8 MIXED-USE ALTERNATIVE ANALYSIS

8.1 INTRODUCTION

The Mixed-Use Alternative chapter of the EIR includes a detailed description of the Mixed-Use Alternative, and subsequently, an equal-weight analysis of the potential environmental impacts that may result from implementation of the Mixed-Use Alternative.

8.2 MIXED-USE ALTERNATIVE DESCRIPTION

The following project description section provides an equivalent level of detail as the description of the proposed MRIC project contained in Chapter 3 of this EIR. Similar to the project, this alternative includes both the MRIC and the Mace Triangle components of the project. As a general summary, on the MRIC site the Mixed-Use Alternative includes the same non-residential square footage and land uses as the proposed project, but also includes up to 850 residential units, intended to support the innovation center's employee-generated demand for housing. On the Mace Triangle site, this alternative assumes the same development assumptions, and mitigation measures, identified for the Mace Triangle in the Project Description chapter and technical sections of this EIR.[1]

The MRIC Preliminary Planned Development (PPD), Site Plan, and Architectural Review entitlements are combined in the following section due to their interrelation. According to Davis Municipal Code Section 40.22.060, the PPD shall contain basic information, such as land uses proposed for the zone, location of parks and trails, proposed street layout, and a preliminary study of facilities required such as drainage, sewage, and public utilities. The Site Plan and Architectural Review consists of the review of the Planned Development Design Guidelines, which, in general, provide design guidance on building orientation; design of landscaped areas; basic palettes for colors, materials, and landscaping; and lighting design/performance controls. The following section describes the PPD proposed for the MRIC site under the Mixed-Use Alternative.

Proposed Land Uses

In comparison to the proposed project, this Alternative includes up to 850 dwelling units. The Mixed-Use Alternative is envisioned as a live/work environment that would allow some of the innovation center employees to live within the project site in proximity to where the employees

[1] The City property would be designated Public-Semi-Public to allow for the continuation of existing uses. New uses on the City property are not proposed. The Ikedas parcel and other agricultural parcel would be designated General Commercial to allow for the continuation or expansion of the existing agricultural retail (Ikedas market) and/or for the development of up to 71,056 sf of new commercial uses.

would work. The Mixed-Use Alternative would include the same innovation center uses as the proposed project (i.e., up to approximately 2,654,000 square feet [sf] of innovation center uses of which up to 260,000 square feet [10 percent of the site] may be developed with supportive commercial uses). The alternative also incorporates up to 850 workforce housing units on-site. The Mixed-Use Alternative PPD has identified alternative land uses within an urban framework designed to:

- Deliver office and corporate spaces that are highly flexible and technologically advanced. The spaces would include collaborative spaces, flex spaces, as well as dry and wet labs.
- Develop space for research/incubator start-ups that may be small, independent entrepreneurs or subsidiaries of larger, more established companies in Davis, Sacramento, and/or the Bay Area.
- Include programs that are scientific, technical and research-focused. The programs are anticipated to be University of California, Davis (UC Davis) spin-off research labs and internships.
- Be suitable for research programs for green technology and sustainable agricultural research.
- Integrate spaces for prototyping and manufacturing with research facilities to allow for greater ease of advanced product development.
- Permit manufacturing facilities on-site to allow for the establishment of "research-to-market" companies.
- Include a variety of workforce housing units designed to meet the needs of the innovation center employees, further spur collaboration and technology start-ups, create a hive of activity with people living and working on-site, and reduce project-related vehicular trips.

The 260,000 sf of supportive commercial uses is anticipated to include up to 160,000 sf of hotel/conference center use and up to 100,000 sf of ancillary retail located throughout the Mixed-Use Alternative Site (see Figure 8-1 [MRIC only] and Table 8-1). The hotel/conference center would be located in the southwestern portion on the Mixed-Use Alternative Site, near the intersection of Mace Boulevard and 2nd Street. Most of the supportive retail would be on the ground floor of the proposed research/office/research and development (R&D) or multi-family residential surrounding the Oval park and the transit plaza area, resulting in vertically integrated mixed-use buildings. However, because the amount of business uses on-site is capped at 2,654,000 sf, the proposed square footage of ancillary retail and research/office/R&D are inversely proportional. For example, if there is less demand for ancillary retail than the allotted 100,000 sf and only 50,000 sf of retail is developed, the square footage of research/office/R&D could increase by 50,000 sf to 1,560,000 sf, thereby filling the available space. The ancillary retail space within the innovation park is intended to provide employees, residents, and visitors with basic convenience shopping, accommodations, fitness, and dining opportunities within walking distance of the innovation center's businesses and workforce housing.

Figure 8-1
Mixed-Use Alternative – Site Plan

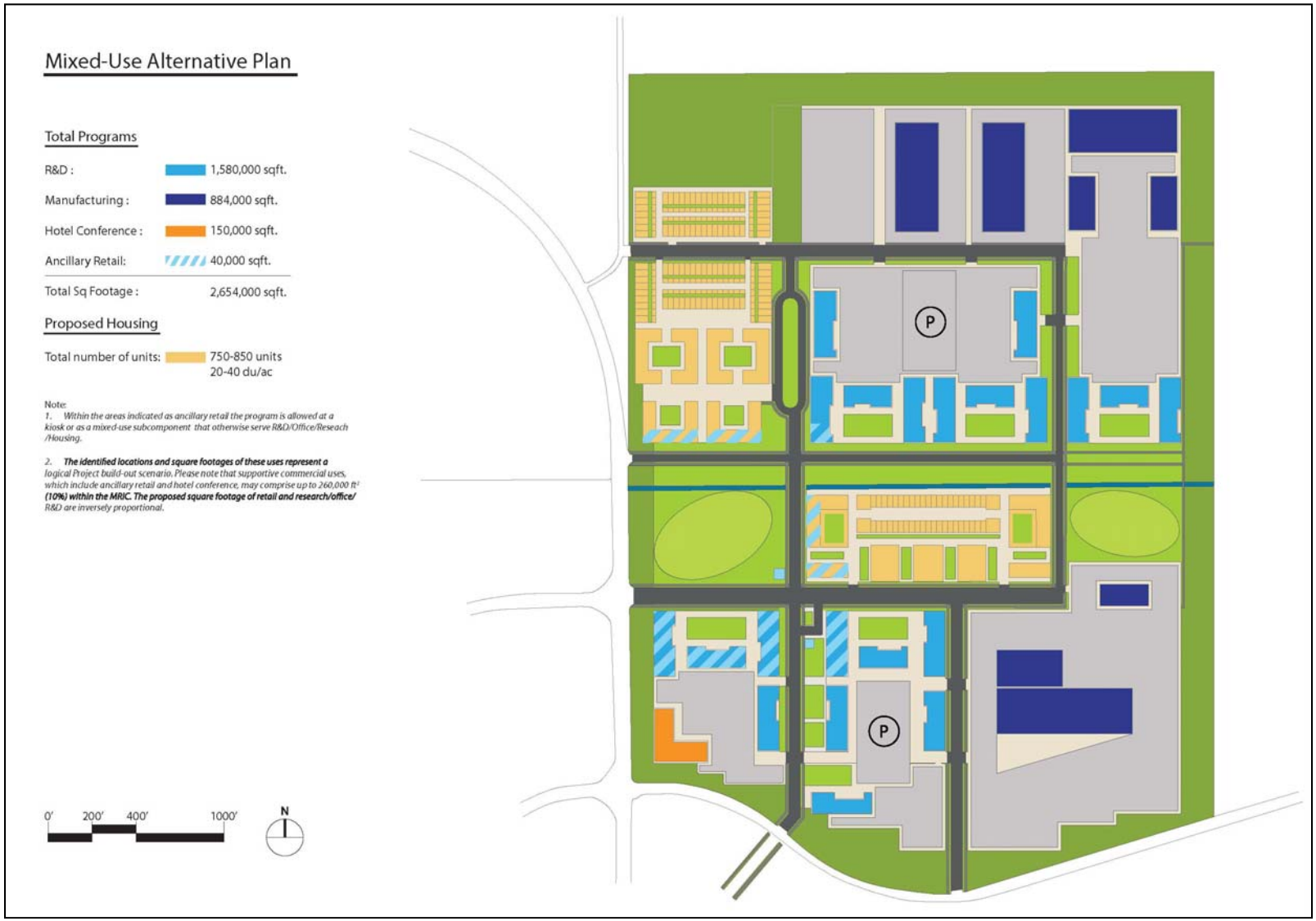


Table 8-1 Mixed-Use Alternative – Summary of Uses by Type	
MRIC Mixed-Use	
Land Use	**Size**
Research; Office; R&D	1,510,000 sf
Manufacturing; Research	884,000 sf
Multifamily Residential (average density 30 du/ac)	850 units
Ancillary Retail	100,000 sf
Hotel/Conference	160,000 sf (150 rooms)
Green Space	75.8 acres
Transit Plaza	0.6 acres
Total Acres	*212 acres*
Total square footage of commercial/office	*2,654,000 sf*
Total number of residential units	*850 units (maximum)*
Mace Triangle	
Land Use	**Size**
Research; Office; R&D	*45,901 sf*
Ancillary Retail	*25,155 sf*
Total Acres	*16.49 acres*
Total square footage	*71,056 sf*

The proposed mix of uses in the Mixed-Use Alternative would provide an innovation center in which technology professionals and entrepreneurs can live, work, and play. The proposed mix of uses would result in more interaction between these individuals, create a vibrant center of activity during more hours of the day, and provide opportunities and synergies for collaboration and innovation.

Permitted and Conditional Uses

In comparison to the project this alternative proposes residential uses. The purpose of the PPD district for the Mixed-Use Alternative is to provide a setting in which leading-edge institutions and local, regional, and international companies can cluster and connect with start-ups, businesses incubators, and accelerators, as well as UC Davis, to create a productive research and development center. The PPD for the Mixed-Use Alternative identifies the following principally permitted uses:

(a) Offices: including administrative, executive, headquarters and medical.
(b) Laboratories: including but not limited to research, design, analysis, development and/or testing of a product.
(c) Light manufacturing, assembly, or packaging of products, including but not limited to electrical, pharmaceutical, biomed and food products and devices, and associated warehousing and distribution.
(d) Any other technical, research, development, or light manufacturing use determined by the Planning Director to be of the same general character as the permitted uses.

(e) Residential: workforce housing with an average density at or above 30 dwelling units per acre. The anticipated density range is between 20 and 50 dwelling units per acre, or higher, depending on product type.
(f) Home Occupation.
(g) Support retail, single users at or less than 25,000 sf, including but not limited to food and beverage, restaurant, dry cleaners, fitness center, or gym.
(h) Lodging or Hotel.
(i) Conference Space.
(j) Agriculture, except the raising of fowls or animals for commercial purposes, or the sale of any products at retail buildings on the premises.
(k) Any use which handles, stores, or treats in any fashion hazardous materials as defined in Section 40.01.010 of the Davis Municipal Code in a manner consistent with adopted City standards.

Proposed conditional uses are as follows:

(a) Support Retail, single users larger than 25,000 sf.
(b) Public and semi-public, including public utility uses necessary and appropriate to the MRIC district.
(c) Any use which handles, stores, or treats in any fashion hazardous materials as defined in Section 40.01.010 of the Davis Municipal Code in a manner deemed to exceed or be inconsistent with the adopted City standards.

It should be noted that special events that require amplified noise may be allowed on-site in both private and public spaces. Prohibited uses include major retail or highway commercial, heavy manufacturing, exclusive distribution, exclusive warehousing, home occupations that involve product distribution resulting in increased traffic, and surface mining and mineral extraction, including, but not limited to, natural gas extraction.

Conceptual Mixed-Use Alternative Site Layout by Use Type

In comparison to the proposed project, this alternative proposes modifications to the site plan to accommodate added residential uses. The Planned Development (PD) submitted for the Mixed-Use Alternative includes an exhibit identifying the anticipated building locations by use type. As indicated in Figures 8-1 above and 8-2 below, the PPD places manufacturing/research uses along the northern and eastern periphery of the project site, while the research/office/R&D uses are centrally located along the internal circulation loop and proximate to the Transit Plaza. Workforce housing would be clustered near the main park feature, the Oval, which is proximate to the transit plaza and to the higher-density office/R&D uses, and is appropriately buffered from the research/manufacturing uses. The proposed hotel/conference center would be located at the southwestern corner of the project site, northeast of the intersection of Mace Boulevard and 2nd Street. According to Figure 8-1, the layout for the ancillary commercial uses concentrates the uses within the office and residential buildings located around the Oval park and the transit plaza, within the central and western portions of the project site.

It should be noted that although an anticipated configuration has been proposed for review and approval, the building locations are conceptual and subject to change during the final planned development process, per Municipal Code Section 40.22.090. If the currently requested entitlements are approved, in accordance with the City's PD zone requirements, the project applicant would need to file one or more final planned developments for the Mixed-Use Alternative, which will be subject to discretionary review and approval by the City of Davis. The final planned developments will need to identify site-specific details, such as locations of buildings on the land, including all dimensions necessary to indicate size of structure, setbacks and yard areas; elevations and design details sufficient to determine consistency with Design Guidelines; proposed tentative subdivision map or parcel map; landscaping, fencing, and screening; types and/or areas for commercial uses and other uses to be established by the district; etc.

Notwithstanding the potential for building locations to shift during the final planned development process, the applicant's Mixed-Use Alternative PPD includes logical zone restrictions on building placement and where specific uses can be located on the site, such that a meaningful analysis of the project alternative can be conducted at this stage of entitlements. Figure 8-2 illustrates the flexibility built into the Mixed-Use Alternative PPD, as well as the boundaries intended to limit where certain uses can be sited. With this approach, land uses are limited to maximum square footages and/or number of residential units and the zone in which a particular use type is permitted. However, the precise size and location of a building or residential structure may fluctuate up or down as long as the use proposed therein would be located within the appropriate zone and would not result in an exceedance of square footage or maximum number of units permitted for a given use type.

Building Heights

The tallest buildings proposed for this alternative – the housing buildings and hotel - are 85 feet, which is 10 feet higher than the tallest building for the proposed project (i.e., hotel). In addition, whereas the R&D buildings for the proposed project would be 55 feet tall, the R&D buildings for this alternative would be 65 feet tall. Three building height zones are proposed for the Mixed-Use Alternative (see Figure 8-3). More specifically, Figure 8-3 identifies anticipated heights for the proposed innovation center buildings. The most restrictive height zone, with a maximum height of 45 feet, generally applies to the proposed manufacturing/research uses on the outer periphery of the Mixed-Use site. The proposed research/office/R&D uses and northernmost residential units are within the 65-foot maximum height zone. The third height zone applies to the proposed multi-family residential and the hotel facility at the southwest corner of the project site, with a proposed maximum height of 85 feet. Taken in context, the proposed Mixed-Use Alternative would place the buildings with the greatest height near Mace Boulevard and the existing urbanized area and then gradually imposes a height reduction as the project moves out toward neighboring agriculturally zoned land.

Figure 8-2
Mixed-Use Alternative – Building Use Zones

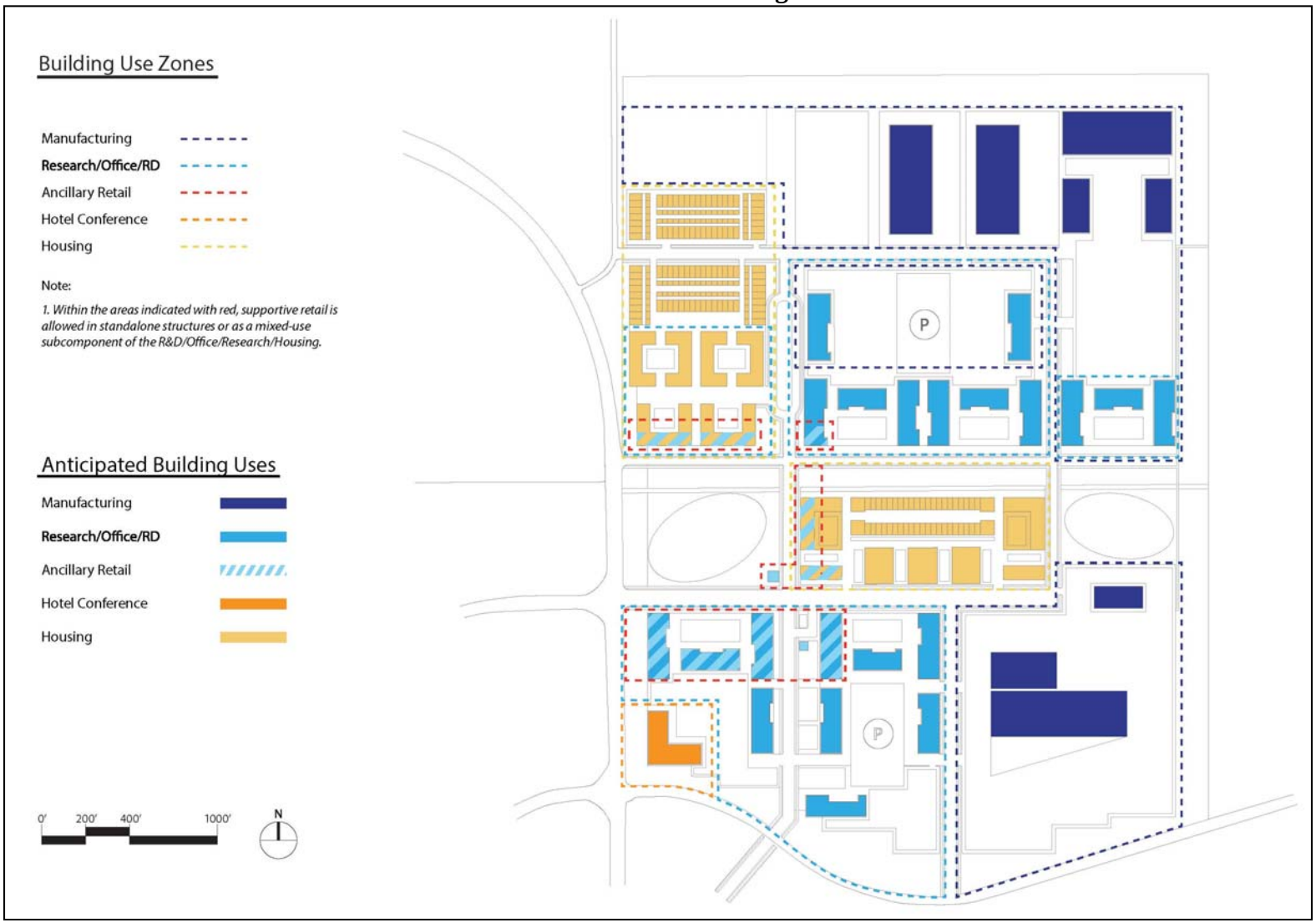


Figure 8-3
Mixed-Use Alternative – Maximum Height Zones

Floor Area Ratio

In comparison to the project FAR of 0.5, this alternative would have an FAR of 0.82. Similar to the building heights, density is concentrated to the west and is reduced along the north and east as the site approaches neighboring agricultural uses. The overall net floor area ratio (FAR) of the Mixed-Use Alternative land use plan is approximately 0.82.

Parks and Green Space

In comparison to the project, this alternative proposes 11.2 more acres of green space in the following categories per Table 8-2 (perimeter green/open space, east-west commons, courtyard plazas). The proposed Mixed-Use Alternative would incorporate several privately maintained parks and open space areas throughout the site, totaling approximately 75.8 acres of green space (see Figure 8-4). The park and open space areas would be accessible from all structures and residences and would include greenways, commons, courtyards, orchards, and plazas. A 150-foot-wide section of buffer land, located along the northern and eastern boundaries of the site, would have restricted public access to minimize conflicts with adjacent agricultural activities; otherwise, all parks and open spaces would be for the use of the innovation center employees, residents, and the public. The greenways and open spaces would be anchored by a 5.1-acre recreational park ("the Oval"), which would be privately maintained but made available for public uses. See Table 8-2 for the size and types of green spaces.

The "commons," comprising approximately 13.5 acres, are the primary landscape spaces of the MRIC site. The commons would create spaces for recreation, community gatherings, and social and business meetings. The North-South Commons separates research/office/R&D from residential uses yet provides a space in which to congregate and provides the visual connection to the agricultural fields to the north. The East-West Commons would align and be enhanced by the Mace Drainage Channel (MDC) and would include recreational fields on the east. The courtyards, plazas, and walkways, comprising approximately 9.1 acres, would connect people and places and create localized places for employees to gather. Where possible, courtyards would be designed to connect with and be open to the commons, establishing walking links throughout the site, and thereby minimizing the pedestrian interface with vehicular roadways.

Perimeter green space, including a minimum 150-foot agricultural buffer along the north and east sides of the MRIC site, would comprise approximately 48.1 acres of the MRIC site. A minimum 150-foot agricultural buffer would be located along the northern and eastern project boundaries. In addition, perimeter green space would be located along the southern and western project boundaries. Per Municipal Code Section 40A.01.050, the minimum 150-foot agricultural buffer/agricultural transition area shall be comprised of two components: a 50-foot-wide agricultural transition area located contiguous to a 100-foot-wide agricultural buffer located contiguous to the agricultural area. The following uses are permitted in the 50-foot agricultural transition area: bike paths, community gardens, organic agriculture, native plants, tree and hedge rows, benches, lights, trash enclosures, fencing, and any other use determined by the Planning Commission to be of the same general character as the foregoing enumerated uses. Public access shall be provided to the 50-foot agricultural transition area.

Figure 8-4
Mixed-Use Alternative – Green Space

Table 8-2
Mixed-Use Alternative – Proposed Parks, Gathering Areas, and Green Spaces

Proposed Type	City Category	Size	Allowable Uses	Habitat/Wildlife
The Oval	Parkland	5.1 acres	Active Recreation (e.g., soccer and softball fields) Linkages/Trails Drainage Conveyance	Tree canopies and meadows: birds, small mammals, and invertebrates Seasonal drainage channel: aquatic invertebrates Hedgerows: birds and invertebrates
North -South Commons	Parkland	5.1 acres	Recreation Linkages/Trails Community Gardens Drainage Conveyance	Meadows: birds and invertebrates Hedgerows: shrubs, birds, small mammals, and invertebrates
East-West Commons	Parkland	8.4 acres	Active Recreation (e.g., east oval park) Linkages/Trails Community Gardens Flood Retention / Detention	Tree canopies and meadows: birds, small mammals, and invertebrates Seasonal wetlands: aquatic invertebrates Hedgerows and shrubs: birds and invertebrates
Courtyard/ Plazas/Walkways	Parkland	9.1 acres	Casual Gathering Supportive Uses	Tree canopies: birds and invertebrates
Perimeter Green/Open Space	Greenbelt	28.0 acres	Recreation Linkages/Trails Flood Retention/ Detention	Tree canopies and meadows: birds, small mammals, and invertebrates
Agricultural Buffer Area	Ag Buffer	20.1 acres	Linkages/Trails Flood Retention / Detention	Hedgerows: birds, small mammals, and invertebrates Ponds: amphibians, birds, aquatic reptiles, and small mammals
	Total	*75.8 acres*		

The agricultural buffer for the Mixed-Use Alternative would include planned and natural spaces, utilized in part for drainage swales, on-site detention, water quality purposes, visual and noise attenuation, energy generation, and habitat, as well as a biking and walking trail. Consistent with the City's agricultural buffer requirements, any bicycle/pedestrian features within the agricultural buffer would occur within the inner 50-foot transitional zone.

Circulation Network

The circulation network for this alternative is generally the same as the proposed project with the exception of the additional northwesterly access along the "Mace Curve", at its intersection with CR 104. The circulation framework for the Mixed-Use Alternative features a modified grid with three primary roadway connections and two secondary connections to the existing bordering roadway system. The primary southern access point would be located along County Road (CR) 32A, where CR 32A intersects with the existing park-and-ride lot access road. The road would provide vehicular access to the dense office/R&D uses in the southwestern section of the MRIC Site, to the transit plaza, and to centrally-located residential units. A secondary southern access point, located at the approximate center of the southern MRIC site boundary, would connect to CR 32A and would be the principal point of entry for transport vehicles and goods movement traffic. Another primary access point would intersect with Mace Boulevard at Alhambra Drive, extending the existing east-west roadway to the transit plaza and into the center of the site thereby linking the project site to the adjacent neighborhood. Internal roadways would provide two additional connections to Mace Boulevard, one located immediately north of the Oval and another serving the uses in the northern third of the Mixed-Use Alternative and utilizing CR 30B as a final point of connection.

Transit

The MRIC site is proximate to a Yolo Bus stop at the park-and-ride lot, from which a landscaped pedestrian connection would be improved to the site and the primary north-south pedestrian promenade. In addition, an existing transit stop is located on Mace Boulevard, adjacent to the proposed project, and a transit hub is proposed in the center of the Mixed-Use Alternative site to allow for a centralized transit terminal to accommodate all users and residents.

Similar to the proposed project, the proposed Transit Plaza is anticipated to provide Unitrans bus stops for local public transit and other rideshare drop-off/pick-ups. Additional transportation demand management strategies which may occur at the Transit Plaza include a primary drop-off/pick-up area for local shuttles to downtown Davis and the Amtrak, and other more direct destination shuttles (UC Davis, Sacramento Airport). In addition, to the extent feasible, car-share parking spots and dedicated carpool/vanpool drop-offs would be located at the site to facilitate the use of alternative modes of transportation by both employees and residents at the innovation center.

Bicycle and Pedestrian Paths

The bicycle/pedestrian improvements for this alternative are generally the same as the proposed project. The project site would be linked to the existing pedestrian trails system and regional bike

trail. The Mixed-Use Alternative includes a bike path within the 50-foot transition zone of the agricultural buffer, which would connect to the existing Class II bike lane on CR 32A at the project's southeastern corner. The Class II bike lane on CR 32A provides connectivity to the following: 1) Old Lincoln Highway Class I (separated) bike path along Interstate 80 (I-80) via the Union Pacific Railroad (UPRR) train tracks at-grade crossing; 2) Class II (striped) bicycle lanes on CR 32A east of CR 105 and the UPRR crossing; and 3) Class I bicycle path on the Yolo Causeway. In addition, the Mixed-Use Alternative would extend the existing bike lane around the Mace Curve, completing the connection and bringing more employees to the site or children to school.

Additional on-site bicycle amenities are provided, including bicycle parking provided near all entrances to office and multi-family residential buildings, and a bike storage and repair area provided near the Transit Plaza to allow for safe storage of bikes and to facilitate any bike repairs that may be needed by users.

Parking

As compared to the proposed project, this alternative would have private garage parking. Multi-story units would have shared parking facilities while detached units would have private garages. The shared corporate and multi-family residential parking areas would be designed to incorporate shade orchards and solar arrays. Where possible, permeable surfaces would be utilized to assist in drainage and groundwater recharge. As a result of user demand-driven build out, parking areas may be converted to parking structures over time to accommodate development at greater densities.

The parking ratios utilized for the office/commercial components of the Mixed-Use Alternative are consistent with those required by the City's Municipal Code. The project applicant has indicated their expectation to reduce standard parking ratios, vehicle trips, and vehicle miles traveled in the future as the following occur: critical mass of employees is achieved on-site; the on-site jobs/housing balance is realized; transit and shuttles are fully utilized at the proposed transit center; car share and carpooling spaces are dedicated on-site; bike path connections are developed and further improved to Downtown Davis and the region; tenant companies retain a Transportation Manager to coordinate all modes of transportation to and from the site; and transit reimbursements and bike credits are offered by tenants to their employees.

Infrastructure

Infrastructure would be extended from nearby utilities to serve the site with public water, wastewater collection, and storm water detention. The following discussion pertains to the proposed water, wastewater, drainage, and other infrastructure-related improvements. Table 8-3 reflects the applicant's proposal for infrastructure ownership and maintenance. The infrastructure for the Mace Triangle site is discussed further below.

Table 8-3
MRIC Infrastructure Ownership and Maintenance

No.	Infrastructure Facility	MRIC Facility Location	MRIC Land Ownership Proposal	MRIC Facility Ownership/Maintenance Proposal	Public Access (Y/N)
1	Street Pavement Between Curbs	Street Corridor	Dedicated Public R/W	Public	Y
2	Median Landscape	Street Corridor	Dedicated Public R/W	Public or Private	Y
3	Parkway Planter Landscape	Street Corridor	Dedicated Public R/W	Public or Private	Y
4	Street Sidewalk and/or Bike Path	Street Corridor	Dedicated Public R/W	Public	Y
5	Bike Path (Non-Street Corridors)	Per Site Plan	Dedicated Public R/W	Public	Y
6	Transit Plaza	Per Site Plan	Private	Private	Y
7	Water Distribution Mainline Piping	Street Corridor	Public R/W	Public	N/A
8		Non-Street Corridor	Private With Easement	Public	N/A
9	Sewer Collection Mainline Piping	Street Corridor	Public R/W	Public	N/A
10		Non-Street Corridor	Private With Easement	Public	N/A
11	Sewer Lift Station	Off-Street	Dedicated Public Lot	Public	N/A
12	Irrigation Well	The Oval	Private	Private	N/A
13	Irrigation Distribution Mainline Piping	Street Corridor	In Public R/W	Private	N/A
14		Non-Street Corridor	Private	Private	N/A
15	Ag Buffer With Green Space + Ponds/Drainage Channel	Site North & East Perimeter	Private	Private	Y
16	The Oval	Per Site Plan	Private	Private	Y
17	Other Parks, Green Space, and Open Space	Various, Per Site Plan	Private	Private	Y
18	Onsite Reach of Mace Channel	Through Site	Private With Easement	Public	N/A
19	Offsite Reaches of Mace Channel	East of Site	Private With Easement	Public	N/A
20	Onsite Detention Storage	Adjacent to Channel, Eastern Quadrant	Private With Easement	Private	N/A
21	Storm Drain Pipes/Inlets	Street Corridor and Public Utilities Easement	N/A	Public	N/A
22	Street Lights	Street Corridor	N/A	Public or Private	N/A

(Continued on next page)

Table 8-3
MRIC Infrastructure Ownership and Maintenance

No.	Infrastructure Facility	MRIC Facility Location	MRIC Land Ownership Proposal	MRIC Facility Ownership/Maintenance Proposal	Public Access (Y/N)
23	Internal Areas Lights	Internal Building Areas, Walkways, Parking Lots	Private	Private	N/A

Notes:
[1] Public access will be restricted in the 100 feet adjacent to neighboring agriculture; the remaining 50 feet will be publicly accessible.
[2] R/W = right-of-way

Water – Mixed-Use

Domestic water would be supplied by extending the existing 12-inch diameter City water main located along Mace Boulevard (see Figure 8-5). The main would be looped throughout the site to supply potable water to internal businesses and workforce housing. The loop would provide the site's interior-use service connections for the planned office/R&D/industrial, residential, and fire-fighting uses. The improvements required to tie the proposed site loop to the City's existing water infrastructure are anticipated to be at three or four locations on Mace Boulevard and would be relatively minor. The water improvements could likely be coordinated with proposed surface improvements along the site's western frontage. Alternatively, the project may consider the option of making one of the loop connections to the existing 20-inch main that connects to the booster pumping station at the four-million-gallon City water tank.

The project applicant proposes to install a new irrigation well in the west-central portion of the site in order to meet approximately 80 percent of the project's non-potable, irrigation water needs. A conceptual location for the well is shown on Figure 8-6. The well would be located within the proposed Oval park area adjacent to Mace Boulevard. The irrigation well would serve the proposed parks and recreation field areas, as well as other open space areas on-site, using a dedicated irrigation distribution piping system. The well may also be used for irrigating street landscaping within the proposed street corridors on-site, as well as other public common areas. As an alternative to installing a new irrigation well, the project may utilize an existing agricultural well, provided the well proves adequate for the intended use.

The existing water supply infrastructure available to the site does not include a recycled water distribution system nor is a source for this water needed to service the demands of the project. However, in order to conserve water resources, the future landowners and users at the site may desire to utilize recycled water if and when it is made available from the City's WWTP. In order for recycled water to be provided to the MRIC Site, off-site distribution infrastructure would need to be installed from the WWTP to the project site. While this off-site distribution infrastructure is not proposed by the applicant, the applicant has proposed to install recycled water/purple pipe infrastructure within the project, with pipe stubs at the property boundaries, in the event that the City, or another entity, constructs this infrastructure at some future date. Should the necessary off-site infrastructure be installed, recycled water from the City's WWTP can be supplied to the site at a future date.

Wastewater – Mixed-Use

The project includes installation of a gravity sewer pipe within the internal road rights-of-way. The gravity sewer line would collect wastewater generated on-site and route the wastewater to the northeastern corner of the site. From the northeastern corner, an off-site wastewater delivery pipe would be installed, the alignment of which would run north of the project site, approximately 0.7-mile. Here, the pipe would connect to an existing manhole along CR 30, near an existing rural residence (see Figure 8-7). Wastewater from the project site would then flow east through an existing 42-inch gravity sewer line, along CR 30, to the intersection of CR 30/CR 105, where the pipe extends north along CR 105 to the City's Wastewater Treatment Plant (WWTP).

Figure 8-5
Mixed-Use Alternative – Conceptual Domestic Water System

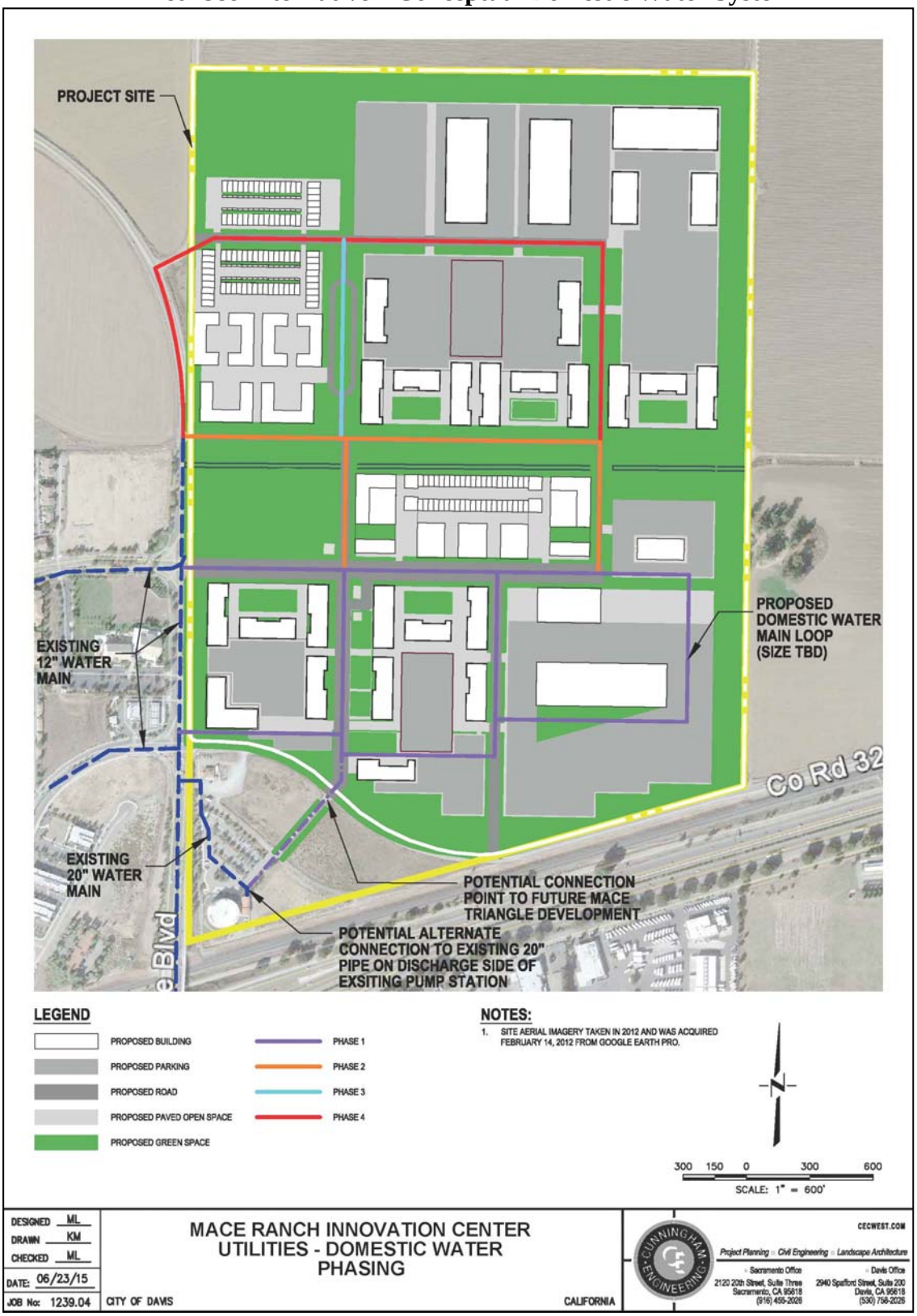


Figure 8-6
Mixed-Use Alternative – Conceptual Irrigation Water System

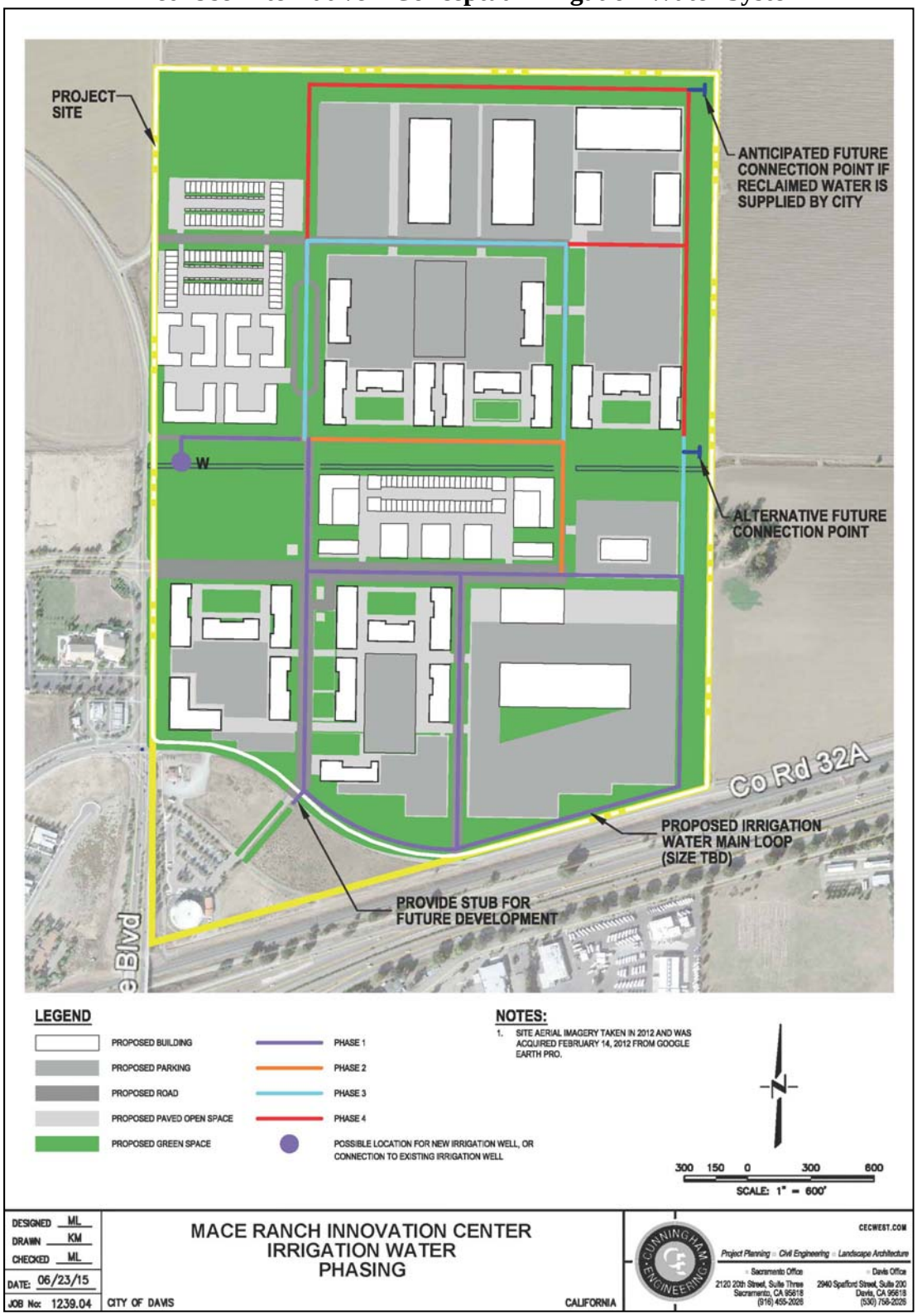
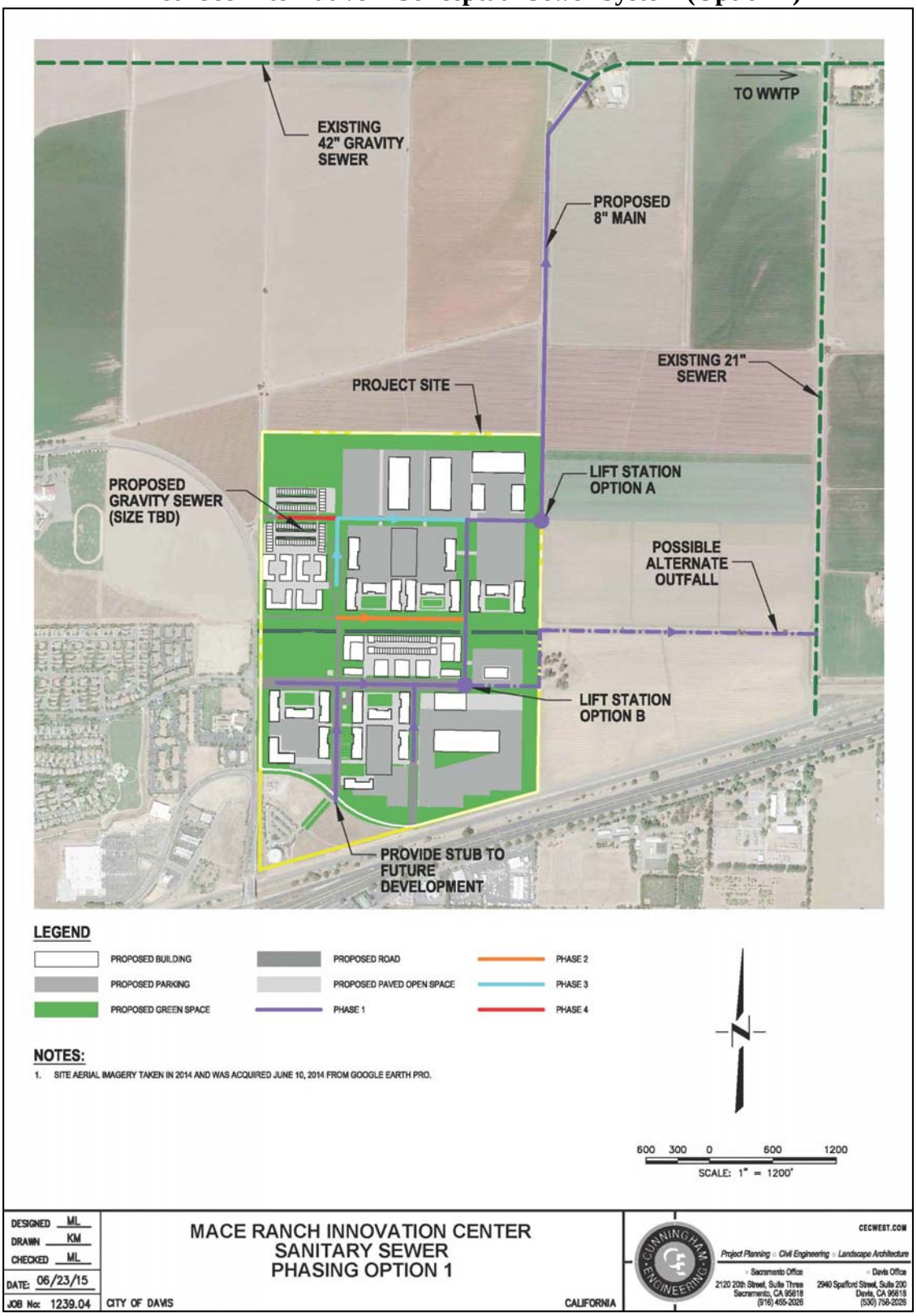


Figure 8-7
Mixed-Use Alternative – Conceptual Sewer System (Option 1)



An alternative off-site sewer alignment has also been identified for the Mixed-Use Alternative and is evaluated in this EIR for potential resultant environmental impacts. As shown in Figure 8-7, the alternative sewer alignment would extend east from the site, along the MDC, and would connect to the existing 21-inch sewer pipe in CR 105, from which point the project's wastewater would flow north to the City's WWTP.

Prior to installing the new off-site sewer alignment, during the first phase of development, the project includes the ability to tie into the existing sewer main located in Mace Boulevard. The temporary connection to and use of existing sewer infrastructure would require the use of a lift station and a force main to be replaced with the off-site gravity fed sewer line with the implementation of Phase 2 (see Figure 8-8).

Drainage – Mixed-Use

The existing City drainage channel, which transverses the center of the MRIC project site, would predominantly remain in place and continue to serve drainage flows from the Mixed-Use Alternative. However, the westernmost approximately 650 feet of the drainage channel would be placed within three 72-inch storm drainage culverts under the Oval park and the existing in-line detention basin adjacent to the existing drainage channel would be reduced in size or relocated to another eastern detention area. Any detention basin would be modified in shape and slope to ensure safety and functionality. Both the channel and detention basin are anticipated to be reconfigured to be more attractive and compatible with the innovation center.

Internal drainage corridors, and perimeter drainage retention areas, swales, and corridors, providing distributed detention storage and water quality treatment, would be constructed at the project site for purposes of collecting surface drainage, maximizing groundwater recharge, and systematically routing the drainage to the existing, centrally-located drainage channel (see Figure 8-9). Treated storm water would then flow off-site through the existing MDC to the east, where the runoff would eventually enter the Yolo Bypass.

Other – Mixed-Use

High speed internet capability with bandwidth sufficient to service the technology sector is available for immediate extension to the project site. Existing fiber optics infrastructure within the UPRR right-of-way would be extended to the MRIC and would proceed in a manner consistent with overall project phasing.

Water – Mace Triangle

Existing water facilities adjacent to the site include a 12-inch City of Davis water main located in Mace Boulevard, and the City's recently constructed 4 million gallon (MG) Southeast Water Tank and booster pumping station, located on the western side of the site. The pumping station discharges to a 20-inch pipe, which traverses adjacent to the Park-and-Ride lot and connects to existing distribution piping in Mace Boulevard, near the intersection of Mace and 2nd Street.

Figure 8-8
Mixed-Use Alternative – Conceptual Sewer System (Option 2)

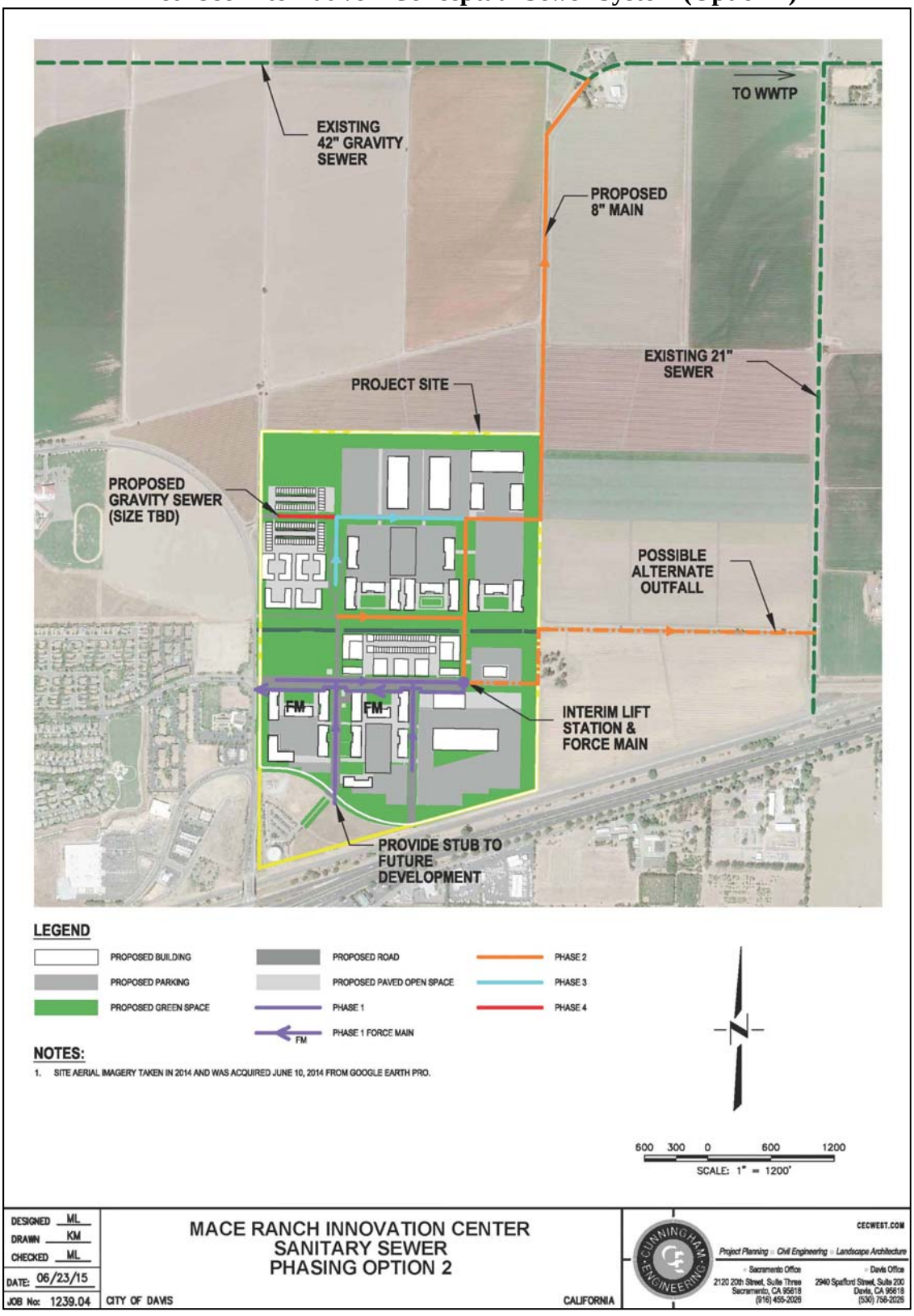
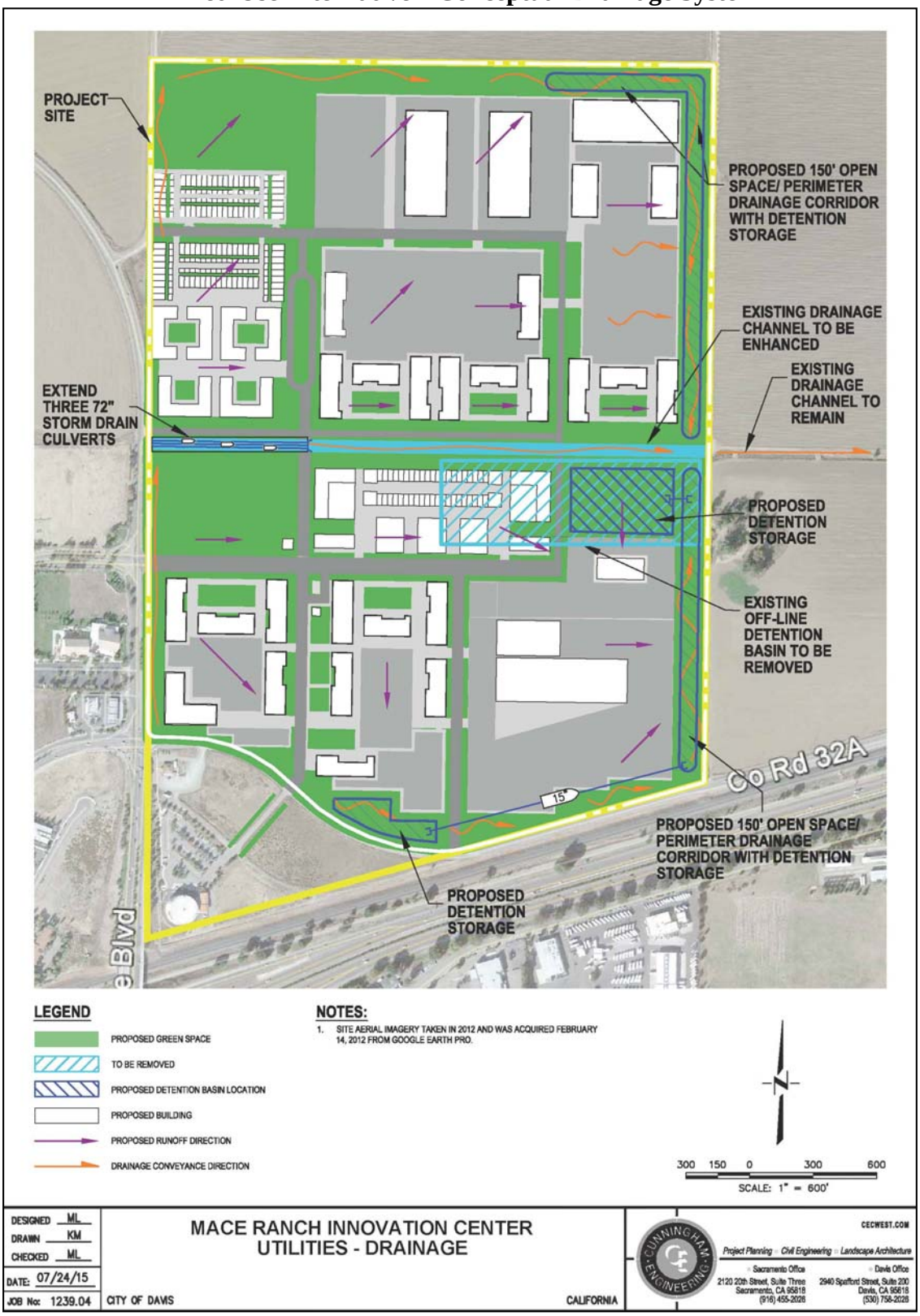


Figure 8-9
Mixed-Use Alternative – Conceptual Drainage System



For preliminary planning purposes, future development of the Triangle area would include the installation of an internal domestic water system that could be supplied through a connection to the City's existing 12inch water main on Mace Boulevard or through a connection to the existing 20-inch water line that connects to the booster pumping station at the City's water tank. Alternatively, as shown in Figure 8-5 above, the Triangle property could connect to the proposed MRIC looped water system, if said system is in place at such time the Triangle properties develop. The actual location for connection to the City's water system will be determined with final design of the Mace Triangle water system.

Sewer – Mace Triangle

The nearest existing City sewer main is an 8-inch line, located in Mace Boulevard, which is unlikely to have capacity to support the ultimate development of the proposed project, as discussed in the Utilities Chapter of this EIR. The MRIC proposes to connect either to the City's existing 42-inch trunk main, located just over a half-mile north of the MRIC site, or to an existing 21-inch main, located approximately one half mile east of the MRIC site, in County Road 105. It is expected that the Mace Triangle would also discharge to the 42-inch main or 21-inch main – doing so via the proposed MRIC's collection system. If the Triangle develops ahead of the MRIC, then the developer could possibly connect to the existing 8-inch line within Mace Boulevard.

Drainage – Mace Triangle

Today, runoff from the Triangle area flows south or southeast to the existing drainage channel located between County Road 32A and the railroad embankment. The collected runoff then flows east along the existing channel that discharges into the Mace Ranch channel east of County Road 105 via a storm drain culvert. The existing railroad channel also conveys runoff from an undetermined relatively small drainage area(s) west of Mace Boulevard via a culvert under the Mace Boulevard overcrossing embankment.

Conceptual design criteria and facilities for the Triangle drainage system have been identified as follows:

1. The increased rate of flow as a result of development will be attenuated to mimic existing conditions.
2. Onsite drainage facilities will be some combination of surface and pipe conveyance to a detention basin at the east end of the Triangle.
3. The outfall pipe from the detention basin is sized to restrict outflow to be equal or less than existing conditions.

The detention basin and storm drain facilities would be designed to meet city design standards in place at the time of development. The railroad channel would be maintained to provide adequate conveyance.

Phasing

Similar to the proposed project, the Mixed-Use Alternative is anticipated to be built out in four phases. In addition, Phase 1 of the proposed project is the same as Phase 1 of the Mixed-Use Alternative. As illustrated in Figure 8-10, Phase 1 is anticipated to consist of approximately 45 acres in the southern portion of the site. Phase 1 is estimated to contain approximately 540,000 sf, which will include 400,000 sf of research/manufacturing space to accommodate the expansion needs of Schilling Robotics, and 140,000 sf of research/office/R&D development which may incorporate ancillary retail of up to 40,000 sf to serve the convenience needs of the innovation center employees. Two access points would be provided for Phase 1: 1) an enlarged intersection at Mace Boulevard and Alhambra Boulevard, and 2) a new southern access point, which would connect to CR 32A, east of the existing park-and-ride lot driveway. The two roadways would connect within the site thereby linking Phases 1A and 1B and creating through-site circulation for vehicles and pedestrians alike. In addition, Phase 1 would include the Transit Plaza which would serve as the focal point of the phase. Workforce housing is not anticipated as part of Phase 1 but instead would be gradually introduced after the innovation center is established and tech employees are actively working on-site causing a demand for housing proximate to their jobs.

Once established, subsequent phases are anticipated to fill in the project's central core and then move north and east. The proposed development pattern represents a logical sequencing with structures gradually extending from the current urbanized area out toward the City's new urban boundary, although the exact pattern of build-out would be driven by user demand and infrastructure costs.

Phase 2 is anticipated to comprise approximately 29 acres located south of the MDC. The central feature of Phase 2 would be the "Oval" park which is a defining component located adjacent to Mace Boulevard. Total office/commercial square footage for the second phase is projected to be 700,000 sf, including the proposed hotel/conference center, various research/office/R&D centered on the Oval park, and additional ancillary retail space. In addition, Phase 2 includes the initial offering of up to 300 workforce housing units, designed to allow those individuals working at the center to live in close proximity to their jobs. The housing is planned to include a variety of mixed-use, rental, and for-sale residential options catering to the needs and demands of innovation center employees.

Phase 3 would include an additional 700,000 sf of building space, comprised of research/office/R&D and manufacturing/research uses, and 300 housing units. The roughly 70 acres developed in Phase 3 completes build-out south of the MDC and the center's core. In addition, Phase 3 completes the east/west roadway loop to Mace Boulevard from above and below the Oval. The phase finalizes the east/west commons and adds a second park along the eastern boundary of the site.

Figure 8-10
Mixed-Use Alternative Conceptual Phasing

Phase 4 consists of the northerly 72 acres of the site and represents completion of the Mixed-Use Alternative. Phase 4 is projected to include approximately 714,000 sf of manufacturing/research and research/office/R&D uses, as well as up to 250 residential units. At the completion of Phase 4, the site will include up to 2,654,000 sf, a maximum of 260,000 sf of which may be ancillary retail, and up to 850 units of workforce housing.

Planned Development Design Guidelines

Consistent with the City's Site Plan and Architectural Review process, the project applicant has prepared alternate Design Guidelines for the Mixed-Use Alternative to be utilized in the event that the City decides to approve the alternative. The purpose of the Mixed-Use Alternative Design Guidelines is to provide a comprehensive overview of the design criteria and development standards required to implement the desired physical form of the project and the key features, as identified in the Mixed-Use Alternative PPD. Generally, the Mixed-Use Alternative Design Guidelines address land use, site design, sustainability, architectural character, landscaping, circulation, and parking. Given that most of these topics have been addressed above, the following includes a brief summary of the proposed sustainability features for Mixed-Use Alternative project, as outlined in the Design Guidelines.

Proposed Sustainability Features

- Develop a strategic mix of employment and residential uses on-site, introduced in phases to maximize utility, to ensure that the project does not detrimentally impact the jobs/housing balance in Davis. The mix of uses will allow employees at the innovation center to live within walking distance of work, thereby minimizing vehicular usage and reducing project-related greenhouse gas (GHG) emissions.
- Provide electrical energy and/or its functional equivalent using renewable generation resources and advanced technologies. On-site energy generation and energy conversion systems, which may include solar photovoltaic production and heat transfer technologies, shall supply and/or supplant a minimum of 50 percent of the electrical energy requirements of the proposed project.
- Incorporate the use of shading and passive solar techniques to minimize heat gain and the heat island effect. Orient buildings to maximize solar exposure from natural daylight resulting in energy conservation.
- Make use of parking lots, rooftops, drainage features, and other areas deemed appropriate for dual-purposes, for the installation of solar panels to generate energy for on-site uses.
- Include the necessary infrastructure to utilize, to the fullest extent possible, solar panels as a means for energy generation on-site and energy exchange throughout the project site including the potential for on-site energy storage.
- Utilize drought-tolerant plantings and incorporate native species adapted to the local climate. Include stormwater management features such as dispersed detention basins and bio swales. Use the agricultural buffer areas to help enhance the efficacy of these measures, particularly as they relate to protecting and enhancing natural and ecological systems.

- Maximize the use of permeable surfaces to reduce storm water runoff and assist in groundwater recharge.
- Incorporate Leadership in Energy & Environmental Design (LEED) Silver/Gold building standards.
- Utilize the latest building technology mechanical/electrical systems for energy efficiency, including remote monitoring and setting modification systems, and energy reductions on plug-loads and ventilation systems.
- Make use of building orientation and natural daylight to promote overall energy efficiency across the site.
- Use natural ventilation for buildings when feasible.
- Promote water conservation and reductions, where feasible, including the utilization of smart and/or high-efficiency fixtures and appliances.
- Incorporate a multitude of Transportation Demand Management (TDM) strategies such as carpooling, bus transit, shuttles, car share, and other smart phone technologies to assist in providing transportation options for employees.
- Dedicate drop-off and pick-up zones for buses, dedicated shuttles, and have carpool uses integrated into the proposed project. This includes a specific "Transit Plaza" to help facilitate alternative modes of transportation to and from the Site for employees and residents.
- Support a Transportation Manager who will coordinate transportation options for the site and help to facilitate the use of alternative modes for all workers and residents.
- Install bicycle supportive facilities such as racks, storage lockers, a repair station and showers to encourage and help establish the use of bicycles as a predominant mode of transportation to the site.

Project Objectives

The Mixed-Use Alternative would be subject to the same objectives as the proposed project, which include the following for the MRIC:

1. Expeditiously provide a suitable space in which to retain existing local businesses, such as Schilling Robotics, and to attract and grow innovative high-value added, technology oriented companies.
2. Provide sufficient land to meet the demand in Davis for innovation centers over a 25-year time horizon.
3. Utilize land immediately adjacent to the City boundary with adequate and easily-extended infrastructure, including but not limited to fiber optics for high-speed internet.
4. Provide an integrated, high-quality campus-like project offering a variety of lot sizes that will respond to the current and future needs of technology start-ups, industry leaders, research and development, and products manufacturing firms; allowing for a full range of research to market uses.
5. Develop a critical mass of users at a given location sufficient to render economically feasible the delivery of infrastructure necessary for development to occur.
6. Contribute to both job creation and tax base enhancement while supporting the University of California, Davis as a research institution.

7. Utilize a site with existing access to I-80 for the convenience and benefit of employees, collaborators, suppliers, and goods movement.
8. Support and build upon the City of Davis's existing successes by offering a logical extension to the 2nd Street technology corridor.
9. Develop an aesthetically pleasing site plan and architectural building design that incorporates energy and water efficiency, provides for non-automotive forms of transit, and is situated to receive and utilize recycled water when available.
10. Create a viable retail component, including hotel and conference center, which will primarily serve the needs of the innovation center, increase retail-related employment opportunities and contribute to tax revenue generation.
11. Encourage recreation and non-automotive modes of transportation by creating trail connections and improvements that enhance and encourage pedestrian/bicycle circulation and connectivity between the project site and surrounding areas.
12. Preserve and protect agriculture through the planning and development of property which will result in a distinct permanent urban edge.
13. Provide a business-oriented site design with a complementary mix of land uses that will encourage user interaction, collaboration, and the exchange of ideas, thereby serving as a catalyst to rapidly achieve economic growth and financial stability.
14. Reflect the feedback captured through the Innovation Park Task Force's planning, research and outreach, and incorporate as many of the consensus concepts as are feasible.

In addition, the Mixed-Use Alternative would be subject to the same objectives set forth by the City of Davis, which include the following:

City Objectives for Innovation Centers

The City of Davis proposes to achieve the following objectives with a new innovation center. These reflect findings of the 2010 Business Park Land Strategy; Innovation Park Task Force, 2012, Davis Innovation Center Report (Studio 30); adopted 2012 Dispersed Innovation Strategy; the 2014 Davis Innovation Center Request for Expressions of Interest (RFEI) and 2014 Guiding Principles for Davis Innovation Center(s).

1. Land and Building Supply
   a. Position City to capture greater share of local/regional business growth. (Studio 30 report, Sect. 3 pgs. 15-20)

      Most remaining small, dispersed sites in the City are not adequate to meet needs of growing businesses and mid-sized companies. The Innovation Centers studied by Studio 30 for the Davis Innovation Center Report averaged around 200 acres in size and offer a variety of parcel sizes and ownership opportunities, flexible use/size of space and lease terms; and physical and virtual business support services allowing successful businesses to remain as they grow.
   b. Provide expansion capability for the City suitable in location and size for larger innovation centers with potential to accommodate commercial and research facilities. (Studio 30 & ICRFEI)

c. Maintain a steady supply of developable land for future business development to meet needs of growing businesses and accommodate medium-scale and large scale (~150 employees) businesses over a long term 20+/- year period. (BPLS)
   A 200 acre innovation center supporting several million square feet of development could accommodate such business growth over a long term 20+/- year period (Studio 30 and RFEI).
d. Provide a mix of building types, sizes and heights meeting needs of new startups and growing mid-sized companies, including potential for headquarter buildings. (RFEI)
e. Increase the supply of flexible business space. (Studio 30)
f. Take into account the specific needs of any identified or targeted tenants.

2. Density
   Due to the relative scarcity of developable land in Davis, an innovation center should focus on guidelines to maximize density to accommodate long-term business growth while taking into account the specific needs of identified tenants within the specific project where applicable. The review process must be cautious to not impose unilateral requirements solely for the sake of achieving "density", without consideration of other objectives.

   a. Maximize density to accommodate long-term business growth offering flexible space (scalability) and viable range of space options.
   b. Goal of at least 0.5 floor area ratio (FAR).
   c. Pursue opportunities for densification over time (i.e. parking structures and new buildings).

3. Sustainability
   a. Apply Low Impact Development Principles.
   b. Ensure minimal greenhouse gas (GHG) impacts at the project level.
   c. Allow flexibility and adaptation over the project lifespan and as new building techniques and energy production technologies emerge, explore opportunities to bolster the goals of the Climate Adaptation & Action Plan. (CAAP)
   d. Comply with the minimum City requirement of the CalGreen Tier 1 energy code for buildings.
   e. Mitigate with agricultural land on a 2 to 1 acre basis.
   f. Budgetary impacts of any proposed City maintenance areas will be carefully evaluated in the fiscal analysis.
   g. Utilize energy and resource efficient design, materials, operations and infrastructure.
   h. Integrate open space and habitat opportunities.
   i. Maximize the use of trees and native landscaping.

4. Transportation
   a. Establish bicycle/pedestrian connectivity.
   b. Develop partnerships with the City, UC Davis Unitrans, Yolo County Transit and Amtrak.

c. Create a comprehensive multi-modal system and transportation plan with safe, dynamic, well-planned automobile, bicycle, pedestrian, mass transit and emergency vehicle access connections.

5. Work Environment
   a. Provide facilities and services that support innovation. (Studio 30)
      i. Provide a built environment and operations offering the ability to draw a critical mass of innovators and creative synergy enabling opportunities for ongoing formal and informal interdisciplinary connections.
      ii. Provide a flexible range of desired work environments, small co-working, incubator/accelerator spaces, specialized maker-spaces, meeting/conference rooms, research and development, manufacturing facilities, larger companies and corporate headquarters.
      iii. Include elements of "work, live, play" that encourage an engaged and inviting workplace, including ancillary amenities and activities that serve employees such as mixed use, cafés, coffee shop, restaurant, copy shop, recreation, fitness center, child care (as a few examples). (Studio 30)
      iv. Provide shared business support services and “cutting edge” business center amenities (teleconferencing etc.) including broadband fiber connectivity.
      v. Provide design elements that include dual use spaces, and shared facilities such as recreation, meeting, and gathering spaces (like amphitheater seating) that serve business needs during the weekdays and community needs during the evening and weekends.
   b. Accommodate a range of lease and ownership options reflecting an array of formal and informal work styles and settings.
   c. Use building designs incorporating LEED standards for healthy work environments (daylight, fresh air, good indoor air quality).

6. Uses
   a. Support research and development; manufacturing facilities, larger companies and corporate headquarters.
   b. Focus largely on expansion needs of research and technology development and creation of research, technology and advanced manufacturing jobs, and revenue generating uses.
   c. Provide a mix of professional office, high-tech, R&D, industrial flex space, grow labs, commercial services.
   d. Provide some ancillary project-serving retail and services.
   e. Target hotel/conference spaces to serve the business needs of the innovation center over time.
   f. Allow warehouse uses auxiliary only to research and manufacturing.
   g. Discourage distribution centers, call centers or large-scale food processing plants.
   h. Minimize and carefully manage heavy truck deliveries.

7. Timing and Project Phasing
   a. Demonstrate sufficient resources to ensure completion of the project.

b. Phasing should meet with anticipated market demand for space and be adaptable to respond to changing market conditions over time.
c. Building density, project phasing, and total job creation must consider community growth and CEQA mitigations.
d. Phasing needs to be responsive to actual and potential tenants.

8. Fiscal Consideration and Net Community Benefit
   a. Achieve fiscal neutrality with regard to City services.
   b. Provide substantial surplus annual revenue.
   c. Provide positive economic impacts/multipliers citywide, and net community benefits (including social and environmental).

9. Partnerships
   a. Facilitate technology and business development.
   b. Facilitate collaborative partnerships.
   c. Provide opportunities for increased university and research engagement.
   d. Increase access to STEAM (science, technology, engineering, arts and agriculture, and math) and educational opportunities.

Mace Triangle Project Objectives

1. Avoid becoming an unincorporated island.
2. Avoid becoming an agricultural island.
3. Create opportunity to expand existing agricultural retail business.
4. Complement existing and future urban uses.
5. Allow for efficient master planning of infrastructure and services.

Detailed discussions of impacts to each environmental resource area as a result of buildout of the site per the Mixed-Use Alternative are presented below.

8.3 MIXED-USE ALTERNATIVE ANALYSIS

The following section provides an analysis of the potential environmental impacts resulting from the Mixed-Use Alternative, at a level of detail that is equivalent to the proposed project analysis. The discussions and mitigation measures presented below apply to both the 212-acre MRIC and the 17-acre Mace Triangle, unless otherwise stated. For each impact section and impact statement a reference to the relevant Chapter 4 analysis is provided.

For conservative analysis purposes, the cumulative impact comparison is based upon the CEQA Cumulative Scenario, with the exception of the analysis of cumulative impacts related to transportation and circulation. The Mixed-Use Alternative's incremental contribution to the cumulative transportation and circulation impacts were analyzed under both the CEQA Cumulative Scenario and the Modified Cumulative Scenario in order to enable a quantitative comparison to the proposed project.

Aesthetics and Visual Resources (reference Section 4.1)

The impacts related to aesthetics and visual resources as a result of buildout of the site per the Mixed-Use Alternative, in comparison to that of the proposed project, are presented below.

8-1 Substantial adverse effect on a scenic vista (reference Impact 4.1-1).

Officially designated scenic highways, corridors, vistas, or viewing areas do not exist within the City's planning area and established scenic vistas are not located on or adjacent to the site. Impacts related to adverse effects on a scenic vista were determined to be less-than-significant for the proposed project. Impacts related to potential effects on such under the Mixed-Use Alternative would also be ***less than significant***.

Mitigation Measure(s)
None required

8-2 Substantially degrade the existing visual character or quality of the project site and its surroundings (reference Impact 4.1-2).

The Mixed-Use Alternative would involve similar development as the proposed project, but with the inclusion of up to 850 residential units, on the same site as the proposed project. Impacts related to degradation of the existing visual character were determined to be significant and unavoidable for the proposed project.

In order to incorporate a residential component, the residential buildings would be 65 to 85 feet in height, and would be clustered along Mace Boulevard and in the center of the site. In addition, the proposed R&D, manufacturing, ancillary retail, and hotel/conference uses would be slightly taller (45 to 65 feet as compared to 45 to 55 feet for the proposed project) than the buildings included in proposed project. Landscaping and agricultural buffers would be included for the Mixed-Use Alternative, similar to the proposed project. The site is not currently planned for future development and is not within the City's LAFCo sphere of influence (SOI); therefore, impacts resulting from development of land uses other than the current agricultural use would be considered a significant change in the visual character or quality of the site. The Mixed-Use Alternative would convert an agricultural field to commercial and residential uses in an area that is outside of the City's SOI. As such, the Mixed-Use Alternative would be considered to substantially degrade the existing visual character or quality of the project site and/or the site's surroundings; and a ***significant and unavoidable*** impact would occur.

Mitigation Measure(s)
None required

8-3 Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (reference Impact 4.1-3).

Impacts related to light or glare were determined to be less-than-significant with mitigation for the proposed project. Potentially more sources of light and glare would be expected for the

Mixed-Use Alternative than the proposed project, due to lighting and windows associated with the inclusion of residential units. As such, light and glare under the Mixed-Use Alternative could result in adverse effects to nearby sensitive receptors; and mitigation measures would be required to reduce impacts to a ***less-than-significant*** level.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-3 *In conjunction with submittal of improvement plans for the Mace Triangle and each phase of development for the Mixed-Use site, the applicant shall submit a lighting plan to the Department of Community Development and Sustainability for review and approval. The lighting plan shall be designed to limit light trespass and glare onto off-site properties to a reasonable level through the use of shielding, and directional lighting methods, including, but not limited to, fixture location and height. The Plan shall comply with Chapter 6 of the Davis Municipal Code - Article 8: Outdoor Lighting Control.*

8-4 Conflict, or create inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to aesthetics and visual resources (reference Impact 4.1-4).

Impacts related to conflicts with plans, policies, or regulations related to aesthetics and visual resources, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.1 and determined to be ***less than significant*** with implementation of mitigation. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-4 *At or prior to final planned development, or tentative map submittal, whichever occurs first, the applicant shall submit landscape and architectural details to the Department of Community Development and Sustainability showing the following:*

Landscaping

- *Research/office/R&D and manufacturing areas shall have access connections at regular intervals along the perimeter of the project area to adjacent bike and pedestrian pathways and easily-accessible, landscaped pedestrian and bicycle access between various areas.*

- *Arterial and collection streets shall have planted medians, but with widths sized to accommodate tree and shrub plantings. Medians on collector streets shall be limited to locations where the median contributes to a specific purpose or solves a specific problem, such as enhancing an entry, calming traffic, or providing a needed pedestrian refuge at intersections. Removal of street trees to accommodate an increase in vehicular traffic shall occur only as a last resort, after review by appropriate boards and commissions.*
- *Trees that are planted in the future shall have wide canopies, sufficient to eventually provide, at maturity, at least 50 percent shade coverage of the pavement area of local streets and 30 percent shade coverage of the pavement area of collector and arterial streets.*

Architecture

- *A scale transition between intensified land uses and adjoining lower intensity land uses shall be provided, as applicable.*
- *Taller buildings shall be stepped back at upper levels in areas with a relatively smaller-scale character.*
- *Buildings shall be varied in size, density and design.*
- *Stored materials, goods, parts or equipment shall be screened from adjacent public streets or highways.*
- *Loading facilities shall be designed as an integral part of the building(s) which they serve and shall be located in an inconspicuous manner.*
- *Roof mounted equipment shall be screened from view of any ground level area accessible to the general public.*
- *Trash enclosures, noise generating equipment, and other nuisances shall be adequately screened or located away from any adjacent residential use.*

Agriculture and Forest Resources (reference Section 4.2)

The impacts related to agriculture and forest resources as a result of buildout of the site per the Mixed-Use Alternative, in comparison to that of the proposed project, are presented below.

8-5 Impacts related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands) to non-agricultural use, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (reference Impact 4.2-1).

Impacts related to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands) were determined to be significant and unavoidable for the proposed project. The Mixed-Use Alternative would involve development over the same site and acreage as the proposed project, and the same disturbance of land on the same site would occur. The California Department of Conservation has defined the Mixed-Use Site as Prime Farmland (approximately 159 acres or 76.1 percent of the site), Farmland of Statewide Importance

(approximately 39 acres or 18.7 percent of the site), and Potential Local Farmland (approximately 11 acres or 5.3 percent of the site). Although the Mixed-Use Alternative would incorporate 64.6 acres of open space and parks, the Alternative would involve the conversion of Prime Farmland, Potential Local Farmland, and Farmland of Statewide Importance to non-agricultural uses. Therefore, impacts related to such would be ***significant and unavoidable*** under the Mixed-Use Alternative.

Mitigation Measure(s)

The following mitigation measures would reduce the proposed Mixed-Use Alternative's impact related to conversion of Prime Farmland and Farmland of Statewide Importance. Mitigation Measure 8-5 sets forth the agricultural land mitigation requirements in Davis Zoning Code, Chapter 40A.03, with which future development on the Mixed-Use site shall be conditioned. While implementation of Mitigation Measure 8-5 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*.

MRIC Mixed-Use

8-5(a) *Prior to initiation of grading activities for each phase of development at the Mixed-Use site, the project applicant for the Mixed-Use site 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 unincorporated Yolo County, 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 any off-site improvements, including but not necessarily limited to the off-site sewer pipe, and 400-feet along the north and east property line unless a "no aerial spray" easement is purchased. The amount of agricultural acreage that needs to be set aside for off-site improvements shall be verified for each phase of the MRIC 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 whose use is 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. The easement instrument used to satisfy this measure shall conform to the conservation easement template of the Yolo Habitat Conservancy.*

8-5(b) *The MRIC Master Owners' Association (MOA) shall encourage, and exercise control over, interim agricultural operations on-site through specific terms of agricultural leases. Terms shall specify duration of leases and require each new leasee to coordinate with the Yolo County Agricultural Commissioner to determine appropriate types of agricultural crops and uses for urban/ag interface areas. The MOA shall work cooperatively with the farmer(s) to minimize incompatibilities between ongoing agricultural operations on-site and MRIC businesses, such that the project site can continue to be farmed successfully until the project is fully built out. Minimization measures should include the appropriate timing of on-site agricultural operations (i.e., use of equipment) to avoid early morning or nighttime noise generation; prohibiting disking operations during periods of high winds; minimization of pesticide applications; etc.*

8-6 Impacts related to conflicting with existing zoning for agricultural use (reference Impact 4.2-2).

Impacts related to conflicts with existing zoning for agricultural use were determined to be less-than-significant for the proposed project. Because the Mixed-Use Alternative would involve development over the same site and acreage as the proposed project, the same disturbance of land on the same site would occur. The Mixed-Use Site is currently in agricultural use and is zoned Agricultural-Intensive (A-N). Current County zoning for the Mace Triangle Site is A-N, Agricultural-Commercial (A-C), and Public and Quasi-Public (PQP). Approval of the project is a discretionary action of the City Council. Should the City Council deny the project, a conflict with existing zoning for agricultural use would not occur. Should the City Council approve the project, the requested prezoning to P-D would be approved concurrently and a conflict with existing zoning for agricultural use would not occur. Therefore, upon approval of the requested prezoning, the Mixed-Use Alternative would result in a ***less-than-significant*** impact in regard to land that is currently zoned for agricultural use.

Mitigation Measure(s)
None required

8-7 Result in the loss of forest or agricultural land or conversion of forest or agricultural land to non-forest or non-agricultural use (reference Impact 4.2-3).

Impacts related to the loss of forest or agricultural land were determined to be significant and unavoidable for the proposed project. Because the Mixed-Use Alternative would involve development over the same site and acreage as the proposed project, the same disturbance of land on the same site would occur. Accordingly, implementation of the Mixed-Use Alternative would result in the same amount of land conversion from agricultural lands to non-agricultural uses. Therefore, the impacts associated with agriculture and forest resources under the Mixed-Use Alternative would be ***significant and unavoidable***.

Mitigation Measure(s)

The following mitigation measures would reduce the proposed project's impact related to conversion of agricultural lands. Mitigation Measures 8-7(a) and (b) set forth the agricultural land mitigation requirements in Davis Zoning Code, Chapter 40A.03, with which future development on the Mixed-Use site and agricultural/fallow portions of the Mace Triangle site shall be conditioned. While implementation of these measures 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*.

MRIC Mixed-Use

8-7(a) *Implement Mitigation Measures 8-5(a) and (b).*

Mace Triangle

8-7(b) *Prior to initiation of grading activities for APN 033-630-012 or APN 033-630-011 within the Mace Triangle site, the future project applicant(s) shall set aside in perpetuity, at a minimum ratio of 2:1 of active agricultural acreage, the following approximate acreages of protected farmland for agricultural purposes:*

- *APN 033-630-011 (Ikedas): Mitigate conversion of approx. 2.5 acres at a 2:1 ratio = 5 acres*
- *APN 033-630-012 (Easternmost Parcel): Mitigate conversion of approx. 8.4 acres at a 2:1 ratio = 16.8 acres*

The agricultural land shall be elsewhere in unincorporated Yolo County, 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 any off-site improvements. Pursuant to Davis Code Section 40A.03.040, the agricultural mitigation land shall be comparable in soil quality with the agricultural land whose use is 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. The easement instrument used to satisfy this measure shall conform to the conservation easement template of the Yolo Habitat Conservancy.

8-8 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 (reference Impact 4.2-4).

Impacts related to other changes in the existing environment which could result in conversion of Farmland were determined to be significant and unavoidable for the proposed project. Because the Mixed-Use Alternative would involve development over the same site and acreage as the proposed project, the same disturbance of land on the same site would occur. Thus, similar to the proposed project, the Mixed-Use Alternative site is currently used for agricultural purposes, and existing agricultural uses occur to the north and east of the site. The existing agricultural uses in the vicinity could continue to be farmed after implementation of the Mixed-Use Alternative, which could have effects on the Alternative site. Similar to the proposed project, the Alternative would incorporate agricultural buffers along the perimeter of the site. In addition, the Alternative would, similar to the proposed project, be required to comply with existing law, including provision of a deed restriction per the City's Municipal Code.

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.[2] 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 maintained as follows:

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 (except when applying baits)**	100 FEET	..50 FEET

According to the current Mace 391 property farmer, ground rigs are routinely used for applying pesticides on the property unless circumstances dictate the use of aerial application. With the use of ground rigs, the Mace 391 farmer could apply pesticides within 50 to 100 feet of any environmentally sensitive areas on the Mixed-Use site, depending upon the type of pesticide being applied, as shown in the above chart. Because the Mixed-Use Alternative includes residential uses, the Alternative would introduce a sensitive use to the project site. However, the

[2] Yolo County, Yolo County Agricultural Commissioner. *Conditions Covering the Use of Restricted Materials*. January 1, 2014.

residences are setback from the existing agricultural operations to the north and east. One residential area would be located central to the site, approximately 575 feet or further from the agricultural operations to the east. A second residential area would be located along Mace Boulevard, approximately 525 feet or further from the agricultural operations to the north. Thus, as noted in the above chart, the sensitive land uses would be at least 500 feet from any potential pesticide application. However, although the Alternative includes sensitive residential uses, the Mixed-Use Alternative would result in impacts related to 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. Therefore, a ***significant and unavoidable*** impact would result.

Mitigation Measures(s)
While implementation of the following mitigation measure would reduce the above identified Mixed-Use impact, it would not fully eliminate the potential burden placed on the adjacent farmer, nor is successful completion of the mitigation measure guaranteed. Therefore, the impact from development at the Mixed-Use site would remain ***significant and unavoidable***.

MRIC Mixed-Use

8-8 *Prior to recording the first final map, the applicant shall attempt to purchase a "no aerial spray" easement from the adjacent property owner. It is anticipated that the easement will need to be 400 feet wide along the Mixed-Use site's northern and eastern boundaries. The applicant shall submit the written proof of the easement to the Department of Community Development and Sustainability.*

Mace Triangle – none

8-9 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to agricultural resources (reference Impact 4.2-5).

Impacts related to conflicts with plans, policies, or regulations related to agricultural resources, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.2 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required

Air Quality (reference Section 4.3)

The impacts related to air quality as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-10 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction (reference Impact 4.3-1).

Impacts related to violation of an air quality standard during construction were determined to be less-than-significant for the proposed project. Because development of the Mixed-Use Alternative would involve the same area of disturbance as the proposed project, the construction-related criteria air pollutant emissions would likely be similar to what is expected for the proposed project. The Mixed-Use Alternative's construction-related emissions were estimated using CalEEMod, using similar construction assumptions as the proposed project (i.e., commencement in July 2017, 18-year construction period). According to CalEEMod, the Alternative would result in construction-related emissions as shown in Table 8-4.

Table 8-4
Maximum Unmitigated Mixed-Use Alternative Construction-Related Emissions

Pollutant	Alternative Emissions	YSAQMD Threshold of Significance	Proposed Project Emissions	Difference
ROG	3.10 tons/yr	10 tons/yr	2.41 tons/yr	+0.69 tons/yr
NO_X	7.64 tons/yr	10 tons/yr	7.64 tons/yr	+0.00 tons/yr
PM_{10}	29.93 lbs/day	80 lbs/day	21.05 lbs/day	+8.92 lbs/day

Source: CalEEMod, July 2015.

As shown in the table, the Mixed-Use Alternative's construction-related emissions would be comparable to that of the proposed project and would be below the applicable thresholds of significance. In addition, similar to the proposed project, the Mixed-Use Alternative would be required to comply with all applicable YSAQMD rules and regulations for construction, as well as best management practices for dust, which would help to minimize emissions generated during construction activities. Therefore, impacts related to a violation of air quality standards or substantial contribution to an existing or projected air quality violation during construction under the Mixed-Use Alternative would be ***less than significant***.

Mitigation Measure(s)
None required

8-11 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operations, and a conflict with or obstruction of implementation of applicable air quality plans (reference Impact 4.3-2).

Impacts related to violation of an air quality standard during operations were determined to be significant and unavoidable for the proposed project. The Mixed-Use Alternative would involve development of the proposed project site with innovation center uses, as well as high-density

residential uses. The amount of innovation center uses would be equal to the buildout of the proposed project (2,654,000 sf), but the Mixed-Use Alternative would introduce approximately 750 to 850 residential units. According to the trip generation data provided for the Mixed-Use Alternative by Fehr & Peers, the modifications to on-site land uses per the Mixed-Use Alternative would result in a slight reduction in daily vehicle trips. Thus, associated mobile emissions would be expected to be less under the Mixed-Use Alternative compared to the proposed project. However, the inclusion of residential uses would likely generate higher energy, water, and solid waste source emissions.

The Mixed-Use Alternative operational emissions were estimated using CalEEMod and compared to the applicable thresholds of significance, as well as to the proposed project emissions, as shown in Table 8-5. It should be noted that the Mixed-Use Alternative's estimated total daily VMT of 139,000 provided by Fehr & Peers was applied to the modeling. In addition, similar assumptions as used for the proposed project, including compliance with the California Building Energy Efficiency Standards Code and Tier 1 of the CALGreen Code per City standards, and provision of on-site renewable energy sufficient to supply a minimum of 50 percent of the project's energy demand have been applied to CalEEMod as inherent project features for the Mixed-Use Alternative as well. Similar to the proposed project, the Mixed-Use Alternative would be required to comply with all applicable YSAQMD rules and regulations for operations, including Rule 2.40 (Wood Burning Appliances), which would help to minimize emissions generated during project operations. Compliance with Rule 2.40 was taken into consideration in the modeling by assuming all residential units would include only natural gas hearths.

Table 8-5
Maximum Unmitigated Mixed-Use Alternative Operational Emissions

Pollutant	Alternative Emissions	YSAQMD Threshold of Significance	Proposed Project Emissions	Difference
ROG	24.21 tons/yr	10 tons/yr	19.51 tons/yr	+4.23 tons/yr
NO_X	17.51 tons/yr	10 tons/yr	18.83 tons/yr	-1.75 tons/yr
PM_{10}	104.14 lbs/day	80 lbs/day	138.95 lbs/day	-34.69 lbs/day

Source: CalEEMod, July 2015.

As shown in the table, the Mixed-Use Alternative would result in greater operational emissions of ROG than the proposed project, and fewer operational emissions of NO_X and PM_{10}. Similar to the proposed project, emissions of ROG, NO_X, and PM_{10} would exceed the applicable YSAQMD thresholds of significance. Accordingly, the Mixed-Use Alternative would result in a contribution to the region's nonattainment status of ozone and PM, and could violate an air quality standard or contribute substantially to an existing or projected air quality violation, and a ***significant*** impact would occur.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-11 *Prior to issuance of any building permits, the project applicant shall show on project plans via notation that only zero-VOC paints, finishes, adhesives, and cleaning supplies shall be used for all buildings on the project site. Project plans shall be subject to review and approval by the Department of Community Development and Sustainability.*

Implementation of Mitigation Measures 8-11 would reduce the Mixed-Use Alternative's operational emissions as shown in Table 8-6. Per the table, the Alternative's operational ROG, NO_X, and PM_{10} emissions would not be reduced to below the applicable thresholds of significance.

Table 8-6
Mitigated Mixed-Use Alternative Operational Emissions

Pollutant	Alternative Emissions	YSAQMD Thresholds of Significance
ROG	21.54 tons/yr	10 tons/yr
NO_X	16.53 tons/yr	10 tons/yr
PM_{10}	93.95 lbs/day	80 lbs/day

Source: CalEEMod, July 2015.

Similar to the proposed project, the majority of the Alternative's mitigated ROG emissions are associated with area sources, the majority of which are from consumer products. Even if the Alternative's operational ROG emissions associated with mobile and energy sources were to be reduced to zero tons/yr, the Alternative would still result in emissions from area sources (consumer products) in excess of the applicable YSAQMD threshold of significance. Possible additional mitigation measures for further reducing consumer product emissions of ROG could include limitations on consumer products at the site (e.g., amounts, types, etc.); however, such mitigation cannot be feasibly enforced or verified. The sale, manufacturing, substance control, and content limitation (such as VOC limits) of consumer products are regulated by federal, State, and/or local government agencies. The YSAQMD is charged with local enforcement of regulations regarding consumer products that are associated with effects on air quality. The YSAQMD is also charged with developing measures to offset potential effects on regional air quality through their planning efforts. For example, the regional 2013 Ozone Attainment Plan includes existing and new control strategies intended to provide the necessary future emission reductions to meet the ozone NAAQS. In addition, the YSAQMD's 2012 Triennial Assessment and Plan Update includes control measures intended to ensure that the CAAQS for ozone is reached. Because the Alternative has not been anticipated per the City's General Plan, the associated emissions have not been anticipated in the air quality plans. As such, any future updates to the air quality plans would have to take into account the emission associated with buildout of the Mixed-Use Alternative (if approved) and include additional strategies to offset the overall regional emissions of ozone, including ROG emissions, through local and/or regional programs.

The majority of the Alternative's mitigated operational NO_X and PM_{10} emissions are associated with mobile sources. The inherent site and/or design features that would contribute to a reduction in vehicle trips and VMT, such as site enhancements and features that encourage alternative modes of transportation, which subsequently result in mobile source emissions of criteria pollutants including NO_X and PM_{10}, have already been accounted for in the Alternative-specific VMT applied in the modeling. Additional measures for the reduction of mobile source emissions, sufficient to reduce emissions of NO_X and PM_{10} to below the applicable threshold of significance, are not available or feasible for the Alternative at this time.

Because additional feasible mitigation for the reduction of the Alternative's operational ROG, NO_X, and PM_{10} emissions is not currently available, even with implementation of Mitigation Measures 8-11, the above impact would remain ***significant and unavoidable***.

8-12 Expose sensitive receptors to substantial pollutant concentrations (reference Impact 4.3-3)

Impacts related to exposure of sensitive receptors to substantial pollutant concentrations were determined to be less-than-significant for the proposed project. According to Fehr & Peers, the Mixed-Use Alternative would result in an increase in new (external) trips of 14,880, as compared to the proposed project's increase of 17,091. The daily VMT associated with the Mixed-Use Alternative would be less than the proposed project as well. Due to the decrease in vehicle trips and VMT as a result of the Mixed-Use Alternative, in comparison to the proposed project, the potential for the Mixed-Use Alternative to cause localized CO concentrations would be less than the proposed project. The conservative analysis conducted for the proposed project determined that the highest predicted concentrations of CO associated with the worst-case intersections and roadway segment would be well below the 1-hour and 8-hour CAAQS for CO at a conservative distance of approximately 32 feet (10 meters). Because all affected intersections and roadways associated with the Alternative would involve lower volumes of traffic and less of a delay than the proposed project, the CO concentrations resultant of the Mixed-Use Alternative affected intersections would be expected to be less than what has been estimated for the proposed project. Therefore, the Alternative's impact related to a contribution to local mobile-source concentrations of CO would be less than significant.

Residential land uses are not typically associated with long-term TAC emissions; however, the same potential for the innovation center uses to generate emissions of TACs, particularly DPM during construction, would occur for the Mixed-Use Alternative. Similar to the proposed project, to the extent the future innovation center uses are known, the Mixed-Use Alternative would not be expected to involve long-term operation of any stationary diesel engines or other major on-site stationary source of TACs.

If the on-site residences, which would be considered sensitive receptors, are occupied while the remainder of the site is being constructed, the future on-site sensitive receptors would be exposed to DPM associated with construction activities. According to AERMOD, a sensitive receptor standing on-site in the approximate location of the future residential areas as shown in Figure 8-1 during project construction would be exposed to maximum DPM concentrations as shown in

Table 8-7. According to the table, the Mixed-Use Alternative would not cause exposure of sensitive receptors to substantial concentrations of construction-related DPM.

Table 8-7
Maximum Construction-Related DPM Concentration at On-site Sensitive Receptor

	DPM Concentration (µg/m^3)	Threshold of Significance (µg/m^3)
24-Hour Average	13.65	50
Annual Average	4.49	20
Source: AERMOD, July 2015.		

Because the Mixed-Use Alternative would not produce substantial pollutant concentrations, and is not located near any existing sources of substantial pollutant concentrations, as determined for the proposed project, sensitive receptors would not be exposed to significant levels of pollutant concentrations as a result of the Mixed-Use Alternative. Thus, a ***less-than-significant*** impact would result.

Mitigation Measure(s)
None required.

8-13 Create objectionable odors affecting a substantial number of people (reference Impact 4.3-4).

As determined in Section 4.3 of this EIR, construction and operation of the proposed project would not create objectionable odors, nor would the project site be affected by any existing sources of substantial objectionable odors. Impacts related to objectionable odors were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would involve similar development, on the same site and over the same acreage as the proposed project but with the inclusion of a high-density residential component. The innovation center uses included in the Mixed-Use Alternative would have the same potential to create objectionable odors as would occur under the proposed project. As determined in Section 4.3, the proposed innovation center uses would not be expected to create objectionable odors that would affect a substantial number of people. Residential uses are not typically associated with the generation of objectionable odors. It should be noted that diesel fumes from construction equipment are often found to be objectionable; however, construction is temporary and associated diesel emissions would be regulated in accordance with the In-Use Off-Road Diesel Vehicle Regulation, as discussed above. In addition, the Alternative would be required to comply with all applicable YSAQMD rules and regulations, including, but not limited to, Rule 2.1, Rule 2.28, and Rule 2.5, which would help to control construction-related odorous emissions.

The YSAQMD also regulates objectionable odors through Rule 2.5 (Nuisance), which prohibits any person or source from emitting air contaminants or other material that result in any of the following: cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such persons or the public; or have a natural tendency to cause injury or damage to business or property. Rule 2.5 is enforced based on complaints. If complaints are received, the YSAQMD is required to investigate the complaint, as well as determine and ensure a solution for the

source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made after the Alternative is developed, the YSAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

In addition, odors associated with potential pesticide odor related to nearby agricultural operations are addressed by the Yolo County Agricultural Commissioner. If an odor complaint is reported, a biologist representing the Yolo County Agricultural Commissioner investigates the complaint and is required to determine if a nearby pesticide application has caused the odor and if a nearby farmer has violated pesticide permit conditions. The Yolo County Agricultural Commissioner would ensure that any issue is rectified.

For the aforementioned reasons, construction and operation of the Mixed-Use Alternative would not create objectionable odors, nor would the Alternative site be affected by any existing sources of substantial objectionable odors, and a ***less-than-significant*** impact related to objectionable odors would result.

Mitigation Measure(s)
None required.

8-14 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to air quality (reference Impact 4.3-5).

Impacts related to conflicts with plans, policies, or regulations related to air quality, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.3 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Biological Resources (reference Section 4.4)

The impacts related to biological resources as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-15 Impacts related to special-status plant species (reference Impact 4.4-1).

Impacts related to special-status plant species were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the same potential exists for special-status plant species to be located at the site under the Mixed-Use Alternative as the

proposed project. As such, the same mitigation measures as the proposed project would be required for the Mixed-Use Alternative in order to protect such species and ensure impacts are less than significant. Overall, impacts related to special-status plant species under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-15 To ensure avoidance and minimization of potential impacts to special-status plant species, the following measures shall be implemented:

- *Prior to initiation of any ground disturbance activities for the Mace Triangle and for each phase of the MRIC Mixed-Use, the applicant shall retain a qualified botanist to conduct a botanical survey during spring (April to May) and fall (July to September), during the evident and identifiable periods for special-status plants with potential to occur on the site. The botanical survey must also cover all potential utility line alignments and any other off-site work required for any phase of development. The survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.*
- *Any special-status plants that are within the limits of grading for on- or off-site improvements shall be propagated to suitable habitat in designated open space areas, or for the Mace Triangle, another pre-approved location. The propagation shall be overseen by a qualified botanist, approved by the City of Davis Department of Community Development and Sustainability and CDFW. The botanist shall identify the location to receive the plants, identify the methods of propagation, and oversee the work.*

8-16 Impacts to VELB (reference Impact 4.4-2).

Impacts related to valley elderberry longhorn beetle (VELB) were determined to be less-than-significant with mitigation for the proposed project. Blue elderberry (*Sambucus nigra* ssp. *caerulea*; formerly, *Sambucus mexicana*) shrubs in the Mixed-Use Site area provide marginal habitat for VELB. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the same potential exists for special-status species to be located at the site under the Mixed-Use Alternative as the proposed project, including VELB. The same mitigation measures as the proposed project would be required for the Mixed-Use Alternative in order to protect such species and ensure impacts are less than significant. Overall, impacts related to VELB under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-16(a) *To ensure avoidance and minimization of impacts to VELB, the project applicant for the MRIC Mixed-Use site shall implement the following measures prior to initiation of any ground disturbance activities within the Phase 3 portion of the Mixed-Use site along Mace Boulevard:*

- *The project applicant for the Mixed-Use site shall avoid the single elderberry shrub along Mace Boulevard by restricting all construction and ground-disturbance during Phase 3 of development within 20 feet from the dripline of the shrub, subject to inspection by the City of Davis Department of Community Development and Sustainability. Restriction would include installing temporary orange fencing around the dripline so the area is clearly visible to workers; or*
- *If the shrub cannot be avoided during Phase 3 through re-design 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 by either (1) purchasing VELB conservation credits from a USFWS-approved conservation bank, or (2) transplanting the individual shrub 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.*

8-16(b) *To ensure avoidance and minimization of impacts to VELB, the project applicant for the Mixed-Use site shall implement the following measures, prior to initiation of ground disturbance activities, if the northerly off-site sewer alignment is selected by the project applicant:*

- *The project applicant for the Mixed-Use site shall avoid the elderberry shrubs along County Road 104 by restricting all construction and ground-disturbance within 20 feet from the dripline of the shrubs, subject to inspection by the City of Davis Department of Community Development and Sustainability. Restriction would include installing temporary orange fencing around the dripline so the area is clearly visible to workers; or*
- *If the shrubs cannot be avoided in such a fashion, the project applicant shall mitigate for potential impacts to the shrubs by either (1) purchasing VELB conservation credits from a USFWS-approved conservation bank, or (2) transplanting the individual shrubs that are 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.

Mace Triangle – none

8-17 Impacts to Giant garter snake (reference Impact 4.4-3).

MRIC

GGS were not observed during biological surveys of the MRIC Mixed-Use site, or any portion of the Study Area. The closest potentially occupied GGS habitat appears to coincide with the closest known populations of GGS, which occur in the Yolo Bypass and in the Willow Slough Bypass. The MRIC site does not occur in an area of rice production. Agricultural fields in the area are upland row crops. Based on aerial photographs, rice production does not occur along the MDC or in the fields between the MRIC site and either the Willow Slough Bypass or the Yolo Bypass.

As noted previously, the MDC is a manmade storm drain that transports urban runoff from the Mace Ranch Drainage Basin in the City of Davis, east through the center of MRIC site to the Yolo Bypass, approximately 2.5 air miles east of the MRIC site. The hydrology for the portion of MDC in the MRIC site is provided by urban irrigation runoff and precipitation runoff from within the City of Davis. Upstream (west) of the MRIC Site, the MDC is culverted underground for at least 1,000 feet. The Channel enters the MRIC site through two culverts that pass underneath Mace Boulevard. The upland row crop agriculture in the MRIC site uses drip irrigation. Irrigation does not contribute substantially to the hydrology of the MDC.

From the Study Area, the MDC drains to the Yolo Bypass approximately 2.5 air miles to the east. Water from the channel drains into the Bypass through an approximately 8-foot wide, one-way metal flap gate that rests in the closed position. Water does not flow into the channel from the Bypass. Water was not present in the channel at the Yolo Bypass outlet during fieldwork. Insufficient water exists in the MDC during the GGS active season to support a GGS population, or to facilitate dispersal. To enter the MDC, GGS would have to travel across the Yolo Bypass levee, which is mostly barren and approximately 170 feet wide. GGS populations are known to occur in the Willow Slough Bypass and in the Yolo Bypass, but not on the land side of (west of) the 150- to 200-foot-wide Yolo Bypass levee on the north side of I-80 (CDFW 2015).

Vegetation within the portion of the MDC located in the MRIC site consists of freshwater marsh species such as bulrush (*Schoenoplectus acutus* var. *occidentalis*), and cattail (*Typha* sp.). Downstream of the MRIC site, in the eastern portion of the MRIC site, and in all portions of the MDC visible from CR 105, the MDC is dominated by low growing ruderal species such as perennial pepperweed (*Lepidium latifolium*) and non-native annual grasses that do not provide cover or habitat for GGS. Vegetation in the MDC is periodically removed by the City of Davis. Between the MRIC site and the Yolo Bypass, vegetation in the channel is dominated by ruderal weeds such as perennial pepperweed, curly dock (*Rumex crispus*), and yellow star-thistle (*Centaurea solstitialis*). The portion of the channel adjacent to the Yolo Bypass is dominated by bulrush, cattail and willows (*Salix* spp.). The MDC lacks the emergent aquatic vegetation that is

an essential component of GGS habitat for most of its length. Vegetation in most of the MDC does not indicate perennially, or near-perennially inundated conditions. Regular removal of vegetation in the MDC also reduces the amount of emergent aquatic vegetation present in the channel.

Urban influence, artificial hydrology, vegetation maintenance, culverts, and lack of water and suitable prey items during the active season make it unlikely that GGS would be able to travel to the site. Suitable GGS habitat is not present in the MDC within the MRIC site.

Mace Triangle

GGS habitat does not occur in the Mace Triangle site. The Mace Triangle site is disturbed (i.e., either via existing development or agricultural operations) and does not contain any agricultural ditches or drainage channels through which GGS could disperse. Therefore, any future development on the Mace Triangle site would not impact GGS or their habitat.

Conclusion

While suitable habitat for GGS within the MDC is currently lacking, according to the City's Wildlife Resource Specialist,[3] suitable habitat has been present in the past. The existing conditions within the MDC are likely the result of the on-going drought conditions in the region. The possibility exists that more favorable habitat conditions may return during average rainfall years, or with a change in crop type and associated irrigation runoff on adjacent fields, which may occur over the long-term buildout of the proposed project. In addition, a significant GGS source population exists within the Yolo Bypass and Willow Slough Bypass, which increases the possibility of the snake being present, whether resident or vagrant, in the MDC. With respect to the potential off-site volume storage pond improvement area, north of the Railroad Channel and west of the Yolo Bypass, some areas within these survey boundaries are within 200 feet of potential GGS aquatic habitat and are thus within the snake's upland dispersal range, although these area consist of farm roads and tilled agricultural fields that are unlikely to be occupied by GGS during the GGS active season. During the winter inactive season, GGS could seek refuge in burrows and cracks in the upland habitat. If an off-site volume storage pond is constructed within the southern portion of the area shown in Figure 4.4-3 of Section 4.4, Biological Resources, near the Railroad Channel, the possibility exists for GGS to be adversely impacted should GGS occur in this upland habitat.

With implementation of the following mitigation measure, development of the MRIC site near the MDC, would have a ***less-than-significant*** impact to GGS.

[3] Personal email communication with Nick Pappani, Vice President of Raney Planning & Management, Inc. and John T. McNerney, Wildlife Resource Specialist, City of Davis, February 27, 2015.

Mitigation Measure(s)

MRIC Mixed-Use

8-17(a) *To ensure avoidance and minimization of impacts to GGS, the project applicant for the Mixed-Use Site shall implement the following measures:*

Mace Drainage Channel – Preconstruction Surveys

- *Within 15 days prior to conducting any work in the Mace Drainage Channel or existing on-site detention basin, the project applicant shall retain a qualified biologist to conduct a preconstruction survey to verify that no water is present in the channel within the project limits. The preconstruction survey shall be submitted to the City of Davis Community Development and Sustainability Department for review.*
- *The qualified biologist shall document whether aquatic habitat is present in the Mace Drainage Channel downstream of the Mixed-Use Site. If aquatic habitat is not present in the Channel between the Mixed-Use Site and CR 105 (a distance of 0.5 miles), then aquatic habitat connectivity is not present in the Mace Drainage Channel and further preconstruction surveys or construction monitoring is not required.*
- *If water is present within the on- and off-site project limits, the Mace Drainage Channel shall be dewatered for a minimum of two weeks prior to construction activities in the Channel.*
- *If the first preconstruction survey reveals that aquatic habitat is present in the Channel between the project site and CR 105, a second preconstruction survey shall be conducted within 24 hours prior to construction. The second preconstruction survey shall be submitted to the City of Davis Community Development and Sustainability Department for review. The second preconstruction survey shall cover the portion of the Mace Drainage Channel located on the Mixed-Use Site, and areas within 200 feet of the channel. If, based on the preconstruction surveys, it is determined that potentially occupied GGS aquatic habitat occurs within 200 feet of the MRIC Site, MM 8-17(b) shall be implemented.*

  If GGS are encountered during preconstruction surveys, USFWS and CDFW shall be notified and construction shall not commence until the following avoidance measures approved by USFWS and CDFW are implemented.
  - *Unless authorized by USFWS, site disturbance or construction activity within 200 feet of suitable aquatic habitat for the GGS shall not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance should be completed by October 1.*

- *To the extent possible, site disturbance or construction activity shall be avoided within 200 feet from the banks of GGS aquatic habitat for any phase of development. 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 site disturbance or construction activity, the project area shall be surveyed for GGS. The survey shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a GGS 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 GGS will 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) shall be removed so that snakes and other wildlife are not attracted to the construction area.*
- *GGS habitat to be avoided within or adjacent to construction areas shall be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel throughout construction for any phase of development.*

Off-Site Volume Storage Pond (if approved)

- *During the inactive season (October 2 to April 30), no work shall be conducted in areas within 200 feet of potential aquatic habitat for GGS, unless authorized by USFWS.*
- *Temporary stockpiling of soil shall not occur within 200 feet of potential aquatic habitat for GGS.*
- *During the active season (May 1 to October 1), the construction monitoring provision of MM 8-17(b) shall be implemented and a biological monitor shall be present during work within 200 feet of aquatic habitat for GGS.*

8-17(b) Construction Monitoring

- *If any work is to occur within 200 feet of GGS aquatic habitat, then a biological monitor trained in GGS identification shall be on-site during any work within or immediately adjacent to the Mace Drainage Channel.*

The monitor shall provide environmental training to construction personnel working in or near the Mace Drainage Channel, subject to inspection by the City of Davis Community Development and Sustainability Department. The training shall include instruction on GGS identification, behavior, and habitat. Work shall be stopped and USFWS and CDFW contacted should any GGS be encountered.

Mace Triangle – none

8-18 Impacts to Burrowing owl (reference Impact 4.4-4)

Impacts related to burrowing owl were determined to be less-than-significant with mitigation for the proposed project. Based on the California Natural Diversity Database (CNDDB) records, burrowing owl was observed near the intersection of Mace Boulevard and CR 104 adjacent (west) to the Mixed-Use site. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the same potential exists for special-status species to be located at the site under the Mixed-Use Alternative as the proposed project, including burrowing owl. The same mitigation measures as the proposed project would be required for the Mixed-Use Alternative in order to protect such species and ensure impacts are less than significant. Overall, impacts related to burrowing owl under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-18(a) *Preconstruction Surveys: The project applicant proposing development on the Mixed-Use Site shall implement the following measure to avoid or minimize impacts to western burrowing owl:*

- *No less than 14 days prior to any ground disturbing activities for any phase of development at the Mixed-Use site, the project applicant shall retain a qualified biologist to conduct a preconstruction survey of the Mixed-Use site, any off-site improvement areas, and all publicly accessible potential burrowing owl habitat within 500 feet of the project construction footprint. The survey shall be performed in accordance with the applicable sections of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If the survey does not identify any nesting burrowing owls on the Mixed-Use site, further mitigation is not required. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review. The survey periods and number of surveys are identified below:*
    - *If construction related activities commence during the non-breeding season (1 September to 31 January), a minimum of one preconstruction survey shall be conducted of that phase and all*

publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.

- *If construction related activities commence during the early breeding season (1 February to 15 April), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.*
- *If construction related activities commence during the breeding season (16 April to 30 August), a minimum of three preconstruction surveys shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase. If construction related activities commence after 15 June, at least one of the three surveys shall be completed after 15 June.*
- *Because the owls are known to occur nearby and may take up occupancy on a site under construction, the preconstruction survey will be conducted annually.*

- *If active burrowing owl dens are found within the survey area in an area where disturbance would occur, the project applicant shall implement measures consistent with the applicable portions of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If needed, as determined by the biologist, the formulation of avoidance and minimization approaches would be developed in coordination with the CDFW. The avoidance and minimization approaches would likely include burrow avoidance buffers during the nesting season (February to August). For burrowing owls present on-site, outside of the nesting season, passive exclusion of owls from the burrows could be utilized with the approval of CDFW. Advance planning with CDFW would be necessary prior to the initiation of the take avoidance survey to plan for contingencies in the event that owls are present on-site.*

8-18(b) *<u>Compensatory Mitigation, if Active Owl Dens are Present:</u> If active burrowing owl dens are present and the project would impact active dens, the project applicant shall implement the following:*

- *If active owl burrows are present and the project would impact active burrows, the project applicant shall provide compensatory mitigation for the permanent loss of burrowing owl habitat consistent with the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation. Such mitigation may include the permanent protection of land, which is deemed to be suitable burrowing owl habitat through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, or the purchase of burrowing owl conservation bank credits from a CDFW-approved burrowing owl conservation bank. If the same mitigation acreage would be utilized for multiple species (i.e. burrowing owl habitat and Swainson's hawk foraging habitat), the*

appropriate wildlife agency, in this case CDFW, must approve the mitigation lands and long-term management practices for the mitigation lands as suitable and compatible for all species for which the lands are to provide compensatory mitigation. Proof of CDFW's approval habitat "stacking" shall be provided to the City of Davis Department of Community Development and Sustainability.

Mace Triangle

8-18(c) *Preconstruction Surveys: The project applicant proposing development on the Mace Triangle site shall implement the following measures to avoid or minimize impacts to western burrowing owl:*

- *No less than 14 days prior to any ground disturbing activities for any phase of development at the Mace Triangle site, the project applicant shall retain a qualified biologist to conduct a preconstruction survey of the Mace Triangle Site, any off-site improvement areas, and all publicly accessible potential burrowing owl habitat within 500 feet of the project construction footprint. The survey shall be performed in accordance with the applicable sections of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If the survey does not identify any nesting burrowing owls on the Mixed-Use site, further mitigation is not required. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review. The survey periods and number of surveys are identified below:*
  - *If construction related activities commence during the non-breeding season (1 September to 31 January), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.*
  - *If construction related activities commence during the early breeding season (1 February to 15 April), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.*
  - *If construction related activities commence during the breeding season (16 April to 30 August), a minimum of three preconstruction surveys shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase. If construction related activities commence after 15 June, at least one of the three surveys shall be completed after 15 June.*
- *If active burrowing owl dens are found within the survey area in an area where disturbance would occur, the project applicant shall implement measures consistent with the applicable portions of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If needed,*

as determined by the biologist, the formulation of avoidance and minimization approaches would be developed in coordination with the CDFW. The avoidance and minimization approaches would likely include burrow avoidance buffers during the nesting season (February to August). For burrowing owls present on-site, outside of the nesting season, passive exclusion of owls from the burrows could be utilized with the approval of CDFW. Advance planning with CDFW would be necessary prior to the initiation of the take avoidance survey to plan for contingencies in the event that owls are present on-site.

8-18(d) *Compensatory Mitigation, if Active Owl Dens are Present: If active burrowing owl dens are present and the project would impact active dens, the project applicant shall implement the following:*

- *If active owl burrows are present and the project would impact active burrows, the project applicant shall provide compensatory mitigation for the permanent loss of burrowing owl habitat consistent with the March 7, 2012 CDFW's Staff Report on Burrowing Owl Mitigation. Such mitigation may include the permanent protection of land that is deemed to be suitable burrowing owl habitat through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, or the purchase of burrowing owl conservation bank credits from a CDFW-approved burrowing owl conservation bank. If the same mitigation acreage would be utilized for multiple species (i.e. burrowing owl habitat and Swainson's hawk foraging habitat), the appropriate wildlife agency, in this case CDFW, must approve the mitigation lands and long-term management practices for the mitigation lands as suitable and compatible for all species for which the lands are to provide compensatory mitigation. Proof of CDFW's approval habitat "stacking" shall be provided to the City of Davis Department of Community Development and Sustainability.*

8-19 Impacts to Swainson's hawk (reference 4.4-5).

Impacts related to Swainson's hawk were determined to be significant and unavoidable for the proposed project. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the Mixed-Use Alternative would have the same potential to cause direct effects on the species during tree removal or if construction occurs during the nesting season and active Swainson's hawk nests are present. In addition, because the same amount of suitable foraging habitat for Swainson's hawk would be present on the site under the Mixed-Use Alternative, the loss of foraging habitat would be the same as the proposed project. With implementation of Mitigation Measures 8-19(a), the project's potential impacts to nesting Swainson's hawk would be reduced to a less-than-significant level. Implementation of Mitigation Measure 8-19(b) would reduce impacts to Swainson's hawk foraging habitat through the preservation of compensatory Swainson's hawk foraging habitat. However, because the Mixed-Use site is currently outside of the existing City limits, and the loss of foraging habitat

associated with urbanization of the project site has not heretofore been anticipated in any City environmental documents, the permanent loss of Swainson's hawk foraging habitat as a result of innovation center development on the Mixed-Use site would remain ***significant and unavoidable***.

Mitigation Measure(s)

MRIC Mixed-Use

8-19(a) *Preconstruction Surveys: To ensure avoidance and minimization of impacts to Swainson's hawk, the project applicant for the Mixed-Use Site shall implement the following measures:*

- *If site disturbance or construction activity for any phase of development is proposed during the nesting season for Swainson's hawk (March 1 through September 15), a qualified biologist shall conduct a preconstruction survey for Swainson's hawk in accordance with the May 2000 Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley prepared by the Swainson's Hawk Technical Advisory Committee (TAC) as applicable. In accordance with the TAC guidelines, to meet the minimum level of protection for Swainson's hawk, three surveys shall be completed in each of the two survey periods immediately prior to project initiation (with the exception that surveys shall not be initiated in period IV). The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.*
- *The preconstruction survey shall include the project construction footprint and publicly accessible areas within 0.25-mile. Inaccessible areas shall be surveyed with binoculars from publicly accessible areas. If active Swainson's hawk nests are not found, further action is not necessary.*
- *If an active Swainson's hawk nest is found within 0.25-mile of the Mixed-Use Site but is effectively shielded from view of the site by structures and/ or vegetation, then with approval from CDFW, construction may commence.*
- *If an active nest located within 0.25-mile of the Mixed-Use site is within line-of-sight of the Mixed-Use Site, then in consultation with CDFW, a biologist experienced with raptor behavior shall monitor the nest for signs of disturbance. Work may be allowed to proceed if the Swainson's hawks are not exhibiting agitated behavior. The biologist shall be on-site daily while construction related activities are taking place and shall have the authority to stop work if the Swainson's hawks are exhibiting agitated behavior. In coordination with CDFW, monitoring may be reduced if the on-site biologist determines that construction is not disturbing the Swainson's hawks or determines that they have become acclimated to construction activities.*

- *If the Swainson's hawk is showing agitated behavior, then construction shall cease or be reduced to a point that does not disturb the hawks. Construction may resume after the nesting season, or in coordination with CDFW, later in the nesting season when Swainson's hawks are less prone to disturbance.*

8-19(b) *Foraging Habitat: The project applicant shall permanently protect an equivalent amount of acres of Swainson's hawk foraging habitat converted by the proposed project by either (1) purchasing a DFW-approved conservation easement of like acreage or (2) paying the requisite mitigation fee to the Yolo Habitat JPA pursuant to the Swainson's Hawk Interim Mitigation Fee Program or purchasing mitigation credits from an approved mitigation credit holder. Purchase of a conservation easement of like acreage or payment of the mitigation fee shall be made to the Yolo Habitat JPA and shall be confirmed by the City prior to the initiation of ground disturbing activities.*

Mace Triangle

8-19(c) *Foraging Habitat: The project applicant shall permanently protect an equivalent amount of acres of Swainson's hawk foraging habitat converted by the proposed project by either (1) purchasing a DFW-approved conservation easement of like acreage or (2) paying the requisite mitigation fee to the Yolo Habitat JPA pursuant to the Swainson's Hawk Interim Mitigation Fee Program or purchasing mitigation credits from an approved mitigation credit holder. Purchase of a conservation easement of like acreage or payment of the mitigation fee shall be made to the Yolo Habitat JPA and shall be confirmed by the City prior to the initiation of ground disturbing activities.*

8-20 Impacts to raptors, nesting birds, or other birds protected under the MBTA (reference Impact 8-20).

Impacts related to raptors, nesting birds, or other birds protected under the Migratory Bird Treaty Act (MBTA) were determined to be less-than-significant with mitigation for the proposed project. Suitable nesting habitat is concentrated mainly along the MDC and existing detention basin wherein trees are located. Migratory birds could also nest within the limited vegetation along the off-site sewer alignments. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the same potential exists for raptors, nesting birds, or other birds protected under the MBTA to be located at the site under the Mixed-Use Alternative as the proposed project. The same mitigation measures as the proposed project would be required for the Mixed-Use Alternative in order to reduce any potential impacts to less than significant. Overall, impacts related to raptors, nesting birds, or other birds protected under the MBTA under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-20 *The project applicant for the Mixed-Use site shall implement the following measures to avoid or minimize impacts to Migratory Birds and other protected bird species:*

- *If any site disturbance or construction activity for any phase of development begins outside the February 1 to August 31 breeding season, a preconstruction survey for active nests shall not be needed.*
- *If any site disturbance or construction activity for any phase of development is scheduled to begin between February 1 and August 31, a qualified biologist shall conduct a preconstruction survey for active nests from publicly accessible areas within 14 days prior site disturbance or construction activity for any phase of development. The survey area shall cover the construction site and the area surrounding the construction site, including a 100-foot radius for MBTA birds, and a 250-foot radius for birds of prey. If an active nest of a bird of prey, MBTA bird, or other CDFW-protected bird is not found, then no further mitigation measures are necessary. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.*
- *If an active nest of a bird of prey, MBTA bird, or other CDFW-protected bird is discovered that may be adversely affected by any site disturbance or construction or an injured or killed bird is found, the project applicant shall immediately:*
    - *Stop all work within a 100-foot radius of the discovery.*
    - *Notify the City of Davis Department of Community Development and Sustainability.*
    - *Do not resume work within the 100-foot radius until authorized by the biologist.*
    - *The biologist shall establish a minimum 250-foot Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey, and a minimum 100-foot ESA around the nest if the nest is of an MBTA bird other than a bird of prey. The ESA may be reduced if the biologist determines that a smaller ESA would still adequately protect the active nest. No work may occur within the ESA until the biologist determines that the nest is no longer active.*

Mace Triangle – none

8-21 Impacts to riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS (reference Impact 4.4-7).

Impacts related to riparian habitat or other sensitive natural community were determined to be less-than-significant with mitigation for the proposed project. The only feature within the Mixed-Use Alternative site that contains sensitive natural habitats, albeit limited in nature, is the MDC. The existing MDC, which transverses the center of the Mixed-Use Alternative site, would remain in place and continue to serve drainage flows from the Mixed-Use Alternative site. Improvements to the MDC are included as part of the Mixed-Use Alternative. Therefore, impacts related to riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-21 The project applicant for the Mixed-Use site shall implement the following measure to avoid or minimize impacts to the Mace Drainage Channel:

- *Prior to conducting non-maintenance work within the bed and banks in the Mace Drainage Channel for any phase of development, as applicable, the project applicant for the Mixed-Use site shall notify CDFW pursuant to Section 1602 of the Fish and Wildlife Code. If CDFW determines that a Streambed Alteration Agreement (SAA) is necessary, the applicant shall obtain a SAA and comply with all conditions of that Agreement. Compliance with the SAA shall be ensured by the City of Davis Department of Community Development and Sustainability. This does not apply to City maintenance work within the Mace Drainage Channel, for which the City already has an agreement with CDFW.*

Mace Triangle – none

8-22 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (reference Impact 4.4-8).

Impacts related to federally protected wetlands were determined to be less-than-significant for the proposed project. Based on the wetland delineation report prepared by Sycamore Environmental Consultants, Inc. on December 10, 2014, Sycamore determined that the MDC is a non-navigable, man-made storm water drainage ditch maintained by the City of Davis. The MDC is excavated in uplands and drains only uplands. It is not a realigned natural channel, nor does the MDC contain relatively permanent flow of water. For these reasons, the MDC is not

jurisdictional. Thus, impacts related to such under the Mixed-Use Alternative would be ***less than significant***.

Mitigation Measure(s)
None required

8-23 Interfere substantially with the movement of native, resident, or migratory fish or wildlife species or established native resident or migratory wildlife corridors (reference Impact 4.4-9).

Impacts related to movement or wildlife corridors were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, the Mixed-Use Alternative would have the same potential as the proposed project to interfere with the movement of native, resident, or migratory fish or wildlife species or established native resident or migratory wildlife corridors. Similar to the proposed project, the Mixed-Use Alternative would include agricultural buffers along the perimeter of the site and open space areas within the site, which could allow for wildlife movement. Furthermore, the adjacent agricultural uses would provide space for the movement of wildlife. Overall, impacts related to interfering substantially with the movement of native, resident, or migratory fish or wildlife species or established native resident or migratory wildlife corridors would be ***less than significant***.

Mitigation Measure(s)
None required

8-24 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (reference Impact 4.4-10).

Impacts related to conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, were determined to be less-than-significant with mitigation for the proposed project. As noted previously, the City of Davis Municipal Code requires permits for the removal of some species and sizes of trees pursuant to Chapter 37 of Davis Municipal Code. The Mixed-Use Alternative would be required to comply with the requirements of the City's Municipal Code. Because the Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project, the number of protected trees necessary for removal would be similar to that of the proposed project. Accordingly, impacts related to a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, under the Mixed-Use Alternative would be ***less-than-significan***t with mitigation.

Mitigation Measure(s)
None required

8-25 Conflict with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan (reference Impact 4.4-11).

Impacts related to conflicts with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative would be subject to the same mitigation/conservation requirements of the future YNHP, which is anticipated to be adopted by May 2017. Therefore, impacts related to a conflict with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan under the Mixed-Use Alternative would be ***less-than-significant*** with implementation of the following mitigation measure.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-25 *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 Mixed-Use Site or Mace Triangle Site, 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 HCP/NCCP shall supersede.*

8-26 Conflict, or create an inconsistency, with any applicable biological resources plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (reference Impact 4.4-12).

Impacts related to conflicts with plans, policies, or regulations related to biological resources, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.4 and determined to be ***less than significant*** with mitigation. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)

MRIC Mixed-Use

8-26 *At or prior to final planned development, or tentative map submittal, whichever occurs first, the applicant shall submit a design plan for the proposed on-site buffer/drainage features to the Department of Community Development and Sustainability for review and approval. The design plan shall demonstrate how the buffer/drainage features will be wildlife friendly natural spaces, with respect to details such as plant types, detention slopes, etc. In addition, should staff determine that in order to meet the City's stated objectives for urban agricultural*

transition areas (UATA), as well as drainage and safety, the proposed buffer design shall be modified to concentrate the proposed buffer and drainage areas to the northern and eastern boundaries of the project site, in order to establish wider UATA segments.

Mace Triangle – none

Cultural Resources (reference Section 4.5)

The impacts related to cultural resources as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-27 Cause a substantial adverse change in the significance of a historical resource (reference Impact 4.5-1).

Impacts related to historical resources were determined to be less-than-significant with mitigation for the proposed project. Archival research associated with the Mixed-Use Alternative location identified two historic resources that may be at least partly within the area of potential effects (APE) as it is presently drawn: the William Seward Wright Home and Farm (standing) and the William Robert Wright Family House (demolished). In addition to the standing structures, historic-period artifacts or subsurface remains may be present within the APE. Far Western's field survey and records search at the Northwest Information Center did not identify evidence of historic resources or sites on any of the Mace Triangle Site parcels. The Mixed-Use Alternative would consist of development over the same site and acreage as the proposed project. Consequently, impacts related to a substantial adverse change in the significance of a historical resource under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-27 If the northerly off-site sewer alignment is selected for the Mixed-Use Alternative, then prior to approval of design-level improvement plans for the off-site sewer pipe, the applicant shall retain a qualified archaeologist to design and implement a cultural study, the intent of which shall be to identify and investigate any subsurface historic remains within the northerly portion of the sewer pipe construction limits. Because of the potential for fragile prehistoric remains within this area, the evaluation shall include only metal detection and hand excavation. Metal detection should include a complete sweep of the APE adjacent to the farm structures, to test for subsurface features. Hand excavation should include testing of the metal detection finds. If no subsurface features are uncovered, no additional cultural investigations will necessary. If, on the other hand, structural remains are found, the investigation shall continue as formal evaluation to determine their eligibility for the California Register of Historical Resources. This shall include, at a minimum, additional exposure of the feature(s), and photo-documentation and recordation. If the evaluation determines that the

features do not have sufficient data potential to be eligible for the California Register, no additional work should be required. However, if data potential exists – e.g., there is an intact feature – it will be necessary to mitigate any project impacts. The evaluation shall be submitted to the Davis Department of Community Development and Sustainability for review.

If it is determined that standing structures associated with the William Seward Wright house and farm are within, or immediately adjacent to, the off-site sewer APE, a qualified architectural historian shall conduct an evaluation of those structures for their potential eligibility for the California Register of Historical Resources. The evaluation should include a full assessment of the structures, archival research to confirm the age, occupants, and historic uses of the structures, and the dates and extent of any renovations that might impact the structures' historic integrity. Should the structures be determined to be eligible for the California Register, pursuant to Public Resources Code Section 5024.1, Title 14 CCR, Section 4852, any mitigation measures provided in the architectural historian's report shall be followed. Should the structures be determined ineligible for the California Register, no further consideration shall be required. The evaluation shall be submitted to the Davis Department of Community Development and Sustainability for review.

Mitigation of impacts might include avoidance of further disturbance to the resources through project redesign. If avoidance is determined to be infeasible, additional data recovery excavations shall be conducted for the resources, to collect enough information to exhaust the data potential of those resources. Impacts to the standing structures shall be mitigated through recordation to the standards of the National Park Service's Historic American Buildings Survey (HABS), as determined by the qualified architectural historian.

Mace Triangle – none

8-28 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (reference Impact 4.5-2).

Impacts related to archaeological resources were determined to be less-than-significant with mitigation for the proposed project. A prehistoric archaeological site is purported to exist at the approximate terminus of the northerly off-site sewer pipe alignment, along CR 30, within the environs of the existing farm/ranch complex. Native American consultation pursuant to SB 18 has not yielded any information regarding archaeological resources within the Mixed-Use site APE. An assessment of the potential for buried archaeological deposits indicates that the northwestern corner of the parcel and the north/south-oriented potential route for the sanitary sewer main are sensitive for buried prehistoric archaeological resources.

If the applicant selects the northerly off-site sewer pipe alignment, then installation of the sewer pipe could result in adverse effects to archaeological resources should a prehistoric site be present within the limits of construction. Because of the potential for subsurface remains,

additional work should be conducted in the APE at the location of the purported prehistoric site, if the northerly sewer alignment is selected as the preferred off-site sewer alignment. Conversely, if the project proponent chooses the east-west alignment of the off-site sewer line, the prehistoric site will not be within the APE; and thus, further investigation will not be required. In the latter case, only the northwestern corner of the Mixed-Use site will require subsurface testing for archaeological remains because, based upon soils analysis and historic waterway alignments, this area has been determined to have a high potential for buried archaeological deposits.

Because the Mixed-Use Alternative would involve development of the same site as the proposed project, the potential for the Mixed-Use Alternative to disrupt or destroy previously unknown archaeological resources during ground disturbing activities exists. Mitigation measures would be required under the Mixed-Use Alternative in order to ensure impacts are reduced to ***less than significant***.

Mitigation Measure(s)

MRIC Mixed-Use

8-28(a) *Prior to approval of any improvement plans for development within the northwestern corner of the Mixed-Use site (i.e., the area designated as having "high" sensitivity for buried sites per Figure 7 of the "Archaeological Survey Report for the Proposed Davis Innovation Center: Mace Ranch Location", prepared by Far Western Anthropological Research Group), the applicant shall retain a qualified archaeologist to design and implement an archeological study, the intent of which shall be to identify and investigate any subsurface archaeological remains within the northwestern portion of the Mixed-Use Site. The subsurface sampling methodology outlined in the study shall be sufficient to enable the qualified archaeologist to define the physical extent and nature of any artifact-bearing deposits should they be discovered. Because of the potential for fragile prehistoric remains, the evaluation should include only hand excavation. Hand excavation should include placement of a series of small shovel probes across the site to look for prehistoric artifacts and features. If artifact-bearing deposits are not uncovered, additional cultural investigations are not required. If artifact-bearing features are found, the investigation shall continue as formal evaluation to determine their eligibility for the California Register of Historical Resources. This shall include, at a minimum, hand excavation of larger control units and analysis of the artifact assemblage(s). If the evaluation determines that the artifacts 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., there is an intact feature with a large and varied artifact assemblage – necessary mitigation measures shall be implemented to alleviate any project impacts. The evaluation shall be submitted to the Davis Department of Community Development and Sustainability for review.*

Mitigation of impacts might include avoidance of further disturbance to the resources through project redesign. If redesign is not feasible, additional data

recovery excavations shall be conducted for the archaeological resources, to collect enough information to exhaust the data potential of those resources.

8-28(b) *If the northerly off-site sewer alignment is selected for the Mixed-Use project, then prior to approval of design-level improvement plans for the off-site sewer pipe, the applicant shall retain a qualified archaeologist to design and implement an archeological study, the intent of which shall be to identify and investigate any subsurface archaeological remains within the northerly portion of the sewer pipe construction limits. The subsurface sampling methodology outlined in the study shall be sufficient to enable the qualified archaeologist to define the physical extent and nature of any artifact-bearing deposits should they be discovered. Because of the potential for fragile prehistoric remains, the evaluation should include only hand excavation. Hand excavation should include placement of a series of small shovel probes across the site to look for prehistoric artifacts and features. If artifact-bearing deposits are not uncovered, additional archaeological investigations are not required. If artifact-bearing features are found, the investigation shall continue as formal evaluation to determine their eligibility for the California Register of Historical Resources. This shall include, at a minimum, hand excavation of larger control units and analysis of the artifact assemblage(s). If the evaluation determines that the artifacts 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., there is an intact feature with a large and varied artifact assemblage – necessary mitigation measures shall be implemented to alleviate any project impacts. The evaluation shall be submitted to the Davis Department of Community Development and Sustainability for review.*

Mitigation of impacts might include avoidance of further disturbance to the resources through project redesign. If redesign is not feasible, additional data recovery excavations shall be conducted for the archaeological resources, to collect enough information to exhaust the data potential of those resources.

MRIC Mixed-Use and Mace Triangle

8-28(c) *If any prehistoric or historic artifacts, or other indications of archaeological resources are found during grading and construction activities, all work within the vicinity of the find shall cease 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 finds. If the resource is determined to be eligible for inclusion in the California Register of Historical Resources and project impacts cannot be avoided, data recovery shall be undertaken. 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. This 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 212-acre Mixed-Use site and/or 16.49-acre Mace Triangle site.

8-29 Directly or indirectly destroy a unique paleontological resource or unique geologic feature on the project site (reference Impact 4.5-3).

Impacts related to paleontological resources were determined to be less-than-significant with mitigation for the proposed project. Because the Mixed-Use Alternative would involve development of the same site as the proposed project, the potential for the Mixed-Use Alternative to destroy previously unknown unique paleontological resources during ground disturbing activities exists. Although the potential for paleontological resources to be impacted during construction is considered remote, unknown resources could be encountered during excavation activities. However, with the implementation of the following mitigation measure, the proposed project would result in a ***less-than-significant*** impact to paleontological resources.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-29 *If any vertebrate bones or teeth are found by the construction crew, the contractor shall cease all work in the immediate vicinity of the discovery until an on-site archaeological monitor, if present, inspects the discovery; if none is present, or if recommended by the monitor, a professional paleontologist shall evaluate the find. If deemed significant with respect to authenticity, completeness, preservation, and identification, the resource(s) shall then be salvaged and deposited in an accredited and permanent scientific institution (e.g., UCMP), where it will be properly curated and preserved for the benefit of current and future generations. 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 212-acre Mixed-Use site and/or 16.49-acre Mace Triangle site, where excavation work will be required.*

8-30 Disturb any human remains, including those interred outside of formal cemeteries (reference Impact 4.5-4).

Impacts related to disturbing human remains were determined to be less-than-significant with mitigation for the proposed project. The Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate area of the Mixed-Use Site. In addition, Far Western did not detect any evidence for human remains or burials within the Mixed-Use Site APE. Although human remains or evidence thereof was not identified within the APE, the potential for unknown human remains to be discovered during construction cannot be eliminated given the known prehistoric occupation of the vicinity by Native American tribes. Accordingly, with implementation of the following mitigation measure, the proposed project would have a ***less than significant*** impact to human remains.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-30 *During construction, if bone is uncovered that may be human, the California Native American Heritage Commission, located in Sacramento, and the Yolo County Coroner shall be notified. Should human remains be found, all work shall be halted until final disposition by the Coroner. Should the remains be determined to be of Native American descent, the Native American Heritage Commission shall be consulted to determine the appropriate disposition of such remains.*

8-31 Conflict, or create an inconsistency, with any applicable cultural resources plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (reference Impact 8-31).

Impacts related to conflicts with plans, policies, or regulations related to cultural resources, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.5 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required

Geology, Soils, and Mineral Resources (reference Section 4.6)

The impacts related to geology, soils, and mineral resources as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-32 Risks to people and structures associated with seismic activity, including ground shaking and ground failure (reference Impact 4.6-1).

Impacts related to risks to people and structures associated with seismic activity, including ground shaking and ground failure, were determined to be less-than-significant for the proposed project. The project site is not located within an Alquist-Priolo Earthquake Fault Zone, and surface evidence of faulting was not observed by Wallace Kuhl and Associates during site reconnaissance completed for the proposed project. Groundshaking is not considered a major geologic hazard in Davis, according to the City's General Plan EIR.[4]

[4] City of Davis. *Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School [pg. 5I-10]*. January 2000.

According to the information obtained from the shear wave velocity measurements taken on the Mixed-Use Site, the soils at the project site can be designated as seismic site Class D in determining seismic design forces for this project in accordance with Table Section 1613A.3 of the 2013 California Building Code (CBC). While a site-specific geotechnical report has not been prepared for the Mace Triangle Site, Wallace Kuhl and Associates' findings for the neighboring Mixed-Use Site are expected to be similar with respect to seismic activity, given the close proximity of the two sites.

Although damage to structure and risks to people from ground rupture and ground failure is highly unlikely at the project site, all project structures would be required to adhere to the provisions of the 2013 CBC, based upon seismic site Class D. The CBC contains provisions to safeguard against major structural failures or loss of life caused by earthquakes or other geologic hazards.

Because the Mixed-Use Alternative would involve buildout on the same site as the proposed project, the same geological conditions would be expected to occur. Accordingly, the potential for the buildings of the Mixed-Use Alternative to be subjected to geologic effects such as seismic activity, including ground shaking and ground failure, exists. Therefore, impacts related to risks to people and structures associated with seismic activity, including ground shaking and ground failure would be ***less than significant***.

Mitigation Measure(s)
None required

8-33 Result in substantial soil erosion or loss of topsoil (reference Impact 4.6-2).

Impacts related to soil erosion or loss of topsoil were determined to be less-than-significant with mitigation for the proposed project. According to the Soil Survey of Yolo County, California, the erosivity of the soils on the Mixed-Use site are "none" to "slight." The surface runoff potential ranges from "very slow" to "moderately slow." However, the potential for human-caused erosion associated with construction activities is always a valid concern that should be addressed.

The Mixed-Use Alternative includes utility excavation and recompaction of a portion of the project site soils. In addition, during earthwork operations, existing soils must be completely removed to expose firm undisturbed soil. Such earthwork activities could result in the exposure of loose soil to wind and/or water. Eroded soils could then be inadvertently transported into off-site drainage facilities.

The Mace Triangle site does not contain any open channels and the Park-and-Ride lot would not be disturbed as part of the project. Future disturbance of topsoil within the Mace Triangle site is anticipated to be limited to any future development at the Ikedas market parcel and the easternmost vacant parcel.

The Mixed-Use Alternative would involve buildout on the same site as the proposed project. Accordingly, the potential for the buildings of the Mixed-Use Alternative to be subjected to geologic effects or hazards, including substantial erosion or loss of topsoil, exists. Therefore,

impacts related to risks associated with substantial erosion or loss of topsoil would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-33 *Prior to initiation of any grading activities for each phase of development at the Mixed-Use site, or Mace Triangle site, 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 groundcover) 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.*

8-34 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 lateral spreading, subsidence, liquefaction, or collapse (reference Impact 4.6-3).

Impacts related to unstable soils were determined to be less-than-significant with mitigation for the proposed project. The following discussion pertains to the Mixed-Use site, for which Wallace Kuhl and Associates performed a geotechnical report.

Liquefaction

Based upon the relatively thick layers of cohesive soils, and the lack of historic occurrence of liquefaction, Wallace Kuhl and Associates concluded that the potential for liquefaction of the soils beneath most of the Mixed-Use Site is relatively low. Furthermore, the results of a soil liquefaction test performed by Wallace Kuhl and Associates confirmed that the potential for liquefaction of the soils beneath the site is very low. As such, impacts related to liquefaction would be less than significant.

Post-Liquefaction Settlement

Given the results of the post-liquefaction settlement analysis performed for the Geotechnical Report, the worst-case estimate of total post-liquefaction settlement at the project site is calculated to be about 0.6 inches of total and differential settlement across 50 feet, or the least

dimension of the structure, whichever is less. The estimates of post-liquefaction seismic settlements represent free-field ground settlement, not settlement of the proposed structures.

Liquefaction potential at the site was also evaluated based on the Liquefaction Potential Index (LPI). The LPI is a measure of the liquefaction potential based on an analysis of the entire vertical soil profile not just discrete layers. Factors taken into consideration for the LPI calculations include: thickness of the liquefied layer; proximity of the liquefied layer to the surface; and the factor of safety. The LPI ranges from 0 to 100 with the value zero representing no liquefaction potential. Surface manifestations of liquefaction occur at LPI greater than or equal to five.

Based on the soil conditions encountered at the site and the liquefaction analysis performed for the Geotechnical Report, including LPI evaluations, Wallace Kuhl and Associates concluded that the potential for liquefaction of the soils beneath the site is very low. In addition, based on the calculated settlements, structures designed to withstand complete collapse from "worst-case scenario" total and differential seismic settlements of 0.6 inches across 50 feet, or the shortest dimension of the structure, whichever is less, would be capable of achieving life safety requirements as established by the 2013 CBC. As such, impacts related to post-liquefaction settlement would be less than significant.

On-Site Fill

Review of an aerial photograph taken in 1957 shows the Mixed-Use site as agricultural land, with a meandering, linear depression in the southwestern-southern portion of the site. According to the Geotechnical Report, the former linear depression was backfilled with soil excavated during the construction of the detention basin; however, Wallace Kuhl and Associates is not aware of documentation regarding the backfill observation/compaction operations. If documentation of the backfill observation/compaction operations for the former linear depression is not available, the area of the former linear depression should be properly identified and investigated to evaluate the conditions of the backfill material.

The subsurface exploration completed for the Geotechnical Report included three borings in the near vicinity of the former linear depression; however, evidence of the presence of fill soils was not observed. Excavations and depressions resulting from the removal of the fill items must be backfilled with engineered fill.

Unsuitable Topsoils

Due the presence of disturbed/soft surface and near-surface soils within the upper one to two feet of major portions of the site, a combination of over-excavation, processing, moisture conditioning and uniform recompaction of the surface and near-surface soils will likely be required to achieve stable support conditions for the proposed improvements associated with the innovation center.

Mace Triangle Site

A site-specific geotechnical report has not been prepared for the Mace Triangle site. This chapter evaluates the potential development of two of the three parcels in the event that additional discretionary entitlements are first obtained from the City of Davis. While geotechnical issues are not anticipated for the Mace Triangle Properties, based upon the findings of the evaluation for the neighboring Mixed-Use site, the possibility exists that fill material or other unsuitable soft soils could be located on portions of the Mace Triangle site. This chapter includes a mitigation measure for submittal of a geotechnical report in conjunction with any future development application submittal for the Triangle parcels.

Conclusion

The Mixed-Use Alternative would involve buildout on the same site as the proposed project. Accordingly, the potential for the buildings of the Mixed-Use Alternative to be subjected to geologic effects or hazards, including unstable soils, exists. Therefore, impacts related to being 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 lateral spreading, subsidence, liquefaction, or collapse would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-34(a) *Prior to final design approval and issuance of building permits for each phase of the project, the project applicant for the Mixed-Use site 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 Engineering Report, Mace Ranch Innovation Center, dated January 20, 2015 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 on-site soils;*
- *Structural foundations, including retaining wall design (if applicable);*
- *Grading practices; and*
- *Expansive/unstable soils, including fill.*

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.

Mace Triangle

8-34(b) Prior to final design approval and issuance of building permits for future on-site development, the future project applicant for the Mace Triangle site shall submit a site-specific, design-level geotechnical report produced by a California Registered Geotechnical Engineer to the City of Davis Building Inspection Division for review and approval. The geotechnical report shall include, but would not be limited to, an analysis of the on-site geologic and seismic conditions, including soil sampling and testing. Recommendations shall be included regarding project design measures to avoid risks to people and structures, including compliance with the latest CBC regulations, structural foundations, and grading practices.

8-35 Be located on expansive soil, as defined in Table 118-1-B of the Uniform Building Code (1994), creating substantial risks to life or property (reference Impact 8-35).

Impacts related to expansive soils were determined to be less-than-significant with mitigation for the proposed project.

MRIC Mixed-Use

Laboratory testing of clay soils performed by Wallace Kuhl and Associates revealed the near-surface soils of the project site are of high to very high plasticity when tested in accordance with the American Society of Testing and Materials (ASTM) D4318. In addition, laboratory test results of near-surface soils collected from the upper four feet revealed the near-surface clay soils possess a "medium" to "very high" expansion potential when tested in accordance with ASTM D4829 test method. Therefore, based on the laboratory tests performed for the Geotechnical Report and Wallace Kuhl and Associates' experience on nearby projects, the on-site near-surface clays are capable of exerting significant expansion pressures on structural foundations, interior slabs, exterior flatwork, and pavements. However, measures can be taken to reduce the effects of expansive soils on the project site, as provided in the *Preliminary Geotechnical Engineering Report.* It should be noted that the degree of expansion potential possessed by the surface and near-surface soils at the site will likely vary across the site.

Mace Triangle

While a site-specific geotechnical report has not been prepared for the Mace Triangle site, Wallace Kuhl and Associates' findings for the neighboring Mixed-Use site are expected to be similar with respect to expansive soils, given the close proximity of the two sites.

Conclusion

Similar to above, because the Mixed-Use Alternative would involve buildout on the same site as the proposed project, the potential for the buildings of the Mixed-Use Alternative to be subjected to geologic effects or hazards, including expansive soils, exists. Therefore, impacts related to

risks to people and structures associated with expansive soils would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-35(a) Implement Mitigation Measure 8-34(a).

Mace Triangle

8-35(b) Implement Mitigation Measure 8-34(b).

8-36 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 (reference Impact 4.6-5).

Impacts related to conflicts with plans, policies, or regulations related to geology, soils, and mineral resources, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.6 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Greenhouse Gas Emissions and Energy (reference Section 4.7)

The impacts related to GHG emissions and energy as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-37 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment (reference Impact 4.7-1).

According to CEQA Guidelines Section 15064.4(b), the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting should be considered when assessing the significance of impacts from GHG emissions on the environment. As presented in Section 4.7 of this EIR, the total existing GHG emissions associated with the project site are currently 267.69 $MTCO_2e$/yr.

Impacts related to generation of GHG emissions were determined to be significant and unavoidable for the proposed project. The Mixed-Use Alternative would involve development of the proposed project site with innovation center uses, as well as high-density residential uses.

The amount of innovation center uses would be equal to the buildout of the proposed project (2,654,000 sf), but the Mixed-Use Alternative would introduce approximately 750 to 850 residential units. According to Fehr & Peers, the Mixed-Use Alternative would result in an increase in new (external) trips of 14,880, as compared to the proposed project's increase of 17,091. The daily VMT associated with the Mixed-Use Alternative would be less than the proposed project as well. Thus, associated mobile emissions would be expected to be less under the Mixed-Use Alternative compared to the proposed project. However, the inclusion of residential uses would likely generate higher energy, water, and solid waste source emissions.

The total annual GHG emissions, including annual operational GHG emissions and amortized construction GHG emissions, associated with the Mixed-Use Alternative were estimated using CalEEMod at an assumed buildout of 2035 and compared to the proposed project emissions as shown in Table 8-8. The Mixed-Use Alternative's estimated total daily VMT of 139,000 provided by Fehr & Peers was applied to the modeling. In addition, similar assumptions as used for the proposed project, including compliance with the California Building Energy Efficiency Standards Code and Tier 1 of the CALGreen Code per City standards, and provision of on-site renewable energy sufficient to supply a minimum of 50 percent of the project's energy demand have been applied to CalEEMod as inherent project features for the Mixed-Use Alternative. Similar to the proposed project, the Mixed-Use Alternative would be required to comply with all applicable YSAQMD rules and regulations for operations, including Rule 2.40 (Wood Burning Appliances), which would help to minimize emissions generated during project operations. Compliance with Rule 2.40 was taken into consideration in the modeling by assuming all residential units would include only natural gas hearths.

Table 8-8
Unmitigated Mixed-Use Alternative GHG Emissions at Buildout (2035)

Emission Source	Mixed-Use Alternative Annual GHG Emissions ($MTCO_2e$/yr)	Proposed Project Annual GHG Emissions ($MTCO_2e$/yr)	Change
Construction Emissions[1]	**219.74**	**158.93**	**+60.81**
Operational Emissions	**23,345.27**	**25,884.38**	**-2,539.11**
Area	616.78	0.05	+616.73
Energy	5,075.58	4,440.53	+635.05
Mobile	15,191.47	19,269.84	-4,078.37
Solid Waste	827.47	649.59	+177.88
Water	1,633.95	1,524.36	+109.59
TOTAL ANNUAL GHG EMISSIONS	**23,565.01**	**26,043.31**	**-2,478.29**

[1] Amortized maximum annual construction emissions over an estimated 18-year construction period (maximum annual construction emissions for Mixed-Use Alternative of 3,955.40 $MTCO_2e$ / 18 years = 219.74 $MTCO_2e$/yr).

Source: CalEEMod, July 2015.

As shown in the table, the Mixed-Use Alternative would result in fewer annual GHG emissions than the proposed project. However, the Alternative would result in total net new emissions

associated with the site of 23,297.32 $MTCO_2e$/yr (23,565.01 – 267.69 = 23,297.32), which would still be considered a substantial net increase in GHG emissions currently emanating from the project site. This is considered a ***significant*** impact on the environment.

Mitigation Measure(s)

Implementation of Mitigation Measures 8-11 and 8-75, which require use of only zero-VOC paints and a reduction of vehicle trips by 10 percent, respectively, would further reduce the Alternative's total annual GHG emissions as shown in Table 8-9. As shown in the table, although Mitigation Measures 8-11 and 8-75 would reduce the Alternative's GHG emissions, the reduction would not be sufficient to reach existing levels associated with the site. Thus, the GHG emissions would still be considered a substantial increase, and the impact would remain *significant and unavoidable*.

Table 8-9
Mitigated Mixed-Use Alternative GHG Emissions at Buildout (2035)

Emission Source	Annual GHG Emissions ($MTCO_2e$/yr)
Construction Emissions[1]	**219.74**
Operational Emissions	**21,908.38**
Area	616.78
Energy	5,075.58
Mobile	13,754.59
Solid Waste	827.47
Water	1,633.95
TOTAL ANNUAL GHG EMISSIONS	**22,128.12**

[1] Amortized maximum annual construction emissions (3,955.40 $MTCO_2e$) over an estimated 18-year construction period for the project (3,955.40 $MTCO_2e$ / 18 years = 219.74 $MTCO_2e$/yr).

Source: CalEEMod, July 2015.

8-38 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (reference Impact 4.7-2).

As discussed above, in absence of YSAQMD-adopted thresholds of significance, the YSAQMD is currently recommending GHG analysis consistent with the SMAQMD approach, which the YSAQMD intends to adopt in 2015. The SMAQMD has established a threshold for both construction and operational GHG emissions of 1,100 $MTCO_2e$/yr. For projects within their jurisdiction that exceed 1,100 $MTCO_2e$/yr, SMAQMD requires a further detailed analysis showing whether the project would meet State and/or local GHG emission reduction targets.

The Mixed-Use Alternative's construction-related emissions were estimated using similar construction assumptions as the proposed project (i.e., commencement in July 2017, 18-year construction period). According to CalEEMod, the Mixed-Use Alternative would result in maximum annual construction-related GHG emissions of 3,955.40 $MTCO_2e$/yr, which would exceed the recommended 1,100 $MTCO_2e$/yr threshold of significance. In addition, as shown in Table 8-8 above, the Mixed-Use Alternative's operational GHG emissions would exceed the recommended 1,100 $MTCO_2e$/yr threshold of significance. Because both the Mixed-Use Alternative's construction-related GHG emissions and operational GHG emissions were

estimated to exceed YSAQMD's recommended GHG threshold of 1,100 $MTCO_2e$/yr, further analysis in comparison with State and/or local GHG emission reduction targets is conducted in the following section.

The State 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 a desired goal to reach the same target by 2010. In addition, the 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.

In order to provide a comparison to the State and City GHG emission reduction goals, the Mixed-Use Alternative's 1990 GHG emission levels were estimated using CalEEMod. The 1990 GHG modeling is intended to represent a benchmark, to which the Alternative's emissions can be compared to determine consistency with State and local goals, given that these goals are themselves benchmarked to 1990 emission levels. The California Building Energy Efficiency Standards Code and CALGreen Code, as well as other GHG-related State programs (i.e., the Low Carbon Fuel Standard Program and the Pavley Clean Car Standards), were not in place in the year 1990; therefore, compliance with such was not applied in the model. Similarly, because such a feature would not likely have been considered in 1990, the project's inclusion of on-site renewable energy was not applied for the 1990 level GHG modeling. However, the project-specific VMT, and compliance with YSAQMD rules and regulations (i.e., low-VOC paints and low-VOC cleaning supplies), were assumed to occur at 1990 GHG levels. According to CalEEMod, the Mixed-Use Alternative's total annual GHG emissions at a 1990 level were estimated as shown in Table 8-10.

Table 8-10
Mixed-Use Alternative GHG Emissions at 1990 Levels

Emission Source	Annual GHG Emissions ($MTCO_2e$/yr)
Construction Emissions[1]	**219.74**
Operational Emissions	**38,427.01**
Area	618.13
Energy	11,877.92
Mobile	22,134.94
Solid Waste	827.47
Water	2,968.54
TOTAL ANNUAL GHG EMISSIONS	**38,646.75**

[1] Amortized maximum annual construction emissions (3,955.40 $MTCO_2e$) over an estimated 18-year construction period for the project (3,955.40 $MTCO_2e$ / 18 years = 219.74 $MTCO_2e$/yr).

Source: CalEEMod, July 2015.

The Mixed-Use Alternative would result in approximately a 39.02 percent reduction in annual GHG emissions from 1990 levels by buildout (2035) ([38,646.75 $MTCO_2e$/yr – 23,565.01

$MTCO_2e$/yr] / 38,646.75 $MTCO_2e$/yr x 100% = 39.02%). The reduction in GHG emissions is primarily attributable to the continued advancement of vehicle and equipment efficiency, as well as more stringent standards and regulations as time progresses.

Using the downward trajectory of GHG emissions from the Alternative from 1990 levels to 2035 levels, approximately 335.15 $MTCO_2e$ of GHG emissions would be reduced per year ([38,646.75 $MTCO_2e$/yr – 23,565.01 $MTCO_2e$/yr] / [2035 – 1990]), or approximately 0.87 percent per year (39.02% / [2035 – 1990]). Based on the estimated 0.87 percent reduction per year from 1990 to 2035, the Mixed-Use Alternative would be expected to have an associated 2020 GHG emission level of 25.97 percent below 1990 levels, which would meet the State AB 32 goal and Davis CAAP minimum goal of 1990 levels by 2020, but would not meet the Davis CAAP 2020 desired target of 28 percent below 1990 levels. At 2030 GHG emission levels, a GHG emissions reduction of approximately 34.67 percent below 1990 levels would be expected to occur, which does not meet the State's goal of 40 percent below 1990 levels by 2030.

In addition, as it is impossible to predict the impact of legislation and policy that has yet to come, an accurate prediction of 2050 emissions is not possible. The regulatory environment associated with climate change is becoming more stringent and technological advancements for the reduction of GHG emissions are ever-evolving. Accordingly, the future regulations that may be in place in the year 2050 could substantially reduce project emissions at that time, but are currently unknown and cannot be reasonably predicted or quantified.

While the proposed project includes features intended to reduce its GHG emissions to the extent practicable at this time, the future of transportation emissions generated by the MRIC, the largest GHG-emitting sector of the project, are uncertain (e.g., additional state-mandated low carbon fuel standards, percentage of electric vehicles traveling to/from the site). With the variety of factors involved and without further action on the MRIC site to reduce mobile source emissions or purchase GHG emissions offsets, it is uncertain that the MRIC could be on a trajectory to achieving net zero carbon emissions by 2050. Therefore, impacts would be considered ***significant***.

Mitigation Measure(s)

Mitigation Measures 8-38(a) and (b) below have been prepared to be consistent with the intent of the statewide and City's CAAP goals, which require GHG emission reductions by a greater, increasing percentage over time. With implementation of Mitigation Measure 8-38(a) below, the proposed project would result in an additional 2.03 percent reduction from 1990 levels by the year 2020 (i.e., from 25.97 to 28 percent reduction below 1990 levels), which would meet the Davis CAAP desired 2020 goal. In addition, with implementation of Mitigation Measure 8-38(a), a 5.5 percent reduction from 1990 levels by the year 2030 (i.e., from 34.67 to 40.17 percent reduction below 1990 levels), which would meet the State's goal of 40 percent below 1990 levels by 2030.[5] As such, the mitigation measures set forth in this EIR would ensure that

[5] The 40 percent reduction below 1990 levels by 2030 was calculated based on the annual GHG emission reductions required per Mitigation Measure 4.7-2(a), the assumption that 150,000 square feet of development would occur per year, and the estimated 1990 GHG emissions for the proposed project (Table 4.7-5).

the proposed project would meet the State's 2020 and 2030 GHG emission reduction goals, and would demonstrate meaningful progress towards the City's 2020, 2040, and 2050 desired targets. In addition, it is assumed that the State and the City will continue to develop programs for the reduction of local, regional, and statewide GHG emissions in order to meet GHG emission reduction goals per State and City standards and regulations. Thus, net future reductions in city-wide GHG emissions (including the proposed project) would be expected to potentially meet the 2050 State and local goals.

Although future regulations that may be in place in the year 2050 could substantially reduce project emissions at that time, such regulations are currently unknown and cannot be reasonably predicted or quantified. Due to such regulatory uncertainties, as well as uncertainties related to the actual buildout of the proposed project and potential GHG emissions reductions due to sustainability features of the project, the full GHG reductions associated with such are speculative at this time. For this reason, and because the proposed project's GHG emissions cannot be conclusively shown to be reduced to net zero by 2050, the impact would remain *significant and unavoidable.*

MRIC Mixed Use and Mace Triangle

8-38(a) *Each individual development of the proposed project shall demonstrate consistency with the City's Climate Action and Adaptation Plan by achieving a downward trajectory in GHG emissions, towards the City goal of zero net GHG emissions by the year 2050. The project must achieve the target in place for the year in which the application is filed.*

At the City's discretion, compliance with this mitigation measure for different development activities associated with the same approval may occur at different stages in the development process depending on the nature of the project and may be based on the year that physical improvements are anticipated. At the time of or before building permits are issued, the applicant must demonstrate reduction of GHG emissions consistent with this measure. Mitigation for buildings shall occur at the time the building permit is issued, and the amount of mitigation shall be based on the year the building permit is issued. Mitigation for other emissions from a project may occur at an earlier approval but no later than issuance of entitlements. The applicant may file and City may consider and approve a GHG mitigation plan that lays out the mitigation for different stages of development within the same subsequent project approval.

Prior to issuance of any subsequent entitlement or permit in the MRIC, or alternatively prior to any approval taking effect, the applicant shall implement the following steps unless these steps have already been undertaken for the project through a prior approval or action:

1) *Using CalEEMod or another model accepted for this purpose by the City, calculate total expected GHG emissions (all sectors) for the proposed project under two scenarios: a) 1990 emissions rates; and, b) emission*

rates applicable at the time of the application, taking into account applicable building standards and other adopted regulatory requirements, as well as building design, use of renewable energy, etc.

2) *Calculate the difference between these two scenarios in step 1 as a percentage of the 1990 project emissions.*

3) *Compare the difference in emissions from step 2 to the required minimum emissions reduction schedule provided below:*

Applications Filed On or Before	***Minimum Required Reduction percentage in GHG Emissions from Calculated 1990 Emissions***
12/31/16	*23.0*
12/31/17	*25.5*
12/31/18	*28.0*
12/31/19	*30.5*
12/31/20	*33.0*
12/31/21	*35.0*
12/31/22	*37.5*
12/31/23	*40.0*
12/31/24	*42.5*
12/31/25	*45.0*
12/31/26	*47.5*
12/31/27	*50.0*
12/31/28	*52.5*
12/31/29	*55.0*
12/31/30	*57.5 (2.5% increased reduction per year)*
12/31/35	*70.0 (2.5% increased reduction per year)*
12/31/40	*82.5 (2.5% increased reduction per year)*
12/31/45	*95.0 (2.5% increased reduction per year)*
12/31/50	*100.0*

If the difference calculated in Step 2 is greater than the required reduction in Step 3, the MRIC may "bank" this as a credit to use with later projects.

4) *If the difference calculated in step 2 does not demonstrate the required reduction in step 3, applicant shall identify feasible actions to achieve the required reductions using the following priority:*
    - *First priority – building specific actions*
    - *Second priority – onsite (within MRIC) actions*

- *Third priority – community based (within Davis) actions*
- *Fourth priority – pay GHG reduction fees (carbon offsets) into a qualified existing local program, if one is in place*
- *Fifth priority – other demonstrated method of reducing emissions*

5) *Calculate, using acceptable methods, the measurable GHG reduction value of each proposed action.*

6) *Provide a Technical Memorandum of Compliance (TMC) documenting the following minimum items: modeling (step 1); emissions calculations (step 2); applicable reduction (step 3); chosen feasible actions to achieve required reduction (step 4); and measurable GHG reduction value of each action (step 5). The TMC and all steps of the process are subject to review and authorization by the City of Davis Department of Community Development and Sustainability.*

7) *Implement the authorized actions and provide evidence of this to the City of Davis Department of Community Development and Sustainability. The City upon review and acceptance of implementation, shall issue the subject entitlement, permit, or approval.*

MRIC Mixed-Use

8-38(b) *Every five years, the MRIC shall submit a GHG Emissions Reduction Accounting and Program Effectiveness Report for the entire innovation center. The report shall be submitted by 12/31 of each fifth year starting in 2020. First report due by 12/31/20, second report due by 12/31/25, etc., through 2050 or until the center is built out.*

The report shall identify the following minimum items. Other documentation requirements may be added by the City if found to be necessary to satisfy this mitigation measure.

1) *Projected annual GHG emissions for MRIC, total and by sector, from the project EIR.*
2) *GHG emissions from all uses collectively operating at the MRIC, total and by sector, at the time of reporting.*
3) *GHG emissions from each occupied building within the MRIC, total and by sector.*
4) *Summary of prior TMCs and 5-year reports.*
5) *Running total of MRIC emissions reductions and reduction credits, in total and by building.*
6) *Comprehensive data base and summary of implemented reduction actions.*

8-39 Impacts related to energy associated with construction (reference Impact 4.7-3).

Impacts related to energy associated with construction were determined to be less-than-significant for the proposed project. As the Mixed-Use Alternative would result in disturbance over the same site and total area, similar construction activities as the proposed project would be expected to occur. Construction would likely occur in distinct individual phases, one-by-one, as necessary to meet demands over the years. In such a case, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, State, and local standards, including YSAQMD rules and regulations, and occurring intermittently throughout the course of a day for a temporary period of time during each phase of construction. Overall, construction equipment operating at the project site would occur over a relatively short duration in comparison to the operational lifetime of the Mixed-Use Alternative, and would operate intermittently over the construction period for the Alternative.

Nonetheless, construction of the Mixed-Use Alternative would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and construction and off-road equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid. Construction would not involve the use of natural gas appliances or equipment. Construction activities would be limited to the hours of 7:00 AM and 7:00 PM on Mondays through Fridays, between the hours of 8:00 AM and 8:00 PM on Saturdays and Sundays per the City's Municipal Code (Section 24.02.040[b]).

Construction of the Alternative, which would result in temporary increases in electricity demand, but would not cause a permanent or substantial increase in demand that would exceed PG&E's anticipated demand projections or such that the existing PG&E supplies or infrastructure could not handle the increase. Therefore, construction would not result in any significant impacts on local or regional electricity supplies, the need for additional capacity, or on peak or base period electricity demands. In addition, standards or regulations specific to construction-related electricity usage do not currently exist. As such, the temporary increase in electricity due to construction activities would not be considered an inefficient, wasteful, or unnecessary consumption of energy, and significant adverse impacts on electricity resources would not occur.

The demand for gasoline and diesel fuel is expected to continue to rise within the State due to population growth, lack of mass transit, and the number of sports utility vehicles on California roads. However, as discussed in Section 4.7 of the EIR, a number of federal, State, and local standards and regulations exist that require improvements in vehicle efficiency, fuel economy, cleaner-burning engines, and emissions reductions, such as the CARB regulation for in-use, off-road, heavy-duty diesel vehicles in California, which would subsequently help to improve fuel efficiency and reduce GHG emissions. Any licensed contractor for the project and equipment would have to be in compliance with all applicable regulations, such as the in-use, off-road, heavy-duty vehicle regulation. Thus, the Alternative would comply with existing standards related to construction fuel efficiency. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design

changes, which could help to reduce demand on oil and emissions associated with construction. Accordingly, the temporary increase in gasoline and diesel consumption due to the Alternative's construction activities would not be an inefficient, wasteful, or unnecessary consumption of energy, and significant adverse impacts on oil resources would not occur.

Although the Mixed Use Alt would introduce 750 to 850 residential units, construction emissions would likely be similar to the proposed project. Most of the emissions during construction are due to the grading and site preparation process, as well as the number of machines/construction vehicles on-site. In addition, the disturbance area for the project and the Mixed-Use Alternative are similar. Overall, the Mixed-Use Alternative would not result in an inefficient, wasteful, and unnecessary consumption of energy, and a ***less-than-significant*** impact on energy resources during construction would occur.

Mitigation Measure(s)
None required.

8-40 Impacts related to energy associated with operations (reference Impact 4.7-4).

Impacts related to energy associated with operations were determined to be less-than-significant with mitigation for the proposed project. The amount of innovation center uses for the Mixed-Use Alternative would be equal to that of the proposed project (2,654,000 sf), but the Mixed-Use Alternative would introduce up to 850 residential units. Buildout of the Mixed-Use Alternative would result in an increase in energy demand and usage within the City, including building energy usage and transportation energy usage.

Based on the CalEEMod results for the Mixed-Use Alternative, the Mixed-Use Alternative would be expected to result in consumption of electricity of a maximum of 13.45 gigawatt-hours (GWh) per year and consumption of natural gas of approximately 0.39 therms per year, in comparison to the proposed project's estimated annual consumption for electricity and gas of 12.01 GWh and 0.27 therms, respectively, which would represent 0.01 and $8.5x10^{-9}$ percent of PG&E's total planning area projected consumption in 2024. Due to the assumption that full buildout of the Alternative would occur by 2035 and the trend of an increase in energy savings due to more stringent regulations and energy efficiency technological advancements over time, the actual demand on electricity and natural gas supplies would likely be less and the percentage of PG&E's total consumption would be less.

Similar to the proposed project, the Mixed-Use Alternative would incorporate the use of on-site alternative energy sufficient to supply 50 percent of the project's energy demand. In addition, the Alternative would include the use of shading and passive solar techniques, and comply with the mandated standards of the CALGreen Code, including compliance with the California Building Energy Efficiency Standards Code, which would help to further reduce the Alternative's overall consumption of energy. However, the MRIC portion of the Mixed-Use Alternative could involve data centers, which are associated with large amounts of energy consumption. Data centers are

spaces specifically designed to accommodate dense arrangements of computer equipment.[6] Any space where dedicated HVAC is installed to handle computing equipment load is likely to be considered a datacenter. As such, the data centers must be designed to be energy efficient to the maximum extent practicable in order to avoid an inefficient, wasteful, or unnecessary consumption of energy.

The Mixed-Use Alternative would result in a daily VMT of 139,000, as compared to the proposed project's 196,000. As such, the gasoline consumption associated with the Alternative during operations would be less than that of the proposed project. In addition, State-specific regulations encourage fuel efficiency and reduction of dependence on oil. Improvements in vehicle efficiency and fuel economy standards help to reduce consumption of gasoline. As further technological advancements are made, more efficient and cost effective oil productivity would occur, which would lead to an increase in oil productivity. In addition, advancements in more efficient, cleaner burning fuels and vehicles would occur, which would help to reduce the State's dependence on petroleum products. The Mixed-Use Alternative would be required to comply with all applicable regulations associated with vehicle efficiency and fuel economy.

The Davis CAAP includes objectives for mobility within the City with priorities to reduce VMT, improve efficiency of the transportation network, improve energy efficiency of the vehicle fleet by implementing more advanced technologies, and reduce the carbon content of fuels through the use of alternative fuels. As the City implements the CAAP objectives, the City's overall dependence on oil would be expected to be reduced, including Alternative-related consumption of gasoline.

In addition, the Mixed-Use Alternative would be subject to the same mitigation measure requiring a TDM Program to be implemented, and would include sustainability features, which would contribute to a reduction of the Alternative's potential increase in demand for oil, promote alternative modes of transportation, and encourage fuel consumption reductions and efficiency. For the aforementioned reasons, the Mixed-Use Alternative would not result in an inefficient, wasteful, or unnecessary consumption of energy. It should be noted that the SACOG MTP/SCS anticipates a certain amount of growth in the region and includes the associated vehicle trips. The Alternative would fulfill a portion of the anticipated growth in the region. Thus, the vehicle trips associated with the Alternative would have been included in the MTP/SCS. Therefore, the Alternative would not be considered to result in a substantial increase in demand for regional fuel supplies, or a requirement for substantial additional fuel capacity, and a less-than-significant impact related to transportation energy use would occur.

Nonetheless, in order to ensure that the Mixed-Use Alternative would not result in a wasteful, inefficient, or unnecessary usage of energy, the future on-site data centers must be designed to be energy efficient to the maximum extent practicable. With implementation of the mitigation measure below, impacts related to operational energy would be considered ***less than significant***.

[6] Pacific Gas and Electric. *Energy Efficiency Baselines for Data Centers*. October 1, 2009.

Mitigation Measure(s)

MRIC Mixed-Use

8-40 *Prior to approval of construction drawings for innovation center buildings that include data centers, the applicant shall submit an Energy Management Plan to the City of Davis Department of Community Development and Sustainability demonstrating compliance with principles for energy management for data centers, which could include, but not be limited to the following:*

- *IT Systems;*
- *Air Management;*
- *Centralized Air Handling;*
- *Cooling Plant Optimization;*
- *On-Site Generation;*
- *Uninterruptible Power Supply Systems.*

Other energy efficient technologies and best practices that are available at the time construction drawings are submitted could be included in the Energy Management Plan as well, such as any measures described by US Department of Energy Center of Expertise for Energy Efficiency in Data Centers.

Mace Triangle Site – none

8-41 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to GHG emissions and energy conservation (reference Impact 4.7-5).

Impacts related to conflicts with plans, policies, or regulations related to GHG emissions and energy conservation, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.7 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Hazards and Hazardous Materials (reference Section 4.8)

The impacts related to hazards and hazardous materials as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-42 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (reference Impact 4.8-1).

Impacts related to the routine transport, use, or disposal of hazardous materials were determined to be less-than-significant for the proposed project. The amount of innovation center uses would be equal to the buildout of the proposed project (2,654,000 sf), but the Mixed-Use Alternative would introduce approximately 750 to 850 residential units. Because innovation center uses would still occur on-site under the Alternative, the same potential for such uses to involve the routine transport, use, or disposal of hazardous materials would occur. Any businesses that may involve the use and/or storage of hazardous materials would be required to be reviewed by the Davis Fire Department for compliance with Fire Code regulations. Accordingly, impacts related to the routine transport, use, or disposal of hazardous materials under the Mixed-Use Alternative would be ***less than significant***.

Mitigation Measure(s)
None required.

8-43 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 associated with potential on-site tanks, well, or soil contamination (reference Impact 4.8-2).

Impacts related to the release of hazardous materials were determined to be less-than-significant with mitigation for the proposed project. The following evaluation of potential impacts of the Mixed-Use Alternative associated with hazards and hazardous materials was primarily based on the Phase I ESA prepared for the proposed project.

On-Site Wells

Potential upset or accident conditions involving the release of hazardous materials into the environment associated with wells are discussed for the Mixed-Use Site and the Mace Triangle site separately below.

MRIC Mixed-Use

According to the Phase I ESA prepared for the proposed project, two active irrigation wells with associated diesel powered engines on trailers were identified on the Mixed-Use site. Evidence of spills or discharges was not observed in the vicinity of either of the trailers.

The Mixed-Use Alternative would be supplied domestic water from the City by new connections to the existing water infrastructure in the vicinity of the project site. While three irrigation wells are located along the western boundary of the Mixed-Use site, the project applicant proposes to install a new irrigation well in the west-central portion of the site, within the proposed park area adjacent Mace Boulevard. Accordingly, development of the Mixed-Use Alternative would not require use of the existing on-site

irrigation wells, and the wells would need to be properly abandoned. Without proper abandonment of the existing wells, the potential exists for upset or accident conditions to occur involving the release of hazardous materials into the environment associated with the existing on-site wells.

Mace Triangle

The Phase I ESA prepared for the proposed project did not investigate the Mace Triangle property. Thus, whether existing on-site wells exist on the site cannot be verified at this time. Future development of the Mace Triangle site would require submittal of a Phase I ESA in order to identify any on-site hazard, including on-site wells, and include recommendations, as necessary, for mitigation (see Mitigation Measure 4-43(c) below).

On-Site Canals

Potential upset or accident conditions involving the release of hazardous materials into the environment associated with canals are discussed for the Mixed-Use site and the Mace Triangle site separately below.

MRIC Mixed-Use

A former canal was located on the southern portion of the Mixed-Use site. The former canal was located on the site from at least 1957 to at least 1992 and was filled and graded in 1993. According to interviews conducted by WKA, soil from the excavation of the detention basin was placed within the canal area and the backfill was leveled with surrounding grade. A record of these operations is not available. As a result, WKA is not aware whether any trash or other debris was within the canal at the time it was backfilled. WKA has recommended that if any debris is encountered within the former canal on APN 033-630-009 during construction activities, WKA should be called to evaluate potential impacts to the site.

Mace Triangle

On-site canals are not located on the Mace Triangle site; therefore, no discussion is necessary.

Nearby Uses

The following discussion pertains to the existing uses in the vicinity of both the Mixed-Use site and the Mace Triangle site.

Nearby Hazardous Materials Sites

To confirm that nearby known or suspected contaminated properties would not have any negative impacts on the project site, vapor encroachment screening was conducted at the project site. The vapor encroachment screening consisted of performing a Search

Distance Test to identify if any known or suspect contaminated properties are surrounding or upgradient of the project site within a specific search radii, and a Chemicals of Concern (COC) Test (for those known or suspect contaminated properties identified within the Search Distance Test) in order to evaluate whether or not COC are likely to be present. Based on the completion of the vapor encroachment screening, vapor encroachment conditions do not or are not likely to exist at the project site.

UPRR

The City of Benicia released a Draft EIR for the Valero Benicia Crude by Rail Project (Valero Project), dated June 2014.[7] The Valero Project proposes daily shipments of 70,000 barrels of crude oil originating at unidentified sites in North America that would be shipped to and assembled at the UPRR Roseville Yard into two daily 50-car trains to the Valero Benicia Refinery in Benicia. Each train would pass through the cities of Roseville, Sacramento, Davis, Dixon, Vacaville, Fairfield, Suisun City, and Benicia. Due to the comments submitted on the Draft EIR, including a letter from the City of Davis, the City of Benicia has determined that sections of the Draft EIR need to be updated and recirculated. The anticipated release of the Recirculated Draft EIR for public comment is June 30, 2015.[8]

Within the City of Davis, the shipments would travel along the UPRR line, of which three active sidings exist that run parallel to 2nd Street and I-80. The primary concerns presented in the comments submitted by the City of Davis on the Valero Project are associated with the Valero Project using a portion of the UPRR line that travels through the downtown core of the City, where a curve in the tracks exists. The City is concerned not only about the potential hazardous materials being transported through such a populated area of the City, but also about how the train operators intend to negotiate the existing curve in the rail line (with a 30-mile-per-hour speed limit) and potentially utilize a 10-mile-per-hour crossover immediately east of the curve in either direction. Concerns are also brought forth regarding navigation over the Richards undercrossing, a private crossing at Arboretum Drive, where accidents have occurred in the past. The City's main areas of concern are located more than 2.3 miles west of the proposed project site.

The portion of the UPRR line that runs parallel to I-80 within the project site vicinity is located approximately 66 feet from the southern border of the Mace Triangle site, and 106 feet from the southeastern border of the Mixed-Use site. While conceptual building locations have not been identified for the Mace Triangle site due to the fact that no new or expanded development is proposed at this time, this EIR recognizes the possibility for future development on the Mace Triangle site. Any future development would require subsequent final planned development discretionary approvals by the City and Site Plan

[7] Environmental Science Associates. *Valero Benicia Crude By Rail Project Draft Environmental Impact Report, SCH # 2013052074, Use Permit Application 12PLN-00063*. June 2014.

[8] City of Benicia. *Valero Crude Oil by Rail.* Available at: http://www.ci.benicia.ca.us/index.asp?Type=B_BASIC&SEC={FDE9A332-542E-44C1-BBD0-A94C288675FD}.

review. With respect to the Mixed-Use site, the nearest buildings are located approximately 256 feet from the tracks, due to the intervening CR 32A and proposed green space setback/buffer.

The potential for crude oil train incidents is not anticipated to be an issue for this portion of the UPRR tracks due to the fact that the tracks alongside the Mace Triangle site are straight and are not located in close proximity to any upcoming curves. The tracks are also relatively flat, with little to no change in elevation, such that if a train carrying crude oil was stopped along this portion of the tracks, it would not be subject to gaining momentum should the brakes not be applied properly (i.e., a case of human error). An at-grade crossing is located east of the City limits at CR 32A/CR 105, which is over half a mile east of the proposed project site. The crossing has the appropriate signage and gate device to ensure adequate safety at the crossing. In the unlikely event of a train accident at this at-grade crossing, neither the Mixed-Use site, nor the Mace Triangle site, would be expected to be impacted given the distance of these portions of the overall project site from the at-grade crossing. In addition, according to the Rail Risk and Response online mapping tool available by the California OES,[9] the City of Davis, or the proposed project site, is not within any mapped high hazards areas associated with oil by rail. Accordingly, upset or accident conditions involving the Valero Project's trains would not be expected to affect the proposed project site.

Therefore, the Mixed-Use Alternative would not be subject to a significant hazard associated with any upset and accident conditions involving the release of hazardous materials into the environment associated with existing nearby uses, and impacts would be considered less than significant.

Soil Contamination

Potential upset or accident conditions involving the release of hazardous materials into the environment associated with soil contamination are discussed for the Mixed-Use site and the Mace Triangle site separately below.

MRIC Mixed-Use

The Mixed-Use site is currently and has historically been used for agricultural operations. Agricultural operations generally involve the use of pesticides and/or herbicides, as well as diesel-fueled farming equipment. Significant pesticide contamination to cropland is commonly associated with inorganic pesticides, as well as large farm headquarter facilities or agricultural dusting airstrips where the storage and repeated mixing of chemicals and the rinsing of application equipment have occurred. The Mixed-Use site and current operations would not be considered a large farming headquarter facility and is not an agricultural dusting airstrip. Nonetheless, the potential exists for the presence of

[9] California Office of Emergency Services. *Interactive Tool: Rail Risk & Response Map*. Available at: http://www.caloes.ca.gov/HazardousMaterials/Pages/Oil-By-Rail.aspx. Accessed March 2015.

persistent pesticide residues due to application during historical agricultural activities on-site. Therefore, a Surface Soil Investigation Report was prepared by WKA for the Mixed-Use site, which included evaluation of surface soil within the Mixed-Use site, detention basin, and canal for concentrations of organochlorine pesticides (OCPs), total arsenic, and total lead that would pose a threat to human health under a commercial land use exposure scenario.

A total of 34 soil samples were collected by WKA for the characterization of the presence of OCPs in the soil. According to the laboratory analysis results, OCP was not present in any soil samples at concentration exceeding reporting limits. Thus, OCP concentrations in the on-site soils would not pose a risk to human health. WKA also collected 13 soil samples to characterize the presence of total arsenic and lead in the soil. The maximum concentration of arsenic detected in the on-site soils was below the applicable threshold (12 mg/kg) for a sensitive land use. In addition, the associated increase in cancer risk associated with the maximum concentration of arsenic at the site was calculated to be within the Cal-EPA typical range of acceptable exposure levels. Lead concentrations at the Mixed-Use site range from 5.4 mg/kg to 7.4 mg/kg, which is below the 80 mg/kg threshold for residential exposure and the 320 mg/kg threshold for commercial exposure.

Based on the results of the Surface Soil Investigation Report, the on-site soils would not 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.

Off-Site Sewer Alignment Options

The two off-site sewer pipe alignments are located within agricultural areas immediately north and east of the Mixed-Use site. These adjacent sites have undergone agricultural practices similar to those historically occurring on the Mixed-Use site. Therefore, any contaminant concentrations that may be found within sewer pipe alignment soils would be expected to be similar to the levels detected in the Mixed-Use site soils, all of which were found to be acceptable.

Mace Triangle

Only the easternmost parcel of the Mace Triangle site is currently in agricultural production. However, given the agricultural history of the easternmost parcel, persistent pesticides may be present in the Mace Triangle site soils, which could result in adverse effects to construction workers. Therefore, prior to future development of the Mace Triangle site, soil sampling shall be completed by the Phase I ESA.

Conclusion

In summary, the Mixed-Use Alternative would not create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials related to

nearby uses or potential soil contamination. The Mixed-Use Alternative would involve development over the same site and acreage as the proposed project. As such, the same potential on-site hazards would occur for the Mixed-Use Alternative as the proposed project, including abandoned tanks or wells or contaminated soils. Thus, impacts related to creating 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 associated with potential on-site tanks, well, or soil contamination under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-43(a) *Prior to any ground disturbance activities within 50 feet of a well on the Mixed-Use site, the applicant shall hire a licensed well contractor to obtain a well abandonment permit for any wells not anticipated to be used from the Yolo County Environmental Health Services Department, and properly abandon the on-site wells, pursuant to review and approval by the City Engineer and the Yolo County Environmental Health Services Department.*

8-43(b) *If any debris is encountered within the former canal on APN 033-630-009 during construction activities, as shown on the construction plans for the Mixed-Use site, the contractor shall contact the project applicant, who shall retain the services of a qualified environmental hazard firm, to evaluate the debris to determine whether it poses any environmental contamination risks. A written evaluation shall be submitted to the City of Davis Department of Community Development and Sustainability. If the debris is trash or other non-hazardous material, then the contractor shall dispose of the debris and no further mitigation shall be required. If the debris is associated with signs of soil staining or odors indicative of hazardous materials, the environmental hazard firm shall conduct additional evaluation, including but not necessarily limited to soil sampling. If soil samples detect concentrations of hazardous materials above applicable Regional Screening Levels (RSL), then the soils shall be remediated and disposed of at a landfill licensed to accept hazardous waste. If constituent concentrations are below RSLs, then no further mitigation shall be necessary.*

Mace Triangle

8-43(c) *In conjunction with submittal of a final planned development and/or tentative map for any parcel in the Mace Triangle Property, the applicant shall submit a Phase I Environmental Site Assessment for that parcel, which shall evaluate on-site conditions, including but not limited to the presence of any wells, evidence of soil staining, or odors indicative of hazardous substances.*

In addition, due to the past agricultural operations on the easternmost parcel, a soil sampling program shall be implemented to assess potential agrichemical impacts to surface soil within the easternmost parcel, as follows:

A soil sampling and analysis workplan shall be submitted for approval to Yolo County Environmental Health Department. The sampling and analysis plan will 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 commercial screening levels, a removal action workplan shall be prepared in coordination with Yolo County Environmental Health Department. 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. A no further action letter will be issued by County Health for the proposed commercial development upon completion of the removal action. 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.

If any stained soil or odor-impacted areas are encountered during the Phase I ESA, then soil sampling of these areas shall be included in the above soil sampling workplan, and depending upon the sampling results, included in the removal action workplan as well.

8-44 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (reference Impact 4.8-3).

Impacts related to emergency response plans were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative, similar to the proposed project, would not involve any operations or changes to the existing roadway network that would impair implementation or physically interfere with any adopted emergency response plan or emergency evacuation plan. According to the City's General Plan, the City of Davis Multi-Hazard Functional Planning Guide states that all major roads are available for emergency evacuation routes in the event of a disaster, depending on the location and type of emergency that arises. Major roads identified for evacuation include Russell Boulevard, SR 113, I-80, Richards Boulevard, CR 102/Pole Line Road, Mace Boulevard southbound, CR 32A, Covell Boulevard/CR 31, "F" Street/CR 101A, and North Sycamore Frontage Road. The residents and employees resulting from the Mixed-Use Alternative would utilize the aforementioned roadways in case of an emergency evacuation, and the Alternative does not involve any operations or changes to the existing roadway network that would impair implementation or physically interfere with the City's Multi-Hazard Functional Planning Guide or the County's Emergency Operations Plan or Multi-Hazard Mitigation Plan. Although the Mixed-Used Alternative would include 750 to 850 residential units, the emergency response and evacuation routes would be similar to the proposed project. Therefore, impacts

associated with emergency response under the Mixed-Use Alternative would be ***less than significant***.

Mitigation Measure(s)
None required.

8-45 Expose people or structure 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 (reference Impact 4.8-4).

Impacts related to wildland fires were determined to be less-than-significant for the proposed project. According to Cal Fire maps for Yolo County, the City of Davis is not within a State or local fire hazard severity zone. Therefore, implementation of the Mixed-Use Alternative would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and impacts would be ***less than significant***.

Mitigation Measure(s)
None required.

8-46 Conflict, or create an inconsistency, with applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigation environmental effects related to hazards and hazardous materials (reference Impact 4.8-5).

Impacts related to conflicts with plans, policies, or regulations related to hazards and hazardous materials, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.8 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Hydrology and Water Quality (reference Section 4.9)

The impacts related to hydrology and water quality as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below. The following discussion is based on the *Drainage Study for Mace Ranch Innovation Center Mixed Use Alternative* prepared by Watermark Engineering, Inc.[10]

[10] Watermark Engineering, Inc. *Drainage Study for Mace Ranch Innovation Center Mixed Use Alternative.* June 30, 2015.

8-47 Substantially alter the existing drainage pattern of the site or area, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site (reference Impact 4.9-1).

MRIC Mixed-Use

The development footprint of the Mixed-Use Alternative would be similar to the proposed project. In order to incorporate a residential component, the residential buildings would be 65 to 85 feet in height and would be clustered along Mace Boulevard and in the center of the site. In addition, the proposed R&D, manufacturing, ancillary retail, and hotel/conference uses would be slightly taller (45 to 65 feet as compared to 45 to 55 feet for the proposed project) than the buildings included in proposed project. Landscaping and agricultural buffers would be included for the Mixed-Use Alternative, similar to the proposed project. Accordingly, the amount of impervious surfaces would be similar to that of the proposed project under the Mixed-Use Alternative.

Rate of Runoff

When the Mixed-Use site is developed, the on-site impervious area will increase, leading to faster runoff rates. The increased rate of runoff will be attenuated using on-site facilities. The conceptual design of the on-site drainage facilities is to minimize the use of storm drains. Rather, runoff will be conveyed along shallow landscaped corridors that will flow to the buffer areas at the northern and southern edges. From there, the runoff will be conveyed to the eastern buffer area where it will flow towards the MDC. The northern, southern, and eastern buffer areas will provide a combination of conveyance and detention storage via wide relatively shallow areas that may be "benched" as the runoff moves toward the MDC. Maximum discharge from each of the north and south buffer areas will be in the range of 5 to 20 cubic feet per second (cfs), and will outfall into the MDC, near the eastern boundary of Mixed-Use site, probably separate for the existing detention basin.

In addition to the on-site facilities, the MDC will likely be modified through the Mixed-Use site, but will be designed to meet the original design criteria. The MDC was originally designed as a trapezoidal channel with a 15-foot bottom width, 2 to 1 (vertical to horizontal) side slopes, a channel slope of 0.0007 feet per foot, and a Manning's roughness of 0.040. A City maintenance program exists to help maintain the design capacity. Table 8-11 provides a summary of the design flows.

The original MDC Improvement Plans show the channel depth to be a minimum of seven feet deep along the entire length, except the reach through the Mixed-Use site. Recent topographic data indicate this reach is also at least seven feet deep. Downstream of the improved section of the channel, downstream of the Swingle PG&E site, the Railroad Channel is not as deep but much wider.

Table 8-11
Summary of Design Flows along Mace Drainage Channel

Location	Design 100-yr flow (cfs)	Depth of Flow (ft)
Downstream of Mace Blvd.	255[(a)]	4.8
Downstream of Detention Basin	225	4.5
At the Eastern Boundary of Mixed-Use Site	260	4.9
Upstream of County Road 105	273	5.0
Downstream of County Road 105	305	5.3
Downstream of Schultz Crossing	313	5.4
Downstream of Swingle PG&E Pumping Station	330	5.5

Notes:
[(a)] Based on recent updated modeling
cfs = cubic feet per second
Source: Watermark Engineering, Inc. March 13, 2015, Revised May 29, 2015

It is expected that both the channel and detention basin will be reconfigured to be more compatible with the innovation center uses included as part of the Mixed-Use Alternative. Conceptual designs of the conveyance corridor and detention facilities that are being considered include the following:

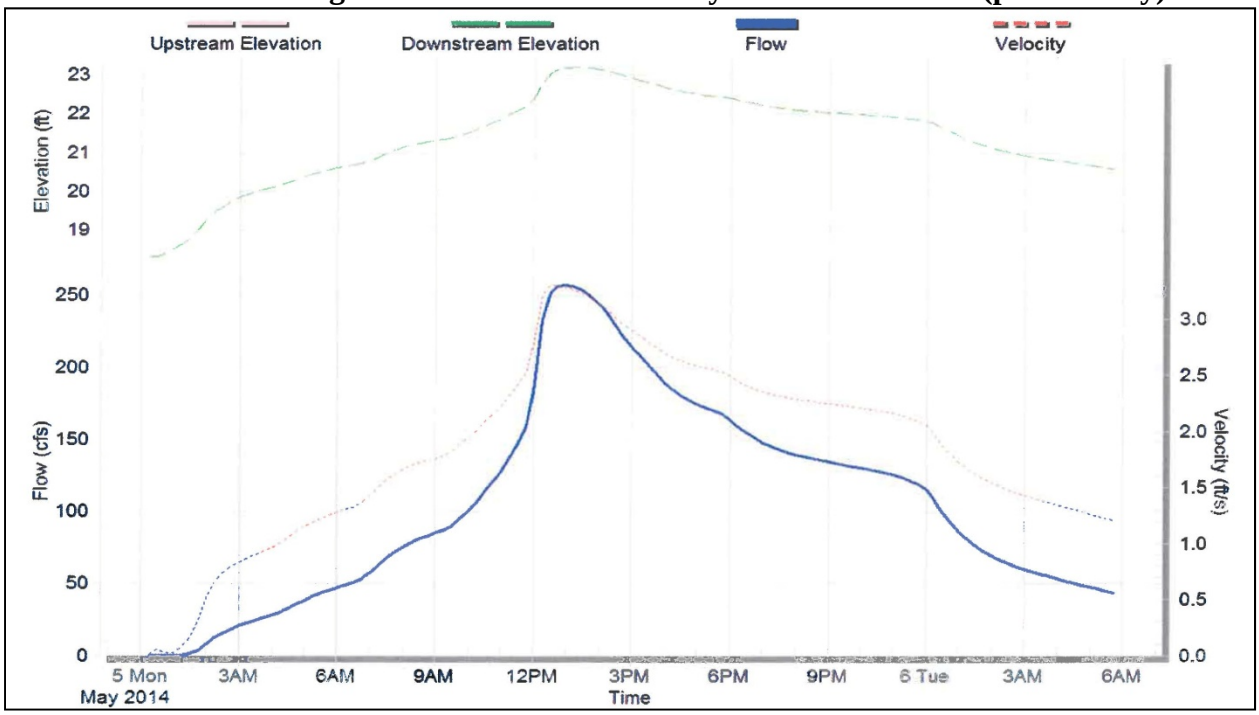
- Extension of the storm drains from Mace Boulevard, approximately 700 feet farther east to provide better access at the eastern portion of MRIC and to alleviate safety concerns at the proposed Oval area of Mixed-Use Alternative. The storm drain will consist of three 72-inch concrete pipes. The hydraulic grade line to convey 255 cfs in these pipes is 0.0003 ft/ft, the same that exists today in the open channel. This means that water levels upstream of Mace Boulevard will not significantly change as a result of the pipe installation.
- Farther downstream, the MDC may be configured to include a low-flow pipe or low-flow channel, coupled with a high-flow channel. If a low-flow channel is used, water depths will be designed to provide a healthy environment for mosquito fish. It is expected that the high flow channel will be landscaped and maintained to be viewed as an amenity. The preliminary channel would have a 15-foot bottom width and 2:1 side slopes.
- The applicant intends to remove the existing on-site detention basin, and reconfigure it with varied side-slopes and a more rectangular shape (see Figure 8-9). It would be an offline storage facility and only fill during extreme storm events. In addition, the 150-foot agricultural buffer area along the eastern and northeastern site boundaries would provide detention storage for storm events. Furthermore, another proposed detention basin would be located along CR 32A.

The design will be such that the combination of attenuated on-site flows and the reconfigured channel and off-line detention will reduce 100-year flows leaving the developed Mixed-Use site to the original design capacity of 260 cfs. This means that there will be no increase in the rate of

flow leaving MRIC, and consequently, no downstream impacts related to the existing capacity of the MDC.

Figure 8-11Figure 8-11 shows the preliminary model results that show no increase in downstream flow.

Figure 8-11
Plot of Flows along MDC at Eastern Boundary of Mixed-Use Site (preliminary)



Source: Watermark Engineering, Inc. June 30, 2015

A vehicle crossing exists at the curved section of the MDC, just east of the Mixed-Use site; and the two channels are connected by two 24-inch CMPs. One pipe is located at the channel slow lines, and the other is several feet higher. The connection represents a significant bottleneck along the MDC. Any potential overtopping of flood waters as a result of the bottleneck is addressed by the interim overland release facilities currently in place. In addition, the risk of damage is low because structures in the affected area do not currently exist. The proposed project would be required to connect the Phase 1 and Phase 2 channels.

Volume of Runoff

For the Mixed-Use Alternative, the rate of runoff will be attenuated on-site, as described above, such that peak runoff will mimic existing conditions. However, the volume of runoff is expected to increase as a result of development. During most rainstorms, this increased volume is unnoticed as the channel conveys all of the collected runoff to the Yolo Bypass.

Approximately 7.5 square miles of land drain to the eastern terminus of the Railroad Channel at the Yolo Bypass, into which the MDC flows. This includes about 730 acres of Mace Ranch and about 4,100 acres of agricultural land west of the Covell Drain and bounded by the Willow Slough Bypass levee to the north, the UPRR to the south, and the Yolo Bypass levee to the east. During typical rainstorms, runoff from this area discharges into the Yolo Bypass.

When there is heavy and prolonged rainfall in Northern California, flow in the Yolo Bypass rises. High flow in the Bypass creates backwater and can completely stop MDC flows from entering the Bypass. When this occurs, runoff from the 7.5-square mile tributary area ponds "behind" the Bypass levee and will remain there until the ponded water level is higher than the Bypass water level. In addition, during extreme storm events, and when the Bypass is high, both the Covell Drain and then North Davis Drain overflow to the east, adding runoff volume to the ponding area east of the Bypass levee.

The local storm event occurring over the City would not necessarily be the same magnitude of storm event that occurred over Northern California causing high water levels in the Yolo Bypass. Also, the duration of the high water levels in the Yolo Bypass would probably last much longer than the duration of flooding from the local storm. Thus, to develop a "worst case" evaluation, it was assumed that the water levels would block the flow into the Yolo Bypass for the full duration of the local storm events occurring over the City and Yolo County. This means that all of the increase in runoff from the Mixed-Use Alternative would contribute to increased flooding in the study area west of the Yolo Bypass. The drainage engineers for the Mixed-Use Alternative have estimated the increase in runoff from the Mixed-Use Site for various, larger storm events, as summarized in Table 8-12. The increase in runoff from the Triangle for various, larger storm events, has also been estimated and shown in Table 8-12, given that the Triangle is included in the approval process for the Mixed-Use Alternative.

Table 8-12
Increases in Runoff Volumes Resulting from Mixed-Use Site

Local Storm Event	Triangle Increase in Runoff Volume, ac-ft	MRIC Increase in Runoff Volume, ac-ft	Mixed-Use Increase in Runoff Volume, ac-ft	Total Volume Increase (Triangle and Mixed-Use), ac-ft
10-Year, 24-Hour	2.0	20	22	24
100-Year 24-Hour	2.5	26	31	34
100-Year, 10-Day	6.7	63	78	85
200-Year, 10-Day	7.2	68	82	89

Source: Watermark Engineering, Inc., June 30, 2015.

Replacement Storage Alternative

The first option involves storing the increased runoff volume off-site, until such time that the Bypass flows recede and MDC and Railroad drain flows can enter the Yolo Bypass through the existing Bypass levee culvert. In order to accomplish this, a portion of an off-site field could be lowered to store the increased incremental volume. The applicant has identified a potential off-site location, which is the easternmost parcel owned by the City of Davis, adjacent to the MDC and Yolo Bypass levee (APN 033-300-015; 204 acres; see Figure 8-12). Although this parcel is the applicant's preferred location due to the fact that it is some of the lowest agricultural land in the area, the other two, City-owned parcels, between the Mixed-Use Site and the parcel adjacent to the Yolo Bypass levee, could alternatively be lowered to provide the necessary storage (APN 033-300-001: 248 acres; and 300-650-006: 327 acres). If one of these higher City-owned properties is lowered, then some field ponding would occur at the lower elevations, adjacent to the levee, before the storage benefits are realized.

Figure 8-12
Conceptual Location of Mixed-Use and Triangle Off-site Detention Area

Source: Watermark Engineering, Inc. June 30, 2015

To accommodate the increased volume from Mixed-Use site and the Mace Triangle site during major storm events, the lowered area would be relatively shallow, approximately 1-foot deep, depending on the footprint selected. The maximum excavation should be limited to 2.5 feet, unless there are compelling reasons for a deeper excavation. Topsoil would be removed and stockpiled, the selected area excavated to the design depth, and the topsoil then spread back over the lowered field. The field would be returned with the same slopes so that irrigation would continue in a manner similar to existing conditions. Drainage patterns would not be changed and the small elevation change will not adversely impact the irrigation methodology.

It is expected that the storage area would be used several times in any 10-year period. Ponding in this area occurs as a result of both heavy, local rainfall, and when the bypass has high flow that restricts or blocks the local outflow. Extent and duration of ponding is completely dependent on both local runoff and the water elevation in the bypass. Regardless, the off-site volumetric storage would be available whenever significant ponding would occur. This approach will allow for continued agricultural operations, but provide detention storage during major storm events, when the Bypass is flowing at a high level.

Pumping Alternative

An alternative method to convey the increased runoff volume into the Bypass, when the outfall is blocked by high water in the Bypass, consists of a small pump station. The pump station would have a capacity of approximately three cfs, and could be a permanent installation or a portable trailer-mounted unit. It would take approximately 12 days to pump about 70 ac-ft of water, resulting from post-project runoff in the 100-year, 10-day storm event.

A permanent installation would be sited near the existing outfall. Pump intake would be in the railroad channel and the conveyance pipe would go "over" the bypass levee, rather than "through" the levee, in order to maintain levee integrity. No impact to the Yolo Bypass would be expected because the pump would be used only when there is at least moderately high flow in the Bypass, at least 10,000 cfs.

Similarly, a portable trailer-mounted, self-contained pump could be used. It could be stored at City facilities when not in use, and set up for pumping in several hours. The portable pump would require fewer and/or less rigorous approvals from the Flood Protection Board. It could also be used at other locations.

Mace Triangle Site

It is anticipated that potential future development of up to 71,056 sf of research/Office/R&D and/or ancillary retail could occur on the Triangle, which would increase the amount of impervious surface area. For the conceptual drainage analysis, it was assumed that the Park-and-Ride lot impervious surface area would not change, but the Ikedas percent impervious surface cover would increase from 20 to 90 percent, and the easternmost parcel from two to 90 percent.

Runoff from the Mace Triangle site currently flows south or southeast to the existing drainage channel located between CR 32A on the north and east, and the UPRR embankment to the south. The increased runoff volume resulting from future development of the Mace Triangle will also need to be addressed, similar to Mixed-Use Alternative.

Conceptual design criteria and facilities for the Mace Triangle are as follows:

- The increased rate of flow as a result of development will be attenuated to mimic existing conditions.
- On-site drainage facilities will be some combination of surface and pipe conveyance to a detention basin at the east end of the Triangle.
- The outfall pipe from the detention basin is sized to restrict outflow to be equal or less than existing conditions.

A summary of the drainage report findings are as follows:

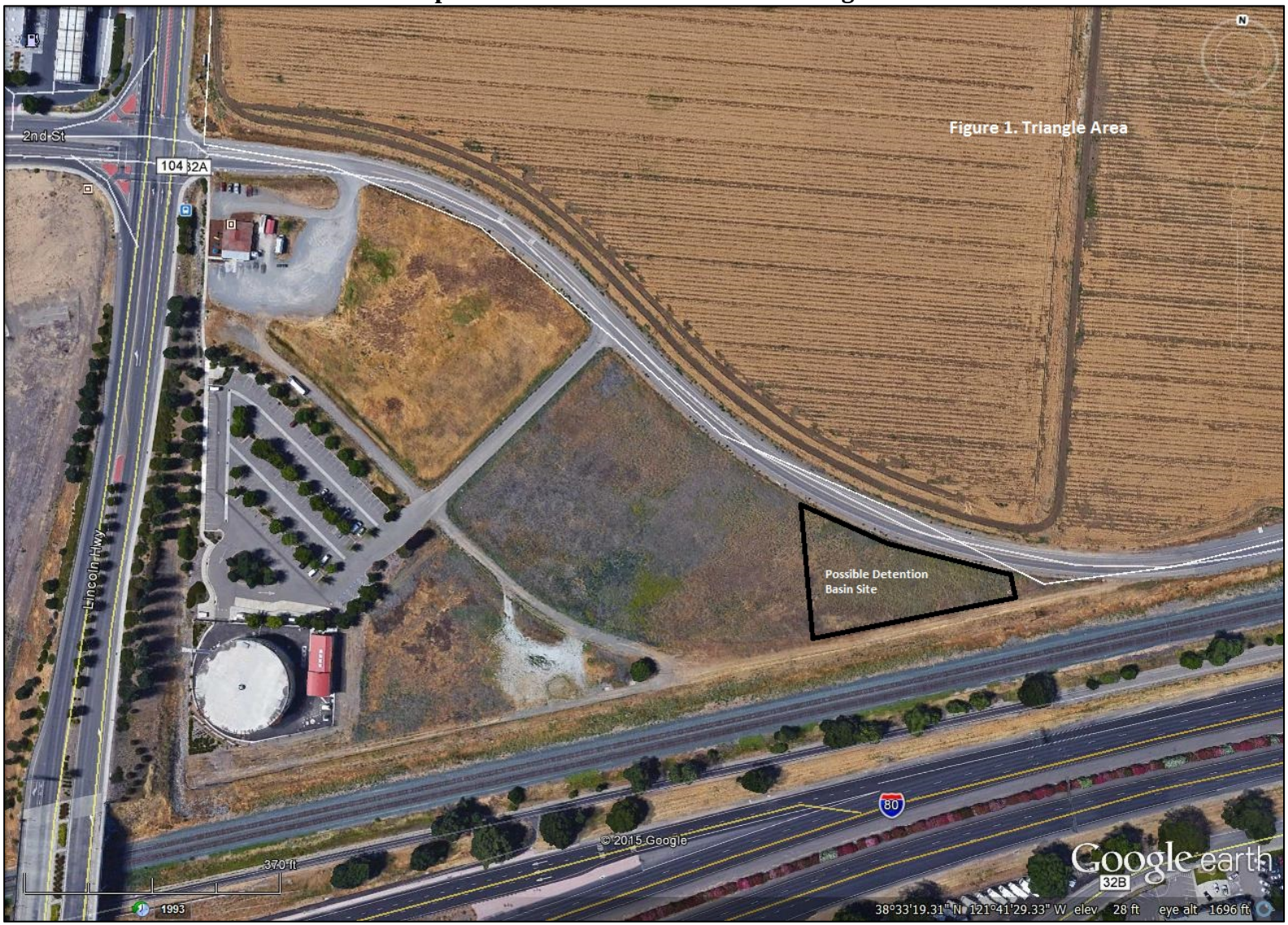
- Existing conditions peak flow is about 9 cubic feet per second (cfs).
- Developed peak flow is about 24 cfs.
- Basin footprint about 0.5-acre.
- Basin depth is four to five feet.
- Basin outfall pipe flow ≈ 9 cfs.
- Required storage about 1.1 acre-feet (af).
- Basin side-slopes would be 4:1 or flatter.

A conceptual location for a single detention basin is shown in Figure 8-13. The single detention basin would likely be constructed in the eastern portion of the Mace Triangle site. The single basin scenario assumes that the involved property owners agree to locate a single detention basin at the proposed location. If such an agreement is not reached, then each property owner would need to develop its own independent drainage system, either on a permanent basis, or temporary basis, until such time that a central detention facility is constructed. The detention basin and storm drain facilities would be designed to meet City design standards in place at the time of development.

Volume of Runoff

The increased runoff volume from the Mace Triangle site for several design storms, assuming full build out, is shown in Table 8-12 above. As discussed, the 100-year, 10-day storm event would result in an increased volume at the developed Triangle site of 6.7 ac-ft. This volumetric increase could be addressed by replacement storage or a pump station, as discussed in detail above.

Figure 8-13
Conceptual Detention Basin at Mace Triangle Site



Conclusion

Impacts related to substantial alteration of the existing drainage pattern were determined to be less-than-significant with mitigation for the proposed project. Development of the Mixed-Use Alternative would alter the existing drainage pattern of the site, and surrounding area, and would increase impervious surfaces on the site. The Mixed-Use Alternative design will be such that the combination of attenuated on-site flows and the reconfigured channel and off-line detention will reduce 100-year flows leaving the developed Mixed-Use site to the original design capacity of 260 cfs. This means that there will be no increase in the rate of flow leaving the Mixed-Use site, and consequently, no downstream impacts related to the existing capacity of the MDC. However, at this time, the drainage system design is conceptual.

In addition, with respect to the project's increase in the volume of runoff, the Mixed-Use Alternative development needs to address this increased volume by either constructing off-site replacement storage, installing a pump station, or some other acceptable engineering alternative, as approved by the City of Davis. Otherwise, the project would result in an increase in downstream flooding of the City's agricultural property and adjacent properties during heavy storm events.

The increased runoff volume resulting from Triangle development will also need to be addressed, similar to Mixed-Use Alternative, by constructing off-site replacement storage, installing a pump station, or implementing another acceptable engineering solution.

Implementation of the following mitigation measures would reduce to a ***less-than-significant*** level the impacts associated with substantially altering the existing drainage pattern of the site or area, creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and substantially increasing the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

Mitigation Measure(s)

MRIC Mixed-Use

8-47(a) *In conjunction with submittal of the first final planned development for the Mixed-Use Site, a design-level drainage report shall be submitted to the City of Davis Public Works Department for review and approval. The drainage report shall identify specific storm drainage design features to control the 100-year, 24-day increased runoff from the project site to ensure that the rate of runoff leaving the developed Mixed-Use site does not exceed the original Mace Ranch Channel design capacity of 260 cfs. This may be achieved through: on-site conveyance and detention facilities, off-site detention or retention facilities, channel modification, or equally effective measures to control the rate and volume of runoff.*

The design-level drainage report shall include off-site drainage facilities sufficient to detain and control the increased runoff volume when the flow from the Mace Drainage Channel into the Yolo Bypass is blocked by high water levels

in the Bypass. Preliminary estimates of increased runoff volumes are as much as 78 acre-feet. The final amount of runoff volume to be detained would be determined with the design-level drainage report. This could result in detaining run-off volume for an extended time period. During this time period, additional large storms could occur; thus, the proposed detention storage facilities shall also be able to manage (detain with a controlled release) the 100-year, 24-hour storm event.

The design-level drainage report shall also include design for detaining and controlling the increased run-off volume from the Mace Triangle Site. Preliminary estimates of increased runoff volumes are as much as 7 acre-feet. The final amount of runoff volume to be detained would be determined with the design-level drainage report prepare for the Mixed-Use site.

Design-level recommendations provided in the drainage report shall be included in the improvements plans prior to their approval by the Davis Public Works Department.

8-47(b) *Prior to approval of the Phase 1 improvement plans for the Mixed-Use site, the Public Works Department shall ensure that the plans include the development of the Phase 2 MDC improvements. The Phase 2 improvements shall consist of removal of the two 24-inch corrugated metal pipes in order to provide a continuous channel between the Phase 1 and Phase 2 improvements.*

Mace Triangle

8-47(c) *In conjunction with submittal of each final planned development for the Mace Triangle Site, a design-level drainage report for the development shall be completed and submitted to the City of Davis Public Works Department for review and approval. The drainage report shall identify specific storm drainage design features to control the 100-year, 24-hour increased runoff from the project site. This may be achieved through: onsite conveyance and detention facilities, offsite detention or retention facilities, channel modification, or equally effective measures to control the rate and volume of runoff.*

The design-level drainage report shall include off-site drainage facilities sufficient to detain and control the increased run-off volume when the flow from the Mace Drainage Channel into the Yolo Bypass is blocked by high water levels in the Bypass. Preliminary estimates of increased runoff volumes for the Mace Triangle Site are as much as 7 acre-feet. The final amount of runoff volume to be detained for each proposed development would be determined with the design-level drainage report. This could result in detaining run-off volume for an extended time period. During this time period, additional large storms could occur; thus, the proposed detention storage facilities shall also be able to manage (detain with a controlled release) the 100-year, 24-hour storm event.

Design-level recommendations provided in the drainage report shall be included in the improvement plans prior to their approval by the Davis Public Works Department.

8-48 Violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality through erosion during construction (reference Impact 4.9-2).

Impacts related to violation of water quality standards during construction were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative would involve development over the same site and acreage as the proposed project. Accordingly, the Mixed-Use Alternative would result in the potential to create or contribute additional sources of polluted runoff, violate water quality standards or waste discharge requirements, or otherwise degrade water quality during construction activities.

Because development at the Mixed-Use site and possible future development at the Mace Triangle Site would require construction activities that would result in a land disturbance greater than one acre, the applicants would be required by the State to obtain a General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the projects applicant to file a Notice of Intent (NOI) with the SWRCB and prepare a SWPPP prior to construction. The SWPPP would incorporate BMPs in order to prevent, or reduce to the greatest feasible extent, adverse impacts to water quality from erosion and sedimentation. In addition, treatment of stormwater runoff would be addressed via the proposed on-site detention basins. The alternative's required compliance with the SWRCB standards would ensure that construction activities would not result in degradation of downstream water quality.

Compliance with the following mitigation measures, requiring a SWPPP and implementation of BMPs during construction, would ensure that the projects' impacts to water quality during construction would be ***less than significant***.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-48 Prior to initiation of any ground disturbing activities, the project applicant(s) for each discretionary development application shall prepare a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMPs) that comply with the General Construction Stormwater Permit from the Central Valley RWQCB, to reduce water quality effects during construction. Such BMPs may 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. The SWPPP shall be kept on-site and implemented during construction activities and shall be made available upon request to representatives of the City of Davis and/or RWQCB.

8-49 Violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality during operations (reference Impact 4.9-3).

MRIC Mixed-Use

The Mixed-Use Alternative would involve development over the same site and acreage as the proposed project. Accordingly, the Mixed-Use Alternative would result in the potential to create or contribute additional sources of polluted runoff, violate water quality standards or waste discharge requirements, or otherwise degrade water quality during operational activities.

The Mixed-Use Alternative would be designed to provide water quality treatment to storm runoff as required by the City Municipal Code. Because of the extensive open space and landscaped corridors, grassy swales and attenuation areas would provide treatment to stormwater resulting from the Alternative. Building downspouts would be directed to surface treatment areas rather than underground storm drains. The stormwater treatment areas would treat stormwater through sedimentation and biological uptake of pollutants by surrounding vegetation, algae, and bacteria. While pollutants settle out within the treatment areas, only the clean surface water within the basins would be allowed to exit into the MDC via outlet control structures. The facilities would be designed in accordance with all City guidelines. The stormwater treatment areas would be integrated within landscaped areas without having the appearance of treatment areas. Additional treatment details would be provided as the development details for the specific parcels of the Mixed-Use Alternative become available.

In addition, drainage channels and swales would be utilized to reduce the velocity of the stormwater flow and help to remove pollutants through the use of vegetated swales, water detention, landscape open space, gravel filters, or other typical measures. Runoff control would be designed to mimic natural conditions as much as possible and protect water quality while utilizing existing drainage structures. Furthermore, the project would be required to include Low Impact Development (LID) features throughout the site.

Each phase of development will be required to comply with the BMPs and criteria established in Chapter 30 of the Municipal Code. Through the preparation of improvement and grading plans, these measures will be refined so that they will functionally minimize stormwater quality impacts. Consistency with the City of Davis Manual of Stormwater Quality Control Standards for New Development and Redevelopment, Municipal Code, and implementation of the BMPs included in the proposed project Planned Development Guidelines will ensure that the proposed would have a less-than-significant impact on long-term stormwater quality.

Mace Triangle Site

Any future development on the Ikedas parcel and adjacent agricultural parcel, within the Mace Triangle site, would increase the amount of impervious surfaces on the site. Additional sources of polluted runoff, or degradation of water quality associated with development at the Mace Triangle site could be adverse. However, similar to the Mixed-Use site, any development will be required to comply with the BMPs and criteria established in the City of Davis Manual of

Stormwater Quality Control Standards for New Development and Redevelopment and Municipal Code. Through the preparation of improvement and grading plans, these measures will be refined so that they will functionally minimize stormwater quality impacts. Consistency with the City of Davis Manual of Stormwater Quality Control Standards for New Development and Redevelopment and Municipal Code will ensure that any future Mace Triangle site projects would have a less-than-significant impact on long-term stormwater quality.

Conclusion

Impacts related to violation of water quality standards during operations were determined to be less-than-significant with mitigation for the proposed project. Development of the Mixed-Use site and any future development at the Mace Triangle site would increase impervious surfaces that could transport urban pollutants during storm events. However, all development will be required to comply with the City of Davis' LID measures, as applicable, included in the City's Manual of Stormwater Quality Control Standards for New Development and Redevelopment and Municipal Code. Compliance with said Manual would ensure that the Mixed-Use Alternative would have a ***less-than-significant*** impact on long-term stormwater quality during operations.

Mitigation Measure(s)
None required.

8-50 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 or preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted) (reference Impact 4.9-4).

Impacts related to groundwater supplies and groundwater recharge were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would likely install a new well for irrigation purposes, similar to the proposed project. Two existing irrigation wells are located on-site, which are utilized to irrigate crops on approximately 185 acres each year. Utilization of groundwater at the site to meet a portion of the innovation center's irrigation demand would not be a new occurrence, which would be expected to lower the groundwater table and affect the production rate of preexisting wells.

The Mixed-Use Alternative would involve an increase in impervious surfaces (e.g., buildings, parking areas, and internal roads) on the project site, which would reduce the amount of natural soil surfaces available for the infiltration of rainfall and runoff to the underlying aquifer. However, the Mixed-Use Alternative would incorporate several parks and open space areas throughout the site, totaling approximately 64.6 acres of parks and green space. Runoff from the developed portions of the project area would drain to the on-site detention areas and the MDC. The aforementioned areas would provide an opportunity for groundwater recharge in the area.

Therefore, impacts related to a substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would be ***less than significant***.

Mitigation Measure(s)
None required.

8-51 Place structure within a 100-year flood hazard as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or flood hazard delineation map; or place within a 100-year floodplain structures which would impede or redirect flood flows; or 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.

MRIC Mixed-Use

Unlike the proposed project, the Mixed-Use Alternative includes development of housing on the site. However, the entire Mixed-Use site is located in Zone X on the applicable FIRM (Panels 604, 610, 612, and 620 of 785). Zone X is not considered a FEMA Special Flood Hazard Area.[11] Zone X includes areas determined to be outside the 0.2 percent annual chance floodplain. Therefore, the entire Mixed-Use site is not located within the regulatory floodplain, and the project would not place structures within a 100-year flood hazard area, place within a 100-year floodplain structures that would impede or redirect flood flows, or expose people or structures to a significant risk of loss, injury or death involving flooding.

In addition, while the increased runoff volume resulting from the Mixed-Use Alternative's impervious surfaces could increase off-site flooding, the affected properties consist of farmland that do not contain any habitable structures. Furthermore, Mitigation Measures 8-47(a) through 8-47(c) would ensure that an increase in off-site ponding would not occur.

Mace Triangle

The Mace Triangle site is located in Zone X (Panel 612 of 785). As noted above, Zone X includes areas determined to be outside the 0.2 percent annual chance floodplain. Thus, impacts related to placing structures within a 100-year flood hazard area would not occur associated with the Mace Triangle site.

Conclusion

Impacts related to flood hazards were determined to be less-than-significant for the proposed project. Based on the above discussions, the Mixed-Use Alternative would not place structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or flood hazard delineation map, or place within a 100-year floodplain structures which would impede or redirect flood flows. Therefore, impacts associated with the 100-year floodplain would be ***less than significant***.

[11] Watermark Engineering, Inc. *Drainage Study for Mace Ranch Innovation Center [Attachments 4-1, 4-2, 4-3, and 4-4]*. January 7, 2015.

Mitigation Measure(s)
None required.

8-52 Impacts related to conflicts, or creation of an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to hydrology and water quality (reference Impact 4.9-6).

Impacts related to conflicts with plans, policies, or regulations related to hydrology and water quality, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.9 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Land Use and Urban Decay (reference Section 4.10)

The impacts related to land use and urban decay as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-53 Physical division of an established community (reference Impact 4.10-1).

Impacts related to the physical division of an established community were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative site is located within Yolo County, just outside the eastern City limits of Davis. The Mixed-Use Alternative would result in development of predominately vacant land adjacent to urbanized areas of Davis to the west and south. As a result, the Mixed-Use Alternative would not result in any division of an established community and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

8-54 Economic and social change and/or effect that result in urban decay (reference Impact 4.10-2).

Impacts related to urban decay were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative consists of buildout on the same site and over the same acreage as the proposed project. The Mixed-Use Alternative would consist of 2,654,000 sf of R&D, manufacturing, ancillary retail, and hotel/conference uses, as well as approximately 750 to 850 (20 to 40 du/ac), attached, multi-story residential units. Therefore, the same potential to impact office, retail, and hotel uses in the Davis market would occur, as compared to the proposed project. Therefore, the office and industrial components of the Mixed-Use Alternative

are not anticipated to cause adverse physical impacts leading to urban decay, despite the anticipated potential of some prolonged existing office and industrial base vacancies. In addition, sufficient demand is anticipated to exist in the City of Davis to support the Alternative's hotel along with the existing hotels. Furthermore, the Mixed-Use Alternative's planned retail component would not cause or contribute to urban decay, as existing retailers are not anticipated to close as a result of the Mixed-Use Alternative. In addition, the on-site residents resulting from the residential portion of the Alternative would provide additional demand for the on-site retail space. Therefore, existing commercial retail properties are not anticipated to fall vacant as a result of implementation of the Mixed-Use Alternative. If such vacancies do occur, however, the market's current and historic performance suggests that such vacancies would be well-maintained and would backfill quickly.

While the retail analysis found that there could be more than sufficient demand for the Mixed-Use Alternative's planned retail space generated by project employees at buildout of the Mixed-Use Alternative's office and industrial uses, the retail space may be built ahead of a sufficient amount of employee demand. In this case, sales may be diverted from existing retail businesses. Though it is likely that any resultant vacancies would be well-maintained and would backfill quickly, based upon the market's current and historic performance, consistent with BAE's recommendation, phasing controls should be implemented for the Mixed-Use Alternative's retail space. As a result, impacts related to urban decay under the Mixed-Use Alternative would be ***less-than-significant*** with mitigation.

Mitigation Measure(s)

MRIC Mixed-Use

8-54 *In conjunction with submittal of any final planned development for the MRIC that includes ancillary retail uses, an analysis shall be submitted to the City of Davis Department of Community Development and Sustainability, which shall demonstrate that the proposed ancillary retail development will not exceed the anticipated demand increase from new employees. If the analysis cannot demonstrate that the proposed amount of ancillary retail space will not outpace employee-generated demand, then the ancillary retail uses shall be removed from the final planned development, or scaled back to be commensurate with the projected employee-generated demand.*

Mace Triangle - none

8-55 Conflict, or create an inconsistency, with any applicable land use and urban decay plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (reference Impact 4.10-3).

Impacts related to conflicts with plans, policies, or regulations related to land use and urban decay, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.10 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are

applicable to the residential component of this Alternative. These additional housing policies and regulations are, in some cases, applicable to land use. Therefore, Table 8-13 has been included in order to analyze these applicable policies, or regulations.

Table 8-13
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation		Project Consistency
Policy LU A.2	A minimum of 50% of future residential lots (exclusive of any required affordable or multifamily lots) within a new residential development of 50 single-family lots or more shall be designated as "diverse architecture lots" (DAL). These lots shall be designated as part of the project zoning and on the tentative and final maps. Houses built on DAL lots may not be of the same stock plan nor have a floor plan and front elevation substantially similar to any other house within the same final map area. All residential lots not designated as DALs, including any required single-family affordable housing lots and lots within new developments of 50 units or less, shall comply with the City's new site design standards, to be developed under Action UD 5.1e.	The Mixed-Use Alternative includes up to a maximum of 850 residential, workforce housing units. The housing for this Alternative does not include detached single family housing and is not anticipated to be subject to this policy.
Policy LU A.3	Require a mix of housing types, densities, prices and rents, and designs in each new development area.	The Mixed-Use Alternative includes up to a maximum of 850 multi-family units intended for workforce housing with an average density at or above 30 dwelling units per acre. The anticipated density range is between 20 and 50 dwelling units per acre, or higher, depending on product type. Therefore, the alternative includes a mix of housing types, densities, and sizes. The mix of housing types, densities, and sizes would also correlate to a variety of prices and rents. For example, smaller units would likely have lower prices or rents, while larger units would likely have higher prices or rents. The project would be developed as a Planned Development, as provided by Article 40.22 of the City of Davis Municipal Code. Project-specific design

(Continued on next page)

Table 8-13
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation		Project Consistency
		guidelines and development standards would be developed and must be approved by the City of Davis, prior to the construction of any buildings on the site.
Policy LU A.4	Allow home occupations, home offices and live/work uses by right where appropriate provided that the home occupation is compatible with the surrounding neighborhoods and does not cause significant negative impacts on the surrounding neighborhoods.	The Mixed-Use Alternative would provide up to a maximum of 850 residential units intended for the innovation center employees. Future home occupations, home offices and live/work uses could be permitted on the Mixed-Use Site. Any potential home occupations would be subject to Davis Municipal Code Section 40.26.150, Home occupations. The purpose of the home occupations provisions is to permit the conduct of a business in residential districts and residential uses in other districts, and is limited to those uses which may be conducted within a residential dwelling without in any way changing the appearance or conditions of the residence and neighborhood.
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.	The Mixed-Use Alternative includes parks, gathering area, and green spaces. See Table 8-2 for the size and types of green spaces. In total, the Alternative includes 64.6 acres (or 30.5 percent of the 212-acre Mixed-Use Site) of parks, gathering area, and green spaces. The acreage includes approximately 20.12 acres of agricultural buffer area along the perimeter of the Mixed-Use Site. Therefore, over 10 percent of the project site would be designated for use as open space.
Policy LU A.6	A maximum of three acres of commercial uses may be permitted within an area with residential designation on the map provided that it is compatible with the surrounding neighborhood and that it does not cause significant negative impacts.	The Mixed-Use Site will not have a residential designation, per se, though residential uses will be permitted. The Mixed-Use Alternative will include ancillary commercial uses to support the needs of the on-site employees.

As demonstrated in Table 8-13, the project is generally consistent with applicable land use plans, policies, or regulations. Therefore, impacts related to conflicting, or creating an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to land use would be ***less than significant***.

Mitigation Measure(s)
None required.

Noise and Vibration (reference Section 4.11)

The impacts related to noise and vibration as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-56 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project (reference Impact 4.11-1).

Impacts related to a temporary or periodic increase in ambient noise levels were determined to be less-than-significant for the proposed project. Because the Mixed-Use Alternative would involve buildout over a similar footprint, the overall area of disturbance for development of the Alternative would be similar to that of the proposed project. During the construction of the Mixed-Use Alternative, including roads, water and sewer lines, and related infrastructure, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in Table 8-14, activities involved in construction would generate maximum noise levels ranging from 76 to 90 decibels (dB) at a distance of 50 feet.

Table 8-14
Construction Equipment Noise

Type of Equipment	Maximum Level (dB) at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

Phase 2 is anticipated to comprise approximately 29 acres, south of the MDC. Total building square footage for this phase is projected to be 700,000 sf, including the proposed hotel/conference center, various research/office/R&D centered around the Oval park, and ancillary retail. In addition, Phase 2 includes the initial offering of up to 300 workforce housing units, designed to allow those individuals working at the center to live in close proximity to their jobs. An additional 700,000 sf of building space is projected for Phase 3, including research/office/R&D and manufacturing uses. Phase 4 consists of the northerly 82 acres of the Mixed-Use Site and is projected to include approximately 714,000 sf of manufacturing and research/office/R&D uses, as well as up to 250 residential units. At the completion of Phase 4,

the site will include up to 2,654,000 sf, a maximum of 260,000 sf of which may be ancillary retail, and up to 850 units of workforce housing.

Activities involved in project construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. The University Covenant Church is located approximately 150 feet west of the project site. Assuming a worst-case scenario where construction activities were to occur at this distance, maximum construction noise levels would be 75 to 80 dB L_{max}. However, the majority of construction activity on the project site would occur at distances much greater than 150 feet. Construction activity occurring in the center of the project site would be located approximately 1,500 feet from the church. At this distance, construction noise levels would be approximately 55 to 60 dB L_{max}. In addition, outdoor use areas at the church are located on the west side of the church building. Therefore, the additional distance and building shielding would provide an additional 5 dB of noise reduction to these outdoor use areas. Therefore, noise levels at outdoor use areas would be approximately 50 to 55 dB.

The nearest existing residential receptors would be located 650 feet or more from on-site construction activities. At this distance, construction related activities are predicted to generate maximum noise levels ranging between 63 to 68 dB L_{max}. Off-site construction of sewer lines (northerly sewer alternative) could occur within approximately 60 to 80 feet of the existing rural residential receptor located north of the project site. At this distance, temporary construction-related activities are predicted to generate maximum noise levels ranging between 81 to 86 dB L_{max}. On-site construction activity after the first phase of development may occur near to occupied buildings or developed open spaces on the Mixed-Use Site.

Mace Triangle Site

Development of the Mace Triangle site is not proposed as part of the Mixed-Use Alternative. However, future development of the Mace Triangle site would temporarily add to the noise environment in the project vicinity. As shown in Table 8-14, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

The nearest residential receptors would be located 700 feet or more from construction activities on the Mace Triangle site. At this distance, construction related activities are predicted to generate maximum noise levels ranging between 57 to 62 dB L_{max}.

Compliance with Existing Law

Section 24 of the City of Davis Municipal Code establishes a maximum noise level standard of 55 dB during the hours of 7:00 AM to 9:00 PM, and 50 dB during the hours of 9:00 PM to 7:00 AM. The Municipal Code makes exemptions for certain typical activities which may occur within the City. The 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 7 AM 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:
   (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 or 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 6:00 AM on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 AM. 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.
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.

Given the requirement for the Mixed-Use Alternative to comply with existing law, the Mixed-Use Alternative's construction noise impacts would be less-than-significant.

Conclusion

Construction would 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. Because construction activities are required to comply with the City's Noise Ordinance, phased construction of the Mixed-Use Alternative would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

8-57 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (reference Impact 4.11-2).

MRIC Mixed-Use

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. As discussed above, construction of the Mixed-Use Alternative would occur over a similar area of disturbance as the proposed project.

The primary vibration-generating activities associated with the Mixed-Use Alternative 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 150 to 650 feet, or further, from the project site. Off-site sewer improvements could be as close as 60 to 80 feet from an existing residential use (northerly sewer alternative). At the aforementioned distances, construction vibrations are not predicted to exceed acceptable levels. In addition, 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 8-15 shows the typical vibration levels produced by construction equipment.

The Table 8-15 data indicate that construction vibration levels anticipated for the project are less than the 0.2 inches per second peak particle velocity (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.

Table 8-15
Vibration Levels for Various Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet	Type of Equipment	Peak Particle Velocity @ 25 feet
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.

Mace Triangle

Development of the Mace Triangle site is not proposed as part of the Mixed-Use Alternative. The City of Davis has included the Mace Triangle Site within the overall project boundaries to allow the continuation of existing uses, while recognizing, and evaluating in the EIR, the potential for additional urban development on the Ikedas parcel and adjacent agricultural parcel. However, future development of the Mace Triangle site would temporarily generate construction vibration in the project vicinity. As shown in Table 8-15, anticipated construction vibration levels 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, future construction vibrations associated with the Mace Triangle site are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

Conclusion

Impacts related to excessive groundborne vibration were determined to be less-than-significant for the proposed project. Because construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors, implementation of the Mixed-Use Alternative would not expose persons to or generate excessive ground borne vibration or ground borne noise levels. Therefore, potential impacts related to construction vibration would be considered ***less than significant***.

Mitigation Measure(s)
None required.

8-58 Transportation noise impacts to existing sensitive receptors in the project vicinity (reference Impact 4.11-3).

Impacts related to transportation noise levels at existing sensitive receptors were determined to be less-than-significant for the proposed project. Vehicle trips associated with operation of the Mixed-Use Alternative would result in changes to traffic on the existing roadway network within

the project vicinity. As a result, project buildout would cause an increase in traffic noise levels on local roadways. To assess noise impacts due to project-related traffic increases on the existing local roadway network, noise levels have been calculated for both the Existing and Existing Plus Project traffic conditions.

With respect to the first part of the test of significance, Table 8-16 demonstrates that the Federal Interagency Committee on Noise (FICON) criteria would not be exceeded as a result of project traffic. As shown in Table 8-16, the largest increase in transportation noise levels from the Mixed-Use Alternative would be 3.6 dB on Drexel Drive from L Street to Pole Line Road.

The project-related increases in transportation noise levels would be less than the FICON criteria outlined. Some noise-sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Davis 60 dB L_{dn} exterior noise level standard for residential uses. The receptors would continue to experience elevated exterior noise levels with implementation of the Mixed-Use Alternative; however, the Mixed-Use Alternative's contribution to traffic noise increases is predicted to be 3.6 dB, or less. For example, sensitive receptors located adjacent to Covell Boulevard from Pole Line Road to Birch Lane currently experience an exterior noise level of approximately 63.3 dB L_{dn}, which exceeds the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Under Existing Plus Project conditions, exterior traffic noise levels are predicted to be approximately 63.8 dB L_{dn}, which would still exceed the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}.

However, the project's contribution of 0.5 dB would not exceed the FICON criteria of 3.0 dB where existing noise levels are between 60 and 65 dB. Therefore, transportation noise levels would have a less-than-significant impact at sensitive receptors located adjacent to Covell Boulevard from Pole Line Road to Birch Lane.

With respect to the second part of the test of significance, the proposed project is not predicted to cause increases in existing traffic noise levels which would trigger a new exceedance of the City of Davis' 60 dB L_{dn} exterior noise level standard at sensitive receptor locations. Therefore, traffic-related noise increases attributable to project-related vehicles would result in ***less-than-significant*** impacts to existing sensitive receptors along nearby roadways.

Mitigation Measure(s)
None required.

8-59 Transportation noise impacts to new sensitive receptors in the project vicinity (reference Impact 4.11-4).

Impacts related to transportation noise at new sensitive receptors were determined to be less-than-significant with mitigation for the proposed project. Development of the Mixed-Use Alternative would introduce new sensitive receptors to the area. The primary sensitive receptor location would be associated with the proposed hotel use and residential uses at the northwest corner of the project site. Generally, the types of uses associated with the non-residential portion of the Mixed-Use Alternative (offices, laboratories, light manufacturing, commercial, retail, etc.) are not considered to be sensitive to noise.

Table 8-16
Existing and Existing Plus Mixed-Use Project Alternative Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise Contours (feet)[2]		
		Existing	Existing + Mixed-Use Alt.	Change	Significance Criteria[1]	Significant ? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
5th St.	West of L St.	63.4	63.4	0.0	+3 dB	No	18	39	85
5th St.	L St. to Pole Line Rd.	61.0	61.1	0.1	+3 dB	No	18	38	83
5th St.	East of Pole Line Rd.	60.7	60.6	0.0	+3 dB	No	18	38	83
Alhambra Dr.	South of E Covell Blvd.	56.5	56.6	0.1	+5 dB or > 60 dB	No	8	17	36
Alhambra Dr.	West of Mace Blvd.	59.0	59.0	0.1	+5 dB or > 60 dB	No	11	24	52
Cantrill Dr.	North of 2nd St.	54.9	55.8	1.0	+5 dB or > 60 dB	No	7	15	32
Chiles Rd.	North of E Covell Blvd.	62.5	63.0	0.5	+3 dB	No	17	37	79
E Covell Blvd.	West of F St.	64.9	65.2	0.3	+3 dB	No	34	72	156
E Covell Blvd.	F St. to J St.	63.0	63.3	0.4	+3 dB	No	36	77	167
E Covell Blvd.	J St. to L St.	57.2	59.5	2.2	+5 dB or > 60 dB	No	35	75	161
E Covell Blvd.	L St. to Pole Line Rd.	62.7	63.1	0.4	+3 dB	No	35	74	160
E Covell Blvd.	Pole Line Rd. to Birch Ln.	63.3	63.8	0.4	+3 dB	No	29	62	134
E Covell Blvd.	Birch Ln. to Baywood Ln.	63.3	63.8	0.5	+3 dB	No	29	62	134
E Covell Blvd.	Baywood Ln. to Manzanita Ln.	63.2	63.6	0.4	+3 dB	No	28	60	130
E Covell Blvd.	Manzanita Ln. to Wright Blvd.	63.2	63.6	0.4	+3 dB	No	28	60	130
E Covell Blvd.	Wright Blvd. to Monarch Ln.	63.4	64.0	0.7	+3 dB	No	30	65	139
E Covell Blvd.	Monarch Ln. to Alhambra Dr.	64.8	65.2	0.4	+3 dB	No	36	78	167
E Covell Blvd.	Alhambra Dr. to Harper Jr. HS	64.1	64.7	0.5	+3 dB	No	33	71	153
E Covell Blvd.	West of Research Park Dr.	62.1	62.5	0.4	+3 dB	No	32	68	147
E Covell Blvd.	Research Park Dr. to Drew Cir.	62.3	63.0	0.7	+3 dB	No	26	55	119
E Covell Blvd.	Drew Cir. to Valdora St.	62.2	62.7	0.5	+3 dB	No	23	49	106

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Table 8-16
Existing and Existing Plus Mixed-Use Project Alternative Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise Contours (feet)[2]		
		Existing	Existing + Mixed-Use Alt.	Change	Significance Criteria[1]	Significant ? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
E Covell Blvd.	Valdora St. to Lillard Dr.	63.4	63.5	0.1	+3 dB	No	20	43	93
E Covell Blvd.	Lillard Dr. to Research Park Dr.	60.2	61.1	0.9	+3 dB	No	16	36	77
E Covell Blvd.	Research Park Dr. to Drummond Ave.	64.0	64.3	0.3	+3 dB	No	21	45	97
E Covell Blvd.	Drummond Ave. to Mace Blvd.	57.9	58.2	0.4	+5 dB or > 60 dB	No	8	18	38
E Covell Blvd.	East of Mace Blvd.	56.7	57.1	0.3	+5 dB or > 60 dB	No	8	18	38
Danbury Street	South of Lillard Dr.	57.2	57.5	0.4	+5 dB or > 60 dB	No	7	16	34
Drexel Drive	West of L St.	54.6	55.3	0.8	+5 dB or > 60 dB	No	5	11	24
Drexel Drive	L St. to Pole Line Rd.	50.6	54.3	3.6	+5 dB or > 60 dB	No	4	10	21
Drummond Ave.	Lillard to E Covell Blvd.	56.1	57.6	1.5	+5 dB or > 60 dB	No	7	16	35
F St.	North of E Covell Blvd.	62.2	62.3	0.1	+3 dB	No	15	33	71
F St.	South of E Covell Blvd.	60.2	60.2	0.0	+3 dB	No	13	29	62
I-80	East of Mace Blvd.	70.8	70.8	0.0	+1.5 dB	No	534	1151	2480
J St.	South of E Covell Blvd.	57.5	57.6	0.1	+5 dB or > 60 dB	No	7	16	35
L St.	E Covell Blvd. to Drexel Dr.	57.3	56.9	-0.4	+5 dB or > 60 dB	No	7	14	31
L St.	South of Drexel Dr.	57.2	58.3	1.2	+5 dB or > 60 dB	No	8	18	39
L St.	North of 5th St.	59.3	59.3	0.1	+5 dB or > 60 dB	No	10	21	45
L St.	5th St. to 3rd St.	60.3	60.5	0.3	+3 dB	No	12	25	54
Lillard Dr.	E Covell Blvd. to Danbury St.	59.2	59.6	0.4	+5 dB or > 60 dB	No	12	26	56
Lillard Dr.	Danbury St. to Drummond Ave.	56.5	57.2	0.6	+5 dB or > 60 dB	No	8	18	39
Lillard Dr.	East of Drummond Ave.	50.8	51.7	0.8	+5 dB or > 60 dB	No	4	8	17
Loyola Dr.	East of Pole Line Rd.	56.6	57.2	0.5	+5 dB or > 60 dB	No	7	15	32

(Continued on next page)

Table 8-16
Existing and Existing Plus Mixed-Use Project Alternative Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise Contours (feet)[2]		
		Existing	Existing + Mixed-Use Alt.	Change	Significance Criteria[1]	Significant ? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Mace Blvd.	Harper Jr. HS to Alhambra Dr.	50.5	50.5	0.0	+5 dB or > 60 dB	No	30	65	140
Mace Blvd.	Alhambra Dr. to 2nd St.	62.7	63.6	0.8	+3 dB	No	43	92	198
Mace Blvd.	Chiles Rd. to E Covell Blvd.	54.0	54.5	0.5	+5 dB or > 60 dB	No	30	65	140
Mace Blvd.	E Covell Blvd. to El Macero Dr.	61.0	61.3	0.3	+3 dB	No	17	37	80
Mace Blvd.	South of El Macero Dr.	59.3	59.5	0.2	+5 dB or > 60 dB	No	13	28	60
Pena Dr.	North of 2nd St.	56.6	56.9	0.3	+5 dB or > 60 dB	No	7	16	34
Pole Line Rd.	North of E Covell Blvd.	64.2	64.4	0.2	+3 dB	No	32	68	147
Pole Line Rd.	E Covell Blvd. to Claremont Dr.	58.7	59.0	0.2	+5 dB or > 60 dB	No	14	30	64
Pole Line Rd.	Claremont Dr. to Loyola Dr.	61.6	61.5	-0.1	+3 dB	No	14	29	63
Pole Line Rd.	South of Loyola Dr.	61.2	61.4	0.3	+3 dB	No	13	29	62
Pole Line Rd.	North of 5th St.	62.3	62.4	0.2	+3 dB	No	16	34	73
Pole Line Rd.	South of 5th St.	63.5	63.7	0.2	+3 dB	No	19	41	88
Research Park	North of E Covell Blvd.	55.7	57.7	1.9	+5 dB or > 60 dB	No	11	24	52
3rd St.	West of L St.	58.6	58.8	0.2	+5 dB or > 60 dB	No	9	19	42

Notes:
[1] Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the City's Normally Acceptable 60 dB L_{dn} noise level standard at an existing outdoor activity area of a residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.
[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

Source: j.c. brennan & associates, Inc., May 1, 2015.

However, the Alternative includes various green space outdoor use areas. Therefore, the following analysis examines transportation noise levels at these outdoor areas. The new sensitive receptors could be exposed to potentially substantial exterior or interior noise levels associated with nearby transportation noise, including traffic and Union Pacific Railroad (UPRR) activity.

MRIC Mixed-Use

Exterior Noise Levels

Existing Plus Mixed-Use Alternative Project traffic noise levels were predicted at the proposed outdoor use areas associated with the project. Table 8-17 shows the predicted traffic noise levels at the proposed uses that may be impacted by noise from Mace Boulevard, I-80, and UPRR activity.

Table 8-17
Transportation Noise Levels at Proposed Uses

Receptor Description	Noise Source and Predicted Noise Level (Ldn)				Standard	Impact ? (Y/N)
	I- 80	Mace Blvd.	UPRR	Total		
Existing Plus Mixed-Use Alternative						
Residential Units	55 dB	56 dB	52 dB	59 dB	60 to 70 dB	No
Hotel	60 dB	61 dB	57 dB	64 dB	65 to 75 dB	No
North-South Commons	61 dB	51 dB	59 dB	63 dB	65 to 75 dB	No
The Oval	55 dB	55 dB	52 dB	59 dB	65 to 75 dB	No
East-West Commons	56 dB	55 dB	53 dB	60 dB	65 to 75 dB	No
Courtyard Plaza	58 dB	49 dB	55 dB	60 dB	65 to 75 dB	No

Source: j.c. brennan & associates, Inc., March 16, 2015.

The southern boundary of the proposed Mixed-Use site is located approximately 130 feet, or further, from the UPRR line. Based on data obtained by the traffic consultant, the UPRR line was estimated to generate an exterior noise level of 69 dBA L_{dn} at a distance of 150 feet. Accordingly, railroad noise levels at the Mixed-Use site were predicted as presented in Table 8-17. As shown in the table, transportation noise levels are predicted to comply with the City of Davis exterior noise level standards for the proposed uses.

Interior Noise Levels

Based upon the Table 8-17 data, exterior noise levels are predicted to be 64 dB L_{dn} or less at each of the proposed project use areas. Typical construction measures provide a 25 dB exterior-to-interior noise level reduction. Therefore, interior noise levels are predicted to be less than 40 dB L_{dn} for all proposed uses. The aforementioned noise levels would comply with the City's 45 dB L_{dn} standard for residential uses (including hotels) and 55 dB L_{dn} standard for office uses.

Mace Triangle

Based upon the General Commercial land use designation proposed for the Ikedas parcel and the easternmost agricultural parcel, the City has identified a future development potential for these parcels, consisting of approximately 45,901 sf of research/office/R&D, and 25,155 sf of ancillary retail. Because of the uncertainty of these uses, in terms of site placement and specific tenants, an acoustical study would be required and should be submitted in conjunction with a development plan application for this site.

Conclusion

As discussed above, the exterior noise levels expected at the Mixed-Use Alternative site would comply with the City's exterior noise level standards. However, future development of the Mace Triangle Site, depending upon the building location and tenant type, could expose new sensitive receptors to excessive transportation noise levels. With implementation of the following mitigation measure, traffic-related noise impacts to new sensitive receptors would be considered ***less than significant***.

Mitigation Measure(s)

MRIC Mixed-Use – none

Mace Triangle

8-59 *In conjunction with the submittal of a final planned development and/or tentative map for the Mace Triangle site, the applicant shall submit an acoustical analysis to the Department of Community Development and Sustainability. The acoustical analysis shall measure existing noise levels in the vicinity of the Mace Triangle Site, as well as model the predicted noise levels for the scenarios determined to be appropriate by the certified noise consultant and the City of Davis Department of Community Development and Sustainability. The existing and predicted future exterior and interior noise levels shall account for any noise sources in the area, potentially including roadway, railway, and nearby outdoor uses. The acoustical analysis shall identify and classify the proposed uses in order to determine the appropriate noise level standards. If any uses identified in Table 19 of the General Plan Noise Chapter are proposed on-site, the acoustical analysis shall evaluate whether predicted transportation noise levels (traffic and train) would exceed the City of Davis' exterior and interior noise level criteria at such use areas. If the City's noise level criteria would be exceeded, the acoustical analysis shall include a detailed list of any noise attenuation measures needed for the proposed uses to comply with the City's exterior and interior noise level standards, for review and approval by the Department of Community Development and Sustainability.*

8-60 Operational noise (reference Impact 4.11-5).

Impacts related to operational noise were determined to be less-than-significant for the proposed project. Operational noise sources generated from the implementation of the Mixed-Use Alternative in addition to the existing ambient noise could potentially affect the noise-sensitive receptors located in the project vicinity. Specifically, parking lot activities, Heating, Ventilation, and Air-Conditioning (HVAC) units, and outdoor events at the Oval park are noise sources that could exceed the City of Davis's exterior noise level standards.

MRIC Mixed-Use

Potential sources of operational noise resulting from development of the Mixed-Use site include commercial and office land uses, mechanical equipment, parking lots, and the Oval park.

Commercial and Office Land Uses

Commercial and office land use activities can produce noise levels which affect adjacent sensitive land uses. The noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The primary noise sources generally include HVAC equipment operation and parking lot use.

Mechanical Equipment

HVAC equipment can be a primary noise source associated with commercial or office uses. The types of equipment are often mounted on roof tops, 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 facades. The nearest residential property lines would be located approximately 800 feet or more from the nearest building façades. At this distance, HVAC noise would be approximately 20 to 25 dBA L_{eq}, or less. The aforementioned noise levels would be well below the City's noise ordinance limit of 50 dBA L_{eq} during nighttime hours. In addition, the noise levels would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors.

Parking Lots

Parking lot noise typically includes periods of conversation, doors slamming, engines starting and stopping and vehicle passage. J.c. brennan & associates, Inc. file data for parking lot activities was used to model the parking lot noise environment for the project site. An average SEL of 71 dB at a distance of 50 feet is typical for a passenger vehicle arrival and departure in a parking lot.

Based upon the project traffic study, the highest peak hour trips would occur during the AM peak hour. The project could result in 2,431 gross AM peak trips. Based upon this trip generation rate, the peak hour L_{eq} value for the total parking area of the Mixed-Use Alternative can be calculated as follows:

L_{eq} = SEL + 10 log N_{eq} - 35.6, dB where:

Sound exposure level (SEL) is the mean SEL of the event, N_{eq} is the sum of the number of hourly events, and 35.6 is 10 times the logarithm of the number of seconds in an hour. Based upon the above formula, the hourly L_{eq} for parking lot activity would be 69.3 dBA L_{eq} at a distance of 50 feet. It should be noted that parking lot activity would be spread across the entire project site, and would not be concentrated in any one specific area. Therefore, to determine parking lot noise generation at the nearest off-site residential sensitive receptors, the total noise generation of 69.3 dBA L_{eq} at 50 feet is adjusted based upon the distance from the center of the project site to the nearest residential receptors. The center of the project site to the nearest residential receptors ranges from approximately 1,550 to 2,050 feet. Based upon these distances, parking lot noise levels would range between 37 to 40 dBA L_{eq} at the nearest receivers. The aforementioned noise levels would be well below the City's noise ordinance limit of 55 dBA L_{eq} during daytime hours. In addition, the noise levels would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors.

The Oval

The Oval park area would be privately maintained but made available for public uses. Other than general use by employees within the Mixed-Use Alternative, and some use by the public, periodic concerts may be scheduled by innovation center businesses who would like to host events. Certain events are exempted by the City of Davis (Municipal Code Section 24.04.070) when approved through a registration process by the City. The process is outlined in Section 21.04.040 of the City's Municipal Code.

It should be noted that special events that require amplified noise may be allowed on-site. Any amplified sound at an event with more than 100 people in attendance is required to obtain a Sound (Noise) Permit from the Davis Police Department prior to the noise event. Should the Permit be approved by the Police Department, the noise event would be subject to the noise requirements and other limitations in

order to ensure interior noise levels at nearby receptors are below acceptable levels.

Mace Triangle

Based upon the General Commercial land use designation proposed for the Ikedas parcel and the easternmost agricultural parcel, the City has identified a future development potential for these parcels consisting of approximately 45,901 sf. of research/office/R&D, and 25,155 sf. of ancillary retail. At this time, a specific development plan has not been proposed for the Mace Triangle site. Based upon the proposed General Plan designation for the Mace Triangle site, the types of uses are expected to be similar to the Mixed-Use site. Therefore, noise generation from future similar uses would be similar to the Mixed-Use Alternative. Based upon the analysis presented above, noise levels from project operations are likely to be in the range of 20 to 40 dBA L_{eq} at the nearest receivers. The aforementioned noise levels would be well below the City's noise ordinance limit of 55 dBA L_{eq} during daytime hours. In addition, the noise levels would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors.

Conclusion

As discussed above, the proposed innovation center uses on the Mixed-Use site would comply with the City of Davis exterior noise level limits without any additional noise control measures. In addition, while development is not proposed on the Mace Triangle site at this time, should development occur on the Triangle site after receipt of additional discretionary approvals, the operational noise levels would not impact the nearest sensitive receptors, based upon comparison with the projected operational noise levels at the Mixed-Use site. Therefore, impacts related to operational noise sources generated from the Mixed-Use Alternative would be considered ***less than significant***.

Mitigation Measure(s)
None required.

8-61 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise (reference Impact 4.11-6).

Impacts related to conflicts with plans, policies, or regulations related to noise, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.11 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Population and Housing (reference Section 4.12)

The impacts related to population and housing as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-62 Induce substantial population growth (reference Impact 4.12-1).

Impacts related to substantial population growth were determined to be significant and unavoidable for the proposed project due to the fact that the City of Davis would not be able to accommodate its fair share of employee housing demand generated by the MRIC. The Mixed-Use Alternative would consist of the same amount of square feet of office, R&D, ancillary retail, and hotel uses (2,654,000 sf). According to the Population and Housing chapter of this EIR, the non-residential portion of the Mixed-Use Alternative would generate approximately 5,882 employees, which correlates to an additional 815 housing units within the City needed to serve the projected employee population. Unlike the proposed project, however, the Mixed-Use Alternative would meet this need by providing up to 850 residential, workforce units (20 to 40 du/ac and higher). As a result, the increase in housing demand associated with the Alternative could be met within the City rather than the surrounding SACOG region, as would be required for the proposed project. In addition, the Mixed-Use Alternative would provide secondary environmental benefits associated with on-site residential opportunities, such as reduced VMT and traffic congestion on regional roadways, as well as reducing the amount of regional residential development needed to support the employees generated from the project. Overall, impacts related to population growth as a result of the Mixed-Use Alternative would be ***less than significant***.

Mitigation Measure(s)
None required.

8-63 Conflict, or create an inconsistency, with any applicable population and housing 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 (reference Impact 4.12-2).

Impacts related to conflicts with plans, policies, or regulations related to population and housing, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.12 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. Therefore, Table 8-18 has been included in order to analyze the applicable plans, policies, or regulations related to housing.

As demonstrated in Table 8-18, the project is generally consistent with applicable land use plans, policies, or regulations. Therefore, impacts related to conflicting, or creating an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to land use would be ***less than significant***.

Table 8-18
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation			Project Consistency
Goal HOUS 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.		The Mixed-Use Alternative includes up to a maximum of 850 multi-family units intended for workforce housing with an average density at or above 30 dwelling units per acre. The anticipated density range is between 20 and 50 dwelling units per acre, or higher, depending on product type. Therefore, the alternative includes a mix of housing types, densities, and sizes. The mix of housing types, densities, and sizes would also correlate to a variety of prices and rents. For example, smaller units would likely have lower prices or rents, while larger units would likely have higher prices or rents. Although the residential units are intended for workplace housing, people of various lifestyles could occupy the residences.
	Policy HOUS 1.1	Encourage a variety of housing types that meet the housing needs of an economically and socially diverse Davis.	See the discussion for Goal HOUS 1. As noted above, the Mixed-Use Alternative would provide a variety of housing types, densities, and sizes which would contribute to the economically and socially diverse housing stock in Davis.
	Policy HOUS 1.2	Strive to maintain an adequate supply of rental housing in Davis to meet the needs of all renters, including students.	See the discussion for Goal HOUS 1. As noted above, the mix of housing types, densities, and sizes would correlate to a variety of prices and rents. For example, smaller units would likely have lower prices or rents, while larger units would likely have higher prices or rents. Although the residential units are intended for workplace housing, students and other groups could occupy the residences.
	Policy HOUS 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.	According to Section 18.05.080, Exemptions from affordable housing requirements, of the City's Municipal Code, the following residential development types are exempt from the affordable housing requirements: (a) Residential developments consisting of fewer than five units. (b) Residential developments constructed as exempt condominiums. (c) Residential components of a vertical mixed use development

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Table 8-18
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation		Project Consistency
		According to Section 18.05.020, Definitions, "vertical mixed use development means mixed-use structures that vertically integrate residential dwelling units above the ground floor with unrelated non-residential uses on the ground floor, including office, restaurant, retail, and other nonresidential uses." Vertical mixed use does not include structures that vertically integrate uses ancillary to residential units, such as resident parking, laundry rooms, community rooms, or common space on the ground floor with the residential units above. Much of the housing included as part of the Mixed-Use Alternative is anticipated to be exempt from the City's affordable housing requirement as the majority of the units would contain unrelated non-residential uses on the ground floor. For any potential housing units which would not contain unrelated non-residential uses on the ground floor, these units would still be required to comply with the City's Municipal Code, including Section 18.05.040.
Policy HOUS 1.4	Encourage a variety of housing types and care choices for disabled persons.	See the discussion for Goal HOUS 1. As noted above, the Mixed-Use Alternative would provide a variety of housing types, densities, and sizes which would contribute to the economically and socially diverse housing stock in Davis. In addition, the multi-family building code requirements would ensure that the residential units within the Mixed-Use Site would be constructed to accommodate person with disabilities.
Policy HOUS 1.5	Encourage a variety of housing types that accommodate persons with disabilities and promote aging in place, including a requirement of 100 percent Universal Access features in all new single-family residential units not otherwise subject to	See the discussion for Goal HOUS 1. As noted above, the Mixed-Use Alternative includes a variety of housing types, densities, and sizes which would contribute to the economically and socially diverse housing stock in Davis. In addition, the residential units included as part of the Mixed-Use Alternative would be subject to the multi-family building code requirements. The multi-family building code requirements would ensure that the residential units within the Mixed-Use Site would be constructed to accommodate person with

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Table 8-18
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation			Project Consistency
		multi-family building code requirements.	disabilities.
	Policy HOUS 1.8	Analyze the models and options to promote housing for local employees.	The residential units included as part of the Mixed-Use Alternative are intended to be utilized for workplace housing. The non-residential portion of the Mixed-Use Alternative would generate approximately 5,882 employees. Utilizing the 1.62 employees per household figure, approximately 1,215 to 1,377 of the 5,882 innovation center employees are anticipated to live and work on the Mixed-Use Site. Therefore, 4,505 employees are not anticipated to live on-site (5,882 total employees – 1,377 employees living on-site). The remaining 4,505 employees are anticipated to utilize housing opportunities within the City of Davis and surrounding area.
	Policy HOUS 1.9	Encourage a variety of housing types and care choices, as well as housing innovation, for seniors.	Senior housing opportunities exist throughout the City of Davis. The residential units included as part of the Mixed-Use Alternative are intended to be utilized for workplace housing. However, the units would not be restricted to such uses, and other populations, such as seniors, would be able to utilize the housing units.
	Policy HOUS 1.10	Encourage construction of housing to meet the needs of farmworkers.	Farmworker opportunities exist throughout Yolo County. The residential units included as part of the Mixed-Use Alternative are intended to be utilized for workplace housing. However, the units would not be restricted to such uses, and other populations, such as farmworkers, would be able to utilize the housing units.
Goal HOUS 2	Provide housing that is affordable for residents with low incomes and low-paying jobs, fixed incomes, and pensions.		See the discussion for Policy HOUS 1.3.
	Policy HOUS 2.1	Strive to meet the identified current and projected local need for housing and for housing affordable to extremely low-, very low-, low-, and moderate-income	See the discussion for Policy HOUS 1.3.

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Table 8-18
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation			Project Consistency
		households including provision of Davis' eight-year fair share of regional housing needs.	
	Policy HOUS 2.2	Provide housing opportunities for the local workforce in the Davis area.	See the discussion for Policy HOUS 1.8. The residential units included as part of the Mixed-Use Alternative are anticipated to be utilized for workforce housing due to the proximity to the proposed innovation center uses.
Goal HOUS 3	Increase equal housing opportunities for all persons and households in Davis.		
	Policy HOUS 3.1	Affirmatively further fair housing opportunities for all persons regardless of race, color, religion, sex, national origin, familial status, disability, age, marital status, sexual orientation, source of income, and receipt of Section 8 or other subsidized rental program.	The Mixed-Use Alternative would not hinder the City's ability to further housing opportunities for all persons regardless of race, color, religion, sex, national origin, familial status, disability, age, marital status, sexual orientation, source of income, and receipt of Section 8 or other subsidized rental program. Instead, the alternative would provide 750 to 850 residential units with a variety of sizes and densities. Although the majority of the residential units would be exempt from the City's affordable housing requirement, the residential units could be utilized by a variety of persons.
	Policy HOUS 3.2	Strive to ensure that required affordable housing is occupied by those with the greatest need.	See the discussion for Policy HOUS 1.3.
	Policy HOUS 3.5	Promote a linkage between new ownership housing and the local workforce.	The residential units included as part of the Mixed-Use Alternative are anticipated to be utilized for workforce housing due to the proximity to the proposed innovation center uses. The alternative would provide a direct linkage between housing and jobs, and the residential units could potentially be utilized by first-time homebuyers.
Goal HOUS 4	Disperse affordable and rental housing fairly throughout the City.		The residential units included as part of the Mixed-Use Alternative would be located in an area which currently contains an abundance of single-family housing units. Although some multi-family housing

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Table 8-18
Applicable Land Use Plan, Policy, or Regulation Consistency Discussion

Plan, Policy, or Regulation		Project Consistency
		units are located in the vicinity of the Mixed-Use Site (i.e., the Seville Apartments), implementation of the alternative would increase the multi-family housing stock in east Davis by 750 to 850 units. Therefore, the alternative would increase the amount of multi-family housing within east Davis.
Policy HOUS 4.4	Encourage senior housing in all parts of Davis and near neighborhood centers, shopping centers, public transportation, and/or parks and greenbelts where compatible with existing uses.	The residential units included as part of the Mixed-Use Alternative would be located in the vicinity of existing neighborhood centers, shopping centers, and public transportation. In addition, support retail and conference spaces would be included within the innovation center portion of the Mixed-Use Site. Furthermore, the alternative includes 64.6 acres of parks, gathering areas, and green spaces. Of the 64.6 acres, 28.0 acres of perimeter green space/open space would be included along the perimeter of the site. Although the majority of the residential units are anticipated to be utilized by the innovation center employees, the residential units could be utilized by a variety of persons, including seniors.
Policy HOUS 4.5	Encourage housing for special needs to be dispersed throughout the community to avoid an over-concentration in one area and to be located near neighborhood services and facilities. Special needs housing may include, but is not limited to, housing for physically and mentally disabled individuals, affordable low-income housing for single persons, emergency shelters, and transitional housing.	See the discussion for Policy HOUS 1.3. As noted above, much of the proposed housing is anticipated to be exempt from the City's affordable housing requirement as the majority of the units would contain unrelated non-residential uses on the ground floor. For any potential housing units which would not contain unrelated non-residential uses on the ground floor, these units would still be required to comply with the City's Municipal Code, including Section 18.05.040. The residential units included as part of the Mixed-Use Alternative could be utilized for physically and mentally disabled and single persons. However, the units are not anticipated to be used for emergency shelters or transitional housing. The aforementioned housing types currently exist within the City of Davis.

Mitigation Measure(s)
None required.

Public Services and Recreation (reference Section 4.13)

The impacts related to public services and recreation as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-64 Result in substantial adverse physical impacts associated with the provisions of new or physically altered fire protection facilities, and/or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection facilities (reference Impact 4.13-1).

Impacts related to fire protection were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would result in an increased population of approximately 2,324 to 2,635 persons (using 3.1 persons per household). The Mixed-Use Alternative, similar to the proposed project, would be required to pay development impact fees for public safety services. In addition, similar to the proposed project, the Mixed-Use Alternative would need to be formally detached from the East Davis County Fire Protection District.

Although the demand for fire protection services would increase due to the addition of residences in the area, the Mixed-Use Alternative would be anticipated to result in a ***less-than-significant*** impact given the close proximity of the nearest fire station and project's payment of impact fees.

Mitigation Measure(s)
None required.

8-65 Result in substantial adverse physical impacts associated with the provisions of new or physically altered police protection facilities, and/or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for police protection facilities (reference Impact 4.13-2).

Impacts related to police protection were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would result in an increased population of approximately 2,324 to 2,635 persons (using 3.1 persons per household). The Mixed-Use Alternative, similar to the proposed project, would be required to pay development impact fees for public safety services. Although the Mixed-Use Alternative would increase the population in the area, impacts related to police protection services would be ***less than significant***.

Mitigation Measure(s)
None required.

8-66 Result in substantial adverse physical impacts associated with the provisions of new or physically altered school facilities, and/or the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for school facilities (reference Impact 4.13-3).

Impacts related to schools were determined to be less-than-significant for the proposed project. The direct increase in population from the development of 750 to 850 residential units on-site would result in the introduction of additional students to the Davis Joint Unified School District (DJUSD). Table 8-19 presents the estimated increase in student enrollment as a result of the Mixed-Use Alternative. The Mixed-Use Alternative is expected to generate 339 to 384 additional students for the DJUSD. 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. In addition, the DJUSD recognizes that parents/guardians of students who reside in one district may, for a variety of reasons, choose to enroll their child in a school in another district. DJUSD approves interdistrict transfer requests based upon space availability in the requested grade level at the requested school. If a parent/guardian of a student is employed in Davis a minimum of 10 hours per week, they are eligible for the transfer based upon parent/guardian employment. Currently DJUSD has approximately 600 'continuing' interdistrict transfer students from various cities. The majority of the approximate 600 continuing interdistrict transfer students have a parent employed in Davis.[12] Through the payment by the applicant of applicable impact fees, and ongoing revenues that would come from taxes, project impacts to school services would be ***less than significant***.

Table 8-19
Mixed-Use Alternative Student Enrollment

Grade Levels	Student Generation Factor per Household	# of Units	New Students
K-6	0.29	750-850	218-247
7-9	0.09		68-77
10-12	0.07		53-60
		Total	**339-384**

Mitigation Measure(s)
None required.

[12] Personal Communication with Erin Grey-Merrit, Student Services Division, Davis Joint Unified School District. May 5, 2015.

8-67 Result in substantial adverse physical impacts associated with the provisions of new or physically altered park facilities, and/or the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for park facilities (reference Impact 4.13-4).

MRIC Mixed-Use

The Davis General Plan establishes a park dedication standard of five acres of parkland per 1,000 residents. The non-residential portion of the Mixed-Use Alternative would generate approximately 5,882 employees. In addition, 750 to 850 residential units would be included on-site and are intended to be utilized by innovation center employees.

Similar to the project, the mixed use alternative of the proposed MRIC is being evaluated assuming that employees (in addition to residents) will have impacts on local City parks and recreation, since employees would be within the City for five or more days per week, for at least 8 to 12 hours per day. Therefore, the following City of Davis adopted service ratios have been used in this analysis to assess whether the project will meet City standards for parks and other green space amenities. The calculations below are based on the total number of employees plus residents.

Utilizing the 1.62 employees per household figure, approximately 1,215 to 1,377 of the 5,882 innovation center employees are anticipated to live and work on the Mixed-Use Site. Therefore, 4,505 employees are not anticipated to live on-site (5,882 total employees – 1,377 employees living on-site). In order to avoid double counting the parkland requirement for the alternative, the requirement has been calculated using the 4,505 employee figure.

The number of anticipated residents (including the resident employees who were deleted from the total above) will be 2,325 to 2,635 people (750 and 850 units, respectively, multiplied times 3.1 persons/dwelling unit). The higher number, 2,635 will be used, added to the 4,505 employees above for a total number of 7,140 persons to be calculated for parklands requirements.

- Parkland: dedication of five (5) acres of parkland per one thousand (1,000) population.
- Greenways/open space: 10 percent of the total project area must be dedicated to greenways/open space.
- Agricultural buffers (urban transition): dedication of a 150-foot wide Urban Agricultural Transitional Area (UATA) on the eastern and partial northern property boundaries.

The following analysis examines alternative's consistency with the standards identified above, assuming number of employees plus residents as a proxy for population.

- *Parklands*: 35.7 acres (7,140 employees plus residents x 0.005 acres/person).
- *Greenways/open space*: 21.2 acres (10 percent of 212 acres; not combined with parklands, but can be combined with interior 50 feet of agricultural buffer).

- *Agricultural buffer*: Approximately 20.12 acres (eastern and northern property lines x 150 feet). One-third of that total, 6.7 acres, can 'overlap' with use as part of the greenways/open space total above, for a total of 13.4 required acres.

Therefore, the Mixed-Use Alterative is expected to dedicate a total of 70.3 acres of appropriate parklands and facilities. The Mixed-Use Alterative includes approximately 75.8 acres, as per the project applicant's project description, or a total of 35.8 percent of the Mixed-Use Site. Of that, 48.1 acres are defined as green space or agricultural buffer areas along the property edge, to provide a variety of uses, and the remaining 27.7 acres are internal plazas, courtyards and landscaped areas. The following totals and types of green space are proposed in the Mixed-Use Alterative:

- *Parklands*: Up to 27.7 acres are proposed.
- *Greenways/open space*: 28.0 acres are proposed, which are partially combined with the agricultural buffer.
- *Agricultural buffer*: Approximately 20.1 acres agricultural buffer are proposed.

Mace Triangle

The Ikedas parcel and other agricultural parcel of the Triangle would be designated General Commercial to allow for the continuation or expansion of the existing agricultural retail (Ikedas market) and/or for the development of up to 71,056 sf of new commercial uses. The General Commercial land use designation is intended to provide locations in several sectors of the City for a broad range of commercial service uses, such as automotive sales and repair, building materials, contractors' offices, nurseries, and similar uses. Unlike the type of campus-like environment envisioned for the MRIC, the broad range of General Commercial uses, which may be built on the undeveloped portions of the Triangle in the future, are not anticipated to generate an impact on local parks and recreation facilities as a result of use by Triangle employees.

Compliance with Existing Law

The City of Davis has adopted citywide development impact fees, which include Parks Impact Fees. Therefore, in compliance with existing law, prior to issuance of any building permits for any phase of development, the project applicant shall pay the City's Park Impact Fees.

Conclusion

The MRIC Mixed-Use includes sufficient park and greenbelt acreage per the methodology applied to the project; however, the parkland category does not currently have sufficient acreage allotted. With implementation of the following mitigation measure, the MRIC would include sufficient parkland acreage, resulting in a ***less-than-significant*** impact. The Mace Triangle would not be expected to result in an impact on local parks and recreation facilities, thus requiring the provision of park amenities, due to the broad range of General Commercial uses that could be built on the Triangle, most of which would not be expected to generate a greater demand for parks.

Mitigation Measure(s)

MRIC Mixed-Use

4.13-4 In conjunction with submittal of the first Final Planned Development Guidelines, or Tentative Map, whichever occurs first, the applicant for the MRIC shall submit a design level Greenspace Exhibit illustrating how the proposed project would meet the following requirements:

- ***Parklands:** 35.7 acres*
- ***Greenways/open space:** 21.2 acres*
- ***Agricultural buffer:** 20.1 acres (one-third of that total, or 6.7 acres, can be applied to the greenways/open space total above)*

The parkland and greenspace shall be open to/available for public use in the same manner and standards as other City parks and greenspace (whether privately or publicly owned). The Greenspace exhibit shall be reviewed by the Department of Community Development and Sustainability and Parks Department. The final Greenspace Exhibit shall be incorporated into the Final Planned Development Guidelines.

Mace Triangle – none

8-68 Result in substantial adverse physical impacts associated with the provisions of new or physically altered other public facilities, and/or the need for new or physically altered other public facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for other public facilities (reference Impact 4.13-5).

Impacts related to other public facilities were determined to be less-than-significant for the proposed project. The Mixed-Use Alternative would involve development of the proposed project site with innovation center uses, as well as high-density residential uses. The amount of innovation center uses would be equal to that of the proposed project, but the Mixed-Use Alternative would introduce approximately 750 to 850 residential units. In compliance with existing law, prior to issuance of any building permits for any phase of development, the project applicant shall pay the City's Roadways and General Facilities Impact Fees. In addition, in accordance with LAFCo law, the City of Davis would be required to negotiate a tax sharing agreement with the County of Yolo to ensure that the Mixed-Use Alternative incorporation would result in a similar exchange of both revenue and responsibility for service delivery among the County and the City. Although the Mixed-Use Alternative would include residential land uses, the demand for other public facilities, such as libraries and community centers, would be ***less than significant***.

Mitigation Measure(s)
None required.

8-69 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to public services and recreation (reference Impact 4.13-6).

Impacts related to conflicts with plans, policies, or regulations related to public services and recreation, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.13 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Transportation and Circulation (reference Section 4.14)

The trip generation of the project is based on the following three-step process. As described below, this process considers internal trips and external trips made by all travel modes:

Step 1 – Estimate gross trip generation of proposed land uses.
Step 2 – Estimate expected internalization of trips between complementary land uses.
Step 3 – Calculate number of external project trips made by walking, bicycling, or transit, with the remainder being external vehicle trips.

Step 1 – Estimate Gross Trip Generation

Table 8-20 shows the gross trip generation associated with build-out of the Mixed-Use Alternative using trip rates from Trip Generation (Institute of Transportation Engineers, 2008), as well as the City of Davis Traffic Model (source: City of Davis Travel Demand Model Development Report, Fehr & Peers, 2003).

For the office and manufacturing employment uses, as well as the hotel uses, rates from Trip Generation (Institute of Transportation Engineers, 2008) are applied. For the ancillary retail uses, the "Home-Based-Work" trip rate was applied to represent vehicle trips made by employees of the retail uses. All other trips to the ancillary retail uses, given their location and design, are assumed to be internal to the MRIC Project.

Step 2 – Estimate Internal Trip Capture and Pass-by Traffic

The expected internalization of trips generated by complementary land uses within the project site was estimated based on the Mixed-Use (MXD) Trip Generation Model,

which was developed by Fehr & Peers and several academic researchers.[13] Although an internal trip calculation methodology is contained in Trip Generation Handbook (ITE, 2004), it was not used in this instance because the MXD model is based on more extensive data.

The model estimates the percentage of daily and peak hour trips that remain internal to a project site, as well as external transit, walk, and vehicle mode splits. The model was developed from surveys of residents and employees in 240 mixed-use projects in six major metropolitan areas (Sacramento, Houston, Boston, Atlanta, Portland, and Seattle) in the United States. A set of 15 independent mixed use sites that were not included in the initial model were tested to validate the model. It should be noted that an alternative approach for estimating walk/bike trips (described on the following page) was used instead of the MXD model given the unique bicycling and walking environment within the City of Davis.

As shown in Table 8-20, the project would generate about 1,700 AM peak hour trips, 1,635 PM peak hour trips, and 14,880 daily trips before considering external trips made by non-auto travel modes.

Step 3 – Estimate External Trips by Travel Mode

For the Existing Plus Project case, all trips are assumed to come from outside the City of Davis. Therefore, no bicycle or pedestrian trips are assumed, and negligible transit trips are assumed, and all external trips are assumed to be vehicle trips. For the Cumulative cases, Table 8-21 shows the expected number of external trips by travel mode for the Mixed Use Alternative. Refer to footnotes in the table for the rationale and methodologies used to estimate external trip mode split. After accounting for internal trips, pass-by trips, and external trips made by walking, bicycling, and transit, the project would generate about 1,480 new AM peak hour vehicle trips, 1,435 new PM peak hour vehicle trips, and 13,500 new daily vehicle trips. Relative to the proposed project, the Mixed Use Alternative is projected to generate about 880 fewer trips in the AM peak hour, 715 fewer trips in the PM peak hour, and 2,100 fewer daily trips.

Based on data provided by Fehr & Peers, the Mixed-Use Alternative would generate vehicle trips as shown in Table 8-22. As shown in the table, the Mixed-Use Alternative would generate 1,700 AM peak hour trips and 1,635 PM peak hour trips, approximately 33.5 percent fewer peak hour trips than the proposed project.

[13] "Ewing, Reid, Michael Greenwald, Ming Zhang, Jerry Walters, Robert Cervero, Lawrence Frank, and John Thomas. 2011. "Traffic Generated by Mixed-Use Developments — Six-Region Study Using Consistent Built Environmental Measures." *ASCE Journal of Urban Planning and Development* 137(3): 248–61. http://ascelibrary.org/action/showAbstract?page=248&volume=137&issue=3&journalCode=jupddm&isAuthorized=no

Table 8-20
Mixed-Use Alternative Trip Generation[1]

Land Use	Quantity	Units[2]	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
R&D / Research Office	1,510	KSF	12,246	1,621	221	1,842	275	1,341	1,616
Manufacturing	884	KSF	3,377	568	77	645	110	536	646
Ancillary Retail	110	KSF	1,831	209	29	238	41	198	239
Hotel / Conference	150	Rooms	1,091	51	36	87	56	37	93
Multi-Family Residential	850	DU	5,067	44	316	360	292	92	384
Gross Trips			*23,612*	*2,493*	*679*	*3,172*	*774*	*2,204*	*2,978*
Internal Trips			*8,732*	*1,157*	*315*	*1,472*	*350*	*993*	*1,343*
New (External) Trips			*14,880*	*1,336*	*364*	*1,700*	*424*	*1,211*	*1,635*

Notes:
[1] Trip Rates based on data from City of Davis Travel Demand Model for Ancillary Retail and from Trip Generation (ITE) for all other uses. For Ancillary Retail uses, since these retail establishments are intended only for use by employees and will not be located on the periphery of the site, the trips shown are those made only by retail employees traveling to the project site.
[2] ksf = 1,000 square feet.
[3] Internal Trips estimated based on mixed-use trip generation model results, reflecting trips between R&D office, Manufacturing, Hotel/Conference Center, and residential. The trip rate for ancillary retail is based on retail employee trips only and thus already accounts for internal trips to retail.
[4] Includes external trips made by vehicle, walk, bike, and transit. Refer to following text and table for estimated split for each mode.

Source: Fehr & Peers, July 2015.

Table 8-21
External Mixed-Use Alternative Trips by Travel Mode

Travel Mode	Daily	AM Peak Hour	PM Peak Hour
Total External Trips[1]	14,880	1,700	1,635
External Trips by Bike/Walk[2]	1,280	200	180
External Trips by Transit[3]	130	20	20
External Trips by Vehicle[4]	13,470	1,480	1,435

Notes:
[1] Source: Last row of Table 8.1-1A
[2] 8.2 percent expected to be bike/walk based on the following methodology: 32.9 percent of MRIC employees are projected to live in Davis. 22 percent of current Davis residents bike to work. Given the location of the Mixed-Use site at the eastern boundary of the city, 3 percent of employees traveling to the site are estimated to walk to work.
[3] 0.82 percent are projected to take transit based on the following methodology: 32.9 percent of MRIC employees are projected to live in Davis. 2.5% of current Davis residents take transit to work.
[4] External trips not estimated to walk, bike, or use transit would otherwise travel by vehicle.

Source: Fehr & Peers, July 2015.

Table 8-22
Mixed-Use Alternative Trip Generation

Alternative	Daily New (External) Trips	AM Peak Hour Trips	PM Peak Hour Trips
Proposed MRIC Project	15,550	2,361	2,175
MRIC Mixed-Use Alternative	13,470	1,480	1,435
Percent Difference from Proposed Project	-13%	-37%	-34%

Source: Fehr & Peers, July 2015.

The impacts related to transportation and circulation as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-70 Impacts to Intersections Outside Freeway Interchange Areas (reference Impact 4.14-1).

The project was determined to have a significant impact at the East Covell Boulevard/Monarch Lane intersection. Table 8-23 shows the service levels for intersections outside the Mace Boulevard interchange area, with the addition of traffic generated by the Mixed-Use Alternative and Mace Triangle.

According to Table 8-23, which addresses intersection operations for Existing plus the Mixed Use Alternative conditions for the non-Mace Boulevard interchange area intersections, all but one intersection is projected to operate at acceptable service levels with the addition of Mixed Use Alternative traffic. The project driveway intersection on Mace Boulevard/Project Access (northernmost)/CR 104/CR 30B is projected to operate at LOS F in the PM peak hour as a side-street stop-controlled intersection, which is proposed by the project. With mitigation, this impact is ***less than significant.***

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-70(a) *As directed by the City, based on either a focused development phase traffic study or the monitoring carried out by the Master Owner's Association as part of the Project Travel Demand Management Program described in Mitigation Measure 8-75, the project applicant shall fund and the City shall supervise the design and construction of a traffic signal at the intersection of Mace Boulevard/Project Access (northernmost)/County Road 104/County Road 30B. The signal design, timing plans, and coordination plan shall be reviewed and approved by the Davis Public Works Department prior to issuance of a building permit for the traffic signal. Funding for the signal will be deposited at the time of the first final map. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis. Based on analysis already performed, this improvement is not triggered by phase one MRIC development; however, all MRIC development shall have a fair share funding obligation.*

MRIC Mixed-Use

8-70(b) *In conjunction with submittal of a final planned development, or tentative map, whichever occurs first, for each phase of development, the Master Owners' Association (MOA) for the Project shall submit a focused traffic impact study to determine if any of the intersection, roadway, interchange, external roadway, or freeway mitigations are required based on the additional traffic generated by the development phase. The focused traffic study shall address the impact of adding the individual phase of development to existing plus other approved/pending development projects. The traffic study shall use the current version of the SACOG travel demand forecasting model available at the time of the study, and the traffic operations analysis methods utilized in this EIR. If operations are found to have declined to unacceptable levels based on the relevant criteria under Standard of Significance #1, the project applicant shall construct physical improvements or pay its fair share as described prior to the issuance of the first certificate of occupancy for the first building in that phase.*

8-71 Impacts to Intersections Within the Mace Boulevard Interchange Area (reference Impact 4.14-2).

The project was determined to have a significant and unavoidable impact at the intersections of Mace Boulevard with Alhambra Drive, 2nd Street/CR 32A, and the I-80 WB ramps. Table 8-24 shows the traffic simulation LOS results for the Mace Boulevard interchange area under Existing Plus Mixed Use Alternative conditions. With the addition of project traffic, all intersections would operate at LOS E or better, meeting the City of Davis criteria for these intersections. Based on this analysis, this impact is ***less-than-significant*** and mitigation is not required**.**

Mitigation Measure(s)
None required

8-72 Impacts to Regional Roadways (reference Impact 4.14-3).

Impacts related to regional roadways were determined to be less-than-significant for the proposed project. Table 8-24 shows the traffic simulation LOS results for the Mace Boulevard interchange area under Existing Plus Mixed Use Alternative conditions. With the addition of project traffic, all intersections would operate at LOS E or better, meeting the City of Davis criteria for these intersections. The Mixed-Use Alternative would provide 750 to 850 housing units intended for employees of the innovation center. Therefore, fewer employees as compared to the proposed project are anticipated to utilize the regional roadways in order to commute to the innovation center. In addition, the Mixed-Use Alternative would generate fewer peak hour trips than the proposed project (139,000 daily VMT vs. 196,000 daily VMT), due to the greater internalization of trips with the addition of residential uses to the project in this alternative. Based on this analysis, impacts to regional roadways would be ***less-than-significant*** and mitigation is not required**.**

Mitigation Measure(s)
None required

8-73 Impacts to Freeways (reference Impact 4.14-4).

The project was determined to have less-than-significant impact to freeways. Table 8-25 presents the freeway operations within the local study area with the addition of Mixed Use Alternative traffic to existing conditions. All freeway segments would operate at LOS D or better with addition of project traffic. Per threshold of significance #2, an impact to a freeway facility would be considered significant if the operating level of a freeway segment deteriorates from LOS E (or better) to LOS F. Because project traffic would not trigger this threshold, the Mixed Use Alternative would have a ***less-than-significant*** impact to freeways in the local study area.

Mitigation Measure(s)
None required.

8-74 Impacts to Local Neighborhood Street Traffic (reference Impact 4.14-5).

MRIC Mixed-Use

The project was determined to have significant and unavoidable impact to local neighborhood street traffic. Please see the discussion under Impact 4.14-5 in Section 4.14, Transportation and Circulation.

The Davis General Plan includes policy direction (Policy TRANS 2.7) to minimize impacts of vehicle traffic on local streets to maintain or enhance livability of the neighborhoods. The Mixed-Use Alternative would add peak hour trips to Alhambra Drive, although the actual choice of drivers to choose Alhambra Drive instead of the Covell/Mace curve to approach and depart the site is somewhat difficult to predict. Korematsu Elementary School is located at the junction of Alhambra Drive and Loyola Drive. The current volume of traffic along this segment of Alhambra Drive is about 480 to 520 peak hour vehicles.

In order to address increased traffic in residential neighborhoods, the General Plan recommends that traffic calming measures be considered along collector and minor arterial streets, where appropriate and feasible, to slow speeds. While the following mitigation measure would require the applicant to prepare a neighborhood traffic calming plan, and implement traffic calming measures within the residential areas, west of the project site, successful implementation of such a plan cannot be guaranteed. Although the Mixed Use Alternative is projected to generate less external traffic than the proposed project, the analysis and findings under Impact 4.14-5 apply to the Mixed Use Alternative. Therefore, this is considered a ***significant*** impact.

Mace Triangle

The development potential for the Mace Triangle will generate a relatively small number of external peak hour trips as compared to the MRIC Mixed-Use. In addition, the Mace Triangle

site has its sole access onto CR 32A; and project trips are most likely to travel to/from the I-80 freeway, to the west along 2nd Street, or to the north via Mace Boulevard. This is in contrast to the MRIC, whose main access is at the Mace Boulevard/Alhambra Drive intersection, where MRIC project traffic can more easily travel westbound onto Alhambra Drive through the neighborhood. As a result of these factors, the Mace Triangle would have a ***less-than-significant*** impact related to local neighborhood street traffic.

Mitigation Measure(s)

MRIC Mixed-Use

8-74 *Prior to final map approval, the project applicant shall fund the development of a neighborhood traffic calming plan, the City shall adopt the plan, and the applicant shall fund implementation of the plan. The traffic calming plan will address Alhambra Drive, Loyola Drive, Fifth Street, and Monarch Lane. Existing weekday daily traffic counts and 85th percentile speeds shall be collected on the above neighborhood streets as part of the traffic calming plan development process. The purpose of the plan will be to maintain both the volume and speed of vehicle traffic on these streets, through the use measures proven in other neighborhoods and jurisdictions to achieve these goals, such as narrow points, neighborhood traffic circles, speed humps, stop signs (where warranted), narrow lane striping, and others. Implementation of a comprehensive traffic calming plan will incentivize traffic to use major routes such as I-80, East Covell Boulevard, Mace Boulevard, and 2nd Street, and avoiding using residential streets as cut-through routes.*

With implementation of Mitigation Measure 8-74, the impact would be reduced. However, successful implementation of the neighborhood traffic calming plan (as described in Mitigation Measure 8-74) cannot be assured due to uncertainties regarding what measures will ultimately be included in the plan, whether the plan will be approved, and whether the plan will be effective at completely eliminating the use of the affected roadways by project traffic. Therefore, this impact is considered ***significant and unavoidable***.

Mace Triangle - none

8-75 Increase in Vehicle Miles Traveled (reference Impact 4.14-6).

Please see the discussion under Impact 4.14-6 in Section 4.14, Transportation and Circulation. Impacts related to increase in vehicle miles travelled (VMT) were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative is projected to generate less VMT than the proposed project (139,000 daily VMT vs. 196,000 daily VMT), due to the greater internalization of trips with the addition of residential uses to the project in this alternative. However, the analysis and findings under Impact 4.14-6 apply to the Mixed Use Alternative.

The Davis General Plan Mobility Element Goal #2 contains performance objectives designed to improve air quality and reduce GHG emissions related to travel in the City. Performance Objective 2.2 requires a reduction in VMT of 39 percent from 2010 levels, by 2035. The reduction is set at the level needed to achieve a 61 percent carbon reduction from the Davis transportation system, based on SACOG modeling. In addition, the *City of Davis Climate Action and Adaptation Plan (2010)* has a long-term goal to reach Carbon Neutrality (net zero greenhouse gas emissions) by 2050 and a series of short-term goals including one to reduce citywide greenhouse gas emissions 28 percent below 1990 levels by 2020. The Climate Action Plan contains actions to promote VMT reduction within the City and regionally. One of the 2015 Actions aimed at reducing VMT is to "Develop Transportation Demand Management Programs with Employers".

The Mixed-Use Alternative would generate substantial new travel demand related to commuting and other trip purposes associated with the industrial and retail uses on-site. The Mixed-Use Alternative is projected to generate 139,000 VMT at build-out. As such, the alternative would increase City-generated VMT and GHG, not reduce them. With implementation of Mitigation Measure 8-75(a) below, the Mixed-Use Alternative could minimize its VMT (although not reduce it to zero), and limit greenhouse gas generation to a "net zero" or "carbon neutral" level.

With implementation of Mitigation Measure 8-75, this is considered a ***less-than-significant*** impact.

Mitigation Measure(a)

MRIC Mixed-Use

8-75(a) *Prior to issuance of the first building permit in the first phase of development, the applicant shall develop a TDM program for the entire proposed project, including any anticipated phasing, and shall submit the TDM program to the City Department of Public Works for review and approval. The TDM program must be designed to achieve the following.*

1. *Reduce trips to achieve one and five-tenths (1.5) Average Vehicle Ridership (AVR) in accordance with Davis Municipal Code Section 22.15.060; and*
2. *Reduce daily and peak hour vehicle trips, as forecast for the project in this transportation impact assessment, by 10 percent for every project phase.*

The Master Owner's Association (MOA) shall be responsible for implementing the TDM Program.

(a) The MOA shall be responsible for funding and overseeing the delivery of trip reduction/TDM proposed programs and strategies to achieve the AVR objectives, which may include, but are not limited to, the following:

(1) Establishment of carpool, buspool, or vanpool programs;
(2) Vanpool purchase incentives;
(3) Cash allowances, passes or other public transit subsidies and purchase incentives;
(4) Low emission vehicle purchase incentives/subsidies;
(5) Parking fees set at levels sufficient to incentivize alternative modes;
(6) Full or partial parking subsidies for ridesharing vehicles;
(7) Preferential parking locations for ridesharing vehicles;
(8) Computerized commuter rideshare matching service;
(9) Guaranteed ride-home program for ridesharing;
(10) Alternative workweek and flex-time schedules;
(11) Telecommuting or work-at-home programs;
(12) On-site lunch rooms/cafeterias;
(13) On-site commercial services such as banks, restaurants and small retail;
(14) On-site day care facilities;
(15) Bicycle programs including bike purchase incentives, storage, maintenance programs, and on-site education program;
(16) On-site car share and bike share service;
(17) Enhancements to Unitrans or Yolobus bus service;
(18) Enhancements to Capitol Corridor or future Regional Rail service;
(19) Enhancements to the citywide bicycle network;
(20) Dedicated employee housing located either on-site or elsewhere in the City of Davis;
(21) Designation of an on-site transportation coordinator for the project.

(b) Single-phase development projects shall achieve TDM AVR objectives within five (5) years of issuance of any certificate of occupancy. Multi-phased projects shall achieve the objectives for each phase within three (3) years of the issuance of any certificate of occupancy.

(c) In conjunction with final map approval, recorded codes, covenants and restrictions (CC&Rs) shall include provisions to guarantee adherence to the TDM objectives and perpetual operation of the TDM program regardless of property ownership, inform all subsequent property owners of the requirements imposed herein, and identify potential consequences of nonperformance.

Each space use agreement (i.e., lease document) shall also include TDM provisions for the site as a means to inform and commit tenants to, and participate in, helping specific applicable developments meet TDM performance requirements.

(d) The MOA shall allow Mace Triangle businesses to participate within the MRIC TDM.

(e) Ongoing reporting:

*(1) **Annual TDM Report.** The MOA for the Project shall submit an annual status report on the TDM program to the City Department of Public Works beginning a year after the issuance of any certificate of occupancy and continuing until full project buildout. Data shall be collected in October of each year and the Annual Report submitted by December 31st of each year. The report shall be prepared in the form and format designated by the City, which must either approve or disapprove the program within sixty (60) days.*

i. The TDM performance reports shall focus on the trip reduction incentives offered by the project, their effectiveness, the estimated greenhouse gas (GHG) emissions generated by the project, and the methods by which a continued trajectory towards carbon neutrality in 2050 can be achieved consistent with Mitigation Measure 4.7-2. The report shall:

- *Report the AVR levels attained;*
- *Verify the TDM plan incentives that have been offered;*
- *Describe the use of those incentives offered by employers;*
- *Evaluate why the plan did or did not work to achieve the AVR targets and explain why the revised plan is more likely to achieve the AVR target levels;*
- *List additional incentives which can be reasonably expected to correct deficiencies;*
- *Evaluate the feasibility and effectiveness of trip reduction/TDM program and strategies, as implemented;*
- *Estimate the greenhouse gas emissions generated by Project transportation operations; and*
- *Identify off-setting GHG credits to be secured by the Project to achieve carbon neutrality.*

ii. The MOA shall conduct employee travel surveys annually to determine TDM program participation, AVR levels, and estimated mode shares, and monitor weekday AM and PM peak hour traffic operations every three years at

all impact locations identified in this EIR, comparing the operating LOS with the relevant standards in this EIR. The survey instrument and LOS monitoring plan will be reviewed and approved by the City prior to implementation.

iii. *The MOA shall also develop and implement a program to monitor daily and peak hour traffic volumes entering and exiting the site, to be conducted annually. The monitoring shall demonstrate that the external vehicle trip generation remains below the EIR projection of 1,480 AM peak hour trips and 1,435 PM peak hour trips. The monitoring program may include statistical considerations to ensure that non-statistically significant increases do not constitute violation of the trip ceiling.*

iv. *If the trip ceiling is exceeded for any two consecutive years, the applicant or current owner of the site will contribute funding to be determined in a separate study toward the provision of additional or more intensive travel demand management programs, such as enhanced regional transit service to the site, employee shuttles, and other potential measures.*

v. *In the event that other TDM objectives are not met as documented in the Annual Monitoring Report submitted by December 31st of each year, the MOA shall:*

- *Submit to the City within thirty (30) days of submittal of the annual report, a list of TDM measures that will be implemented to meet the TDM objectives within one hundred eighty (180) days of submittal of annual report. At the end of the one-hundred-eighty-day period, the MOA shall submit a revised performance report to determine compliance with TDM objectives. No further measures will be necessary if the TDM objectives are met.*

Should the TDM objectives not be satisfied by the end of the one-hundred-eighty-day period, the MOA shall pay a TDM penalty fee to the City in an amount determined by resolution of the City Council. Said penalty fee may be used to provide new transit service and/or subsidize existing transit service, construct bicycle facilities, and/or improve street capacity through construction of physical improvements to be selected by the City of Davis from the list of area-wide improvements identified in the City's CIP.

Mace Triangle

8.75(b) *Prior to issuance of a building permit for development within the Mace Triangle site, each applicant shall develop a TDM program coordinated with, and compliant with, the requirements of the MRIC TDM program and any pre-existing TDM programs on the Mace Triangle site. The program shall be submitted to the City Department of Public Works for review and approval. This includes achievement of the same trip reduction requirements, GHG-reducing transportation strategies, and monitoring and reporting requirements as the MRIC. This may be satisfied by joining the MRIC TDM program as a participating member.*

8-76 Impacts to Emergency Vehicle Access (reference Impact 4.14-7).

The project was determined to have a less-than-significant impact related to emergency vehicle access. The MRIC project would provide multiple emergency vehicle access (EVA) points, two along Mace Boulevard, two along CR 32A, and one on CR 104. As such, emergency vehicles can access the site from multiple directions. Furthermore, the design of the on-site roadways and intersections will be subject to City of Davis code and Public Works Department staff review and approval. Therefore, adequate emergency vehicle access is proposed and this is considered a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

8-77 Impacts associated with Construction Vehicle Traffic (reference Impact 4.14-8).

Please see the discussion under Impact 4.14-8, which applies to the Mixed Use Alternative. Impacts related to construction vehicle traffic were determined to be less-than-significant with mitigation for the proposed project. Construction of the project, including site preparation and construction, and delivery activities, would generate employee trips and a variety of construction-related vehicles. Construction activities would include disruptions to the transportation network near the project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Bicycle and transit access may also be disrupted. These activities could result in degraded roadway conditions. With implementation of the following mitigation measure, construction activities associated with the project would result in a ***less-than-significant*** temporary traffic impact.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-77 *Prior to any construction activities for the project site, the project applicant shall prepare a detailed Construction Traffic Control Plan and submit it for review and approval by the City Department of Public Works. The applicant and the City shall consult with Caltrans, Unitrans, Yolobus, and local emergency service*

providers for their input prior to approving the Plan. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained during construction. At a minimum, the plan shall include:

- *The number of truck trips, time, and day of street closures*
- *Time of day of arrival and departure of trucks*
- *Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting*
- *Provision of a truck circulation pattern*
- *Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas)*
- *Maintain safe and efficient access routes for emergency vehicles*
- *Manual traffic control when necessary*
- *Proper advance warning and posted signage concerning street closures*
- *Provisions for pedestrian safety*

A copy of the construction traffic control plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.

8-78 Impacts to Pedestrian and Bicycle Facilities (reference Impact 4.14-9).

Please see the discussion under Impact 4.14-10, which applies to the Mixed-Use Alternative. Impacts related to pedestrian and bicycle facilities were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative may interfere with existing, planned, or possible future pedestrian/bicycle facilities. Existing facilities that are adjacent to the project include on-street bike lanes on Mace Boulevard and Alhambra Drive, and a shared use path on Alhambra Drive. Proposed bicycle enhancements in the Beyond Platinum Bicycle Action Plan (2012) include enhanced facilities along 2nd Street, between Mace Boulevard and L Street, as well as bike lane conflict markings on Mace Boulevard at the I-80 interchange ramps.

The project will provide a bike path within the 50-foot transition zone of the agricultural buffer, which would connect to the existing Class II bike lane on CR 32A, at the project's southeastern corner. The project will provide bicycle parking near entrances to buildings, and a bike storage and repair area near the transit center to allow for safe storage of bikes and to facilitate any bike repairs that may be needed.

In addition, the alternative includes a proposed off-site bike path on the west side of Mace Boulevard, just north of Alhambra Drive, to the existing path along the frontage of Harper Junior High School. This bicycle/pedestrian path improvement, along the inside of the Mace "curve", will provide an important link in the trail network in the project vicinity. Not only will this link facilitate safe bicycle and pedestrian travel to/from the proposed project, but school children

biking/walking to/from Harper Junior High School will also be able to travel more safely along this stretch of Mace Boulevard.

The addition of peak hour vehicle trips to CR 32A as a result of the alternative has the potential to negatively impact bicycle flow along CR 32A between CR 105 and the access to the causeway bicycle path. This is particularly true for westbound bicycle traffic on CR 32A that is continuing onto the path west of CR 105. These cyclists must cross vehicle traffic on CR 32A just southeast of the at-grade rail crossing where CR 32A has a sharp curve. The addition of peak hour vehicle trips to CR 32A has the potential to negatively impact cyclists making this uncontrolled movement.

As Covell Boulevard is the only continuous roadway that traverses the entire City of Davis, and is primarily a four-lane facility, the City of Davis has required the construction of bicycle/pedestrian grade separations – by new developments located on the north side of the street – to facilitate safe crossings of this high speed, high volume facility. The General Plan Open Space element shows four existing or planned grade separations of Covell Boulevard. Along Covell Boulevard, this includes an existing overpass west of F Street and an existing underpass west of Alhambra Drive. The Cannery Project will be constructing a bicycle/pedestrian grade separation of East Covell Boulevard and a future facility is planned on West Covell east of Denali Drive.

Most of the innovation center employees and residents (for the mixed use) who would commute via bicycle would access the project site via the at-grade intersection of Mace Boulevard/Alhambra Boulevard. This would not adequately serve the level of projected bicycle traffic, and the project would thus not provide an adequate connection to the surrounding bicycle circulation system. This is a significant impact.

With implementation of the following mitigation measures, project impacts to bicycle facilities would be ***less-than-significant***.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-78(a) The project applicant for the Mixed-Use Alternative shall fund and construct the following bicycle and pedestrian improvements.

- *Prior to issuance of the first certificate of occupancy in Phase 1, the applicant shall construct the multi-use path on west side of Mace Boulevard from just north of Alhambra Drive to existing path along frontage of Harper Junior High School, as shown on the Project site plan.*
- *Prior to the issuance of the first certificate of occupancy in Phase 1, the applicant shall construct a crossing for westbound cyclists on CR 32A, southeast of the existing at-grade railroad crossing at CR 32A and CR 105. The crossing shall be a marked crossing, with advanced warning devices for vehicle traffic, for westbound cyclists on CR 32A that are*

continuing west onto the off-street path located between the Union Pacific Railroad and I-80 (e.g., to the west of CR 105). As noted earlier, Union Pacific has discussed the potential closure of the at-grade rail crossing. If that occurs, this mitigation measure will not be required.

- *Prior to the issuance of the first certificate of occupancy in Phase 1 of the MRIC, the access road from the Park-and-Ride Lot to County Road 32A shall be improved with sidewalks, per the project description.*
- *Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.*

8-78(b) *Prior to the issuance of the first certificate of occupancy in Phase 1 of the MRIC, the project applicant shall fund a study for a bicycle/pedestrian grade-separated crossing of Mace Boulevard to supplement the City of Davis' Bicycle Action Plan/Bike Plan.*

- *The study shall evaluate the preferred location, design, funding, and construction timing of the crossing. Identification of a preferred location shall take into consideration several factors, including but not limited to, connectivity to other existing and planned bicycle facilities, environmental constraints, and construction costs.*
- *At or prior to commencement of construction of any building in Phase 2, the project applicant shall: 1) submit design-level drawings of the grade-separated crossing to the City for review and approval; and 2) provide the project's fair share funding to the City for this improvement (or alternatively construct the improvement) subject to agreement with the City.*
- *Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.*

8-79 Impacts to Transit Services (reference Impact 4.14-10).

MRIC Mixed-Use

Please see the discussion under Impact 4.14-11, which applies to the Mixed-Use Alternative. Impacts related to transit services were determined to be less-than-significant with mitigation for the proposed project. The Mixed-Use Alternative would introduce new residential, office, manufacturing, and retail land uses that are situated in close proximity to the current transit stops (at Mace Boulevard/2nd Street) for the P, Q, and A bus routes operated by Unitrans. These routes serve a variety of retail, employment, medical, institutional, and recreational destinations throughout the City, and operate with 30 minute headways, and long service hours. On-board surveys conducted over the past three years indicated that 91 to 95 percent of all riders are UC Davis undergraduate students and 3 to 6 percent of riders are UC Davis graduate students. The 2012 on-board survey indicated that 5.3 percent of riders are non-UC Davis patrons.

The Unitrans General Manager Report for Fiscal Year 2013-14 (Unitrans, November 14, 2014) indicates that Unitrans experiences high levels of crowding (i.e., more than 60 passengers on

standard bus or more than 100 passengers on a double-decker bus) on 6 percent of all buses, with 12 percent of all riders on buses experiencing those high loads.

The City of Davis Short Range Transit Plan (Fiscal Years 2014/15-2020/21) indicates that Route A has the fourth highest ridership of the 18 Unitrans routes, with 1,559 average daily boardings and approximately 325,000 annual one-way passenger trips in FY 2012/13. Ridership on Route A increased by 12 percent between FY 2010/11 and 2012/13. Routes P and Q experience average daily boardings of 1,385 and 1,511, respectively. The average number of one-way trips per revenue service hour for these three routes in FY 2012/13 is as follows.

- Route A – 37
- Route P – 27
- Route Q – 30

Unitrans policy is to increase daily headways from 30 minutes to 15 minutes on routes with more than 60 passengers per hour. The highest ridership levels occur on Unitrans Routes G, J, V and W. All of these routes average more than 60 passengers per hour.

The three routes that serve the Mixed-Use Site – routes A, P and Q – have ridership levels that are well under the 60 passenger per hour threshold and the Mixed-Use Alternative will not result in an increase above that threshold. While the project is expected to increase transit ridership on Unitrans, given the expected number of project transit riders and existing transit patronage, the project would not cause a demand above that which is provided or planned.

Yolobus currently operates both intercity and express bus service in the City of Davis. Routes 42A and 42B are intercity routes that provide hourly service between downtown Sacramento, West Sacramento, Davis, Woodland and the Sacramento International Airport. The routes have a scheduled bus stop at the intersection of Mace Boulevard and 2nd Street. The express bus routes operated by Yolobus in Davis are currently programmed to serve inbound commute trips to Sacramento in the morning peak period and the return trip to Davis in the evening commute peak period. Because the Mixed-Use Alternative is an employment center expected to serve trips in the reverse direction, Mixed-Use Alternative employees are not expected to use the existing express bus routes. The Route 42 Intercity loop routes are the most significant trunk lines for Yolobus, serving approximately 650,000 annual riders in 2009. Routes 42A and 42B currently experience high ridership volumes, with Route 42A reporting standing room on two morning trips and Route 43 reporting standing room only on three of the five morning trips and two of the four evening trips. While the alternative is expected to result in a small increase in transit ridership on Yolobus, given the expected number of project transit riders and existing transit patronage, the alternative would not cause a demand above that which is provided or planned.

The Mixed-Use Alternative includes provision of a transit plaza within the site that is access via the new project access located on the east leg of the existing Mace Boulevard/Alhambra Drive intersection. This would require that Unitrans and Yolobus buses divert from Mace Boulevard into the project site to serve the transit plaza. This would result in additional travel time that would impact scheduling for the individual routes. Unitrans has indicated that they do not wish

to divert buses given the added travel time. Implementation of the following mitigation measure would reduce the potential impact to a ***less-than-significant*** level.

Mace Triangle

The Mace Triangle development would have minor transit impacts, given the proximate location of the Park-and-Ride facility within the site and existing nearby bus stops on Mace Boulevard. The Mace Triangle properties would be responsible for their fair share proportion of transit improvements set forth in Mitigation Measure 4.14-10. This would ensure a ***less-than-significant*** impact to transit service.

Mitigation Measure(s)
The improvements can be constructed within the existing right-of-way and can be implemented by the Mixed-Use Alternative. Therefore, the mitigation is feasible, and the impact would be reduced to a less-than-significant level after mitigation.

MRIC Mixed-Use and Mace Triangle

8-79 *Prior to the issuance of the first certificate of occupancy of the first project phase, the project applicant shall fund and construct new bus stops with turnouts on both sides of Mace Boulevard at the new primary project access point at Alhambra Drive. The project applicant shall prepare design plans, to be reviewed and approved by the City Public Works Department, and construct bus stops with shelters, paved pedestrian waiting areas, lighting, real time transit information signage, and pedestrian connections between the new bus stops and all buildings on the project site.*

8-80 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to transportation/traffic (reference Impact 4.14-9).

Impacts related to conflicts with plans, policies, or regulations related to transportation/traffic, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.14 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure
None required.

Table 8-23
Existing Plus Mixed-Use Alternative Peak Hour Intersection Operations
Outside Mace Boulevard Interchange Area

No.	Study Intersection	Traffic Control	Juris-diction	Existing				Existing Plus Mixed Use Alternative			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	F St./Covell Blvd.	Signal	Davis	17	B	18	B	18	B	19	B
2	J St,/Covell Blvd.	Signal	Davis	10	A	8	A	8	A	9	A
3	L St./Covell Blvd.	SSSC	Davis	2 (20)	A (C)	3 (28)	A (D)	3 (30)	A (D)	1 (13)	A (B)
4	Pole Line Rd./Covell Blvd.	Signal	Davis	27	C	32	C	29	C	39	D
5	Birch Ln./ Covell Blvd.	Signal	Davis	5	A	4	A	5	A	4	A
6	Baywood Ln./Covell Blvd.	SSSC	Davis	1 (19)	A (C)	1 (23)	A (C)	14 (30)	B (D)	19 (21)	C (C)
7	Manzanita Ln./Covell Blvd.	SSSC	Davis	1 (17)	A (C)	1 (21)	A (C)	1 (20)	A (C)	1 (26)	A (D)
8	Wright Blvd./Covell Blvd.	Signal	Davis	5	A	6	A	5	A	7	A
9	Monarch Ln./Covell Blvd.	SSSC	Davis	1 (20)	A (C)	1 (26)	A (D)	10 (34)	B (D)	12 (39)	B (E)
10	Alhambra Dr./Covell Blvd.	Signal	Davis	8	A	8	A	8	A	9	A
11	Harper Jr. HS Access/Covell Blvd.	Signal	Davis	4	A	5	A	4	A	6	A
12	Pole Line Rd./Claremont Dr.	SSSC	Davis	1 (12)	A (B)	1 (14)	A (B)	1 (12)	A (B)	1 (14)	A (B)
13	L St./Drexel Dr.	AWSC	Davis	8	A	9	A	8	A	9	A
14	Pole Line Rd./Loyola Dr.	Signal	Davis	7	A	7	A	8	A	8	A
16	L St./E 5th St.	Signal	Davis	13	B	17	B	14	B	19	B
17	Pole Line Rd./E 5th St.	Signal	Davis	11	B	13	B	18	B	19	B
18	L St./3rd St.	SSSC	Davis	3 (13)	A (B)	6 (24)	A (C)	4 (11)	A (B)	7 (20)	A (C)
19	2nd St./Cantrill Dr.	SSSC	Davis	2 (12)	A (B)	3 (22)	A (C)	4 (15)	A (B)	3 (23)	A (C)
20	2nd St./Pena Dr.	SSSC	Davis	2 (15)	A (B)	4 (30)	A (D)	4 (19)	A (C)	5 (30)	A (D)
21	2nd St./Faraday Ave.	Signal	Davis	11	B	22	C	11	B	18	B
23	Old Davis Rd./I-80 EB Ramps	SSSC	Caltrans	9 (12)	A (B)	2 (14)	A (B)	7 (14)	A (B)	8 (18)	A (B)
24	Old Davis Rd./I-80 WB Ramps	SSSC	Caltrans	7 (13)	A (B)	2 (9)	A (B)	9 (13)	A (B)	2 (9)	A (A)
25	Old Davis Rd./California Ave.	Roundabout	UC Davis	16	C	11	B	18	C	14	B
26	Research Park Dr./Cowell Blvd.	Signal	Davis	25	C	23	C	27	C	23	C
27	Drew Ave./Cowell Blvd.	Signal	Davis	15	B	16	B	16	B	20	C
28	Valdora St./Cowell Blvd.	Signal	Davis	14	B	14	B	16	B	15	B

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Table 8-23
Existing Plus Mixed-Use Alternative Peak Hour Intersection Operations
Outside Mace Boulevard Interchange Area

No.	Study Intersection	Traffic Control	Juris-diction	Existing				Existing Plus Mixed Use Alternative			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
29	Cowell Blvd./Pole Line Road/Lillard Dr.	Signal	Davis	24	C	16	B	33	C	16	B
30	Cowell Blvd./Research Park Dr./Greene Terrace	SSSC	Davis	1 (13)	A (B)	4 (19)	A (C)	13 (13)	B (B)	15 (15)	B (B)
31	Drumond Ave./Chiles Rod/Cowell Blvd.	AWSC	Davis	10	B	12	B	11	B	12	B
32	Mace Blvd./Cowell Blvd.	Signal	Davis	15	B	16	B	15	B	16	B
35	Mace Blvd./El Macero Dr.	AWSC	Davis	10	A	9	A	10	A	9	A
36	Danbury St./Lillard Dr.	AWSC	Davis	9	A	10	A	10	A	10	A
37	Drumond Ave./Lillard Dr.	AWSC	Davis	9	A	8	A	9	A	8	A
38	CR 32A/CR 105	SSSC	Yolo County	3 (9)	A (A)	7 (10)	A (A)	6 (9)	A (A)	8 (10)	A (B)
39	I-80 WB Ramps/CR 32A	SSSC	Caltrans	6 (10)	A (A)	4 (12)	A (B)	7 (11)	A (B)	5 (14)	A (B)
40	CR 32B/I-80 EB Ramps	SSSC	Caltrans	4 (9)	A (A)	4 (11)	A (B)	4 (9)	A (A)	2 (12)	A (B)
43	Mace Ranch IC Access 1/Mace Blvd.	SSSC	Davis	-	-	-	-	1 (12)	A (B)	1 (16)	A (C)
44	Mace Ranch IC Access 3/CR 32A	SSSC	Davis	-	-	-	-	4 (13)	A (B)	4 (16)	A (C)
45	Mace Triangle Access 1/CR 32A	SSSC	Davis	-	-	-	-	3 (10)	A (B)	2 (11)	A (B)
46	Mace Ranch IC Access 5 / Mace Blvd. / CR 104	SSSC	Davis	-	-	-	-	4 (47)	A (E)	37 (216)	E **(F)**

Notes:
[1] Traffic Control: AWSC = all-way stop control; SSSC = side street stop control; Signal = traffic signal
[2] Signals and all-way stops: LOS based on average control delay in seconds. Side street stop controlled intersections: LOS given for the average intersection followed by the worst side-street movement in parentheses.
[3] Sub-standard LOS shown in **bold**; significant impact indicated by shading. If signal warrant is met, the entry is *italicized.*

Source: Fehr & Peers, July 2015.

Table 8-24
Existing Plus Mixed-Use Alternative Peak Hour Intersection Operations
Mace Boulevard/I-80 Interchange Area

No.	Intersection	Control	Juris-diction	Existing				Existing Plus Mixed-Use Alternative			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
15	Mace Blvd./Alhambra Dr.	Signal	Davis	4	A	5	A	33	C	36	D
22	Mace Blvd./2nd St./CR 32A	Signal	Davis	38	D	34	C	29	C	45	D
33	Mace Blvd./I-80 WB Ramps	Signal	Davis	18	B	13	B	57	E	37	D
34	Mace Blvd./Chiles Rd.	Signal	Davis	19	B	18	B	23	C	21	C
41	I-80 EB Off-Ramp/Chiles Rd.	Signal	Davis	7	A	8	A	7	A	9	A
42	Mace Blvd./I-80 EB Ramps	Un-controlled	Davis	3	A	2	A	3	A	3	A

Notes:
[1] Delay is reported in seconds per vehicle for the overall intersection for signalized and uncontrolled intersections.
[2] **Bold** – LOS below standard. Shading indicates significant impact.

Source: Fehr & Peers, July 2015.

Table 8-25
Existing Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				Existing Plus Mixed-Use Alternative			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS
I-80	EB	Kidwell Rd. to SR-113 Junction	11	A	11	A	11	A	11	A
		Old Davis Rd. to Richards Blvd.	17	B	18	B	17	B	18	B
		Richards Blvd. to Mace Blvd.	20	C	22	C	21	C	23	C
		Mace Blvd. to Chiles Rd.	25	C	26	C	25	C	30	D
		Chiles Rd. to Enterprise Blvd.	19	C	24	C	19	C	27	D
	WB	Enterprise Blvd.to Chiles Rd.	18	B	20	C	21	C	24	C
		Chiles Rd. to Mace Blvd.	17	B	21	C	20	C	22	C
		Mace Blvd.to Olive Dr.	25	C	22	C	26	C	24	C

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Table 8-25
Existing Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				Existing Plus Mixed-Use Alternative			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS
		Richards Blvd. to Old Davis Rd.	17	B	25	C	18	B	26	C
		SR-113 Junction to Kidwell Rd.	14	B	17	B	14	B	18	B
SR-113	NB	Hutchison Dr. to Russell Blvd.	8	A	12	B	8	A	12	B
		Russell Blvd. to Covell Blvd.	9	A	15	B	9	A	15	B
		Covell Blvd. to CR 29	6	A	13	B	7	A	15	B
		CR 29 to CR 27	7	A	12	B	7	A	14	B
	SB	CR 27 to CR 29	17	B	15	B	18	B	16	B
		CR 29 to Covell Blvd.	16	B	16	B	18	B	16	B
		Covell Blvd. to Russell Blvd.	18	B	9	A	19	C	12	B
		Russell Blvd. to Hutchison Dr.	18	B	7	A	19	C	7	A

Note: Delay and LOS is based on 2010 HCM methodology.

Source: Fehr & Peers, July 2015.

Utilities (reference Section 4.15)

The impacts related to utilities as a result of buildout of the site per the Mixed-Use Alternative in comparison to that of the proposed project are presented below.

8-81 Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (reference Impact 4.15-1).

Impacts related to wastewater treatment requirements were determined to be less-than-significant for the proposed project. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. Per the City of Davis' current WWTP Order and NPDES Permit from the State Water Resources Control Board (Order R5-2013-0127; NPDES NO. CA0079049), specific effluent limitations have been set for the two WWTP discharge points.

The federal CWA section 307(b), and federal regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations.

The City of Davis Pretreatment Program requires businesses to provide necessary wastewater treatment as required to comply with this article, and shall achieve compliance with all national pretreatment standards. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the general manager for review, and shall be acceptable to the general manager before construction of the facility. It should be noted that the City's Pretreatment Program does not apply to residential uses. The City is responsible for ensuring that wastewater resulting from residential uses which connect to the City's sewer system would not result in exceedance of the applicable wastewater treatment requirements of the Regional Water Quality Control Board.

As a result of the City's Pretreatment Program, prior to operation of each building within the innovation center, the City will review each proposed business' wastewater system to ensure that it will not impede the City's ability to meet its wastewater treatment requirements approved by the Regional Water Quality Control Board in Order R5-2013-0127. Therefore, the project would have a ***less-than-significant*** impact related to exceeding wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Mitigation Measure(s)
None required.

8-82 Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed (reference Impact 4.15-2).

Impacts related to water supply were determined to be less-than-significant for the proposed project. Similar to the proposed project, buildout of the Mixed-Use Alternative would consist of 2,654,000 sf of R&D, manufacturing, ancillary retail, and hotel/conference uses, but in addition, the Mixed-Use Alternative would introduce approximately 750-850 high-density residential units. As such, the inclusion of residential land uses with the Mixed-Use Alternative would result in greater demands for domestic water supply and delivery as compared to the proposed project.

The projected annual and maximum day demands of the City's current service area and of the Mixed-Use Alternative, in comparison to the proposed project, are summarized in Table 8-26. A comparison of the demands to the City's supply capacity is also presented in Table 8-26. Table 8-27 compares the projected average-year water demands to the supplies in five year intervals to 2035. The water demands represent the City's total water demands and consist of the projected demands within the City's existing service area and the demands of the Mixed-Use Alternative and other proposed developments. As shown in the tables and as anticipated, the Mixed-Use Alternative would result in slightly greater demands for water supply than the proposed project; however, the capacities of the City's water supply facilities are sufficient to supply the City's

buildout demand of the existing service area and the demands of the Mixed-Use Alternative and other proposed developments during normal-year or average-year conditions over the 20-year planning horizon.

Table 8-26
Summary of Normal-Year Buildout Demands and Supplies

	Mixed-Use Alternative		Proposed Project	
	Annual (ac-ft/yr)	Maximum Day (mgd)	Annual (ac-ft/yr)	Maximum Day (mgd)
Demand				
Existing City Service Area[1]	13,258	21.3	13,258	21.3
Proposed Developments[2]	1,203	1.5	1,066	1.3
Total[3]	**14,461**	**22.8**	**14,324**	**22.6**
Supply	15,253	23.4	15,253	23.4
Supply Minus Demand	792	0.6	929	0.8

Notes:
mgd = million gallons per day
ac-ft/yr = acre pet per year

1 Buildout demand for the City's existing service area, which is projected to occur with the assumed growth rate in 2023. Buildout demand projected to decline to 12,356 ac-ft/yr and 19.9 mgd by 2030.
2 Buildout demand for the proposed developments assumed to occur in 2025. Proposed developments are located outside of the City's current service area.
3 This total would occur if the buildout of the City's existing service area and the proposed developments occur in the same year.

Source: Brown and Caldwell. Water Supply Assessment. June 2015.

Table 8-27
Average-Year Water Demand and Supply Comparison (ac-ft/yr)

	2015	2020	2025	2030	2035
Demand within Current Services Area	12,574	12,889	12,767	12,356	12,356
Demand of Proposed Developments (including Mixed-Use Alternative)	-	602	1,203	1,203	1,203
Total Demand	**12,574**	**13,491**	**13,970**	**13,559**	**13,559**
Supply	12,574	15,253	15,253	15,253	15,253
Supply Minus Demand	-	1,762	1,283	1,694	1,694

Source: Brown and Caldwell. Water Supply Assessment. June 2015.

Table 8-28 provides a water supply and demand comparison for single- and multiple-dry years through the year 2035. As illustrated in Table 8-28, the City has the supplies to be able to meet dry-year demands of the existing service area and the Mixed-Use Alternative and other proposed developments over the 20-year planning horizon.

Overall, according to the WSA prepared for the proposed project, sufficient water supplies are available to serve the Mixed-Use Alternative and other proposed projects, as well as the buildout

demands of the City's current service area over the next 20-years during normal-year, single-year, and multiple-dry year scenarios.

Table 8-28
Single- and Multiple-Dry Year Water Demand and Supply Comparison (ac-ft/yr)

	2015	2020	2025	2030	2035
Single-Dry Year					
Demand	13,328	14,227	14,663	14,226	14,226
Supply	13,328	15,253	15,253	15,253	15,253
Supply Minus Demand	-	1,026	590	1,026	1,026
Multiple-Dry Years					
Year 1					
Demand	12,888	13,757	14,179	13,757	13,757
Supply	12,888	15,253	15,253	15,253	15,253
Supply Minus Demand	-	1,496	1,074	1,496	1,496
Year 2					
Demand	13,328	14,227	14,663	14,227	14,227
Supply	13,328	15,253	15,253	15,253	15,253
Supply Minus Demand	-	1,026	590	1,026	1,026
Year 3					
Demand	12,951	13,824	14,248	13,824	13,824
Supply	12,951	15,253	15,253	15,253	15,253
Supply Minus Demand	-	1,428	1,005	1,429	1,429

Source: Brown and Caldwell. Water Supply Assessment. June 2015.

The Mixed-Use Alternative would involve the same connections to the City's domestic water supplies as included for the proposed project, which would be an extension of the existing 12-inch diameter City water main located along Mace Boulevard and potential connection to the existing 20-inch diameter main that connects to the booster pumping station at the four-million-gallon City water tank. The 0.2 mgd increase in water demand from that of the proposed project resultant of the Mixed-Use Alternative would not change the ability of the City's existing water delivery infrastructure system to accommodate the domestic and fire flow demands associated with the Alternative.

Based on the above, sufficient water supplies would be available to serve the Mixed-Use Alternative from existing entitlements and resources, and impacts would be considered ***less than significant***.

Mitigation Measure(s)
None required.

8-83 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments (reference Impact 4.15-3).

Impacts related to wastewater treatment capacity were determined to be less-than-significant with mitigation for the proposed project. A technical memorandum was prepared for the Mixed-Use Alternative by West Yost Associates for the analysis of impacts on wastewater treatment plant (WWTP) and sewer collection capacity.[14] The results of such are discussed below.

WWTP Capacity

As discussed in Section 4.15 of this EIR, the MRIC, in combination with the adjacent Mace Triangle development, was determined to produce 0.111 mgd of average dry weather flow (ADWF) based on the use of the City's sewer flow factors or 0.203 mgd of ADWF based on indoor water use from the WSA. Subtracting out the Mace Triangle development, those numbers are reduced to 0.107 mgd and 0.197 mgd, respectively.

According to the analysis within the technical memorandum, the MRIC portion of the Mixed-Use Alternative would add 0.097 mgd of ADWF based on an assumption of the addition of 1,700 residents, or two residents per each of the maximum 850 proposed dwelling units, with an assumed flow factor of 57 gallons per day (gpd) per resident. An assumed flow factor of 57 gpd coupled with an assumption of two person per dwelling unit equates to a per unit flow factor of 114 gpd per unit, which is an unusually low residential factor in comparison to typical values found elsewhere. Using a more appropriate and somewhat conservative approach assuming the City's multiple-family residential flow factor of 230 gpd per unit equates to an ADWF value from the residential portion of the Mixed-Use Alternative of 0.196 mgd. When added to the estimated MRIC ADWF of 0.107 mgd and 0.197 mgd, as discussed above, the total Mixed-Use Site ADWF would be 0.303 mgd (sewer flow factor basis) and 0.393 mgd (water use basis).

As determined in Section 4.15, the WWTP would have 0.95 mgd of ADWF capacity remaining after all City General Plan buildout development is in place. The Mixed-Use Alternative's estimated ADWF of 0.303 mgd (sewer flow factor basis) and 0.393 mgd (water use basis) would both be within the remaining WWTP capacity. Even if the other proposed non-General Plan development projects are included (i.e., Davis IC with 0.19 mgd ADWF and Nishi Gateway with 0.18 mgd ADWF), adequate WWTP capacity would be available to accommodate the increase in wastewater generation.

Impacts of future development of the WWTP were also assessed in Section 4.15 of this EIR by considering future BOD loadings entering the WWTP. The technical memorandum prepared for the Mixed-Use Alternative, included such an assessment for the Alternative. As determined in Section 4.15, the WWTP would have 660 lbs/day of average dry weather BOD load capacity

[14] West Yost Associates. *Impacts of the Mace Ranch Innovation Center Proposed Mixed-Use Alternative on Wastewater Treatment Plant and Sewer Capacity*. July 15, 2015.

remaining after all General Plan buildout development is in place. The MRIC was estimated to generate approximately 430 lbs/day of BOD (not including Mace Triangle), and the conclusion was made that available average dry weather BOD load capacity would be available at the WWTP to support the MRIC (and Mace Triangle) alone, but not in combination with any of the other proposed non-General Plan development projects.

According to the technical memorandum, residential land uses within the City generate an average of 0.267 lbs/day per dwelling unit. A 20 percent safety factor is added to account for the uncertainties in the analysis. The Mixed-Use Alternative would consist of the same development as the proposed project, with the exception of the addition of up to 850 dwelling units. The addition of the dwelling units would increase the estimated BOD loading associated with buildout of the site from 430 lbs/day to 700 lbs/day, which would exceed the estimated average dry weather BOD load capacity of the WWTP by a small margin that is within the range of the 20 percent safety factor used in the calculations. Due to the uncertainties of the analysis, the marginal exceedance of the estimated average dry weather BOD loading from the Mixed-Use Alternative versus the estimated average dry weather BOD load capacity of the WWTP (660 lbs/day) does not conclusively show that the proposed project would result in an exceedance of the BOD load capacity of the WWTP. Nevertheless, without implementation of the following mitigation measure, the impact could be significant.

Wastewater Collection Capacity

The peak wet weather flow (PWWF) is the key statistic of interest with regard to sewer line capacity. According to the technical memorandum, the Mixed-Use Alternative would result in PWWF estimates of approximately 0.84 mgd (sewer flow factor basis) and 1.04 mgd (water use basis), as compared to the proposed project's values of 0.41 mgd (sewer flow factor basis) and 0.61 mgd (water use basis).

According to the technical memorandum, the 42-inch diameter trunk sewer north of the project site is predicted to flow at 88 percent of capacity at General Plan buildout PWWF conditions, while the 21-inch diameter trunk sewer east of the project site is predicted to flow at 84 percent of capacity at buildout PWWF conditions. In addition, gravity sewers are required to maintain a depth less than 75 percent of the pipe diameter, which roughly equates to a PWWF that should not exceed 90 percent of the calculated full-pipe capacity of the given sewer line. Based on the aforementioned requirement, the remaining available capacity in the adjacent sewer lines are estimated to be 0.31 mgd and 0.28 mgd, respectively, which indicated inadequate capacity to accommodate either the proposed project or the Mixed-Use Alternative. However, as discussed in Section 4.15 of this EIR, use of the City's current flow factors significantly overestimate the actual ADWF. According to West Yost Associates, a 40 percent reduction in the City's collection system ADWF brings the results in line with the current ADWF values measured at the WWTP; as such, a 40 percent reduction in the estimates is justified.

Applying the 40 percent reduction, the resultant available PWWF flow capacity in the trunk sewer lines in question increases to approximately 5.0 mgd of allowable capacity remaining in the 42-inch diameter trunk sewer at General Plan buildout PWWF conditions, and approximately 1.4 mgd of allowable capacity remaining in the 21-inch diameter sewer at General Plan buildout

PWWF conditions. Therefore, the Mixed-Use Alternative's increase of approximately 0.84 mgd (sewer flow factor basis) or 1.04 mgd (water use basis) would be within the allowable capacity remaining in the sewer lines, and adequate buildout PWWF capacity exits to handle the additional flow generate by the Mixed-Use Alternative.

Conclusion

Based on the above, adequate ADWF capacity exists at the WWTP to accommodate the Mixed-Use Alternative at General Plan buildout conditions, either alone or in combination with the other non-General Plan development projects. Although the BOD loading capacity at the WWTP would be slightly exceeded, due to uncertainties and the 20 percent safety factor, the marginal exceedance calculated does not conclusively show that the Mixed-Use Alternative would result in an exceedance of BOD load capacity of the WWTP. In addition, if the City sewer flow factors are taken at face value, inadequate PWWF capacity exists in adjacent trunk sewers to accommodate the flows from the Mixed-Use Alternative. However, if the City sewer flow factors are reduced to be consistent with observed flow conditions at the WWTP, then adequate capacity exists in both trunk sewers to accommodate flows from the Mixed-Use Alternative.

Implementation of the following mitigation measures would be required for the Mixed-Use Alternative in order to ensure impacts related to wastewater collection and treatment are reduced to a ***less-than-significant*** level.

Mitigation Measure(s)

MRIC Mixed-Use

8-83(a) *Prior to approval of improvement plans for Phase 2 of development, and all subsequent phases, the applicant shall provide funding for the City to perform a WWTP analysis to identify the then-current City of Davis WWTP BOD loading capacity. If the WWTP analysis determines that adequate BOD loading capacity exists at the WWTP to serve the MRIC Project phase under review, further action is not required for the phase under review. If the analysis finds that the WWTP BOD loading capacity is not sufficient to serve the particular development phase under review, that phase of development shall not be approved until a plan for financing and constructing additional BOD loading capacity improvements has been prepared and approved, the additional BOD loading capacity improvements have been constructed, and the City Engineer has verified that sufficient capacity exists to serve said phase.*

8-83(b) *The applicant shall provide for annual wet-weather monitoring of the existing off-site 42-inch or 21-inch sanitary sewer line, depending upon which off-site sewer alignment is chosen for the project, over the course of project buildout to confirm that there is capacity within the line to serve the Mixed-Use Alternative Project, in combination with existing and future projected General Plan buildout. If the wet weather monitoring fails to confirm capacity within the chosen existing sanitary sewer line, the applicant shall either upsize the existing sewer line,*

subject to reimbursement, or install a parallel line, subject to review and approval by the City Engineer.

8-83(c) *If the applicant pursues a connection to the existing 8-inch sewer line in Mace Boulevard to serve Phase 1 of the Mixed-Use Alternative Project, then prior to approval of Improvement Plans for Phase 1, the applicant shall prepare and submit to the Davis Public Works Department, a sewer study, which shall determine the available capacity in the 8-inch sewer pipe in Mace Boulevard. If the 8-inch line has adequate capacity for Phase 1 of the Mixed-Use Alternative Project, then no further mitigation is needed. If the sewer study determines that the 8-inch line does not have adequate capacity to serve Phase 1, then the applicant shall upsize the sewer pipe within Mace Boulevard, or pursue construction of the northerly or easterly off-site sewer pipe connection alternative. The design of the sewer pipe improvements shall be reviewed and approved by the City Engineer prior to approval of Phase 1 Improvement Plans.*

Mace Triangle Site – none

8-84 Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs or fail to comply with federal, State, and local statutes and regulations related to solid waste (reference Impact 4.15-4).

Impacts related to solid waste were determined to be less-than-significant for the proposed project. Similar to the proposed project, the Mixed-Use Alternative would use the City's solid waste services, and solid waste would be transferred to the Yolo County Central Landfill for disposal. Because the Mixed-Use Alternative would involve the same development as the proposed project, but would add 750 to 850 residential units, the Alternative would generate more solid waste than the proposed project. The proposed MRIC Project could generate approximately 3,775.9 tons of waste per year. Using 3.1 persons per household, the Mixed-Use Alternative would accommodate 2,324 to 2,635 persons. The addition of 750 to 850 residential units would increase the amount of waste by 1,323 to 1,500 tons of waste per year, for a total of 5,098.9 to 5,275.9 tons of waste per year. An additional 5,098.9 to 5,275.9 tons of waste per year would constitute only 0.139 to 0.144 percent of the remaining capacity at the Yolo County Central Landfill of approximately 36,555,700 cubic yards.[15] In addition, 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. Therefore, impacts related to solid waste disposal services and landfill capacity would be ***less than significant***.

[15] [(2,508 tons/yr) / (0.218 tons/cubic yard)] = 11,505 cubic yards. Conversion rates from http://www.calrecycle.ca.gov/FacIT/Conversion1.pdf; accessed April 1, 2015.

Mitigation Measure(s)
None required.

8-85 Gas and electric facilities (reference Impact 4.15-5).

Impacts related to gas and electric facilities were determined to be less-than-significant for the proposed project. The amount of innovation center uses would be equal to the buildout of the proposed project (2,654,000 sf), but the Mixed-Use Alternative would introduce approximately 750 to 850 residential units. Due to the inclusion of residential uses, the amount of operational energy use associated with the Mixed-Use Alternative would be expected to be greater than the proposed project. Energy-efficiency measures and compliance with building design regulations would still be included in the Mixed-Use Alternative design. Based on the CalEEMod results for the Mixed-Use Alternative, the Mixed-Use Alternative would be expected to result in consumption of electricity of a maximum of 13.45 gigawatt-hours (GWh) per year and consumption of natural gas of approximately 0.39 therms per year, in comparison to the proposed project's estimated annual consumption for electricity and gas of 24.03 GWh and 0.27 therms, respectively.

According to PG&E, the load demand created by the proposed MRIC, would be able to be accommodated by existing substations in the area.[16] Therefore, because the load demand created by the Mixed-Use Alternative would be less than the demand created by the proposed project, PG&E would also be able to accommodate the Mixed-Use Alternative. In addition, according to utility maps provided by PG&E, existing gas and electric infrastructure is located within the roadways surrounding the Mixed-Use Site. The applicant for the Mixed-Use Site, and any future applicants associated with buildout at the Mace Triangle Site, would be responsible for funding the construction of the on-site gas and electric infrastructure needed to connect to existing, adjacent infrastructure. The design-level details for each phase of development would be worked out in consultation with PG&E, prior to confirmation of service. Because the Mixed-Use Alternative would be expected to result in an decrease in the amount of energy consumption (electricity and natural gas) from the proposed project levels, impacts related to gas and electric facilities would be ***less-than-significant*** under the Mixed-Use Alternative.

Mitigation Measure(s)
None required.

8-86 Adequate telecommunication facilities (reference Impact 4.15-6).

Impacts related to telecommunication facilities were determined to be less-than-significant with mitigation for the proposed project. The provision of telecommunications services is a collaborative effort between the end-users and the service providers. Similar to the proposed project, prior to constructing each phase of the Mixed-Use Alternative, the applicant would coordinate with the service providers to identify points of connection to existing

[16] Personal email communication between Nick Pappani, Vice President, Raney Planning & Management, Inc. and Seth Perez, Land Agent, PG&E. March 23, 2015.

telecommunications lines and any needed upgrades to the existing system, which would be designed to occur within existing development areas. It should be noted that broadband would still be necessary for the Mixed-Use Alternative. As a result, the Mixed-Use Alternative would have a ***less-than-significant*** impact to telecommunications facilities.

Mitigation Measure(s)
None required.

8-87 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigation environmental effects related to utilities (reference Impact 4.15-7).

Impacts related to conflicts with plans, policies, or regulations related to utilities, as they pertain to the proposed non-residential innovation center uses, were evaluated for the proposed project in Section 4.15 and determined to be ***less than significant***. For the Mixed-Use Alternative, there are additional City of Davis housing policies and regulations that are applicable to the residential component of this Alternative. These additional housing policies and regulations are evaluated in the appropriate sections of this equal-level analysis, namely, the Land Use and Urban Decay section (Impact 8-55), and the Population and Housing section (Impact 8-63).

Mitigation Measure(s)
None required.

Cumulative Impacts (reference Chapter 5)

The cumulative impacts as a result of buildout of the site per the Mixed-Use Alternative are presented below.

8-88 Cumulative impacts related to long-term changes in visual character of the region (reference Impact 5-1).

Cumulative impacts related to long-term visual changes in the visual character of the region were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Impacts to changes in visual character resulting from development of the Mixed-Use Alternative and the undeveloped Mace Triangle properties would combine with related impacts resulting from development of the Davis IC Project, the Nishi Gateway Project, and buildout of vacant lands within the City limits per their Davis General Plan land use designations. Additional urban development on vacant land within the city limits would not represent the same magnitude of visual change because this development would occur within in-fill areas, generally surrounded by urban uses that limit views through the sites. However, development of the Nishi Gateway, Davis IC, Mixed-Use Site, and Mace Triangle Sites,[17] totaling approximately 479 acres, would

[17] This estimate does not include the acreage for the City Park-and-Ride lot portion of the Mace Triangle Site because it is already developed.

alter open space views, which are visible from surrounding developed areas, and contrast with the surrounding open space/agricultural environments.

The undeveloped portion of the triangle parcels is proposed for development but not as a part of the Mixed-Use Alternative. As a part of the alternative, the City will prepare a PPD Ordinance that would apply only to the three Mace Triangle parcels. It is anticipated that the Ikedas parcel and other agricultural parcel would be designated General Commercial to allow for the continuation or expansion of the existing agricultural retail (Ikedas market) and/or for the development of up to 71,056 sf of new commercial uses.[18] The combined effects of cumulative development on approximately 479 acres of open space/agricultural land on the periphery of the city limits would lead to a significant cumulative impact with respect to changes in visual character within the cumulative geographic setting. The Mixed-Use Alternative's and Mace Triangle's incremental contribution toward this significant cumulative impact would be approximately 224 acres, which would be ***cumulatively considerable***.

Mitigation Measure(s)
None available.

Buildout of the Mixed-Use Site and the undeveloped portions of the Mace Triangle would combine with other development to represent a significant change in the visual character of the cumulative geographic context. Although compliance with the City's General Plan policies and the Mace Ranch Innovation Center Design Guidelines would help to minimize impacts, feasible mitigation measures are not available to reduce impacts associated with the cumulative change in the existing visual character or quality of the project site from project development to a less-than-significant level. Therefore, the impact would remain *cumulatively considerable* and *significant and unavoidable*.

8-89 Cumulative impacts related to the creation of new sources of light or glare associated with development of the proposed project in combination with future buildout in the City of Davis (reference Impact 5-2).

Mixed-Use Site

Cumulative effects of lighting are visible over a wide area, due to the potential for lighting from a number of projects to create sky glow. The Mixed-Use site and undeveloped portions of the Mace Triangle do not have night time lighting under existing conditions, and do not presently contribute to skyglow in the area. As described in Impact 4.1-3, the Mixed-Use Alternative would introduce new lighting sources at the project site; however, these fixtures would comply with City lighting design requirements, which would ensure that the Mixed-Use Alternative would not create an adverse sky glow condition.

[18] The City property (i.e., Park-and-Ride lot) would be designated Public-Semi-Public to allow for the continuation of existing uses. No new uses are proposed.

Specifically, the City's Outdoor Lighting Control standards have been designed to "…minimize light pollution, glare, and light trespass caused by inappropriate or misaligned light fixtures, while improving nighttime public safety, utility, and security, and *preserving the night sky as a natural resource and thus people's enjoyment of looking at the stars* (emphasis added).[19] To this end, the City requires all outdoor light fixtures, maintained upon private property used for commercial, industrial, or multifamily purposes, to be fully shielded. In addition, light trespass and glare shall be limited to a reasonable level through the use of shielding, and directional lighting methods, including, but not limited to, fixture location and height. Consistency with the City's Municipal Code would be ensured during the design permit and architectural review process, and implementation of Mitigation Measure 4.1-3, which requires the applicant to submit a lighting plan to the Community Development and Sustainability Department for review and approval, showing compliance with shielding and directional lighting standards included in the City's Outdoor Lighting Control ordinance.

The Mixed-Use Alternative Design Guidelines would be consistent with the City's Outdoor Lighting Control standards, in that they require exterior lighting throughout the project site to be designed and selected to provide appropriate light levels to reduce long-range visibility of night lighting with full cut off fixture designs. Therefore, the project would not have a considerable contribution to sky glow such that a new significant cumulative sky glow impact would occur.

Mace Triangle Site

The Mace Triangle properties currently contain a City-owned water tank, Ikedas Market, and a Park-and-Ride lot. Entitlements for the Mace Triangle Site include Annexation and Prezoning, General Plan Amendment, and a Preliminary Planned Development (PPD). The intent of the PPD would be to allow the continuation of existing uses, while recognizing the potential for additional urban development on the Ikedas parcel and adjacent agricultural parcel. As such, implementation of development on the undeveloped portions of the Mace Triangle, in combination with other reasonably foreseeable projects in the City of Davis, could introduce new sources of light and glare to the project area in the future. However, should an applicant propose development of the Mace Triangle Site in the future, any lighting would be subject to Article 8.17, Outdoor Lighting Control, of the Davis Municipal Code.

Other Cumulative Development

Other development on vacant lands within the Davis city limits, as well as the Davis IC and Nishi Gateway sites, would be required to comply with the City's Outdoor Lighting Control standards, which would ensure that each project's individual contribution to the sky glow effect would be minimized to a less that is not considered cumulatively considerable.

[19] Davis Municipal Code, Chapter 8, Buildings, Article 8.17, Outdoor Lighting Control. Accessible at: http://qcode.us/codes/davis/.

Conclusion

Cumulative impacts related to light or glare were determined to be less-than-cumulatively-considerable for the proposed project. While the project's effects related to new sources of light and glare, in combination with related effects of other cumulative development, would be significant, the project's contribution to this significant cumulative impact will be rendered ***less than cumulatively considerable*** through its compliance with City Code requirements and the mitigation measures set forth in this EIR.

Mitigation Measures

MRIC Mixed-Use and Mace Triangle

8-89 Implement Mitigation Measure 8-3.

Implementation of the above mitigation measure would ensure that the project's incremental contribution to cumulative impacts related to new sources of light and glare is reduced to *less than cumulatively considerable*.

8-90 Impacts related to cumulative loss of agricultural land (reference Impact 5-3).

Annexation of the approximately 229-acre project site and redesignation of the property for urban development would result in the conversion of agricultural land, requiring mitigation per City of Davis Municipal Code requirements. At a 2:1 mitigation ratio, on- and off-site impacts associated with development of the Mixed-Use Site and Mace Triangle Site will require agricultural land mitigation for on- and off-site improvements, depending upon the final alignment selected.

Development of other cumulative projects, such as the 208-acre Davis IC Project and 47-acre Nishi Gateway Project, the sites of which are primarily active agricultural sites, would result in related impacts associated with conversion of farmland. The combined effects of this cumulative development scenario would lead to a significant cumulative impact on agricultural resources within the cumulative geographic setting. This conclusion is consistent with the Davis General Plan EIR, which concluded that conversion of farmland associated with potential development of a new junior high school on several prospective sites would be significant and unavoidable. Among the sites evaluated in the GP EIR for the new junior high school were the Covell site; Nishi Gateway Site; Oeste Campus, which includes a portion of the Davis IC site; and the Signature Site (below Mace curve).[20]

Buildout of the remaining vacant parcels within the City limits would not be expected to result in additive effects related to conversion of agricultural land. Vacant parcels in agricultural use are limited to the horse ranch property; and this property is designated as Agriculture in the City's

[20] See Davis General Plan EIR, p. 5A-32.

General Plan. Therefore, conversion of the horse ranch site to urban uses could not occur without a GPA and Measure R approval.

Cumulative impacts related to loss of agricultural land were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Although the project, in combination with other cumulative development on sites in agricultural use, would be required to set aside agricultural mitigation acreage at a 2:1 ratio (2 acres of agricultural land for every acre impacted), thereby minimizing the effects of agricultural land conversion, the cumulative impact, as well as the project's incremental contribution, would be ***cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-90 Implement Mitigation Measures 8-5(a) and (b), and 8-7(b).

While Mitigation Measures 8-5(a) and (b) and 8-7(b) require the project to set aside two acres of agricultural land for every acre of agricultural land impacted, the result is nevertheless a net loss of agricultural land. 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 *cumulatively considerable* and *significant and unavoidable.*

8-91 A cumulatively considerable net increase of any criteria pollutant (reference Impact 5-4).

Cumulative impacts related to criteria pollutants were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Air pollution is largely a cumulative impact. The SVAB's nonattainment status of ozone and PM is a result of past and present development. Cumulative future development would result in increases in the amount of criteria air pollutants in the ambient air, which would contribute towards the current nonattainment status of the ozone and PM AAQS. Thus, impacts related to cumulative development within the SVAB could be considered cumulatively significant.

The YSAQMD has established mass emissions thresholds of significance for criteria pollutants, which are intended to be the level at which the YSAQMD considers an individual project to have the potential to impede attainment of the AAQS and, thus, the level necessary to reduce regional emissions associated with anticipated future growth to AAQS. As the YSAQMD's mass emissions thresholds of significance for criteria pollutants represent the level at which an individual project has the potential to impede attainment of AAQS, as well as the level necessary to reduce regional emissions associated with anticipated future growth to AAQS, the YSAQMD's approach to determining cumulative air quality impacts from development projects is based on whether a project's individual emissions would exceed the YSAQMD thresholds of significance. If a project's estimated emission would be below the YSAQMD thresholds of significance, the project would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact.

As discussed above, even with implementation of mitigation measures, the Mixed-Use Alternative would generate criteria air pollutant emissions of ROG and NO_X, which are ozone precursors, as well as emissions of PM_{10} in excess of the applicable thresholds of significance at project-level during operations. The majority of the operational ROG emissions are associated specifically with consumer products. Even if the proposed project's operational ROG emissions due to all other sources (i.e., mobile and energy sources) were to be reduced to zero tons per year, the Alternative would still result in emissions from consumer products that would exceed the applicable YSAQMD threshold of significance. Possible additional mitigation measures for further reducing consumer product emissions of ROG could not be feasibly enforced or verified. In addition, the majority of operational NO_X and PM_{10} emissions are associated with mobile sources. The Alternative's inherent site and/or design features that would contribute to a reduction in vehicle trips and VMT, such as site enhancements and features that encourage alternative modes of transportation, which subsequently result in mobile source emissions of criteria pollutants including NO_X and PM_{10}, have already been accounted for in the modeling. Additional measures for the reduction of mobile source emissions, sufficient to reduce emissions of NO_X and PM_{10} to below the applicable threshold of significance, are not available or feasible for the Alternative at this time.

Overall, buildout of the Alternative in conjunction with cumulative buildout would result in a substantial increase in regional emissions from what has been anticipated for the area. In addition, the Alternative would exceed the applicable project-level thresholds for ROG and NO_X, which are ozone precursors, as well as for PM_{10}, for which feasible mitigation is not available at this time. Therefore, the Alternative would be considered to contribute to the cumulative air quality impacts in the region, particularly the region's nonattainment status of ozone and PM, and a ***cumulatively considerable*** net increase in emissions would result.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-91 Implement Mitigation Measure 8-11.

Additional feasible mitigation measures to further reduce the proposed project's operational emissions of ROG, NOx, and PM_{10} to below the applicable threshold of significance are not currently available. Therefore, the above impact would remain *cumulatively considerable* and *significant and unavoidable.*

8-92 Cumulative loss of habitat in the City of Davis area for special-status species.

Cumulative impacts related to habitat loss were determined to be cumulatively considerable and significant and unavoidable for the proposed project. The habitat loss resulting from the Mixed-Use Alternative would combine with related impacts resulting from development of the Davis IC Project, the Nishi Gateway Project, and buildout of the city limits per the Davis General Plan. The combined effects of the cumulative development scenario would lead to a significant cumulative impact on habitat loss within the cumulative geographic setting. Buildout of the remaining vacant parcels within the Davis City limits, which are zoned for development, would

result in the conversion of approximately 145 acres of habitat to urban uses. Development of the Nishi Gateway Project and Davis IC combined would result in conversion of approximately 255 acres of habitat to urban uses. Development of the Mixed-Use Alternative would add an additional approximately 223 acres (212 acres for Mixed-Use site and approximately 11 acres for the undeveloped portions of the Triangle) to that, for a cumulative total of approximately 623 acres of habitat converted to urban uses. Therefore, habitat conversion associated with development of the Mixed-Use Alternative would constitute approximately 35 percent of the total habitat acreage converted under the CEQA cumulative scenario.

In addition, while construction of the Mixed-Use Alternative would not be expected to result in *direct* adverse impacts to special-status species (because this EIR includes mitigation measures requiring preconstruction clearance surveys to protect any species occurring on-site), cumulative habitat loss could result in *indirect* adverse effects to the long-term viability of special-status species populations within the region, due to loss of their habitats. Special-status species that could be potentially impacted by development of the proposed project include, special-status plants, valley elderberry longhorn beetle, giant garter snake, burrowing owl, Swainson's hawk, and other raptors and migratory birds. Other cumulative development, such as the Davis IC and Nishi Gateway projects, will similarly be required to conduct preconstruction surveys to avoid adverse impacts to special-status species.

While this EIR requires the applicant to mitigate for the loss of Swainson's hawk foraging habitat resulting from development of the project, and burrowing owl habitat, if owls are found nesting on-site, the value of the region as it relates to the long-term viability of special-status species' habitats would be diminished as a result of project development. As a result, the Mixed-Use Alternative's incremental contribution to direct habitat impacts, and indirect effects to special-status species, would be ***cumulatively considerable***, when viewed in conjunction with other cumulative development.

Mitigation Measure(s)

MRIC Mixed-Use

8-92(a) Implement Mitigation Measures 8-16, 8-17, 8-20, 8-21, and 8-26.

MRIC Mixed-Use and Mace Triangle

8-92(b) Implement Mitigation Measures 8-15, 8-18, 8-19, and 8-25.

Implementation of the above mitigation measure would reduce the direct impact to habitat loss and the indirect impact to species associated with the Mixed-Use Alternative, but not to a less-than-significant level. Therefore, the impact would remain *cumulatively considerable* and *significant and unavoidable.*

8-93 Cumulative impacts to movement corridors in the City of Davis area (reference Impact 5-6).

Cumulative impacts related to movement corridors were determined to be less-than-cumulatively-considerable for the proposed project. Development of the Mixed-Use Alternative would result in the conversion of approximately 223 acres of agricultural land to a largely urban environment. This is comprised of 212 acres for the Mixed-Use Site and approximately 11 acres for the undeveloped portions of the Triangle. However, a portion of the 223 acres would remain undeveloped, and could continue to serve as a movement corridor for special-status and otherwise common wildlife species. Specifically, the project is required, per City of Davis ordinance, to include a 20.1-acre buffer around the Mixed-Use Site's northern and eastern perimeter. This agricultural buffer will include wildlife friendly vegetation and will continue to enable movement of wildlife through the site. Therefore, the project's incremental contribution toward elimination of movement corridors would be less than cumulatively considerable.

Similar to the proposed project, other cumulative development, the sites of which may currently contain wildlife movement corridors, (i.e., both the Davis IC and Nishi Gateway projects, will be required, per City ordinance, to include agricultural buffers that would continue to facilitate any wildlife movements through the sites.

In conclusion, the project's contribution to this significant cumulative impact would be rendered ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-94 Cumulative loss of cultural resources (reference Impact 5-7).

Cumulative impacts related to cultural resources were determined to be less-than-cumulatively-considerable with mitigation for the proposed project. While some cultural resources may have regional significance, the resources themselves are site-specific, and impacts to them are project-specific. For example, impacts to a subsurface archeological finds at one project site are generally not made worse by impacts from another project to a cultural resource at another site. Rather the resources and the effects upon them are generally independent. A possible exception to this would be a cultural resource that represents the last known example of its kind or is part of larger cultural resources such as a single building along an intact historic Main Street. For such a resource, cumulative impacts, and the contribution of the proposed project to them, may be cumulatively significant. Such is not the case for the Mixed-Use Alternative. The site-specific cultural resources analysis identified only one historic-era resource within the area of potential effect for the project. This historic-era resource, a farmstead, does not represent the last known example of its kind, nor is it part of larger cultural resources. Furthermore, implementation of Mitigation Measure 8-27 would minimize impacts to this resource to a less-than-significant level.

With respect to archeological resources, the EIR determined that only the northwestern corner of the Mixed-Use site, and the northerly sewer alignment, are sensitive for buried prehistoric

resources. Mitigation Measure 8-28 requires protection of archaeological resources should any be found during construction.

Because the Mixed-Use Alternative would implement site-specific mitigation consistent with the California Health and Safety Code and the California Public Resources Code, and impacts to any historic or archaeological resources associated with the site would be site-specific, the project's incremental contribution towards the cumulative impact to cultural resources would be ***less than cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use

8-94(a) Implement Mitigation Measures 8-28(a) and (b).

MRIC Mixed-Use and Mace Triangle

8-94(b) Implement Mitigation Measure 8-28(c).

Implementation of the above mitigation measures would ensure that the project's incremental contribution to cumulative cultural resources impacts is reduced to *less than cumulatively considerable*.

8-95 Cumulative increase in the potential for geological related impacts and hazards (reference Impact 5-8).

Cumulative impacts related to geologic related hazards were determined to be less-than-cumulatively-considerable for the proposed project. While some geologic features may affect regional construction practices, such as seismicity or soil elasticity, impacts and mitigation measures are site-specific and project-specific. For example, impacts resulting from development on expansive soils or undocumented fill at one project site are not worsened by impacts from development on expansive soils or undocumented fill at another project site. Rather, the soil conditions, and the implications of those conditions for each project, are independent.

As such, the potential for cumulative impacts related to geology, soils, seismicity and mineral resources, to which implementation of the Mixed-Use Alternative might contribute, is ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-96 Cumulative impacts related to greenhouse gas (GHG) emissions and global climate change (reference Impact 5-9).

Global climate change is, by nature, a cumulative impact. The cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city,

and virtually every individual on Earth. Accordingly, the analysis of GHG emissions generated by the Mixed-Use Alternative and the associated contribution towards global climate change, as addressed under the Greenhouse Gas Emissions and Energy section above, is inherently a cumulative impact analysis. Emissions of GHG contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. A single project on its own could not generate enough GHG emissions to result in any noticeable changes in climatic conditions such as the global average temperature. Although, a project's GHG emissions are at a micro-scale relative to global emissions, a project's GHG emissions could result in a cumulatively considerable incremental contribution to the world-wide phenomenon of global climate change and the associated significant cumulative macro-scale environmental impacts when combined with GHG emissions of other past, present, and future projects.

Based on the cumulative nature of global climate change, emissions from a project must be considered in the context of that project's contribution to cumulative global GHG emissions. According to the analysis above, the Mixed-Use Alternative would result in a substantial increase in GHG emissions from existing levels associated with the site. In addition, the Alternative's GHG emissions would exceed the recommended YSAQMD thresholds of significance, and would not meet the State's GHG emissions reduction target of reaching 1990 GHG levels by 2020 (consistent with AB 32), 40 percent below 1990 levels by 2030 (consistent with EO B-30-15), or 80 percent below 1990 levels by 2050 (consistent with EO S-03-05). The Alternative's GHG emissions would also not meet the more stringent desired reduction targets of the Davis CAAP.

Cumulative impacts related to GHG emissions and global climate change were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Implementation of Mitigation Measures 8-11 and 8-75 of this chapter would reduce the Alternative's operational GHG emissions, but not sufficient to meet the State or City reduction goals. Mitigation Measures 8-38(a) and (b), which would also be required for the Mixed-Use Alternative, are intended to be consistent with the intent of the statewide and City's CAAP goals, which require GHG emission reductions by a greater, increasing percentage over time. In addition, the State and the City would continue to develop programs for the reduction of local, regional, and statewide GHG emissions in order to meet GHG emission reduction goals per State and City standards and regulations. As such, although implementation of the mitigation measures required in this EIR alone cannot be shown to reduce project GHG emissions to net zero by 2050, the mitigation measures would ensure that the Alternative would contribute to the overall downward trajectory of local GHG emissions to the year 2050.

In addition, the regulatory environment associated with climate change is becoming more stringent and technological advancements for the reduction of GHG emissions are ever-evolving. Based on recent developments, the regulatory environment associated with climate change has a high level of effect on land-use-related GHG emissions. Accordingly, the future regulations that may be in place in the year 2050 could substantially reduce project-related GHG emissions at that time, but are currently unknown and cannot be reasonably predicted or quantified. Due to such regulatory uncertainties, as well as uncertainties related to the actual buildout of the Mixed-Use Alternative and potential GHG emissions reductions due to sustainability features of the project, the full GHG reductions associated with such would be speculative to identify at this

time. For this reason, and because the Mixed-Use Alternative's GHG emissions cannot be shown to be reduced to net zero by 2050 with any certainty at this time, the Alternative's GHG emissions would be ***cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use

8-96(a) Implement Mitigation Measure 8-38(b).

MRIC Mixed-Use and Mace Triangle

8-96(b) Implement Mitigation Measure 8-38(a).

Implementation of the above mitigation measure would reduce the GHG emissions associated with the Mixed-Use Alternative, but not to a less-than-significant level. Therefore, the impact would remain *cumulatively considerable* and *significant and unavoidable.*

8-97 Cumulative impacts related to energy (reference Impact 5-10).

California leads the nation in renewable energy generation growth and encouragement of alternatively-fueled and hybrid vehicles. State-specific regulations encourage energy efficiency and reduction of energy consumption. One of the regulations the State has adopted is the CALGreen Code, including the California Building Energy Efficiency Standards Code, which require building standards that encourage energy efficiency for all new development and redevelopment projects within the State. The Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. The State standards are intended to help reduce global climate change and cumulative energy consumption. In addition, the Davis CAAP includes objectives for mobility and energy within the City with priorities to reduce VMT, improve efficiency of the transportation network, improve energy efficiency of the vehicle fleet, reduce the carbon content of fuels through the use of alternative fuels, strengthen energy efficiency requirements, develop local solar farms, and develop a renewable energy production plan to meet community electricity needs. As the City implements the CAAP objectives, the overall City's energy consumption will decline.

Overall, buildout of the Mixed-Use Alternative in conjunction with cumulative buildout would contribute to an increase in energy usage and consumption from current levels; thus, an increase in demand for energy resources and supplies would occur, which would represent a commitment of non-renewable resources and the irreversible consumption of energy. However, the Alternative, as well as each future development project within the City, would be required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency in place at the time of approval and/or development. Regulations regarding energy and fuel efficiency continue to become more and more stringent at the federal, State, and local levels. Technological advancements continue to be researched and could, once developed, change the

outlook on available alternative energy resources, demand reductions, and overall energy and fuel efficiency regulations. Compliance with existing and future regulations, and development of technological advancements, would help to ensure that an inefficient, wasteful, or unnecessary usage of energy would not occur.

Cumulative impacts related to energy were determined to be less-than-cumulatively-considerable for the proposed project. As discussed above, the MRIC portion of the Alternative, similar to the proposed project, would include a number of sustainability features that would reduce the Alternative's overall energy usage. Some of the features, such as LEED certification and use of on-site solar or other alternative energy supplies would substantially reduce project-specific energy demands on PG&E supplies. Mitigation Measure 8-40 further requires high energy consuming data centers within the site to implement energy management principles, aimed at minimizing energy use. In addition, as discussed in Impact 8-40 above, the Mixed-Use Project would comply with the mandated standards of the CALGreen Code, including compliance with the California Building Energy Efficiency Standards Code. Furthermore, the Mixed-Use Alternative would be subject to the same mitigation measure requiring a TDM Program to be implemented, and would include sustainability features, which would contribute to a reduction of the Alternative's potential increase in demand for oil, promote alternative modes of transportation, and encourage fuel consumption reductions and efficiency. The aforementioned strategies would help to further reduce the Alternative's overall consumption of energy.

Overall, because the Mixed-Use Alternative would include measures to reduce energy usage, the Alternative would not result in a wasteful, inefficient, or unnecessary usage of energy, and the Alternative's incremental contribution to cumulative impacts on energy would be considered ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-98 Increase in the number of people who could be exposed to potential hazards or hazardous materials and an increase in the transport, storage, and use of hazardous materials due to development of the proposed project in combination with future buildout in the City of Davis (reference Impact 5-11).

Cumulative impacts related to the transport, storage, and use of hazardous materials was determined to be less-than-cumulatively-considerable for the proposed project. All project-specific impacts related to hazards and hazardous materials were found to be less-than-significant with implementation of relevant mitigation measures set forth in this chapter. Hazardous materials and other public health and safety issues are generally site-specific and/or project-specific, and would not be significantly affected by other development inside or outside of the City. Other cumulative development would be subject to the same federal, State, and local hazardous materials management requirements as would the proposed project, which would minimize potential risks associated with increased hazardous materials use in the community.

In conclusion, the contribution of the Mixed-Use Alternative to cumulative impacts related to hazards and hazardous materials would be ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-99 Cumulative impacts associated with increases in volume runoff and effects to on- and off-site flooding within the City of Davis planning area (reference Impact 5-12).

Cumulative impacts related to volume runoff and flooding were determined to be less-than-cumulatively-considerable with mitigation for the proposed project. Development of the alternative, the Davis IC, and other cumulative development within the surrounding principal watersheds that drain to Willow Slough and the Yolo Bypass, will lead to the combined effects of increasing runoff volumes and rates. This could lead to increases in ponding west of the Bypass levee when water levels in the Willow Slough and Yolo Bypass are high. The City considers increases in ponding on off-site properties, as a result of project development, a significant effect. Therefore, the combined runoff effects of the project, along with other cumulative development in the watersheds draining to Willow Slough and the Yolo Bypass, would be considered significant.

The combined volumes of the Mixed-Use Alternative and Davis IC Projects would lead to greater downstream water surface elevations (WSEs) and inundation areas at the land side of the Yolo Bypass levee during heavy storm events when flows in Willow Slough and the Yolo Bypass are high. However, each project will be required to mitigate its individual incremental increase in volume (as well as peak flow rate increase), so as to ensure that increases in ponding on off-site properties does not occur as a result of cumulative development. With implementation of Mitigation Measures 8-47(a) through 8-47(c) of the Hydrology and Water Quality section, the alternative's incremental contribution to cumulative hydrology impacts would be considered ***less than cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-99 Implement Mitigation Measures 8-47(a) through 8-47(c).

Implementation of the above mitigation measure would ensure that the project's incremental contribution to cumulative hydrology impacts is *less than cumulatively considerable*.

8-100 Cumulative impacts to water quality within the City of Davis (reference Impact 5-13).

Cumulative impacts related to water quality were determined to be less-than-cumulatively-considerable for the proposed project. Construction activities resulting from the Mixed-Use Alternative have the potential to affect water quality and contribute to localized violations of water quality standards if stormwater runoff from construction activities enters receiving waters. Additional runoff from the construction site, in combination with the other reasonably foreseeable projects in the Davis area, could carry sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products

could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities.

While continued development within the City of Davis would result in additional stormwater runoff and entry of pollutants into receiving waters via construction and operation of future projects, each project is required to comply with the City's regulatory stormwater documents, standards, and requirements. Mitigation Measure 8-33 of this chapter would ensure that the Mixed-Use Alternative project applicant and the future Mace Triangle project applicant(s) prepare a Stormwater Pollution Prevention Plan (SWPP), provide adequate storage capacity for the additional stormwater runoff generated, and incorporate sufficient best management practices (BMPs) to successfully remove pollutants from site runoff during the construction and operational phases.

In addition, the applicant proposes to integrate Low Impact Development (LID) measures throughout the project to provide stormwater quality treatment. The LID measures would include both volume-based best management practices (bioretention, infiltration features, pervious pavement, etc.) and flow-based best management practices (vegetated swales, storm water planter, etc.) in accordance with the City's Manual of Stormwater Quality Control Standards. Therefore, impacts related to operational water quality would be reduced to a less-than-significant level with implementation of mitigation.

As demonstrated in this Chapter, the Mixed-Use Alternative would not result in any significant impacts related to water quality or stormwater quality. Overall, the combined effects of increased runoff flows resulting from construction and operation of cumulative projects could be considered significant. However, given that the proposed project would be required through mitigation and City ordinances to implement BMPs and LID features in the site design, the incremental contribution resulting from the project would be considered ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-101 Cumulative land use incompatibilities (reference Impact 5-14).

Cumulative impacts related to land use were determined to be less-than-cumulatively-considerable for the proposed project. Land use conflicts are site-specific and would not result in a cumulative impact. Incompatibility issues are addressed and mitigated on a project-by-project basis. The Mixed-Use Alternative has been designed to be consistent with applicable aspects of the City's General Plan, and as described in this chapter, the alternative would not result in incompatibilities with any of the surrounding land uses. Therefore, the alternative's contribution to cumulative land use impacts related to land incompatibilities would be ***less than cumulatively considerable***

Mitigation Measure(s)
None required.

8-102 Cumulative urban decay (reference Impact 5-15).

The urban decay impacts resulting from the Mixed-Use Alternative would combine with related impacts resulting from development of the Davis IC Project, the Mace Triangle site, and the Nishi Gateway Property, and buildout of the Davis General Plan. The combined effects of this cumulative development scenario would lead to a significant cumulative impact on urban decay within the cumulative geographic setting.

Office and Industrial

In addition to the proposed Mixed-Use site, there are 10 other office and industrial projects planned in the City of Davis (see Exhibit 7 of Appendix H). According to the urban decay analysis conducted specifically for the proposed project, the potential cumulative amount of office and industrial space that could be added to the Davis market by 2035, including the Mixed-Use Alternative, totals close to 6.9 million sf. The cumulative amount of space is equal to 2.3 times the size of the existing office and industrial base in Davis. Of this amount of space, almost all, or up to 99 percent, could comprise competitive space for innovation sector businesses. ALH Economics concluded it is possible that some existing innovation sector businesses may seek to relocate to the site upon availability or sometime thereafter. Therefore, existing office and industrial space in Davis could experience increased vacancy as a result of the innovation center.

Whether impacts from the Mixed-Use Alternative's 2,394,000 sf of office/industrial space is considered, or the projected cumulative total of approximately 6.9 million sf of office/industrial space is considered, the impact on the existing office/industrial base within the City of Davis will generally be the same, as there is a fixed amount of space in the City of Davis that is currently attractive to this tenant base. ALH determined this fixed amount of space to be 760,000 sf.

Any resultant vacancies would remain sustained until such time as yet additional demand was generated due to economic growth and expansion. Numerous market factors could likely boost this demand potential, including the attraction of larger increments of office and industrial space and the draw of the City of Davis to businesses located in other regional locations like Woodland and West Sacramento that would prefer a Davis location.

The regulatory review suggests existing City of Davis measures to avoid the onset of deterioration or decay are effective. Moreover, many of the office and industrial properties in Davis are owned by major institutional and private real estate companies, with the financial wherewithal to withstand prolonged vacancy and fund the maintenance necessary for upkeep even during times of vacancy. Therefore, the potential for properties to be well maintained during periods of prolonged vacancy exists.

Retail Space

In addition to the Mixed-Use Alternative, seven other projects are proposed with new retail components in the City of Davis (see Exhibit 15 of Appendix H). According to the urban decay

analysis conducted specifically for the proposed project, an additional estimated cumulative total of 266,745 sf of planned retail could be added to the Davis market by 2035.

ALH Economics conducted analysis comparing the size of the planned retail space for each project, and all the projects cumulatively, to the amount of retail anticipated to be supportable by the employment and households associated with each project. The purpose of this analysis was to assess if the cumulative projects, in addition to the Mixed-Use Alternative's, planned retail space would result in negative impacts on the existing retail base that could cause or contribute to urban decay.

The results of this analysis indicate that in the aggregate, the Mixed-Use Alternative and the cumulative projects include development of 361,652 square feet of retail space. The supportable retail square feet based upon project-generated demand totals 474,407 square feet (see ALH Exhibit 16). These aggregate findings indicate that retail demand generated by the cumulative projects is anticipated to exceed the retail supply. It should be noted that the on-site residents resulting from the residential portion of the Alternative would provide additional demand for the on-site retail space. Even if all the project-generated demand is not directed to each individual project's retail space, the results indicate the projects would need to capture less than 80 percent of the demand to achieve 95 percent occupancy. While the cumulative employee demand for retail space can support the anticipated cumulative retail space, the possibility exists for retail space to outpace employee demand as the cumulative projects buildout. As a result, phasing controls should be implemented to ensure that the incremental contribution of the Mixed-Use Alternative's retail space toward the potential cumulative urban decay impacts on existing retail space are less than cumulatively considerable.

Hotel

In addition to the Mixed-Use Alternative, two other projects include new hotel components in the City of Davis (see Exhibit 24 of Appendix H). The two planned hotel projects include a total of 237 hotel rooms that could be added to the Davis market. Adding the proposed project's planned hotel rooms into the future supply results in the total addition of 437 hotel rooms to the Davis market.

ALH Economics prepared a future projection of hotel supply and demand and then examined the occupancy impacts pursuant to the addition of the planned hotel projects. Given the more cumulative nature of the analysis, and potentially prolonged innovation center absorption, the two innovation center hotels are assumed to be cumulatively added to the supply in 2035, or approximately eight years later than assumed individually for the Mixed-Use Alternative.

The near-term results, after the addition of the new Embassy Suites Hotel in 2017, indicate that hotel occupancy is projected to dip down to 61.6 percent to 62.7 percent, following a much higher occupancy of 72.5 percent to 73.5 percent the year before when the supply could be temporarily reduced due to the redevelopment of the existing University Park Inn and Suites Hotel. The 61.6 percent to 62.76 percent rate is projected to quickly ratchet up, reaching 77.1 percent to 84.4 percent in 2034, which is the year before the Mixed-Use Alternative's hotel and the Davis IC hotel are cumulatively assumed to be added to the market. Once these two hotels

are added to the market, annual average occupancy is projected to drop to 54.8 percent to 60.2 percent and increase thereafter, although at the low end, remain in the 50 percent range until at least 2040.

In 2009 and 2010, at the height of the recession, hotels in Davis operated at average occupancy rates of 49.8 percent and 50.3 percent, respectively. These rates are even lower than the projected rates in Davis in 2035 when all cumulative projects have been added to the supply. Overall, the historic hotel occupancy rates in Davis were sustained in the 50% range for at least four years, from 2008 through 2012. ALH Economics is not aware of any hotels closing or becoming characterized by poor maintenance and lackluster operations during this time. Thus, market precedence suggests that reduced occupancy in the range of 50 percent is sustainable for a limited period of time without resulting in existing hotel closure.

ALH Economics conducted sensitivity analysis to assess potential innovation center hotel market impacts assuming earlier introduction of one of the innovation center hotels, such as in 2027 or 2030. This sensitivity analysis did not change the projected occupancy rates to a level where ALH Economics would conclude the potential for impacts resulting in potential hotel closure of existing hotels.

Conclusion

Cumulative impacts related to urban decay were determined to be less-than-cumulatively-considerable with mitigation for the proposed project. The cumulative analysis conducted for the Mixed-Use Alternative's office/industrial space, and hotel space, in combination with other similar cumulative development, determined that the project's incremental contribution to urban decay of these spaces would not be cumulatively considerable. With respect to the alternative's incremental contribution to cumulative urban decay impacts on the retail sector, it was determined that with implementation of Mitigation Measure 8-54, the project's incremental contribution to cumulative urban decay impacts would be considered ***less than cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use

8-102 Implement Mitigation Measure 8-54.

Implementation of the above mitigation measure would ensure that the project's incremental contribution to cumulative urban decay impacts on retail space is *less than cumulatively considerable*.

Mace Triangle - none

8-103 Cumulative impacts on noise-sensitive receptors (reference Impact 5-16).

MRIC Mixed-Use and Mace Triangle

The cumulative context for noise impacts associated with the proposed project would consist 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. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project and on-site activities resulting from operation of the proposed project. The following analysis is based on noise level increases along roadways resulting from traffic from development of innovation center and residential uses on the 212-acre Mixed-Use site and potential future commercial/retail development on the 17-acre Mace Triangle Site.

Cumulative Traffic Noise

The cumulative noise impacts due to project-related traffic increases on the existing local roadway network are analyzed for the following traffic scenarios:

- *Cumulative No Project:* Includes the growth anticipated in the SACOG Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) as well as the Davis IC, and Nishi Gateway development projects. Intersection and roadway volumes were developed using the difference method procedure, which adds the growth in traffic between the 2008 base year and the Cumulative No Project forecasts to existing volumes.

- *Cumulative Plus Project:* The Cumulative Plus Project scenario adds the projected trips from the Mixed-Use Alternative and Triangle onto the Cumulative No Project forecasts, discussed above.

Table 8-29 shows the predicted cumulative traffic noise level increases on the local roadway network for Cumulative No Project and Cumulative Plus Project conditions.[21]

[21] Consistent with the traffic study prepared for the project, the roadway segment method for cumulative impact assessment was chosen because the potential changes in travel patterns in 2035, with both the proposed project and the other two Innovation Center projects developed, make it infeasible to project intersection turning movement level projections with sufficient accuracy to support the impact and mitigation assessment. However, the two exceptions to the use of roadway segment analysis for the cumulative impact assessment are the sections of Covell Boulevard and Russell Boulevard within the SR 113 interchange areas; for these roadway segments, the intersection simulation method was used to ensure a more conservative analysis, given the complexity of traffic operations in this area.

Table 8-29
Cumulative No Project and Cumulative Plus Mixed-Use Project Alternative Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Cumulative + Project Traffic Noise Contours (feet)[2]		
		Cumulative No Project	Cumulative + Project	Change	Significance Criteria[1]	Significant?	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
5th St.	L St. to Pole Line Rd.	62.6	62.7	0.2	+3 dB	No	23	49	107
Alhambra Dr.	South of E Covell Blvd.	57.3	57.8	0.5	+5 dB or > 60 dB	No	9	20	43
Alhambra Dr.	West of Mace Blvd.	61.3	61.3	0.1	+3 dB	No	16	34	73
E Covell Blvd.	F St. to J St.	64.4	64.4	-0.1	+3 dB	No	42	91	195
E Covell Blvd.	Monarch Ln. to Alhambra Dr.	66.2	65.8	-0.4	+1.5 dB	No	39	85	183
E Covell Blvd.	Research Park to Drew Cir.	65.3	65.1	-0.1	+1.5 dB	No	36	77	165
E Covell Blvd.	Drummond Ave. to Mace Blvd.	60.0	60.2	0.2	+3 dB	No	11	24	51
F St.	North of E Covell Blvd.	64.3	63.1	-1.2	+3 dB	No	17	37	80
F St.	South of E Covell Blvd.	57.6	58.6	1.0	+5 dB or > 60 dB	No	13	28	61
I-80	East of Mace Blvd.	71.8	71.7	-0.2	+1.5 dB	No	614	1,323	2,851
L St.	E. Covell Blvd. to Drexel Rd.	58.3	59.8	1.4	+5 dB or > 60 dB	No	10	22	48
Loyola Dr.	East of Pole Line Rd.	58.1	58.3	0.2	+5 dB or > 60 dB	No	8	18	39
Mace Blvd.	Harper Jr. HS to Alhambra	51.9	51.7	-0.2	+5 dB or > 60 dB	No	36	78	167
Mace Blvd.	South of El Macero Dr.	57.3	59.1	1.8	+5 dB or > 60 dB	No	12	26	57
Pole Line Rd.	North of E Covell Blvd.	64.6	65.0	0.3	+3 dB	No	35	74	160
Pole Line Rd.	E Covell Blvd.to Claremont Dr.	59.9	59.4	-0.5	+5 dB or > 60 dB	No	15	32	69
Pole Line Rd.	North of 5th St.	63.5	63.0	-0.6	+3 dB	No	17	37	79
Pole Line Rd.	South of 5th St.	65.2	66.2	1.1	+1.5 dB	No	28	60	130
Research Park Dr.	North of E Covell Blvd.	62.0	61.7	-0.3	+3 dB	No	21	46	98

(Continued on next page)

Table 8-29
Cumulative No Project and Cumulative Plus Mixed-Use Project Alternative Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Cumulative + Project Traffic Noise Contours (feet)[2]		
		Cumulative No Project	Cumulative + Project	Change	Significance Criteria[1]	Significant?	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}

Notes:
[1] Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the City's Normally Acceptable 60 dB L_{dn} noise level standard at an existing residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.
[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[3] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: j.c. brennan & associates, Inc., March 16, 2015.

To determine the proposed project's incremental contribution to the "cumulative no project" noise environment, the Federal Interagency Committee on Noise (FICON) criteria outlined in Table 4.11-9 of the Noise and Vibration Chapter of this EIR were utilized. Pursuant to the FICON standards, an incremental contribution would be significant if the contribution exceeded 5.0 dB where existing noise levels are less than 60 dB, 3.0 dB, where noise levels without the project are 60 to 65 dB, and if the contribution exceeded 1.5 dB where noise levels without the project are greater than 65 dB. In addition, as noted in the Regulatory Context section of Section 4.11, Noise and Vibration, of this EIR, a 3.0 dB change is barely perceptible to the human ear.

Off-site traffic noise increase threshold test

The test of significance for increases in off-site traffic noise is two-fold. First, traffic noise levels are reviewed to see if the Mixed-Use Alternative's contribution to traffic noise would exceed the FICON levels identified in Table 4.11-9 of Section 4.11, Noise and Vibration. If the alternative's incremental increase in traffic noise levels along surrounding roadways would exceed the FICON criteria, the alternative would be considered to have a cumulatively considerable noise impact along that roadway segment.

The second part of the significance test would be applied if the alternative does not result in the traffic noise level increases shown in Table 4.11-9 of Section 4.11 (i.e., the project does not exceed the FICON criteria). In this case, each roadway segment is assessed to determine whether the project's traffic noise contribution would cause any receptors along the roadway to be exposed to exterior noise levels exceeding the City's General Plan Noise Element standards. Specifically, Noise Element Policy 1.1-c requires the following:

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 [Table 4.11-7 of Section 4.11] and Table 20 [Table 4.11-8 of Section 4.11] Cumulative and project specific impacts by new development on existing residential land uses shall be mitigated consistent with the standards in Table 19 [Table 4.11-7 of Section 4.11] and Table 20 [Table 4.11-8 of Section 4.11].

For residential uses, Table 19 [Table 4.11-7 of Section 4.11] establishes a Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Therefore, if an existing residential receptor is exposed to existing noise levels of less than 60 dB L_{dn}, any project-related traffic noise level increase that causes noise levels to exceed 60 dB L_{dn} would be considered significant. If an existing receptor is exposed to conditionally acceptable exterior noise levels (60 to 70 dB) the FICON criteria shown in Table 4.11-9 would be used as the test of significance.

Findings

With respect to the first part of the test of significance, Table 8-29 demonstrates that the FICON criteria would not be exceeded as a result of the alternative's incremental traffic. When project traffic noise is added to the Cumulative No Project scenario, the noise levels increase by as much as 1.5 dB, which is less than the FICON threshold of 5 dB where existing noise levels are less than 60 dB.

With respect to the second part of the significance test, the project's contribution to traffic noise levels would not cause any new exceedances of the City's 60 dB exterior noise level standard.

Cumulative impacts related to noise-sensitive receptors were determined to be less-than-cumulatively-considerable for the proposed project. Overall, the project's incremental contribution to traffic noise levels would be ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-104 Cumulative traffic noise effects on proposed uses (reference Impact 5-17).

Mixed-Use Site

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the Mixed-Use Alternative and other projects within the area. As shown in Table 8-30, cumulative transportation noise levels are predicted to comply with the City of Davis exterior noise level standards at the exterior spaces of the residential units, hotel, commons areas, and Oval park.

Table 8-30
Transportation Noise Levels at Proposed Uses

Receptor Description	Noise Source and Predicted Noise Level (Ldn)				Standard	Impact ? (Y/N)
	Interstate 80	Mace Blvd.	UPRR	Total		
Cumulative Plus Mixed-Use Alternative						
Residential Units	56 dB	55 dB	52 dB	59 dB	60 to 70 dB	No
Hotel	61 dB	60 dB	57 dB	64 dB	65 to 75 dB	No
North-South Commons	62 dB	50 dB	59 dB	64 dB	65 to 75 dB	No
The Oval	56 dB	54 dB	52 dB	59 dB	65 to 75 dB	No
East-West Commons	57 dB	54 dB	53 dB	60 dB	65 to 75 dB	No
Courtyard Plaza	59 dB	48 dB	55 dB	61 dB	65 to 75 dB	No

Source: j.c. brennan & associates, Inc., March 16, 2015.

Mace Triangle Site

Based upon the General Commercial land use designation proposed for the Ikedas parcel and the easternmost agricultural parcel, the City has identified a future development potential for these parcels, consisting of approximately 45,901 sf of research/office/R&D, and 25,155 sf of ancillary retail. Because of the uncertainty of these uses, in terms of site placement and specific tenants, an acoustical study will need to be submitted in conjunction with a development plan application for this site.

Conclusion

Cumulative impacts related to traffic noise were determined to be less-than-cumulatively-considerable with mitigation for the proposed project. Through compliance with Mitigation Measure 8-59, the project's contribution to cumulative traffic noise would be ***less than cumulatively considerable*** with respect to the exterior noise levels experienced at future on-site sensitive uses.

Mitigation Measure(s)

MRIC Mixed-Use – none

Mace Triangle

8-104 Implement Mitigation Measure 8-59.

Implementation of the above mitigation measure would ensure that the project's incremental contribution to cumulative traffic noise impacts is *less than cumulatively considerable*.

8-105 Cumulative population and housing impacts (reference Impact 5-18).

Cumulative impacts related to population and housing were determined to be cumulatively considerable and significant and unavoidable for the proposed project analysis. Impacts associated with population and housing related to implementation of the proposed project are analyzed in Section 4.12 of this EIR.

As shown in Table 4.12-12, the estimated employee housing demand at buildout of the MRIC is 3,763. Using the methodology described in Table 4.12-12, out of the total employee housing demand of the MRIC of 3,763 units, an employee housing demand for 2,053 units would occur within the City of Davis.[22] The remaining housing units (1,710) needed to meet the MRIC's employee housing demand would be met outside of the City of Davis, within the six-county SACOG region.

Assuming that 1,238 housing units out of the 2,053 units would be available to accommodate the MRIC's total employee housing demand within the City of Davis, the resultant MRIC employee housing demand that cannot be accommodated in the City of Davis would be 815 housing units. For this proposed project, this unmet housing demand within the City of Davis would then need to be met within surrounding jurisdictions. For the Mixed-Use Alternative, the demand for 815 housing units would be met on-site, thus providing the City of Davis' projected share towards employee-generated housing.

Under the CEQA Cumulative Scenario, the proposed project, in combination with the Davis IC and Nishi Gateway projects, and General Plan buildout, is projected to result in an unmet

[22] See Table 4.12-12.

housing demand within the City of Davis of 4,530 units.[23] As such, the combined effect of this unmet housing demand on other jurisdictions within the SACOG region would be significant with respect to inducing substantial population growth. For the Mixed-Use Alternative cumulative scenario, this cumulative impact would be incrementally reduced due to the Alternative's provision of up to 850 workforce units on-site. Furthermore, the amount of housing provided for this Alternative would enable to the City to satisfy its projected fair share of employee-generated housing. It follows then that the project's incremental contribution to this significant cumulative impact would be ***less-than-cumulatively considerable*** given the provision of up to 850 residential units on-site.

Mitigation Measure(s)
None required.

8-106 Cumulative impacts to fire protection services from the proposed project in combination with future developments in the City of Davis (reference Impact 5-19).

The following impact discussion is based on the implementation of the Mixed-Use Site in combination with other proposed and pending projects in the region. Other pending and proposed projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the project, the Davis IC, and the Nishi Gateway Property.

The closest station to the Mixed-Use Site would be Station 33, located at 425 Mace Boulevard, approximately 0.50-mile south of the project site. Station 33 currently provides fire protection and emergency medical services to the site and its vicinity. In addition, Station 33 provides backup response to Station 31 in the downtown core of the City, given that Station 31 is overburdened with calls and cannot meet the General Plan response time goal of reaching all areas of the City within a five-minute emergency response time, 90 percent of the time. Response time includes alarm processing, turnout time, and travel time.

As discussed in Impact 4.13-1, the Davis Fire Chief has indicated that Station 33 can adequately serve the proposed project, with existing resources and personnel.[24] However, an impact is predicted to occur under a scenario in which Station 33 is not able to provide needed back-up response to the downtown core station because the Station has already responded to a fire/medical incident at the Mixed-Use Site. In other words, the alternative could exacerbate the existing response time deficiency experienced in certain areas of the City of Davis by precluding Station 33 from being able to provide back-up to already impacted areas.[25] The Alternative's impact, then, should be considered a secondary, or indirect cumulative impact, to fire protection services.

[23] BAE Urban Economics. *City of Davis Economic Evaluation of Innovation Park Proposals*. May 11, 2015, Table C1.
[24] Personal communication with Chief Nathan J. Trauernicht, City of Davis Fire Department. February 5, 2015.
[25] Personal communication with Chief Nathan J. Trauernicht, City of Davis Fire Department. February 5, 2015.

Cumulative impacts related to fire protection were determined to be cumulatively considerable and significant and unavoidable for the proposed project. The Mixed-Use Alternative would introduce 750 to 850 residential units to a site which currently does not contain housing. In conclusion, the Mixed-Use Alternative, in combination with past, present, and probable future projects, will result in a significant cumulative impact to fire protection services; and the project's incremental contribution would be ***cumulatively considerable***.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-106 *Prior to issuance of building permits for each phase of development, the project applicant shall contribute the project's fair share funding towards one of the following mitigation options, as determined by the City of Davis Department of Community Development and Sustainability and Davis Fire Department:*

1. *Construct a fourth fire station within the City of Davis.*
2. *Modify of existing Davis fire facilities, which may include renovation of existing fire stations.*
3. *Complete a Fire Facilities Master Plan (FFMP), and Community Risk and Standards of Cover Study to identify the various alternatives that could be implemented to enable the City of Davis Fire Department to reach all areas of the City, including the Davis Mace Ranch Innovation Center project site, within a five-minute emergency response time, 90 percent of the time, consistent with Davis General Plan Policy POLFIRE 1.2.*

Once the mitigation option is selected, the identified improvement project(s) shall be included in the City's Capital Improvement Program and the City's Fire Impact Fee updated accordingly. In addition, each improvement project shall be subject to its own environmental review process, unless the improvement can be determined by the City to be exempt from CEQA.

The above impact could be reduced to a less-than-significant level if one of the above three mitigation options is implemented. Successful implementation of each mitigation option, however, cannot be assured, as the full amount of funding for the improvement(s) has not been secured, nor programmed into an identified improvement program. As a result, the project's incremental contribution to this significant impact would remain *cumulatively considerable and significant and unavoidable*.

8-107 Cumulative impacts to public services and recreation from the proposed project in combination with existing and future developments in the City of Davis (reference Impact 5-20).

Cumulative impacts related to public services and recreation were determined to be less-than-cumulatively-considerable for the proposed project. The following impact discussion is based on the implementation of the Mixed-Use Alternative in combination with other proposed and

pending projects in the region. Other pending and proposed projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the project, the Davis IC, and the Nishi Gateway Property.

Each development project is required by the City of Davis to pay adopted development impact fees, which include fees for such services as public safety, general facilities, roadways, parks, and open space. Each project's payment of adopted City impact fees for public services and recreation would ensure that the combined, related effects of cumulative development on public services and recreation would not be significant. It follows that the project's incremental contribution would be ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-108 CEQA Cumulative Impacts to Intersections Within the Freeway Interchange Area (reference Impact 5-21).

Cumulative impacts related to the freeway interchange area were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Table 8-31 shows the traffic simulation LOS results for the Mace Boulevard interchange area. In the CEQA Cumulative Without Mixed-Use Alternative case, several intersections are projected to operate at LOS D or E. With the addition of Mixed Use Alternative traffic, service levels would deteriorate further, and two intersections would operate at LOS F. Using the criteria presented under standard of significance #1, a significant impact is identified at two intersections in the Mace Boulevard/I-80 interchange area:

1. Mace Boulevard/Alhambra Drive
2. Mace Boulevard/2nd Street/CR 32A

In summary, the alternative's incremental increase in traffic to study intersections, in combination with traffic from cumulative development, would be considered ***cumulatively considerable***.

Mitigation Measure(s)

Focused Traffic Study Requirement to Verify Timing for Improvements

Due to the scale of the Mixed-Use Alternative and its extended buildout, and the uncertainty over the timing of each project phase, the establishment of an ongoing management and monitoring program is the best way to establish the need for implementation of individual mitigation measures. The following mitigation measure will require the Master Owners' Association for the Alternative to conduct focused traffic studies with each phase of development, submit the study to the City and, if standards are met, the project applicant or the City shall construct physical traffic improvements.

Table 8-31
CEQA Cumulative Plus Mixed-Use Alternative Peak Hour Intersection Operations
Mace Boulevard/I-80 Interchange Area

No.	Intersection	Control	Jurisdiction	CEQA Cumulative No Project				CEQA Cumulative Plus Mixed-Use Alternative			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
15	Mace Blvd./Alhambra Dr.	Signal	Davis	11	B	55	D	34	C	96	F
22	Mace Blvd./2nd St./CR 32A	Signal	Davis	30	C	68	E	37	D	**139**	**F**
33	Mace Blvd./I-80 WB Ramps	Signal	Davis	69	E	46	D	71	E	66	E
34	Mace Blvd./Chiles Rd.	Signal	Davis	28	C	38	D	26	C	53	D
41	I-80 EB Off-Ramp/Chiles Rd.	Signal	Davis	11	B	18	B	12	B	33	C
42	Mace Blvd./I-80 EB Ramps	Un-controlled	Davis	5	A	5	A	3	A	3	A

Notes:
[1] Delay is reported in seconds per vehicle for the overall intersection for signalized and uncontrolled intersections.
[2] **Bold** – LOS below standard. Shading indicates significant impact.

Source: Fehr & Peers, July 2015.

MRIC Mixed-Use

8-108(a) Implement Mitigation Measure 8-70(b).

Mace Triangle – none

Mitigation for Mace Boulevard/Alhambra and Mace Boulevard/2nd Street/County Road 32A

MRIC Mixed-Use and Mace Triangle

8-108(b) Roadway and Intersection Widening: Construct improvements to Mace Boulevard to provide sufficient capacity to serve the alternative's traffic. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis. Note that the City of Davis is currently in the process of adding a second northbound left turn lane at the intersection of Mace Boulevard/2nd Street/CR 32A. This improvement is assumed to be in place prior to implementation of the mitigations described below. Note also that the improvements along the corridor work together to mitigate the intersection impact by improving flow through the entire corridor.

- *Southbound Mace Boulevard: Add a third southbound lane from the I-80 westbound ramps intersection to the eastbound loop on-ramp, with two lanes feeding the on-ramp.*

- *Mace Boulevard/I-80 Westbound Ramps intersection: Eliminate the westbound free right lane and construct two right turn lanes.*

- *Mace Boulevard/2nd Street/County Road 32A intersection: Widen approaches to add a new westbound left turn lane, a second eastbound left turn lane, and lengthen the westbound left turn lanes to 250 feet in length. Remove the eastbound free right turn channelizing island and replace with a non-channelized right turn lane.*

- *Mace Boulevard/Alhambra Drive/Central Project Driveway intersection: Widen and configure the Project access driveway to provide one westbound left turn lane, a shared left/through lane, and a right turn lane. Widen Mace Boulevard to provide an additional northbound through lane.*

With these mitigations, LOS E would be restored to the impacted intersections, and queues would be contained within the available storage.

Widening the Mace Boulevard overpass of I-80, modifying the westbound off-ramp, and widening the southbound on-ramp at the I-80/Mace Boulevard interchange would require approval by Caltrans.

With implementation of Mitigation Measure 8-108, the impact would be reduced to a less-than-significant level. However, because the approval of interchange improvements by Caltrans cannot be assured, the impact remains ***cumulatively considerable*** and ***significant and unavoidable***.

8-109 Modified Cumulative Impacts to Intersections Within the Freeway Interchange Area.

Cumulative impacts related to intersections within the freeway interchange area were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Table 8-32 shows the traffic simulation LOS results for the Mace Boulevard interchange area. In the Modified Cumulative Without Mixed-Use Alternative case, two intersections are projected to operate at LOS F. With the addition of Mixed Use Alternative traffic, service levels would deteriorate further, and queues would worsen. Using the criteria presented under standard of significance #1, a significant impact is identified at one intersection in the Mace Boulevard/I-80 interchange area:

1. Mace Boulevard/Second Street/CR 32A

Table 8-32
Modified Cumulative Plus Mixed-Use Alternative Peak Hour Intersection Operations
Mace Boulevard/I-80 Interchange Area

No.	Intersection	Control	Jurisdiction	Modified Cumulative No Project				Modified Cumulative Plus Mixed-Use Alternative			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
15	Mace Blvd./Alhambra Dr.	Signal	Davis	10	A	11	B	38	D	64	E
22	Mace Blvd./2nd St./CR 32A	Signal	Davis	27	C	46	D	30	C	**102**	**F**
33	Mace Blvd./I-80 WB Ramps	Signal	Davis	36	D	39	D	64	E	50	D
34	Mace Blvd./Chiles Rd.	Signal	Davis	25	C	35	D	27	C	37	D
41	I-80 EB Off-Ramp/Chiles Rd.	Signal	Davis	9	A	17	B	10	A	20	B
42	Mace Blvd./I-80 EB Ramps	Un-controlled	Davis	3	A	3	A	3	A	3	A

Notes:
[1] Delay is reported in seconds per vehicle for the overall intersection for signalized and uncontrolled intersections.
[2] **Bold** – LOS below standard. Shading indicates significant impact.

Source: Fehr & Peers, July 2015.

In summary, the alternative's incremental increase in traffic to study intersections, in combination with traffic from cumulative development, would be considered ***cumulatively considerable***.

Mitigation Measure(s)

Focused Traffic Study Requirement to Verify Timing for Improvements

Due to the scale of the Mixed-Use Alternative and its extended buildout, and the uncertainty over the timing of each project phase, the establishment of an ongoing management and monitoring program is the best way to establish the need for implementation of individual mitigation measures. The following mitigation measure will require the Master Owners' Association for the Alternative to conduct focused traffic studies with each phase of development, submit the study to the City and, if standards are met, the project applicant or the City shall construct physical traffic improvements.

MRIC Mixed-Use

8-109(a) Implement Mitigation Measure 8-70(b).

Mace Triangle - none

Mitigation for Mace Boulevard/Alhambra and Mace Boulevard/2nd Street/County Road 32A

MRIC Mixed-Use and Mace Triangle

8-109(b) *Roadway and Intersection Widening: Construct improvements to Mace Boulevard to provide sufficient capacity to serve the alternative's traffic. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis. Note that the City of Davis is currently in the process of adding a second northbound left turn lane at the intersection of Mace Boulevard/2nd Street/CR 32A. This improvement is assumed to be in place prior to implementation of the mitigations described below. Note also that the improvements along the corridor work together to mitigate the intersection impact by improving flow through the entire corridor.*

- *Southbound Mace Boulevard: Add a third southbound lane from I-80 WB Ramps to the eastbound loop on-ramp, with two lanes feeding the on-ramp*

- *Mace Blvd / Alhambra / Central Project Driveway: Add a northbound right-turn lane, and widen and configure the Project access driveway to provide one westbound left turn lane, a shared left/through lane, and a right turn lane*

With these mitigations, LOS E would be restored to the impacted intersections, and queues would be contained within the available storage.

Widening the Mace Boulevard overpass of I-80 and widening the southbound on-ramp at the I-80/Mace Boulevard interchange would require approval by Caltrans.

With implementation of Mitigation Measure 8-109, the impact would be reduced to a less-than-significant level. However, because the approval of interchange improvements by Caltrans cannot be assured, the impact remains ***cumulatively considerable*** and ***significant and unavoidable***.

8-110 CEQA Cumulative Impacts to Roadway Segments (reference Impact 5-23).

Cumulative impacts related to roadway segments were determined to be cumulatively considerable and significant and unavoidable for the proposed project. Table 8-33 presents the roadway segment volumes for the CEQA Cumulative No Mixed-Use Alternative and CEQA Cumulative With Mixed-Use Alternative cases in the local study area. It should be noted that the amount and location of new development in both cases results in substantially different travel route choices, which leads to volume growth on many roadways and volume drops on some roadways. It is also noted that Mace Boulevard from Chiles Road to Alhambra Drive is not discussed here, because it is discussed separately above.

Table 8-33
CEQA Cumulative with Mixed-Use Alternative Roadway Segment LOS

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative		CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
First Street East of D St.	44	City Core	1,780	1,020	C	840	C	1,250	C	1,140	C
First St. East of E St.	45	City Core	1,780	460	C	400	C	1,030	C	1,070	C
Second St. East of Pena D.	37	City	1,750	1,570	E	1,520	E	1,760	**F**	1,760	**F**
Third St. East of B St.	36	City Core	610	830	**F**	810	**F**	1,570	**F**	1,330	**F**
Fifth St. West of Pole Line Rd.	33	City	4,770	1,480	C	1,360	C	1,400	C	1,470	C
Eighth St. East of F St.	23	City	1,750	940	C	880	C	1,070	D	840	C
Alhambra Dr. South of Covell Blvd.	20	City	1,750	670	C	680	C	330	C	350	C
Alhambra Dr. West of Mace Blvd.	22	City	1,110	1,150	**F**	1,180	**F**	820	D	780	D
Anderson Rd. North of Covell Blvd.	3	City	1,750	610	C	570	C	920	C	640	C
Anderson Rd. North of Russell Blvd.	25	City	1,750	980	C	1,160	D	1,640	E	1,090	D
Anderson Rd. South of Covell Blvd.	15	City	1,750	780	C	830	C	630	C	820	C
La Rue Rd. South of Russell Blvd.	34	UCD	4,770	1,650	C	1,680	C	1,760	C	2,230	C
B St. North of Russell Blvd./5th St.	26	City	1,750	670	C	530	C	1,020	C	600	C

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Table 8-33
CEQA Cumulative with Mixed-Use Alternative Roadway Segment LOS

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative		CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Chiles Rd. East of Mace Blvd.	40	City	1,750	850	C	820	C	1,500	E	1,060	D
Chiles Rd. West of Cowell/EB I-80 Off-Ramp	39	City	1,750	980	C	1,050	D	1,130	D	1,270	D
CR 31 East of CR 98	6	Yolo County	1,780	740	C	820	C	830	C	1,070	C
CR 32A East of Mace Blvd.	38	Yolo County	1,750	170	C	550	C	1,160	D	640	C
CR 99D South of CR 29	1	Yolo County	1,750	730	C	840	C	570	C	830	C
Covell Blvd. East of Denali Dr.	7	City	1,780	1,130	C	890	C	1,110	C	2,160	**F**
Covell Blvd. East of F St.	9	City	4,770	2,750	C	2,750	C	2,650	C	2,640	C
Covell Blvd. East of Harper High	11	Yolo County	1,780	1,440	**D**	1,360	C	1,580	**D**	1,540	D
Covell Blvd. East of Monarch Ln.	10	City	4,770	2,070	C	1,970	C	1,870	C	1,730	C
Covell Blvd. West of Anderson Rd.	8	City	4,770	1,940	C	1,960	C	1,880	C	2,170	C
Cowell Blvd. West of Mace Blvd.	49	City	1,750	730	C	680	C	620	C	640	C

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Table 8-33
CEQA Cumulative with Mixed-Use Alternative Roadway Segment LOS

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative		CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
E St. North of First St.	43	City Core	610	470	D	640	**F**	1,290	**F**	670	**F**
F St. North of Fifth St.	27	City	1,750	540	C	560	C	730	C	700	C
F St. North of Covell Blvd.	4	City	1,750	760	C	740	C	980	C	740	C
F St. South of Covell Blvd.	17	City	1,750	860	C	1,000	C	720	C	910	C
Hutchison Dr. W. of Health Science Dr.	41	UCD	4,770	2,080	C	1,710	C	2,230	C	1,930	C
John Jones Road N of Covell Blvd.	2	City	1,750	1,380	D	2,340	**F**	1,390	D	1,740	E
L St. South of Covell Blvd.	18	City	1,110	570	C	580	C	460	C	630	C
Lake Blvd. South of Covell Blvd.	12	City	1,750	790	C	690	C	510	C	610	C
Loyola Dr. East of Pole Line R.	21	City	1,110	360	C	370	C	440	C	470	C
Mace Blvd. South of El Macero Dr.	50	City	1,780	280	C	300	C	270	C	310	C
Oak Ave. South of Covell Blvd.	16	City	1,110	500	C	550	C	430	C	660	C
Old Davis Rd. North of I-80	46	UCD	1,750	1,190	D	1,250	D	910	C	1230	D

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Table 8-33
CEQA Cumulative with Mixed-Use Alternative Roadway Segment LOS

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative		CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Old Davis Rd. South of Hutchison Dr.	42	UCD	1,750	1,040	D	1,000	C	1,080	D	1,150	D
Pole Line Rd. North of 5th St.	28	City	1,750	1,090	D	970	C	1,510	E	1,280	D
Pole Line Rd. North of Covell Blvd.	5	City	1,780	1,320	C	1,340	C	1,410	D	1,510	D
Pole Line Rd. South of 5th St.	35	City	1,780	1,450	D	1,470	D	1,530	D	1,910	**F**
Pole Line Rd. South of Covell Blvd.	19	City	1,750	940	C	940	C	1,210	D	1,030	C
Research Park Dr. North of Richards Blvd.	47	City	1,750	510	C	560	C	1,070	D	1,000	C
Richards Blvd. East of Research Park Dr.	48	City	1,780	2,000	**F**	2,000	**F**	2,260	**F**	2,150	**F**
Russell Blvd. East of Eisenhower St.	30	City	4,770	2,140	C	2,050	C	1,810	C	2,190	C
Russell Blvd. West of A St.	32	City	4,770	1,890	C	1,740	C	2,140	C	2,540	C
Russell Blvd. West of Anderson Rd.	31	City	4,770	1,900	C	1,920	C	2,690	C	2,150	C
Russell Blvd. West of Lake Blvd.	29	City	1,750	790	C	800	C	1,040	D	990	C

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Table 8-33
CEQA Cumulative with Mixed-Use Alternative Roadway Segment LOS

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative		CEQA Cumulative No Project		CEQA Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Shasta Dr. South of Covell Blvd.	13	City	1,750	890	C	890	C	980	C	970	C
Sycamore Ln. North of Russell Blvd.	24	City	1,110	970	E	990	E	660	C	850	D
Sycamore Ln. South of Covell Blvd.	14	City	1,110	1,010	E	920	D	1,030	E	780	D

Note: Deficient operations are in **bold**. Significant impacts are highlighted in grey.

Source: Fehr & Peers, July 2015.

Adding the project to the CEQA Cumulative No Mixed-Use Alternative condition causes significant impacts on five roadway segments based on standard of significance #1, including:

1. Alhambra Drive west of Mace Boulevard (LOS F, AM peak hour)
2. Covell Boulevard east of Denali Drive (LOS F, PM peak hour)
3. E Street north of First Street (LOS F, PM peak hour)
4. John Jones Road north of Covell Boulevard (LOS F, AM peak hour)
5. Pole Line Road south of 5th Street (LOS F, PM peak hour)

In summary, the alternative's incremental increase in traffic along roadway segments, in combination with traffic from cumulative development, would be considered ***cumulatively considerable***.

Mitigation Measure(s)

Because the CEQA Cumulative Plus Mixed-Use Alternative scenario assumes a significant level of new development in Davis, and the cumulative impacts to the road segments are based on forecast volumes that would exceed capacities by between 5 and 35 percent, a combination of monitoring and traffic management strategies is recommended as an alternative to widening. Mitigation Measure 8-110 is proposed to reduce the impacts to the extent feasible, without roadway widening that (1) would potentially not be needed and/or (2) would be inconsistent with City of Davis General Plan policies regarding ultimate roadway widths.

MRIC Mixed-Use and Mace Triangle

8-110 *The Master Owners' Association (MOA) for the Mixed-Use Project shall coordinate with the City of Davis to implement travel route management strategies, including changeable message signs with route delay information and downtown parking capacity information, signal coordination and timing plans, and other roadway network management strategies, as appropriate, to efficiently manage the capacities of the various roadways serving as the primary travel corridors in Davis. Annual monitoring shall be conducted by the MOA, and submitted to the City, to verify effectiveness of the route management strategies. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.*

Because the effectiveness of these measures cannot be assured of reducing the projected volumes on the affected roadways to a level that reduces volumes at or below the affected roadways' capacities, this impact remains ***cumulatively considerable*** and ***significant and unavoidable.***

8-111 Modified Cumulative Impacts to Roadway Segments (reference Impact 5-24).

Table 8-34 presents the roadway segment volumes for the Modified Cumulative No Mixed-Use Alternative and Modified Cumulative With Mixed-Use Alternative cases in the local study area. It should be noted that the amount and location of new development in both cases results in substantially different travel route choices, which leads to volume growth on many roadways and volume drops on some roadways.

Table 8-34
Modified Cumulative with Mixed-Use Alternative Roadway Segment Levels of Service

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative		Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
First St. East of D St.	44	City Core	1,780	920	C	940	C	1,140	C	1,120	C
First St. East of E St.	45	City Core	1,780	380	C	290	C	770	C	1,170	C
Second St. East of Pena Dr.	37	City	1,750	1,180	D	1,230	D	1,720	E	1,700	E
Third St. East of B St.	36	City Core	610	720	**F**	750	**F**	1,300	**F**	1,300	**F**
Fifth St. West of Pole Line Rd.	33	City	4,770	990	C	970	C	1,250	C	1,410	C
Eighth St. East of F St.	23	City	1,750	760	C	800	C	870	C	930	C
Alhambra Dr. South of Covell Blvd.	20	City	1,750	430	C	590	C	220	C	480	C
Alhambra Dr. West of Mace Blvd.	22	City	1,110	870	D	980	E	690	D	950	E
Anderson Rd. North of Covell Blvd.	3	City	1,750	460	C	520	C	780	C	530	C
Anderson Rd. North of Russell Blvd.	25	City	1,750	910	C	910	C	1,530	E	1,010	C
Anderson Rd. South of Covell Blvd.	15	City	1,750	770	C	800	C	680	C	820	C
La Rue Rd. South of Russell Blvd.	34	UCD	4,770	1,670	C	1680	C	1,800	C	2,210	C
B St. North of Russell Blvd./ 5th St.	26	City	1,750	450	C	480	C	790	C	650	C

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Table 8-34
Modified Cumulative with Mixed-Use Alternative Roadway Segment Levels of Service

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative		Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Chiles Rd. East of Mace Blvd.	40	City	1,750	810	C	830	C	1,480	E	1,000	C
Chiles Rd. West of Cowell Blvd./EB I-80 Off-Ramp	39	City	1,750	930	C	940	C	1,100	D	1,230	D
CR 31 East of CR98	6	Yolo County	1,780	610	C	650	C	720	C	930	C
CR 32A East of Mace Blvd.	38	Yolo County	1,750	180	C	240	C	1,160	D	450	C
CR 99D South of CR29	1	Yolo County	1,750	100	C	100	C	50	C	110	C
Covell Blvd. East of Denali Dr.	7	City	1,780	1250	C	1,270	C	1,330	C	1,620	D
Covell Blvd. East of F St.	9	City	4,770	2370	C	2,440	C	2,360	C	2,570	C
Covell Blvd. East of Harper High	11	Yolo County	1,780	1370	C	1,550	**D**	1,370	C	1,730	**E**
Covell Blvd. East of Monarch Ln.	10	City	4,770	1720	C	1,930	C	1,620	C	1,960	C
Covell Blvd. West of Anderson Rd.	8	City	4,770	1,700	C	1,800	C	1,680	C	2,110	C
Cowell Blvd. West of Mace Blvd.	49	City	1,750	630	C	630	C	580	C	620	C

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Table 8-34
Modified Cumulative with Mixed-Use Alternative Roadway Segment Levels of Service

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative		Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
E St. North of First St.	43	City Core	610	390	D	490	D	1,160	**F**	570	E
F St. North of Fifth St.	27	City	1,750	460	C	500	C	700	C	680	C
F St. North of Covell Blvd.	4	City	1,750	740	C	750	C	940	C	750	C
F St. South of Covell Blvd.	17	City	1,750	970	C	960	C	760	C	970	C
Hutchison Dr. West of Health Science Dr.	41	UCD	4,770	1,730	C	1,830	C	2,170	C	2,090	C
John Jones Rd. North of Covell Blvd .	2	City	1,750	600	C	600	C	220	C	520	C
L St. South of Covell Blvd.	18	City	1,110	600	C	610	C	440	C	640	C
Lake Blvd. South of Covell Blvd.	12	City	1,750	730	C	730	C	550	C	710	C
Loyola Dr. East of Pole Line Rd.	21	City	1,110	300	C	360	C	280	C	490	C
Mace Blvd. South of El Macero Dr.	50	City	1,780	130	C	120	C	230	C	310	C
Oak Ave. South of Covell Blvd.	16	City	1,110	530	C	510	C	470	C	640	C
Old Davis Rd. North of I-80	46	UCD	1,750	1,160	D	1,110	D	690	C	1,160	D

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Table 8-34
Modified Cumulative with Mixed-Use Alternative Roadway Segment Levels of Service

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative		Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Old Davis Rd. South of Hutchison Dr.	42	UCD	1,750	750	C	760	C	890	C	1,090	D
Pole Line Rd. North of 5th St.	28	City	1,750	1,030	C	1,040	D	1,530	E	1,280	D
Pole Line Rd. North of Covell Blvd.	5	City	1,780	1,280	C	1,290	C	1,360	C	1,420	D
Pole Line Rd. South of 5th St.	35	City	1,780	1,270	C	1,320	C	1,460	D	1,700	E
Pole Line Rd. South of Covell Blvd.	19	City	1,750	770	C	760	C	1,120	D	1,100	D
Research Park Dr. North of Richards Blvd.	47	City	1,750	550	C	560	C	990	C	980	C
Richards Blvd. East of Research Park Dr.	48	City	1,780	1,740	E	1,670	E	2,090	**F**	2,050	**F**
Russell Blvd. Easy of Eisenhower St.	30	City	4,770	1,600	C	1,630	C	1,280	C	1,430	C
Russell Blvd. West of A St.	32	City	4,770	1,620	C	1,640	C	2,100	C	2,390	C
Russell Blvd. West of Anderson Rd.	31	City	4,770	1,460	C	1,500	C	2,480	C	2,090	C
Russell Blvd. West of Lake Blvd.	29	City	1,750	810	C	820	C	1,010	C	910	C

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Table 8-34
Modified Cumulative with Mixed-Use Alternative Roadway Segment Levels of Service

Roadway Segment	Segment ID	Jurisdiction	Capacity	AM Peak Hour				PM Peak Hour			
				Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative		Modified Cumulative No Project		Modified Cumulative With Mixed-Use Alternative	
				Total Volume	LOS	Total Volume	LOS	Total Volume	LOS	Total Volume	LOS
Shasta Dr. South of Covell Blvd.	13	City	1,750	570	C	600	C	600	C	790	C
Sycamore Ln. North of Russell Blvd.	24	City	1,110	810	D	820	D	510	C	770	D
Sycamore Ln. South of Covell Blvd.	14	City	1,110	760	D	810	D	760	D	730	D

Note: Deficient operations are in **bold**. Significant impacts are highlighted in grey.

Source: Fehr & Peers, July 2015.

It is also noted that Mace Boulevard from Chiles Road to Alhambra Drive is not discussed here, because it is discussed separately above.

Adding the Mixed Use Alternative to the Modified Cumulative No Project condition causes significant impacts on two roadway segments based on standard of significance #1, including:

1. Third Street east of B Street (LOS F, AM peak hour)
2. Covell Boulevard east of Harper Junior High School (LOS D, AM peak hour and LOS E, PM peak hour)

It is noted that the portion of Covell Boulevard above, also known as the Mace curve, is located within Yolo County jurisdiction, and has a LOS D threshold.

In summary, the project's incremental increase in traffic along roadway segments, in combination with traffic from cumulative development, would be considered ***cumulatively considerable***.

Mitigation Measure(s)

Because the Modified Cumulative Plus Mixed-Use Alternative scenario assumes a significant level of new development in Davis, and the cumulative impacts to the two road segments are based on forecast volumes that are below capacity (in the case of Covell Boulevard) and about 20 percent over capacity on B Street, where significant widening is infeasible, a combination of monitoring and traffic management strategies is recommended as an alternative to widening. Therefore, Mitigation Measure 8-111(a) is proposed to reduce the impacts to the extent feasible, without roadway widening that (1) would potentially not be needed and/or (2) would be inconsistent with City of Davis General Plan policies regarding ultimate roadway widths.

MRIC Mixed-Use and Mace Triangle

8-111(a) *The Master Owners' Association (MOA) for the MRIC Mixed-Use shall coordinate with the City of Davis to implement travel route management strategies, including changeable message signs with route delay information and downtown parking capacity information, signal coordination and timing plans, and other roadway network management strategies, as appropriate, to efficiently manage the capacities of the various major roadways (i.e., Richards Boulevard, Cowell Boulevard, Pole Line Road, Fifth Street, Old Davis Road, etc.) serving as the primary travel corridors in Davis. Annual monitoring shall be conducted by the MOA, and submitted to the City, to verify effectiveness of the route management strategies. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.*

An optional Mitigation Measure 8-111(b) is provided below, which would address the forecasted near-capacity condition on the two-lane section of Covell Boulevard at the "Mace Curve". This improvement would increase the arterial roadway capacity for trips in east Davis, and mitigate the Covell Boulevard significant impact to a less than significant level.

MRIC Mixed-Use and Mace Triangle

8-111(b) Project applicant shall widen Covell Boulevard from two lanes to four lanes from the Harper Junior High School access to Alhambra Boulevard. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.

Because the effectiveness of Mitigation Measure 8-111(a) cannot be assured of reducing the projected volumes on the affected roadways to a level that restores acceptable levels of service, this impact remains ***cumulatively considerable*** and ***significant and unavoidable***.

With implementation of Mitigation Measure 8-111(b), the impact to Covell Boulevard at the Mace Curve would be reduced to a ***less-than-cumulatively-considerable*** level.

8-112 CEQA Cumulative Impacts to Local Area Freeway Segments (reference Impact 5-25).

Table 8-35 shows the effect of project traffic on the CEQA Cumulative No Mixed-Use Alternative freeway operating condition for the local study area freeway segments studied. The Mixed Use Alternative has a significant cumulative impact on five freeway segments, by increasing the volume of trips by five percent where the segment operates at LOS F conditions under the CEQA Cumulative No Mixed-Use Alternative scenario or causing them to fall from LOS E or better to LOS F:

1. I-80 Eastbound, PM peak hour, Mace to Chiles;
2. I-80 Eastbound, PM peak hour, Chiles to Enterprise;
3. I-80 Westbound, AM peak hour, Enterprise to Chiles;
4. I-80 Westbound, AM peak hour, Chiles to Mace; and
5. I-80 Westbound, AM peak hour, Mace to Olive.

The CEQA Cumulative forecasts, with Mixed Use Alternative traffic, indicate the need for additional lane capacity on I-80 between the Enterprise Drive and Richards Boulevard interchanges. The Metropolitan Transportation Plan/Sustainable Communities Strategy 2035, adopted by the SACOG Board in 2012, includes a project to construct carpool lanes on Highway 50 and I-80 between Downtown Sacramento and the I-80/Richards Boulevard interchange in Davis. This project, in conjunction with additional auxiliary lanes between the Chiles Road hook ramps and Richards Boulevard ramps, would provide sufficient capacity to restore the above freeway segments to LOS E or better operation.

The project's incremental increase in traffic along freeway segments, in combination with traffic from cumulative development, would be considered ***cumulatively considerable***.

Table 8-35
CEQA Cumulative Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				CEQA Cumulative No Project				CEQA Cumulative Plus Mixed-Use Project			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
I-80	EB	Kidwell Rd. to SR-113 Junction	11	A	11	A	16	B	14	B	17	B	15	B
		Old Davis Rd. to Richards Blvd.	17	B	18	B	23	C	28	D	23	C	27	D
		Richards Blvd. to Mace Blvd.	20	C	22	C	27	C	38	E	26	C	38	E
		Mace Blvd. to Chiles Rd.	25	C	26	C	34	D	-	**F**	35	D	-	**F**
		Chiles Rd. to Enterprise Blvd.	19	C	24	C	26	C	-	**F**	26	C	-	**F**
	WB	Enterprise Blvd. to Chiles Rd.	18	B	20	C	40	E	32	D	-	**F**	33	D
		Chiles Rd. to Mace Blvd.	17	B	21	C	39	E	29	D	-	**F**	31	D
		Mace Blvd. to Olive Dr.	25	C	22	C	-	F	32	D	-	**F**	31	D
		Richards Blvd.to Old Davis Rd.	17	B	25	C	27	D	42	**E**	26	C	40	E
		SR-113 Junction to Kidwell Rd.	14	B	17	B	18	B	24	C	18	B	25	C

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Table 8-35
CEQA Cumulative Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				CEQA Cumulative No Project				CEQA Cumulative Plus Mixed-Use Project			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
SR-113	NB	Hutchison Dr. to Russell Blvd.	8	A	12	B	18	B	17	B	18	B	17	B
		Russell Blvd. to Covell Blvd.	9	A	15	B	20	C	22	C	21	C	22	C
		Covell Blvd. to CR 29	6	A	13	B	9	A	19	C	10	A	20	C
		CR 29 to CR 27	7	A	12	B	10	A	23	C	11	A	26	C
	SB	CR 27 to CR 29	17	B	15	B	30	D	19	C	35	D	20	C
		CR 29 to Covell Blvd.	16	B	16	B	24	C	18	B	24	C	20	C
		Covell Blvd. to Russell Blvd.	18	B	9	A	22	C	22	C	23	C	22	C
		Russell Blvd. to Hutchison Dr.	18	B	7	A	26	C	18	B	26	C	18	B

Notes: Delay and LOS is based on 2010 HCM methodology.

Source: Fehr & Peers, July 2015.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-112 *The applicant shall contribute a proportional share, with other Davis employment center projects (based on the number of pm peak hour trips added), to the local contribution portion of freeway improvement projects to construct carpool lanes on I-80 between Highway 50/Jefferson Boulevard and Richards Boulevard, as well as to the construction of auxiliary lanes between Chiles Road and Richards Boulevard, if and when these projects are added to the MTP/SCS and programmed for funding. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.*

With implementation of Mitigation Measure 8-112, the impact would be reduced to a less-than-significant level. Because this mitigation is not yet fully funded and depends upon the actions of other agencies, including the Sacramento Area Council of Governments and Caltrans, its implementation cannot be assured. Therefore, while the mitigation would reduce the impact to a less-than-significant level, this impact remains ***cumulatively considerable*** and ***significant and unavoidable.***

8-113 Modified Cumulative Impacts to Local Area Freeway Segments (reference Impact 5-26).

Table 8-36 shows the effect of project traffic on the Modified Cumulative No Mixed-Use Alternative freeway operating condition for the local study area freeway segments studied. The Mixed-Use Alternative has a significant cumulative impact on one freeway segment, by causing it to fall from LOS E or better to LOS F:

1. I-80 Eastbound, PM peak hour, Mace to Chiles

The Modified Cumulative forecasts, with Mixed-Use Alternative traffic, indicate the need for additional lane capacity on I-80 eastbound between the Chiles Road and Mace Boulevard interchanges. The Metropolitan Transportation Plan/Sustainable Communities Strategy 2035, adopted by the SACOG Board in 2012, included a project to construct carpool lanes on Highway 50 and I-80 between Downtown Sacramento and the I-80/Richards Boulevard interchange in Davis. This project would provide sufficient capacity to restore the above freeway segment to LOS E or better operation.

The project's incremental increase in traffic along freeway segments, in combination with traffic from cumulative development, would be considered ***cumulatively considerable.***

Table 8-36
Modified Cumulative Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				Modified Cumulative No Project				Modified Cumulative Plus Mixed-Use Project			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
I-80	EB	Kidwell Rd. to SR-113 Junction	11	A	11	A	15	B	14	B	15	B	14	B
		Old Davis Rd. to Richards Blvd.	17	B	18	B	22	C	24	C	23	C	24	C
		Richards Blvd. to Mace Blvd.	20	C	22	C	26	C	32	D	26	C	32	D
		Mace Blvd. to Chiles Rd.	25	C	26	C	32	D	42	E	33	D	-	**F**
		Chiles Rd. to Enterprise Blvd.	19	C	24	C	24	C	38	E	25	C	41	E
	WB	Enterprise Blvd. to Chiles Rd.	18	B	20	C	28	D	30	D	31	D	31	D
		Chiles Rd. to Mace Blvd.	17	B	21	C	27	D	28	D	30	D	28	D
		Mace Blvd. to Olive Dr.	25	C	22	C	36	E	30	D	36	E	31	D
		Richards Blvd. to Old Davis Rd.	17	B	25	C	22	C	39	E	22	C	39	E
		SR-113 Junction to Kidwell Rd.	14	B	17	B	18	B	22	C	18	B	23	C
SR-113	NB	Hutchison Dr. to Russell Blvd.	8	A	12	B	12	B	17	B	13	B	17	B

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Table 8-36
Modified Cumulative Plus Mixed-Use Alternative Peak Hour Freeway Operations (Local Study Area)

Route	Direction	Segment	Existing				Modified Cumulative No Project				Modified Cumulative Plus Mixed-Use Project			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
		Russell Blvd. to Covell Blvd.	9	A	15	B	13	B	21	C	13	B	21	C
		Covell Blvd. to CR 29	6	A	13	B	9	A	18	B	9	A	19	C
		CR 29 to CR 27	7	A	12	B	10	A	18	B	10	A	19	C
	SB	CR 27 to CR 29	17	B	15	B	22	C	18	B	24	C	18	B
		CR 29 to Covell Blvd.	16	B	16	B	22	C	18	B	22	C	18	B
		Covell Blvd. to Russell Blvd.	18	B	9	A	23	C	16	B	24	C	16	B
		Russell Blvd. to Hutchison Dr.	18	B	7	A	26	C	13	B	27	D	14	B

Notes: Delay and LOS is based on 2010 HCM methodology.

Source: Fehr & Peers, July 2015.

Mitigation Measure(s)

MRIC Mixed-Use and Mace Triangle

8-113 The applicant shall contribute a proportional share to the local contribution portion of freeway improvement projects to construct carpool lanes on I-80 between Richards Boulevard and the Chiles Road hook ramps. Responsibility for implementation of this mitigation measure shall be assigned to the MRIC and Mace Triangle on a fair share basis.

With implementation of Mitigation Measure 8-113, the impact would be reduced to a less-than-significant level. Because this mitigation is not yet fully funded and depends upon the actions of other agencies, including the Sacramento Area Council of Governments and Caltrans, its implementation cannot be assured. Therefore, while the mitigation would reduce the impact to a less-than-significant level, this impact remains ***cumulatively considerable*** and ***significant and unavoidable.***

8-114 Cumulative water system impacts (reference Impact 5-27).

CEQA Cumulative Scenario and Modified Cumulative Scenario

Cumulative impacts related to the water system were determined to be less-than-cumulatively-considerable for the proposed project. The project-level impact discussion for water supply and delivery considers the project's water demand in conjunction with demand from other cumulative buildout over a 20-year horizon. This approach reflects a typical cumulative discussion, and is appropriate in this case because arranging the project-level impact discussion in this way enables the reader to see how the discussion corresponds to the analytical requirements of SB 610. As shown in Table 4.15-23 and Table 4.15-24 in the Utilities section of this EIR, sufficient water supplies are available to serve the Mixed-Use Project and other proposed projects, as well as the buildout demands of the City's current service area, over the next 20 years during normal-year, single-dry year, and multiple-dry year scenarios.

The analysis within Impact 4.15-1 also determined that the City's existing water delivery infrastructure system would be able to accommodate the domestic and fire flow demands associated with the Mixed-Use Alternative and cumulative development, including General Plan buildout and the Davis IC and Nishi Gateway projects.

The above discussion demonstrates that the project's incremental contribution toward cumulative effects on water supply would be ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.

8-115 Cumulative wastewater treatment and collection system impact (reference Impact 5-28).

Wastewater Treatment Plant Capacity

West Yost evaluated impacts of future General Plan growth on the WWTP, using the following three methodologies:

- Indoor Water Use Basis
- Land Use and Sewer Flow Factor Basis
- BOD Loading Basis

Indoor Water Use Basis

The indoor water use associated with future General Plan buildout development is estimated in the WSA for the proposed project, which presents total projected water use on an annual average basis, and then assumes that indoor water use represents 49 percent of residential use and 46 percent of commercial/industrial/institutional uses. It should be noted that the WSA for the Mixed-Use Alternative did not present indoor water use. Assuming that indoor water use equates with wastewater generation, the predicted wastewater flows from General Plan buildout development are summarized in Table 8-37.

Table 8-37
Estimated Wastewater Generation from General Plan Buildout Development

Source	Water Demand (ac-ft/yr)	Indoor Use Percentage	Wastewater Generation (mgd)
Residential, Single-family	315	49	0.28
Residential, Multiple-family	276	49	0.25
Commercial/Industrial/Institutional	213	46	0.19
Total	**804**	**-**	**0.72**

Notes:
ac-ft/yr = acre feet per year
mgd = million gallons per day

Source: West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity. Technical Memorandum (Final). April 2, 2015.

Land Use and Sewer Flow Factor Basis

While the WSA does not specify the number of future single-family versus multiple-family units to be added to the City service area, it does specify the total number of residential units to be added (2,231), and it also specifies the number of future water supply connections to be added. Specifically, 815 future additional single-family water supply connections are indicated. If it is assumed that a one-to-one correspondence exists between single-family units and single-family connections, then a total of 1,416 future additional multiple-family units can be inferred. The WSA also specifies 7,500 future

employees to be added, although it does not make any assumptions about future retail customers associated with future commercial development. For this analysis, flows associated with future retail customers are considered to be de minimus. Given these assumptions, the ADWF associated with General Plan buildout development is indicated in Table 8-38.

Table 8-38
Projected Wastewater Generation from General Plan Buildout Development

Category	Flow Factor (gpd/unit)	Quantity	Average Flow (mgd)
Residential, Single-family	330	815	0.27
Residential, Multiple-family	230	1,416	0.33
Employees	15	7,500	0.11
Total	**-**	**-**	**0.71**

Source: West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity. Technical Memorandum (Final). April 2, 2015.

The same method can be used to estimate future wastewater flows associated with the Mixed-Use Alternative and other proposed development projects, specified above. The City SSMP does not specify sewer flow factors for either retail customers or convention center guests, both of which are applicable for the Mixed-Use Alternative. However, the WSA specifies indoor water use factors of three gpd per customer/guest for both. That value is used in combination with sewer flow factors in Table 4.15-15 of the Utilities Chapter, and the land use quantities, to produce projected wastewater generation rates for the projects, which are shown in Table 8-39.

Combining the results from Table 8-38 and Table 8-39 produces a total estimated wastewater generation from future development of 1.177 mgd (0.71 from the General Plan buildout, and 0.467 from the Davis IC and Nishi Gateway projects. However, given the uncertainties associated with future development, West Yost applied a 20 percent factor of safety, which produces a total estimated wastewater generation from future development of 1.41 mgd. Given the estimated available WWTP ADWF capacity of 1.66 mgd discussed above, this demonstrates that the WWTP can accommodate all future development, including Mixed-Use Alternative, according to this flow estimation method.

Table 8-39
Projected Wastewater Generation for the Proposed Development Projects

Project	Average Flow (mgd)
Davis IC	0.193
Mixed-Use Site/Mace Triangle Site	0.097
Nishi Gateway Project	0.177
Total	**0.467**

Source: West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity. Technical Memorandum (Final). April 2, 2015.

BOD Loading Basis

For General Plan buildout development, the estimated BOD loadings are indicated in Table 8-40. In April 2015, a determination was made that residential sources within the City generate an average of 0.267 lbs/day per dwelling unit. In addition, a 20 percent safety factor was added to account for the uncertainties in the analysis.

As indicated in Table 8-40, after accounting for future General Plan buildout, the WWTP would have an estimated available BOD loading capacity of 660 lbs/day. Therefore, as can be seen in Table 4.15-28 of the Utilities section of this EIR (section 4.15), the WWTP would not have sufficient capacity to accommodate the BOD loading projected for the Mixed-Use Alternative/Triangle, Davis IC, and Nishi Gateway projects, regardless of whether a 20 percent safety factor is assumed for the proposed project.

Table 8-40
Projected Future BOD Loads for General Plan Buildout Development

Category	Projected BOD Load (lbs/day)	Plus 20 Percent Safety Factor (lbs/day)
Residential	600	720
Non-Residential	350	420
Total	**950**	**1,140**

Source: West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity. Technical Memorandum (Final). April 2, 2015.

The only difference between the proposed project and the Mixed-Use Alternative is the 750 to 850 dwelling units. The addition of these units would thus increase the estimated BOD loading of the MRIC Project from 430 lbs/day to 700 lbs/day. This result exceeds the estimated average dry weather BOD load capacity of the WWTP by a small margin that is within the range of 20 percent safety factor used in the calculations. Due to the uncertainties of the analysis, the marginal exceedance of the estimated average dry weather BOD loading from the proposed project (700 lbs/day) versus the estimated average dry weather BOD load capacity of the WWTP (660 lbs/day) does not conclusively show that the Mixed-Use Alternative would result in an exceedance of the BOD load capacity of the WWTP.

Wastewater Collection

According to the City Sewer Spreadsheets, the 42-inch diameter trunk sewer north of the City is predicted to flow at 88 percent of capacity at buildout PWWF conditions. Similarly, the 21-inch diameter trunk sewer serving south Davis is predicted to flow at 84 percent of capacity at buildout PWWF conditions. In light of the City's d/D standard of 0.75 specified in the 2009 SECAP, the remaining available capacity in these lines would be 0.31 mgd in the 42-inch diameter trunk sewer, and 0.28 mgd in the 21-inch diameter trunk sewer.

Taken at face value, there appears to be inadequate capacity available in either trunk sewer to accommodate the proposed development. However, as noted above, it appears that the City Sewer Spreadsheets significantly over-predict ADWF throughout the system. If the ADWF estimates in the City Sewer Spreadsheets are reduced by 40 percent (as per the findings in Table 8-41 then the 42-inch diameter trunk sewer would have approximately 5.0 mgd of allowable capacity remaining at General Plan buildout PWWF conditions, while the 21-inch diameter sewer would have approximately 1.4 mgd of allowable capacity remaining at General Plan buildout PWWF conditions. It is thus concluded that adequate buildout PWWF capacity exists in both lines to handle the additional flow generated by the Mixed-Use Site and Mace Triangle Site.

Table 8-41
Estimated Wastewater Generation from Existing Development City-Wide

Source	Units	Quantity	Flow Factor (gpd/unit)	ADWF (mgd)
Residential, Single-family	Dwelling Units	14,516	330	4.79
Residential Multi-family	Dwelling Units	12,080	230	2.78
Commercial/Institutional	Employees	37,500	15	0.56
Total	-	-	-	**8.13**

Source: West Yost Associates. Impacts of Innovation Center/Nishi Property Development on Wastewater Collection System Capacity. Technical Memorandum. March 25, 2015.

Conclusion

Cumulative impacts related to wastewater treatment were determined to be less-than-cumulatively-considerable with mitigation for the proposed project. Based on flow considerations alone, this analysis demonstrates that the WWTP would have the capacity to accommodate flows from all future General Plan buildout development, plus the flows from the Davis IC, Mixed-Use Alternative, and Nishi Gateway projects. However, based on BOD loading considerations, adequate WWTP capacity does not exist to fully accommodate the proposed cumulative projects not anticipated in the General Plan.

Using the City's design standards and flow calculations, the 42-inch and the 21-inch diameter trunk mains lack the capacity to accommodate future General Plan growth and the Davis IC, Mixed-Use Alternative, and Nishi Gateway projects. However, upon downward-adjusting the ADWF values in the City Sewer Spreadsheets by 40 percent (as appears justified from this analysis), there would be adequate PWWF capacity in both possible trunk mains for City General Plan buildout development plus the flow from the proposed developments, assuming that actual project flows conform relatively closely to those assumed in this analysis.

With implementation of the following mitigation measure, the project's wastewater effects, in combination with related effects from cumulative development, would result in a ***less than cumulatively considerable*** impact to the City's wastewater system.

Mitigation Measure(s)

MRIC Mixed-Use

8-115 Implement Mitigation Measures 8-83(a) through (c).

Implementation of the above mitigation measure would ensure that the project's incremental contribution to cumulative cultural resources impacts is reduced to *less than cumulatively considerable*.

Mace Triangle – none

8-116 The project may contribute to cumulative impacts on utilities, including solid waste, natural gas, electric, and telecommunications (reference Impact 5-29).

With respect to solid waste, the Yolo County Central Landfill has a substantial amount of remaining capacity (36,555,700 cubic yards), with an estimated landfill closure date of 2081. The project's incremental contribution to cumulative solid waste generation represents approximately 0.031 percent of the remaining capacity at the Yolo County Central Landfill. This incremental contribution is less than cumulatively considerable.

With respect to gas and electric service, PG&E has indicated that the load demand created by the two innovation center projects can be accommodated by existing substations in the area.[26] Since California's energy crisis in 2001, utility planning is done in a much more coordinated manner to achieve adequacy of supply, to establish and oversee formal operational standards for running the bulk power systems, and to address security concerns for critical electrical infrastructures. This coordination is administered under mandatory procedures set up by the electric power industry's electricity reliability organization (the North American Electric Reliability Corporation), with oversight provided by the Federal Energy Regulatory Commission and the US Department of Energy. This planning effort has resulted in a more dependable electricity supply to the State, and new transmission lines are being built throughout California and elsewhere to ensure a steady and reliable supply of electricity. In addition, all projects in California are subject to Title 24 requirements for energy conservation, as discussed in more detail in Section 4.7, Greenhouse Gas Emissions and Energy, of this chapter. Therefore, development of cumulative projects is not anticipated to result in demand exceeding supply, and there would be no significant cumulative impact. The alternative's infrastructure improvements would ensure that necessary upgrades to the natural gas and electrical distribution systems are provided and that capacity of the service provider to provide natural gas and electricity to the project and existing customers would not be exceeded. The alternative's incremental contribution to cumulative demands on natural gas and electricity services would be less than cumulatively considerable.

[26] Personal email communication between Nick Pappani, Vice President, Raney Planning & Management, Inc. and Seth Perez, Land Agent, PG&E. March 23, 2015.

Telecommunications services are provided on-demand, and service providers expand their distribution systems as needed to accommodate growth. Cumulative projects would increase demand for these services, but would be accommodated by any one of a number of providers in the Davis area. Therefore, a significant cumulative impact would not occur. The alternative's telecommunications needs would be accommodated by these providers, and demand would not exceed supply. Therefore, the alternative's incremental contribution to cumulative demands on telecommunications services would be less than cumulatively considerable.

Cumulative impacts related to utilities, including solid waste, natural gas, electric, and telecommunications, were determined to be less-than-cumulatively-considerable for the proposed project. The above discussion demonstrates that the project's incremental contribution toward cumulative effects on solid waste, natural gas and electricity, and telecommunications would be ***less than cumulatively considerable***.

Mitigation Measure(s)
None required.