7	20.9	17.3	19.6	13.1
HCM Lane LOS	B	C	B	C	C	C	B
HCM 95th-tile Q	0.3	2.8	0.2	4.4	2.9	4.3	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	21	50	11
Future Vol, veh/h	0	21	50	11
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	54	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.1
HCM LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	480	27	150	542	21	105
Future Volume (veh/h)	480	27	150	542	21	105
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	539	0	156	565	25	0
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.89	0.89	0.96	0.96	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	887	0	210	1306	54	0
Arrive On Green	0.48	0.00	0.12	0.70	0.03	0.00
Sat Flow, veh/h	1863	0	1774	1863	1709	0
Grp Volume(v), veh/h	539	0	156	565	26	0
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1777	0
Q Serve(g_s), s	8.0	0.0	3.2	4.9	0.5	0.0
Cycle Q Clear(g_c), s	8.0	0.0	3.2	4.9	0.5	0.0
Prop In Lane		0.00	1.00		0.96	0.00
Lane Grp Cap(c), veh/h	887	0	210	1306	56	0
V/C Ratio(X)	0.61	0.00	0.74	0.43	0.46	0.00
Avail Cap(c_a), veh/h	1743	0	948	1743	950	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	15.9	2.4	17.8	0.0
Incr Delay (d2), s/veh	0.7	0.0	5.2	0.2	12.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.9	2.4	0.4	0.0
LnGrp Delay(d),s/veh	7.9	0.0	21.1	2.6	29.9	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	539			721	26	
Approach Delay, s/veh	7.9			6.6	29.9	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.4	23.8				32.2		5.2
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	5.2	10.0				6.9		2.5
Green Ext Time (p_c), s	0.3	7.8				8.1		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		7.6
HCM 2010 LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
PM Peak Hour

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	44	46	105.0%	4.8	0.7	A
	Through	44	45	102.5%	3.8	1.0	A
	Right Turn	19	19	100.5%	2.9	0.9	A
	Subtotal	107	110	103.2%	4.2	0.5	A
SB	Left Turn	3	3	86.7%	0.9	0.8	A
	Through	107	105	97.7%	0.2	0.2	A
	Right Turn	1	2	200.0%	0.0	0.0	A
	Subtotal	111	109	98.3%	0.2	0.2	A
EB	Left Turn						
	Through	2	3	170.0%	2.4	3.3	A
	Right Turn	41	64	155.4%	3.0	0.6	A
	Subtotal	43	67	156.0%	3.1	0.6	A
WB	Left Turn	20	18	91.5%	4.1	0.6	A
	Through	4	5	130.0%	2.3	3.8	A
	Right Turn						
	Subtotal	24	24	97.9%	4.2	0.9	A
Total		285	310	108.8%	2.7	0.2	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	13	92.1%	39.1	23.8	D
	Through	12	13	108.3%	42.4	11.8	D
	Right Turn	185	185	99.7%	3.4	0.6	A
	Subtotal	211	210	99.7%	9.9	2.6	A
SB	Left Turn	125	135	107.7%	41.6	7.0	D
	Through	9	14	151.1%	45.0	28.0	D
	Right Turn	34	40	118.2%	14.3	7.5	B
	Subtotal	168	188	112.1%	35.2	6.4	D
EB	Left Turn	39	39	99.0%	56.4	18.2	E
	Through	515	529	102.7%	14.4	3.1	B
	Right Turn	15	16	107.3%	3.3	1.3	A
	Subtotal	569	584	102.5%	17.8	3.4	B
WB	Left Turn	201	207	102.9%	46.9	4.5	D
	Through	686	692	100.9%	10.2	3.8	B
	Right Turn	68	69	101.0%	5.8	2.2	A
	Subtotal	955	968	101.3%	18.1	2.4	B
Total		1,903	1,950	102.5%	18.7	1.6	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
PM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	233	231	99.2%	39.5	6.1	D
	Through						
	Right Turn	58	62	106.0%	6.5	1.2	A
	Subtotal	291	293	100.5%	32.4	4.2	C
EB	Left Turn	36	35	96.7%	52.7	7.2	D
	Through	793	815	102.8%	11.0	2.2	B
	Right Turn						
	Subtotal	829	850	102.6%	12.7	2.1	B
WB	Left Turn						
	Through	897	903	100.7%	10.7	2.6	B
	Right Turn	175	180	102.7%	8.4	2.0	A
	Subtotal	1,072	1,083	101.0%	10.3	2.5	B
Total		2,192	2,226	101.5%	14.2	1.7	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	130	121	93.2%	37.1	4.9	D
	Through	1	1	90.0%	2.8	9.0	A
	Right Turn	96	100	104.6%	38.2	6.9	D
	Subtotal	227	223	98.0%	37.7	5.0	D
EB	Left Turn						
	Through	759	782	103.0%	21.6	3.7	C
	Right Turn	267	269	100.8%	17.6	2.9	B
	Subtotal	1,026	1,051	102.5%	20.6	3.4	C
WB	Left Turn	245	255	104.0%	48.9	7.1	D
	Through	976	984	100.8%	7.7	2.0	A
	Right Turn						
	Subtotal	1,221	1,239	101.5%	16.5	3.1	B
Total		2,474	2,513	101.6%	20.1	2.4	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
PM Peak Hour

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	394	395	100.3%	36.9	4.0	D
	Through						
	Right Turn	592	605	102.2%	35.9	17.3	D
	Subtotal	986	1,001	101.5%	36.4	10.1	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	108	113	104.4%	70.3	17.8	E
	Through	787	792	100.6%	11.8	2.5	B
	Right Turn						
	Subtotal	895	905	101.1%	19.4	4.4	B
WB	Left Turn						
	Through	825	841	101.9%	16.6	2.9	B
	Right Turn	170	177	103.9%	7.8	1.5	A
	Subtotal	995	1,017	102.2%	15.0	2.6	B
Total		2,876	2,922	101.6%	23.7	3.4	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	123	123	100.3%	41.3	13.7	D
	Through	51	47	92.7%	40.9	12.2	D
	Right Turn	46	47	102.6%	9.2	6.9	A
	Subtotal	220	218	99.0%	34.0	10.0	C
SB	Left Turn	153	152	99.1%	50.8	14.0	D
	Through	77	77	100.0%	44.0	10.4	D
	Right Turn	125	127	101.6%	20.2	8.9	C
	Subtotal	355	356	100.2%	39.0	10.0	D
EB	Left Turn	169	173	102.5%	52.7	13.3	D
	Through	835	846	101.3%	16.4	2.7	B
	Right Turn	131	132	100.6%	10.5	3.4	B
	Subtotal	1,135	1,151	101.4%	21.5	3.5	C
WB	Left Turn	27	23	85.6%	40.1	13.9	D
	Through	662	682	103.0%	24.7	3.5	C
	Right Turn	102	106	104.0%	18.9	6.8	B
	Subtotal	791	811	102.5%	24.3	4.0	C
Total		2,501	2,535	101.4%	26.0	2.8	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	814	142	92	505	74	257	134	126	70	119	45
Future Volume (veh/h)	45	814	142	92	505	74	257	134	126	70	119	45
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1857	1900	1863	1863	1727	1792	1808	1900	1863	1786	1900
Adj Flow Rate, veh/h	49	885	0	101	555	0	299	156	0	92	157	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.86	0.86	0.86	0.76	0.76	0.76
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	63	1310	0	130	1442	598	340	552	0	120	592	0
Arrive On Green	0.04	0.37	0.00	0.07	0.41	0.00	0.20	0.31	0.00	0.07	0.17	0.00
Sat Flow, veh/h	1691	3622	0	1774	3539	1468	1707	1808	0	1774	3483	0
Grp Volume(v), veh/h	49	885	0	101	555	0	299	156	0	92	157	0
Grp Sat Flow(s),veh/h/ln	1691	1764	0	1774	1770	1468	1707	1808	0	1774	1697	0
Q Serve(g_s), s	2.8	20.8	0.0	5.5	10.9	0.0	16.8	6.5	0.0	5.0	4.0	0.0
Cycle Q Clear(g_c), s	2.8	20.8	0.0	5.5	10.9	0.0	16.8	6.5	0.0	5.0	4.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	63	1310	0	130	1442	598	340	552	0	120	592	0
V/C Ratio(X)	0.78	0.68	0.00	0.77	0.38	0.00	0.88	0.28	0.00	0.77	0.27	0.00
Avail Cap(c_a), veh/h	683	1605	0	538	1609	668	690	731	0	717	1372	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.2	26.1	0.0	45.0	20.6	0.0	38.5	26.1	0.0	45.4	35.4	0.0
Incr Delay (d2), s/veh	18.0	0.8	0.0	9.3	0.6	0.0	7.4	0.3	0.0	9.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.2	0.0	3.1	5.4	0.0	8.6	3.3	0.0	2.8	1.9	0.0
LnGrp Delay(d),s/veh	65.2	27.0	0.0	54.4	21.2	0.0	45.9	26.4	0.0	55.0	35.6	0.0
LnGrp LOS	E	C		D	C		D	C		E	D	
Approach Vol, veh/h		934			656			455			249	
Approach Delay, s/veh		29.0			26.3			39.2			42.8	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	41.7	23.7	21.2	8.7	45.3	10.7	34.2
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	7.5	22.8	18.8	6.0	4.8	12.9	7.0	8.5
Green Ext Time (p_c), s	0.2	13.9	0.9	2.0	0.1	17.5	0.2	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1002	82	77	575	0	140	0	166	0	0	0
Future Volume (veh/h)	0	1002	82	77	575	0	140	0	166	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1022	0	87	646	0	147	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.89	0.89	0.89	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1820	0	133	2411	0	197	0	0	0	4	0
Arrive On Green	0.00	0.51	0.00	0.07	0.68	0.00	0.11	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	147		0	-93137	0
Grp Volume(v), veh/h	0	1022	0	87	646	0	147	24.2		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	8.5	0.0	2.1	3.1	0.0	3.5			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.5	0.0	2.1	3.1	0.0	3.5			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1820	0	133	2411	0	197			0	4	0
V/C Ratio(X)	0.00	0.56	0.00	0.65	0.27	0.00	0.75			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2532	0	614	2613	0	819			0	645	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.2	0.0	19.5	2.7	0.0	18.7			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	5.4	0.1	0.0	5.5			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	0.0	1.2	1.5	0.0	2.0			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.5	0.0	24.9	2.8	0.0	24.2			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		1022			733						0	
Approach Delay, s/veh		7.5			5.4						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		34.5	8.8	0.0	7.2	27.3		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		5.1	5.5	0.0	4.1	10.5		
Green Ext Time (p_c), s		13.7	0.3	0.0	0.1	11.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	925	257	188	620	185	122	151	224	120	131	49
Future Volume (veh/h)	68	925	257	188	620	185	122	151	224	120	131	49
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1852	1900	1863	1843	1900
Adj Flow Rate, veh/h	76	1028	0	211	697	0	137	170	0	138	151	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	99	1411	631	309	1534	0	178	331	0	182	332	0
Arrive On Green	0.06	0.40	0.00	0.09	0.43	0.00	0.10	0.18	0.00	0.10	0.18	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1852	0	1774	1843	0
Grp Volume(v), veh/h	76	1028	0	211	697	0	137	170	0	138	151	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1852	0	1774	1843	0
Q Serve(g_s), s	3.1	18.3	0.0	4.4	10.3	0.0	5.6	6.2	0.0	5.6	5.4	0.0
Cycle Q Clear(g_c), s	3.1	18.3	0.0	4.4	10.3	0.0	5.6	6.2	0.0	5.6	5.4	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	99	1411	631	309	1534	0	178	331	0	182	332	0
V/C Ratio(X)	0.77	0.73	0.00	0.68	0.45	0.00	0.77	0.51	0.00	0.76	0.45	0.00
Avail Cap(c_a), veh/h	718	2148	961	1379	2148	0	711	749	0	718	746	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	18.9	0.0	32.7	14.8	0.0	32.5	27.5	0.0	32.4	27.1	0.0
Incr Delay (d2), s/veh	4.7	0.3	0.0	1.0	0.1	0.0	6.9	1.2	0.0	7.6	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.9	0.0	2.1	5.1	0.0	3.1	3.2	0.0	3.1	2.9	0.0
LnGrp Delay(d),s/veh	39.2	19.2	0.0	33.7	14.9	0.0	39.3	28.7	0.0	40.0	28.3	0.0
LnGrp LOS	D	B		C	B		D	C		D	C	
Approach Vol, veh/h		1104			908			307			289	
Approach Delay, s/veh		20.6			19.3			33.5			33.9	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	37.1	11.5	17.4	10.7	34.5	11.6	17.3
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.1	12.3	7.6	7.4	6.4	20.3	7.6	8.2
Green Ext Time (p_c), s	0.1	10.1	0.4	2.1	0.4	9.3	0.5	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	1023	81	74	781	169	132	90	55	218	101	90
Future Volume (veh/h)	165	1023	81	74	781	169	132	90	55	218	101	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	183	1137	27	83	878	175	155	106	40	263	122	74
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.85	0.85	0.85	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	225	1391	577	107	962	192	195	184	70	311	226	137
Arrive On Green	0.13	0.39	0.39	0.06	0.33	0.33	0.11	0.14	0.14	0.18	0.21	0.21
Sat Flow, veh/h	1774	3539	1469	1660	2914	581	1774	1278	482	1774	1078	654
Grp Volume(v), veh/h	183	1137	27	83	533	520	155	0	146	263	0	196
Grp Sat Flow(s),veh/h/ln	1774	1770	1469	1660	1770	1725	1774	0	1761	1774	0	1733
Q Serve(g_s), s	8.5	24.5	1.0	4.2	24.6	24.6	7.3	0.0	6.6	12.2	0.0	8.6
Cycle Q Clear(g_c), s	8.5	24.5	1.0	4.2	24.6	24.6	7.3	0.0	6.6	12.2	0.0	8.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.27	1.00		0.38
Lane Grp Cap(c), veh/h	225	1391	577	107	584	570	195	0	254	311	0	363
V/C Ratio(X)	0.81	0.82	0.05	0.78	0.91	0.91	0.79	0.00	0.58	0.84	0.00	0.54
Avail Cap(c_a), veh/h	417	1391	577	390	624	608	417	0	827	417	0	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	23.1	16.0	39.2	27.3	27.3	36.9	0.0	34.0	34.0	0.0	30.0
Incr Delay (d2), s/veh	8.2	4.0	0.0	13.5	17.4	17.8	8.5	0.0	2.5	14.6	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	12.6	0.4	2.3	14.8	14.5	4.0	0.0	3.4	7.3	0.0	4.3
LnGrp Delay(d),s/veh	44.4	27.1	16.0	52.8	44.8	45.2	45.4	0.0	36.5	48.6	0.0	32.3
LnGrp LOS	D	C	B	D	D	D	D		D	D		C
Approach Vol, veh/h		1347			1136			301			459	
Approach Delay, s/veh		29.3			45.5			41.1			41.6	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	23.3	15.3	32.6	19.4	17.8	10.0	38.0
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	40.0	20.0	30.0	20.0	40.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	9.3	10.6	10.5	26.6	14.2	8.6	6.2	26.5
Green Ext Time (p_c), s	0.4	3.3	0.4	1.5	0.8	3.3	0.2	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

FEHR & PEERS

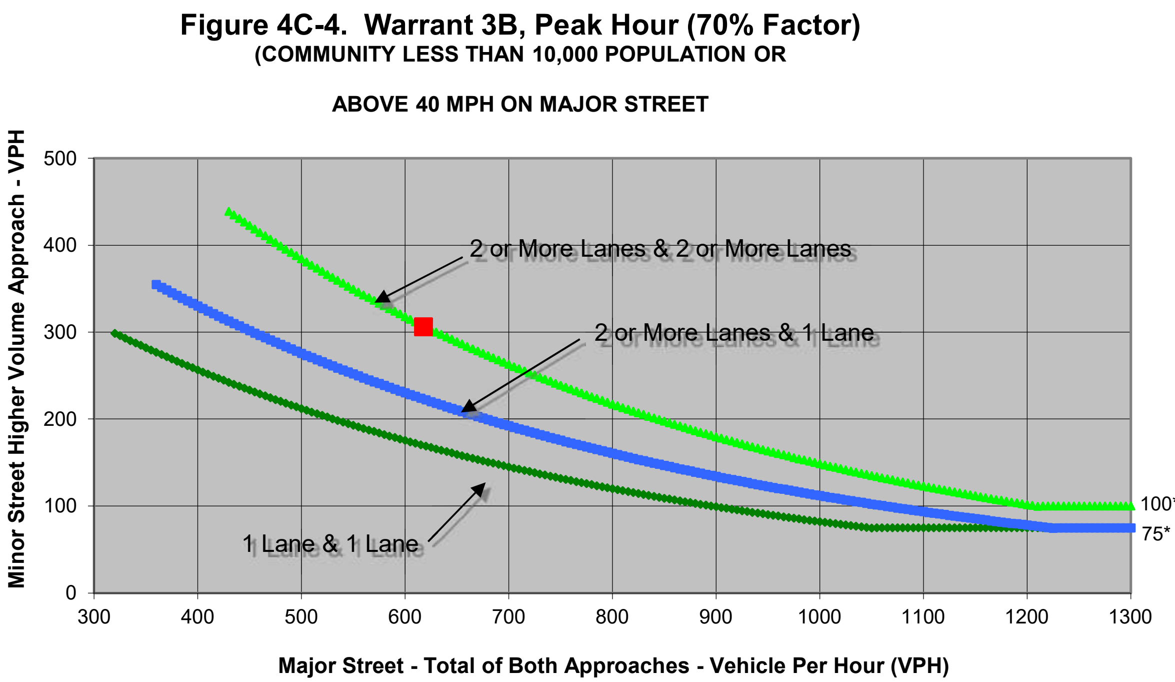
		Project	West Davis AAC EIR
Major Street	Covell Blvd	Scenario	Existing Plus Approved Projects Plus Project Conditions
Minor Street	Lake Blvd	Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	36	9	113
Through	62	53	267	179
Right	204	10	39	11
Total	306	99	315	303

Major Street Direction

	North/South
x	East/West



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	**Minor Street** Lake Blvd	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**618**	**306**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Approved Projects Plus Project Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	36	9	113
Through	62	53	267	179
Right	204	10	39	11
Total	306	99	315	303

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	306

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
us Approved Projects Plus Project (	**1.4**	**306**	**1,023**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

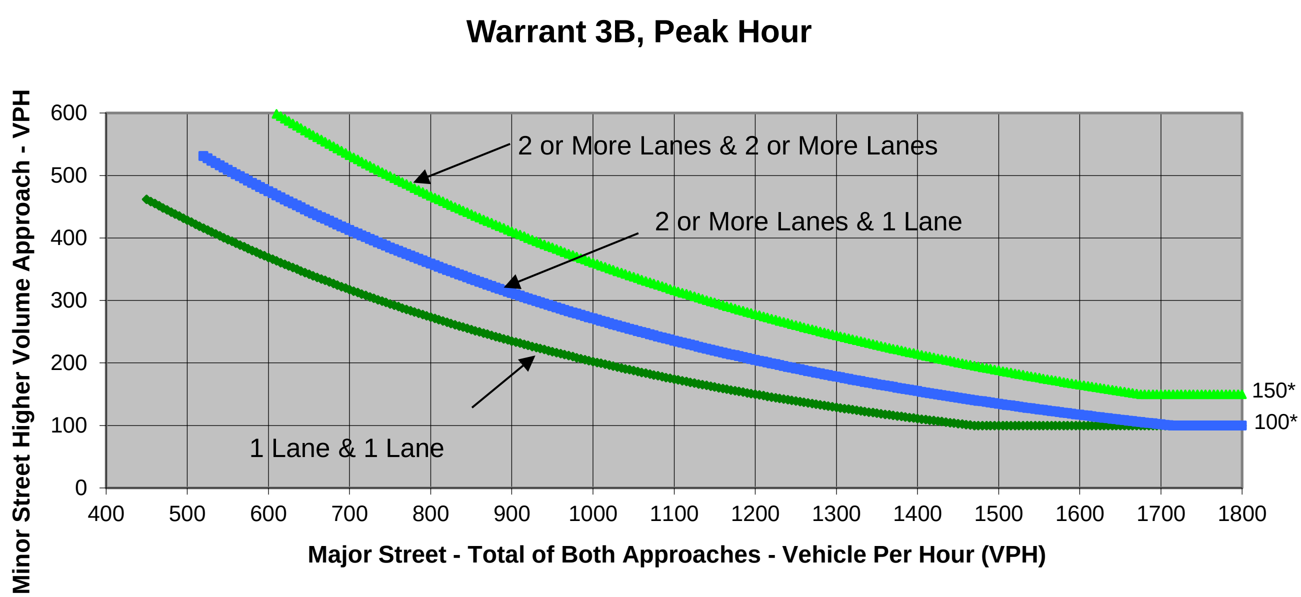
Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Existing Plus Approved Projects Plus Project Conditions
			Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	11
Through	106	101	4	3
Right	31	0	57	2
Total	194	102	61	16

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**296**	**61**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project	West Davis AAC EIR
Scenario	Existing Plus Approved Projects Plus Project Conditions
Peak Hour	AM Peak Hour

Major Street	Risling Ct
Minor Street	Hospital Dwy

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	11
Through	106	101	4	3
Right	31	0	57	2
Total	194	102	61	16

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	16

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
us Approved Projects Plus Project	**0.1**	**61**	**373**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

		Project	West Davis AAC EIR
Major Street	Covell Blvd	Scenario	Existing Plus Approved Projects Plus Project Conditions
Minor Street	Lake Blvd	Peak Hour	PM Peak Hour

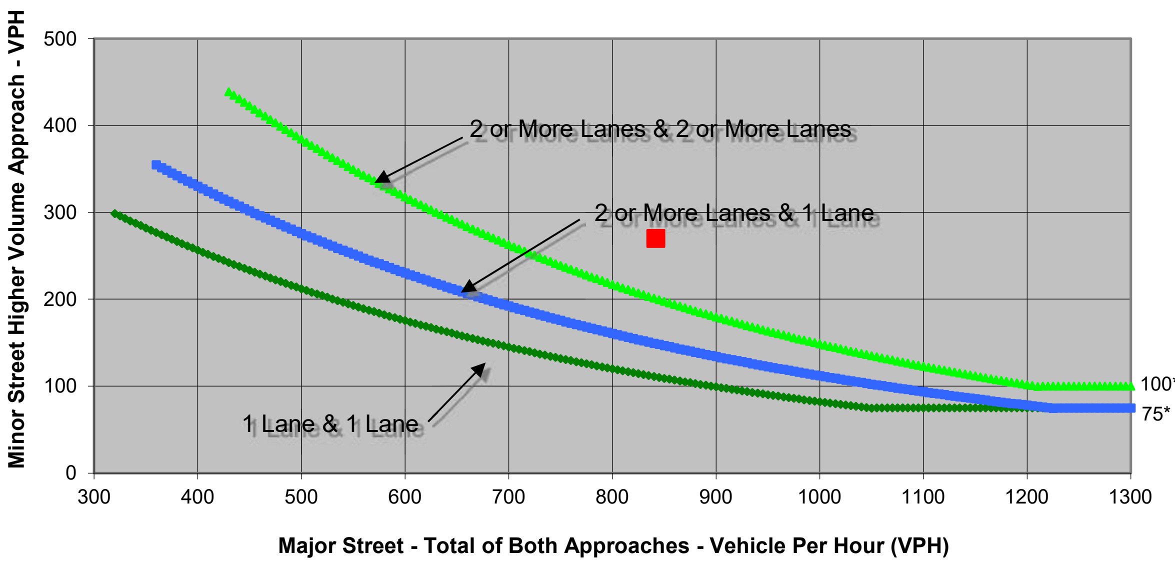
Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	235
Through	46	50	237	276
Right	186	11	38	34
Total	270	82	297	545

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR
ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Covell Blvd	**Minor Street** Lake Blvd	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**842**	**270**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Covell Blvd	Project	West Davis AAC EIR
Minor Street	Lake Blvd	Scenario	Existing Plus Approved Projects Plus Project Conditions
		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	38	21	22	235
Through	46	50	237	276
Right	186	11	38	34
Total	270	82	297	545

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16.5
Approach with Worst Case Delay	NB
Total Vehicles on Approach	270

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
us Approved Projects Plus Project (	**1.2**	**270**	**1,194**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

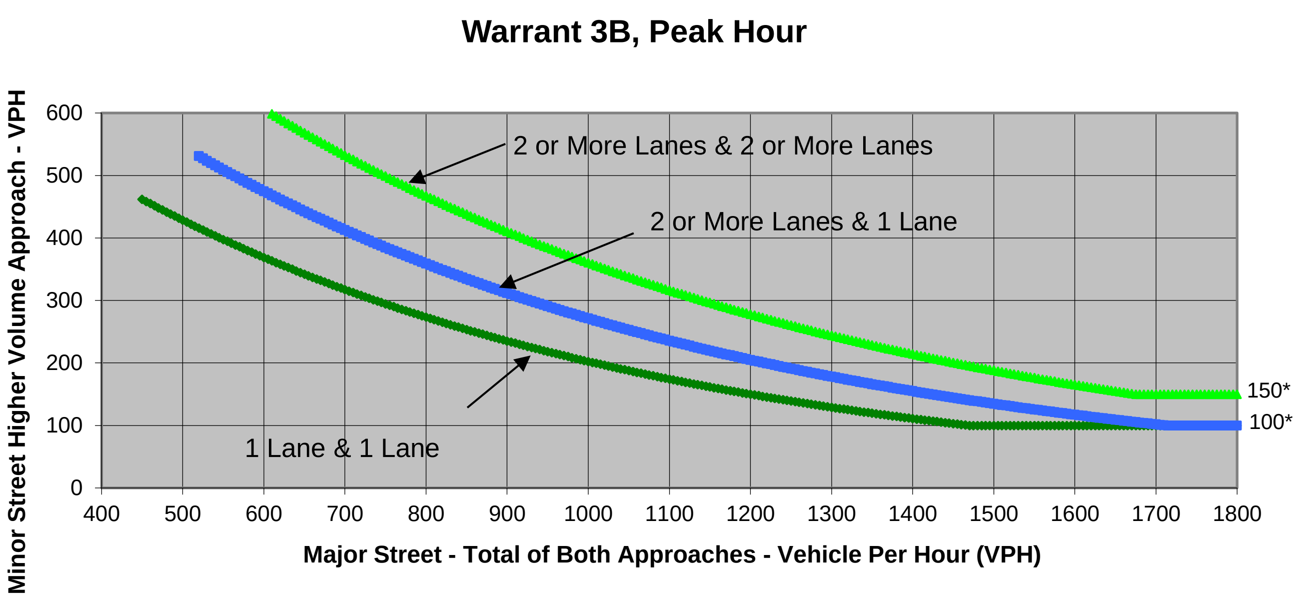
Major Street	Risling Ct		Project	West Davis AAC EIR
			Scenario	Existing Plus Approved Projects Plus Project Conditions
Minor Street	Hospital Dwy		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	3	0	20
Through	44	107	3	4
Right	19	1	63	0
Total	110	111	66	24

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**221**	**66**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Existing Plus Approved Projects Plus Project Conditions
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	3	0	20
Through	44	107	3	4
Right	19	1	63	0
Total	110	111	66	24

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	11.5
Approach with Worst Case Delay	WB
Total Vehicles on Approach	24

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
us Approved Projects Plus Project	**0.1**	**66**	**311**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

SimTraffic Post-Processor **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs **Existing Plus Approved Projects Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	12	18	151.7%	4.0	1.4	A
	Subtotal	12	18	151.7%	4.0	1.4	A
EB	Left Turn						
	Through	569	584	102.6%	1.0	0.2	A
	Right Turn						
	Subtotal	569	584	102.6%	1.0	0.2	A
WB	Left Turn						
	Through	660	674	102.1%	2.6	0.5	A
	Right Turn	86	83	96.0%	2.3	0.7	A
	Subtotal	746	756	101.4%	2.6	0.5	A
Total		1,327	1,358	102.4%	1.9	0.3	A

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Shared	900	50	4	75	7	75	17	0%	0%
NB	Shared	350	25	3	50	10	75	13	0%	0%
SB	Shared	2,000	25	2	25	12	25	25	0%	0%
WB	Shared	950	25	2	50	3	50	11	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	225	75	14	125	30	175	47	0%	0%
	Through	400	125	14	225	20	250	32	1%	0%
	Through/Right	400	125	10	225	17	250	36	0%	0%
NB	Left Turn	125	25	3	50	8	75	25	0%	0%
	Through	350	50	8	150	36	225	94	5%	0%
	Right Turn	75	75	1	75	3	75	2	3%	0%
SB	Left Turn	350	150	29	275	57	325	45	31%	2%
	Through/Right	125	50	9	125	16	125	0	0%	0%
WB	U/Left Turns	325	100	7	150	15	150	19	0%	0%
	Left Turn	325	50	7	100	12	125	16	0%	0%
	Through	575	125	12	200	20	250	42	3%	0%
	Right Turn	150	25	8	100	38	175	54	0%	0%

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

West Davis Active Adult Community Project EIR
Existing Plus Approved Projects Plus Project Conditions
AM Peak Hour

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	150	100	9	150	16	175	1	1%	0%
	Through	575	225	50	450	109	500	112	10%	2%
SB	Left Turn	250	125	12	200	19	225	30	0%	0%
	Through/Right	1,600	25	6	75	30	125	95	0%	0%
WB	Through	350	175	14	300	25	325	57	27%	0%
	Right Turn	75	75	4	100	3	100	0	4%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	350	275	18	400	15	375	10	0%	5%
	Through/Right	350	300	13	425	10	375	6	0%	9%
SB	Left/Through	1,425	125	8	200	15	250	36	0%	0%
	Right Turn	1,425	100	8	175	16	225	28	0%	0%
WB	Left Turn	225	225	4	250	9	225	0	49%	0%
	Through	500	400	40	600	51	525	42	19%	6%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	100	9	200	17	200	0	1%	0%
	Through	500	175	10	275	17	325	36	5%	0%
NB	Left/Through	1,675	225	12	325	38	400	61	0%	0%
	Right Turn	1,675	100	7	150	20	200	42	0%	0%
WB	Through	425	200	28	375	60	425	52	9%	1%
	Right Turn	150	75	9	175	19	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	125	8	200	9	200	0	2%	0%
	Through	400	175	10	275	19	325	33	10%	0%
	Through/Right	400	200	9	300	13	350	34	0%	0%
NB	Left Turn	125	125	5	175	6	150	0	21%	0%
	Through/Right	1,125	125	15	275	23	350	58	1%	0%
SB	Left Turn	125	75	6	150	10	150	0	2%	0%
	Through/Right	1,775	150	24	325	39	375	61	18%	0%
WB	Left Turn	125	50	9	125	18	150	0	0%	0%
	Through	5,800	175	12	275	23	300	31	15%	0%
	Through/Right	5,800	200	14	300	25	325	35	0%	0%

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	2	50	3	50	10	0%	0%
WB	Through	400	25	0	25	0	25	0	0%	0%
	Through/Right	400	25	1	25	9	25	26	0%	0%
EB	Through	1,400	25	0	25	0	25	0	0%	0%
0										

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Shared	900	50	2	75	4	75	6	0%	0%
NB	Shared	350	25	1	25	3	50	11	0%	0%
SB	Shared	2,000	25	1	25	9	25	26	0%	0%
WB	Shared	950	25	3	50	4	50	12	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	50	7	75	15	125	32	0%	0%
	Through	400	100	11	175	24	200	35	8%	0%
	Right Turn	100	25	4	25	28	75	63	0%	0%
NB	Left Turn	125	25	2	50	4	75	7	0%	0%
	Through	350	50	4	100	10	100	36	2%	0%
	Right Turn	75	75	1	75	4	75	3	2%	0%
SB	Left Turn	350	125	11	200	29	250	52	16%	0%
	Through/Right	125	50	10	125	13	125	1	0%	0%
WB	U/Left Turns	325	100	6	175	15	200	31	0%	0%
	Left Turn	325	75	5	150	14	175	35	0%	0%
	Through	575	100	17	250	34	300	61	5%	0%
	Right Turn	150	25	11	100	31	175	0	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	50	6	100	18	150	42	0%	0%
	Through	575	100	15	200	32	275	48	3%	0%
SB	Left Turn	250	150	7	250	8	275	8	2%	0%
	Through/Right	1,600	50	10	125	56	250	140	0%	0%
WB	Through	350	175	19	300	31	350	19	17%	0%
	Right Turn	75	50	7	100	7	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	200	10	325	21	350	7	0%	1%
	Through/Right	350	200	12	350	25	350	12	0%	1%
SB	Left/Through	1,425	100	9	175	14	200	22	0%	0%
	Right Turn	1,425	75	8	150	16	175	33	0%	0%
WB	U/Left Turns	225	175	11	250	16	250	3	7%	0%
	Through	500	150	22	300	34	325	34	4%	0%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	125	12	175	17	200	7	5%	0%
	Through	500	125	15	225	38	300	51	3%	0%
NB	Left/Through	1,675	250	13	375	24	400	37	0%	0%
	Right Turn	1,675	275	43	475	122	550	177	0%	0%
WB	Through	425	125	13	200	24	250	44	5%	0%
	Right Turn	150	50	6	100	28	200	51	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	150	13	225	15	200	4	8%	0%
	Through	400	175	14	275	37	325	53	4%	0%
	Through/Right	400	175	12	275	22	325	44	0%	0%
NB	Left Turn	125	100	4	150	7	150	3	7%	0%
	Through/Right	1,125	75	15	175	45	250	84	2%	0%
SB	Left Turn	125	125	6	175	5	150	1	15%	0%
	Through/Right	1,775	150	22	325	56	400	83	11%	0%
WB	Left Turn	125	50	6	100	16	175	30	0%	0%
	Through	5,800	175	11	275	27	325	54	15%	0%
	Through/Right	5,800	200	9	300	28	375	71	0%	0%

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	2	50	3	50	9	0%	0%
EB	Through	1,400	25	0	25	0	25	0	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										

Arterial Level of Service: EB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	15.8	22.5	0.1	14
	5	26.5	39.0	0.1	11
SR 113 SB Ramps	6	29.6	37.6	0.1	7
Route 1	7	16.7	27.3	0.1	14
Total		88.6	126.3	0.4	11

Arterial Level of Service: WB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	41.2	70.1	0.3	17
SR 113 SB Ramps	6	8.6	22.6	0.1	16
John Jones Rd	5	14.3	22.0	0.1	12
Risling Ct	4	13.1	25.2	0.1	17
	13	2.7	10.5	0.1	30
Total		79.9	150.4	0.7	17

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	15.7	22.4	0.1	14
	5	26.2	38.6	0.1	11
Route 2	6	34.1	46.4	0.1	6
Total		76.0	107.4	0.3	9

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.3	25.5	0.1	17
	13	2.8	10.5	0.1	30
Total		16.1	36.0	0.3	28

Arterial Level of Service: EB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.1	19.9	0.1	16
	5	11.4	23.8	0.1	18
SR 113 SB Ramps	6	23.1	31.1	0.1	9
Route 1	7	10.5	21.1	0.1	18
Total		58.1	95.9	0.4	14

Arterial Level of Service: WB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	40.5	69.6	0.3	17
SR 113 SB Ramps	6	8.8	23.0	0.1	16
John Jones Rd	5	11.4	19.1	0.1	14
Risling Ct	4	10.3	22.5	0.1	19
	13	2.8	10.6	0.1	30
Total		73.9	144.8	0.7	18

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.1	19.9	0.1	16
	5	11.4	23.8	0.1	18
Route 2	6	18.9	31.0	0.1	9
Total		43.4	74.7	0.3	14

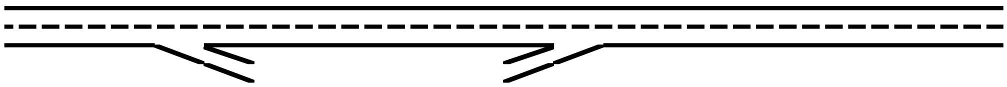
Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	10.3	22.5	0.1	19
	13	2.8	10.6	0.1	30
Total		13.1	33.1	0.3	31

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

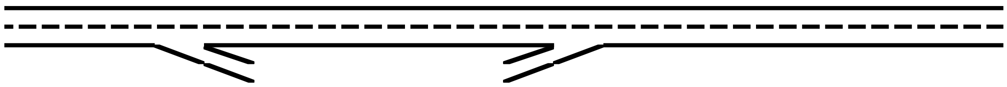
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,077	430	430	671
On Ramp Volume			241	
Off Ramp Volume	647			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,077	430	430	671
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,478	590	590	921
Flow (pcphpl)	739	295	295	461

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

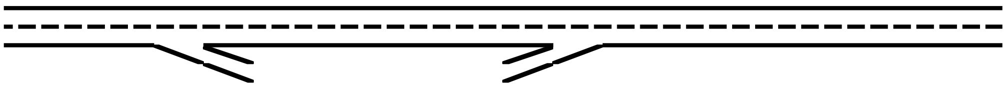


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.31	0.12	0.12	0.19
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	10.6	4.2	4.2	6.6
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			868	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.18	
Flow Rate (pcphpl)			434	
Speed (mph)			70.0	
Density (pcphpl)			6.2	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	732			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.15			
Flow Rate (pcphpl)	366			
Speed (mph)	70.0			
Density (pcphpl)	5.2			
LOS	A			

Location	1	2	3	4



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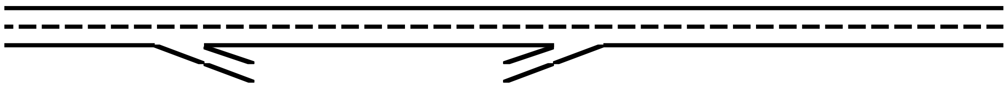
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			241	
PHF			0.88	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			278	
Flow Rate (pcphpl)			278	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.13	

Location	1	2	3	4



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<> Express Lane (HOV)

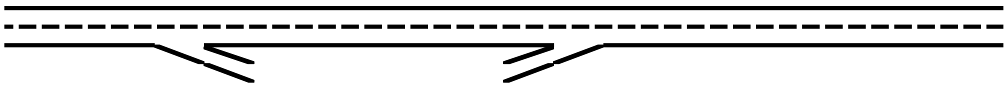
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	647			
PHF	0.88			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	746			
Flow Rate (pcphpl)	746			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.36			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



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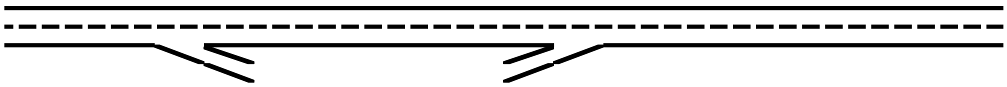
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			590	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			590	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			590	
v_{R12a} (pcph)			868	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.19	
Density			9.8	
LOS			A	

Location	1	2	3	4

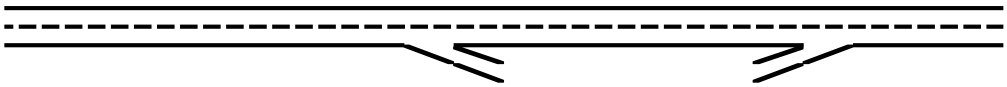


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,478			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.689			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,478			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,478			
Speed Index	0.37			
Area Speed	59.8			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.8			
v/c ratio	0.34			
Density	15.6			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.34	0.12	0.19	0.19
Segment Density	15.6	4.2	9.8	6.6
Segment LOS	B	A	A	A
Over Capacity				

Location	1	2	3	4



Key

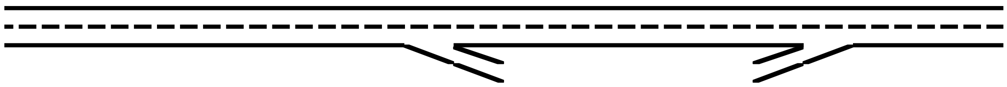
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,873	1,873	1,574	1,574
On Ramp Volume				956
Off Ramp Volume		299		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,873	1,873	1,574	1,574
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,296	2,296	1,929	1,929
Flow (pcphpl)	1,148	1,148	965	965

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

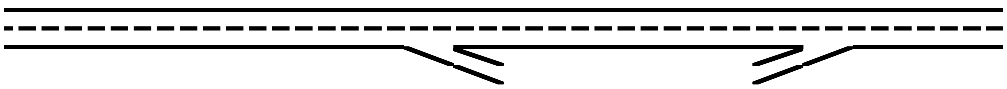
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.48	0.48	0.40	0.40
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.4	16.4	13.8	13.8
LOS	B	B	B	B
Operations for Segment GP Lanes				
Flow (pcph)				3,026
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.63
Flow Rate (pcphpl)				1,513
Speed (mph)				68.9
Density (pcphpl)				22.0
LOS				C
Operations for Exiting GP Lanes				
Flow (pcph)		1,952		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.41		
Flow Rate (pcphpl)		976		
Speed (mph)		70.0		
Density (pcphpl)		13.9		
LOS		B		

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

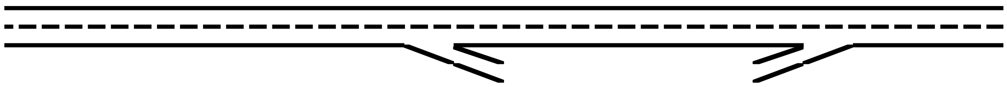


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				956
PHF				0.88
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				1,097
Flow Rate (pcphpl)				1,097
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.52

Location	1	2	3	4



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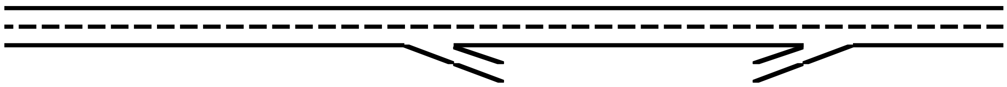
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		299		
PHF		0.88		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		343		
Flow Rate (pcphpl)		343		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.16		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

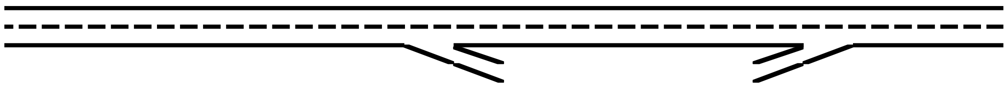


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,929
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,929
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,929
v_{R12a} (pcph)				3,026
Speed Index				0.37
Area Speed				59.6
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				59.6
v/c ratio				0.66
Density				26.5
LOS				C

Location	1	2	3	4



Key

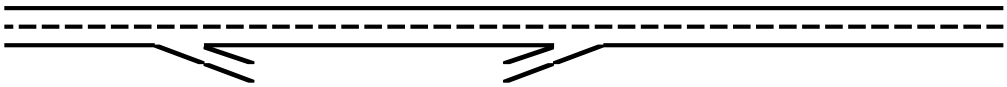
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,296		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.687		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,296		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,296		
Speed Index		0.33		
Area Speed		60.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.8		
v/c ratio		0.52		
Density		22.5		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.48	0.52	0.40	0.66
Segment Density	16.4	22.5	13.8	26.5
Segment LOS	B	C	B	C
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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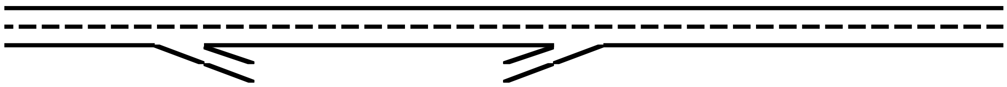
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,964	978	978	1,256
On Ramp Volume			278	
Off Ramp Volume	986			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,964	978	978	1,256
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,351	1,171	1,171	1,504
Flow (pcphpl)	1,176	585	585	752

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

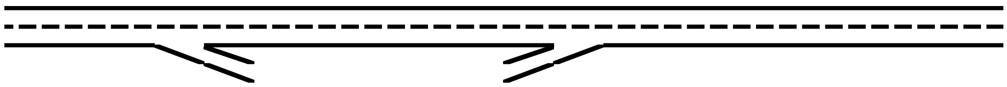


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.49	0.24	0.24	0.31
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	16.8	8.4	8.4	10.7
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			1,474	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.31	
Flow Rate (pcphpl)			737	
Speed (mph)			70.0	
Density (pcphpl)			10.5	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	1,275			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.27			
Flow Rate (pcphpl)	637			
Speed (mph)	70.0			
Density (pcphpl)	9.1			
LOS	A			

Location	1	2	3	4

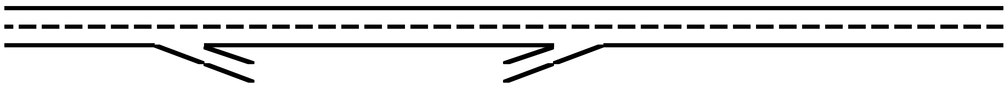


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			278	
PHF			0.93	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
Flow (pcph)			303	
Flow Rate (pcphpl)			303	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.14	

Location	1	2	3	4



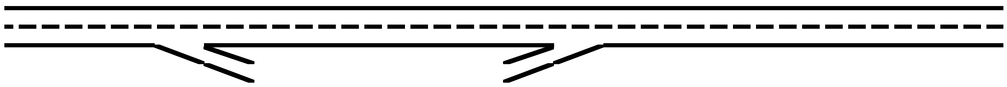
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	986			
PHF	0.93			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	3.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.985			
f_P	1.00			
Flow (pcph)	1,076			
Flow Rate (pcphpl)	1,076			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.51			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4



Key

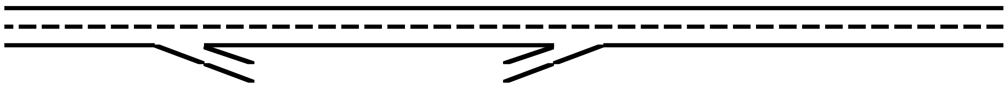
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,171	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,171	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,171	
v_{R12a} (pcph)			1,474	
Speed Index			0.30	
Area Speed			61.5	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.5	
v/c ratio			0.32	
Density			14.5	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

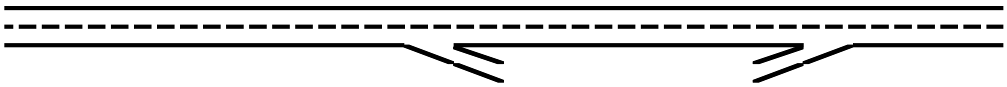


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	2,351			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.652			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	2,351			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	2,351			
Speed Index	0.39			
Area Speed	58.9			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	58.9			
v/c ratio	0.53			
Density	23.1			
LOS	C			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.53	0.24	0.32	0.31
Segment Density	23.1	8.4	14.5	10.7
Segment LOS	C	A	B	A
Over Capacity				

Location	1	2	3	4

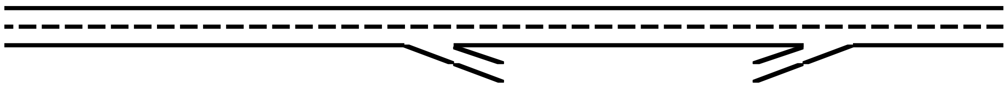


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,107	1,107	880	880
On Ramp Volume				511
Off Ramp Volume		227		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,107	1,107	880	880
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,225	1,225	974	974
Flow (pcphpl)	613	613	487	487

Location	1	2	3	4

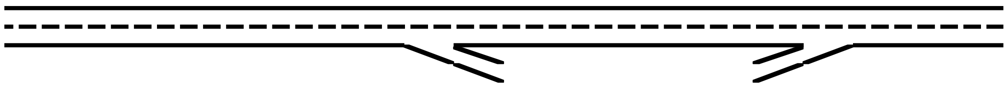


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.26	0.26	0.20	0.20
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	8.8	8.8	7.0	7.0
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,529
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.32
Flow Rate (pcphpl)				765
Speed (mph)				70.0
Density (pcphpl)				10.9
LOS				A
Operations for Exiting GP Lanes				
Flow (pcph)		979		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.20		
Flow Rate (pcphpl)		489		
Speed (mph)		70.0		
Density (pcphpl)		7.0		
LOS		A		

Location	1	2	3	4



Key

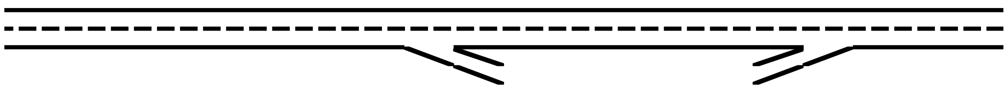
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				511
PHF				0.93
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				555
Flow Rate (pcphpl)				555
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.26

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Existing Plus Approved Projects Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

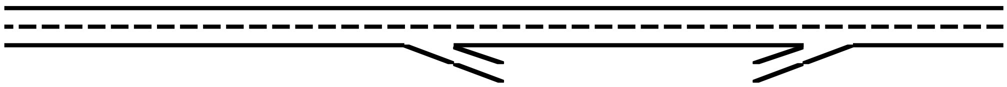


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		227		
PHF		0.93		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		247		
Flow Rate (pcphpl)		247		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.12		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4

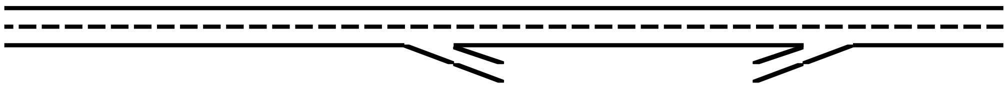


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				974
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				974
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				974
v_{R12a} (pcph)				1,529
Speed Index				0.31
Area Speed				61.3
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.3
v/c ratio				0.33
Density				15.1
LOS				B

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,225		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.718		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,225		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,225		
Speed Index		0.32		
Area Speed		61.0		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		61.0		
v/c ratio		0.28		
Density		13.3		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.26	0.28	0.20	0.33
Segment Density	8.8	13.3	7.0	15.1
Segment LOS	A	B	A	B
Over Capacity				

Cumulative No Project Level of Service (LOS) Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	300	50	160	220	10	40	60	340	40	60	10
Future Volume (veh/h)	10	300	50	160	220	10	40	60	340	40	60	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	323	0	174	239	10	43	65	0	43	65	7
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	425	0	278	658	28	141	148	0	62	94	10
Arrive On Green	0.01	0.23	0.00	0.16	0.37	0.37	0.08	0.08	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1774	1863	0	1774	1775	74	1774	1863	0	677	1023	110
Grp Volume(v), veh/h	11	323	0	174	0	249	43	65	0	115	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1849	1774	1863	0	1809	0	0
Q Serve(g_s), s	0.3	7.7	0.0	4.4	0.0	4.7	1.1	1.6	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.3	7.7	0.0	4.4	0.0	4.7	1.1	1.6	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.04	1.00		0.00	0.37		0.06
Lane Grp Cap(c), veh/h	25	425	0	278	0	685	141	148	0	167	0	0
V/C Ratio(X)	0.44	0.76	0.00	0.63	0.00	0.36	0.30	0.44	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	245	724	0	1061	0	1570	920	966	0	636	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.4	17.2	0.0	18.9	0.0	10.9	20.8	21.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	11.4	2.8	0.0	2.3	0.0	0.3	2.6	4.3	0.0	10.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.3	0.0	2.3	0.0	2.4	0.6	1.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	34.8	20.1	0.0	21.2	0.0	11.3	23.3	25.3	0.0	31.3	0.0	0.0
LnGrp LOS	C	C		C		B	C	C		C		
Approach Vol, veh/h		334			423			108			115	
Approach Delay, s/veh		20.5			15.3			24.5			31.3	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	16.3		9.6	6.1	23.1		9.0
Change Period (Y+Rc), s	5.4	5.4		* 5.2	5.4	5.4		5.2
Max Green Setting (Gmax), s	28.6	18.6		* 17	6.6	40.6		24.8
Max Q Clear Time (g_c+I1), s	6.4	9.7		4.9	2.3	6.7		3.6
Green Ext Time (p_c), s	1.9	1.2		0.7	0.0	2.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	660	30	100	490	40	200
Future Volume (veh/h)	660	30	100	490	40	200
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	717	0	108	527	43	0
Adj No. of Lanes	2	0	1	2	0	0
Peak Hour Factor	0.92	0.92	0.93	0.93	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1645	0	164	2369	86	0
Arrive On Green	0.46	0.00	0.09	0.67	0.05	0.00
Sat Flow, veh/h	3725	0	1774	3632	1736	0
Grp Volume(v), veh/h	717	0	108	527	44	0
Grp Sat Flow(s),veh/h/ln	1770	0	1774	1770	1776	0
Q Serve(g_s), s	4.8	0.0	2.1	2.1	0.9	0.0
Cycle Q Clear(g_c), s	4.8	0.0	2.1	2.1	0.9	0.0
Prop In Lane		0.00	1.00		0.98	0.00
Lane Grp Cap(c), veh/h	1645	0	164	2369	88	0
V/C Ratio(X)	0.44	0.00	0.66	0.22	0.50	0.00
Avail Cap(c_a), veh/h	3481	0	997	3481	998	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	15.6	2.3	16.5	0.0
Incr Delay (d2), s/veh	0.2	0.0	4.5	0.0	9.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	1.2	1.0	0.6	0.0
LnGrp Delay(d),s/veh	6.6	0.0	20.1	2.3	25.6	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	717			635	44	
Approach Delay, s/veh	6.6			5.4	25.6	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	22.5				29.8		5.8
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.1	6.8				4.1		2.9
Green Ext Time (p_c), s	0.2	9.7				10.0		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			6.6
HCM 2010 LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	100	99	99.1%	3.6	1.1	A
	Right Turn	90	91	101.0%	2.7	0.6	A
	Subtotal	190	190	100.0%	3.1	0.5	A
SB	Left Turn						
	Through	50	53	106.8%	0.1	0.2	A
	Right Turn						
	Subtotal	50	53	106.8%	0.1	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	40	38	95.8%	4.8	0.8	A
	Through						
	Right Turn	10	12	123.0%	3.7	1.8	A
	Subtotal	50	51	101.2%	4.6	0.8	A
Total		290	294	101.4%	2.8	0.4	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	21	102.5%	61.3	26.9	E
	Through	20	20	102.0%	36.2	16.4	D
	Right Turn	290	288	99.1%	5.5	2.7	A
	Subtotal	330	328	99.5%	11.8	4.3	B
SB	Left Turn	50	51	101.2%	47.3	16.9	D
	Through	10	9	90.0%	24.3	21.1	C
	Right Turn	30	32	107.0%	9.1	6.4	A
	Subtotal	90	92	101.9%	32.1	13.1	C
EB	Left Turn	110	108	98.2%	60.4	12.8	E
	Through	770	768	99.8%	19.3	2.3	B
	Right Turn	20	21	102.5%	10.6	14.5	B
	Subtotal	900	897	99.6%	24.3	2.4	C
WB	Left Turn	150	147	97.8%	61.5	18.1	E
	Through	630	638	101.3%	17.4	4.2	B
	Right Turn	60	62	103.5%	9.7	4.4	A
	Subtotal	840	847	100.8%	24.3	3.4	C
Total		2,160	2,164	100.2%	22.8	2.2	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	200	203	101.3%	28.1	4.1	C
	Through						
	Right Turn	60	64	106.2%	5.1	1.6	A
	Subtotal	260	266	102.4%	22.9	2.9	C
EB	Left Turn	90	89	98.7%	54.0	12.3	D
	Through	1,020	1,017	99.7%	13.3	3.3	B
	Right Turn						
	Subtotal	1,110	1,105	99.6%	16.8	2.4	B
WB	Left Turn						
	Through	780	786	100.7%	13.5	1.7	B
	Right Turn	350	349	99.7%	10.4	1.8	B
	Subtotal	1,130	1,134	100.4%	12.5	1.4	B
Total		2,500	2,506	100.2%	15.6	1.5	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	217	98.5%	31.4	3.9	C
	Through	10	12	118.0%	36.5	12.2	D
	Right Turn	140	147	105.3%	31.4	3.1	C
	Subtotal	370	376	101.6%	31.6	2.6	C
EB	Left Turn						
	Through	770	762	99.0%	21.7	4.0	C
	Right Turn	450	456	101.2%	26.1	5.2	C
	Subtotal	1,220	1,218	99.8%	23.4	4.2	C
WB	Left Turn	550	537	97.5%	47.0	7.8	D
	Through	990	987	99.7%	10.1	1.7	B
	Right Turn						
	Subtotal	1,540	1,523	98.9%	22.9	4.0	C
Total		3,130	3,117	99.6%	24.2	2.6	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Cumulative No Project Conditions
AM Peak Hour

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	340	333	97.8%	29.5	3.1	C
	Through	10	11	113.0%	21.5	12.1	C
	Right Turn	570	570	100.0%	23.7	3.6	C
	Subtotal	920	914	99.4%	25.9	2.8	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	90	83	92.0%	60.2	9.2	E
	Through	900	896	99.5%	6.5	0.8	A
	Right Turn						
	Subtotal	990	979	98.8%	11.1	1.3	B
WB	Left Turn						
	Through	1,200	1,192	99.4%	41.7	14.3	D
	Right Turn	190	187	98.6%	28.8	13.7	C
	Subtotal	1,390	1,380	99.3%	40.0	14.2	D
Total		3,300	3,273	99.2%	27.7	6.5	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	230	224	97.3%	67.1	26.1	E
	Through	80	81	101.5%	35.8	16.8	D
	Right Turn	70	72	102.1%	18.4	14.2	B
	Subtotal	380	376	99.1%	51.1	21.5	D
SB	Left Turn	50	51	102.2%	35.6	6.4	D
	Through	80	78	97.6%	40.3	8.3	D
	Right Turn	350	358	102.4%	14.6	6.6	B
	Subtotal	480	488	101.6%	21.4	6.6	C
EB	Left Turn	120	115	95.6%	56.5	12.7	E
	Through	830	829	99.9%	29.8	7.0	C
	Right Turn	350	352	100.7%	23.0	7.3	C
	Subtotal	1,300	1,297	99.7%	30.4	7.4	C
WB	Left Turn	40	41	101.5%	50.0	14.3	D
	Through	710	691	97.4%	26.2	4.4	C
	Right Turn	50	53	105.6%	18.7	5.4	B
	Subtotal	800	785	98.1%	27.0	4.1	C
Total		2,960	2,945	99.5%	30.8	4.0	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	560	330	220	540	20	170	70	120	110	210	70
Future Volume (veh/h)	40	560	330	220	540	20	170	70	120	110	210	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1849	1900	1863	1863	1727	1792	1823	1900	1863	1784	1900
Adj Flow Rate, veh/h	43	609	0	239	587	0	185	76	0	120	228	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	64	1217	0	286	1663	690	229	338	0	157	473	0
Arrive On Green	0.04	0.35	0.00	0.16	0.47	0.00	0.13	0.19	0.00	0.09	0.14	0.00
Sat Flow, veh/h	1691	3606	0	1774	3539	1468	1707	1823	0	1774	3479	0
Grp Volume(v), veh/h	43	609	0	239	587	0	185	76	0	120	228	0
Grp Sat Flow(s),veh/h/ln	1691	1757	0	1774	1770	1468	1707	1823	0	1774	1695	0
Q Serve(g_s), s	2.1	11.3	0.0	10.8	8.7	0.0	8.7	2.9	0.0	5.4	5.1	0.0
Cycle Q Clear(g_c), s	2.1	11.3	0.0	10.8	8.7	0.0	8.7	2.9	0.0	5.4	5.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	64	1217	0	286	1663	690	229	338	0	157	473	0
V/C Ratio(X)	0.67	0.50	0.00	0.83	0.35	0.00	0.81	0.22	0.00	0.77	0.48	0.00
Avail Cap(c_a), veh/h	821	1920	0	646	1934	802	829	886	0	862	1646	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.1	21.3	0.0	33.5	13.9	0.0	34.6	28.5	0.0	36.7	32.7	0.0
Incr Delay (d2), s/veh	11.4	0.3	0.0	6.3	0.5	0.0	6.7	0.3	0.0	7.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.5	0.0	5.7	4.3	0.0	4.5	1.5	0.0	3.0	2.4	0.0
LnGrp Delay(d),s/veh	50.5	21.6	0.0	39.8	14.3	0.0	41.3	28.8	0.0	44.3	33.4	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		652			826			261			348	
Approach Delay, s/veh		23.5			21.7			37.7			37.2	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	33.5	15.0	15.5	8.1	43.7	11.3	19.3
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	12.8	13.3	10.7	7.1	4.1	10.7	7.4	4.9
Green Ext Time (p_c), s	0.6	15.2	0.5	2.0	0.1	15.8	0.3	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	670	80	220	740	0	110	0	220	0	0	0
Future Volume (veh/h)	0	670	80	220	740	0	110	0	220	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	728	0	239	804	0	120	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1570	0	307	2502	0	160	0	0	0	4	0
Arrive On Green	0.00	0.44	0.00	0.17	0.71	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	120		0	-93137	0
Grp Volume(v), veh/h	0	728	0	239	804	0	120	26.6		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	6.4	0.0	5.7	3.8	0.0	2.9			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.4	0.0	5.7	3.8	0.0	2.9			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1570	0	307	2502	0	160			0	4	0
V/C Ratio(X)	0.00	0.46	0.00	0.78	0.32	0.00	0.75			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2475	0	600	2555	0	800			0	630	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.6	0.0	17.5	2.5	0.0	19.7			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.3	0.1	0.0	6.9			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.0	3.2	1.8	0.0	1.7			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.9	0.0	21.8	2.5	0.0	26.6			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		728			1043						0	
Approach Delay, s/veh		8.9			6.9						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		36.3	8.0	0.0	11.7	24.7		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		5.8	4.9	0.0	7.7	8.4		
Green Ext Time (p_c), s		12.2	0.2	0.0	0.4	11.3		

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	890	150	230	880	120	60	90	170	250	230	90
Future Volume (veh/h)	50	890	150	230	880	120	60	90	170	250	230	90
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1842	1900
Adj Flow Rate, veh/h	54	967	0	250	957	0	65	98	0	272	250	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	76	1353	605	341	1555	0	85	242	0	324	489	0
Arrive On Green	0.04	0.38	0.00	0.10	0.44	0.00	0.05	0.13	0.00	0.18	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1842	0
Grp Volume(v), veh/h	54	967	0	250	957	0	65	98	0	272	250	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1842	0
Q Serve(g_s), s	2.5	19.3	0.0	5.9	17.3	0.0	3.0	4.0	0.0	12.3	9.6	0.0
Cycle Q Clear(g_c), s	2.5	19.3	0.0	5.9	17.3	0.0	3.0	4.0	0.0	12.3	9.6	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	76	1353	605	341	1555	0	85	242	0	324	489	0
V/C Ratio(X)	0.71	0.71	0.00	0.73	0.62	0.00	0.76	0.40	0.00	0.84	0.51	0.00
Avail Cap(c_a), veh/h	639	1912	856	1228	1912	0	633	667	0	639	664	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.3	21.9	0.0	36.4	17.9	0.0	39.2	33.2	0.0	32.8	26.0	0.0
Incr Delay (d2), s/veh	4.5	0.3	0.0	1.2	0.1	0.0	13.2	1.1	0.0	6.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.5	0.0	2.8	8.4	0.0	1.8	2.1	0.0	6.7	5.0	0.0
LnGrp Delay(d),s/veh	43.9	22.2	0.0	37.5	18.1	0.0	52.3	34.3	0.0	39.7	27.0	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		1021			1207			163			522	
Approach Delay, s/veh		23.3			22.1			41.5			33.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	41.6	8.0	26.1	12.3	36.8	19.2	14.9
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.5	19.3	5.0	11.6	7.9	21.3	14.3	6.0
Green Ext Time (p_c), s	0.1	10.9	0.1	2.2	0.4	10.5	0.9	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	940	220	110	1010	120	170	50	80	180	90	50
Future Volume (veh/h)	150	940	220	110	1010	120	170	50	80	180	90	50
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	1022	132	120	1098	120	185	54	11	196	98	28
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	200	1468	630	149	1259	137	223	172	35	236	169	48
Arrive On Green	0.11	0.41	0.41	0.09	0.39	0.39	0.13	0.12	0.12	0.13	0.12	0.12
Sat Flow, veh/h	1774	3539	1520	1660	3214	351	1774	1485	302	1774	1370	392
Grp Volume(v), veh/h	163	1022	132	120	604	614	185	0	65	196	0	126
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1660	1770	1795	1774	0	1787	1774	0	1762
Q Serve(g_s), s	6.9	18.3	4.3	5.5	24.3	24.4	7.9	0.0	2.6	8.3	0.0	5.2
Cycle Q Clear(g_c), s	6.9	18.3	4.3	5.5	24.3	24.4	7.9	0.0	2.6	8.3	0.0	5.2
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.17	1.00		0.22
Lane Grp Cap(c), veh/h	200	1468	630	149	693	703	223	0	208	236	0	218
V/C Ratio(X)	0.82	0.70	0.21	0.81	0.87	0.87	0.83	0.00	0.31	0.83	0.00	0.58
Avail Cap(c_a), veh/h	218	1491	640	161	700	710	241	0	452	264	0	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	18.6	14.5	34.5	21.7	21.7	32.9	0.0	31.3	32.6	0.0	31.9
Incr Delay (d2), s/veh	20.1	1.5	0.2	24.6	11.6	11.7	20.2	0.0	1.0	20.3	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	9.2	1.8	3.5	14.0	14.2	5.1	0.0	1.3	5.4	0.0	2.8
LnGrp Delay(d),s/veh	53.6	20.0	14.7	59.1	33.3	33.4	53.1	0.0	32.3	52.9	0.0	36.4
LnGrp LOS	D	C	B	E	C	C	D		C	D		D
Approach Vol, veh/h		1317			1338			250			322	
Approach Delay, s/veh		23.7			35.6			47.7			46.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.0	13.2	34.7	14.8	14.5	11.4	36.5
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	20.5	9.5	30.5	11.5	19.5	7.5	32.5
Max Q Clear Time (g_c+I1), s	9.9	7.2	8.9	26.4	10.3	4.6	7.5	20.3
Green Ext Time (p_c), s	0.0	1.2	0.0	3.8	0.1	1.3	0.0	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	270	40	420	310	40	50	70	260	30	50	20
Future Volume (veh/h)	30	270	40	420	310	40	50	70	260	30	50	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	33	293	0	457	337	43	54	76	0	32	54	22
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	363	0	560	770	98	136	143	0	45	76	31
Arrive On Green	0.03	0.19	0.00	0.32	0.48	0.48	0.08	0.08	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1774	1863	0	1774	1619	207	1774	1863	0	525	886	361
Grp Volume(v), veh/h	33	293	0	457	0	380	54	76	0	108	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1825	1774	1863	0	1773	0	0
Q Serve(g_s), s	1.2	9.7	0.0	15.4	0.0	8.9	1.9	2.5	0.0	3.8	0.0	0.0
Cycle Q Clear(g_c), s	1.2	9.7	0.0	15.4	0.0	8.9	1.9	2.5	0.0	3.8	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.11	1.00		0.00	0.30		0.20
Lane Grp Cap(c), veh/h	61	363	0	560	0	869	136	143	0	151	0	0
V/C Ratio(X)	0.54	0.81	0.00	0.82	0.00	0.44	0.40	0.53	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	181	536	0	784	0	1145	680	714	0	460	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.7	24.9	0.0	20.4	0.0	11.2	28.5	28.8	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	7.1	5.7	0.0	4.6	0.0	0.3	4.0	6.5	0.0	12.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.5	0.0	8.2	0.0	4.5	1.1	1.6	0.0	2.4	0.0	0.0
LnGrp Delay(d),s/veh	37.9	30.6	0.0	25.0	0.0	11.6	32.4	35.2	0.0	41.4	0.0	0.0
LnGrp LOS	D	C		C		B	C	D		D		
Approach Vol, veh/h		326			837			130			108	
Approach Delay, s/veh		31.3			18.9			34.1			41.4	
Approach LOS		C			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.8	18.0		10.7	7.6	36.2		10.2
Change Period (Y+Rc), s	5.4	5.4		* 5.2	5.4	5.4		5.2
Max Green Setting (Gmax), s	28.6	18.6		* 17	6.6	40.6		24.8
Max Q Clear Time (g_c+I1), s	17.4	11.7		5.8	3.2	10.9		4.5
Green Ext Time (p_c), s	3.1	0.9		0.6	0.0	4.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	610	40	260	750	30	110
Future Volume (veh/h)	610	40	260	750	30	110
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	663	0	271	781	33	0
Adj No. of Lanes	2	0	1	2	0	0
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1562	0	350	2586	67	0
Arrive On Green	0.44	0.00	0.20	0.73	0.04	0.00
Sat Flow, veh/h	3725	0	1774	3632	1724	0
Grp Volume(v), veh/h	663	0	271	781	34	0
Grp Sat Flow(s),veh/h/ln	1770	0	1774	1770	1777	0
Q Serve(g_s), s	5.6	0.0	6.3	3.3	0.8	0.0
Cycle Q Clear(g_c), s	5.6	0.0	6.3	3.3	0.8	0.0
Prop In Lane		0.00	1.00		0.97	0.00
Lane Grp Cap(c), veh/h	1562	0	350	2586	69	0
V/C Ratio(X)	0.42	0.00	0.78	0.30	0.49	0.00
Avail Cap(c_a), veh/h	2857	0	818	2857	820	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	16.5	2.0	20.4	0.0
Incr Delay (d2), s/veh	0.2	0.0	3.7	0.1	11.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	3.4	1.5	0.6	0.0
LnGrp Delay(d),s/veh	8.5	0.0	20.2	2.1	31.7	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	663			1052	34	
Approach Delay, s/veh	8.5			6.8	31.7	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.5	25.1				37.7		5.7
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	8.3	7.6				5.3		2.8
Green Ext Time (p_c), s	0.6	11.5				11.9		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			7.9
HCM 2010 LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	40	36	90.8%	2.8	0.4	A
	Right Turn	70	68	97.0%	2.5	0.7	A
	Subtotal	110	104	94.7%	2.6	0.4	A
SB	Left Turn	10	10	101.0%	2.0	0.9	A
	Through	110	111	101.0%	0.3	0.2	A
	Right Turn						
	Subtotal	120	121	101.0%	0.5	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	150	150	99.9%	5.0	0.6	A
	Through						
	Right Turn						
	Subtotal	150	150	99.9%	5.0	0.6	A
Total		380	375	98.7%	3.0	0.5	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	19	95.5%	69.3	21.2	E
	Through	10	10	102.0%	38.5	26.3	D
	Right Turn	200	201	100.5%	3.4	0.6	A
	Subtotal	230	230	100.1%	9.7	1.8	A
SB	Left Turn	150	149	99.0%	46.3	5.8	D
	Through	30	34	112.0%	41.7	6.5	D
	Right Turn	80	79	99.0%	15.7	5.0	B
	Subtotal	260	261	100.5%	37.4	3.4	D
EB	Left Turn	50	52	103.0%	62.0	13.2	E
	Through	630	623	99.0%	16.3	2.5	B
	Right Turn	30	31	102.7%	7.7	5.3	A
	Subtotal	710	706	99.4%	18.7	2.9	B
WB	Left Turn	180	165	91.5%	57.6	7.9	E
	Through	910	807	88.6%	11.2	2.8	B
	Right Turn	50	43	86.4%	5.7	3.3	A
	Subtotal	1,140	1,015	89.0%	18.5	2.5	B
Total		2,340	2,212	94.5%	20.0	2.0	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	240	243	101.0%	42.8	5.8	D
	Through						
	Right Turn	60	62	103.7%	7.8	2.0	A
	Subtotal	300	305	101.6%	36.2	4.5	D
EB	Left Turn	50	51	101.2%	60.9	6.2	E
	Through	930	921	99.0%	10.0	1.5	B
	Right Turn						
	Subtotal	980	972	99.1%	12.8	1.3	B
WB	Left Turn						
	Through	1,080	952	88.2%	8.2	1.9	A
	Right Turn	210	184	87.8%	5.9	1.0	A
	Subtotal	1,290	1,137	88.1%	7.8	1.7	A
Total		2,570	2,413	93.9%	13.8	1.4	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	190	191	100.6%	43.0	6.2	D
	Through	10	11	112.0%	52.6	37.8	D
	Right Turn	90	90	99.6%	41.4	6.9	D
	Subtotal	290	292	100.7%	42.9	5.7	D
EB	Left Turn						
	Through	880	869	98.7%	22.5	2.6	C
	Right Turn	290	293	101.1%	17.5	3.0	B
	Subtotal	1,170	1,162	99.3%	21.3	2.4	C
WB	Left Turn	530	448	84.5%	48.9	11.6	D
	Through	1,200	1,049	87.4%	10.1	1.5	B
	Right Turn						
	Subtotal	1,730	1,497	86.5%	22.0	4.1	C
Total		3,190	2,951	92.5%	23.9	2.7	C

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Cumulative No Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	460	440	95.7%	103.7	38.2	F
	Through						
	Right Turn	780	748	95.9%	150.3	37.7	F
	Subtotal	1,240	1,188	95.8%	132.8	37.2	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	90	88	97.4%	85.2	10.9	F
	Through	980	970	99.0%	24.6	5.7	C
	Right Turn						
	Subtotal	1,070	1,058	98.8%	29.1	5.2	C
WB	Left Turn						
	Through	1,270	1,057	83.2%	110.7	18.5	F
	Right Turn	310	262	84.5%	78.6	15.5	E
	Subtotal	1,580	1,319	83.5%	104.3	17.9	F
Total		3,890	3,564	91.6%	92.8	15.2	F

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	280	277	98.9%	130.9	105.9	F
	Through	50	50	100.0%	127.6	93.2	F
	Right Turn	100	100	100.1%	92.8	106.0	F
	Subtotal	430	427	99.3%	121.0	104.3	F
SB	Left Turn	80	81	101.4%	40.3	9.1	D
	Through	140	140	100.1%	59.6	19.5	E
	Right Turn	230	225	97.8%	30.1	19.3	C
	Subtotal	450	446	99.1%	41.5	16.9	D
EB	Left Turn	300	282	94.1%	89.4	29.5	F
	Through	1,060	1,034	97.6%	53.2	20.0	D
	Right Turn	190	181	95.4%	42.8	19.2	D
	Subtotal	1,550	1,498	96.6%	58.7	21.8	E
WB	Left Turn	30	23	75.0%	372.0	104.2	F
	Through	960	787	82.0%	386.9	61.5	F
	Right Turn	70	54	77.6%	377.8	72.4	F
	Subtotal	1,060	864	81.5%	386.2	61.4	F
Total		3,490	3,235	92.7%	152.5	16.8	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	850	230	110	640	120	390	150	190	70	150	30
Future Volume (veh/h)	50	850	230	110	640	120	390	150	190	70	150	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1855	1900	1863	1863	1727	1792	1816	1900	1863	1776	1900
Adj Flow Rate, veh/h	54	924	0	120	696	0	424	163	0	76	163	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	70	1203	0	149	1359	564	456	670	0	99	532	0
Arrive On Green	0.04	0.34	0.00	0.08	0.38	0.00	0.27	0.37	0.00	0.06	0.16	0.00
Sat Flow, veh/h	1691	3617	0	1774	3539	1468	1707	1816	0	1774	3463	0
Grp Volume(v), veh/h	54	924	0	120	696	0	424	163	0	76	163	0
Grp Sat Flow(s),veh/h/ln	1691	1762	0	1774	1770	1468	1707	1816	0	1774	1687	0
Q Serve(g_s), s	3.8	28.0	0.0	8.0	18.1	0.0	29.0	7.5	0.0	5.1	5.1	0.0
Cycle Q Clear(g_c), s	3.8	28.0	0.0	8.0	18.1	0.0	29.0	7.5	0.0	5.1	5.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	70	1203	0	149	1359	564	456	670	0	99	532	0
V/C Ratio(X)	0.78	0.77	0.00	0.81	0.51	0.00	0.93	0.24	0.00	0.77	0.31	0.00
Avail Cap(c_a), veh/h	565	1324	0	444	1359	564	570	670	0	593	1127	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.9	35.2	0.0	53.9	28.3	0.0	42.8	26.2	0.0	55.8	44.6	0.0
Incr Delay (d2), s/veh	16.6	2.5	0.0	9.8	1.1	0.0	19.4	0.2	0.0	11.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	14.0	0.0	4.3	9.0	0.0	16.1	3.7	0.0	2.8	2.4	0.0
LnGrp Delay(d),s/veh	73.5	37.8	0.0	63.7	29.4	0.0	62.2	26.4	0.0	67.6	45.0	0.0
LnGrp LOS	E	D		E	C		E	C		E	D	
Approach Vol, veh/h		978			816			587			239	
Approach Delay, s/veh		39.7			34.4			52.3			52.2	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	45.9	36.0	22.9	9.9	51.0	10.7	48.2
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	10.0	30.0	31.0	7.1	5.8	20.1	7.1	9.5
Green Ext Time (p_c), s	0.3	10.8	1.0	1.1	0.1	17.2	0.2	2.1

Intersection Summary		
HCM 2010 Ctrl Delay		42.0
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1070	110	100	730	0	170	0	260	0	0	0
Future Volume (veh/h)	0	1070	110	100	730	0	170	0	260	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1092	0	109	793	0	179	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1817	0	143	2399	0	237	0	0	0	4	0
Arrive On Green	0.00	0.51	0.00	0.08	0.68	0.00	0.13	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	179		0	-93137	0
Grp Volume(v), veh/h	0	1092	0	109	793	0	179	24.8		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	10.4	0.0	2.9	4.4	0.0	4.6			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.4	0.0	2.9	4.4	0.0	4.6			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1817	0	143	2399	0	237			0	4	0
V/C Ratio(X)	0.00	0.60	0.00	0.76	0.33	0.00	0.75			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2298	0	557	2399	0	743			0	585	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.2	0.0	21.5	3.2	0.0	19.9			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	8.1	0.1	0.0	4.8			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	0.0	1.7	2.1	0.0	2.6			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.5	0.0	29.6	3.3	0.0	24.8			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		1092			902						0	
Approach Delay, s/veh		8.5			6.5						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		37.4	10.4	0.0	7.8	29.5		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		6.4	6.6	0.0	4.9	12.4		
Green Ext Time (p_c), s		15.3	0.4	0.0	0.2	12.1		

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1250	170	200	830	270	150	160	270	120	160	50
Future Volume (veh/h)	70	1250	170	200	830	270	150	160	270	120	160	50
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1846	1900
Adj Flow Rate, veh/h	76	1359	0	217	902	0	163	174	0	130	174	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	99	1582	708	297	1693	0	201	353	0	167	314	0
Arrive On Green	0.06	0.45	0.00	0.09	0.48	0.00	0.11	0.19	0.00	0.09	0.17	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1846	0
Grp Volume(v), veh/h	76	1359	0	217	902	0	163	174	0	130	174	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1846	0
Q Serve(g_s), s	4.0	32.3	0.0	5.8	16.7	0.0	8.5	7.9	0.0	6.7	8.1	0.0
Cycle Q Clear(g_c), s	4.0	32.3	0.0	5.8	16.7	0.0	8.5	7.9	0.0	6.7	8.1	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	99	1582	708	297	1693	0	201	353	0	167	314	0
V/C Ratio(X)	0.77	0.86	0.00	0.73	0.53	0.00	0.81	0.49	0.00	0.78	0.55	0.00
Avail Cap(c_a), veh/h	568	1698	760	1090	1698	0	562	592	0	568	590	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.7	23.3	0.0	41.7	17.1	0.0	40.5	33.9	0.0	41.5	35.6	0.0
Incr Delay (d2), s/veh	4.7	4.1	0.0	1.3	0.2	0.0	7.5	1.1	0.0	9.1	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	16.6	0.0	2.8	8.2	0.0	4.5	4.1	0.0	3.7	4.3	0.0
LnGrp Delay(d),s/veh	48.4	27.4	0.0	43.1	17.3	0.0	48.1	35.0	0.0	50.6	37.5	0.0
LnGrp LOS	D	C		D	B		D	C		D	D	
Approach Vol, veh/h		1435			1119			337			304	
Approach Delay, s/veh		28.5			22.3			41.3			43.1	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	49.9	14.7	20.0	12.2	46.9	12.8	21.9
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	6.0	18.7	10.5	10.1	7.8	34.3	8.7	9.9
Green Ext Time (p_c), s	0.1	13.7	0.4	2.2	0.4	7.6	0.4	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1360	140	80	1060	120	140	140	50	190	110	80
Future Volume (veh/h)	140	1360	140	80	1060	120	140	140	50	190	110	80
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	152	1478	63	87	1152	120	152	152	38	207	120	53
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	187	1456	602	109	1197	124	187	219	55	244	225	100
Arrive On Green	0.11	0.41	0.41	0.07	0.37	0.37	0.11	0.15	0.15	0.14	0.19	0.19
Sat Flow, veh/h	1774	3539	1464	1660	3218	334	1774	1427	357	1774	1217	537
Grp Volume(v), veh/h	152	1478	63	87	632	640	152	0	190	207	0	173
Grp Sat Flow(s),veh/h/ln	1774	1770	1464	1660	1770	1783	1774	0	1784	1774	0	1754
Q Serve(g_s), s	6.9	33.7	2.2	4.2	28.6	28.8	6.9	0.0	8.3	9.3	0.0	7.3
Cycle Q Clear(g_c), s	6.9	33.7	2.2	4.2	28.6	28.8	6.9	0.0	8.3	9.3	0.0	7.3
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.20	1.00		0.31
Lane Grp Cap(c), veh/h	187	1456	602	109	658	663	187	0	274	244	0	325
V/C Ratio(X)	0.81	1.01	0.10	0.80	0.96	0.96	0.81	0.00	0.69	0.85	0.00	0.53
Avail Cap(c_a), veh/h	206	1456	602	152	658	663	227	0	424	249	0	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	24.1	14.8	37.7	25.1	25.2	35.9	0.0	32.9	34.5	0.0	30.2
Incr Delay (d2), s/veh	20.8	27.4	0.1	19.5	25.6	26.3	17.4	0.0	3.8	24.5	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	21.9	0.9	2.5	18.6	18.9	4.3	0.0	4.4	6.3	0.0	3.7
LnGrp Delay(d),s/veh	56.7	51.5	14.9	57.3	50.8	51.5	53.3	0.0	36.6	59.0	0.0	32.7
LnGrp LOS	E	F	B	E	D	D	D		D	E		C
Approach Vol, veh/h		1693			1359			342			380	
Approach Delay, s/veh		50.6			51.5			44.0			47.0	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	20.7	13.1	35.0	15.8	18.1	9.9	38.2
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	20.5	9.5	30.5	11.5	19.5	7.5	32.5
Max Q Clear Time (g_c+I1), s	8.9	9.3	8.9	30.8	11.3	10.3	6.2	35.7
Green Ext Time (p_c), s	0.1	2.2	0.0	0.0	0.0	1.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.0
HCM 2010 LOS	D

FEHR & PEERS

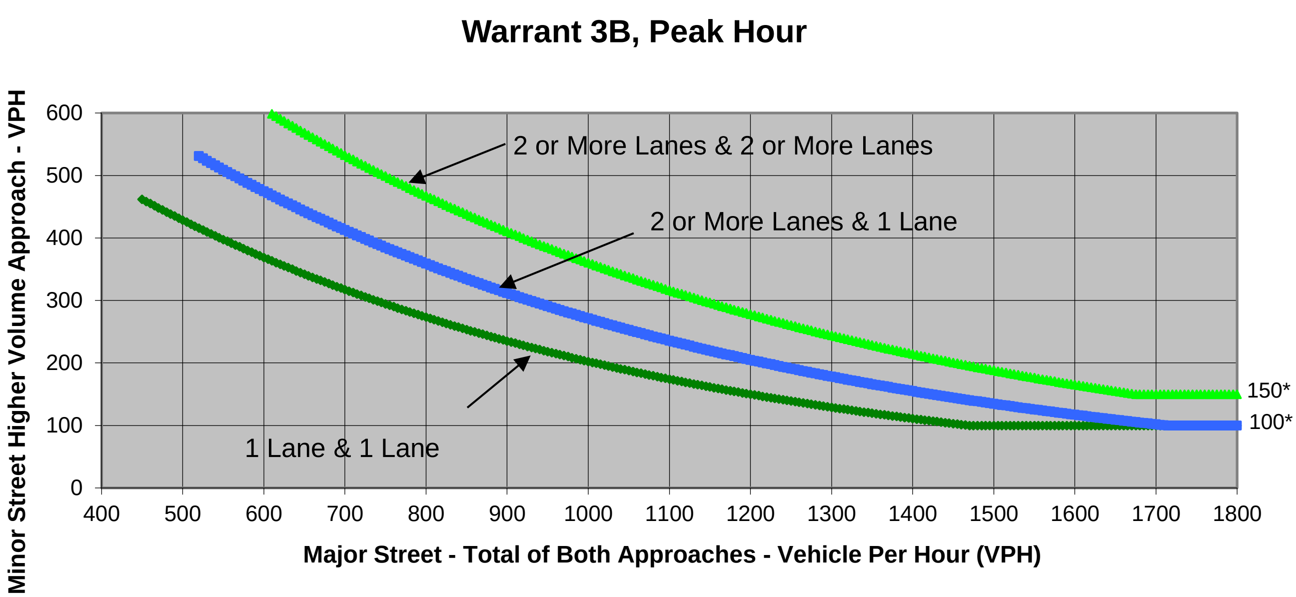
Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Cumulative No Project
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	40
Through	100	50	0	0
Right	90	0	0	10
Total	190	50	0	50

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**240**	**50**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Cumulative No Project
			Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	40
Through	100	50	0	0
Right	90	0	0	10
Total	190	50	0	50

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	4.6
Approach with Worst Case Delay	WB
Total Vehicles on Approach	50

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative No Project	**0.1**	**50**	**290**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

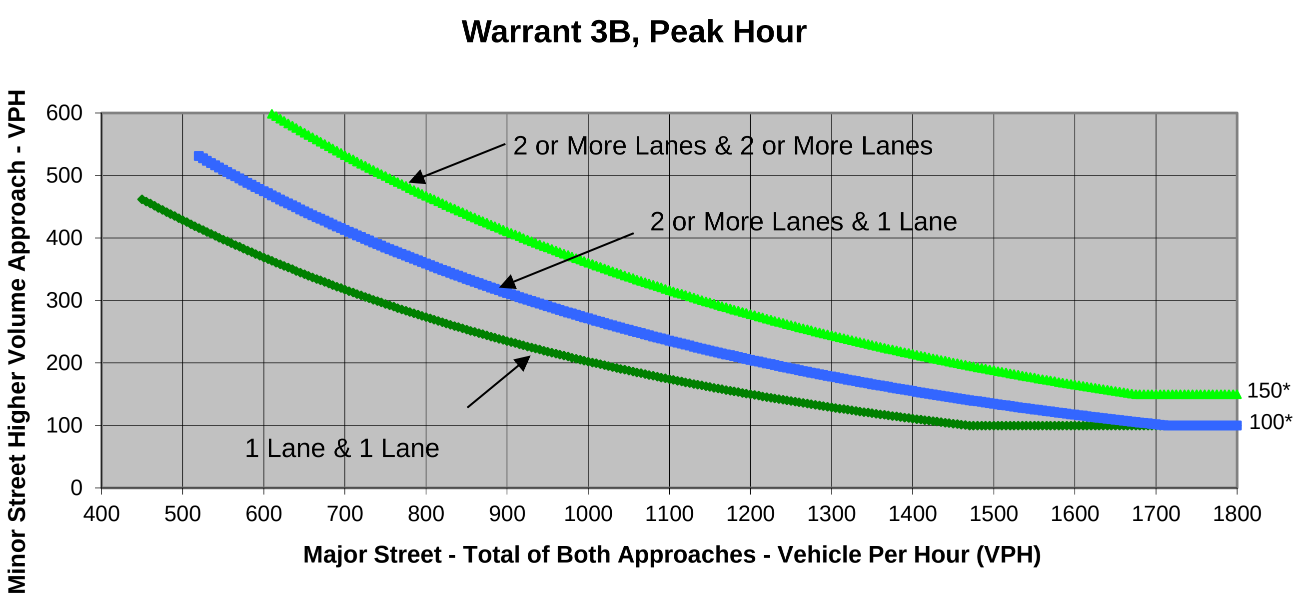
			Project	West Davis AAC EIR
Major Street	Risling Ct		Scenario	Cumulative No Project
Minor Street	Hospital Dwy		Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	150
Through	40	110	0	0
Right	70	0	0	0
Total	110	120	0	150

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**230**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

		Project	West Davis AAC EIR
Major Street	Risling Ct	Scenario	Cumulative No Project
Minor Street	Hospital Dwy	Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	150
Through	40	110	0	0
Right	70	0	0	0
Total	110	120	0	150

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	5.0
Approach with Worst Case Delay	WB
Total Vehicles on Approach	150

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative No Project	**0.2**	**150**	**380**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Not Met**
Warrant Met	**NO**		

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
NB	Through/Right	350	25	1	25	8	25	21	0%	0%
SB	Left/Through	1,000	25	0	25	4	25	14	0%	0%
WB	Shared	1,925	50	3	75	6	75	12	0%	0%
0										

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	225	100	10	200	28	225	26	1%	0%
	Through	5,700	150	11	250	15	275	29	22%	0%
	Right Turn	100	25	5	75	22	100	33	0%	0%
NB	Left Turn	125	25	4	75	10	100	18	0%	0%
	Through	350	75	11	125	44	200	102	4%	0%
	Right Turn	75	75	1	75	2	75	2	3%	0%
SB	Left Turn	125	50	6	100	12	125	11	3%	0%
	Through/Right	350	50	4	100	22	125	52	0%	0%
WB	U/Left Turns	325	100	6	150	10	175	17	0%	0%
	Left Turn	325	75	8	125	14	175	26	0%	0%
	Through	575	100	12	200	19	250	20	0%	0%
	Through/Right	575	125	10	225	12	275	27	0%	0%

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Cumulative No Project Conditions**
Queue Length | **AM Peak Hour**

Intersection 5 | **John Jones Rd/W Covell Blvd** | **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	150	75	9	150	12	175	7	2%	0%
	Through	575	125	13	225	30	300	69	2%	0%
SB	Left Turn	250	125	11	200	17	225	25	0%	0%
	Through/Right	1,600	25	2	75	6	75	14	0%	0%
WB	Through	350	175	20	300	37	325	50	25%	0%
	Right Turn	75	75	2	100	5	100	0	8%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 | **SR 113 SB Ramps/W Covell Blvd** | **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	350	200	19	325	28	350	24	0%	0%
	Through/Right	350	250	15	375	23	375	13	0%	2%
SB	Left/Through	1,425	150	12	225	19	275	31	0%	0%
	Right Turn	1,425	100	10	175	22	200	38	0%	0%
WB	Left Turn	225	175	18	250	21	225	1	5%	0%
	Through	500	175	49	400	116	500	108	0%	1%
0										

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Cumulative No Project Conditions**
Queue Length | **AM Peak Hour**

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Std. Dev.	95th Queue (ft) Average	Std. Dev.	Maximum Queue (ft) Average	Std. Dev.	Block Time Pocket	Upstream
EB	U/Left Turns	175	50	6	75	16	100	23	0%	0%
	Left Turn	175	75	5	100	10	100	14	0%	0%
	Through	500	100	8	150	11	175	19	0%	0%
NB	Left/Through	2,400	175	14	275	23	325	34	0%	0%
	Right Turn	825	225	30	375	70	450	93	0%	0%
WB	Through	875	375	44	575	76	650	77	31%	0%
	Right Turn	150	125	11	200	8	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Std. Dev.	95th Queue (ft) Average	Std. Dev.	Maximum Queue (ft) Average	Std. Dev.	Block Time Pocket	Upstream
EB	Left Turn	175	125	11	200	12	200	0	2%	0%
	Through	875	250	18	425	29	525	31	14%	0%
	Through/Right	875	300	16	450	24	475	21	0%	0%
NB	Left Turn	225	175	23	250	20	225	1	20%	0%
	Through/Right	2,050	175	87	400	187	500	175	1%	0%
SB	Left Turn	250	75	11	150	48	200	87	0%	0%
	Through	1,775	150	33	300	68	375	124	19%	0%
	Right Turn	75	75	2	100	4	100	0	2%	0%
WB	Left Turn	125	50	8	125	22	150	28	0%	0%
	Through	5,800	175	14	275	18	300	32	14%	0%
	Through/Right	5,800	200	15	300	23	325	45	0%	0%

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Left/Through	1,000	25	1	25	8	50	17	0%	0%
WB	Shared	925	50	4	100	10	100	18	0%	0%
NB	Through/Right	1,025	25	0	25	0	25	0	0%	0%
0										

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	225	50	4	100	12	150	22	0%	0%
	Through	5,700	125	11	200	16	225	32	16%	0%
	Right Turn	100	25	5	75	18	125	0	0%	0%
NB	Left Turn	125	25	3	75	6	100	19	0%	0%
	Through	350	50	6	100	26	125	75	1%	0%
	Right Turn	75	75	1	75	6	75	6	2%	0%
SB	Left Turn	125	125	9	175	8	175	1	21%	0%
	Through/Right	350	100	14	200	34	275	50	6%	0%
WB	U/Left Turns	325	100	6	150	10	175	15	0%	0%
	Left Turn	325	75	8	125	18	150	27	0%	0%
	Through	575	100	13	225	32	275	59	0%	0%
	Through/Right	575	125	16	250	28	300	57	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	50	7	100	14	125	18	0%	0%
	Through	575	100	9	175	13	225	32	1%	0%
SB	Left Turn	250	175	14	275	24	275	3	5%	0%
	Through/Right	1,600	75	18	200	69	325	83	0%	0%
WB	Through	350	125	16	250	31	300	31	14%	0%
	Right Turn	75	50	7	100	8	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	250	21	375	22	375	7	0%	2%
	Through/Right	350	275	15	375	9	375	19	0%	3%
SB	Left/Through	1,425	150	12	250	19	300	31	0%	0%
	Right Turn	1,425	75	7	150	14	175	20	0%	0%
WB	Left Turn	225	200	9	275	9	250	0	9%	0%
	Through	500	200	25	450	52	525	71	1%	1%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	50	5	100	8	100	16	0%	0%
	Left Turn	175	100	10	200	18	200	0	0%	0%
	Through	500	250	18	375	44	425	66	16%	0%
NB	Left/Through	2,375	1,450	561	2,400	689	2,225	332	0%	15%
	Right Turn	725	725	56	825	56	775	0	42%	0%
WB	Through	875	850	22	1,025	25	925	14	55%	24%
	Right Turn	150	200	8	300	6	225	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	200	4	225	11	225	0	37%	0%
	Through	875	525	67	775	89	825	76	25%	1%
	Through/Right	875	550	70	800	91	850	79	0%	1%
NB	Left Turn	225	225	12	275	17	250	0	49%	0%
	Through/Right	2,050	525	376	975	584	1,000	513	3%	0%
SB	Left Turn	250	100	22	250	53	275	39	0%	0%
	Through	1,775	250	79	475	184	550	208	47%	0%
	Right Turn	75	75	3	100	9	100	0	2%	0%
WB	Left Turn	125	50	8	150	18	175	1	0%	0%
	Through	5,800	1,850	394	3,200	749	3,050	708	73%	0%
	Through/Right	5,800	1,875	392	3,225	741	3,050	715	0%	0%

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	28.6	69.9	0.5	24
SR 113 SB Ramps	6	10.9	25.5	0.1	15
John Jones Rd	5	15.7	23.4	0.1	12
Risling Ct	4	18.6	30.8	0.1	14
	13	2.3	10.2	0.1	31
Total		76.2	159.6	0.8	19

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	17.1	23.6	0.1	13
	5	10.5	22.9	0.1	19
SR 113 SB Ramps	6	18.0	25.9	0.1	10
Route 1	7	4.9	15.6	0.1	24
Total		50.5	88.0	0.4	16

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	17.1	23.6	0.1	13
	5	10.5	22.9	0.1	19
Route 2	6	21.8	33.3	0.1	8
Total		49.3	79.8	0.3	13

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	18.6	30.8	0.1	14
	13	2.3	10.2	0.1	31
Total		20.9	41.0	0.3	25

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	103.5	182.0	0.5	12
SR 113 SB Ramps	6	6.3	20.8	0.1	18
John Jones Rd	5	7.8	15.4	0.1	18
Risling Ct	4	10.4	22.6	0.1	19
	13	1.9	9.7	0.1	32
Total		129.8	250.5	0.8	14

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	13.8	20.3	0.1	15
	5	7.3	19.7	0.1	22
SR 113 SB Ramps	6	21.9	29.8	0.1	9
Route 1	7	23.9	34.5	0.1	11
Total		66.8	104.3	0.4	13

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.2	22.7	0.1	14
	5	6.8	19.3	0.1	22
Route 2	6	17.8	29.4	0.1	9
Total		40.8	71.5	0.3	14

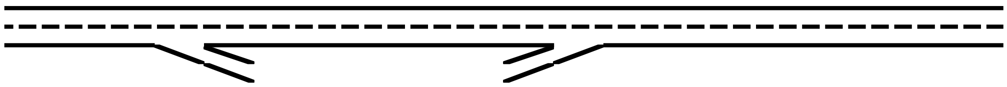
Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	13.7	26.0	0.1	16
	13	2.0	10.0	0.1	31
Total		15.7	35.9	0.3	28

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

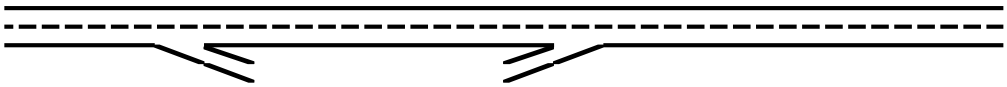
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,370	450	450	740
On Ramp Volume			290	
Off Ramp Volume	920			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,370	450	450	740
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,881	618	618	1,016
Flow (pcphpl)	940	309	309	508

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

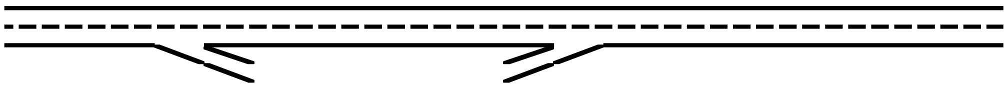


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.39	0.13	0.13	0.21
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	13.4	4.4	4.4	7.3
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			926	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.19	
Flow Rate (pcphpl)			463	
Speed (mph)			70.0	
Density (pcphpl)			6.6	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	902			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.19			
Flow Rate (pcphpl)	451			
Speed (mph)	70.0			
Density (pcphpl)	6.4			
LOS	A			

Location	1	2	3	4

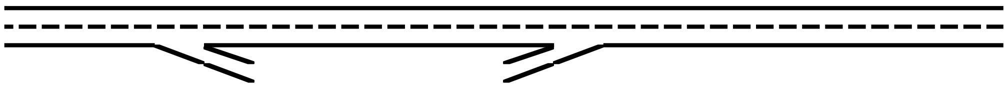


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			290	
PHF			0.95	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			2.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.990	
f_P			1.00	
Flow (pcph)			308	
Flow Rate (pcphpl)			308	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.15	

Location	1	2	3	4

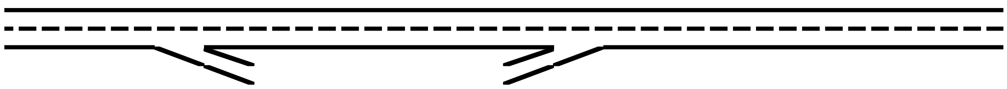


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	920			
PHF	0.95			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	2.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.990			
f_P	1.00			
Flow (pcph)	978			
Flow Rate (pcphpl)	978			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.47			
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4

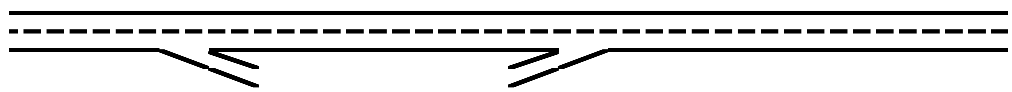


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			618	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			618	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			618	
v_{R12a} (pcph)			926	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.20	
Density			10.2	
LOS			B	

Location	1	2	3	4



Key

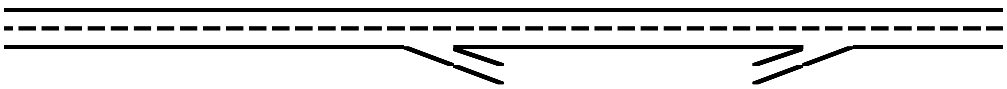
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,881			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.668			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,881			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,881			
Speed Index	0.39			
Area Speed	59.2			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.2			
v/c ratio	0.43			
Density	19.1			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.43	0.13	0.20	0.21
Segment Density	19.1	4.4	10.2	7.3
Segment LOS	B	A	B	A
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



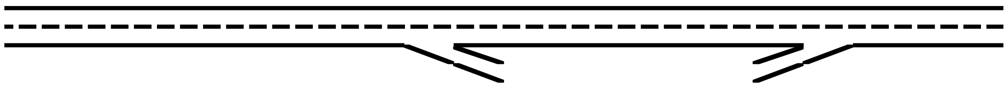
Key
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	2,360	2,360	1,990	1,990
On Ramp Volume				1,010
Off Ramp Volume		370		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	2,360	2,360	1,990	1,990
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,892	2,892	2,439	2,439
Flow (pcphpl)	1,446	1,446	1,219	1,219

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

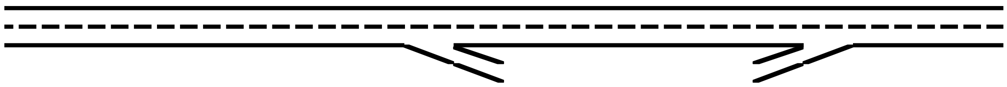
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.60	0.60	0.51	0.51
Speed (mph)	69.3	69.3	70.0	70.0
Density (pcphpl)	20.9	20.9	17.4	17.4
LOS	C	C	B	B
Operations for Segment GP Lanes				
Flow (pcph)				3,513
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.73
Flow Rate (pcphpl)				1,756
Speed (mph)				66.4
Density (pcphpl)				26.4
LOS				D
Operations for Exiting GP Lanes				
Flow (pcph)		2,499		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.52		
Flow Rate (pcphpl)		1,250		
Speed (mph)		70.0		
Density (pcphpl)		17.9		
LOS		B		

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

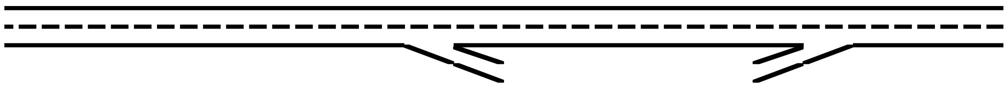
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
FFS	65	65	65	65
Capacity (pcph)				
v/c ratio				
On Ramp Flow Rate				
Volume (vph)				1,010
PHF				0.95
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				1,074
Flow Rate (pcphpl)				1,074
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.51

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

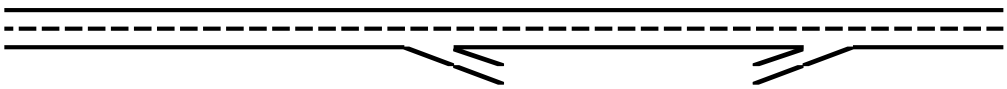


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		370		
PHF		0.95		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		393		
Flow Rate (pcphpl)		393		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.19		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Location	1	2	3	4



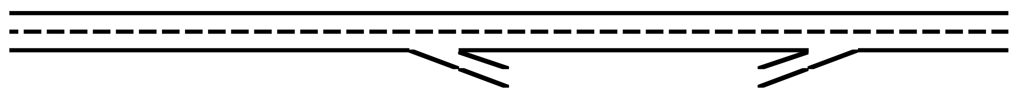
Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				2,439
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				2,439
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				2,439
v_{R12a} (pcph)				3,513
Speed Index				0.42
Area Speed				58.2
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				58.2
v/c ratio				0.76
Density				30.3
LOS				D

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: AM Peak Hour



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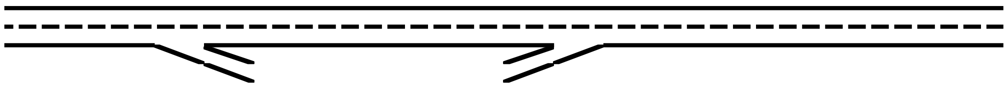
<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,892		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.670		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,892		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,892		
Speed Index		0.33		
Area Speed		60.7		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.7		
v/c ratio		0.66		
Density		27.6		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.60	0.66	0.51	0.76
Segment Density	20.9	27.6	17.4	30.3
Segment LOS	C	C	B	D
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

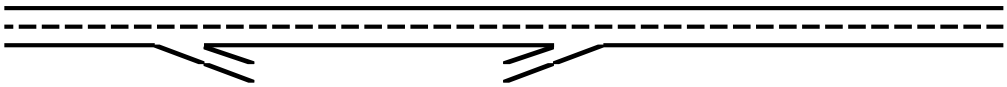
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	2,490	1,250	1,250	1,650
On Ramp Volume			400	
Off Ramp Volume	1,240			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	2,490	1,250	1,250	1,650
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,981	1,496	1,496	1,975
Flow (pcphpl)	1,490	748	748	988

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



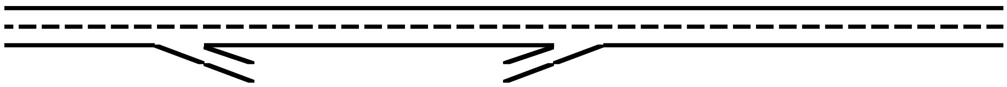
Key
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.62	0.31	0.31	0.41
Speed (mph)	69.0	70.0	70.0	70.0
Density (pcphpl)	21.6	10.7	10.7	14.1
LOS	C	A	A	B
Operations for Segment GP Lanes				
Flow (pcph)			1,922	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.40	
Flow Rate (pcphpl)			961	
Speed (mph)			70.0	
Density (pcphpl)			13.7	
LOS			B	
Operations for Exiting GP Lanes				
Flow (pcph)	1,662			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.35			
Flow Rate (pcphpl)	831			
Speed (mph)	70.0			
Density (pcphpl)	11.9			
LOS	B			

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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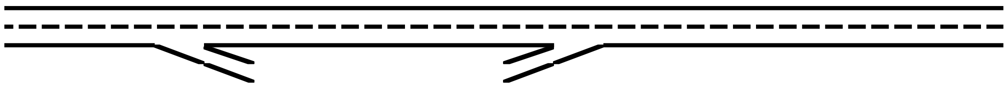
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			400	
PHF			0.95	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			2.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.990	
f_P			1.00	
Flow (pcph)			425	
Flow Rate (pcphpl)			425	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.20	

Location	1	2	3	4



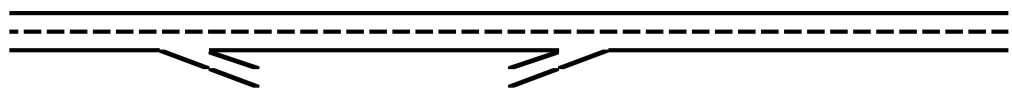
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	1,240			
PHF	0.95			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	2.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.990			
f_P	1.00			
Flow (pcph)	1,318			
Flow Rate (pcphpl)	1,318			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.63			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4



Key

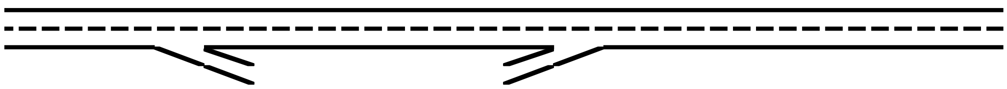
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,496	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,496	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,496	
v_{R12a} (pcph)			1,922	
Speed Index			0.31	
Area Speed			61.2	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.2	
v/c ratio			0.42	
Density			17.9	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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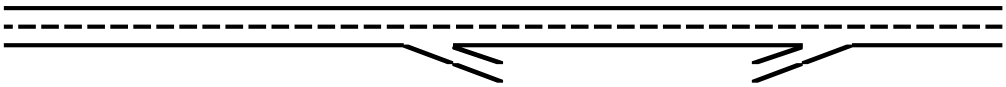
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	2,981			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.625			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	2,981			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	2,981			
Speed Index	0.42			
Area Speed	58.3			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	58.3			
v/c ratio	0.68			
Density	28.5			
LOS	D			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.68	0.31	0.42	0.41
Segment Density	28.5	10.7	17.9	14.1
Segment LOS	D	A	B	B
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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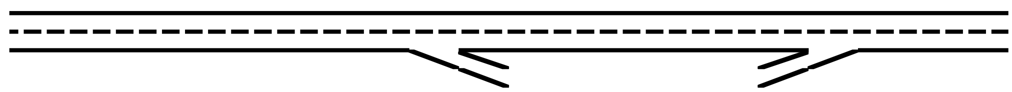
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,200	1,200	910	910
On Ramp Volume				820
Off Ramp Volume		290		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,200	1,200	910	910
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,328	1,328	1,007	1,007
Flow (pcphpl)	664	664	504	504

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

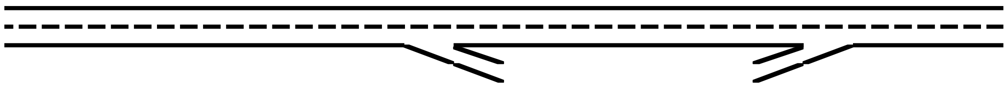


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.28	0.28	0.21	0.21
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	9.5	9.5	7.2	7.2
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,879
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.39
Flow Rate (pcphpl)				940
Speed (mph)				70.0
Density (pcphpl)				13.4
LOS				B
Operations for Exiting GP Lanes				
Flow (pcph)		1,020		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.21		
Flow Rate (pcphpl)		510		
Speed (mph)		70.0		
Density (pcphpl)		7.3		
LOS		A		

Location	1	2	3	4



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<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				820
PHF				0.95
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				872
Flow Rate (pcphpl)				872
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.42

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

Key

<> Express Lane (HOV)

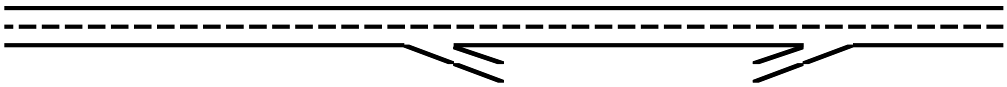
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		290		
PHF		0.95		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		308		
Flow Rate (pcphpl)		308		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.15		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative No Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



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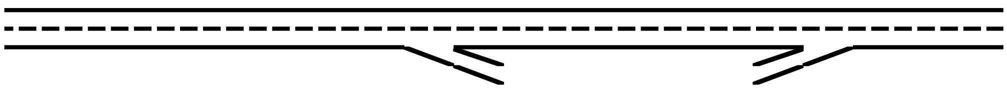
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,007
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,007
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,007
v_{R12a} (pcph)				1,879
Speed Index				0.32
Area Speed				61.1
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.1
v/c ratio				0.41
Density				17.7
LOS				B

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,328		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.713		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,328		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,328		
Speed Index		0.33		
Area Speed		60.9		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.9		
v/c ratio		0.30		
Density		14.1		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.28	0.30	0.21	0.41
Segment Density	9.5	14.1	7.2	17.7
Segment LOS	A	B	A	B
Over Capacity				

Cumulative Plus Project Level of Service (LOS) Calculations

FEHR & PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	304	50	173	225	10	40	60	352	40	60	10
Future Volume (veh/h)	10	304	50	173	225	10	40	60	352	40	60	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	327	0	188	245	10	43	65	0	43	65	7
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	426	0	296	678	28	140	147	0	62	94	10
Arrive On Green	0.01	0.23	0.00	0.17	0.38	0.38	0.08	0.08	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1774	1863	0	1774	1777	73	1774	1863	0	677	1023	110
Grp Volume(v), veh/h	11	327	0	188	0	255	43	65	0	115	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1849	1774	1863	0	1809	0	0
Q Serve(g_s), s	0.3	8.0	0.0	4.8	0.0	4.8	1.1	1.6	0.0	3.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	8.0	0.0	4.8	0.0	4.8	1.1	1.6	0.0	3.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.04	1.00		0.00	0.37		0.06
Lane Grp Cap(c), veh/h	25	426	0	296	0	705	140	147	0	167	0	0
V/C Ratio(X)	0.44	0.77	0.00	0.64	0.00	0.36	0.31	0.44	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	239	709	0	1038	0	1536	900	945	0	622	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.9	17.6	0.0	19.0	0.0	10.8	21.3	21.5	0.0	21.5	0.0	0.0
Incr Delay (d2), s/veh	11.5	2.9	0.0	2.3	0.0	0.3	2.6	4.4	0.0	10.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.4	0.0	2.5	0.0	2.5	0.7	1.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	35.4	20.5	0.0	21.2	0.0	11.2	23.9	25.9	0.0	31.9	0.0	0.0
LnGrp LOS	D	C		C		B	C	C		C		
Approach Vol, veh/h		338			443			108			115	
Approach Delay, s/veh		21.0			15.4			25.1			31.9	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	16.6		9.7	6.1	24.0		9.0
Change Period (Y+Rc), s	5.4	5.4		* 5.2	5.4	5.4		5.2
Max Green Setting (Gmax), s	28.6	18.6		* 17	6.6	40.6		24.8
Max Q Clear Time (g_c+I1), s	6.8	10.0		5.0	2.3	6.8		3.6
Green Ext Time (p_c), s	2.0	1.2		0.7	0.0	2.2		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		20.2
HCM 2010 LOS		C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	678	30	105	512	40	209
Future Volume (veh/h)	678	30	105	512	40	209
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	737	0	113	551	43	0
Adj No. of Lanes	2	0	1	2	0	0
Peak Hour Factor	0.92	0.92	0.93	0.93	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1670	0	166	2391	86	0
Arrive On Green	0.47	0.00	0.09	0.68	0.05	0.00
Sat Flow, veh/h	3725	0	1774	3632	1736	0
Grp Volume(v), veh/h	737	0	113	551	44	0
Grp Sat Flow(s),veh/h/ln	1770	0	1774	1770	1776	0
Q Serve(g_s), s	5.0	0.0	2.2	2.2	0.9	0.0
Cycle Q Clear(g_c), s	5.0	0.0	2.2	2.2	0.9	0.0
Prop In Lane		0.00	1.00		0.98	0.00
Lane Grp Cap(c), veh/h	1670	0	166	2391	88	0
V/C Ratio(X)	0.44	0.00	0.68	0.23	0.50	0.00
Avail Cap(c_a), veh/h	3408	0	976	3408	977	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	15.9	2.3	16.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	4.8	0.0	9.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.3	1.0	0.7	0.0
LnGrp Delay(d),s/veh	6.6	0.0	20.8	2.3	26.0	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	737			664	44	
Approach Delay, s/veh	6.6			5.5	26.0	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.4	23.2				30.6		5.8
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	4.2	7.0				4.2		2.9
Green Ext Time (p_c), s	0.2	10.1				10.4		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		6.7
HCM 2010 LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	57	59	103.0%	5.5	1.6	A
	Through	108	113	104.3%	4.0	0.9	A
	Right Turn	90	97	108.1%	3.7	1.7	A
	Subtotal	255	269	105.3%	4.3	0.9	A
SB	Left Turn	1	1	50.0%	0.9	2.9	A
	Through	118	121	102.3%	0.3	0.2	A
	Right Turn						
	Subtotal	119	121	101.8%	0.3	0.2	A
EB	Left Turn						
	Through	4	3	72.5%	3.5	3.8	A
	Right Turn	57	59	102.6%	3.4	0.5	A
	Subtotal	61	61	100.7%	3.5	0.5	A
WB	Left Turn	40	44	110.3%	5.7	1.0	A
	Through	3	3	83.3%	2.7	2.4	A
	Right Turn	10	12	122.0%	2.7	1.6	A
	Subtotal	53	59	110.9%	5.3	0.9	A
Total		488	510	104.5%	3.3	0.5	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	22	21	95.5%	53.5	17.1	D
	Through	27	25	92.2%	34.6	9.8	C
	Right Turn	290	284	97.8%	5.7	1.4	A
	Subtotal	339	330	97.2%	10.1	2.3	B
SB	Left Turn	158	162	102.5%	52.1	13.7	D
	Through	16	19	120.6%	37.0	27.7	D
	Right Turn	41	44	107.3%	18.1	8.8	B
	Subtotal	215	225	104.7%	44.6	12.3	D
EB	Left Turn	137	141	102.6%	45.4	7.8	D
	Through	770	761	98.9%	21.5	4.8	C
	Right Turn	20	21	103.0%	9.1	4.9	A
	Subtotal	927	923	99.5%	25.0	5.3	C
WB	Left Turn	150	151	100.5%	47.4	6.1	D
	Through	655	657	100.3%	25.7	5.5	C
	Right Turn	96	107	111.9%	11.4	4.3	B
	Subtotal	901	915	101.5%	27.6	4.2	C
Total		2,382	2,392	100.4%	26.0	3.4	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	200	196	98.1%	28.3	3.8	C
	Through						
	Right Turn	61	62	101.1%	7.3	1.8	A
	Subtotal	261	258	98.8%	23.7	3.5	C
EB	Left Turn	92	91	99.2%	57.6	14.3	E
	Through	1,126	1,113	98.9%	19.1	9.5	B
	Right Turn						
	Subtotal	1,218	1,205	98.9%	22.0	8.8	C
WB	Left Turn						
	Through	840	855	101.8%	14.4	2.4	B
	Right Turn	350	347	99.3%	11.6	2.2	B
	Subtotal	1,190	1,202	101.0%	13.6	2.3	B
Total		2,669	2,665	99.8%	18.5	4.3	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	213	96.7%	35.4	3.8	D
	Through	10	11	107.0%	32.7	18.2	C
	Right Turn	149	152	101.7%	33.3	3.9	C
	Subtotal	379	375	98.9%	34.5	1.8	C
EB	Left Turn						
	Through	833	817	98.1%	19.8	3.1	B
	Right Turn	493	492	99.7%	23.8	2.6	C
	Subtotal	1,326	1,309	98.7%	21.3	2.7	C
WB	Left Turn	550	549	99.8%	50.0	9.5	D
	Through	1,041	1,048	100.6%	10.8	1.1	B
	Right Turn						
	Subtotal	1,591	1,596	100.3%	24.5	4.7	C
Total		3,296	3,280	99.5%	24.4	2.9	C

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	364	360	98.8%	28.5	4.4	C
	Through	10	9	93.0%	26.7	19.6	C
	Right Turn	570	568	99.6%	25.4	5.0	C
	Subtotal	944	937	99.3%	26.8	2.9	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	104	97	93.6%	56.3	4.9	E
	Through	949	933	98.3%	6.5	1.1	A
	Right Turn						
	Subtotal	1,053	1,030	97.9%	11.4	1.8	B
WB	Left Turn						
	Through	1,227	1,237	100.8%	54.6	20.6	D
	Right Turn	190	199	104.6%	39.4	19.4	D
	Subtotal	1,417	1,436	101.3%	52.5	20.5	D
Total		3,414	3,403	99.7%	33.1	8.3	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	234	233	99.5%	82.2	38.7	F
	Through	80	76	94.4%	45.0	24.0	D
	Right Turn	70	71	100.7%	27.9	29.8	C
	Subtotal	384	379	98.7%	66.2	34.2	E
SB	Left Turn	50	46	92.0%	34.5	12.6	C
	Through	80	79	99.3%	35.8	5.4	D
	Right Turn	352	369	104.9%	13.8	6.0	B
	Subtotal	482	495	102.6%	19.5	5.4	B
EB	Left Turn	121	121	99.7%	56.0	9.2	E
	Through	864	864	100.0%	28.5	5.2	C
	Right Turn	356	343	96.5%	21.4	5.6	C
	Subtotal	1,341	1,328	99.0%	29.1	5.4	C
WB	Left Turn	40	41	102.0%	54.3	19.5	D
	Through	727	729	100.2%	34.4	20.3	C
	Right Turn	50	55	109.6%	29.1	21.3	C
	Subtotal	817	824	100.9%	35.0	20.1	D
Total		3,024	3,025	100.0%	34.1	6.9	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	585	337	220	552	20	174	70	120	110	210	71
Future Volume (veh/h)	42	585	337	220	552	20	174	70	120	110	210	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1849	1900	1863	1863	1727	1792	1823	1900	1863	1784	1900
Adj Flow Rate, veh/h	46	636	0	239	600	0	189	76	0	120	228	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	66	1234	0	285	1674	695	232	340	0	156	469	0
Arrive On Green	0.04	0.35	0.00	0.16	0.47	0.00	0.14	0.19	0.00	0.09	0.14	0.00
Sat Flow, veh/h	1691	3607	0	1774	3539	1468	1707	1823	0	1774	3479	0
Grp Volume(v), veh/h	46	636	0	239	600	0	189	76	0	120	228	0
Grp Sat Flow(s),veh/h/ln	1691	1757	0	1774	1770	1468	1707	1823	0	1774	1695	0
Q Serve(g_s), s	2.3	12.1	0.0	11.0	9.1	0.0	9.1	3.0	0.0	5.6	5.2	0.0
Cycle Q Clear(g_c), s	2.3	12.1	0.0	11.0	9.1	0.0	9.1	3.0	0.0	5.6	5.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	66	1234	0	285	1674	695	232	340	0	156	469	0
V/C Ratio(X)	0.70	0.52	0.00	0.84	0.36	0.00	0.81	0.22	0.00	0.77	0.49	0.00
Avail Cap(c_a), veh/h	802	1875	0	631	1888	783	810	865	0	841	1608	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.0	21.7	0.0	34.3	14.1	0.0	35.4	29.1	0.0	37.6	33.6	0.0
Incr Delay (d2), s/veh	12.3	0.3	0.0	6.4	0.5	0.0	6.8	0.3	0.0	7.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.9	0.0	5.9	4.5	0.0	4.7	1.5	0.0	3.1	2.5	0.0
LnGrp Delay(d),s/veh	52.4	22.0	0.0	40.8	14.6	0.0	42.2	29.5	0.0	45.3	34.3	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		682			839			265			348	
Approach Delay, s/veh		24.1			22.0			38.5			38.1	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	34.6	15.5	15.7	8.3	44.9	11.4	19.7
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	13.0	14.1	11.1	7.2	4.3	11.1	7.6	5.0
Green Ext Time (p_c), s	0.6	15.5	0.5	2.0	0.1	16.3	0.3	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	688	85	220	749	0	112	0	220	0	0	0
Future Volume (veh/h)	0	688	85	220	749	0	112	0	220	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	748	0	239	814	0	122	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1582	0	306	2507	0	163	0	0	0	4	0
Arrive On Green	0.00	0.45	0.00	0.17	0.71	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	122		0	-93137	0
Grp Volume(v), veh/h	0	748	0	239	814	0	122	26.7		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	6.7	0.0	5.8	3.9	0.0	3.0			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.7	0.0	5.8	3.9	0.0	3.0			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1582	0	306	2507	0	163			0	4	0
V/C Ratio(X)	0.00	0.47	0.00	0.78	0.32	0.00	0.75			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2437	0	591	2516	0	788			0	621	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.7	0.0	17.8	2.5	0.0	19.9			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.3	0.1	0.0	6.8			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	0.0	3.2	1.8	0.0	1.8			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.0	0.0	22.1	2.6	0.0	26.7			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		748			1053						0	
Approach Delay, s/veh		9.0			7.0						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		36.9	8.1	0.0	11.8	25.1		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		5.9	5.0	0.0	7.8	8.7		
Green Ext Time (p_c), s		12.4	0.3	0.0	0.4	11.4		

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	901	156	230	885	120	64	90	170	250	230	90
Future Volume (veh/h)	50	901	156	230	885	120	64	90	170	250	230	90
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1842	1900
Adj Flow Rate, veh/h	54	979	0	250	962	0	70	98	0	272	250	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	76	1361	609	340	1564	0	92	241	0	324	480	0
Arrive On Green	0.04	0.38	0.00	0.10	0.44	0.00	0.05	0.13	0.00	0.18	0.26	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1842	0
Grp Volume(v), veh/h	54	979	0	250	962	0	70	98	0	272	250	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1842	0
Q Serve(g_s), s	2.5	19.7	0.0	6.0	17.5	0.0	3.3	4.1	0.0	12.4	9.7	0.0
Cycle Q Clear(g_c), s	2.5	19.7	0.0	6.0	17.5	0.0	3.3	4.1	0.0	12.4	9.7	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	76	1361	609	340	1564	0	92	241	0	324	480	0
V/C Ratio(X)	0.71	0.72	0.00	0.73	0.62	0.00	0.76	0.41	0.00	0.84	0.52	0.00
Avail Cap(c_a), veh/h	634	1898	849	1218	1898	0	628	662	0	634	659	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.7	22.0	0.0	36.7	18.0	0.0	39.2	33.5	0.0	33.1	26.5	0.0
Incr Delay (d2), s/veh	4.6	0.4	0.0	1.2	0.2	0.0	12.2	1.1	0.0	6.9	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.7	0.0	2.9	8.6	0.0	1.9	2.2	0.0	6.7	5.1	0.0
LnGrp Delay(d),s/veh	44.2	22.3	0.0	37.8	18.1	0.0	51.4	34.6	0.0	40.0	27.6	0.0
LnGrp LOS	D	C		D	B		D	C		D	C	
Approach Vol, veh/h		1033			1212			168			522	
Approach Delay, s/veh		23.5			22.2			41.6			34.1	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	42.1	8.4	25.9	12.4	37.3	19.3	14.9
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.5	19.5	5.3	11.7	8.0	21.7	14.4	6.1
Green Ext Time (p_c), s	0.1	11.0	0.2	2.2	0.4	10.5	0.9	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	948	222	110	1014	120	171	50	80	180	90	50
Future Volume (veh/h)	151	948	222	110	1014	120	171	50	80	180	90	50
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	164	1030	134	120	1102	120	186	54	11	196	98	28
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	201	1469	631	149	1258	137	224	173	35	236	169	48
Arrive On Green	0.11	0.41	0.41	0.09	0.39	0.39	0.13	0.12	0.12	0.13	0.12	0.12
Sat Flow, veh/h	1774	3539	1520	1660	3216	350	1774	1485	302	1774	1370	392
Grp Volume(v), veh/h	164	1030	134	120	606	616	186	0	65	196	0	126
Grp Sat Flow(s),veh/h/ln	1774	1770	1520	1660	1770	1796	1774	0	1787	1774	0	1762
Q Serve(g_s), s	7.0	18.6	4.4	5.5	24.5	24.6	7.9	0.0	2.6	8.3	0.0	5.2
Cycle Q Clear(g_c), s	7.0	18.6	4.4	5.5	24.5	24.6	7.9	0.0	2.6	8.3	0.0	5.2
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.17	1.00		0.22
Lane Grp Cap(c), veh/h	201	1469	631	149	692	703	224	0	208	236	0	217
V/C Ratio(X)	0.82	0.70	0.21	0.81	0.87	0.88	0.83	0.00	0.31	0.83	0.00	0.58
Avail Cap(c_a), veh/h	218	1488	639	161	698	709	241	0	451	264	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	18.7	14.5	34.5	21.8	21.8	33.0	0.0	31.3	32.6	0.0	32.0
Incr Delay (d2), s/veh	20.4	1.6	0.2	24.7	12.0	12.1	20.5	0.0	1.0	20.4	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	9.3	1.9	3.5	14.3	14.5	5.2	0.0	1.3	5.4	0.0	2.8
LnGrp Delay(d),s/veh	53.9	20.2	14.7	59.2	33.8	33.9	53.4	0.0	32.3	53.0	0.0	36.5
LnGrp LOS	D	C	B	E	C	C	D		C	D		D
Approach Vol, veh/h		1328			1342			251			322	
Approach Delay, s/veh		23.8			36.1			48.0			46.5	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	15.0	13.2	34.7	14.8	14.5	11.4	36.6
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	20.5	9.5	30.5	11.5	19.5	7.5	32.5
Max Q Clear Time (g_c+I1), s	9.9	7.2	9.0	26.6	10.3	4.6	7.5	20.6
Green Ext Time (p_c), s	0.0	1.2	0.0	3.7	0.1	1.3	0.0	10.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 13 **Project Dwy/W Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	16	17	106.9%	6.6	4.2	A
	Subtotal	16	17	106.9%	6.6	4.2	A
EB	Left Turn						
	Through	927	921	99.4%	4.4	0.6	A
	Right Turn						
	Subtotal	927	921	99.4%	4.4	0.6	A
WB	Left Turn						
	Through	691	696	100.7%	3.0	0.3	A
	Right Turn	32	28	86.3%	2.5	0.6	A
	Subtotal	723	723	100.0%	3.0	0.3	A
Total		1,666	1,662	99.7%	3.8	0.5	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	276	40	434	314	40	50	70	275	30	50	20
Future Volume (veh/h)	30	276	40	434	314	40	50	70	275	30	50	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	33	300	0	472	341	39	54	76	0	32	54	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	369	0	573	798	91	136	142	0	45	76	17
Arrive On Green	0.03	0.20	0.00	0.32	0.49	0.49	0.08	0.08	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1774	1863	0	1774	1641	188	1774	1863	0	586	989	220
Grp Volume(v), veh/h	33	300	0	472	0	380	54	76	0	98	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1828	1774	1863	0	1795	0	0
Q Serve(g_s), s	1.2	10.0	0.0	16.0	0.0	8.8	1.9	2.6	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	1.2	10.0	0.0	16.0	0.0	8.8	1.9	2.6	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.10	1.00		0.00	0.33		0.12
Lane Grp Cap(c), veh/h	61	369	0	573	0	890	136	142	0	137	0	0
V/C Ratio(X)	0.54	0.81	0.00	0.82	0.00	0.43	0.40	0.53	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	180	533	0	780	0	1142	677	710	0	464	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.9	24.9	0.0	20.3	0.0	10.8	28.6	28.9	0.0	29.3	0.0	0.0
Incr Delay (d2), s/veh	7.2	6.2	0.0	5.2	0.0	0.3	4.0	6.5	0.0	13.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.8	0.0	8.6	0.0	4.4	1.1	1.6	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	38.1	31.1	0.0	25.6	0.0	11.1	32.6	35.4	0.0	42.9	0.0	0.0
LnGrp LOS	D	C		C		B	C	D		D		
Approach Vol, veh/h		333			852			130			98	
Approach Delay, s/veh		31.8			19.1			34.3			42.9	
Approach LOS		C			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.4	18.3		10.2	7.6	37.0		10.2
Change Period (Y+Rc), s	5.4	5.4		* 5.2	5.4	5.4		5.2
Max Green Setting (Gmax), s	28.6	18.6		* 17	6.6	40.6		24.8
Max Q Clear Time (g_c+I1), s	18.0	12.0		5.5	3.2	10.8		4.6
Green Ext Time (p_c), s	3.0	0.9		0.5	0.0	4.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	634	40	268	771	30	118
Future Volume (veh/h)	634	40	268	771	30	118
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	689	0	279	803	33	0
Adj No. of Lanes	2	0	1	2	0	0
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1580	0	357	2610	66	0
Arrive On Green	0.45	0.00	0.20	0.74	0.04	0.00
Sat Flow, veh/h	3725	0	1774	3632	1724	0
Grp Volume(v), veh/h	689	0	279	803	34	0
Grp Sat Flow(s),veh/h/ln	1770	0	1774	1770	1777	0
Q Serve(g_s), s	6.0	0.0	6.7	3.4	0.8	0.0
Cycle Q Clear(g_c), s	6.0	0.0	6.7	3.4	0.8	0.0
Prop In Lane		0.00	1.00		0.97	0.00
Lane Grp Cap(c), veh/h	1580	0	357	2610	68	0
V/C Ratio(X)	0.44	0.00	0.78	0.31	0.50	0.00
Avail Cap(c_a), veh/h	2777	0	795	2777	796	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	16.9	2.0	21.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	3.8	0.1	11.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.6	1.6	0.6	0.0
LnGrp Delay(d),s/veh	8.7	0.0	20.6	2.1	32.4	0.0
LnGrp LOS	A		C	A	C	
Approach Vol, veh/h	689			1082	34	
Approach Delay, s/veh	8.7			6.9	32.4	
Approach LOS	A			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.0	25.9				38.9		5.7
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	20.0	35.0				35.0		20.0
Max Q Clear Time (g_c+I1), s	8.7	8.0				5.4		2.8
Green Ext Time (p_c), s	0.6	11.9				12.4		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			8.0
HCM 2010 LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 3 | **Risling Ct/Sutter Hospital Dwy** | **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	47	45	95.5%	4.8	0.7	A
	Through	63	57	90.8%	3.2	0.4	A
	Right Turn	70	63	90.1%	2.9	0.3	A
	Subtotal	180	165	91.8%	3.6	0.3	A
SB	Left Turn	10	10	102.0%	3.6	3.5	A
	Through	153	155	101.4%	1.7	2.1	A
	Right Turn	1	1	120.0%	0.0	0.0	A
	Subtotal	164	167	101.5%	1.9	2.0	A
EB	Left Turn						
	Through	3	3	103.3%	5.8	8.0	A
	Right Turn	63	60	94.4%	9.7	9.7	A
	Subtotal	66	63	94.8%	9.9	9.5	A
WB	Left Turn	120	122	101.6%	11.2	8.9	B
	Through	4	4	87.5%	3.8	3.2	A
	Right Turn						
	Subtotal	124	125	101.1%	11.1	8.7	B
Total		534	520	97.3%	6.0	4.5	A

Intersection 4 | **Risling Ct-Shasta Dr/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	22	20	90.0%	74.6	27.0	E
	Through	16	17	106.3%	48.7	14.5	D
	Right Turn	200	198	98.9%	3.7	0.7	A
	Subtotal	238	235	98.6%	11.9	2.1	B
SB	Left Turn	207	201	97.1%	85.8	28.5	F
	Through	39	39	100.3%	86.8	35.9	F
	Right Turn	90	95	106.0%	63.1	33.3	E
	Subtotal	336	336	99.9%	79.3	29.8	E
EB	Left Turn	82	78	94.6%	71.5	20.3	E
	Through	630	629	99.9%	18.0	4.2	B
	Right Turn	30	33	110.7%	4.4	2.3	A
	Subtotal	742	740	99.8%	23.0	3.1	C
WB	Left Turn	180	164	91.2%	63.9	13.1	E
	Through	982	866	88.2%	16.4	3.8	B
	Right Turn	94	83	88.7%	10.7	3.9	B
	Subtotal	1,256	1,114	88.7%	23.4	3.0	C
Total		2,572	2,424	94.2%	30.4	6.7	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	270	259	95.7%	55.5	11.3	E
	Through						
	Right Turn	62	65	104.7%	13.4	6.5	B
	Subtotal	332	323	97.4%	46.9	10.1	D
EB	Left Turn	52	49	93.8%	68.0	14.0	E
	Through	985	977	99.2%	11.3	1.9	B
	Right Turn						
	Subtotal	1,037	1,026	98.9%	13.8	2.6	B
WB	Left Turn						
	Through	1,194	1,048	87.8%	12.1	2.2	B
	Right Turn	210	178	85.0%	8.4	2.3	A
	Subtotal	1,404	1,226	87.3%	11.6	2.2	B
Total		2,773	2,575	92.9%	16.9	2.0	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	190	186	98.1%	55.7	9.5	E
	Through	10	10	104.0%	49.0	31.3	D
	Right Turn	105	112	106.4%	49.4	6.8	D
	Subtotal	305	309	101.1%	53.6	6.4	D
EB	Left Turn						
	Through	936	924	98.7%	20.7	2.8	C
	Right Turn	319	316	99.1%	18.4	3.3	B
	Subtotal	1,255	1,240	98.8%	20.1	2.8	C
WB	Left Turn	530	430	81.2%	61.6	11.1	E
	Through	1,299	1,111	85.6%	10.3	1.1	B
	Right Turn						
	Subtotal	1,829	1,542	84.3%	23.7	2.0	C
Total		3,389	3,090	91.2%	25.2	2.0	C

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	504	459	91.1%	134.7	18.6	F
	Through						
	Right Turn	780	720	92.2%	179.8	23.0	F
	Subtotal	1,284	1,179	91.8%	162.7	21.7	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	102	95	92.7%	88.3	15.0	F
	Through	1,024	1,016	99.2%	31.0	10.6	C
	Right Turn						
	Subtotal	1,126	1,110	98.6%	35.8	10.3	D
WB	Left Turn						
	Through	1,325	1,097	82.8%	114.9	16.8	F
	Right Turn	310	252	81.3%	85.5	13.7	F
	Subtotal	1,635	1,349	82.5%	109.3	16.3	F
Total		4,045	3,638	89.9%	103.5	8.2	F

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	286	240	84.0%	291.1	112.7	F
	Through	50	44	88.0%	261.2	133.2	F
	Right Turn	100	84	83.6%	256.1	140.8	F
	Subtotal	436	368	84.4%	279.4	119.5	F
SB	Left Turn	80	77	96.8%	64.3	37.9	E
	Through	140	142	101.2%	88.1	43.8	F
	Right Turn	231	231	100.0%	70.8	47.9	E
	Subtotal	451	450	99.8%	75.2	44.8	E
EB	Left Turn	302	276	91.2%	105.8	38.7	F
	Through	1,090	1,064	97.6%	62.1	17.4	E
	Right Turn	195	187	95.9%	49.0	17.8	D
	Subtotal	1,587	1,526	96.2%	68.7	21.9	E
WB	Left Turn	30	25	83.3%	333.7	74.2	F
	Through	997	847	85.0%	351.1	56.1	F
	Right Turn	70	59	83.9%	359.3	86.6	F
	Subtotal	1,097	931	84.8%	351.6	57.0	F
Total		3,571	3,275	91.7%	172.7	20.7	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	871	236	110	669	120	397	150	190	70	150	31
Future Volume (veh/h)	53	871	236	110	669	120	397	150	190	70	150	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1855	1900	1863	1863	1727	1792	1816	1900	1863	1776	1900
Adj Flow Rate, veh/h	58	947	0	120	727	0	432	163	0	76	163	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	2	2	2	10	6	8	8	2	8	8
Cap, veh/h	75	1201	0	148	1345	558	463	675	0	99	528	0
Arrive On Green	0.04	0.34	0.00	0.08	0.38	0.00	0.27	0.37	0.00	0.06	0.16	0.00
Sat Flow, veh/h	1691	3617	0	1774	3539	1468	1707	1816	0	1774	3464	0
Grp Volume(v), veh/h	58	947	0	120	727	0	432	163	0	76	163	0
Grp Sat Flow(s),veh/h/ln	1691	1762	0	1774	1770	1468	1707	1816	0	1774	1687	0
Q Serve(g_s), s	4.1	29.4	0.0	8.1	19.5	0.0	30.0	7.5	0.0	5.1	5.2	0.0
Cycle Q Clear(g_c), s	4.1	29.4	0.0	8.1	19.5	0.0	30.0	7.5	0.0	5.1	5.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	75	1201	0	148	1345	558	463	675	0	99	528	0
V/C Ratio(X)	0.78	0.79	0.00	0.81	0.54	0.00	0.93	0.24	0.00	0.77	0.31	0.00
Avail Cap(c_a), veh/h	557	1305	0	438	1345	558	562	675	0	584	1111	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.5	36.1	0.0	54.7	29.4	0.0	43.2	26.3	0.0	56.6	45.4	0.0
Incr Delay (d2), s/veh	15.6	3.1	0.0	9.9	1.3	0.0	20.6	0.2	0.0	11.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	14.9	0.0	4.4	9.7	0.0	16.8	3.8	0.0	2.8	2.4	0.0
LnGrp Delay(d),s/veh	73.0	39.2	0.0	64.6	30.7	0.0	63.9	26.5	0.0	68.5	45.8	0.0
LnGrp LOS	E	D		E	C		E	C		E	D	
Approach Vol, veh/h		1005			847			595			239	
Approach Delay, s/veh		41.2			35.5			53.6			53.0	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	46.4	36.9	23.0	10.4	51.2	10.8	49.2
Change Period (Y+Rc), s	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	40.0	40.0	40.0	45.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	10.1	31.4	32.0	7.2	6.1	21.5	7.1	9.5
Green Ext Time (p_c), s	0.3	10.0	0.9	1.1	0.1	17.0	0.2	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱		↰	↑↑		↰		↱		✣	
Traffic Volume (veh/h)	0	1086	113	100	749	0	175	0	260	0	0	0
Future Volume (veh/h)	0	1086	113	100	749	0	175	0	260	0	0	0
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1108	0	109	814	0	184	0	0	0	0	0
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	2	2	2
Cap, veh/h	0	1815	0	143	2394	0	243	0	0	0	4	0
Arrive On Green	0.00	0.51	0.00	0.08	0.68	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0	1774	184		0	-93137	0
Grp Volume(v), veh/h	0	1108	0	109	814	0	184	24.8		0	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1774	C		0	1863	0
Q Serve(g_s), s	0.0	10.7	0.0	2.9	4.7	0.0	4.8			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.7	0.0	2.9	4.7	0.0	4.8			0.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	1815	0	143	2394	0	243			0	4	0
V/C Ratio(X)	0.00	0.61	0.00	0.76	0.34	0.00	0.76			0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2276	0	552	2394	0	736			0	580	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.3	0.0	21.7	3.3	0.0	20.0			0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	8.1	0.1	0.0	4.8			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	0.0	1.7	2.3	0.0	2.7			0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.7	0.0	29.8	3.4	0.0	24.8			0.0	0.0	0.0
LnGrp LOS		A		C	A		C					
Approach Vol, veh/h		1108			923						0	
Approach Delay, s/veh		8.7			6.5						0.0	
Approach LOS		A			A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		
Phs Duration (G+Y+Rc), s		37.6	10.6	0.0	7.9	29.7		
Change Period (Y+Rc), s		5.0	4.0	5.0	4.0	5.0		
Max Green Setting (Gmax), s		32.0	20.0	15.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		6.7	6.8	0.0	4.9	12.7		
Green Ext Time (p_c), s		15.5	0.4	0.0	0.2	12.0		

Intersection Summary			
HCM 2010 Ctrl Delay			9.1
HCM 2010 LOS			A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1260	175	200	841	270	157	160	270	120	160	50
Future Volume (veh/h)	70	1260	175	200	841	270	157	160	270	120	160	50
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1845	1863	1900	1845	1851	1900	1863	1846	1900
Adj Flow Rate, veh/h	76	1370	0	217	914	0	171	174	0	130	174	0
Adj No. of Lanes	1	2	1	2	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	2	2	3	2	2	2	2	2
Cap, veh/h	99	1576	705	296	1686	0	210	361	0	167	313	0
Arrive On Green	0.06	0.45	0.00	0.09	0.48	0.00	0.12	0.19	0.00	0.09	0.17	0.00
Sat Flow, veh/h	1774	3539	1583	3408	3632	0	1757	1851	0	1774	1846	0
Grp Volume(v), veh/h	76	1370	0	217	914	0	171	174	0	130	174	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1704	1770	0	1757	1851	0	1774	1846	0
Q Serve(g_s), s	4.0	33.2	0.0	5.9	17.3	0.0	9.0	7.9	0.0	6.8	8.2	0.0
Cycle Q Clear(g_c), s	4.0	33.2	0.0	5.9	17.3	0.0	9.0	7.9	0.0	6.8	8.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	99	1576	705	296	1686	0	210	361	0	167	313	0
V/C Ratio(X)	0.77	0.87	0.00	0.73	0.54	0.00	0.82	0.48	0.00	0.78	0.56	0.00
Avail Cap(c_a), veh/h	561	1679	751	1078	1686	0	556	586	0	561	584	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.2	23.8	0.0	42.2	17.5	0.0	40.7	33.9	0.0	42.0	36.1	0.0
Incr Delay (d2), s/veh	4.7	4.7	0.0	1.3	0.2	0.0	7.5	1.0	0.0	9.1	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	17.2	0.0	2.8	8.4	0.0	4.8	4.2	0.0	3.7	4.3	0.0
LnGrp Delay(d),s/veh	48.9	28.5	0.0	43.6	17.7	0.0	48.3	34.9	0.0	51.1	38.0	0.0
LnGrp LOS	D	C		D	B		D	C		D	D	
Approach Vol, veh/h		1446			1131			345			304	
Approach Delay, s/veh		29.5			22.7			41.6			43.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	50.2	15.3	20.1	12.2	47.2	12.9	22.5
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	45.0	30.0	30.0	30.0	45.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	6.0	19.3	11.0	10.2	7.9	35.2	8.8	9.9
Green Ext Time (p_c), s	0.1	13.8	0.4	2.2	0.4	7.0	0.4	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	1367	142	80	1068	120	142	140	50	190	110	81
Future Volume (veh/h)	141	1367	142	80	1068	120	142	140	50	190	110	81
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1810	1743	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	153	1486	65	87	1161	120	154	152	38	207	120	54
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	5	9	2	2	2	2	2	2	2	2
Cap, veh/h	188	1457	603	109	1197	123	190	219	55	244	223	100
Arrive On Green	0.11	0.41	0.41	0.07	0.37	0.37	0.11	0.15	0.15	0.14	0.18	0.18
Sat Flow, veh/h	1774	3539	1464	1660	3221	332	1774	1427	357	1774	1209	544
Grp Volume(v), veh/h	153	1486	65	87	637	644	154	0	190	207	0	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1464	1660	1770	1783	1774	0	1784	1774	0	1753
Q Serve(g_s), s	6.9	33.8	2.2	4.2	29.0	29.2	7.0	0.0	8.3	9.3	0.0	7.4
Cycle Q Clear(g_c), s	6.9	33.8	2.2	4.2	29.0	29.2	7.0	0.0	8.3	9.3	0.0	7.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.20	1.00		0.31
Lane Grp Cap(c), veh/h	188	1457	603	109	658	663	190	0	274	244	0	323
V/C Ratio(X)	0.82	1.02	0.11	0.80	0.97	0.97	0.81	0.00	0.69	0.85	0.00	0.54
Avail Cap(c_a), veh/h	205	1457	603	152	658	663	227	0	424	249	0	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	24.1	14.9	37.8	25.3	25.4	35.8	0.0	32.9	34.6	0.0	30.3
Incr Delay (d2), s/veh	21.1	28.7	0.1	19.6	27.2	28.0	17.8	0.0	3.8	24.5	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	22.2	0.9	2.5	19.1	19.5	4.4	0.0	4.4	6.3	0.0	3.8
LnGrp Delay(d),s/veh	57.0	52.8	15.0	57.4	52.5	53.4	53.6	0.0	36.7	59.1	0.0	32.9
LnGrp LOS	E	F	B	E	D	D	D		D	E		C
Approach Vol, veh/h		1704			1368			344			381	
Approach Delay, s/veh		51.8			53.2			44.3			47.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	20.6	13.2	35.0	15.8	18.1	9.9	38.3
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	4.5	5.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	20.5	9.5	30.5	11.5	19.5	7.5	32.5
Max Q Clear Time (g_c+I1), s	9.0	9.4	8.9	31.2	11.3	10.3	6.2	35.8
Green Ext Time (p_c), s	0.1	2.2	0.0	0.0	0.0	1.9	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			51.2
HCM 2010 LOS			D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Cumulative Plus Project Conditions
PM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	19	20	105.8%	5.6	1.9	A
	Subtotal	19	20	105.8%	5.6	1.9	A
EB	Left Turn						
	Through	742	739	99.5%	3.4	0.3	A
	Right Turn						
	Subtotal	742	739	99.5%	3.4	0.3	A
WB	Left Turn						
	Through	1,020	915	89.7%	3.0	0.5	A
	Right Turn	86	78	90.5%	2.7	0.4	A
	Subtotal	1,106	993	89.8%	2.9	0.5	A
Total		1,867	1,752	93.8%	3.2	0.3	A

FEHR PEERS

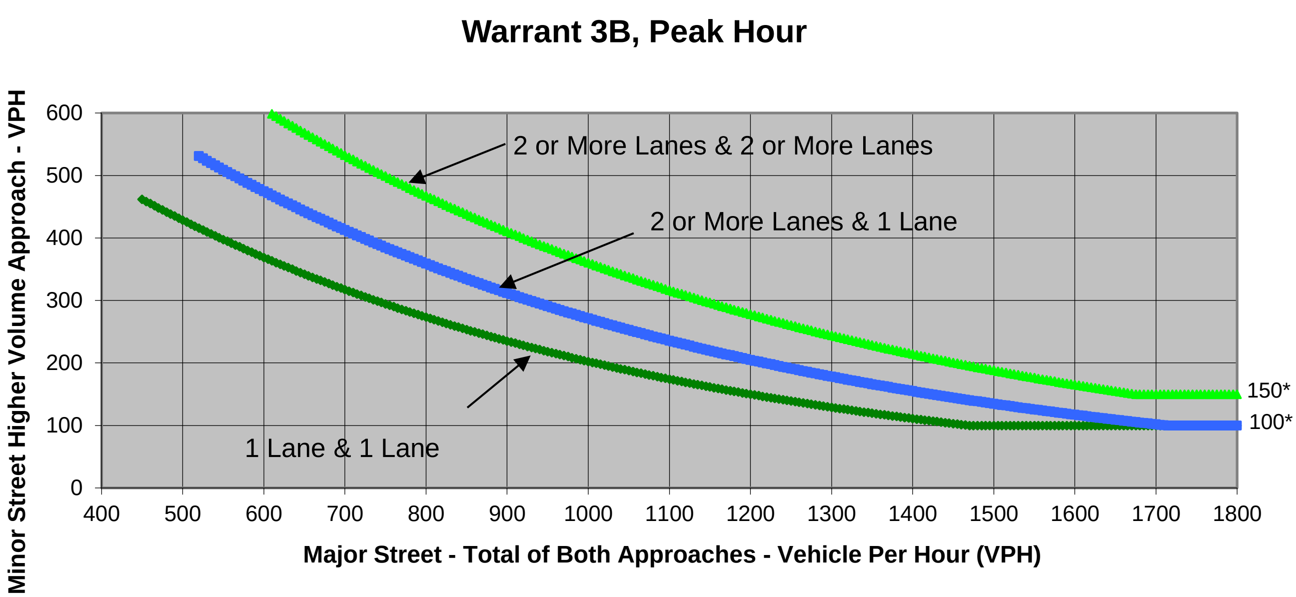
			Project	West Davis AAC EIR
Major Street	Risling Ct		Scenario	Cumulative Plus Project
Minor Street	Hospital Dwy		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	40
Through	108	118	4	3
Right	90	0	57	10
Total	255	119	61	53

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**374**	**61**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Risling Ct	Project	West Davis AAC EIR
Minor Street	Hospital Dwy	Scenario	Cumulative Plus Project
		Peak Hour	AM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	57	1	0	40
Through	108	118	4	3
Right	90	0	57	10
Total	255	119	61	53

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	5.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	53

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Plus Project	**0.1**	**61**	**488**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

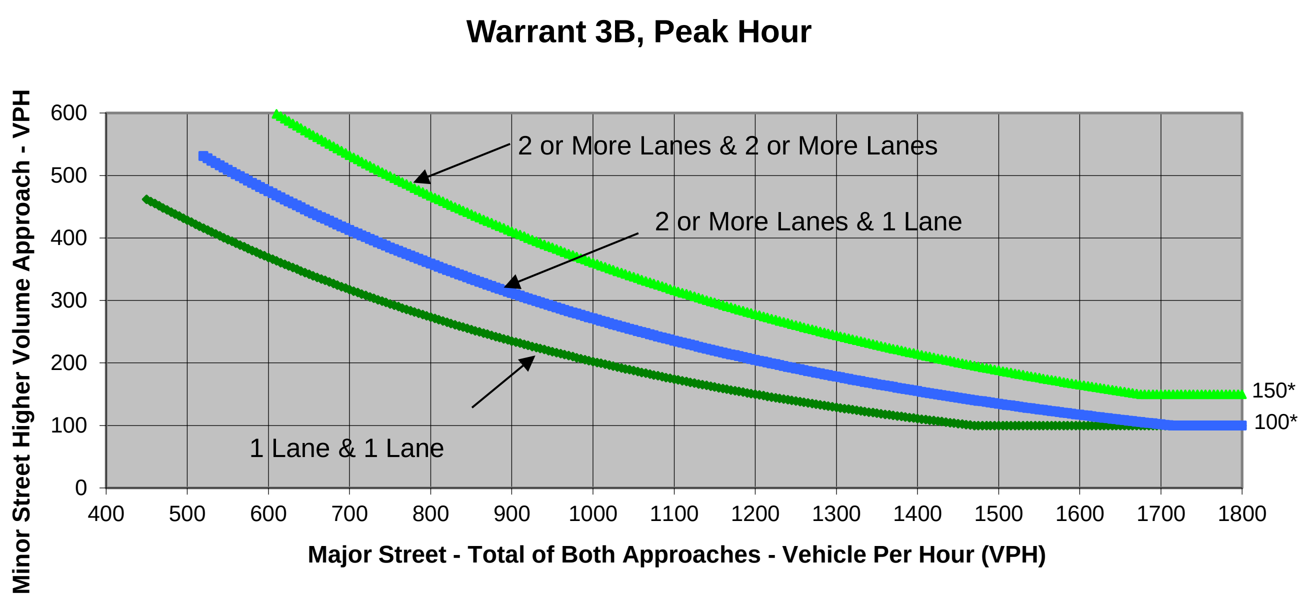
		Project	West Davis AAC EIR
Major Street	Risling Ct	Scenario	Cumulative Plus Project
Minor Street	Hospital Dwy	Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	10	0	120
Through	63	153	3	4
Right	70	1	63	0
Total	180	164	66	124

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Risling Ct	Minor Street Hospital Dwy	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**344**	**124**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Risling Ct		Project	West Davis AAC EIR
Minor Street	Hospital Dwy		Scenario	Cumulative Plus Project
			Peak Hour	PM Peak Hour

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	10	0	120
Through	63	153	3	4
Right	70	1	63	0
Total	180	164	66	124

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	11.1
Approach with Worst Case Delay	WB
Total Vehicles on Approach	124

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus Project	**0.4**	**124**	**534**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Not Met**
Warrant Met	**NO**		

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Shared	900	50	4	75	5	75	12	0%	0%
NB	Shared	525	25	4	50	10	75	22	0%	0%
SB	Shared	2,000	25	1	25	5	25	16	0%	0%
WB	Shared	950	50	2	75	6	75	15	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	225	125	13	200	18	225	7	0%	0%
	Through	400	175	14	275	30	300	45	27%	0%
	Right Turn	100	25	7	75	23	125	1	0%	0%
NB	Left Turn	125	25	4	75	11	100	30	0%	0%
	Through	350	75	8	150	22	200	47	3%	0%
	Right Turn	75	75	1	75	2	100	0	3%	0%
SB	Left Turn	525	150	18	250	52	325	87	26%	0%
	Through/Right	125	75	12	150	23	125	1	0%	0%
WB	U/Left Turns	325	100	6	125	13	150	26	0%	0%
	Left Turn	325	50	6	125	25	150	76	0%	0%
	Through	575	125	16	250	38	275	54	0%	0%
	Through/Right	575	150	15	275	32	325	56	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	100	8	150	14	175	7	3%	0%
	Through	575	175	25	325	83	375	115	5%	0%
SB	Left Turn	250	125	8	200	17	225	22	0%	0%
	Through/Right	1,600	50	6	75	22	100	68	0%	0%
WB	Through	350	200	14	350	27	350	21	28%	1%
	Right Turn	75	75	4	100	5	100	0	7%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	200	17	350	15	350	8	0%	1%
	Through/Right	350	250	15	400	14	375	9	0%	3%
SB	Left/Through	1,425	150	7	225	16	275	53	0%	0%
	Right Turn	1,425	100	6	175	8	175	17	0%	0%
WB	Left Turn	225	175	13	250	13	225	2	4%	0%
	Through	500	175	43	375	93	500	123	0%	0%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	50	5	75	12	100	15	0%	0%
	Left Turn	175	75	4	100	11	125	32	0%	0%
	Through	500	100	7	150	10	175	28	0%	0%
NB	Left/Through	2,400	175	12	275	21	325	32	0%	0%
	Right Turn	825	225	19	375	33	450	48	0%	0%
WB	Through	875	450	75	650	110	700	96	38%	2%
	Right Turn	150	125	14	225	6	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	125	9	225	8	200	0	3%	0%
	Through	400	225	19	375	25	400	18	17%	1%
	Through/Right	400	250	14	400	18	425	8	0%	1%
NB	Left Turn	225	200	14	275	7	225	1	25%	0%
	Through/Right	2,050	200	108	475	223	550	180	0%	0%
SB	Left Turn	250	50	8	150	28	250	47	0%	0%
	Through	1,775	150	16	300	33	350	52	16%	0%
	Right Turn	75	75	2	100	5	100	0	2%	0%
WB	Left Turn	125	75	11	125	21	150	0	0%	0%
	Through	5,800	200	33	300	72	350	91	20%	0%
	Through/Right	5,800	225	34	350	72	400	88	0%	0%

Intersection 13 **Project Dwy/W Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	3	50	5	50	11	0%	0%
WB	Through	400	25	1	25	5	25	16	0%	0%
	Through/Right	400	25	0	25	0	25	0	0%	0%
EB	Through	5,350	25	0	25	0	25	0	0%	0%
0										

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Shared	900	50	5	75	12	100	26	0%	0%
NB	Shared	525	25	3	50	9	75	18	0%	0%
SB	Shared	2,000	25	3	50	9	75	16	0%	0%
WB	Shared	950	50	5	100	13	100	23	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	100	15	175	29	200	50	0%	0%
	Through	400	125	8	225	22	275	44	19%	0%
	Right Turn	100	25	6	75	28	125	38	0%	0%
NB	Left Turn	125	25	5	75	10	75	17	0%	0%
	Through	350	50	6	100	14	100	40	4%	0%
	Right Turn	75	75	1	75	7	75	2	2%	0%
SB	Left Turn	1,550	325	48	550	83	600	48	43%	0%
	Through/Right	125	100	5	175	6	150	0	12%	0%
WB	U/Left Turns	325	100	7	175	9	200	21	0%	0%
	Left Turn	325	75	8	150	25	200	81	0%	0%
	Through	575	150	13	275	21	325	59	0%	0%
	Through/Right	575	150	14	300	23	350	51	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	75	6	125	17	150	36	1%	0%
	Through	575	125	11	225	25	275	44	2%	0%
SB	Left Turn	250	200	12	300	19	275	1	9%	0%
	Through/Right	1,600	100	38	275	116	400	138	0%	0%
WB	Through	350	200	26	350	37	350	16	21%	1%
	Right Turn	75	50	6	100	6	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	250	17	375	21	375	16	0%	2%
	Through/Right	350	250	17	400	14	375	10	0%	2%
SB	Left/Through	1,425	175	16	275	32	300	48	0%	0%
	Right Turn	1,425	100	10	175	18	200	18	0%	0%
WB	Left Turn	225	200	7	275	7	250	0	15%	0%
	Through	500	250	27	475	43	500	73	1%	1%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	50	7	100	9	125	12	0%	0%
	Left Turn	175	100	11	175	23	200	1	0%	0%
	Through	500	250	34	425	69	450	61	23%	0%
NB	Left/Through	2,375	1,650	415	2,800	336	2,425	8	0%	21%
	Right Turn	725	725	51	875	78	775	0	41%	0%
WB	Through	875	875	33	1,025	41	925	12	54%	35%
	Right Turn	150	175	13	300	8	225	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	175	200	3	250	11	225	0	38%	0%
	Through	875	600	85	825	103	850	76	30%	1%
	Through/Right	875	625	84	850	101	850	81	0%	1%
NB	Left Turn	225	225	5	250	11	250	0	67%	0%
	Through/Right	2,050	925	475	1,700	665	1,700	494	4%	14%
SB	Left Turn	250	150	21	325	30	275	0	0%	0%
	Through	1,775	375	81	625	173	700	166	50%	0%
	Right Turn	75	75	3	100	6	100	0	2%	0%
WB	Left Turn	125	75	16	150	38	175	28	0%	0%
	Through	5,800	1,550	324	2,775	464	2,700	433	69%	0%
	Through/Right	5,800	1,575	321	2,800	467	2,750	441	0%	0%

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	3	50	4	50	12	0%	0%
WBEB		5,150	25	0	25	0	25	0	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	28.6	69.7	0.5	24
SR 113 SB Ramps	6	10.5	25.1	0.1	15
John Jones Rd	5	16.4	24.0	0.1	11
Risling Ct	4	23.9	36.0	0.1	12
	13	3.0	10.7	0.1	29
Total		82.3	165.6	0.8	19

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	20.6	27.3	0.1	11
	5	13.2	25.6	0.1	17
SR 113 SB Ramps	6	17.5	25.3	0.1	11
Route 1	7	5.2	15.8	0.1	23
Total		56.5	94.1	0.4	15

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	20.6	27.3	0.1	11
	5	13.2	25.6	0.1	17
Route 2	6	22.1	33.6	0.1	8
Total		55.9	86.5	0.3	12

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	23.9	36.0	0.1	12
	13	3.0	10.7	0.1	29
Total		26.9	46.7	0.3	22

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	115.4	212.8	0.5	11
SR 113 SB Ramps	6	10.8	25.4	0.1	15
John Jones Rd	5	11.1	18.8	0.1	14
Risling Ct	4	15.4	27.5	0.1	16
	13	3.0	10.8	0.1	29
Total		155.7	295.3	0.8	13

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	15.9	22.6	0.1	14
	5	7.3	19.6	0.1	22
SR 113 SB Ramps	6	17.3	25.1	0.1	11
Route 1	7	26.4	37.0	0.1	10
Total		66.8	104.3	0.4	13

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.6	23.3	0.1	13
	5	9.0	21.3	0.1	20
Route 2	6	16.8	28.3	0.1	10
Total		42.4	72.9	0.3	14

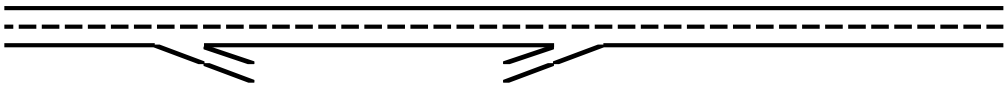
Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	16.0	28.1	0.1	15
	13	3.1	10.9	0.1	29
Total		19.1	39.0	0.3	26

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

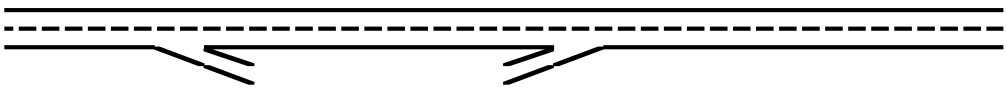
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	1,394	450	450	754
On Ramp Volume			304	
Off Ramp Volume	944			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,394	450	450	754
PHF	0.75	0.75	0.75	0.75
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,913	618	618	1,035
Flow (pcphpl)	957	309	309	517

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

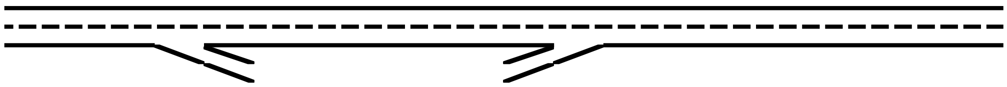


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.40	0.13	0.13	0.22
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	13.7	4.4	4.4	7.4
LOS	B	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)			941	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.20	
Flow Rate (pcphpl)			470	
Speed (mph)			70.0	
Density (pcphpl)			6.7	
LOS			A	
Operations for Exiting GP Lanes				
Flow (pcph)	910			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.19			
Flow Rate (pcphpl)	455			
Speed (mph)	70.0			
Density (pcphpl)	6.5			
LOS	A			

Location	1	2	3	4



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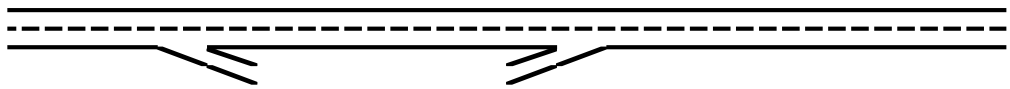
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			304	
PHF			0.95	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			2.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.990	
f_P			1.00	
Flow (pcph)			323	
Flow Rate (pcphpl)			323	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.15	

Location	1	2	3	4



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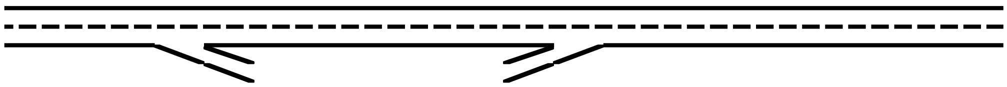
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	944			
PHF	0.95			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	2.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.990			
f_P	1.00			
Flow (pcph)	1,004			
Flow Rate (pcphpl)	1,004			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.48			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4



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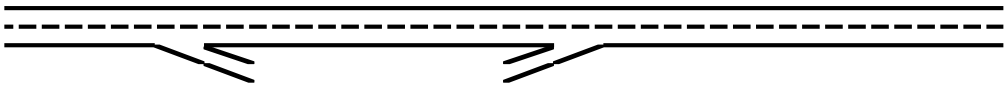
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			618	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			618	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			618	
v_{R12a} (pcph)			941	
Speed Index			0.30	
Area Speed			61.7	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.7	
v/c ratio			0.20	
Density			10.3	
LOS			B	

Location	1	2	3	4



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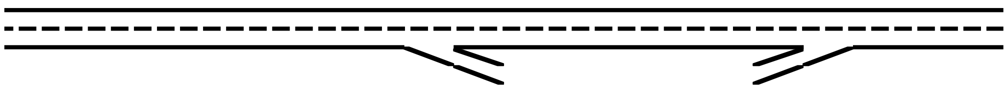
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	1,913			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.666			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	1,913			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	1,913			
Speed Index	0.39			
Area Speed	59.1			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	59.1			
v/c ratio	0.43			
Density	19.4			
LOS	B			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.43	0.13	0.20	0.22
Segment Density	19.4	4.4	10.3	7.4
Segment LOS	B	A	B	A
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour



Key

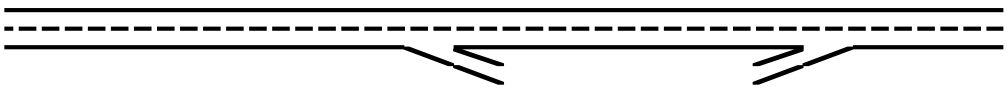
<> Express Lane (HOV)

Location	1	2	3	4
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	2,369	2,369	1,990	1,990
On Ramp Volume				1,053
Off Ramp Volume		379		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	2,369	2,369	1,990	1,990
PHF	0.84	0.84	0.84	0.84
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	2,903	2,903	2,439	2,439
Flow (pcphpl)	1,452	1,452	1,219	1,219

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



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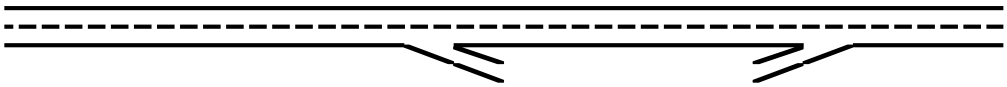
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.60	0.60	0.51	0.51
Speed (mph)	69.3	69.3	70.0	70.0
Density (pcphpl)	21.0	21.0	17.4	17.4
LOS	C	C	B	B
Operations for Segment GP Lanes				
Flow (pcph)				3,558
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.74
Flow Rate (pcphpl)				1,779
Speed (mph)				66.1
Density (pcphpl)				26.9
LOS				D
Operations for Exiting GP Lanes				
Flow (pcph)		2,500		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.52		
Flow Rate (pcphpl)		1,250		
Speed (mph)		70.0		
Density (pcphpl)		17.9		
LOS		B		

Location	1	2	3	4



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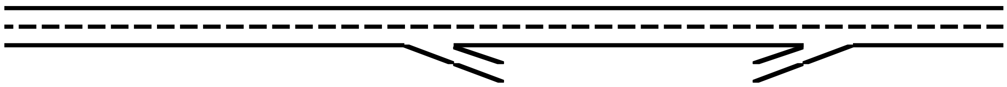
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
FFS	65	65	65	65
Capacity (pcph)				
v/c ratio				
On Ramp Flow Rate				
Volume (vph)				1,053
PHF				0.95
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				1,120
Flow Rate (pcphpl)				1,120
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.53

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



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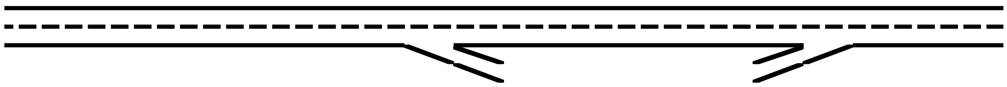
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		379		
PHF		0.95		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		403		
Flow Rate (pcphpl)		403		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.19		
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4



Key

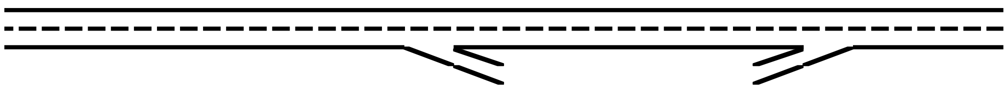
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				2,439
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				2,439
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				2,439
v_{R12a} (pcph)				3,558
Speed Index				0.43
Area Speed				58.0
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				58.0
v/c ratio				0.77
Density				30.6
LOS				D

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: AM Peak Hour

Location	1	2	3	4

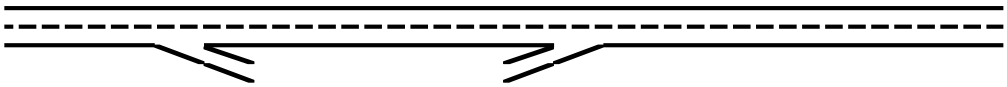


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		2,903		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.669		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		2,903		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		2,903		
Speed Index		0.33		
Area Speed		60.6		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.6		
v/c ratio		0.66		
Density		27.7		
LOS		C		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.60	0.66	0.51	0.77
Segment Density	21.0	27.7	17.4	30.6
Segment LOS	C	C	B	D
Over Capacity				

Location	1	2	3	4



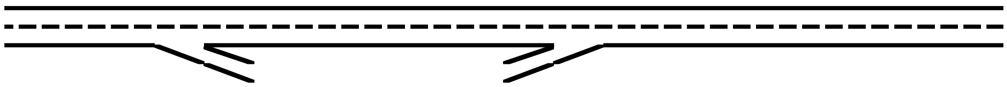
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Freeway Segment				
Type	Diverge	Basic	Merge	Basic
Length (ft)	1,500	2,560	1,500	5,980
Accel Length			370	
Decel Length	150			
Mainline Volume	2,534	1,250	1,250	1,662
On Ramp Volume			412	
Off Ramp Volume	1,284			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	2,534	1,250	1,250	1,662
PHF	0.86	0.86	0.86	0.86
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	3,033	1,496	1,496	1,990
Flow (pcphpl)	1,517	748	748	995

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

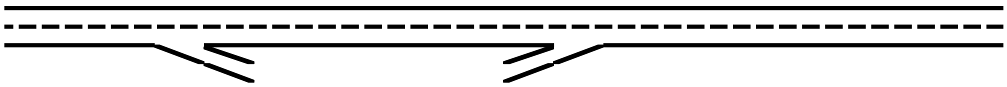


Key

<> Express Lane (HOV)

Location	1	2	3	4
Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.63	0.31	0.31	0.41
Speed (mph)	68.8	70.0	70.0	70.0
Density (pcphpl)	22.0	10.7	10.7	14.2
LOS	C	A	A	B
Operations for Segment GP Lanes				
Flow (pcph)			1,934	
Lanes			2	
Capacity (pcph)			4,800	
v/c ratio			0.40	
Flow Rate (pcphpl)			967	
Speed (mph)			70.0	
Density (pcphpl)			13.8	
LOS			B	
Operations for Exiting GP Lanes				
Flow (pcph)	1,668			
Lanes	2			
Capacity (pcph)	4,800			
v/c ratio	0.35			
Flow Rate (pcphpl)	834			
Speed (mph)	70.0			
Density (pcphpl)	11.9			
LOS	B			

Location	1	2	3	4

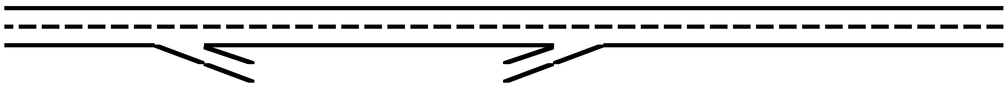


Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)			412	
PHF			0.95	
Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			2.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.990	
f_P			1.00	
Flow (pcph)			438	
Flow Rate (pcphpl)			438	
On Ramp Roadway Operations				
Ramp Type			Right	
Ramp Speed (mph)			45	
Ramp Capacity (pcph)			2,100	
Ramp v/c ratio			0.21	

Location	1	2	3	4



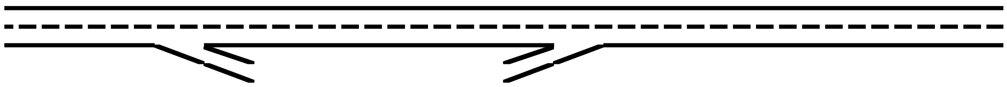
Key

<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Off Ramp Flow Rate				
Volume (vph)	1,284			
PHF	0.95			
Lanes	1			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	2.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.990			
f_P	1.00			
Flow (pcph)	1,365			
Flow Rate (pcphpl)	1,365			
Off Ramp Roadway Operations				
Ramp Type	Right			
Ramp Speed	45			
Ramp Capacity (pcph)	2,100			
Ramp v/c ratio	0.65			

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Location	1	2	3	4



Key

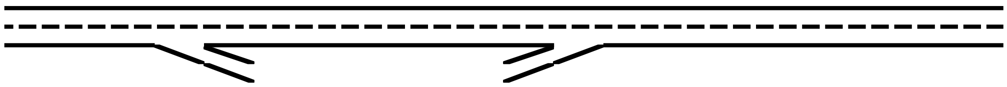
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)			1,496	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.588	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			1,496	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			1,496	
v_{R12a} (pcph)			1,934	
Speed Index			0.31	
Area Speed			61.2	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			61.2	
v/c ratio			0.42	
Density			18.0	
LOS			B	

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Northbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

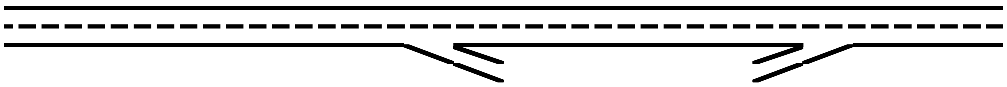
<> Express Lane (HOV)

Name	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp	Covell Blvd On-Ramp to County Rd 29 Off-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)	3,033			
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)	0.621			
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}	1.000			
v_{12} (pcph)	3,033			
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)	3,033			
Speed Index	0.42			
Area Speed	58.2			
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed	58.2			
v/c ratio	0.69			
Density	29.0			
LOS	D			
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.69	0.31	0.42	0.41
Segment Density	29.0	10.7	18.0	14.2
Segment LOS	D	A	B	B
Over Capacity				

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4

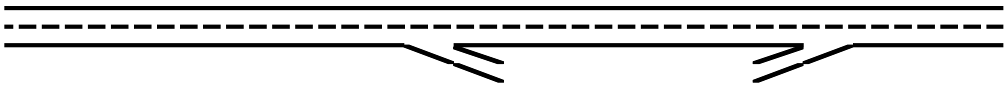


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Freeway Segment				
Type	Basic	Diverge	Basic	Merge
Length (ft)	4,920	1,500	2,850	1,550
Accel Length				330
Decel Length		170		
Mainline Volume	1,215	1,215	910	910
On Ramp Volume				859
Off Ramp Volume		305		
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Flow Rate in Entering General Purpose Lanes (GP)				
Volume (vph)	1,215	1,215	910	910
PHF	0.93	0.93	0.93	0.93
Lanes	2	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	5.9%	5.9%	5.9%	5.9%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971
f_P	1.00	1.00	1.00	1.00
Flow (pcph)	1,345	1,345	1,007	1,007
Flow (pcphpl)	672	672	504	504

Location	1	2	3	4

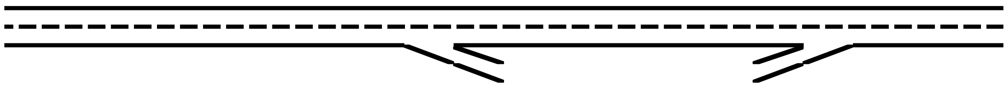


Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Free Flow Speed in Entering GP Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	70	70	70	70
Operations in Entering GP Lanes				
Capacity (pcph)	4,800	4,800	4,800	4,800
v/c ratio	0.28	0.28	0.21	0.21
Speed (mph)	70.0	70.0	70.0	70.0
Density (pcphpl)	9.6	9.6	7.2	7.2
LOS	A	A	A	A
Operations for Segment GP Lanes				
Flow (pcph)				1,921
Lanes				2
Capacity (pcph)				4,800
v/c ratio				0.40
Flow Rate (pcphpl)				960
Speed (mph)				70.0
Density (pcphpl)				13.7
LOS				B
Operations for Exiting GP Lanes				
Flow (pcph)		1,021		
Lanes		2		
Capacity (pcph)		4,800		
v/c ratio		0.21		
Flow Rate (pcphpl)		510		
Speed (mph)		70.0		
Density (pcphpl)		7.3		
LOS		A		

Location	1	2	3	4



Key

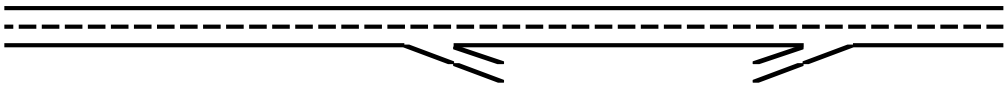
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Flow Rate in Express Lanes				
Operations in Express Lanes				
On Ramp Flow Rate				
Volume (vph)				859
PHF				0.95
Lanes				1
Terrain				Level
Grade %				0.0%
Grade Length (mi)				0.00
Truck & Bus %				2.0%
RV %				0.0%
E_T				1.5
E_R				1.2
f_{HV}				0.990
f_P				1.00
Flow (pcph)				913
Flow Rate (pcphpl)				913
On Ramp Roadway Operations				
Ramp Type				Right
Ramp Speed (mph)				45
Ramp Capacity (pcph)				2,100
Ramp v/c ratio				0.43

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

<> Express Lane (HOV)

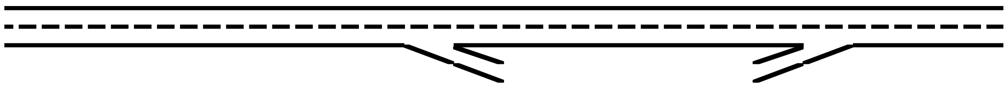
Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Off Ramp Flow Rate				
Volume (vph)		305		
PHF		0.95		
Lanes		1		
Terrain		Level		
Grade %		0.0%		
Grade Length (mi)		0.00		
Truck & Bus %		2.0%		
RV %		0.0%		
E_T		1.5		
E_R		1.2		
f_{HV}		0.990		
f_P		1.00		
Flow (pcph)		324		
Flow Rate (pcphpl)		324		
Off Ramp Roadway Operations				
Ramp Type		Right		
Ramp Speed		45		
Ramp Capacity (pcph)		2,100		
Ramp v/c ratio		0.15		

Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

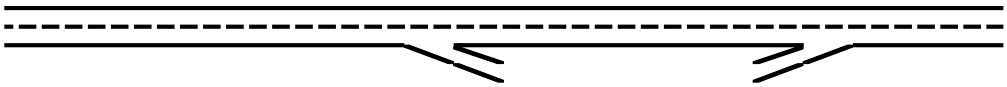
<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Merge Influence Area Operations				
Effective v_P (pcph)				1,007
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)				0.587
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}				1.000
v_{12} (pcph)				1,007
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				1,007
v_{R12a} (pcph)				1,921
Speed Index				0.32
Area Speed				61.1
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				61.1
v/c ratio				0.42
Density				18.0
LOS				B

Project: West Davis AAC EIR
Freeway Corridor: SR 113 Southbound

Alternative: Cumulative Plus Project Conditions
Time Period: PM Peak Hour

Location	1	2	3	4



Key

<> Express Lane (HOV)

Name	County Rd 29 On-Ramp to Covell Blvd Off-Ramp	Covell Blvd Off-Ramp	Covell Blvd Off-Ramp to Covell Blvd On-Ramp	Covell Blvd On-Ramp
Diverge Influence Area Operations				
Effective v_P (pcph)		1,345		
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)		0.711		
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}		1.000		
v_{12} (pcph)		1,345		
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)		1,345		
Speed Index		0.33		
Area Speed		60.8		
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed		60.8		
v/c ratio		0.31		
Density		14.3		
LOS		B		
On Ramp to Off Ramp Flow Rate for Weave Segments				
On Ramp to Mainline Flow Rate for Weave Segments				
Mainline to Off Ramp Flow Rate for Weave Segments				
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments				
Weave Segment Operations				
Summarize Segment Operations				
Segment v/c ratio	0.28	0.31	0.21	0.42
Segment Density	9.6	14.3	7.2	18.0
Segment LOS	A	B	A	B
Over Capacity				

Cumulative Plus Project (Mitigated) Level of Service (LOS) Calculations

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	57	58	101.6%	4.7	1.2	A
	Through	108	112	104.0%	3.9	0.4	A
	Right Turn	90	92	101.8%	3.1	0.7	A
	Subtotal	255	262	102.7%	3.8	0.4	A
SB	Left Turn	1	1	90.0%	1.1	1.5	A
	Through	118	119	100.9%	0.2	0.1	A
	Right Turn						
	Subtotal	119	120	100.8%	0.2	0.1	A
EB	Left Turn						
	Through	4	4	95.0%	4.4	4.0	A
	Right Turn	57	58	100.9%	3.4	0.5	A
	Subtotal	61	61	100.5%	3.6	0.5	A
WB	Left Turn	40	43	107.0%	5.3	1.8	A
	Through	3	3	110.0%	3.4	5.1	A
	Right Turn	10	11	107.0%	2.8	1.0	A
	Subtotal	53	57	107.2%	4.9	1.4	A
Total		488	500	102.4%	3.1	0.4	A

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	22	24	110.5%	37.4	9.8	D
	Through	27	28	104.4%	30.9	12.0	C
	Right Turn	290	300	103.3%	7.7	3.8	A
	Subtotal	339	352	103.8%	12.0	3.8	B
SB	Left Turn	158	160	101.3%	56.6	23.7	E
	Through	16	14	88.1%	33.2	15.1	C
	Right Turn	41	42	102.9%	12.6	8.1	B
	Subtotal	215	216	100.6%	45.5	19.9	D
EB	Left Turn	137	138	100.7%	45.6	8.2	D
	Through	770	776	100.8%	22.4	3.8	C
	Right Turn	20	20	100.5%	6.7	4.1	A
	Subtotal	927	934	100.8%	25.7	3.9	C
WB	Left Turn	150	154	102.5%	47.4	4.0	D
	Through	655	660	100.7%	23.7	4.7	C
	Right Turn	96	99	102.8%	14.1	4.9	B
	Subtotal	901	912	101.3%	27.1	3.5	C
Total		2,382	2,415	101.4%	26.2	3.7	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	200	195	97.3%	30.1	4.4	C
	Through						
	Right Turn	61	64	104.6%	6.7	1.7	A
	Subtotal	261	258	99.0%	24.1	3.0	C
EB	Left Turn	92	90	97.4%	57.0	13.1	E
	Through	1,126	1,146	101.8%	20.5	12.0	C
	Right Turn						
	Subtotal	1,218	1,236	101.5%	23.2	11.4	C
WB	Left Turn						
	Through	840	846	100.8%	15.0	3.8	B
	Right Turn	350	350	100.0%	11.9	3.2	B
	Subtotal	1,190	1,196	100.5%	14.1	3.6	B
Total		2,669	2,691	100.8%	19.5	6.4	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	224	101.7%	35.9	3.5	D
	Through	10	11	113.0%	35.6	16.0	D
	Right Turn	149	145	97.4%	36.0	5.6	D
	Subtotal	379	380	100.3%	36.1	2.7	D
EB	Left Turn						
	Through	833	841	101.0%	23.3	4.3	C
	Right Turn	493	503	102.0%	27.5	3.6	C
	Subtotal	1,326	1,344	101.3%	24.9	3.7	C
WB	Left Turn	550	550	99.9%	47.1	4.1	D
	Through	1,041	1,050	100.8%	11.2	1.3	B
	Right Turn						
	Subtotal	1,591	1,599	100.5%	23.4	2.0	C
Total		3,296	3,323	100.8%	25.5	1.9	C

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	364	375	103.1%	25.6	2.9	C
	Through	10	10	102.0%	32.2	14.6	C
	Right Turn	570	567	99.4%	19.3	2.1	B
	Subtotal	944	952	100.9%	21.9	2.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	104	108	103.7%	60.5	7.6	E
	Through	949	957	100.9%	6.9	0.6	A
	Right Turn						
	Subtotal	1,053	1,065	101.1%	12.2	1.3	B
WB	Left Turn						
	Through	1,227	1,226	99.9%	46.1	11.2	D
	Right Turn	190	196	103.2%	31.1	10.2	C
	Subtotal	1,417	1,422	100.4%	44.0	11.1	D
Total		3,414	3,439	100.7%	27.8	4.3	C

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	234	237	101.2%	93.9	72.6	F
	Through	80	79	99.0%	56.3	65.3	E
	Right Turn	70	72	102.1%	33.7	71.4	C
	Subtotal	384	387	100.9%	75.0	70.7	E
SB	Left Turn	50	49	97.6%	37.1	6.6	D
	Through	80	82	102.9%	35.7	5.4	D
	Right Turn	352	350	99.5%	7.4	2.1	A
	Subtotal	482	481	99.9%	15.7	1.6	B
EB	Left Turn	121	122	100.5%	57.4	9.8	E
	Through	864	869	100.5%	22.4	4.7	C
	Right Turn	356	359	100.9%	16.8	6.0	B
	Subtotal	1,341	1,349	100.6%	24.2	5.2	C
WB	Left Turn	40	38	95.8%	51.1	12.5	D
	Through	727	724	99.6%	23.3	3.5	C
	Right Turn	50	50	100.6%	18.0	6.6	B
	Subtotal	817	813	99.5%	24.1	3.4	C
Total		3,024	3,031	100.2%	29.7	10.7	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Cumulative Plus Project Conditions (Mitigated)
AM Peak Hour

Intersection 13 **Project Dwy/W Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	16	16	100.0%	4.4	2.8	A
	Subtotal	16	16	100.0%	4.4	2.8	A
EB	Left Turn						
	Through	927	936	101.0%	4.4	0.4	A
	Right Turn						
	Subtotal	927	936	101.0%	4.4	0.4	A
WB	Left Turn						
	Through	691	698	101.0%	2.9	0.4	A
	Right Turn	32	33	103.1%	2.4	0.6	A
	Subtotal	723	731	101.1%	2.8	0.4	A
Total		1,666	1,683	101.0%	3.7	0.3	A

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Cumulative Plus Project Conditions (Mitigated)**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 3 | **Risling Ct/Sutter Hospital Dwy** | **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	47	45	96.2%	5.2	1.6	A
	Through	63	62	98.9%	3.7	0.9	A
	Right Turn	70	72	103.3%	3.3	0.7	A
	Subtotal	180	180	99.9%	3.9	0.7	A
SB	Left Turn	10	8	82.0%	1.4	1.0	A
	Through	153	152	99.1%	0.3	0.2	A
	Right Turn	1	1	120.0%	0.0	0.1	A
	Subtotal	164	161	98.2%	0.4	0.2	A
EB	Left Turn						
	Through	3	3	110.0%	5.6	4.6	A
	Right Turn	63	63	99.7%	4.1	1.0	A
	Subtotal	66	66	100.2%	4.3	1.0	A
WB	Left Turn	120	121	100.6%	5.9	0.9	A
	Through	4	4	95.0%	3.5	3.0	A
	Right Turn						
	Subtotal	124	125	100.4%	5.9	0.9	A
Total		534	531	99.5%	3.5	0.2	A

Intersection 4 | **Risling Ct-Shasta Dr/W Covell Blvd** | **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	22	17	77.3%	66.0	12.1	E
	Through	16	20	122.5%	54.2	16.0	D
	Right Turn	200	201	100.5%	4.4	2.3	A
	Subtotal	238	238	99.8%	13.4	2.9	B
SB	Left Turn	207	203	98.3%	60.9	11.0	E
	Through	39	39	100.3%	48.3	15.1	D
	Right Turn	90	92	101.8%	25.9	8.3	C
	Subtotal	336	334	99.4%	49.5	9.3	D
EB	Left Turn	82	81	98.7%	83.3	17.1	F
	Through	630	638	101.2%	16.4	2.3	B
	Right Turn	30	29	96.0%	6.0	4.2	A
	Subtotal	742	747	100.7%	23.3	3.2	C
WB	Left Turn	180	170	94.2%	69.2	13.3	E
	Through	982	974	99.2%	16.3	3.5	B
	Right Turn	94	92	98.0%	10.7	4.0	B
	Subtotal	1,256	1,235	98.4%	23.0	2.9	C
Total		2,572	2,554	99.3%	26.0	2.5	C

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	270	269	99.7%	51.6	7.0	D
	Through						
	Right Turn	62	66	106.6%	14.8	4.0	B
	Subtotal	332	335	101.0%	44.1	6.6	D
EB	Left Turn	52	56	107.1%	70.0	13.5	E
	Through	985	991	100.6%	11.5	2.2	B
	Right Turn						
	Subtotal	1,037	1,047	101.0%	14.5	2.4	B
WB	Left Turn						
	Through	1,194	1,175	98.4%	13.3	2.2	B
	Right Turn	210	211	100.2%	10.7	2.5	B
	Subtotal	1,404	1,385	98.7%	12.9	2.1	B
Total		2,773	2,767	99.8%	17.5	2.5	B

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	190	194	102.1%	52.3	6.8	D
	Through	10	12	123.0%	47.8	32.4	D
	Right Turn	105	105	100.0%	51.6	9.6	D
	Subtotal	305	311	102.1%	52.2	6.1	D
EB	Left Turn						
	Through	936	950	101.5%	22.4	2.2	C
	Right Turn	319	321	100.5%	18.9	3.1	B
	Subtotal	1,255	1,271	101.3%	21.5	2.4	C
WB	Left Turn	530	507	95.6%	64.4	12.5	E
	Through	1,299	1,272	97.9%	13.8	1.7	B
	Right Turn						
	Subtotal	1,829	1,779	97.3%	28.4	3.3	C
Total		3,389	3,361	99.2%	28.0	1.9	C

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	504	500	99.3%	69.5	34.7	E
	Through						
	Right Turn	780	777	99.7%	51.0	22.5	D
	Subtotal	1,284	1,278	99.5%	58.2	26.9	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	102	97	94.8%	72.9	8.5	E
	Through	1,024	1,042	101.7%	18.8	3.7	B
	Right Turn						
	Subtotal	1,126	1,139	101.1%	23.4	3.4	C
WB	Left Turn						
	Through	1,325	1,302	98.2%	63.9	10.8	E
	Right Turn	310	304	98.0%	45.8	8.0	D
	Subtotal	1,635	1,605	98.2%	60.3	10.3	E
Total		4,045	4,022	99.4%	49.0	11.4	D

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	286	276	96.4%	86.1	35.3	F
	Through	50	47	94.0%	77.6	35.2	E
	Right Turn	100	103	103.0%	28.7	24.2	C
	Subtotal	436	426	97.7%	71.4	32.0	E
SB	Left Turn	80	82	102.9%	41.3	10.5	D
	Through	140	147	105.1%	51.5	8.5	D
	Right Turn	231	238	103.1%	17.9	8.4	B
	Subtotal	451	468	103.7%	33.2	9.2	C
EB	Left Turn	302	290	95.9%	121.1	39.6	F
	Through	1,090	1,116	102.4%	48.4	17.8	D
	Right Turn	195	191	97.8%	39.6	16.6	D
	Subtotal	1,587	1,596	100.6%	60.4	20.2	E
WB	Left Turn	30	29	96.7%	89.4	24.8	F
	Through	997	1,011	101.4%	88.0	35.8	F
	Right Turn	70	70	100.3%	90.5	45.7	F
	Subtotal	1,097	1,110	101.2%	88.2	35.9	F
Total		3,571	3,600	100.8%	67.3	12.0	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

West Davis Active Adult Community Project EIR
Cumulative Plus Project Conditions (Mitigated)
PM Peak Hour

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn	19	16	85.8%	5.6	2.4	A
	Subtotal	19	16	85.8%	5.6	2.4	A
EB	Left Turn						
	Through	742	747	100.7%	3.5	0.4	A
	Right Turn						
	Subtotal	742	747	100.7%	3.5	0.4	A
WB	Left Turn						
	Through	1,020	1,007	98.7%	3.1	0.5	A
	Right Turn	86	87	100.6%	2.8	0.6	A
	Subtotal	1,106	1,094	98.9%	3.1	0.5	A
Total		1,867	1,857	99.5%	3.3	0.3	A

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Shared	900	50	3	75	4	75	6	0%	0%
NB	Shared	525	25	5	50	16	75	28	0%	0%
SB	Shared	2,000	25	1	25	6	25	16	0%	0%
WB	Shared	950	50	3	75	5	75	12	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	225	125	14	200	21	225	2	0%	0%
	Through	400	175	13	275	23	300	36	30%	0%
	Right Turn	100	25	5	75	15	125	0	0%	0%
NB	Left Turn	125	50	6	75	17	100	33	0%	0%
	Through	350	75	16	175	48	225	64	5%	0%
	Right Turn	75	75	1	75	4	75	1	3%	0%
SB	Left Turn	525	150	26	225	54	275	83	4%	0%
	Through/Right	225	50	13	100	46	175	70	0%	0%
WB	U/Left Turns	325	100	6	150	11	150	17	0%	0%
	Left Turn	325	50	7	125	11	125	15	0%	0%
	Through	575	150	17	250	29	300	39	0%	0%
	Through/Right	575	175	18	275	27	350	41	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	150	100	6	150	11	175	0	3%	0%
	Through	575	175	30	325	71	400	104	7%	0%
SB	Left Turn	250	125	10	200	17	225	27	0%	0%
	Through/Right	1,600	25	6	75	21	100	67	0%	0%
WB	Through	350	200	18	325	36	350	25	28%	0%
	Right Turn	75	75	3	100	4	100	0	7%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	350	225	17	375	20	350	7	0%	1%
	Through/Right	350	275	13	400	12	375	6	0%	4%
SB	Left/Through	1,425	150	11	250	21	275	53	0%	0%
	Right Turn	1,425	100	11	175	16	200	24	0%	0%
WB	Left Turn	225	175	11	250	12	225	1	4%	0%
	Through	500	175	39	350	100	450	128	0%	0%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	50	5	75	10	100	26	0%	0%
	Left Turn	175	75	4	100	8	125	11	0%	0%
	Through	500	100	8	175	13	175	33	0%	0%
NB	Left Turn	2,400	125	7	200	23	250	50	0%	0%
	Shared	2,400	200	10	275	20	325	41	0%	0%
	Right Turn	825	150	6	225	16	275	48	0%	0%
WB	Through	850	400	43	625	72	750	77	34%	1%
	Right Turn	150	125	11	225	5	175	0	0%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	300	125	8	200	26	250	68	0%	0%
	Through	850	250	18	400	36	550	52	2%	0%
	Through/Right	850	275	15	425	26	525	42	0%	0%
NB	Left Turn	225	200	18	275	16	225	1	30%	0%
	Through	2,050	250	149	550	345	625	331	3%	0%
	Right Turn	125	25	4	50	20	100	33	0%	0%
SB	Left Turn	250	50	10	125	36	175	79	0%	0%
	Through	1,775	100	18	225	38	325	69	3%	0%
	Right Turn	125	75	9	175	11	150	0	8%	0%
WB	Left Turn	125	50	11	125	23	150	13	1%	0%
	Through	5,800	175	16	275	33	300	41	14%	0%
	Through/Right	5,800	200	12	300	28	325	34	0%	0%

Intersection 13 **Project Dwy/W Covell Blvd** **Side-street Stop**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	3	50	4	50	10	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										
0										

Intersection 3 **Risling Ct/Sutter Hospital Dwy** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Shared	900	50	4	75	5	75	9	0%	0%
NB	Shared	525	25	2	50	6	75	13	0%	0%
SB	Shared	2,000	25	2	25	11	25	22	0%	0%
WB	Shared	950	50	4	75	6	100	12	0%	0%

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	225	100	10	175	15	200	31	0%	0%
	Through	400	125	11	225	21	275	36	17%	0%
	Right Turn	100	25	5	75	16	125	0	0%	0%
NB	Left Turn	125	25	4	75	10	100	28	0%	0%
	Through	350	50	11	100	38	150	84	5%	0%
	Right Turn	75	75	1	75	3	75	4	2%	0%
SB	Left Turn	525	200	30	350	56	425	62	10%	0%
	Through/Right	225	125	14	250	23	250	0	0%	0%
WB	U/Left Turns	325	125	8	175	12	175	21	0%	0%
	Left Turn	325	100	8	150	25	200	79	0%	0%
	Through	575	150	21	300	46	375	80	1%	0%
	Through/Right	575	175	17	325	42	400	77	0%	0%

Intersection 5 **John Jones Rd/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	150	75	10	125	18	150	25	1%	0%
	Through	575	125	12	225	29	275	85	3%	0%
SB	Left Turn	250	225	13	300	10	275	0	10%	0%
	Through/Right	1,600	100	30	300	83	450	87	0%	0%
WB	Through	350	225	26	400	31	375	18	21%	2%
	Right Turn	75	50	6	100	6	100	0	1%	0%
NB	Shared	25	25	0	25	0	25	0	0%	0%

Intersection 6 **SR 113 SB Ramps/W Covell Blvd** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	350	275	10	400	15	350	6	0%	2%
	Through/Right	350	275	11	400	14	375	10	0%	3%
SB	Left/Through	1,425	175	12	275	32	350	61	0%	0%
	Right Turn	1,425	100	8	175	20	225	45	0%	0%
WB	Left Turn	225	225	5	275	9	250	0	26%	0%
	Through	500	375	28	600	46	550	19	2%	6%
0										

Intersection 7 **SR 113 NB Ramps/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	175	50	7	100	11	125	26	0%	0%
	Left Turn	175	75	13	150	31	200	23	0%	0%
	Through	500	200	33	350	56	450	50	12%	0%
NB	Left Turn	725	300	37	500	81	575	120	0%	0%
	Shared	2,375	400	58	600	198	775	462	0%	0%
	Right Turn	725	325	29	500	67	600	121	0%	0%
WB	Through	850	675	38	900	60	925	46	43%	6%
	Right Turn	150	175	16	300	9	225	0	1%	0%
0										

Intersection 8 **Sycamore Ln/W Covell Blvd** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	300	300	19	400	12	350	0	36%	0%
	Through	850	525	103	750	124	800	109	12%	1%
	Through/Right	850	525	91	750	115	800	107	0%	1%
NB	Left Turn	225	225	11	275	13	250	1	51%	0%
	Through	2,050	425	164	750	219	750	214	3%	0%
	Right Turn	125	25	8	100	19	125	12	1%	0%
SB	Left Turn	250	100	14	200	40	250	43	0%	0%
	Through	1,775	200	36	375	55	475	87	24%	0%
	Right Turn	125	100	8	200	3	150	0	9%	0%
WB	Left Turn	125	50	13	150	29	175	0	0%	0%
	Through	5,800	550	158	875	282	950	285	56%	0%
	Through/Right	5,800	600	160	925	275	975	253	0%	0%

Intersection 13 **Project Dwy/Covell Blvd** **Side-street Stop**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
SB	Right Turn	925	25	3	50	4	50	12	0%	0%
EB	Through	5,150	25	0	25	0	25	0	0%	0%
WB	Through	475	25	0	25	0	25	0	0%	0%
	Through/Right	475	25	0	25	0	25	0	0%	0%
0										

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	28.7	68.6	0.5	24
SR 113 SB Ramps	6	12.6	27.0	0.1	14
John Jones Rd	5	15.2	22.9	0.1	12
Risling Ct	4	24.9	37.1	0.1	12
	13	3.1	10.8	0.1	29
Total		84.5	166.3	0.8	18

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	22.6	29.3	0.1	11
	5	14.8	27.1	0.1	16
SR 113 SB Ramps	6	19.5	27.4	0.1	10
Route 1	7	4.9	15.4	0.1	24
Total		61.7	99.3	0.4	14

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	22.6	29.3	0.1	11
	5	14.8	27.1	0.1	16
Route 2	6	23.9	35.5	0.1	8
Total		61.3	91.9	0.3	11

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	24.9	37.1	0.1	12
	13	3.1	10.8	0.1	29
Total		28.0	47.8	0.3	21

Arterial Level of Service: NB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Covell Blvd	7	92.3	133.2	0.5	13
SR 113 SB Ramps	6	13.4	27.4	0.1	13
John Jones Rd	5	12.1	19.7	0.1	14
Risling Ct	4	17.2	29.4	0.1	15
	13	3.6	11.3	0.1	28
Total		138.5	221.0	0.8	14

Arterial Level of Service: SB Route 1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.1	22.9	0.1	14
	5	8.5	20.8	0.1	21
SR 113 SB Ramps	6	20.3	28.1	0.1	10
Route 1	7	19.8	30.4	0.1	12
Total		64.7	102.2	0.4	14

Arterial Level of Service: EB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Shasta Dr	4	16.2	22.9	0.1	14
	5	8.2	20.6	0.1	21
Route 2	6	16.6	28.2	0.1	10
Total		41.1	71.7	0.3	14

Arterial Level of Service: WB Route 2

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
John Jones Rd	5	-	-	0.1	-
Risling Ct	4	15.4	27.6	0.1	16
	13	3.2	11.0	0.1	29
Total		18.6	38.6	0.3	26

Supplemental Analysis Level of Service (LOS) Calculations

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	22	23	102.3%	42.9	9.9	D
	Through	27	26	95.9%	27.1	6.8	C
	Right Turn	290	288	99.4%	17.7	2.4	B
	Subtotal	339	337	99.3%	20.4	2.7	C
SB	Left Turn	158	150	95.0%	62.9	37.0	E
	Through	16	16	96.9%	25.8	27.2	C
	Right Turn	41	40	96.8%	11.4	9.0	B
	Subtotal	215	205	95.5%	50.5	30.7	D
EB	Left Turn	137	135	98.8%	46.9	9.8	D
	Through	770	770	100.0%	28.7	6.0	C
	Right Turn	20	20	102.0%	20.8	11.4	C
	Subtotal	927	926	99.9%	31.1	6.4	C
WB	Left Turn	150	148	98.8%	50.4	5.4	D
	Through	655	651	99.4%	24.5	5.2	C
	Right Turn	96	99	102.6%	7.9	2.0	A
	Subtotal	901	898	99.6%	27.3	4.4	C
Total		2,382	2,366	99.3%	30.1	4.4	C

SimTraffic Post-Processor **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs **Supplemental Analysis**
Volume and Delay by Movement **PM Peak Hour**

Intersection 4 **Risling Ct-Shasta Dr/W Covell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	22	23	106.4%	69.9	23.1	E
	Through	16	18	113.1%	64.3	21.7	E
	Right Turn	200	197	98.4%	27.6	11.3	C
	Subtotal	238	238	100.1%	33.6	12.2	C
SB	Left Turn	207	198	95.6%	53.6	5.4	D
	Through	39	40	102.8%	51.7	13.4	D
	Right Turn	90	87	96.7%	28.8	10.5	C
	Subtotal	336	325	96.7%	46.4	7.2	D
EB	Left Turn	82	80	97.8%	73.2	12.5	E
	Through	630	629	99.8%	22.8	3.0	C
	Right Turn	30	29	96.3%	17.6	7.8	B
	Subtotal	742	738	99.5%	28.2	4.3	C
WB	Left Turn	180	177	98.1%	67.8	9.4	E
	Through	982	973	99.1%	14.8	3.6	B
	Right Turn	94	95	101.5%	7.0	3.6	A
	Subtotal	1,256	1,245	99.1%	21.7	3.3	C
Total		2,572	2,546	99.0%	28.0	3.0	C

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Supplemental Analysis**
Queue Length | **AM Peak Hour**
Intersection 4 | **Risling Ct-Shasta Dr/W Covell Blvd** | **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	125	17	200	31	225	3	0%	0%
	Through	400	175	12	275	27	325	29	3%	0%
	Through/Right	400	200	12	275	24	325	40	0%	0%
NB	Left Turn	125	50	6	100	13	125	0	0%	0%
	Through/Right	350	125	11	225	23	275	35	16%	0%
SB	Left Turn	525	125	43	225	85	250	89	6%	0%
	Through/Right	225	50	23	100	74	125	78	0%	0%
WB	U/Left Turns	325	100	4	150	11	175	12	0%	0%
	Left Turn	325	50	5	100	8	125	8	0%	0%
	Through	575	150	15	250	25	325	39	7%	0%
	Right Turn	175	50	10	150	24	200	0	0%	0%

SimTraffic Post-Processor | **West Davis Active Adult Community Project EIR**
Average Results from 10 Runs | **Supplemental Analysis**
Queue Length | **PM Peak Hour**
Intersection 4 | **Risling Ct-Shasta Dr/W Covell Blvd** | **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	U/Left Turns	225	100	12	175	28	225	30	1%	0%
	Through	400	150	11	250	21	275	37	2%	0%
	Through/Right	400	150	12	250	23	275	34	0%	0%
NB	Left Turn	125	50	7	100	19	125	30	0%	0%
	Through/Right	350	125	20	250	49	325	69	14%	0%
SB	Left Turn	525	175	15	300	34	350	44	6%	0%
	Through/Right	225	100	14	225	26	250	0	0%	0%
WB	U/Left Turns	325	125	11	175	13	200	20	0%	0%
	Left Turn	325	100	11	175	33	225	101	0%	0%
	Through	575	150	25	300	43	400	79	9%	0%
	Right Turn	175	50	12	125	44	150	62	0%	0%

Appendix G

Water Supply Assessment

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To: Brian Foster

From: Tully & Young, Inc.

Date: October 20, 2017

Subject: West Davis Active Adult Community Land Use Changes

1.0 Introduction

In August of 2017, a Water Supply Assessment (WSA) was prepared for the West Davis Active Adult Community (WDAAC). Since then, the project has been modified to account for minor land use changes and a revision to the planned scope of the commercial portions of the project. The purposes of this memorandum are to discuss the land use changes since Tully & Young, Inc. issued the WSA and determine the resulting impacts to the water demands of the West Davis Active Adult Community (WDAAC). In short, we conclude that although the land use changes increase the project's water demands, the conclusion of sufficiency remains.

2.0 Water Demand as presented in the Water Supply Assessment

The WSA derived sufficiency from two separate analyses. First, the land use and water demands were analyzed and presented in **Table 2-1** and **2-2** of the August 2017 WSA. A map of the land uses proposed in the August 2017 WSA is presented in **Figure 2-1**. Second, the UWMP water demand allocation was derived with a per acre methodology for the project site. The result of this analysis as compared to the WDAAC project was a small surplus in water supply based on the projected water demands of the proposed project as presented in the WSA. **Table 2-1**, **2-2** and **Figure 2-1** are the same as those used in the 2017 WSA and shown below.

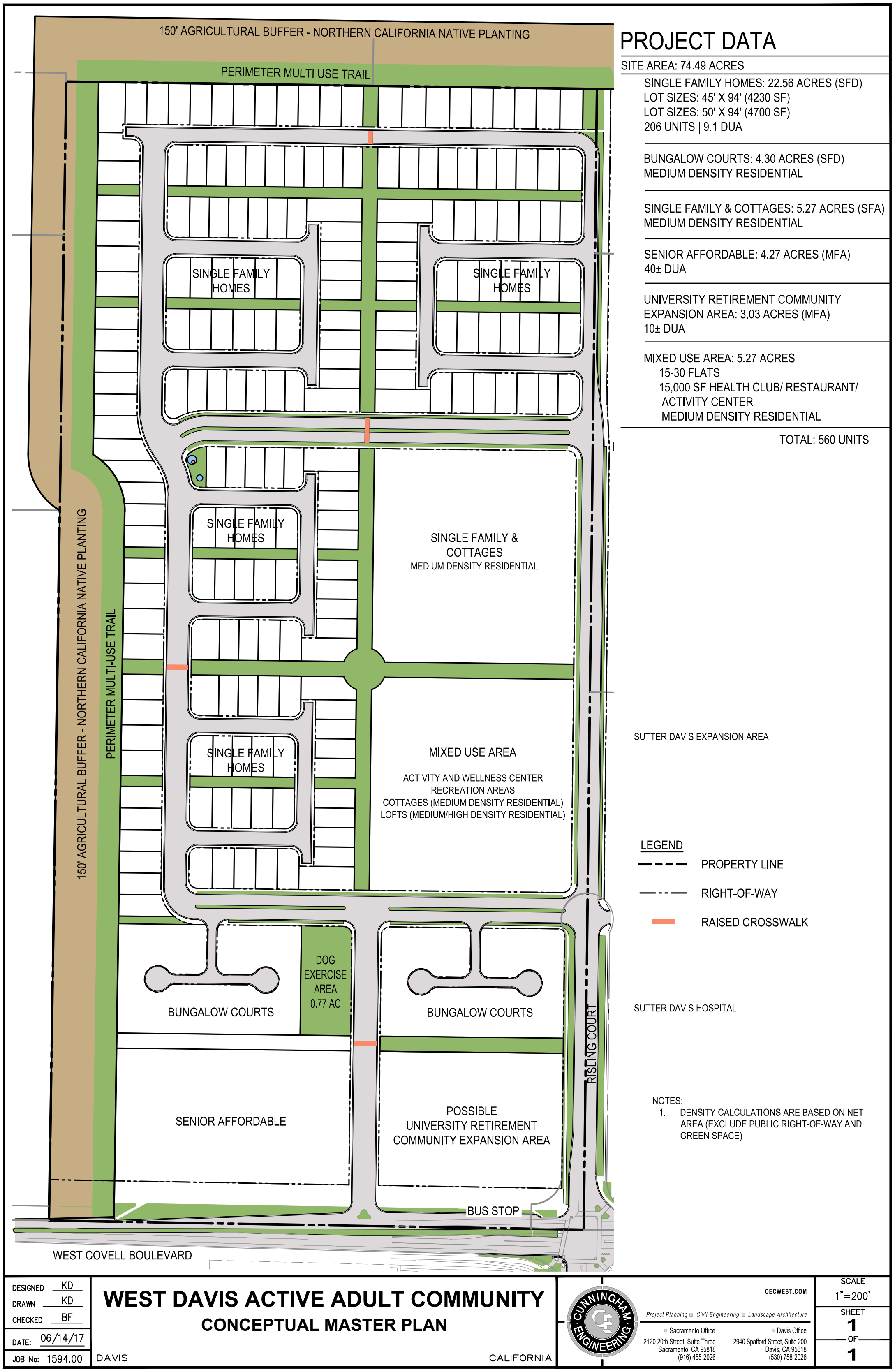
Table 2-1 – WSA Land Use

Land Use	Gross Acreage	Details
Homes, Bungalows, lots	26.78	238 Dwelling Units
Homes and Cottages	5.27	92 Dwelling Units
Continuing Care Retirement Community	3.03	30 Dwelling Units
Senior Affordable Apartments	4.36	150 Dwelling Units
Mixed Use Area	5.27	50 Dwelling Units
Dog Park	0.76	
Linear Park	4.69	
Ag Transition Area	7.19	
Right of Ways	17.59	
Total	**75**	**560 dwelling units**

Table 2-2 – Water Demands in the WSA

	Unit Count or Acreage						Demand Factor	Demand (af/yr)					
Category	Current	2020	2025	2030	2035	2040	(af/du or af/ac)	Current	2020	2025	2030	2035	2040
Residential													
Homes, Bungalows, and Builder Lots	0	0	238	238	238	238	0.19 (indoor)	0	0	45	45	45	45
							0.21 (outdoor)	0	0	49	49	49	49
Cottages	0	0.0	92	92	92	92	0.19 (indoor)	0	0	17	17	17	17
							0.13 (outdoor)	0	0	12	12	12	12
Mixed Use	0	0.0	50	50	50	50	0.15 (indoor)	0	0	8	8	8	8
							0.05 (outdoor)	0	0	3	3	3	3
Senior Affodable Apartments	0	0.0	150	150	150	150	0.15 (indoor)	0	0	23	23	23	23
							0.02 (outdoor)	0	0	3	3	3	3
University Retirement Expansion	0	0.0	30	30	30	30	0.15 (indoor)	0	0	5	5	5	5
							0.19 (outdoor)	0	0	6	6	6	6
DU Total	**0**	**0**	**560**	**560**	**560**	**560**							
							Indoor Subtotal	0	0.0	97	97	97	97
							Outdoor Subtotal	0	0.0	73	73	73	73
Non-Residential													
Mixed Use	0	0	5.3	5.3	5.3	5.3	2.80	0	0	15	15	15	15
							Indoor Subtotal	0	0.0	14.8	15	15	15
Public													
Dog Park	0	0	1	1	1	1	4.01	0	0	3	3	3	3
Linear Park	0	0	2	5	5	5	4.01	0	0	9	19	19	19
Agricultural Transition Area	0	0	7	0	0	0	2.81	0	0	20	0	0	0
Right of Way Landscaping	0	0	18	18	18	18	0.19	0	0	3	3	3	3
							Outdoor Subtotal	0	0.0	36.0	25	25	25
Other Miscellaneous Uses													
Construction Water	0	0	1	0	0	0	1	0	0	1	0	0	0
							Outdoor Subtotal	0	0	1	0	0	0
							Indoor Total	0	0	112	112	112	112
							Outdoor Total	0	0	110	99	99	99
							Total	0	0	222	211	211	211
						Outdoor Non-revenue water	11%	0	0	12	11	11	11
						Indoor Non-revenue water	11%	0	0	12	12	12	12
							Total Indoor	0	0	124	124	124	124
							Total Outdoor	0	0	123	110	110	110
							Total Proposed Project Demand	**0**	**0**	**247**	**234**	**234**	**234**

Figure 2-1 – WSA Land Use Map



The WSA concluded that the pre-loss demands totaled 211 acre-feet.[1] Specifically, the WSA stated:

> *The City of Davis' 2015 UWMP included a number of "Proposed Developments" in analyzing supply reliability for the City. One of the analyzed developments was the "Davis Innovation Center." The Davis Innovation Center was the previous project planned for the site of the new Proposed Project. The UWMP accounted for 619 acre-feet for the entire Innovation Center's 207 acres which is approximately 2.99 acre-feet per acre. Thus, the Proposed Project's area, a mere 75 acres of the original 207 acres, is budgeted in the UWMP for approximately 221 acre-feet.*[2]

3.0 Revised Land Use

Since the completion of the WSA draft, the land use plan has changed. The primary change was related to the replacement of the large multi-use facility with 50 mixed use apartments with a small community center and a 109 condos. Additionally there were some increases in the amount of expected irrigated landscaping as the linear park and agricultural transition area was better defined. It should be noted that the total number of housing units has not changed but has shifted. Specifically, the number of smaller homes and cottages were decreased, from 92 to 33, and the mixed use area apartments were replaced with a greater number of condos, from 50 to 109. **Table 2-1A** presents the revised land use plan.

Table 2-1A – Revised Land Use

Land Use	Gross Acreage	Details
Homes, Bungalows, lots	26.70	238 Dwelling Units
Cottages	3.05	33 Dwelling Units
Continuing Care Retirement Community	3.03	30 Dwelling Units
Senior Affordable Apartments	4.26	150 Dwelling Units
Condos/Unassigned/Wellness Center	6.16	109 Dwelling Units
Dog Park	1.10	
Linear Park	8.16	
Ag Transition Area	4.24	
Right of Ways	17.79	
Total	**74**	**560 dwelling units**

Table 2-2A presents the revised water demand projection.

[1] Note that the loss occurring will be on the City system side and very little will be occurring within the project boundary.

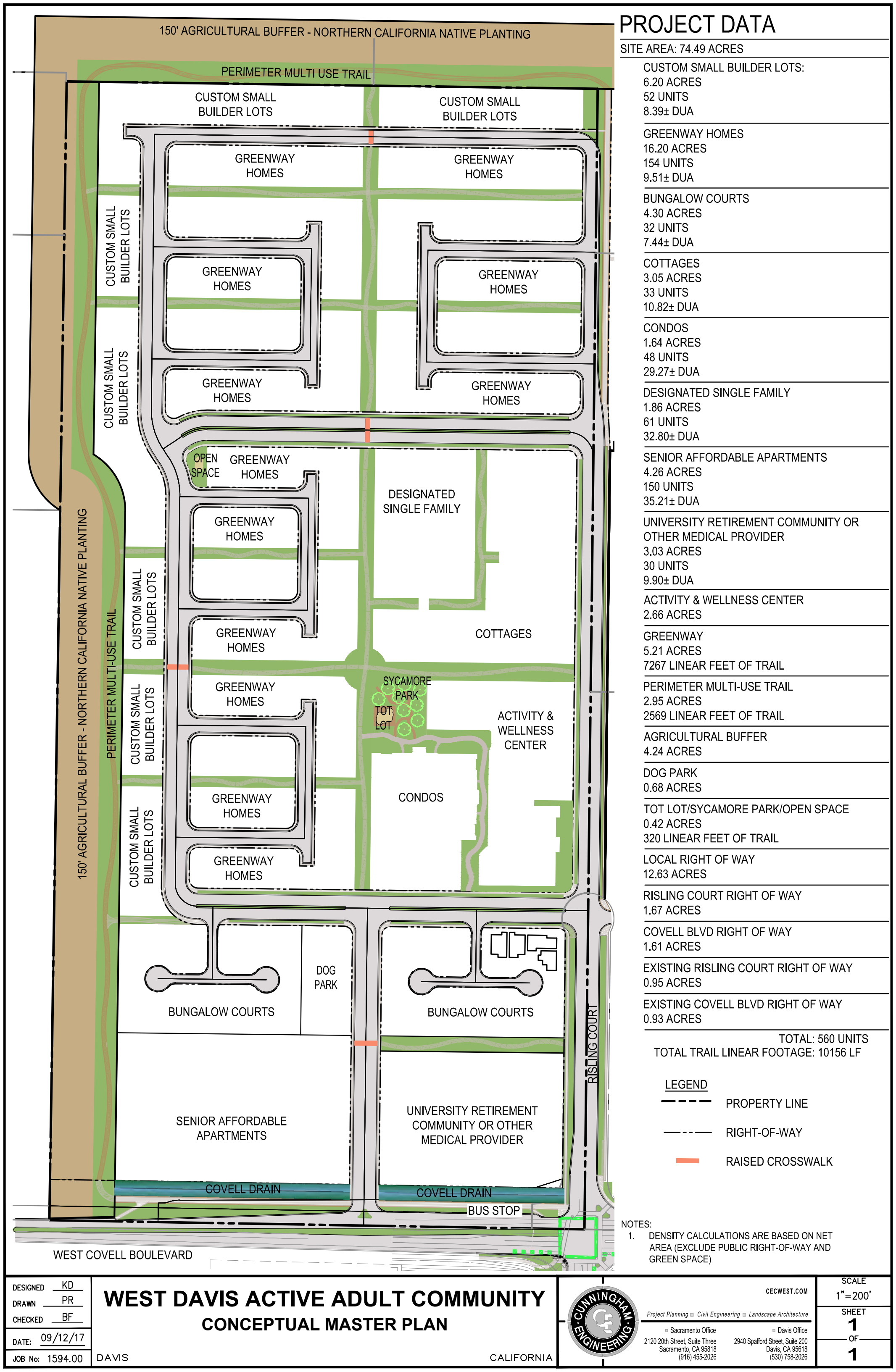
[2] Text from page 4-1 of the August 2017 Water Supply Assessment for the West Davis Active Adult Community project.

Table 2-2A – Revised Water Demands

Category	Unit Count or Acreage						Demand Factor	Demand (af/yr)					
	Current	2020	2025	2030	2035	2040	(af/du or af/ac)	Current	2020	2025	2030	2035	2040
Residential													
Homes, Bungalows, and Builder Lots	0	0	238	238	238	238	0.19 (indoor)	0	0	45	45	45	45
							0.23 (outdoor)	0	0	54	54	54	54
Cottages	0	0.0	33	33	33	33	0.19 (indoor)	0	0	6	6	6	6
							0.22 (outdoor)	0	0	7	7	7	7
Mixed Use	0	0.0	109	109	109	109	0.15 (indoor)	0	0	16	16	16	16
							0.01 (outdoor)	0	0	1	1	1	1
Senior Affodable Apartments	0	0.0	150	150	150	150	0.15 (indoor)	0	0	23	23	23	23
							0.03 (outdoor)	0	0	5	5	5	5
University Retirement Expansion	0	0.0	30	30	30	30	0.15 (indoor)	0	0	5	5	5	5
							0.19 (outdoor)	0	0	6	6	6	6
DU Total	**0**	**0**	**560**	**560**	**560**	**560**							
							Indoor Subtotal	0	0.0	95	95	95	95
							Outdoor Subtotal	0	0.0	73	73	73	73
Non-Residential													
Mixed Use	0	0	2.7	2.7	2.7	2.7	2.80	0	0	7	7	7	7
							Indoor Subtotal	0	0.0	7.4	7	7	7
Public													
Dog Park	0	0	1	1	1	1	4.01	0	0	4	4	4	4
Linear Park	0	0	4	8	8	8	4.01	0	0	16	33	33	33
Agricultural Transition Area	0	0	4	0	0	0	2.81	0	0	12	0	0	0
Right of Way Landscaping	0	0	18	18	18	18	0.19	0	0	3	3	3	3
							Outdoor Subtotal	0	0.0	36.1	41	41	41
Other Miscellaneous Uses													
Construction Water	0	0	1	0	0	0	1	0	0	1	0	0	0
							Outdoor Subtotal	0	0	1	0	0	0
							Indoor Total	0	0	102	102	102	102
							Outdoor Total	0	0	110	114	114	114
							Total	0	0	213	216	216	216
						Outdoor Non-revenue water	11%	0	0	12	13	13	13
						Indoor Non-revenue water	11%	0	0	11	11	11	11
							Total Indoor	0	0	114	114	114	114
							Total Outdoor	0	0	123	127	127	127
							Total Proposed Project Demand	**0**	**0**	**236**	**240**	**240**	**240**

The changes between **Table 2-2** and **Table 2-2A** include the unit counts for the Cottages and Mixed Use in the Residential category. In the Non-Residential category, the Mixed Use acreage was adjusted to reflect the land use change. For the Public category, acreages for the Dog Park, Linear Park, and Agricultural Transition Area were all adjusted.

Figure 2-1A – Revised Land Use Map



4.0 Conclusion of Sufficiency

The net impacts of the land use changes increase the net water demands from 211 acre-feet to 216 acre-feet before loss. With loss included, total demands from the demands analyzed in the August 2017 WSA increase by 6 acre-feet. The addition of this demand still results in a project demand below the UWMP allocation. Thus, despite the demand changes, there is sufficient water supply to serve the Proposed Project and the conclusion of sufficiency stated in the WSA is still valid after considering the impacts of land use changes.

West Davis Active Adult Community Project

SB 610 Water Supply Assessment

CITY OF DAVIS

West Davis Active Adult
SB 610 Water Supply Assessment

Prepared for the
City of Davis

Admin Draft

August 2017

Prepared by:

Tully & Young
Comprehensive Water Planning

Prepared for:
The City of Davis

CITY OF
DAVIS

Approved on

Contact:
Tully & Young, Inc.
Sacramento, Ca.
(916) 669-9357

Table of Contents

SECTION 1 – PROJECT INTRODUCTION

1.1 INTRODUCTION

As the lead agency under the California Environmental Quality Act (CEQA), the City of Davis (hereafter referred to as the "City") is assessing the potential environmental impacts associated with the proposed development under the West Davis Active Adult Community (Specific Plan) in the western portion of the City. To support the CEQA analysis, a Water Supply Assessment (WSA) for the West Davis Active Adult Community Specific Plan is necessary (hereafter referred to as the "Proposed Project").

Statutory Background

Enacted in 2001, Senate Bill 610 added section 21151.9 to the Public Resources Code requiring that any proposed "project" as defined in section 10912 of the Water Code comply with Water Code section 10910, et seq. Commonly referred to as a "SB 610 Water Supply Assessment," Water Code section 10910 outlines the necessary information and analysis that must be included in an environmental analysis of the project to ensure that proposed land developments have a sufficient water supply to meet existing and planned water demands over a 20-year projection.

Proposed "projects" requiring the preparation of a SB 610 water supply assessment include, among others, residential developments of more than 500 dwelling units, shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space and projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.[1] The Proposed Project requires a WSA because it is a residential development of more than 500 dwelling units.

The WSA will be incorporated into the CEQA document — an Environmental Impact Report (EIR) — being prepared for the Proposed Project (the Project EIR).[2]

Document Preparation and Approval

The WSA law requires that the lead agency – in this case, the City of Davis – identify a "public water system"[3] and further requires the lead agency to request that each identified public water system prepare a WSA for the project. If the lead agency is not able to identify a public water system that may supply water for the project, the lead agency must prepare the WSA itself after

[1] Water Code § 10912, subdivision (a).
[2] Water Code § 10911(b).
[3] A "public water system" is a system that provides water for human consumption that has 3,000 service connections.

consulting with “any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.”[4]

In this case, the City of Davis has prepared the WSA because the City plans to serve water to the Proposed Project and the Proposed Project lies within the City’s General Plan Area. This document provides the necessary information for the City to make its determinations and to comply with the assessment of water supply sufficiency as required by statute.

Document Organization

This WSA supports the Proposed Project’s environmental review process and analyzes the sufficiency of water supplies to meet projected water demands of the Proposed Project through the required planning horizon. The WSA is organized according to the following sections:

> **Section 1: Project Introduction**. This section provides an overview of WSA requirements, and a detailed description of the Proposed Project, especially the land-use elements that will require water service.
>
> **Section 2: Proposed Project Estimated Water Demands**. This section describes the methodology used to estimate water demands of the Proposed Project and details the estimated water demands at build-out of the Proposed Project.
>
> **Section 3: Water Supply Characterization**. This section characterizes the City’s water supply portfolio that will serve the Proposed Project along with other current and future water demands. City wells, along with water service contracts and agreements are characterized for normal, single dry, and multiple dry year conditions.
>
> **Section 4: Sufficiency Analysis**. This section assesses whether sufficient water will be available to meet the Proposed Project water demands, while recognizing existing and other potential planned water demands within the City of Davis service area. To provide the necessary conclusions required by statute, the analysis integrates the demand detailed in Section 2 with the characterization of the City’s water supply portfolio detailed in Section 3.

[4] Water Code § 10910(b).

1.2 PROPOSED PROJECT DESCRIPTION

The Proposed Project ("Proposed Project" or "Project") is a new residential, mixed use development on approximately 75 acres located adjacent to the northwest corner of the City and within the sphere of influence. The Proposed Project is just west of Sutter Davis Hospital and Highway 113 with the City's west area water tank and booster pump station located to the north.

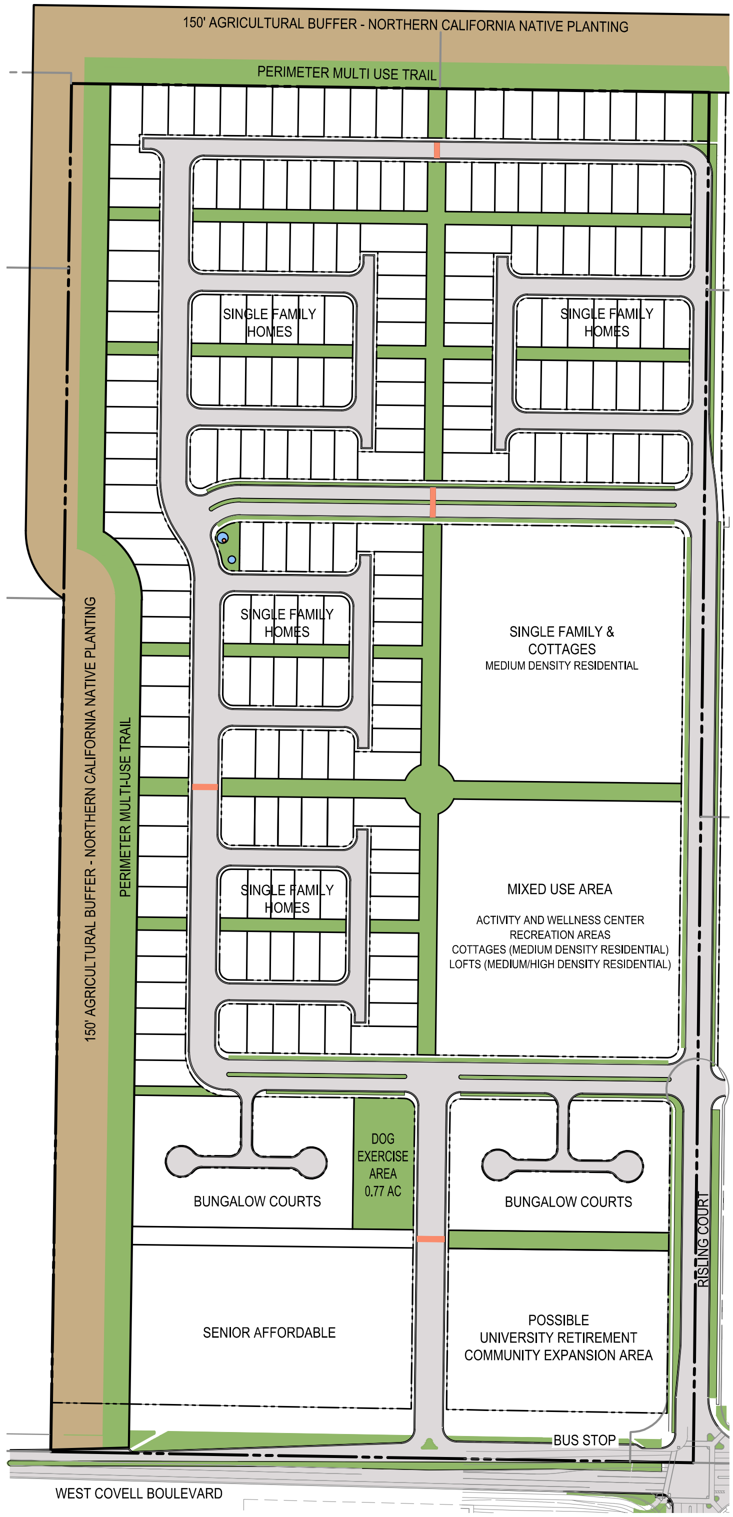
Project Background

The Project Site is located on lands that were once part of the Davis Innovation Center Project. The Proposed Project is located on the southern portion of the 207 acre Davis Innovation Center Project location. That project was placed on hold by the request of the developer in 2015. The Innovation Center project included a Draft EIR and other supporting documents. As such, much of land specific environmental analysis has been completed and the City accounted for water use on the property in its 2015 Urban Water Management Plan (UWMP). **Figure 1-1**, on the following page, depicts the Proposed Project's location and land uses.

Project Description

This Water Supply Assessment (WSA) includes an evaluation of the Proposed Project, which consists of approximately 560 dwelling units, health club, restaurant, and clubhouse on 75 acres. The breakdown of residential uses includes 150 affordable age restricted apartments, 32 attached age restricted cottages, 92 attached age restricted units, 129 single family age restricted homes, 77 single family non-age restricted homes, a retirement community with 30 detached age restricted units, and 50 attached age restricted mixed use units. Non-residential uses include the 5.3 acre mixed use area with the health club, restaurant, and clubhouse. Public uses include a dog park, greenways, and agricultural buffer zones with trails. The existing on-site agricultural well may be utilized to offset the more expensive potable water for non-potable demands, but this is not considered for purposes of the sufficiency analysis in this WSA. Layout of the Proposed Project uses setbacks in open space to buffer the residential lands from neighboring operating agricultural operations.

Figure 1-1 – Proposed Project Location and Land Uses



PROJECT DATA

SITE AREA: 74.49 ACRES

SINGLE FAMILY HOMES: 22.56 ACRES (SFD)
LOT SIZES: 45' X 94' (4230 SF)
LOT SIZES: 50' X 94' (4700 SF)
206 UNITS | 9.1 DUA

BUNGALOW COURTS: 4.30 ACRES (SFD)
MEDIUM DENSITY RESIDENTIAL

SINGLE FAMILY & COTTAGES: 5.27 ACRES (SFA)
MEDIUM DENSITY RESIDENTIAL

SENIOR AFFORDABLE: 4.27 ACRES (MFA)
40± DUA

UNIVERSITY RETIREMENT COMMUNITY
EXPANSION AREA: 3.03 ACRES (MFA)
10± DUA

MIXED USE AREA: 5.27 ACRES
15-30 FLATS
15,000 SF HEALTH CLUB/ RESTAURANT/ ACTIVITY CENTER
MEDIUM DENSITY RESIDENTIAL

TOTAL: 560 UNITS

DESIGNED KD DRAWN KD CHECKED BF DATE: 06/14/17 JOB No: 1594.00	**WEST DAVIS ACTIVE ADULT COMMUNITY** **CONCEPTUAL MASTER PLAN** DAVIS CALIFORNIA	CUNNINGHAM ENGINEERING CECWEST.COM Project Planning • Civil Engineering • Landscape Architecture Sacramento Office: 2120 20th Street, Suite Three, Sacramento, CA 95818, (916) 455-2026 Davis Office: 2940 Spafford Street, Suite 200, Davis, CA 95618, (530) 758-2026	SCALE 1"=200' SHEET 1 OF 1

Table 1-1 summarizes the Proposed Project's land use acreages and dwelling unit counts.

Table 1-1 – Summary of Project Land Uses and Acreages

Land Use	Gross Acreage	Details
Homes, Bungalows, lots	26.78	238 Dwelling Units
Homes and Cottages	5.27	92 Dwelling Units
Continuing Care Retirement Community	3.03	30 Dwelling Units
Senior Affordable Apartments	4.36	150 Dwelling Units
Mixed Use Area	5.27	50 Dwelling Units
Dog Park	0.76	
Linear Park	4.69	
Ag Transition Area	7.19	
Right of Ways	17.59	
Total	**75**	**560 dwelling units**

Overall, the Proposed Project includes 560 dwelling units at average densities between 8.9 and 34.4 dwelling units per acre depending on unit type. The Proposed Project consists of both age restricted and non-age restricted units so occupancy rates will differ between housing types. Davis has an average occupancy of 2.64 persons per household.[5] The age-restricted units will be less than 2 as no children will be present and some units will have single individuals. Using the census number for non-age restricted and 2 for age restricted gives a conservative estimate of 1,169 people.1.3 Proposed Project Phasing

Table 1-2 describes the Proposed Project's anticipated construction phases for purposes of this WSA. Each phase represents a portion of the Proposed Project, focusing on particular land use classifications. Before constructing homes, commercial space, or other parts of the Proposed Project, the applicants will begin site grading and Project-wide infrastructure development. Some infrastructure and site grading will continue throughout all phases of the Proposed Project, as necessary. These activities include, among other things, installing facilities for potable water, non-potable water, sewer, electric, telecommunications, gas, stormwater, and roads. During these activities, a small water demand will exist – referred to in this WSA as "construction water." This demand is included in the projected annual water demands presented in **Section 2**.

While the timing of the Proposed Project's ultimate build-out will be market driven, it is anticipated that the Proposed Project should be complete within about 5 years of the start of construction. Project construction should begin in 2020 and be completed well within the 20-year planning horizon contemplated in this WSA.

[5] US Census 2011-2015

Table 1-2 – Proposed Number of Units and Project Phasing

Project Element	Unit Count					
	Current	2020	2025	2030	2035	2040
Homes, Bungalows, lots	0	0	238	238	238	238
Homes and Cottages	0	0	92	92	92	92
Continuing Care Retirement Community	0	0	30	30	30	30
Senior Affordable Apartments	0	0	150	150	150	150
Mixed Use Area	0	0	50	50	50	50
Village Mixed Use	0	0	0	0	0	0

SECTION 2 – PROPOSED PROJECT ESTIMATED WATER DEMANDS

2.1 INTRODUCTION

This section describes the methodology, provides the supporting evidence, and presents the estimated annual water demands for the Proposed Project. For the purpose of estimating annual water demand, the Proposed Project is planned to develop according to the phasing in **Table 1-2.**

2.2 DETERMINING UNIT WATER DEMAND FACTORS

As detailed in **Section 1**, the Proposed Project has specific residential and potential non-residential land uses with defined residential lot-sizes, potential mixed use commercial area, and other greenbelt and open space characteristics. As these attributes vary among the types of proposed land uses, so too will the water needs. To understand the water needs of the entire Proposed Project, unique demand factors that correspond with each unique land use are necessary. This subsection presents the methodology for determining the unit water use demand factors that become the basis of the Proposed Project water demand estimates. Two distinct groups of demand factors are presented: (1) residential, and (2) potential non-residential. The values developed for each distinct group are based on several sources of information; the details of that information is provided below.

2.2.1 Current and Future Mandates

There are several factors that affect the development of unit water demand factors, ranging from state mandates to changes in the types of housing products being offered. These factors are incorporated into the determination of unit water demand factors, as discussed later in this section. Characteristics of the most important factors are described below.

2.2.1.1 Water Conservation Objectives

On November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill No. 7 (SBX7-7), which established a statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020 for urban retail water suppliers.[6] Since the Proposed Project is yet to be built, this legislation has limited restrictive applicability.

The efforts undertaken by the City, and to a lesser extent the Woodland-Davis Clean Water Agency, to comply with this statute will affect the Proposed Project's use of appliances, fixtures, landscapes and other water using features, through changes or additions to City and County ordinances and/or through an emerging "conservation ethic" seen in the region as a result of drought conditions.

[6] California Water Code § 10608.20

2.2.1.2 Indoor Infrastructure Requirements

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the "CAL Green Code") that requires the installation of water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. The CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations.[7] The Cal Green Code was revised in 2013 with the revisions taking effect on January 1, 2014; however these revisions do not have substantial implications to the water use already contemplated by the 2010 Cal Green Code.[8] The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. All Proposed Project land uses must satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code.

The CAL Green Code requires residential and non-residential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside each building and structure by 20 percent. The 20 percent water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building "water use baseline."[9] The Proposed Project will satisfy one of these two requirements through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, or other fixtures as well as Energy Star and California Energy Commission-approved appliances.

2.2.1.3 California Model Water Efficient Landscape Ordinance and County Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the Department of Water Resources ("DWR") to update the Model Water Efficient Landscape Ordinance (MWELO).[10] In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO

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[7] The CAL Green Code is Part 11 in Title 24. All references in this WSA will be to the Chapter and Section numbers that appear in the adopted document which may be obtained by visiting the California Building Standards Commission web site at: http://www.documents.dgs.ca.gov/bsc/CALGreen/2010_CA_Green_Bldg.pdf

[8] "The 2010 CAL Green Code was evaluated for updates during the 2012 Triennial Code Adoption Cycle . HCD evaluated stakeholder input, changes in technology, implementation of sustainable building goals in California, and changes in statutory requirements. As such, the scope of the CAL Green Code was increased to include both low-rise and high-residential structures, additions and alterations." *Guide to the 2013 California Green Building Standards Code (Residential)*, California Department of Housing and Community Development, 2013.

[9] See CAL Green Code. For Residential construction, Section 4.303.1 provides the residential water conservation standard and Table 4.303.2 identifies the infrastructure requirements to meet this standard. Table 4.303.1 and Worksheets WS-1 and WS-2 are to be used in calculating the baseline and the reduced water use if Option 2 is selected. For non-residential construction, Section 5.303.2.3 provides the water conservation standard as well as the baseline and reduced flow rate infrastructure standards. Note that Worksheets WS-1 and WS-2 incorporate both residential and non-residential fixtures, yet the water use is still to be analyzed by "building or structure" as specified in Chapter 1, Section 101.3.

[10] Gov. Code §§ 65591-65599

provisions.[11] Because the City of Davis is a “local agency” under the MWELO, it must require “project applicants” to prepare plans consistent with the requirements of MWELO for review and approval by the City of Davis. The City of Davis is in compliance with this state law and uses the MWELO as written for projects within the City Limits.[12] This WSA uses the methods described in the MWELO in setting landscaping irrigation limits. For the purposes of this WSA, the MWELO limit is applied to all aspects of the Proposed Project.

The MWELO applies to new construction with a landscape area greater than 2,500 square feet.[13] The MWELO “highly recommends” use of a dedicated landscape meter on landscape areas smaller than 5,000 square feet, and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems.[14] The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency.[15] Finally, the MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then to assign a unique valve for each hydrozone (low, medium, high water use).[16]

2.2.1.4 Metering, Volumetric Pricing, and Water Budgets

California Water Code §525 requires water purveyors to install meters on all new service connections after January 1, 1992. California Water Code §527 requires water purveyors to charge for water based upon the actual volume of water delivered if a meter has been installed. Consistent with current customer billing, the City will be billing the Proposed Project water users on a volumetric basis. This will have little impact on the City in terms of implementation as the City is fully metered but new tools are available to help future savings. In 2015, the City replaced all meters on City facilities and parks with Advanced Metering Infrastructure (AMI) and is in the process of converting all customer meters. Once this AMI system is fully online, the City will have a new tool to pinpoint use issues, customer leaks, and other system patterns which can be used to further conservation through better system operation.

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[11] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget. For purposes of this WSA, precipitation is not assumed to satisfy a portion of the outdoor landscape requirement because the determination of an appropriate effective precipitation factor is highly uncertain given the various landscape slopes, terrain composition, concurrent watering schedules, etc.

[12] Information about Davis's MWELO can be found on their website: http://cityofdavis.org/city-hall/public-works/water/water-conservation/model-water-efficient-landscape-ordinance

[13] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

[14] CCR Tit. 23, Div. 2, Ch. 27, Sec. 492.7(a)(1)(A)-(B).

[15] In calculating Estimated Total Water Use, the MWELO requires use of at least a 71% irrigation efficiency factor. Assuming 71% irrigation efficiency, the average plant factor must be 0.50. It would be possible to stay within the water budget if the average plant factor were higher than 0.50 by designing a system with an irrigation efficiency higher than 71%. Again the relationship between a Plant Factor (PF) and Irrigation Efficiency (IE) in the Applied Water formula is: AW=(ETo*PF)/IE.

[16] CCR Tit. 23, Div. 2, Ch. 27, Secs. 492.3(a)(2)(A) and 492.7(a)(2).

Though the City will be billing customers in the Proposed Project on a volumetric basis, this action alone is not expected to substantially reduce water use. However, it is anticipated that the retail billing system will encourage and help maintain reasonable use (e.g. through rate structure at 87% volumetric pricing), so that the Proposed Project's water demands at build-out are not expected to grow as the Proposed Project progresses.

2.3 Residential Water Use Demand Factors

The Proposed Project anticipates five general lot-size designations with the potential for some residential units with the commercial Village Mixed Use Area. The size of the lot has the greatest impact on the annual per-lot demand for water as the irrigation needs for landscaping increase with larger landscaped areas. In contrast, indoor water demands remain relatively consistent regardless of lot size, but do vary slightly based on the number of people per dwelling unit. Distinct demand factors are provided for the following residential uses:

- Indoor Residential Use – this category differentiates the slight variance anticipated to occur between the conventional housing and higher density housing to reflect the difference in people per dwelling unit.

- Outdoor Residential Use – this category addresses the landscape water demands for varying lot sizes and housing types planned within the Proposed Project.

For purposes of this WSA, residential unit water demand factors are described as "the acre-feet of water use annually per dwelling unit" – or simply put, acre-feet/dwelling unit (af/du).

2.3.1 Indoor Residential Water Use Factors

The Proposed Project's residential elements will be built in accordance with all applicable building codes including the Cal Green Code discussed previously.

Given the longevity of the City of Davis, indoor water use is likely highly variable because homes have been built over a long period of time. Older homes still typically use more water than newer homes, even with the additional drivers such as the Cal Green Code. As homes are remodeled and appliances are replaced, indoor water use falls but there will always be lingering old appliances and fixtures in older neighborhoods keeping averages higher than new neighborhoods. Because of the age of the City, average indoor use is not accurate for a new development. With this in mind, Tully & Young reviewed a number of meter studies from throughout northern California and has developed an indoor demand estimate that is in line with newer homes and the impacts of the latest Cal Green Code.

Additionally, the size of the house has little impact on indoor water demands. While a bigger house may have more space dedicated to living areas, water use is predicated on bathroom fixtures and appliances, which are limited by the previously mentioned CAL Green Code. For the purposes of this WSA, indoor demands are assumed to vary only slightly based on the number of people per unit. The Proposed Project's age restricted units leads to persons per household numbers that differ from previous census records. This difference is due to the fact that age restricted units will almost universally have 2 people (at most) versus the City average of 2.64. For the Proposed Project the projected persons per household are 2.64 for non-age restricted and 2 for the age restricted units. To account for the differences in persons per household, the indoor water demand factors differ between housing unit type with age-restricted units having a lower indoor demand.

2.3.2 Outdoor Residential Water Use Factors

The primary factor driving outdoor water use on a per lot basis is the size of the lot and the landscaping square footage. The Proposed Project includes several residential lot types, each having a unique proposed housing layout and landscaped area. The plantings are intended to consist of low-water, drought-tolerant, and native plants. Landscapes not installed by the developer will be left to the homeowners where MEWLO compliance can not be guaranteed. However, homeowners will be strongly encouraged to follow the sustainability principles and the City of Davis requires compliance for even small landscape projects.[17]

To provide flexibility for the Proposed Project to landscape lots as needed and to provide a conservative assumption for this analysis, each lot is assumed to have a landscaped area equal to the lot square footage minus the house footprint and an amount of hardscaping in line with existing similar houses within the City. The remaining area of each lot is conservatively assumed to demand the maximum allowed by the MWELO. However, this characterization provides for a conservative analysis since the landscaping goals set forth in the Specific Plan will likely result in a lower outdoor residential water demand than is estimated by this WSA because of actions taken by developers and end users to be more water efficient.

A conservative starting point for landscape usage per acre is estimated at 4.01 AF/Ac as 85% of ETo.[18]

The primary driver that could significantly change both existing residential and non-residential outdoor water demands is the MWELO, as noted in **Section 2.2.1.3**. In following MWELO methodologies, landscaping demand may be calculated as an estimate of reference ETo. Using demand values estimated for MWELO, a demand per acre or square foot is applied to the average lot size of each category to develop the outdoor demand for each residence type.

Using the outdoor unit demand factor of 4.01 af/ac/yr and associated landscape area for an average lot in the City, an estimate of current outdoor demands can be derived.[19] Using this

[17] Davis MWELO short form prescriptive compliance - http://cityofdavis.org/home/showdocument?id=5782
[18] ETo is the Evapotranspiration or a standard measurement used to calculate plant water demands. For more information on ETo, refer to MWELO. This value is still accurate for parks under the revised MWELO where special landscaped areas are allowed.

same number and the average lot size from the West Davis Active Adult Community land-use plan, which is a current example of future development in the City, an estimate of future outdoor demands is created. All lot sizes are calculated to use this number. For example, the single family builder lots are expected to share this demand per-acre value but with greater proportions of the lot dedicated to landscape versus areas covered by hardscape and the structure's footprint. The medium density cottage lots are also assumed to have similar per-acre values, but with lesser proportions of the lot dedicated to landscaping. Thus, the larger lots will see per dwelling unit outdoor demand factors that are greater than that of a dwelling unit on a smaller lot such as a cottage.

The revised MWELO provides for determining the Maximum Applied Water Allowance ("MAWA"), where the maximum is determined as 55 percent of the reference evapotranspiration for the area for residential projects and 45 percent for non-residential, resulting in the following equation:

> *MAWA = (ETo) (0.62)(0.55 x LA), where ETo is the reference evapotranspiration in inches per year, LA is the landscape area, and 0.62 is a conversion factor. The resulting value is in "gallons per year"*

The ETo value for the City of Davis is 59 inches as recorded from the Davis CIMIS Weather Station.

- **Single Family.** – The proposed 238 lots of the homes, bungalows, and builder lots designations will include large single family structures with extensive outdoor hardscapes. These designations for the Proposed Project have lots with an average size of approximately 4,900 square feet. For the purposes of this WSA, the Proposed Project will use the outdoor demand factor, derived in **Table 2-1**, of 0.21 acre-feet per year for lots in this class.

- **Cottages.** – The proposed 92 cottage lot designation will include small single family structures with extensive outdoor hardscapes. These designations for the Proposed Project have lots with an average size of approximately 3,600 square feet. For the purposes of this WSA, the Proposed Project will use the outdoor demand factor, derived in **Table 2-1**, of 0.13 acre-feet per year for lots in this class.

[19] This value is conservative for residential use under the revised MWELO but meter results for newer homes in similar areas support using this conservative value. It is anticipated that a small reduction in this value will be seen in the next meter study performed by the City. This reduction is both due to the conservative nature of the value and to ongoing conservation and improvements in water use efficiencies.

- **High Density Senior Affordable Apartments.** – The proposed 150 units of this designation will include attached multi-family dwellings on a single large lot with an average of about 1,100 square-feet of ground area per unit. This dwelling unit type is typically associated with community controlled outdoor spaces so the average outdoor demands are typically quite low with typically less than a few hundred square feet of landscaping per unit. For the purposes of this WSA, the Proposed Project will use the outdoor demand factor, derived in **Table 2-1**, of 0.02 acre-feet per year for lots in this class.

- **Mixed Use Residential.** – The proposed 50 units of this designation are a unique dwelling unit type typically existing above commercial space. Outdoor demands are minimal if present but are typically found. For the purposes of this WSA, the Proposed Project will use the outdoor demand factor, derived in **Table 2-1**, of 0.05 acre-feet per year for lots in this class.

- **University Retirement Expansion.** – The proposed 30 retirement lots will include small single family structures with extensive outdoor hardscapes. These designations for the Proposed Project have lots with an average size of approximately 4,350 square feet. For the purposes of this WSA, the Proposed Project will use the outdoor demand factor, derived in **Table 2-1**, of 0.19 acre-feet per year for lots in this class.

2.3.3 Summary of Residential Water Use Demand Factors

Table 2-1 provides a summary of the baseline demand factor for each residential land use category and the resulting unit demand factor used to estimate the Proposed Project's water use.

Table 2-1 – Summary of Residential Baseline and Proposed Project Demand Factors

Water Demand Category by Dwelling Unit (du) Type	Average Density (du/ac)	Indoor Factor	Outdoor Factor	Total Demand Factor (af/du)
Homes, Bungalows, and Builder Lots	8.9	0.19	0.21	0.40
Cottages	12.0	0.19	0.13	0.32
Mixed Use	14.8	0.19	0.05	0.24
Senior Affodable Apartments	40.0	0.15	0.02	0.17
University Retirement Expansion	10.0	0.15	0.19	0.34

2.4 NON-RESIDENTIAL WATER USE DEMAND FACTORS

The non-residential factors are developed from either details provided in the Proposed Project Specific Plan or are based upon recent water use trends for similar types of land classifications found in other supporting materials.

For purposes of this WSV, the per-lot demand for non-residential classifications is described as either "the acre-feet of water use annually per acre of land", acre-feet/acre (af/ac), or as a single demand projection for a demand category such as the community center (e.g. which has a unit of "1"), acre-feet/unit (af/unit). These values reflect indoor and outdoor water needs expected for typical non-residential use for each of the following classifications:

- Mixed Use – Health Club, Club House, and Restaurant
- Dog Park
- Linear Parks
- Other miscellaneous uses, including common area open space, agricultural setback open space, right-of-way landscaping, and construction water

The method and basis for determining the unit water demand factor for each of these classifications is detailed in the following subsections.

Mixed Use

The proposed Mixed Use area will consist of a Health Club, Club House, and a Restaurant. The Health Club is planned for 8,000 square feet (sf) of indoor space plus an outdoor pool. The pool is open to the public but not intended for swim meets or other high attendance events The Club House will be for use by onsite residents and will consist of standard meeting space facilities. The Restaurant is a "fast casual" type intended primarily for use by on-site residents. The Restaurant and Club House will share a 5,000 sf building. Tully & Young, Inc. has conducted a number of meter studies throughout northern California and has found that the best projection of use is a per-acre number for this type of use. Based on the typical usage of health clubs and restaurants, Tully & Young is assuming 2.80 af/ac use on site.

Parks

The Proposed Project includes two distinct park types consisting of a Dog Park and additional Linear Parks.

The Linear Parks are wide corridors that link areas with pedestrian and bikeway trails. The Specific Plan calls for 4.7 acres of these landscaped parks throughout the Proposed Project. Typically ranging from 25 to 35 feet in width, these parkways will use landscaping to provide both a corridor for travel and a buffer between land use types.

As described more fully in the Specific Plan, the main park is described as a 0.8 acre Dog Park located for easy community access. The Dog Park will consist primarily of irrigated turf.

For the Purposes of this WSA the City's calculated conservative landscape demand factor of 4.01 acre-feet/acre is used for both the Linear Parks and Dog Park.

Other Miscellaneous Uses

The Proposed Project has additional miscellaneous land uses including common area open space and on-site agricultural setback. These uses have minimal impacts to the overall projected water use due to their limited size and water needs, or because they are temporary in nature.

Open Space and Agricultural Setback

As of the preparation of this WSA, the Proposed Project includes about 7.2 acres of "agricultural transition area". While including informal trails and natural planted areas, a portion of this land will also be dedicated to providing storm drainage and biofiltration and storage of storm water aligned along streets and drainage courses. Plantings will emphasize drought-tolerant, hardy materials and compatibility with existing surrounding native and adaptive plants. Given the form and function of the landscaping of this project element, a water supply will only be needed to establish plantings for the first few years. After plant establishment, these landscape features will be served by annual precipitation. Plant established water demand factors are based on 70 percent of the maximum applied water allowance under MWELO – 2.81 af/ac.

Right-of-Ways

The Proposed Project includes approximately 17.6 acres of right-of-way. Tully & Young has conducted a number of meter studies for areas with medial landscaping and derived a demand factor that accounts for the majority of areas that is hardscape. For the purposes of this WSA a demand factor of 0.19 acre-feet/acre for right-of-ways is used.

Construction Water

Early phases of the Proposed Project will include site grading and infrastructure installation. These and other construction elements will require dust suppression and other incidental water uses. These are estimated to be nominal, and do not continue beyond the construction phases of the Proposed Project. For purposes of identifying incremental water demands, construction water is assumed within this WSA to be 1 acre-foot per year (this is about 300,000 gallons – or over 75 fill-ups of a 4,000 gallon water truck).

Summary of Non-Residential Demands

Table 2-2 provides a summary of the non-residential demand factors used to estimate the Proposed Project's future demands.

Table 2-2 – Summary of Non-Residential Demand Factors

Land Use	Demand Factor	Unit
Mixed Use	2.80	af/ac
Dog Park	4.01	af/ac
Linear Parks	4.01	af/ac
Agricultural Transition	2.81	af/ac
Natural Open Space	0.0	af/ac
Right of Ways	0.19	af/ac
Construction Water	1.0	af/unit

2.5 Proposed Project Water Demand Projection

Combining the Proposed Project's land use details and phasing as summarized in **Table 1-1** and **Table 1-2** with the demand factors presented in **Table 2-1** and **Table 2-2**, the water demands for the Proposed Project from initiation to build-out can be estimated. At completion, the Proposed Project is estimated to need approximately 211 acre-feet of water annually (prior to considerations of non-revenue water, described in the next subsection) and approximately 234 acre-feet when considering non-revenue water, as shown in **Table 2-4**.

2.5.1 Non-Revenue Water Demands

The demand factors presented earlier in this section represent the demand for water at the residential or non-residential customer meter for each category. To fully represent the demand on water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially un-metered uses such as fire protection, hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings.[20] In most instances, the predominant source of non-revenue water is from system leaks – the loss from fittings and connections from water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems. Because a significant portion of the delivery system used to bring water to the Proposed Project will be new, the percentage of non-revenue water is estimated to meet the 10 percent goal set forth by the American Water Works Association. Therefore, the Proposed Project's water delivery system is expected to require an additional 23 acre-feet at build-out with 11 acre-feet of that required for outdoor demands that could be mostly met with non-potable water.

[20] The American Water Works Association and the California Urban Water Conservation Council recognize the inherent non-revenue water that is either lost or not accounted for in urban treated water distribution systems and suggest purveyors strive for a value of 10% of all delivered water. Obtaining this value is dependent on numerous factors including the age and extent of distribution system infrastructure, meter rehabilitation programs, and how a purveyor accounts for actions such as fire flows and hydrant flushing.

2.5.2 Projected Treated Demands versus Landscape Water Demands

A unique feature of this project is the separation of indoor and outdoor demands. The on site well, previously used for agricultural purposes, has the capacity to serve more water than is needed onsite. This well will be used to serve the landscaping demands of the project through a separate pipe system. The demand on the City's treatment and distribution system will be limited to the indoor demands. The table below compares the projects water demands by type.

Table 2-3 – Indoor vs Outdoor Water Demands

	Demand (af/yr) without loss		
	Residential	Non-Res	Total
Potable	97	15	112
Non-Potable	73	25	99
Total Demand	**171**	**40**	**211**

Table 2-4 – Estimated Proposed Project Water Demands

Category	Unit Count or Acreage						Demand Factor (af/du or af/ac)	Demand (af/yr)					
	Current	2020	2025	2030	2035	2040		Current	2020	2025	2030	2035	2040
Residential													
Homes, Bungalows, and Builder Lots	0	0	238	238	238	238	0.19 (indoor)	0	0	45	45	45	45
							0.21 (outdoor)	0	0	49	49	49	49
Cottages	0	0.0	92	92	92	92	0.19 (indoor)	0	0	17	17	17	17
							0.13 (outdoor)	0	0	12	12	12	12
Mixed Use	0	0.0	50	50	50	50	0.15 (indoor)	0	0	8	8	8	8
							0.05 (outdoor)	0	0	3	3	3	3
Senior Affodable Apartments	0	0.0	150	150	150	150	0.15 (indoor)	0	0	23	23	23	23
							0.02 (outdoor)	0	0	3	3	3	3
University Retirement Expansion	0	0.0	30	30	30	30	0.15 (indoor)	0	0	5	5	5	5
							0.19 (outdoor)	0	0	6	6	6	6
DU Total	**0**	**0**	**560**	**560**	**560**	**560**							
							Indoor Subtotal	0	0.0	97	97	97	97
							Outdoor Subtotal	0	0.0	73	73	73	73
Non-Residential													
Mixed Use	0	0	5.3	5.3	5.3	5.3	2.80	0	0	15	15	15	15
							Indoor Subtotal	0	0.0	14.8	15	15	15
Public													
Dog Patrk	0	0	1	1	1	1	4.01	0	0	3	3	3	3
Linear Park	0	0	2	5	5	5	4.01	0	0	9	19	19	19
Agricultural Transition Area	0	0	7	0	0	0	2.81	0	0	20	0	0	0
Right of Way Landscaping	0	0	18	18	18	18	0.19	0	0	3	3	3	3
							Outdoor Subtotal	0	0.0	36.0	25	25	25
Other Miscellaneous Uses													
Construction Water	0	0	1	0	0	0	1	0	0	1	0	0	0
							Outdoor Subtotal	0	0	1	0	0	0
							Indoor Total	0	0	112	112	112	112
							Outdoor Total	0	0	110	99	99	99
							Total	0	0	222	211	211	211
						Outdoor Non-revenue water 11%		0	0	12	11	11	11
						Indoor Non-revenue water 11%		0	0	12	12	12	12
							Total Indoor	0	0	124	124	124	124
							Total Outdoor	0	0	123	110	110	110
							Total Proposed Project Demand	**0**	**0**	**247**	**234**	**234**	**234**

Section 3 – Water Supply Characterization

3.1 Introduction

This chapter describes the City of Davis' (City) existing and planned supplies for the 20 year period covered in this Water Supply Assessment (WSA). The water supplies that are used within the City and its Sphere of Influence (SOI) are derived from the Woodland-Davis Clean Water Agency (WDCWA) water rights and its Central Valley Project Settlement Contract as well as the City's rights to groundwater. All water supplies derived from these sources are managed in order to best meet the City's demands in different year types, reduce delivery costs, manage water quality issues, and handle drought and emergency situations. As such, water deliveries from each identified source may fluctuate in any given year because of management decisions, regulatory constraints, and hydrological conditions. Nevertheless, the City will provide retail water to meet the Proposed Project's needs.

3.2 Historical Potable Water Supplies

The City's water supplies have historically included water supplies solely derived from its groundwater resources. In June of 2016, the City began using a new water diversion facility from the Sacramento River and began taking water supplies from WDCWA's surface water assets. The City's additional water sources will reduce its historical reliance upon groundwater and improve other water quality issues associated with utilization of groundwater resources. In normal years, the City anticipates relying upon WDCWA's surface water assets to meet the majority of the City's water demands. In dry years, the City anticipates using additional groundwater to meet demands that its surface water supplies are unable to meet. In short, the City is developing a robust conjunctive use program in coordination with WDCWA that will allow it to optimally manage its surface and groundwater resources to serve its near-term and long-term demands.

The City generally only purchases and delivers water that is necessary to meet the City's customers' demands. Thus, although the WDCWA may have rights and entitlements to significant sources of water, the City only utilizes the amount it needs under those rights and entitlements. **Tables 3-1** and **3-2**, on the following page, show the City's historical water supply deliveries.

Table 3-1 – City of Davis Historic Water Supplies

Year	Groundwater	Year	Groundwater
1995	12,494	2006	14,333
1996	12,995	2007	14,762
1997	13,857	2008	14,219
1998	11,908	2009	12,835
1999	13,740	2010	11,957
2000	14,099	2011	11,531
2001	15,072	2012	12,218
2002	15,112	2013	12,338
2003	14,551	2014	10,901
2004	15,100	2015	9,211
2005	14,452	'95-'13 ave	13,556

Table 3-2 – City of Davis 2016 Water Supplies[21]

Month	Groundwater	Permit	CVP Contract
Jan	467	0	0
Feb	446	0	0
Mar	465	0	0
Apr	703	0	0
May	959	0	0
Jun	0	0	1,093
Jul	0	0	1,218
Aug	264	0	980
Sep	0	0	1,150
Oct	400	412	0
Nov	0	527	0
Dec	0	452	0
	3,704	**1,391**	**4,440**

[21] These water supplies are derived from the availability of various assets under the City's rights and contracts as well as rescheduling opportunities associated with the CVP supply. Total water use derived from the City's measured demands coupled with supply availability produced the supply numbers depicted in this table.

3.3 EXISTING WATER SUPPLIES AND ENTITLEMENTS

There are three primary water rights and contracts (collectively, "water supplies") that are used within the City's existing service area and SOI. All three of these water supplies are used to meet the water demands for the City's residents. In several areas within the City, the water supplies can be interchanged and commingled for delivery to end users. The water supplies are:

- WDCWA's SWRCB Appropriative Water Right Permit 20281
- WDCWA's Central Valley Project Contract No. 14-06-200-7422X-R-1; and
- City of Davis' Groundwater rights

Each of these water supplies are subject to a unique set of conditions based upon the terms of the underlying water rights, the regulatory environment, the contractual limitations, and the City's ability to access and deliver the supplies to meet targeted end-user needs. Within this structural framework, the City manages its water assets to meet its customers' demands. Importantly, the structural framework morphs and changes, requiring the City's water managers to adjust the water asset management and use.[22]

3.3.1 Woodland-Davis Clean Water Agency

The Woodland-Davis Clean Water Agency (WDCWA) is a joint powers authority established by the Cities of Woodland and Davis to develop a sustainable high-quality water supply. The cities signed the "Amended and Restated Woodland-Davis Clean Water Agency Joint Powers Agreement" on February 26, 2013 that outlines the structure and governance of the JPA. This Agreement, coupled with the "Amended and Restated Woodland-Davis Clean Water Agency and University of California Agreement Concerning Potential Water Supply Contract" allocate water supplies, infrastructure costs, and operating issues among the participating agencies.

WDCWA and Reclamation District 2035 constructed a new water intake on the Sacramento River to divert surface water supplies to the cities of Woodland and Davis in order to allow those cities to reduce their dependence on groundwater. The WDCWA holds water right permit 20281 and CVP contract 14-06-200-7422X-R-1 and allocates the water assets under those contracts pursuant to the above noted agreements. In short, the pertinent cost allocation and supply allocation under the agreements is as follows: 52.1% for the City of Woodland, 44.4% for the City of Davis, and 3.5% for the University of California. The information in the following sections describes the key aspects of WDCWA's water assets that make up the wholesale water that is delivered to the Cities of Woodland and Davis as well as UC Davis.

[22] The City may investigate additional water assets that may be included in its water supply portfolio, including surface diversions that would be banked in groundwater aquifers.

3.3.1.1 SWRCB Appropriative Water Right Permit 20281

The WDCWA's appropriative water right Permit 20281 (Permit) provides the primary surface water supply for the City that the City's retail customers will use from the fall through spring each year, as that right is available. The Permit allows WDCWA to divert a maximum 80 cubic feet per second (cfs) of water at its diversion facility on the Sacramento River. WDCWA may divert a maximum volume each year of 45,000 acre-feet. The Permit has a priority date of April 19, 1994 – rendering it a significantly junior water right on the Sacramento River watershed system. The WDCWA began diverting water under this Permit in 2016.

The Permit is subject to two important conditions: Term 20 and Term 25. Term 20 is a standard permit term that is contained in nearly all recently issued SWRCB Appropriative water right permits. Term 20 is commonly referred to as "Term 91." Term 91 does not authorize water diversions under the permit when "satisfaction of inbasin entitlements requires release of supplemental Project water by the Central Valley Project or the State Water Project." The "inbasin entitlements" include other water users as well as needs of the environment. Thus, although the water right allows diversions of water all year, the actual diversion period is limited by the needs of other demands on the broader Sacramento-San Joaquin Bay Delta.

In 2015, Term 91 was in effect – which would have disallowed diversions under this Permit – from April 30 through November 2. In 2016, Term 91 was in effect from May 2 through October 14 limiting diversions under this Permit. To date, in 2017, Term 91 has not been declared and the WDCWA continues to divert water under the Permit to meet its local demands.

Term 25 is another important term in the WDCWA appropriative water right Permit. Term 25 states, in relevant part, the following: "No water shall be diverted under this permit until Permittee obtains a long-term water supply covering those periods when water is not available for diversion pursuant to this permit." Accordingly, the WDCWA was unable to divert water under this Permit until it acquired a water supply that could be used when Term 91 was in effect or otherwise "not available." The WDCWA acquired an additional water supply, noted below, in order to satisfy the Permit term.

WDCWA has recently initiated water diversions under its Permit. These diversions started on October 15, 2016 and have continued uninterrupted since that time. The water supplies have been delivered to the City of Davis through the terms of the applicable agreements. The supplies have resulted in reduced pumping from groundwater resources that have augmented groundwater supplies available to the City.

The total volume of water available under this Permit is divided proportionally pursuant to the allocation terms noted above. Thus, the total annual allowable water supply of

45,000 acre-feet would be divided as follows: City of Woodland 23,445 AF, City of Davis 19,980 AF, and the University of California 1,575 AF. Although these water supplies can be manipulated by the participating agencies, for purposes of this WSA we assume that the maximum water available under the Permit to the City of Davis to meet its long-term demands would be 19,980 acre-feet per year.

3.3.1.2 Central Valley Project Contract No. 14-06-200-7422X-R-1

The second surface water supply available to the City is based upon the terms and conditions contained in Central Valley Project Contract No. 14-06-200-7422X-R-1 issued to the WDCWA (Settlement Contract). The Settlement Contract is just that – a settlement of water right claims against the United States when the United States acquired water rights and constructed the Central Valley Project. The "Settlement Contractors" essentially dismissed their claims against the United States in return for specific water supply contracts that generally promised water supply deliveries pursuant to the terms of underlying water rights.

The WDCWA was not an original Settlement Contractor. In 2010, however, the WDCWA purchased a portion of the underlying water rights from an existing Settlement Contractor and was assigned the protections of a Settlement Contract in an agreement with Conoway Preservation Group, LLC (CPG). The 2010 Agreement assigned a portion of CPG's water rights under Licenses 904 and 5487 to WDCWA. WDCWA now holds two water right licenses – License 904A and 5487A that make up the underlying water rights under the assigned Settlement Contract. License 904A has a priority date of March 1, 1919 and License 5487A has a priority date of September 8, 1947. The maximum volumes of water available collectively under these water right Licenses is 10,000 AF/year even though License 904A has a maximum annual volume of 7,500 AF/year and License 5487A has a maximum annual volume of 4,919 AF/year (combined 12,419 AF/year).

The Settlement Contract entitles WDCWA to a maximum of 10,000 acre-feet per year of water supplies from the Sacramento River. Article 5(c) notes, however, that in critical years the maximum water supply available will be only 7,500 acre-feet. The contract entitles WDCWA to divert water from April through October. However, the Settlement Contract has some other specific terms that limit this open-ended diversion:

1. The WDCWA may schedule deliveries as follows "at no cost": June: 2,500 AF, July: 3,500 AF, August: 500 AF, and September: 3,500 AF.

2. The water may be made available under Article 3(c)(1) in other months "at additional cost".

3. Under Article 3(c)(2)(ii) the July August and September maximum annual diversion is 7,500 AF.

Accordingly, in light of the ability to move water assets around in various months, we assume for purposes of this WSA that the majority of the water supplies available for use will be used in the no-cost months as noted in the Settlement Contract. If additional water is available for use that was not used in the "no cost months" then that water will be diverted as available in other months of the year. Water was initially diverted under this contract in June of 2015. **Table 3-3** and **3-4** represent the water supplies available under the Settlement Contract in accordance with the WDCWA's allocation system:

Table 3-3 – WDCWA Normal Year Settlement Contract Allocation (10,000 AF available)

Contracting Entity	Percentage Supply	Annual Allocation
City of Woodland	52.1%	5,210 acre-feet
City of Davis	44.4%	4,440 acre-feet
University of California	3.5%	350 acre-feet

Table 3-4 – WDCWA Dry Year Settlement Contract Allocation (7,500 AF available)

Contracting Entity	Percentage Supply	Annual Allocation
City of Woodland	52.1%	3,907.5 acre-feet
City of Davis	44.4%	3,330 acre-feet
University of California	3.5%	262.5 acre-feet

The City of Davis can allocate its portion of its water supply delivered from WDCWA into a monthly allocation. Thus, **Tables 3-5** and **3-6** represents the City of Davis' monthly Settlement Contract allocation:

Table 3-5 – City of Davis Normal Year Settlement Contract Allocation (4,440 AF available)[23]

Month	Percentage Supply based on Settlement Contract Terms	Monthly Allocation
June	44.4%	1,110 acre-feet
July	44.4%	1,554 acre-feet
August	44.4%	222 acre-feet
September	44.4%	1,554 acre-feet

[23] Although the supplies depicted are designated for the months shown, the City may take the supplies in other months as needed, subject to other fees and conditions. Any change does not alter total available supply.

Table 3-6 – City of Davis Dry Year Settlement Contract Allocation (3,330 AF available)

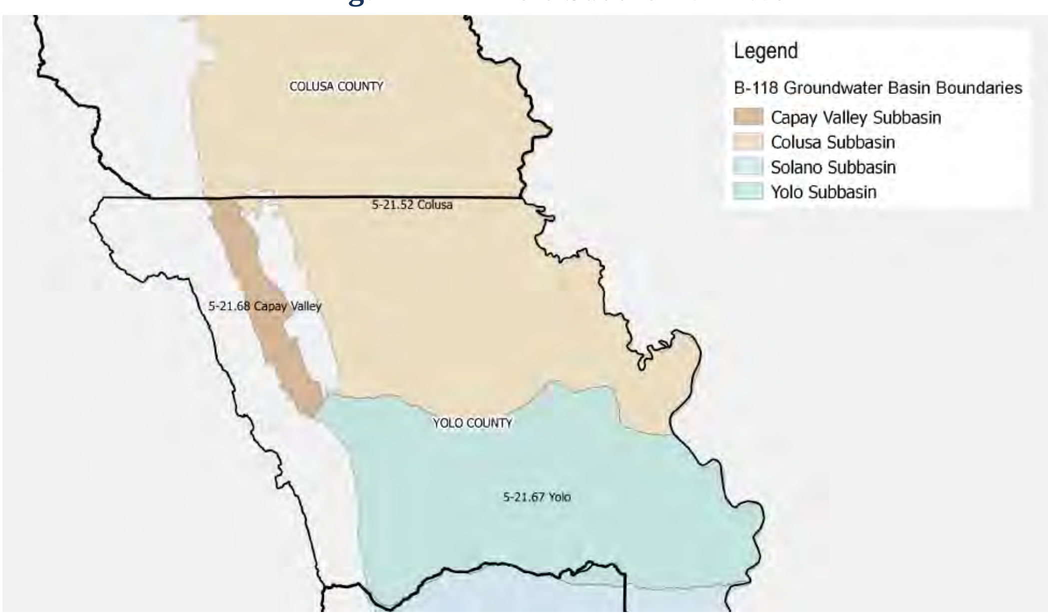
Month	Percentage Supply based on Settlement Contract Terms	Monthly Allocation
June	44.4%	832.5 acre-feet
July	44.4%	1,165.5 acre-feet
August	44.4%	166.5 acre-feet
September	44.4%	1,165.5 acre-feet

3.3.3 Groundwater Supplies and Management[24]

The City of Davis has historically pumped groundwater from the Yolo Subbasin (DWR Bulletin 118 noted 5-21.67) which is part of the broader Sacramento Valley groundwater basin. A map of the Yolo Subbasin is depicted below in **Figure 3-1**. The Subbasin is essentially bounded by the Coast Ranges in the west, Putah Creek in the south, Cache Creek in the north, and the Sacramento River on the east. The groundwater supplies within the Subbasin are shared by numerous agricultural and urban purveyors. The City has greatly reduced its reliance on groundwater to meet its needs since the development of the surface water supplies derived from the Woodland-Davis Clean Water Agency. The development of these surface supplies have allowed the City to use groundwater only in instances where surface water assets are unavailable.

The aquifers in the Davis area are recharged from rainfall, applied irrigation water, streambed recharge, irrigation channel recharge and water moving through the Yolo Bypass. Putah Creek and Cache Creek provide substantial stream channel infiltration.

Figure 3-1 – Yolo Subbasin 5-21.67



[24] The majority of the information about groundwater is derived from the City of Davis' 2015 Urban Water Management Plan at Section 6 on pages 6-1 *et seq*.

The City's groundwater supply is provided by 12 active wells as shown in **Table 3-7**. These wells are located in both the "intermediate aquifer" and the "deep aquifer." The "intermediate aquifer" begins at about 200 feet below the ground surface and the "deep aquifer" begins at about 700 feet below the ground surface. The deep aquifer's water chemistry has lower levels of nitrate and selenium, making it better suited for drinking water supplies. Moreover, the water at this depth is "less hard" than water at the intermediate depth, improving quality for municipal uses. Thus, urban water supplies are better derived from the deep aquifer while supplemental supplies are better derived from the intermediate aquifer.

Table 3-7 – Groundwater Wells

Well No	Well Depth Classification	Capacity (gpm)
11	Intermediate	1,360
15	Intermediate	1,178
23	Intermediate	1,700
24	Intermediate	1,855
26	Intermediate	1,591
27	Intermediate	1,058
28	Deep	591
30	Deep	1,712
31	Deep	2,759
32	Deep	2,339
33	Deep	1,750
34	Deep	2,348
Total Deep Well Capacity		**11,499**
Total Capacity		**20,241**

The Total Capacity of the wells is 20,241 gallons per minute (gpm).[25] In the majority of situations, the City will use only water derived from its deep wells but will keep the wells in the intermediate levels online for additional uses as needed.[26] Together, the water supply available through these wells is sufficient to meet the City's needs but are only used to supplement the surface water supplies derived from WDWCA surface water assets.

The Yolo Subbasin is not an adjudicated groundwater basin. The Yolo Subbasin, however, has been declared a "high priority basin" for purposes of the Sustainable Groundwater Management Act (SGMA). It is not designated as "critically overdrafted" but it is subject to a rigorous water management program. The water management program is governed by the Water Resources Association of Yolo County (WRA), which is a consortium of local water agencies providing a regional forum to coordinate and facilitate water issues in Yolo County. Moreover, the City of Davis developed a groundwater management plan in 2006 that includes basin management objectives for monitoring and evaluating water levels, water quality, and inelastic ground subsidence.[27] Additional groundwater management actions are anticipated with the development of a Groundwater Sustainability Plan as required by the Sustainable Groundwater Management Act. This plan is in its earliest formative stages.

The City's historical pumping numbers is depicted in **Table 3-8**. As shown in that table, with the development of surface water supplies in 2015, the City has reduced its dependence upon groundwater to meet its overall demands. Accordingly, the City will continue to protect and secure its unused groundwater as it implements its conjunctive use projects.

[25] The total capacity of 20,241 gpm equates to 107.4 AF/day if wells were pumped continuously and at full capacity.
[26] Deep well 30 is the first "stand by well" that would be used if surface and groundwater supplies cannot meet demands and wells 23, 24, 26 and 27 are the next stand by wells that would be used. Telephone call with City Staff on July 19, 2017.
[27] A copy of the City of Davis Groundwater Management Plan can be found at http://cityofdavis.org/home/showdocument?id=4653

Table 3-8 – City of Davis Historical Groundwater Use

Year	Groundwater Production (Acre Feet per year)
2000	14,099
2001	15,112
2002	14,551
2003	15,100
2005	14,452
2006	14,333
2007	14,762
2008	14,219
2009	12,835
2010	11,957
2011	11,531
2012	12,218
2013	12,338
2014	10,901
2015	9,211
2016	3,704

The pumping data noted in **Table 3-8** shows the significant decrease in groundwater usage within the City that has accompanied the acquisition and use of surface water supplies from WDCWA in 2016. This conjunctive use effort will allow the City to better meet its long-term needs as well as preserve its groundwater assets for additional uses, as needed, in the future. Nevertheless, the utility of wells denoted in **Table 3-7** as well as the groundwater analysis in the City's 2015 UWMP, demonstrates that there is sufficient groundwater to meet the City's existing needs.[28]

3.4 Water Supply Summary

Tables 3-9 and **3-10** summarize the City of Davis' reasonably available water supplies in normal and dry conditions. These supplies may be manipulated as the water assets are needed to meet the City's demands. In other words, as shown in **Section 4**, the City only utilizes water supplies from its water asset portfolio that it needs to meet its demands. This manipulation may include using more surface water assets under Permit 20281 and its CVP Contract in certain hydrological and regulatory conditions rather than using groundwater. The Permit water supply is equally spread out during available months for use but may be redistributed to other months as needed. The groundwater numbers depicted in the tables indicate a maximum volume available assuming full utilization of the City's pumping capacity.

[28] City of Davis 2015 Urban Water Management Plan at Section 6.

Table 3-9 – Normal Year Water Supply Availability[29]

Month	CVP Settlement Contract Supply	Permit 20281	Groundwater
January		2,200	3,329
February		2,200	3,007
March		2,200	3,329
April		2,200	3,222
May		2,200	3,329
June		2,200	3,222
July	1,554		3,329
August	1,332		3,329
September	1,554		3,222
October		2,200	3,329
November		2,200	3,222
December		2,200	3,329
Total	**4,440**	**19,800**	**39,198**

Table 3-10 – Dry Year Water Supply Availability

Month	CVP Settlement Contract Supply	Permit 20281	Groundwater
January		2,200	3,329
February		2,200	3,007
March		2,200	3,329
April		2,200	3,222
May			3,329
June	832.5		3,222
July	1,165.5		3,329
August	166.5		3,329
September	1,165.5		3,222
October			3,329
November		2,200	3,222
December		2,200	3,329
Total	**3,330**	**13,200**	**39,198**

[29] CVP supplies depicted here show a shift in acquisition from June to August so as to maximize the use of all available surface water supplies even though there may be additional expenses in changing the month of use.

SECTION 4 – SUFFICIENCY ANALYSIS

4.1 INTRODUCTION

The analysis detailed in this section provides a basis for determining whether sufficient water supplies exist to meet the estimated water demand of the Proposed Project.[30] The WSA must provide a reasoned analysis of the likely availability of the identified supplies to serve the Proposed Project, while considering the demands of existing and other future planned-for demands on those supplies.[31]

This section includes:

- The demand and supply conclusions for the Proposed Project's area as contemplated in the City's 2015 Urban Water Management Plan

- Analysis of sufficiency of the City's conjunctive use program, including both groundwater and surface water, to serve the Proposed Project, considering variations in supply and demand characteristics under normal, single-dry and multi-dry hydrologic conditions.

- Alternatives analysis of sufficiency, when considering non-potable water supply sources, that will be used to meet a portion of the demands of the Proposed Project.

4.2 DEMAND AND SUPPLY CONCLUSIONS IN THE 2015 UWMP

The City of Davis' 2015 UWMP included a number of "Proposed Developments" in analyzing supply reliability for the City. One of the analyzed developments was the "Davis Innovation Center." The Davis Innovation Center was the previous project planned for the site of the new Proposed Project. The UWMP accounted for 619 acre-feet for the entire Innovation Center's 207 acres which is approximately 2.99 acre-feet per acre. Thus, the Proposed Project's area, a mere 75 acres of the original 207 acres, is budgeted in the UWMP for approximately 221 acre-feet. This total budgeted volume of water is greater than the 211 acre-feet the Proposed Project is expected to use. Once the

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[30] CWC § 10910 (c)(4) provides that "If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

[31] *Vineyard Area Citizens for Responsible Growth, Inc*. v. *City of Rancho Cordova* (2007) 40 Cal.4th 412, 430-32.

proposed raw water supply is accounted for, the City's water system will be using much less than what the project was budgeted for in the 2015 UWMP.

In addition, the City's 2015 UWMP did not account for surface water supplies in conducting its analysis. Although the development of surface water supplies is mentioned in the UWMP, the UWMP did not account for those supplies in assessing supply availability. Thus, the project's 211 acre-feet of total usage that was contemplated in the Davis Innovation Center in the existing UWMP, had supplies that were wholly derived from groundwater supply sources. Since that time, the City has developed surface water sources through the WDCWA.

4.3 PROPOSED PROJECT'S WATER SUFFICIENCY ANALYSIS

The sufficiency analysis integrates the Proposed Project's water demands detailed in **Section 2** with the water supplies characterized in **Section 3.** The assessment incorporates the City's existing and planned future uses as discussed in the 2015 UWMP. The maximum annual water supply results are presented in **Table 4-1** beginning with "current" conditions (recognized as 2016, the first year with surface water contract use)[32] and continuing with 5-year increments from 2015 through 2040. While the analysis at various intervals before build-out is important, the most critical projection for the sufficiency analysis occurs beyond 2030 when build-out is projected in the 2015 UWMP. This analysis assumes that the Proposed Project is fully constructed in line with the Specific Plan, well before the City's build-out.

Table 4-1 – Maximum Annual Water Supply Availability

Surface Water and Groundwater	Estimated Supply (af/yr)					
	Current	2020	2025	2030	2035	2040
Normal Year						
Surface Water	24,420	24,420	24,420	24,420	24,420	24,420
Groundwater	39,198	39,198	39,198	39,198	39,198	39,198
Normal Year Total	63,618	63,618	63,618	63,618	63,618	63,618
Dry Year						
Surface Water	16,530	16,530	16,530	16,530	16,530	16,530
Groundwater	39,198	39,198	39,198	39,198	39,198	39,198
Dry Year Total	55,728	55,728	55,728	55,728	55,728	55,728

As noted in **Section 3**, the City will only utilize the water supplies that are needed to meet its annual demands. Thus, a depiction of the total available supplies in **Table 4-1** is

[32] This period was chosen to represent the "current" condition because of the surface supply addition. It is recognized that the drought impacts reduced water use over the current normal use thus the current groundwater portion of supplies was conservatively approximated at 4,000 acre-feet, slightly higher than projected.

misleading in terms of how water will be used. First, as noted in **Section 3**, although the City has the physical capacity to pump significant volumes of groundwater, this amount of groundwater will likely never be used – even if the City were to utilize groundwater to meet its entire build-out demands. Thus, characterizing the pumping capacity as the groundwater supply overestimates actual groundwater utility even though it is technically possible to produce significant volumes of groundwater.

Second, with the development of the WDCWA's surface water supplies, the City anticipates using as much surface water during a water year as can be made available through the new project. Importantly, the City anticipates developing active conjunctive use projects with its surface water supplies so that more surface water can be stored and less naturally occurring groundwater will be used. All of these efforts to develop additional water supplies are in the planning stages with the WDCWA. For purposes of this WSA sufficiency analysis, however, we assume that the Proposed Project and future planned projects will only utilize the water assets that are currently available to the City.

The normal year and dry year sufficiency analyses are derived from the water rights and contractual limitations that the WDCWA has established. The key provisions of these water assets, as noted in **Section 3**, are as follows:

- Permit 20281: In normal years, as much as 19,800 acre-feet could be available depending on whether Term 20 is instituted and in what months the water supply is curtailed. In dry years, we assume that the direct diversion water supplies under this Permit will be unavailable from May through October. This reduction in diversion months likely necessitates that the City reduce its overall dependence on the Permit supply to 13,200 acre-feet.

- CVP Settlement Contract: In normal years, 10,000 acre-feet is available to the WDCWA of which 4,400 acre-feet is available to the City of Davis. In dry years, the total available to WDCWA is reduced to 7,500 acre-feet of which 3,330 acre-feet is available to the City of Davis.

Table 4-2 shows the anticipated water demands for the City as it approaches buildout. These water demands are derived from the City's 2015 UWMP as well as the anticipated Proposed Project demands depicted in Section 2.

Table 4-2 – Current Normal Year Annual and Planned Future Annual Demands

City of Davis	Estimated Water Demand (af/yr)				
	2020	2025	2030	2035	2040
City of Davis Demand	14,227	14,416	13,992	13,992	13,992
Proposed Project	0	247	234	234	234
Total Demand	14,227	14,663	14,226	14,226	14,226

Conservative modifications to the estimated demands of the Proposed Project are made to reflect conditions expected during single-dry and multiple dry year events as follows:

> *Single dry year*: Landscape irrigation demands will increase to reflect the generalized earlier start of the landscape irrigation season due to limited rainfall in the single driest year. Since this increase only applies to the outdoor portion of a customer's demand, an adjustment factor of 5 percent is applied to the total normal-year water demand values to conservatively reflect the expected increase in demand for water.
>
> *Multiple dry years*: During multiple dry years, demands are also expected to increase during the first in a series of dry years – as discussed above for the single dry year condition. However, during the second and third consecutive dry years, demands also are expected to reflect water shortage contingency plans implemented by the municipal water purveyor.[33] During the second year, the water purveyor is assumed to request a reduction target of 10 percent. The resulting demand, however, only reflects a 5 percent reduction to accommodate conservatively low participation by customers. During the third year, the purveyor is expected to set a conservation target of 20 percent. For this analysis, the demands in the third year are only reduced by 10 percent to again reflect a conservatively low participation rate by the customers. Thus, during multiple dry conditions, demands both increase due to reduced effective precipitation, but also decrease (from the increased demand) to reflect implementation of short-term conservation measures.

Table 4-3 shows the anticipated dry year water demands for the City as it approaches buildout. These water demands are derived from the City's 2015 UWMP as well as the anticipated Proposed Project demands depicted in Section 2 with the dry year impacts as described above.

Table 4-3 – Current Annual Demands and Planned Future Annual Demands for Single Dry and Multi-Dry Years

City of Davis		Estimated Water Demand (af/yr)				
		2020	2025	2030	2035	2040
Single Dry/ Multi-Dry Year 1	City of Davis Demand	14,938	15,137	14,692	14,692	14,692
	Proposed Project	0	259	246	246	246
	Total Demand	14,938	15,396	14,937	14,937	14,937
Multi-Dry Year 2	City of Davis Demand	12,804	12,974	12,593	12,593	12,593
	Proposed Project	0	222	211	211	211
	Total Demand	12,804	13,197	12,803	12,803	12,803
Multi-Dry Year 3	City of Davis Demand	11,382	11,533	11,194	11,194	11,194
	Proposed Project	0	198	187	187	187
	Total Demand	11,382	11,730	11,381	11,381	11,381

[33] Though the municipal water purveyor does not exist yet for the Proposed Project, this WSA assumes that whatever purveyor is established will develop a water shortage contingency plan to address drought conditions.

4.4.1 Existing and Planned Future Uses

As required by statute, the analysis of sufficiency needs to consider existing and planned future uses that would be served in addition to the Proposed Project. Since there are other users of the same groundwater basin, the identification of existing and planned future uses expands beyond the boundaries of the City.

4.4.1.1 Future Groundwater Demand Growth Outside the City

The City of Davis does not expect any significant growth in groundwater use in the areas adjacent to the City. This is due to the conjunctive use of Yolo County Flood Control and Water Conservation District delivered surface water in the area and the lack of undeveloped farmland in the area. Further urban growth adjacent to and outside of the City is not expected without the land first being annexed into the City.

4.4.1.2 Future Groundwater Demand Growth by the City

Future groundwater uses within the areas of the SOI are similar to historic and existing uses of groundwater for irrigated agricultural, and therefore reasonably certain to exist. This agricultural demand is not part of the City though it does share the same aquifer. With the City's recent connection to the WDCWA Treatment Plant, the City has shifted significantly to surface water and will only pump groundwater at historic rates in emergency or severe drought conditions. Due to increasing groundwater quality regulations, it is not likely that the City will ever move back to full groundwater dependence.

Therefore, it is safe to conclude that the increment of additional groundwater use for the City's planned growth would also still maintain current stable conditions as this amount will be significantly lower than historic pumping by the City.

4.5 WATER SUPPLY SUFFICIENCY ANALYSIS

The following section details the sufficiency of the City of Davis' water supplies as compared with total demands for normal, single-dry, and multi-dry year periods. **Table 4-4** provides the sufficiency analysis conclusions. In short, the City has both surplus surface water and groundwater during all months of usage during normal, single dry, and multiple-dry years. As noted in **Section 3**, the anticipated source used to meet monthly demands may vary based upon the City's desire to conjunctively manage its water assets to maximize their utility.

Table 4-4 – Water Demand and Supply Comparisons during Normal, Single-Dry, and Multiple-Dry Years[34]

Year	Projected Baseline Water Demand (AF)			Hydrologic Year Type	Water Supplies (Acre-feet)				
	City of Davis	West Davis Active Adult	Total		Permit	CVP	Surface Water Used	Groundwater Supply	Groundwater Used
2020	14,227	0	14,227	Normal	19,980	4,440	9,763	39,198	4,464
				Single Dry	13,200	3,330	8,761	39,198	6,177
				Multiple Dry Yr-3	13,200	3,330	7,788	39,198	3,594
2025	14,416	247	14,663	Normal	19,980	4,440	9,851	39,198	4,812
				Single Dry	13,200	3,330	8,824	39,198	6,572
				Multiple Dry Yr-3	13,200	3,330	7,908	39,198	3,823
2030	13,992	234	14,226	Normal	19,980	4,440	9,794	39,198	4,432
				Single Dry	13,200	3,330	8,761	39,198	6,177
				Multiple Dry Yr-3	13,200	3,330	7,788	39,198	3,593
2035	13,992	234	14,226	Normal	19,980	4,440	9,794	39,198	4,432
				Single Dry	13,200	3,330	8,761	39,198	6,177
				Multiple Dry Yr-3	13,200	3,330	7,788	39,198	3,593
2040	13,992	234	14,226	Normal	19,980	4,440	9,794	39,198	4,432
				Single Dry	13,200	3,330	8,761	39,198	6,177
				Multiple Dry Yr-3	13,200	3,330	7,788	39,198	3,593

Table 4-5 – Water Supply Sufficiency at Build-out

Month	Demand			Supply			Surplus		
	Normal	Single Dry	Multi-Dry	Normal	Single Dry	Multi-Dry	Normal	Single Dry	Multi-Dry
Jan	619	650	620	5,529	5,529	5,529	4,910	4,879	4,909
Feb	654	687	582	5,207	5,207	5,207	4,553	4,520	4,625
Mar	970	1,018	834	5,529	5,529	5,529	4,559	4,511	4,695
Apr	1,073	1,127	908	5,422	5,422	5,422	4,349	4,295	4,514
May	1,485	1,559	1,091	5,529	3,329	3,329	4,044	1,770	2,238
Jun	1,649	1,731	1,195	5,422	4,055	4,055	3,773	2,324	2,859
Jul	1,777	1,865	1,298	4,883	4,495	4,495	3,106	2,629	3,197
Aug	1,693	1,777	1,304	4,659	3,496	3,496	2,966	1,718	2,192
Sep	1,420	1,491	1,245	4,776	4,388	4,388	3,356	2,897	3,143
Oct	1,317	1,383	1,093	5,529	3,329	3,329	4,212	1,946	2,236
Nov	906	951	659	5,422	5,422	5,422	4,516	4,471	4,763
Dec	665	698	551	5,529	5,529	5,529	4,864	4,831	4,978
	14,226	**14,937**	**11,381**	**63,436**	**55,728**	**55,728**	**49,210**	**40,791**	**44,347**

4.6 WATER SYSTEM CAPACITY

Based on the comparison of contracted rights and projected citywide demands there is ample water supply for the City to reach its projected build-out. Rights only entitle the City to the water, infrastructure is needed to actually deliver supplies to the Proposed Project. Primary infrastructure includes treatment, pumping, and piping.

4.6.1 Existing Treatment Plant Capacity

The new WDCWA Treatment Plant was built to supply water to Woodland, Davis, and UC Davis. All designs are recent and capacities were designed to serve the Cities and UC as they currently exist. As the Proposed Project is on land that was accounted for in

[34] Values in this table are both derived in Section 3 and pulled from the 2015 UWMP source material.

the 2015 UWMP, it is safe to assume that adequate surface water capacity exists to serve the Proposed Project.

4.6.2 Groundwater System Capacity

As discussed in the groundwater section, the City has an ample supply of water to accommodate future development. With the transition to surface water, there is an abundance of well capacity. This system can provide more water for use in curtailment periods as well as peak demands that will likely ever be needed. The City will be optimizing it's groundwater system to minimize maintenance costs, maintain appropriate backup supplies, and maintaining water quality in the system.

4.6.3 System Infrastructure Capacity

The Proposed Project will finance all needed infrastructure upgrades necessary to serve on site metered demands and meet fireflow requirements. The City of Davis operates an extensive Innovyze based water model. Further, the City is currently installing AMI which will allow for improved system analysis. The Proposed Project will rely on information from the City's system model to ensure sufficient capacity.

4.7 Non-Potable Source Scenario

Located on the southwest portion of the Proposed Project is an existing agricultural supply well that was previously used for irrigation on the property. It is proposed to convert this agricultural supply well to an irrigation well to supply non-potable supplies for landscape irrigation needs on site. This is proposed to offset the high costs of treated water with the lower cost of simply pumping underlying groundwater.

The well and landscape water system would be owned and operated by a homeowners association or other type of community governance. Purple pipe would be used to ensure no accidental cross connection. Well water in the area is generally of potable quality so body contact does not carry the same risk as recycled water however no drinking level monitoring will be conducted. The total impact to the supply availability may not differ even if this groundwater well is used because the City already accounts for the groundwater usage in its estimation of available supply. Development of a new well does not necessarily equate to an additional supply but simply may offset one source of supply for another source of supply from the same groundwater source.

4.7.1 Potential Impacts to Other Neighboring Groundwater Users

Located north of the project is a neighborhood which is served by groundwater and has expressed concern over impacts to their water rights by use of well water to serve the Proposed Project. There are no likely risks or impacts to the existing users based on a number of factors primarily being the City's shift to surface water supplies. Additionally the rights of these water users are juxtaposed against the appropriation of the Proposed Project so effort and money would not be spent on the non-potable system without secure knowledge that water would be available.

As a reference point, if the parcel had historically been irrigated as part of an agricultural production operation, groundwater use per acre would have been much higher than the proposed use. As defined in **Table 2-3** the proposed maximum outdoor demands are only 110 acre-feet per year. Typical agricultural demands are between 3 and 5 acre-feet per year per acre so the 75 acres of the Proposed Project would have been using at least double what the Proposed Project is expected to.

In 2016 the WDCWA Treatment Plant came online and began to serve surface water to the City. With the treatment plant in operation, well pumping has declined by over 10 MGD. While most of the large City production wells are deeper, some are in the same zone as residential wells in the area north of the City. With the City pumping seriously curtailed it is anticipated that groundwater levels will rebound in and around the City. This reduction in pumping by thousands of acre-feet is much more likely to benefit the groundwater users to the north than a Proposed Projects pumping of just more than 100 acre-feet.

Appendix A

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To: Brian Foster

From: Tully & Young, Inc.

Date: October 20, 2017

Subject: West Davis Active Adult Community Land Use Changes

1.0 Introduction

In August of 2017, a Water Supply Assessment (WSA) was prepared for the West Davis Active Adult Community (WDAAC). Since then, the project has been modified to account for minor land use changes and a revision to the planned scope of the commercial portions of the project. The purposes of this memorandum are to discuss the land use changes since Tully & Young, Inc. issued the WSA and determine the resulting impacts to the water demands of the West Davis Active Adult Community (WDAAC). In short, we conclude that although the land use changes increase the project's water demands, the conclusion of sufficiency remains.

2.0 Water Demand as presented in the Water Supply Assessment

The WSA derived sufficiency from two separate analyses. First, the land use and water demands were analyzed and presented in **Table 2-1** and **2-2** of the August 2017 WSA. A map of the land uses proposed in the August 2017 WSA is presented in **Figure 2-1**. Second, the UWMP water demand allocation was derived with a per acre methodology for the project site. The result of this analysis as compared to the WDAAC project was a small surplus in water supply based on the projected water demands of the proposed project as presented in the WSA. **Table 2-1**, **2-2** and **Figure 2-1** are the same as those used in the 2017 WSA and shown below.

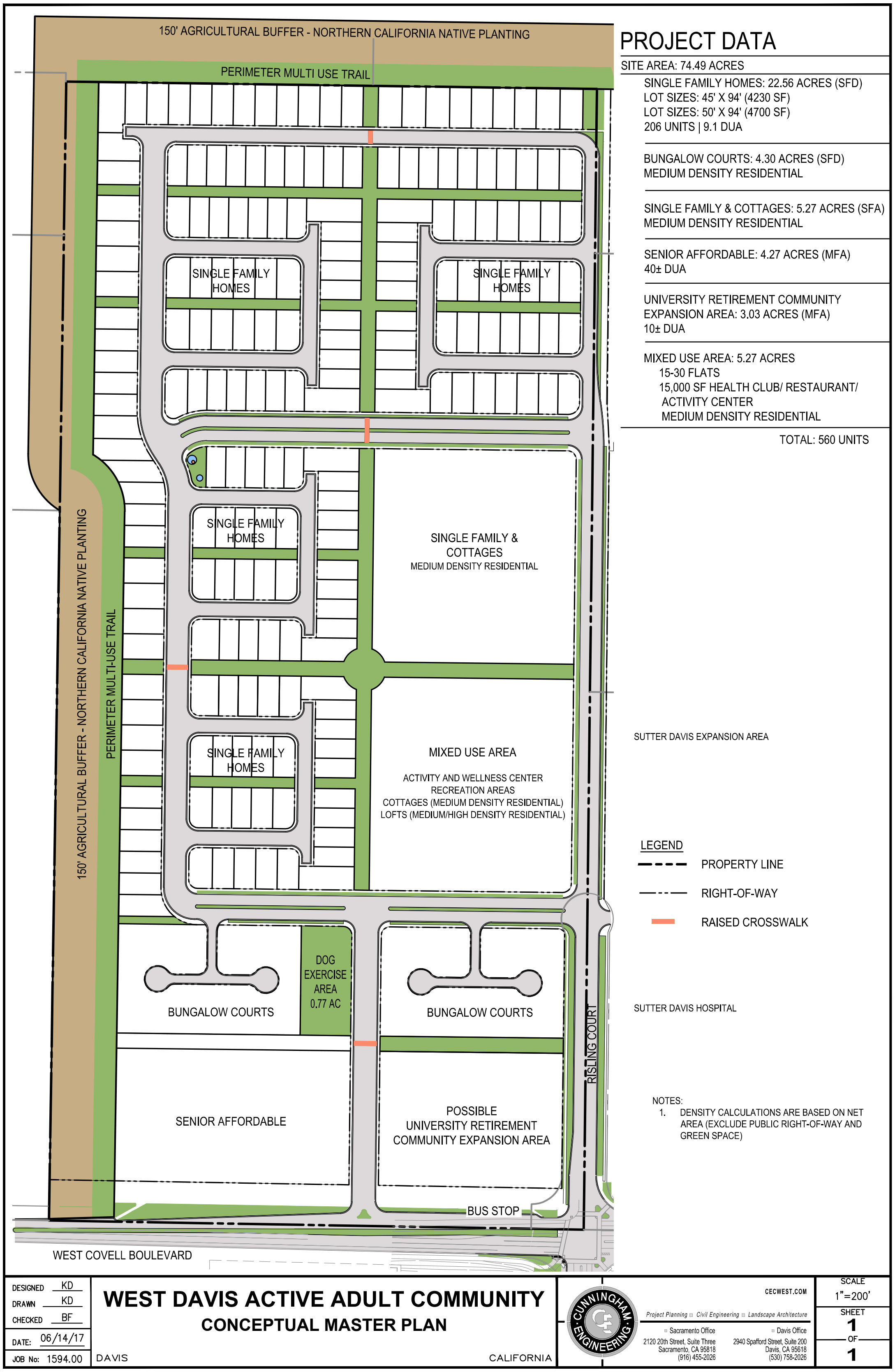
Table 2-1 – WSA Land Use

Land Use	Gross Acreage	Details
Homes, Bungalows, lots	26.78	238 Dwelling Units
Homes and Cottages	5.27	92 Dwelling Units
Continuing Care Retirement Community	3.03	30 Dwelling Units
Senior Affordable Apartments	4.36	150 Dwelling Units
Mixed Use Area	5.27	50 Dwelling Units
Dog Park	0.76	
Linear Park	4.69	
Ag Transition Area	7.19	
Right of Ways	17.59	
Total	**75**	**560 dwelling units**

Table 2-2 – Water Demands in the WSA

	Unit Count or Acreage						Demand Factor	Demand (af/yr)					
Category	Current	2020	2025	2030	2035	2040	(af/du or af/ac)	Current	2020	2025	2030	2035	2040
Residential													
Homes, Bungalows, and Builder Lots	0	0	238	238	238	238	0.19 (indoor)	0	0	45	45	45	45
							0.21 (outdoor)	0	0	49	49	49	49
Cottages	0	0.0	92	92	92	92	0.19 (indoor)	0	0	17	17	17	17
							0.13 (outdoor)	0	0	12	12	12	12
Mixed Use	0	0.0	50	50	50	50	0.15 (indoor)	0	0	8	8	8	8
							0.05 (outdoor)	0	0	3	3	3	3
Senior Affodable Apartments	0	0.0	150	150	150	150	0.15 (indoor)	0	0	23	23	23	23
							0.02 (outdoor)	0	0	3	3	3	3
University Retirement Expansion	0	0.0	30	30	30	30	0.15 (indoor)	0	0	5	5	5	5
							0.19 (outdoor)	0	0	6	6	6	6
DU Total	**0**	**0**	**560**	**560**	**560**	**560**							
							Indoor Subtotal	0	0.0	97	97	97	97
							Outdoor Subtotal	0	0.0	73	73	73	73
Non-Residential													
Mixed Use	0	0	5.3	5.3	5.3	5.3	2.80	0	0	15	15	15	15
							Indoor Subtotal	0	0.0	14.8	15	15	15
Public													
Dog Park	0	0	1	1	1	1	4.01	0	0	3	3	3	3
Linear Park	0	0	2	5	5	5	4.01	0	0	9	19	19	19
Agricultural Transition Area	0	0	7	0	0	0	2.81	0	0	20	0	0	0
Right of Way Landscaping	0	0	18	18	18	18	0.19	0	0	3	3	3	3
							Outdoor Subtotal	0	0.0	36.0	25	25	25
Other Miscellaneous Uses													
Construction Water	0	0	1	0	0	0	1	0	0	1	0	0	0
							Outdoor Subtotal	0	0	1	0	0	0
							Indoor Total	0	0	112	112	112	112
							Outdoor Total	0	0	110	99	99	99
							Total	0	0	222	211	211	211
Outdoor Non-revenue water							11%	0	0	12	11	11	11
Indoor Non-revenue water							11%	0	0	12	12	12	12
							Total Indoor	0	0	124	124	124	124
							Total Outdoor	0	0	123	110	110	110
							Total Proposed Project Demand	**0**	**0**	**247**	**234**	**234**	**234**

Figure 2-1 – WSA Land Use Map



The WSA concluded that the pre-loss demands totaled 211 acre-feet.[1] Specifically, the WSA stated:

> *The City of Davis' 2015 UWMP included a number of "Proposed Developments" in analyzing supply reliability for the City. One of the analyzed developments was the "Davis Innovation Center." The Davis Innovation Center was the previous project planned for the site of the new Proposed Project. The UWMP accounted for 619 acre-feet for the entire Innovation Center's 207 acres which is approximately 2.99 acre-feet per acre. Thus, the Proposed Project's area, a mere 75 acres of the original 207 acres, is budgeted in the UWMP for approximately 221 acre-feet.*[2]

3.0 Revised Land Use

Since the completion of the WSA draft, the land use plan has changed. The primary change was related to the replacement of the large multi-use facility with 50 mixed use apartments with a small community center and a 109 condos. Additionally there were some increases in the amount of expected irrigated landscaping as the linear park and agricultural transition area was better defined. It should be noted that the total number of housing units has not changed but has shifted. Specifically, the number of smaller homes and cottages were decreased, from 92 to 33, and the mixed use area apartments were replaced with a greater number of condos, from 50 to 109. **Table 2-1A** presents the revised land use plan.

Table 2-1A – Revised Land Use

Land Use	Gross Acreage	Details
Homes, Bungalows, lots	26.70	238 Dwelling Units
Cottages	3.05	33 Dwelling Units
Continuing Care Retirement Community	3.03	30 Dwelling Units
Senior Affordable Apartments	4.26	150 Dwelling Units
Condos/Unassigned/Wellness Center	6.16	109 Dwelling Units
Dog Park	1.10	
Linear Park	8.16	
Ag Transition Area	4.24	
Right of Ways	17.79	
Total	**74**	**560 dwelling units**

Table 2-2A presents the revised water demand projection.

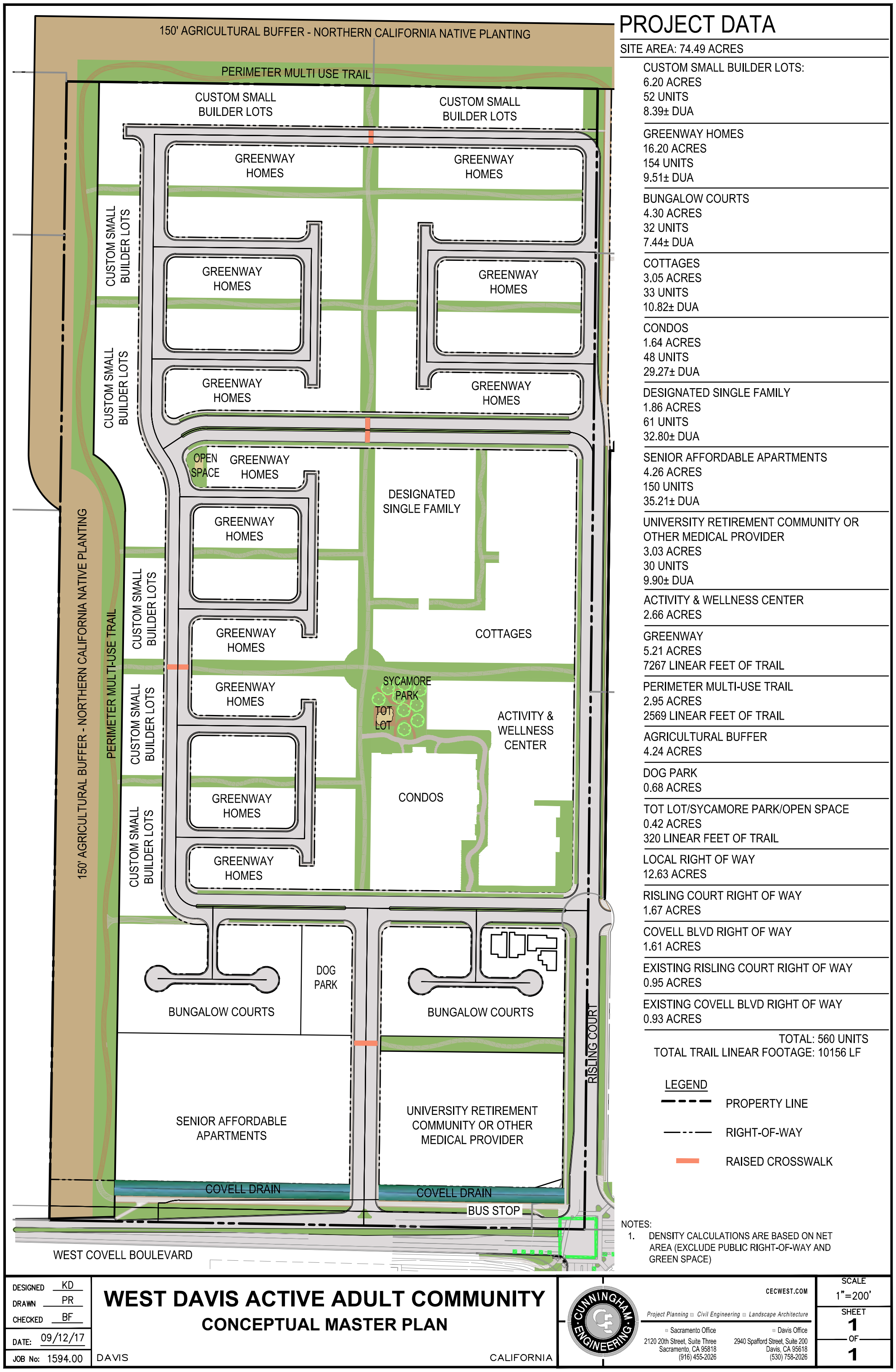
[1] Note that the loss occurring will be on the City system side and very little will be occurring within the project boundary.
[2] Text from page 4-1 of the August 2017 Water Supply Assessment for the West Davis Active Adult Community project.

Table 2-2A – Revised Water Demands

Category	Unit Count or Acreage						Demand Factor	Demand (af/yr)					
	Current	2020	2025	2030	2035	2040	(af/du or af/ac)	Current	2020	2025	2030	2035	2040
Residential													
Homes, Bungalows, and Builder Lots	0	0	238	238	238	238	0.19 (indoor)	0	0	45	45	45	45
							0.23 (outdoor)	0	0	54	54	54	54
Cottages	0	0.0	33	33	33	33	0.19 (indoor)	0	0	6	6	6	6
							0.22 (outdoor)	0	0	7	7	7	7
Mixed Use	0	0.0	109	109	109	109	0.15 (indoor)	0	0	16	16	16	16
							0.01 (outdoor)	0	0	1	1	1	1
Senior Affodable Apartments	0	0.0	150	150	150	150	0.15 (indoor)	0	0	23	23	23	23
							0.03 (outdoor)	0	0	5	5	5	5
University Retirement Expansion	0	0.0	30	30	30	30	0.15 (indoor)	0	0	5	5	5	5
							0.19 (outdoor)	0	0	6	6	6	6
DU Total	**0**	**0**	**560**	**560**	**560**	**560**							
							Indoor Subtotal	0	0.0	95	95	95	95
							Outdoor Subtotal	0	0.0	73	73	73	73
Non-Residential													
Mixed Use	0	0	2.7	2.7	2.7	2.7	2.80	0	0	7	7	7	7
							Indoor Subtotal	0	0.0	7.4	7	7	7
Public													
Dog Park	0	0	1	1	1	1	4.01	0	0	4	4	4	4
Linear Park	0	0	4	8	8	8	4.01	0	0	16	33	33	33
Agricultural Transition Area	0	0	4	0	0	0	2.81	0	0	12	0	0	0
Right of Way Landscaping	0	0	18	18	18	18	0.19	0	0	3	3	3	3
							Outdoor Subtotal	0	0.0	36.1	41	41	41
Other Miscellaneous Uses													
Construction Water	0	0	1	0	0	0	1	0	0	1	0	0	0
							Outdoor Subtotal	0	0	1	0	0	0
							Indoor Total	0	0	102	102	102	102
							Outdoor Total	0	0	110	114	114	114
							Total	0	0	213	216	216	216
							Outdoor Non-revenue water 11%	0	0	12	13	13	13
							Indoor Non-revenue water 11%	0	0	11	11	11	11
							Total Indoor	0	0	114	114	114	114
							Total Outdoor	0	0	123	127	127	127
							Total Proposed Project Demand	**0**	**0**	**236**	**240**	**240**	**240**

The changes between **Table 2-2** and **Table 2-2A** include the unit counts for the Cottages and Mixed Use in the Residential category. In the Non-Residential category, the Mixed Use acreage was adjusted to reflect the land use change. For the Public category, acreages for the Dog Park, Linear Park, and Agricultural Transition Area were all adjusted.

Figure 2-1A – Revised Land Use Map



4.0 Conclusion of Sufficiency

The net impacts of the land use changes increase the net water demands from 211 acre-feet to 216 acre-feet before loss. With loss included, total demands from the demands analyzed in the August 2017 WSA increase by 6 acre-feet. The addition of this demand still results in a project demand below the UWMP allocation. Thus, despite the demand changes, there is sufficient water supply to serve the Proposed Project and the conclusion of sufficiency stated in the WSA is still valid after considering the impacts of land use changes.