This section of the EIR analyzes the potential impacts of the proposed project on the surrounding transportation system including freeways, roadways, bicycle/pedestrian facilities, and transit facilities/services. This section identifies the significant impacts of the proposed project and recommends mitigation measures to lessen their significance. All technical calculations can be found in Appendix F of the Draft EIR. Information in this section is derived from the following:

- City of Davis General Plan (as amended through 2013);
- City of Davis Bicycle Map (June 1016);
- Unitrans and Yolobus websites (http://unitrans.ucdavis.edu/ and http://unitrans.ucdavis.edu/);
- *Highway Capacity Manual* Transportation Research Board (2010);
- *Trip Generation* (Institute of Transportation Engineers [ITE], 2012);
- *Trip Generation Handbook* (ITE, 2012);
- *State Route 113 Transportation Concept Report* (Caltrans, 2014);
- *California Manual on Uniform Traffic Control Devices for Streets and Highways* (Caltrans, 2014)
- City of Davis Capital Improvement Program (CIP).
- Sacramento Area Council of Governments (SACOG) 2036 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).
- *National Association of City Transportation Officials* (*NACTO) Urban Streets Design Guide (2013)*
- *Unitrans General Manager's Report Fiscal Year 2015-2016 (September 2016)*

Comments were received during the public review period for the Notice of Preparation (NOP) regarding this topic from the following: Jaron D. Ross (April 15, 2017), Corinne Gee (April 24, 2017), Robin Whitmore (April 26, 2017), Toni Terhaar and Russ Kanz (April 26, 2017), Toni Terhaar and Russ Kanz (May 4, 2017), Greg Rowe (May 11, 2017), California Department of Transportation (May 12, 2017), Eileen M. Samitz (May 13, 2017), and Brad and Cindy Nelson (May 15, 2017). Each of the comments related to this topic are addressed within this section, and comments are included within Appendix A.

Key comments that pertain to the transportation analysis included:

- The scope of the analysis should include State Route (SR) 113 as well as project-related VMT analysis.
- Mitigation should include transportation demand management and access management strategies.
- Cumulative conditions should consider projected increases in the University of California, Davis (UC Davis) student enrollment as described in its Long Range Development Plan (LRDP).
- Queuing at the Shasta Drive/Covell Boulevard intersection should be analyzed.
- Bicycle travel and safety along Covell Boulevard should be evaluated.

- Effects of more frequent pedestrian crossings of Covell Boulevard should be considered.
- The cumulative impacts of increases in traffic associated with the proposed Binning Ranch subdivision project should be evaluated.

To the extent the transportation-related NOP comments pertain to the environmental effects of the proposed project, they are included in the analysis presented in this section.

The following scenarios are analyzed in this section:

Existing Conditions – Establishes the existing setting, which is used to measure the significance of project impacts.

Existing Plus Project Conditions – Adds traffic resulting from buildout of the proposed project to existing conditions traffic.

Existing Plus Approved Projects Conditions – Adds traffic generated by various approved, but not yet constructed land developments to existing conditions traffic.

Existing Plus Approved Projects Plus Project Conditions – Adds traffic resulting from buildout of the proposed project to existing plus approved projects conditions traffic.

Cumulative No Project Conditions – Represents cumulative travel conditions based on output from the City of Davis Traffic Model. This scenario assumes the project site remains vacant.

Cumulative Plus Project Conditions – Adds the proposed project to the Cumulative No Project scenario.

Evaluations are performed for the freeway, roadway, bicycle, pedestrian, and transit systems for each of these scenarios.

3.14.1 ENVIRONMENTAL SETTING

PROJECT LOCATION

The proposed project site is located in the City of Davis, Yolo County, California. The project site is bordered on the south by West Covell Boulevard and on the east by Risling Court. The land located immediately to the north and west of the project is currently undeveloped. Sutter Davis Hospital is located directly to the east. Figure 3.14-1 displays the site and surrounding roadway network, as well as intersections included in the transportation analysis.

STUDY AREA ROADWAYS AND INTERSECTIONS

West Covell Boulevard provides access to the project site via Risling Court. Other key roadways in the project vicinity include Shasta Drive, John Jones Road, and SR 113. These roadways are described below. Refer to Figure 3.14-2 for the existing number of lanes on study area roadways.

Covell Boulevard is an east-west roadway that borders the southern edge of the site. It is referred to as either "West" or "East" depending on whether the street section is located east or west of the railroad tracks. The City of Davis General Plan classifies this street as a major arterial. The posted speed limit is 35 miles per hour (mph) from east of Risling Court/Shasta Drive to east of SR 113. West of Risling Court/Shasta Drive, the posted speed limit is 45 mph. This roadway consists of two lanes in each direction separated by a raised median east of Risling Court/Shasta Drive. West of Risling Court/Shasta Drive, the roadway narrows to one lane in each direction separated by a two-way left-turn lane. In 2016, the City of Davis recorded 23,700 daily vehicles on West Covell Boulevard west of SR 113. The segment of West Covell Boulevard from SR 113 to the West City limits is classified as a truck route in the City of Davis General Plan.

Risling Court is a two-lane local street that extends 700 feet to the north of West Covell Boulevard, terminating at a cul-de-sac. This roadway currently provides access to the Sutter Davis Hospital. Field observations revealed vehicles parked on the west side of the street. Additionally, temporary off-street parking has been provided for staff and visitors to the University Retirement Community, which is located south of West Covell Boulevard. The street does not have a posted speed limit, though prevailing speeds are typically 25 mph or less.

John Jones Road is a two-lane minor arterial that extends north from West Covell Boulevard into unincorporated Yolo County, where it becomes County Road 99D. This roadway has a posted speed limit of 35 mph (northbound) and 45 mph (southbound) within the City. The speed limit is 35 mph from Covell Boulevard until the roadway starts to run parallel to SR 113, just before the City limits. This roadway provides access to Sutter Davis Hospital as well as several other office and retail uses.

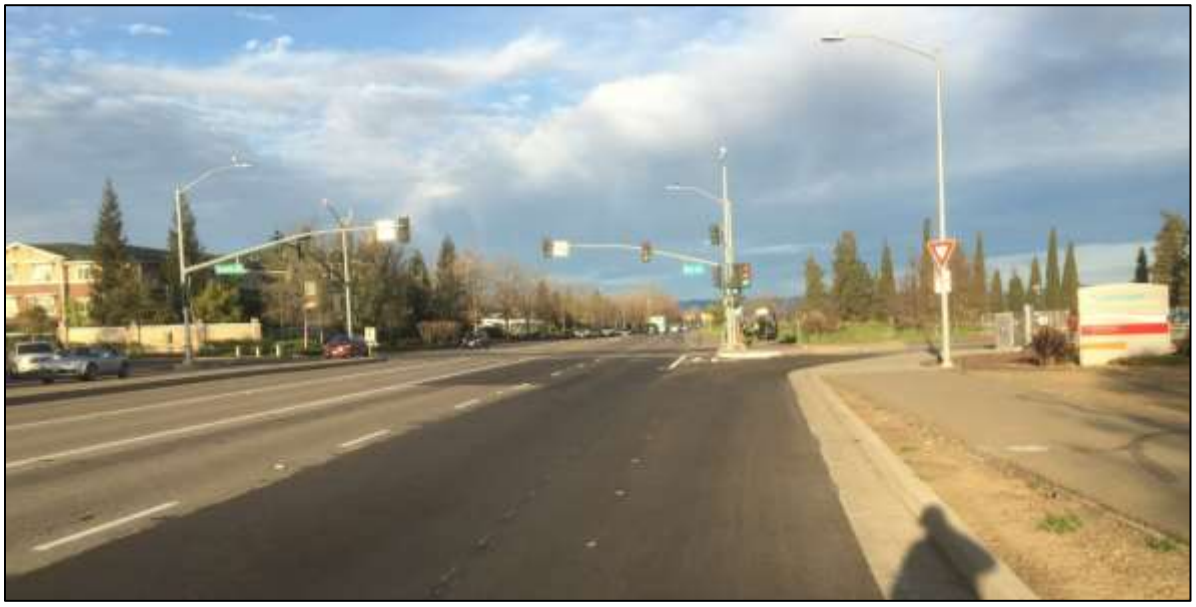
Shasta Drive is a two-lane minor arterial that extends south from West Covell Boulevard serving primarily residential uses. It has a posted speed limit of 25 mph.

According to the *State Route 113 Transportation Concept Report* (Caltrans, July 2014), the four-lane freeway segment of SR 113 between Interstate (I) 80 and I-5 (in Woodland) currently carries 39,800 daily vehicle trips and operates at Level of Service (LOS) B. Trucks represent approximately 7.7 percent of the total volume.

Page 17 of the *State Route 113 Transportation Concept Report* states the following:

> "The LOS for this segment is not projected to drop below the minimum standard of LOS E, but congestion during peak hours is a concern due to the fact that it is the primary route between major state highway system routes and the cities of Davis and Woodland. Currently, SR 113 is still equipped to handle the projected population, but certain merge points along the route (e.g., lane reduction or on/off ramps) have a tendency to cause congestion. Monitoring the impacts new development will have on SR 113 should continue and improvements to alleviate issues should be considered as they arise."

The following image shows West Covell Boulevard approaching Risling Court/Shasta Drive.



VIEW OF WEST COVELL BOULEVARD/RISLING COURT/SHASTA DRIVE SIGNALIZED INTERSECTION.

Study intersections were selected in consultation with City of Davis staff and based on the project's expected travel characteristics (i.e., project location and amount of project trips) as well as facilities susceptible to being impacted by the project. The following 12 intersections were selected for study:

1. West Covell Boulevard/Lake Boulevard
2. West Covell Boulevard/Denali Drive
3. Risling Court/Sutter Hospital Driveway (located 375 feet north of West Covell Boulevard)
4. West Covell Boulevard/Risling Court/Shasta Drive
5. West Covell Boulevard/John Jones Road
6. West Covell Boulevard/SR 113 SB Ramps
7. West Covell Boulevard/SR 113 NB Ramps
8. West Covell Boulevard/Sycamore Lane
9. West Covell Boulevard/Anderson Road
10. West Covell Boulevard/Oak Avenue
11. East Covell Boulevard/F Street
12. East Covell Boulevard/J Street

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

This section describes the existing pedestrian and bicycle facilities in the study area.

Pedestrian Facilities

The City of Davis has an extensive system of multi-use pathways, sidewalks, and crosswalks available for use by pedestrians. The following facilities are located near the project (see Figure 3.14-3):

- Shared-use paths (typically 10 feet wide and accommodate bicycle/pedestrian travel in both directions) exist on one and/or both sides of West Covell Boulevard from west of Risling Court across SR 113.
- Sidewalks are present on portions of study area streets including West Covell Boulevard, Risling Court, John Jones Road, and Shasta Drive.
- Marked crosswalks with push-button pedestrian actuation are provided on all four legs of the West Covell Boulevard/Risling Court/Shasta Drive intersection. Marked crosswalks with pedestrian actuation are also provided at the signalized West Covell Boulevard/John Jones Road and SR 113 SB and NB Ramps/West Covell Boulevard intersections.
- The northbound, eastbound, and westbound right-turn movements at the West Covell Boulevard/Risling Court/Shasta Drive intersection include channelized right-turn triangular medians. Crosswalks are provided in these right-turn lanes with posted yield signs for motorists.

Pedestrian facilities do not exist along the north side of West Covell Boulevard and the west side of Risling Court along the project frontage as this area has not been developed.

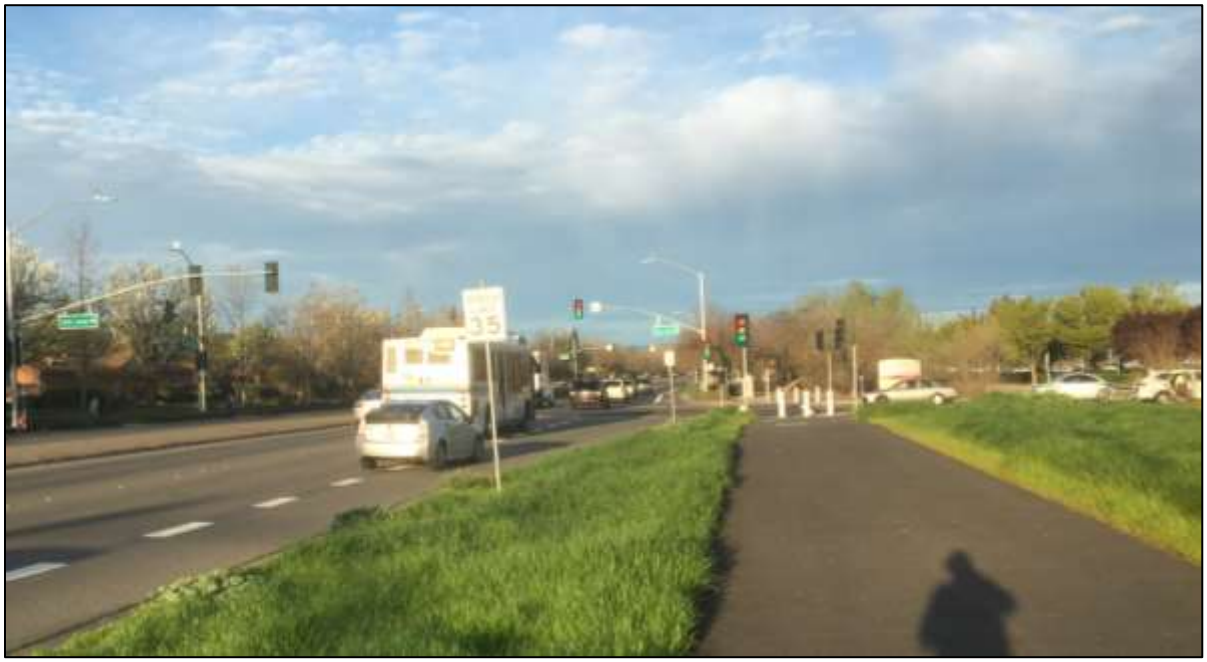
Bicycle Facilities

The following types of bicycle facilities exist within the City of Davis:

- Shared-use paths (Class I) – are paved trails that are separated from roadways, and allow for shared use by both cyclists and pedestrians.
- On-street bike lanes (Class II) – are designated for use by bicycles by striping, pavement legends, and signs.
- On-street bike routes (Class III) – are designated by signage for shared bicycle use with vehicles but do not include any additional pavement width.

Figure 3.14-3 displays existing bicycle facilities within the project vicinity. The previously discussed shared-use paths on West Covell Boulevard are located near the proposed project site. As shown in the figure, a number of Class II bike lanes are also provided within the project vicinity. A bicycle signal (with ramps and push-button actuation) is present at the signalized West Covell Boulevard/John Jones Road intersection to accommodate northbound bicycle travel (southbound bicyclists travel concurrently with the southbound vehicle phase). This bicycle route provides access to the grade-separated overcrossing of SR 113, which connects to Sycamore Lane and other destinations in central Davis, including the 12-mile Davis Bike Loop.

The following images show two bicycle facilities near the project site.



VIEW OF CLASS I SHARED-USE PATH ON NORTH SIDE OF WEST COVELL BOULEVARD EAST OF JOHN JONES ROAD

VIEW (FROM SOUTH SIDE OF WEST COVELL BOULEVARD) OF BICYCLE SIGNAL PROVIDED FOR BICYCLISTS DESIRING TO TRAVEL NORTH THROUGH WEST COVELL BOULEVARD/JOHN JONES ROAD INTERSECTION

TRANSIT SERVICE

Transit service in the City of Davis is provided by Unitrans (local), Yolobus (regional), and Davis Community Transit (paratransit).

Unitrans is a student-run public transportation bus system that serves the City of Davis. According to the Unitrans website (http://unitrans.ucdavis.edu/), the following transit routes exist in the project vicinity.

- **Unitrans Routes P & Q (Davis Perimeter)** – Route P operates in a counterclockwise direction, while Route Q operates in a clockwise direction. Each line originates/terminates at the Memorial Union Terminal on the UC Davis campus. Weekday service hours are from approximately 7:00 AM to 8:00 PM with 30-minute headways. Weekday (Monday to Thursday) evening service hours are 8:10 PM until 11:10 PM with 60-minute headways. Less frequent service is provided during weekday evenings and weekends. The Unitrans website provides real-time arrival prediction information for each route.

Buses generally run more frequently during the UC Davis academic year when ridership is higher and less frequently during the summer and breaks. Unitrans charges a $1.00 cash fare, and many types of prepaid discounted tickets and passes are available. UC Davis undergraduate students can show a valid student ID as their form of payment. Seniors (60+) may also ride free with an ID card available from the Senior Center. A variety of other fare options is also available.

According to the Yolobus website (http://www.yolobus.com/), the following transit routes exist in the study area.

- **Yolobus Route 220** – Provides fixed-route service to Davis, Winters, and Vacaville. On weekdays and Saturdays, this route provides one morning, one mid-day, and one afternoon round trip. Route 220C is similar but only operates between Davis and Winters, with one morning and one afternoon trip on weekdays only.

- **Yolobus Route 230 Express** – Provides three morning and three afternoon trips on weekdays between West Davis and downtown Sacramento. Route 231 is the last afternoon weekday Express trip from downtown Sacramento, returning to Davis.

The fare for single non-express rides is $2.25, and the fare for single express rides is $3.25. There are a variety of discounts and other pass purchase options available to riders.

Each of the above Unitrans and Yolobus routes stops at the bus stops located on West Covell Boulevard adjacent to the project (see Figure 3.14-3). Each of these stops includes a shelter. The two stops closest to the West Covell Boulevard/Risling Court/Shasta Drive intersection also include bus turnouts and parking for bicycles.

The following images show the bus facilities near the project site.

BUS STOP AND SHELTER IN NORTHWEST QUADRANT OF WEST COVELL BOULEVARD/RISLING COURT INTERSECTION

BOARDINGS ONTO ROUTE P FROM BUS STOP IN NORTHWEST QUADRANT OF WEST COVELL BOULEVARD/RISLING COURT INTERSECTION

3.14.2 ANALYSIS METHODS

The operational performance of the roadway network is commonly described with the term Level of Service, or LOS. LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The LOS analysis methods outlined in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010) were used in this study. The HCM methods for calculating LOS for signalized intersections and unsignalized intersections are described below.

Intersections

Traffic operations at signalized intersections are evaluated using the LOS method described in the 2010 HCM. A signalized intersection's LOS is based on the weighted average control delay measured in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Table 3.14-1 summarizes the relationship between the control delay and LOS for signalized intersections.

TABLE 3.14-1: INTERSECTION LOS CRITERIA

LOS	*DESCRIPTION*	*AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)*	
		SIGNALIZED INTERSECTIONS	*UNSIGNALIZED INTERSECTIONS*
A	Little or no delays	≤ 10.0	≤ 10.0
B	Short traffic delays	> 10.0 TO 20.0	> 10.0 to 15.0
C	Average traffic delays	> 20.0 TO 35.0	> 15.0 to 25.0
D	Long traffic delays	> 35.0 TO 55.0	> 25.0 to 35.0
E	Very long traffic delays	> 55.0 TO 80.0	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 80.0	> 50.0

SOURCE: HIGHWAY CAPACITY MANUAL (TRANSPORTATION RESEARCH BOARD, 2010).

The LOS for unsignalized intersections (side-street or all-way stop controlled intersections) is also defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop-controlled intersections, delay is calculated for each stop-controlled movement and for the uncontrolled left turns, if any, from the main street. The delay and LOS for the intersection as a whole and for the worst movement are reported for side-street stop intersections. The intersection average delay is reported for all-way stop intersections. Table 3.14-1 summarizes the relationship between delay and LOS for unsignalized intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections as drivers expect less delay at unsignalized intersections.

Study intersections 3 through 8 were analyzed using the SimTraffic microsimulation software based on their close spacing to one another and observed queues. The results of 10 runs were averaged to yield the reported results. The SimTraffic model applied actual traffic signal timings and was validated against measured traffic volumes and maximum queue lengths.

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered into the model according to the peak hour of the study area.
- The peak hour factor (PHF) was entered into the model to represent the busiest 15-minutes during each peak hour.
- The counted pedestrian and bicycle volumes were entered into the model according to the peak hour measurements.
- Signal phasing and timings were based on existing signal timing plans provided by the City and field observations.
- Speeds for the model network were based on the posted speed limits.

At the remaining study intersections, analyses were conducted using the Synchro software program. Synchro and SimTraffic apply procedures from the 2010 HCM.

The *California Manual on Uniform Traffic Control Devices for Streets and Highways* (Caltrans, 2014) provides criteria for eight signal warrants. Warrant 3 (Peak Hour Volumes) was applied to determine if traffic signals are warranted at any unsignalized study intersections. The use of the peak hour signal warrant is intended to examine the general correlation between existing/projected traffic levels and the need to install new traffic signals. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated. Furthermore, the decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to increases in certain types of collisions.

Freeway Merge/Diverge Areas

Operations at the SR 113 merge/diverge areas with West Covell Boulevard were analyzed using procedures described in the 2010 HCM. The LOS for these 'ramp junctions' is based on the vehicle density (passenger car equivalents/lane/mile/hour) at each ramp as shown in Table 3.14-2.

TABLE 3.14-2: FREEWAY MERGE/DIVERGE LOS CRITERIA

LEVEL OF SERVICE	*DENSITY (PASSENGER CARS/MILE/LANE/HOUR)*
	RAMP JUNCTIONS
A	≤ 10.0
B	> 10.0 to 20.0
C	> 20.0 to 28.0
D	> 28.0 to 35.0
E	> 35.0
F	Demand Exceeds Capacity

NOTE: OCCURS WHEN FREEWAY DEMAND EXCEEDS UPSTREAM (DIVERGE) OR DOWNSTREAM (MERGE) FREEWAY SEGMENT CAPACITY, OR IF OFF-RAMP DEMAND EXCEEDS OFF-RAMP CAPACITY

SOURCE: HIGHWAY CAPACITY MANUAL (TRANSPORTATION RESEARCH BOARD, 2010).

Bicycle and Pedestrian Facilities

Bicycle Level of Traffic Stress (LTS) refers to a bicyclist's comfort traveling along roadways. Metrics for bicycling LTS were developed at the Mineta Transportation Institute (MTI) and published in the report "Low-Stress Bicycling and Network Connectivity." Factors influencing LTS along corridors include: bicycle separation from vehicle traffic, presence of on-street parking, street width, bike lane width, vehicle speeds, and bike lane blockage. Factors influencing LTS at intersection approaches include: bicycle separation from vehicle traffic, bike lane separation from vehicle right turn lane, bike lane straight or shifted approach to the intersection, right turn lane length, and right turn vehicle speeds.

Bicycle riders vary in experience, skill, ability, and confidence. Different classes of bicyclists are correlated with different levels of "traffic stress" they are willing to experience while cycling. Bicycle LTS criteria span from 1 to 4, with 1 being the least stressful and 4 being the most stressful:

- **LTS 1**: Most children and elderly riders can tolerate this level of stress and feel safe and comfortable; bicyclists typically require more separation from traffic.
- **LTS 2**: This is the highest level of stress that the mainstream adult population will tolerate while still feeling safe.
- **LTS 3**: Bicyclists who are considered "enthused and confident" but still prefer having their own dedicated space for riding will tolerate this level of stress and feel safe while bicycling.
- **LTS 4**: For bicyclists, this is tolerated only by those characterized as "strong and fearless," which comprises a small percentage of the population. These roadways have high speed limits, multiple travel lanes, limited or non-existent bike lanes and signage, and large distances to cross at intersections.

Figure 3.14-4a shows the LTS for key bicycle corridors and intersection approaches near the project site. The LTS rating is based on the average score of all factors. A few factors contributing to a higher level of stress for bicyclists include the segment of West Covell Boulevard west of Shasta Drive having a 45 mph posted speed limit, and the southbound approach at the West Covell Boulevard/Risling Court/Shasta Drive intersection consisting of a mixed bicycle-vehicle travel lane.

Pedestrian StreetScore+ refers to the measure of pedestrian comfort on sidewalks and paths. StreetScore+ metrics were developed by Fehr & Peers using parameters and best practice guidance provided by the *National Association of City Transportation Officials* (*NACTO) Urban Streets Design Guide* (2013). Factors influencing StreetScore+ along corridors include: sidewalk width, sidewalk pavement quality, driveways within sidewalk zone, landscape buffer/street trees, number of roadway lanes, vehicle speeds, lighting, percentage of heavy vehicles on roadway, and crosswalk frequency. Factors influencing StreetScore+ at intersection crossings include: crossing distance, pedestrian signal accessibility, curb ramp accessibility, and presence of channelized right turns.

Pedestrian StreetScore+ has a parallel structure to the LTS approach for bicyclists, using the following 1 to 4 scale:

- **StreetScore+ 1**: Highly comfortable, pedestrian-friendly, and easily navigable for pedestrians of all ages and abilities, including seniors or school-aged children walking unaccompanied to school. These streets provide an ideal "pedestrian-friendly" environment.
- **StreetScore+ 2**: Generally comfortable for many pedestrians, but parents may not feel comfortable with children walking alone. Seniors may have concerns about the walking environment and take more caution. These streets may be part of a "pedestrian-friendly" environment where it intersects with a more auto-oriented roadway or other environmental constraints.
- **StreetScore+ 3**: Walking is uncomfortable but possible. Minimum sidewalk and crossing facilities may be present, but barriers are present that make the walking experience uninviting and uncomfortable.
- **StreetScore+ 4**: Walking is a barrier and is very uncomfortable or even impossible. Streets have limited or no accommodation for pedestrians and are inhospitable and possibly unsafe environment for pedestrians.

Figure 3.14-4b shows the StreetScore+ for key sidewalk corridors and intersection crossings near the project site. The StreetScore+ rating is based on the average score of all factors. A few factors contributing to a less comfortable environment for pedestrians include the lack of sidewalks adjacent to the project site, poor pavement quality along the shared-use path on the south side of West Covell Boulevard from Shasta Drive to John Jones Road, limited or no lighting on West Covell Boulevard, and the long crossing distance on the east leg of the West Covell Boulevard/Risling Court/Shasta Drive intersection.

DATA COLLECTION

Traffic counts were collected at the 12 study intersections during the AM peak hour period (7:00 AM to 9:00 AM) and PM peak hour period (4:00 PM to 6:00 PM) on Thursday, March 16, 2017 while UC Davis and local schools were in session. No unusual weather or traffic conditions were observed during the count periods.

Figure 3.14-5 displays the existing AM and PM peak hour traffic volumes at the study intersections. This figure also displays the existing traffic controls and lane configurations at each intersection, which were collected through review of aerial imagery and field observations. As shown, 10 of the 12 study intersections are controlled by traffic signals with the remaining two consisting of all way or side-street stop-control.

At the West Covell Boulevard/Risling Court/Shasta Drive intersection, the AM peak hour occurred from 7:45 to 8:45 AM and the PM peak hour occurred from 4:30 to 5:30 PM. The other study intersections featured slightly different peak hours of travel.

Pedestrian travel was observed at all study intersections. At the West Covell Boulevard/Risling Court/Shasta Drive intersection, the west leg (i.e., crossing of West Covell Boulevard)

accommodated 33 pedestrians during the AM peak hour and 18 pedestrians during the PM peak hour. The other three legs accommodated less than 10 pedestrians per hour. The heavy pedestrian flow on the west leg was likely associated with persons traveling to/from the bus stop in the northwest quadrant of the intersection.

Bicycle travel on West Covell Boulevard was also recorded. On-street bicycle flows on eastbound and westbound West Covell Boulevard consisted of 10 bicyclists or fewer during each peak hour. However, additional bicyclists were observed using the shared-use (Class I) paths that parallel West Covell Boulevard.

The technical analyses presented in this section considers the effects of bicyclists and pedestrians on intersection operations and delays. Conversely, the effects of the project on these non-motorized travel modes are also evaluated.

INTERSECTION OPERATIONS

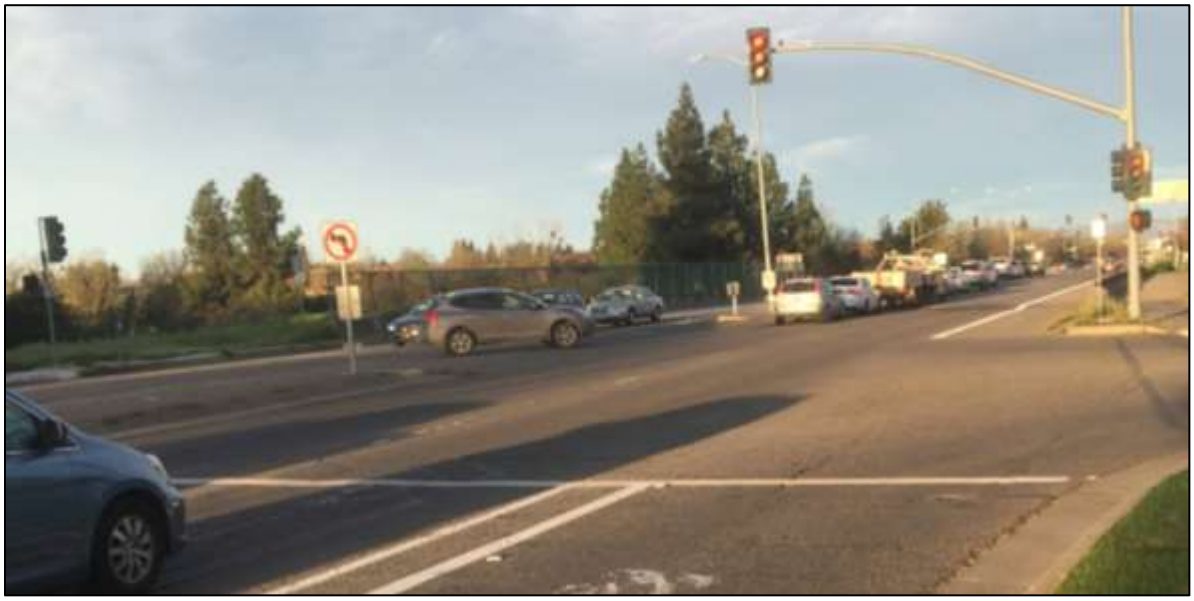
It is important that the SimTraffic model be adequately validated to be able to replicate existing vehicular queues for key movements in the study area. Table 3.14-3 displays the results of the SimTraffic model's validation against the maximum observed queue lengths (collected on March 16, 2017) for critical movements along the West Covell Boulevard study corridor. As shown, the model validates well against the observed maximum queue lengths, with the majority of movements being within 25 feet (one vehicle) of the observed maximum queue length. Given these results, the SimTraffic model is considered adequately validated to existing conditions, and therefore capable of accurately estimating how the project would change delays and queuing.

TABLE 3.14-3: SIMTRAFFIC MODEL MAXIMUM QUEUE LENGTH VALIDATION

INTERSECTION	*MOVEMENT*	*AVAILABLE STORAGE*	*OBSERVED MAXIMUM VEHICLE QUEUE*		*MODELED MAXIMUM VEHICLE QUEUE*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	50 feet	50 feet	100 feet	75 feet
	Southbound LT	150 feet	75 feet	75 feet	100 feet	100 feet
	Southbound TH/RT	150 feet	75 feet	75 feet	75 feet	75 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	425 feet	275 feet	425 feet	250 feet
	Westbound TH	325 feet	250 feet	275 feet	300 feet	275 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. CRITICAL MOVEMENTS ALONG WEST COVELL BOULEVARD SELECTED FOR VALIDATION. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

Additionally, the model was able to accurately replicate the AM peak hour queuing effects associated with the heavy westbound left-turn movement onto the SR 113 southbound on-ramp. This movement spills back into the northbound ramps intersection, both in the field and as simulated in the SimTraffic model. Refer to the image on the following page.



VIEW OF QUEUING ON WESTBOUND WEST COVELL BOULEVARD DURING AM PEAK HOUR

Existing intersection operations were analyzed for the weekday AM and PM peak hours at the study intersections. Table 3.14-4 displays the intersection analysis results. This table indicates that all study intersections currently operate at LOS C or better.

TABLE 3.14-4: PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

LOCATION	CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (2)	A (A)
4. West Covell Blvd./Risling Ct./Shasta Dr.	Signal	17	B	16	B
5. West Covell Blvd./John Jones Rd.	Signal	21	C	13	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B
7. West Covell Blvd./SR 113 NB Ramps	Signal	24	C	21	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	25	C
9. West Covell Blvd./Anderson Rd.	Signal	22	C	29	C
10. West Covell Blvd./Oak Ave.	Signal	9	A	7	A
11. West Covell Blvd./F St.	Signal	24	C	23	C
12. East Covell Blvd./J St.	Signal	15	B	15	B

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.

AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.

SOURCE: FEHR & PEERS, 2017.

During the AM peak hour, eastbound traffic on West Covell Boulevard queues nearly back to Risling Court/Shasta Drive from John Jones Road. This occurs as the result of several factors. First, delays occur at the SR 113 SB Ramps intersection (particularly due to the heavy westbound left-turn movement of 454 vehicles in a single lane). Second, the signals along West Covell Boulevard, although interconnected, do not currently operate in a manner that facilitates efficient through movement of vehicles. Third, frequent pedestrian calls for service across West Covell Boulevard contribute to more lengthy queues in the east and west directions, which causes corridor operations to frequently "fall out of coordination".

The two unsignalized study intersections were evaluated to determine if they satisfy the peak hour warrant for consideration of a traffic signal. The West Covell Boulevard/Lake Boulevard intersection currently meets the peak hour warrant during the AM and PM peak hours. The Risling Court/Sutter Hospital driveway does not meet the peak hour warrant for a traffic signal.

FREEWAY OPERATIONS

Table 3.14-5 displays existing operations at the SR 113/West Covell Boulevard freeway on/off ramp merge/diverge areas. As shown, all ramp junctions currently operate at LOS C or better.

TABLE 3.14-5: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING CONDITIONS

RAMP	*MOVEMENT*	*AM PEAK HOUR*		*PM PEAK HOUR*	
		DENSITY	*LOS*	*DENSITY*	*LOS*
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	22	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B

SOURCE: FEHR & PEERS, 2017.

BICYCLE/PEDESTRIAN CONDITIONS

Figure 3.14-4a shows that the majority of streets have bicycle facilities in the project vicinity that result in generally comfortable bicycling conditions. However, the Class II bike lane on westbound West Covell Boulevard west of Risling Court is along a street segment with a high posted speed limit (45 mph), and includes a conflict area with buses. Conditions may also be considered uncomfortable for some groups (though bike travel is still possible) approaching/departing certain intersections near the project site including southbound Risling Court in which a bicycle facility is not provided.

Figure 3.14-4b shows a generally comfortable walking environment along streets near the project site with developed frontage improvements. However, due to the lack of sidewalks, pedestrian travel along the project frontage of West Covell Boulevard and Risling Court is considered either very uncomfortable or impossible. Pedestrian travel across West Covell Boulevard at Risling Court/Shasta Drive is also considered uncomfortable due to the long crossing distance and/or presence of triangular right-turn medians, which results in an uncontrolled pedestrian crossing across a 'free-flow' right-turn movement.

3.14.3 PROJECT TRAVEL CHARACTERISTICS

PROJECT DESCRIPTION

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

For analysis purposes, the proposed project was assumed to consist of the trip generating land uses detailed in Section 2.0, Project Description (based on the NOP's project description and discussions with the project team). Refer to Section 2.0 for detailed project description including a project site plan exhibit.

TRIP GENERATION

Because the majority of project units would be age-restricted (up to 484 age-restricted units and up to 76 non-age restricted units), a suitable source of data was needed to estimate their trips. The *Trip Generation Manual* (Institute of Transportation Engineers, 2012) contains data on age-restricted / active adult housing. However, the extent of its applicability to the City of Davis is unknown. Accordingly, it was determined that a trip generation study should be conducted at a comparable facility.

The Rancho Yolo Senior Community, which is located at 620 Pole Line Road in east Davis and consists of 262 mobile home units, was selected as the comparable facility to study. This facility requires at least one resident to be age 55 or over. It includes a clubhouse (with kitchen and library area), two pools, a laundry room, and boat/RV parking. The facility is served by a nearby Unitrans bus stop, and has various bicycle/pedestrian facilities in close proximity.

Traffic counts were conducted on Tuesday, April 11, 2017, Wednesday, April 19, 2017, and Thursday, April 20, 2017 at the two entrances to the community. Table 3.14-6 shows the results of these counts. The daily traffic counts varied by less than two percent from one day to the next. The community generated an average of 1,200 external daily trips, which translates into an average of 4.6 daily vehicle trips per unit.

TABLE 3.14-6: VEHICLE TRIPS GENERATED BY RANCHO YOLO SENIOR COMMUNITY

DATE	DAILY	AM PEAK HOUR			PM PEAK HOUR		
		TOTAL	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND
Tuesday, April 11, 2017	1,198	58	21	37	111	64	47
Wednesday, April 19, 2017	1,218	62	22	40	91	53	38
Thursday, April 20, 2017	1,199	63	25	38	80	43	37
Average	1,205	61	23	38	94	53	41
Vehicle Trip Rate	*4.60*	*0.23*	*38%*	*62%*	*0.36*	*56%*	*44%*

NOTE: VEHICLE TRIP RATE BASED ON 262 UNITS.
SOURCE: FEHR & PEERS, 2017.

Table 3.14-7 shows the mode split of external trips generated by the Rancho Yolo Senior Community. Walking (including some walk trips destined for nearby bus stops) and bicycling trips comprised 15 percent of all external trips during the AM peak hour and 12 percent of all external trips during the PM peak hour.

TABLE 3.14-7: AM AND PM PEAK HOUR MODE SPLIT AT RANCHO YOLO SENIOR COMMUNITY

DATE	AM PEAK HOUR	PM PEAK HOUR
Vehicle	85%	88%
Bicycle	7%	4%
Walk [1]	8%	8%

NOTE: [1] SOME EXTERNAL WALK TRIPS WERE LIKELY DESTINED FOR NEARBY BUS STOPS.
SOURCE: FEHR & PEERS, 2017.

The following trip generation data was collected by Fehr & Peers in 2003 as part of the City of Davis travel demand model update. These trip rates are used in the City's travel demand model.

- **Montgomery Avenue, Catalina Drive, and Marina Circle Single-Family Developments**: These projects were observed to generate a weighted average of 12.82 daily vehicle trips per unit.

While other more recent trip generation studies of residential uses in Davis have been conducted, those have focused on student housing in the vicinity of the UC Davis campus. Thus, they are not considered applicable for this study given its location and intended resident types.

Table 3.14-8 estimates the gross trip generation of the various components of the proposed project. The following describes the specific trip generation estimates used for each land use type:

- **Age-restricted apartments, condominiums, and attached cottages** – These uses were analyzed using the *Senior Adult Housing – Attached* (LU Category 252) from the *Trip Generation Manual.* For the AM and PM peak hours, the data set consists of 10 studies whose average size is 138 units. Data does not exist to allow for differentiation between units that are affordable or not. This data is valid for use in this study because the trip rates

are reasonable (i.e., somewhat lower) when compared with rates measured at the Rancho Yolo Senior Community, which are comprised of age-restricted detached units.

- **Single-family, non-age-restricted, detached units** – These uses are based on the single-family rate in the City of Davis travel demand model, which is derived from the trip generation study cited above. These units generate an average of 12.82 trips per day.
- **Life-long learning class in clubhouse** – This analysis conservatively assumes that 90 percent of the 50 attendees reside outside the project, and that 80 percent arrive during the AM peak hour and depart during the PM peak hour.
- **Health club and sit-down restaurant uses** – These uses were based on trip rates contained in *Trip Generation Manual* (Institute of Transportation Engineers, 2012).

TABLE 3.14-8: PROJECT TRIP GENERATION

LAND USE	QUANTITY	TRIP RATES [1]			VEHICLE TRIPS						
		DAILY	AM PEAK HOUR	PM PEAK HOUR	DAILY	AM PEAK HOUR			PM PEAK HOUR		
						TOTAL	IN	OUT	TOTAL	IN	OUT
Senior, age-restricted, affordable apartments	150 du	3.44	0.20	0.25	516	30	10	20	38	20	18
Age-restricted, attached cottages	32 du	3.44	0.20	0.25	110	6	2	4	8	4	4
Single-family, age-restricted, detached units	129 du	*4.6*	*0.23*	*0.36*	593	30	11	19	46	26	20
Single-family, non-age-restricted, detached units	77 du	*12.82*	*1.01*	*1.04*	987	78	12	66	80	56	24
Assist living, age-restricted detached units	30 du	*4.6*	*0.23*	*0.36*	138	7	3	4	11	6	5
Attached, age-restricted units	142 du	3.44	0.20	0.25	488	28	10	18	36	19	17
Health Club	8 ksf	32.93	1.41	3.77	263	11	6	5	30	17	13
High-Turnover (Sit-Down) Restaurant	5 ksf	127.2	10.81	9.85	636	54	30	24	49	30	19
Life-Long Learning Class [2]	50 attendees	-	-	-	160	33	30	3	33	3	30
Gross Trips					3,891	277	114	163	331	181	150
Internal Trips [3]					200	22	11	11	32	16	16
External Walk/Bike/Transit Trips [4]					105	9	3	6	9	5	4
New Vehicle Trips					3,586	246	100	146	290	160	130

NOTES:

[1] TRIP RATES SHOWN IN ITALICS AND UNDERLINE WERE OBTAINED FROM EMPIRICAL STUDIES OF SIMILAR RESIDENTIAL PROJECTS ELSEWHERE IN DAVIS. TRIP RATES NOT SHOWN IN ITALICS AND UNDERLINE ARE BASED ON DATA FROM THE TRIP GENERATION MANUAL (INSTITUTE OF TRANSPORTATION ENGINEERS, 2012).

[2] *Assumes 10% of attendees reside within proposed project. Of the remaining 90%, 80% arrive during the AM peak hour, and depart during the PM peak hour, with 10% of these trips being drop-offs and pick-ups. Average vehicle occupancy conservatively assumed to be 1.2 persons per vehicle.*

[3] *Internal trips estimated using mixed-use trip generation (MXD) model (see following page for description). Internalization of trips (excluding Life-Long Learning class which is estimated separately) estimated at 5.4% on a daily basis, 9.0% during the AM peak hour, and 10.7% during the PM peak hour.*

[4] *The two sets of trip rates collected at existing Davis residential communities reflect vehicle trips (i.e., trips made by walking, bicycling, and transit are already reflected in the rates). However, trip rates for the attached age-restricted units are based on ITE rates and do not consider the extent of travel by non-auto modes that occurs in Davis. Accordingly, external walk/bike/transit adjustments were made to those uses (based on percentages observed at Rancho Yolo Senior Community).*

du = dwelling unit. ksf = thousand square feet.

Source: Fehr & Peers, 2017.

Due to the complementary nature of the project's land uses, some trips generated by the project would be expected to remain internal (i.e., residential to restaurant, etc.). The internalization of trips within the project site was estimated using a Mixed-Use Trip Generation Model (MXD), which was developed for the US Environmental Protection Agency (EPA) to estimate internal trip-making and external trips by non-auto travel modes. This model was developed by consultants and academic researchers to more accurately estimate the external vehicular trip generation of mixed-use land development projects than prior methods (e.g., ITE internalization spreadsheet). The model was developed based on empirical evidence at 240 mixed-use projects located across the U.S. The model considers various built environment variables such as land use density, regional location, proximity to transit, and various design variables when calculating the project's internal trips, and external trips made by auto, transit, and non-motorized modes. The MXD model has been applied in numerous EIRs throughout California. According to Table 3.14-8, approximately five percent of daily project trips, and nine to ten percent of AM and PM peak hour project trips would remain internal to the project.

The two sets of trip rates collected at existing Davis residential communities and applied in Table 3.14-8 already consider external trips made by walking, bicycling, and transit. Therefore, it was not necessary to make any further adjustments to those rates. However, trip rates for the attached age-restricted units are based on ITE rates and do not consider the degree of travel by non-auto modes that occurs in Davis. Accordingly, external walk/bike/transit adjustments were made to those uses (i.e., age-restricted apartments, attached cottages, and condominiums) based on percentages observed at the Rancho Yolo Senior Community. To be conservative, no adjustments to trip rates for the health club and sit-down restaurant were made to account for bicycle, pedestrian, or transit use, though it is possible that some employees and patrons may use those modes to access those uses. Similarly, no adjustments were made to reflect the potential for 'pass-by' trips to these uses.

Table 3.14-8 indicates that the proposed project would generate 3,586 new daily vehicle trips, with 246 occurring during the AM peak hour and 290 occurring during the PM peak hour. Approximately 59 percent of AM peak hour trips would be outbound and 55 percent of PM peak hour trips would be inbound.

TRIP DISTRIBUTION/ASSIGNMENT

Figure 3.14-6 shows the expected distribution of external residential vehicle trips to and from the project. The residential trip distribution was developed based on the following data sources:

- A 'project-only' traffic assignment for residential-only uses from the City of Davis base year travel demand model.
- Review of existing directional travel patterns to and from nearby housing developments to the south (i.e., trips accessing West Covell Boulevard from Shasta Drive and Denali Drive).

Figure 3.14-6 shows that 82 percent of residential trips would be distributed to/from the east toward the SR 113/West Covell Boulevard interchange.

Figure 3.14-7 shows the expected distribution of external commercial vehicle trips to and from the project. These percentages were developed based on a 'project-only' traffic assignment for commercial-only uses from the City of Davis base year travel demand model. This figure shows a relatively balanced distribution of trips to/from the east, west, and south. These percentages would apply only to external vehicle trips associated with the health club, Life-Long Classes, and sit-down restaurant.

Vehicle Miles of Travel (VMT)

This section describes the methodologies used to estimate the project's Vehicle Miles of Travel (VMT). VMT is presented for informational purposes in this section. However, the values shown here are used in other sections of the EIR as inputs to air quality, noise, and greenhouse gas emissions.

VMT is considered a useful metric in understanding how a project can affect the efficiency of the transportation system. By definition, one VMT occurs when a vehicle is driven one mile. In addition, a given VMT value represents vehicular miles of travel for entire weekday. Lastly, VMT values in this section represent the full length of a given trip, and are not truncated at city, county, or region boundaries.

Table 3.14-9 displays the project's estimated VMT. This table shows that the project is estimated to generate approximately 21,000 VMT on a typical weekday. Refer to the footnotes in the table for data sources and references used in this estimate. This estimate is applicable both to existing and cumulative conditions because there are not tangible changes in background conditions (e.g., introduction of new bus service that doesn't current exist, new streets, etc.) that would cause a meaningful change in VMT.

TABLE 3.14-9: PROPOSED PROJECT VMT ESTIMATION

LAND USE	*EXTERNAL DAILY VEHICLE TRIPS*	*DISTRIBUTION BY TRIP PURPOSE [1] (TRIP LENGTH) [2]*				*VMT*
		HOME-BASED WORK	*HOME-BASED SCHOOL*	*HOME-BASED OTHER*	*HOME-BASED UCD TRIPS*	
Senior / Age-Restricted Residential	1,728	5% (10.9 mi)	0%	90% (5.5 mi)	5% (2.8 mi)	9,737
Non-Age-Restricted Residential	927	20% (10.9 mi)	5% (1.5 mi)	66% (5.5 mi)	9% (2.8 mi)	5,689
Restaurant / Health Club / Entertainment	932	10% (12.4 mi)	0%	85% (5.5 mi)	5% (2.8 mi)	5,643
					Total	*21,069*

NOTES:

[1] THE DISTRIBUTION OF TRIP PURPOSES WAS DERIVED FROM THE CITY OF DAVIS TRAVEL DEMAND MODEL DEVELOPMENT REPORT, FEHR & PEERS, 2003. TO BE CONSERVATIVE (I.E., ENSURE THAT VMT IS NOT UNDERESTIMATED), A MODEST LEVEL OF HOME-BASED WORK TRIP PURPOSE WAS ASSUMED FOR SENIOR / AGE-RESTRICTED UNITS (I.E., HOME-BASED WORK TRIPS ARE LONGER THAN OTHER HOME-BASED TRIPS).

[2] TRIP LENGTHS ARE ESTIMATED FROM TAZ 316 WITHIN THE CALIFORNIA STATEWIDE TRAVEL DEMAND MODEL (CSTDM), (FOUND AT: HTTP://DOT.CA.GOV/HQ/TPP/OFFICES/OMSP/SB743.HTML) AS WELL AS ORIGIN-DESTINATION CALCULATIONS FOR NEARBY SCHOOLS AND UCD. REASONABLENESS OF CSTDM HOME-BASED OTHER TRIP LENGTH CONFIRMED BY REVIEWING CALIFORNIA 2012 HOUSEHOLD TRAVEL SURVEY, WHICH SHOWED AN AVERAGE 5.25 MILE TRIP LENGTH FOR HOME-BASED OTHER TRIPS BY DAVIS RESIDENTS.

SOURCE: FEHR & PEERS, 2017.

3.14.4 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the Proposed Project are summarized below. This information provides a context for the impact discussion related to the project's consistency with applicable regulatory conditions and development of significance criteria for evaluating project impacts.

City of Davis General Plan

The City of Davis General Plan Transportation Element was updated in 2013. The following goals and policies related to transportation and circulation are applicable to the project. Most of the listed goals and policies are relevant at a project-level scale, versus city-wide.

TRANSPORTATION

GOAL #2: The Davis transportation system will evolve to improve air quality, reduce carbon emissions, and improve public health by encouraging usage of clean, energy-efficient, active (i.e. human powered), and economically sustainable means of travel.

Performance Objective #2.1: Reduce carbon emissions from the transportation sector 61 percent by 2035.

- Performance Objective #2.2: Reduce vehicle miles traveled (VMT) 39 percent by 2035.

- Performance Objective #2.3: Annually increase funding for maintenance and operation needs of the transportation system, until fully funded.

Policy TRANS 1.6: Reduce carbon emissions from the transportation system in Davis by encouraging the use of non-motorized and low carbon transportation modes.

Policy TRANS 1.7: Promote the use of electric vehicles and other low-polluting vehicles, including Neighborhood Electric Vehicles (NEV).

Policy TRANS 2.1: Provide Complete Streets to meet the needs of drivers, public transportation vehicles and riders, bicyclists, and pedestrians of all ages and abilities in all transportation planning, programming, design, construction, reconstruction, retrofit, operations, and maintenance activities and products. The City shall view all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in Davis, and recognizes bicycle, pedestrian, fixed-route transit, and demand-response para-transit modes as integral elements of the transportation system along with motor vehicles. This policy also includes the following language pertaining to automobile level of service:

- LOS D or better is acceptable during non-peak traffic hours.
- LOS E or better is acceptable during peak traffic hours.
- LOS F is acceptable during peak traffic hours in the Core Area and Richards Boulevard/Olive Drive area.
- LOS F is acceptable during peak traffic hours in other areas if approved by City Council.

Action TRANS 2.1(i): Establish a multi-modal Level of Service (LOS) standard to address the needs of all users of the street, including bicyclists and pedestrians, at intersections.

Action TRANS 2.1(k): Work with citizens and technical experts to review the street width and "Greenstreet" standards to reflect pedestrian and bicycle friendly policies in this chapter, including but not limited to the following:

- Design/redesign residential and collector streets to slow vehicular traffic to 25 mph or less.
- Design travel lanes to prioritize pedestrians and bicycles, including provisions for a marked "buffer space" to further separate bicycles from both moving and parked motor vehicles, where right-of-way allows.
- Eliminate intersection standards that allow high speed right turns for motor vehicles.

- Adjust intersection signal operations to smooth traffic flow, reduce automobile idle time, and to adequately service bicycles and pedestrians by giving priority and to maintain momentum.

Action TRANS 2.1(l): Preserve rights-of-way for future transportation use.

Action TRANS 2.1(m): Ensure transit stops have adequate curb space for loading and unloading passengers.

Policy TRANS 2.2: Implement state-of-the-art street design solutions to improve bicycle/pedestrian access, comfort, and safety that may include:

- Bicycle boxes at intersections
- Cycletracks
- Shared lane markings (sharrows)
- Contraflow bicycle lanes
- Improved bicycle detection at intersections
- Two-stage turn queue boxes
- Colored bicycle lanes
- Bicycle route wayfinding

Policy TRANS 2.3: Apply best practices in sustainability to new streets and redesigns of existing streets/corridors.

Policy TRANS 2.4: As part of the initial project review for any new project, a project-specific traffic study may be required. Studies shall identify impacted transportation modes and recommend mitigation measures designed to reduce these impacts to acceptable levels.

Policy TRANS 2.5: Create a network of street and bicycle facilities that provides for multiple routes between various origins and destinations.

Policy TRANS 2.7: Minimize impacts of vehicle traffic on local streets to maintain or enhance livability of the neighborhoods. Consider traffic calming measures along collector and minor arterial streets, where appropriate and feasible, to slow speeds.

Policy TRANS 2.8: Improve the function, safety, and appearance of selected corridors as illustrated.

- **Action:**
  a. Develop "corridor plans" for selected streets which warrant special treatment because of existing impact problems or operational issues. Corridor plans should take into consideration adjacent land uses and result in streets that are both functional and aesthetic. The plans should utilize innovative means of slowing traffic, where appropriate, and provide safe access for pedestrians and

bicyclists. Mitigation shall be incorporated to protect residences and sensitive receptors from noise, air pollution and other traffic related impacts. The corridor plans may deviate from the standards established in the General Plan, if deviates improve the livability of the area. Covell Boulevard from SR 113 to the west City limit is included in this program.

Policy TRANS 2.10: Prohibit through truck traffic on streets other than identified truck routes shown in [the Transportation Element].

Policy TRANS 3.1: Facilitate the provision of convenient, reliable, safe, and attractive fixed route, commuter, and demand responsive public transportation that meets the needs of the Davis community, including exploring innovative methods to meet specialized transportation needs.

Policy TRANS 3.3: Require new development to be designed to maximize transit potential.

Policy TRANS 4.2: Develop a continuous trails and bikeway network for both recreation and transportation that serves the Core, neighborhoods, neighborhood shopping centers, employment centers, schools and other institutions; minimize conflicts between pedestrians, bicyclists, equestrians, and automobiles; and minimize impacts on wildlife. Greenbelts and separated bike paths on arterials should serve as the backbone of much of this network.

Policy TRANS 4.3: Continue to build transportation improvements specifically targeted at bicycles. Refer to Bicycle Plan and Transportation Implementation Plan for list of bicycle-related projects.

Policy TRANS 4.5: Establish and implement bicycle parking standards for new developments and significant redevelopment.

Policy TRANS 4.7: Develop a system of trails around the edge of the city and within the city for recreational use and to allow pedestrians and bicyclists to reach open space and natural areas.

Policy TRANS 5.1: Use parking management techniques to efficiently manage motor vehicle parking supply and promote sustainability.

Policy TRANS 5.2: Existing and future off-street parking lots in development should contribute to the quality of the urban environment and support the goals of this chapter to the greatest extent possible.

City of Davis Comprehensive Bicycle Plan

This document included discussions regarding goals and objectives, bicycle facility guidelines, engineering standards, and implementation and funding. The Plan was heard before and adopted by the City Council in February 2014. This document includes numerous goals and policies regarding enforcement, education, and engineering design. The following policies are particularly relevant to this study:

Goal: Provide bike lanes along arterial and collector streets. Provide separated bike paths adjacent to arterial and collector streets only where justified, with full consideration of the potential safety problems this type of facility can create.

Goal: Consider bicycle-operating characteristics in the design of bikeways, intersections, and traffic control systems.

In addition, this document shows a variety of existing and proposed bicycle facilities. No new proposed facilities were shown within the immediate project vicinity. However, Appendix K, the Davis Greenway Concept Plan, shows missing links and grade-separated crossings of SR-113 and Covell Boulevard as part of a loop around the City, as an illustration of the completed and missing links of the entire planned shared use path network.

SACOG MTP/SCS

SACOG is responsible for the preparation of, and updates to, the 2016 MTP/SCS and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in 2016.

Senate Bill 743

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." OPR is currently updating its CEQA Guidelines to implement SB 743 and is proposing that VMT be the primary metric used to identify transportation impacts.

Certification of these revisions to the Guidelines by the Secretary of the California Natural Resources Agency will trigger requirements for their use by lead agencies.[1] As this is a substantive change to

[1] Public Resources Code section 21099(b)(2).

CEQA practice, there has been considerable statewide interest and comment on OPR's latest (January 2016) on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA[2] (Revised Proposal). As of the date of this writing, the date for formal adoption of these Guidelines is uncertain. Accordingly, this EIR discloses the project's effects on VMT but does not apply a VMT significance threshold due to the lack of available guidance for how such a threshold should be developed.

3.14.5 THRESHOLDS OF SIGNIFICANCE

This section describes the thresholds or criteria that determine whether the project causes a significant impact on the roadway, bicycle, pedestrian, or transit systems. These thresholds are based on policies from the City of Davis General Plan and recommended/example thresholds from the CEQA Guidelines.

Intersection Impacts

According to the City of Davis General Plan, intersection operations at LOS E or better are acceptable at intersections within the City's right-of-way. The *State Route 113 Transportation Concept Report* identifies a concept LOS E for SR 113 between I-80 and I-5. For the purposes of this EIR analysis, significant traffic impacts at intersections are defined when the addition of project traffic causes any of the following:

- For signalized intersections, cause overall intersection operations to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- For signalized intersections, exacerbate unacceptable (LOS F) operations by increasing an intersection's average delay by five seconds or more;
- For unsignalized intersections, cause the worst-case movement (or average of all movements for all-way stop-controlled intersections) to worsen from an acceptable level (LOS E or better) to an unacceptable level (LOS F) and meet the peak hour signal warrant;
- For unsignalized intersections that operate unacceptably (LOS F) and meet the peak hour signal warrant without the project, worsen operations by increasing the overall intersection's volume by more than one percent; or
- For unsignalized intersections that operate unacceptably but do not meet the peak hour signal warrant without the project, add sufficient volume to meet the warrant.

[2] Governor's Office of Planning and Research, 2016. Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013), January 20, 2016.

Freeway Impacts

For the purposes of this EIR analysis, significant traffic impacts at a freeway facility on SR 113 are defined when the addition of project traffic causes any of the following:

- Cause a facility to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- Cause a facility operating unacceptably (LOS F) to experience more than a one percent increase in volume; or
- Cause the off-ramp maximum queue length to spill back onto the freeway mainline (or exacerbate this condition if already occurring or is projected to occur).

Transit, Bicycle, and Pedestrian Impacts

The proposed project is considered to result in a significant transit, bicycle, and/or pedestrian impact if:

- The project conflicts with existing or planned transit, bicycle, and/or pedestrian facilities and services;
- The project conflicts or creates demand for public transit services above that which is provided or planned; or
- The project does not provide connections to bicycle and pedestrian circulation systems of the surrounding area.

Additional Impacts

The proposed project is considered to result in a significant impact if any of the following conditions occur:

- The project does not provide for adequate emergency vehicle access or project access; or
- Construction-related traffic causes significant intersection impacts as defined by the traffic system criteria described above.

3.14.6 IMPACTS AND MITIGATION MEASURES

Project Access

This section describes project access and proposed improvements along the project frontage. The proposed project would extend Risling Court northerly from its existing terminus to the north project limits. Vehicular access to the project would be provided as follows:

- Construction of a westerly leg at the existing Risling Court/Sutter Hospital driveway.
- Multiple accesses along the extended portion of Risling Court.
- A new right-turn only driveway located on West Covell Boulevard about 460 feet west of the West Covell Boulevard/Risling Court/Shasta Drive intersection.

The project would construct the following improvements along its frontage:

- **West Covell Boulevard** – Would be widened (to the north) to extend its five-lane cross-section (i.e., two lanes in each direction separated by a median lane) to just west of the proposed driveway. The roadway would then transition back to match its existing three-lane cross-section. This improvement would result in better lane utilization in the eastbound and westbound through lanes on West Covell Boulevard at Risling Court/Shasta Drive.
- **Risling Court** – Would be widened (to the west) to consist of two 12-foot travel lanes, two 8-foot Class II bike lanes, and two 8-foot parking lanes between West Covell Boulevard and the Sutter Hospital Main Driveway. The northerly extension of this street would consist of two 12-foot travel lanes, two 7-foot Class II bike lanes, and two 7-foot parking lanes. Sidewalks would be provided on both sides of the street.

The project would construct the following additional improvements within the project vicinity:

- **Bus Stop/Shelter on West Covell Boulevard west of Risling Court** – Would be reconstructed/upgraded in a new location nearly equidistant between Risling Court and the proposed driveway. The bus stop would include a bus turnout that would become a deceleration lane into the new driveway.
- **Bicycle Facilities** – The south side of West Covell Boulevard along the project frontage would include a buffered (i.e., separation between the bike lane and adjacent travel lane) Class II bike lane. The north side of West Covell Boulevard along the project frontage would include a Class I shared-use path that would connect to the existing path located east of Risling Court. To avoid conflicts with buses, the path would be routed behind the reconstructed bus stop.
- **West Covell Boulevard/Risling Court/Shasta Drive intersection** – Would be reconstructed as follows:
    - The existing 200-foot westbound right-turn taper would be replaced by a full-width turn lane of the same length.
    - The existing channelized eastbound right-turn movement would be removed, and this turn movement would instead be made from a shared through/right lane.
    - Southbound Risling Court would be designed to consist of a left-turn lane and a shared through/right lane (with 85 feet of storage) approaching West Covell Boulevard. The southbound through lane on this street would transition into the left-turn lane.
    - Upgraded bicycle facilities would be provided including bicycle crosswalks (parallel and adjacent to pedestrian crosswalks) on all four legs, green skip-striping of Class II bike lanes in areas of potential conflict, and pavement markings within the intersection to guide bicyclists on southbound Risling Court to the Class I shared-use trail located in the southeast quadrant of the intersection.

The new right-turn only driveway onto West Covell Boulevard would include a triangular raised median within its throat to physically restrict movements to right-turns only. Additionally, a raised, landscaped median would be constructed to prevent left-turn movements at this driveway. The eastbound left-turn movement at the West Covell Boulevard/Risling Court/Shasta Drive intersection would permit u-turn movements to enable motorists traveling from the west to access this driveway.

EXISTING PLUS PROJECT TRAFFIC IMPACTS

Traffic Forecasts

Project trips were assigned to the study intersections in accordance with the trip generation estimates and distribution percentages described previously. Those trips were then added to the existing volumes to yield "existing plus project" conditions. Refer to Figure 3.14-8 for the existing plus project volumes.

The project would add the following trips to West Covell Boulevard approaching SR 113:

- Eastbound West Covell Boulevard: 108 AM peak hour trips and 87 PM peak hour trips; and
- Westbound West Covell Boulevard: 61 AM peak hour trips and 116 PM peak hour trips.

When compared to the existing volumes, these volumes would represent an 11 percent increase in traffic in the eastbound direction. In the westbound direction, a 9 percent increase would occur during the AM peak hour and a 14 percent increase would occur during the PM peak hour.

Intersection Operations

The study intersections were re-analyzed under existing plus project conditions. The results are shown in Table 3.14-10. This table indicates that the proposed project would cause the West Covell Boulevard/Risling Court/Shasta Drive intersection to worsen from LOS B to C during the AM peak hour. The project would not cause any other intersection LOS degradations.

The West Covell Boulevard/Lake Boulevard intersection would continue to meet the peak hour volume warrant for consideration of a traffic signal. The Risling Court/Sutter Hospital Driveway would continue to not meet the peak hour volume warrant for consideration of a traffic signal.

TABLE 3.14-10: PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

LOCATION	CONTROL	EXISTING CONDITIONS				EXISTING PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C	16	C	18	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	8	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (2)	A (A)	4 (7)	A (A)	3 (5)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	17	B	16	B	24	C	19	B
5. West Covell Blvd./John Jones Rd.	Signal	21	C	13	B	22	C	14	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B	35	C	19	B
7. West Covell Blvd./SR 113 NB Ramps	Signal	24	C	21	C	24	C	21	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	25	C	30	C	26	C
9. West Covell Blvd./Anderson Rd.	Signal	22	C	29	C	23	C	29	C
10. West Covell Blvd./Oak Ave.	Signal	9	A	7	A	9	A	7	A
11. West Covell Blvd./F St.	Signal	24	C	23	C	24	C	23	C
12. East Covell Blvd./J St.	Signal	15	B	15	B	15	B	15	B
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				2 (4)	A (A)	2 (4)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

Table 3.14-11 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. This table indicates the following:

- The project would cause the maximum queue in the eastbound left-turn lane to increase from 50 to 125 feet during the AM peak hour. A 170-foot turn pocket is identified in the corridor improvement drawing. This pocket lane is adequate to provide storage for these movements as well as provide deceleration opportunities.
- The project would cause the maximum queue in the southbound left-turn lane to increase from 75 to 300 feet during the AM peak hour. Although traffic would not spill back to the Sutter Hospital Driveway, a lengthy queue would occur. The 85-foot shared through/right-turn lane results in vehicles desiring to enter this turn lane being blocked by left-turning traffic, which contributes to lengthened queues.

- The project would cause somewhat lengthier (i.e., up to 75 feet additional) maximum vehicle queues on West Covell Boulevard west of SR 113.

TABLE 3.14-11: MAXIMUM QUEUE LENGTH ESTIMATES – EXISTING PLUS PROJECT CONDITIONS

INTERSECTION	*MOVEMENT*	*AVAILABLE STORAGE*	*EXISTING MAXIMUM VEHICLE QUEUE*		*EXISTING PLUS PROJECT MAXIMUM VEHICLE QUEUE*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	50 feet	50 feet	125 feet	75 feet
	Southbound LT	150 feet (600 feet)	75 feet	75 feet	300 feet	225 feet
	Southbound TH/RT	150 feet (85 feet)	75 feet	75 feet	150 feet	125 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	425 feet	275 feet	500 feet	275 feet
	Westbound TH	325 feet	250 feet	275 feet	275 feet	325 feet
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		75 feet	75 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH. AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE).
SOURCE: FEHR & PEERS, 2017.

Corridor Travel Time Evaluation

The SimTraffic model can be used to calculate average travel times along the West Covell Boulevard corridor. The following routes are of particular interest given that the majority of project trips would be distributed to/from the east toward SR 113:

- Route 1 (Westbound Travel on West Covell Boulevard): This route begins at the SR 113 NB off-ramp and terminates on West Covell Boulevard beyond the signalized Risling Court/Shasta Drive intersection.
- Route 2 (Eastbound Travel on West Covell Boulevard): This route begins on West Covell Boulevard prior to the signalized Risling Court/Shasta Drive intersection and terminates at the SR 113 SB on-ramp.

Although neither route is particularly lengthy (i.e., less than one-half mile), they nonetheless require travel through three or four signalized intersections, which currently feature moderate levels of queuing.

Table 3.14-12 compares the average AM and PM peak hour travel time for Routes 1 and 2 under existing and existing plus project conditions. As shown, the addition of project trips would cause average travel times on each route to increase by three to seven seconds depending on the peak hour and direction of travel. This increase in delay would not be perceptible to most motorists.

TABLE 3.14-12: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – EXISTING PLUS PROJECT CONDITIONS

ROUTE	START LOCATION	END LOCATION	AVERAGE TRAVEL TIME (MIN : SEC)			
			EXISTING CONDITIONS		EXISTING PLUS PROJECT CONDITIONS	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:26	2:16	2:33	2:19
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:35	1:09	1:40	1:13

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-13 displays existing plus project operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS C or better.

TABLE 3.14-13: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

RAMP	MOVE-MENT	EXISTING CONDITIONS				EXISTING PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DENSITY	LOS	DENSITY	LOS	DENSITY	LOS	DENSITY	LOS
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B	22	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B	26	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	22	C	15	B	23	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B	10	A	15	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-14 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under existing plus project conditions. As shown, the project would not cause queued vehicles to spill back onto the SR 113 mainline.

TABLE 3.14-14: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – EXISTING PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)			
		EXISTING CONDITIONS		EXISTING PLUS PROJECT CONDITIONS	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	225 ft.	200 ft.	225 ft.	200 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	375 ft.	425 ft.	425 ft.	475 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-1: Under existing plus project conditions, project implementation would not cause any significant impacts at study intersections (Less than Significant)

Table 3.14-10 indicates that all study intersections would continue to operate at an acceptable LOS C or better under existing plus project conditions. Therefore, project impacts at study intersections are considered ***less than significant***.

Impact 3.14-2: Under existing plus project conditions, project implementation would not cause any significant impacts at study freeway facilities (Less than Significant)

Table 3.14-13 indicates that all study freeway facilities would continue to operate at an acceptable LOS C or better under existing plus project conditions. Additionally, as shown in Table 3.14-14, the project would not cause traffic to queue back from the SR 113/West Covell Boulevard off-ramps into the SR 113 freeway mainline. Therefore, project impacts at study freeway facilities are considered ***less than significant***.

EXISTING PLUS APPROVED PROJECTS PLUS PROJECT TRAFFIC IMPACTS

Traffic Forecasts

An analysis was conducted to examine project impacts in consideration of traffic associated with various approved, but not yet constructed land developments within the study area. Based on discussions with City staff, the "approved projects" list consisted of the following projects:

- **Paso Fino**: 6 single-family units
- **2860 West Covell Boulevard Building**: 8,657 square feet of retail
- **Grande Subdivision**: 41 single-family units
- **Chiles Ranch**: 96 single-family units
- **University Retirement Community (URC) expansion**: 17 beds of continuing care
- **Sterling Apartments**: 198 multi-family units
- **Cannery Park (Remainder of Buildout)**: 86,250 square feet of retail, 49,800 square feet of office, 22,000 square feet of medical-office, 311 single-family dwelling units, and 264 multi-family units.

Although the above is not a comprehensive list of all approved/pending land developments in the City. it does represent those projects that would have the potential to add traffic to the study intersections.

These land uses were entered into the appropriate traffic analysis zone (TAZs) of the base year City of Davis travel demand model. The model was then run, and the change in traffic volumes predicted by the model was recorded at all study intersections. These trips were then added to the existing

volumes to yield "existing plus approved projects" conditions shown on Figure 3.14-9.

The addition of the approved projects causes most turning movement volumes to remain relatively unchanged or increase slightly. However, in some instances, the volume actually decreases. This occurs as a result of the introduction of new retail or employment opportunities, to which the traffic model reassigns trips (i.e., a home-based shopping trip now stops at Cannery Park versus another destination).

Project trips were added to this scenario in accordance with the aforementioned project trip generation/distribution assumptions. The resulting "existing plus approved projects plus project" forecasts are shown on Figure 3.14-10.

Intersection Operations

The study intersections were re-analyzed under existing plus approved projects conditions, without and with the proposed project. The results are shown in Table 3.14-15.

TABLE 3.14-15 PEAK HOUR INTERSECTION LEVEL OF SERVICE – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

LOCATION	CONTROL	EXISTING PLUS APPROVED PROJECTS CONDITIONS				EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	AWSC	15	C	17	C	16	C	18	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	8	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (4)	A (A)	2 (3)	A (A)	5 (9)	A (A)	3 (5)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	18	B	15	B	25	C	19	B
5. West Covell Blvd./John Jones Rd.	Signal	19	B	14	B	23	C	14	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	33	C	18	B	36	D	20	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	22	C	21	C	27	C	24	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	26	C	31	C	26	C
9. West Covell Blvd./Anderson Rd.	Signal	24	C	31	C	25	C	32	C
10. West Covell Blvd./Oak Ave.	Signal	8	A	8	A	8	A	8	A
11. West Covell Blvd./F St.	Signal	25	C	23	C	26	C	23	C
12. East Covell Blvd./J St.	Signal	37	D	37	D	37	D	38	D
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				2 (4)	A (A)	2 (4)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.

AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

During the AM peak hour, the project would cause the following drops in intersection LOS:

- West Covell Boulevard/Risling Court/Shasta Drive: LOS B to LOS C;
- West Covell Boulevard/John Jones Road: LOS B to LOS C; and
- West Covell Boulevard/SR 113 SB Ramps: LOS C to LOS D.

The project would cause the West Covell Boulevard/SR 113 SB Ramps intersection to worsen from LOS C to LOS D during the PM peak hour.

Among the 10 signalized study intersections, the project would cause an average delay increase of two seconds during the AM peak hour and one second during the PM peak hour.

Table 3.14-16 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. These results show similar conclusions as under existing plus project conditions, though slightly longer queues on West Covell Boulevard would occur during the PM peak hour.

TABLE 3.14-16: MAXIMUM QUEUE LENGTH ESTIMATES – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

INTERSECTION	*MOVEMENT*	*AVAILABLE STORAGE*	*EXISTING PLUS APPROVED PROJECTS CONDITIONS MAXIMUM VEHICLE QUEUE*		*EXISTING PLUS APPROVED PROJECTS PLUS PROJECT MAXIMUM VEHICLE QUEUE*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	75 feet	50 feet	125 feet	125 feet
	Southbound LT	150 feet (600 feet)	75 feet	100 feet	300 feet	225 feet
	Southbound TH/RT	150 feet (85 feet)	75 feet	100 feet	125 feet	125 feet
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	375 feet	275 feet	500 feet	300 feet
	Westbound TH	325 feet	250 feet	300 feet	275 feet	350 feet
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		75 feet	75 feet

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE).
SOURCE: FEHR & PEERS, 2017.

Corridor Travel Time Evaluation

The SimTraffic model was used to calculate average travel times along the West Covell Boulevard corridor under existing plus approved projects conditions, both without and with the project. Table 3.14-17 compares the average AM and PM peak hour travel time for Routes 1 and 2. As shown, the addition of project trips would cause average travel times on each route to increase by six to 14 seconds depending on the peak hour and direction of travel.

TABLE 3.14-17: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

ROUTE	START LOCATION	END LOCATION	AVERAGE TRAVEL TIME (MIN : SEC)			
			EXISTING PLUS APPROVED PROJECTS CONDITIONS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:24	2:12	2:30	2:25
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:33	1:07	1:47	1:15

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-18 displays existing plus approved projects plus project operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS C or better.

TABLE 3.14-18: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

RAMP	MOVE-MENT	EXISTING PLUS APPROVED PROJECTS CONDITIONS				EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DENSITY	LOS	DENSITY	LOS	DENSITY	LOS	DENSITY	LOS
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	22	C	13	B	23	C	13	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	26	C	15	B	27	C	15	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	15	B	23	C	16	B	23	C
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	A	14	B	10	A	15	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-19 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under existing plus approved projects plus project conditions. As shown, the project would not cause queued vehicles to spill back onto the SR 113 mainline.

TABLE 3.14-19: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)			
		EXISTING PLUS APPROVED PROJECTS CONDITIONS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	225 ft.	200 ft.	250 ft.	200 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	400 ft.	475 ft.	400 ft.	550 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-3: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study intersections (Less than Significant)

Table 3.14-15 indicates that all study intersections would continue to operate at an acceptable LOS D or better under existing plus approved projects plus project conditions. Therefore, project impacts at study intersections are considered ***less than significant***.

Impact 3.14-4: Under existing plus approved projects plus project conditions, project implementation would not cause any significant impacts at study freeway facilities (Less than Significant)

Table 3.14-18 indicates that all study freeway facilities would continue to operate at an acceptable LOS C or better under existing plus approved projects plus project conditions. Additionally, as shown in Table 3.14-19, the project would not cause traffic to queue back from the SR 113/West Covell Boulevard off-ramps into the SR 113 freeway mainline. Therefore, project impacts at study freeway facilities are considered ***less than significant***.

CUMULATIVE CONDITIONS TRAFFIC IMPACTS

The cumulative analysis considers planned land use growth and roadway improvements within the City of Davis and unincorporated Yolo County using the City of Davis travel demand model. The future year model is based on land use growth projected by SACOG in the MTP/SCS, but with several adjustments as described below.

The cumulative impact analysis first determines if the cumulative impact is significant, inclusive of the proposed project. For those cumulative impacts deemed to be significant, a subsequent evaluation is conducted to determine whether the project's contribution to that impact is considerable (using the significance criteria as the basis for this determination). If the proposed project's contribution is less than considerable, then the cumulative impact is less than significant. If the proposed project's contribution is considerable, then the cumulative impact is significant, and mitigation is required.

Land Use and Roadway System Assumptions

The following specific land developments are considered reasonably foreseeable under cumulative conditions:

- **Sutter Hospital Expansion** – Based on discussions with Sutter Davis Hospital representatives, a net increase of 100,000 square feet of medical-office space was assumed on the hospital property, which is located directly east of the project site.
- **UC Davis Long Range Development Plan (LRDP)** – According to the 2017 Notice of Preparation for the update to the LRDP (dated January 4, 2017), the UC Davis campus is assumed to have a net increase of 6,229 students and 2,000 employees between existing conditions and the 2027-2028 academic year. The LRDP NOP makes no mention of further growth beyond the 2027-2028 year.

The cumulative model assumes buildout of the Cannery Park project located on East Covell Boulevard at J Street. The model excludes the Nishi Gateway property because it was defeated in a public vote in 2016. The cumulative model also excludes the Davis Innovation Center because although the City Council certified its EIR in fall 2017, the project was not approved. Accordingly, neither of these projects are currently considered reasonably foreseeable. A revised version of the Nishi project, which would consist entirely of student housing, has begun to undergone initial planning and environmental review. A detailed analysis found that the Nishi project would not contribute any additional traffic at the study intersections analyzed in this chapter. This is to be expected given the Nishi project's size, use type, and location.

The cumulative model includes several planned roadway network improvements within the study area (as well as other improvements elsewhere in the City). Within the study area, the following improvements were assumed:

- **SR 113/Covell Boulevard Interchange Improvements** – The 2036 MTP/SCS identifies the widening of the overcrossing to add turn lanes as a planned improvement to be constructed in the 2021-2036 horizon. The specified improvements describe the need for additional turn lanes onto each on-ramp to SR 113 as well as on-ramp widening. Accordingly, the cumulative lane configurations assume second left-turns are added on westbound Covell Boulevard onto the SB on-ramp and on eastbound Covell Boulevard onto the NB on-ramp.
- **West Covell Boulevard Widening** – The 2036 MTP/SCS identifies the widening of the segment from west of Risling Court to Denali Drive from two to four lanes as a planned improvement to be constructed in the 2021-2036 horizon.
- **Covell Boulevard/Lake Boulevard** – The 2036 MTP/SCS identifies a future traffic signal at this intersection as a planned improvement to be constructed in the 2021-2036 horizon.

Traffic Forecasting

Traffic forecasts were developed for the cumulative no project scenario (i.e., no development on the project site) using the City of Davis travel demand model. Peak hour intersection turning

movement forecasts were developed using the difference method procedure, which adds the growth in traffic between the base year and future year models to existing volumes. This method is commonly used in forecasting because it accounts for errors in the base year model, which could also translate to the cumulative forecasts if not accounted for by this method. The cumulative no project forecasts are shown on Figure 3.14-11.

A comparison of the existing volumes and cumulative no project traffic forecasts reveals the following traffic growth trends in the study area:

- Traffic growth is anticipated to be modest (i.e., between 18 and 38 percent depending on peak hour and direction) on West Covell Boulevard west of SR 113. This is to be expected given the mostly built out nature of the area. However, as noted previously, several new land developments (e.g., Sutter Hospital expansion) are anticipated under cumulative conditions. Lastly, it is possible that the widening of West Covell Boulevard to four lanes westerly to Denali Drive may cause traffic volumes to shift.
- During the PM peak hour, the following critical movements at the SR 113/West Covell Boulevard interchange are projected to experience significant traffic growth:

    - SR 113 SB on-ramp: 71 percent increase (341 vehicles) over existing conditions.
    - SR 113 NB off-ramp: 41 percent increase (360 vehicles) over existing conditions.
    - Westbound West Covell Boulevard through movement approaching the SR 113 NB Ramps: 71 percent increase (529 vehicles) over existing conditions.

    This growth is due to additional development anticipated east of SR 113 that would use West Covell Boulevard. It is also likely caused by the redistribution of trips away from the Russell Boulevard corridor, which becomes more congested under cumulative conditions.

The net effect of this traffic growth is the potential for additional congestion and queuing at the SR 113/West Covell Boulevard interchange as well as intersections to the east. Given the lesser amount of traffic growth projected west of the interchange, intersections along that corridor are likely to experience lower levels of delay increase.

Traffic forecasts were developed for cumulative plus project conditions based on the project's expected trip generation, mode split, and distribution characteristics. Project trips were added to the cumulative no project volumes to yield "cumulative plus project" conditions. These forecasts are shown on Figure 3.14-12.

Intersection Operations

The study intersections were analyzed under cumulative conditions, without and with the project. The results are shown in Table 3.14-20. Given changes in cumulative travel demands, it was reasonable to assume signal timings at the West Covell Boulevard corridor would be re-optimized.

TABLE 3.14-20: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

LOCATION	CONTROL	CUMULATIVE NO PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
1. West Covell Blvd./Lake Blvd.	Signal	20	C	25	C	20	C	25	C
2. West Covell Blvd./Denali Dr.	Signal	7	A	8	A	7	A	8	A
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (5)	A (A)	3 (5)	A (A)	3 (6)	A (A)	6 (11)	A (B)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	23	C	20	C	26	C	30	C
5. West Covell Blvd./John Jones Rd.	Signal	16	B	14	B	19	B	17	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	24	C	24	C	24	C	25	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	28	C	93	F	33	C	104	F
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	153	F	34	C	173	F
9. West Covell Blvd./Anderson Rd.	Signal	27	C	42	D	27	C	43	D
10. West Covell Blvd./Oak Ave.	Signal	9	A	9	A	9	A	9	A
11. West Covell Blvd./F St.	Signal	26	C	29	C	26	C	30	C
12. East Covell Blvd./J St.	Signal	33	C	50	D	33	C	51	D
13. West Covell Blvd./ Project Dwy.	SSSC	Does Not Exist				4 (7)	A (A)	3 (6)	A (A)

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.
SOURCE: FEHR & PEERS, 2017.

The West Covell Boulevard/SR 113 NB Ramps intersection would operate at LOS F during the PM peak hour under cumulative no project conditions. This condition is primarily caused by the heavy volume of northbound off-ramp traffic, which is served by single left- and right-turn lanes. Queue spillback on the westbound approach extends back to the West Covell Boulevard/Sycamore Lane intersection, thereby contributing to its LOS F operations. Below is a screenshot from the SimTraffic model illustrating this queuing effect. All other study intersections would operate at LOS D or better under cumulative no project conditions.

The addition of project trips to cumulative no project conditions would worsen LOS F conditions during the PM peak hour at the West Covell Boulevard/SR 113 NB Ramps and West Covell Boulevard/Sycamore Lane intersections. Average delay at these intersections would increase by 11 and 20 seconds, respectively.

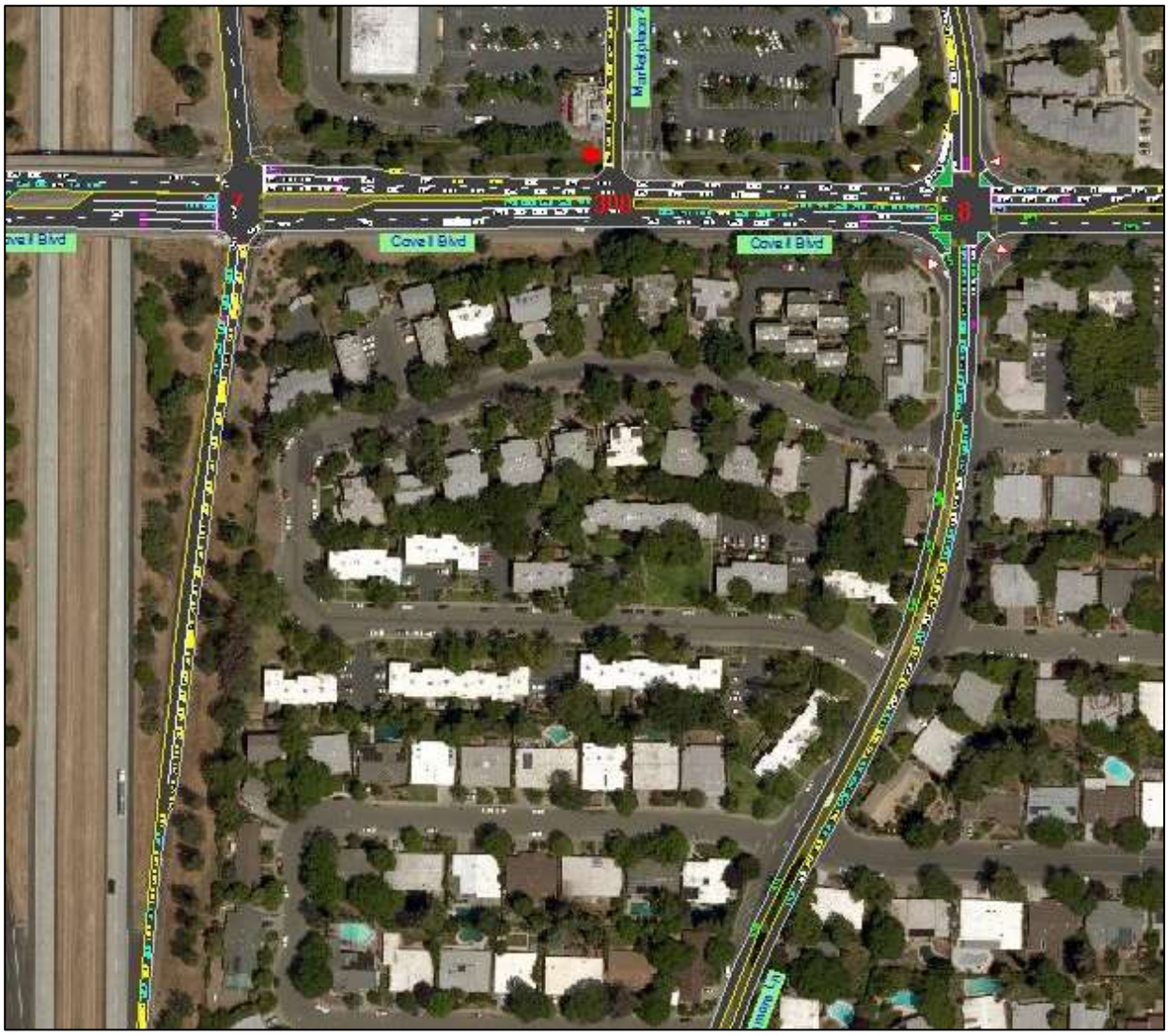


IMAGE OF SIMTRAFFIC MODEL SHOWING CONGESTION ON WEST COVELL BOULEVARD, SR 113 NB OFF-RAMP, AND SYCAMORE LANE UNDER CUMULATIVE NO PROJECT PM PEAK HOUR CONDITIONS.

Table 3.14-21 shows how the project would change maximum queue lengths for critical movements along the West Covell Boulevard corridor. This table indicates the following:

- The project would cause the southbound left-turn movement at the West Covell Boulevard/Risling Court/Shasta Drive intersection to experience substantially greater queues. During the PM peak hour, the vehicle queue would extend back to Sutter Hospital/Project Driveway intersection.
- The project would cause the eastbound left-turn lane at the West Covell Boulevard/Risling Court/Shasta Drive intersection to have a maximum queue of 200 feet during the PM peak hour, which exceeds the available storage of 175 feet, thereby causing vehicles to spill into the adjacent through lane.

TABLE 3.14-21: MAXIMUM QUEUE LENGTH ESTIMATES – CUMULATIVE PLUS PROJECT CONDITIONS

INTERSECTION	*MOVEMENT*	*AVAILABLE STORAGE*	*CUMULATIVE NO PROJECT MAXIMUM VEHICLE QUEUE*		*CUMULATIVE PLUS PROJECT MAXIMUM VEHICLE QUEUE*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet	225 ft.	150 ft.	225 ft.	200 ft.
	Southbound LT	150 feet (600 feet)	125 ft.	175 ft.	325 ft.	600 ft.
	Southbound TH/RT	150 feet (85 feet)	125 ft.	275 ft.	125 ft.	150 ft.
West Covell Blvd./ John Jones Road	Eastbound TH	525 feet	300 ft.	225 ft.	375 ft.	275 ft.
	Westbound TH	325 feet	325 ft.	300 ft.	350 ft.	350 ft.
West Covell Blvd./ Project Dwy.	Southbound RT	150 feet	Does Not Exist		50 ft.	50 ft.

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT STORAGE). LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

Measures for addressing these queuing issues are discussed later in this section.

The Risling Court/Sutter Hospital Driveway intersection would continue to not meet the peak hour volume warrant for consideration of a traffic signal.

EFFECTS OF POTENTIAL LANE CONFIGURATION MODIFICATION AT WEST COVELL BOULEVARD/RISLING COURT/SHASTA DRIVE INTERSECTION

A supplemental analysis was performed to determine how cumulative traffic conditions would be affected by the following potential lane modifications at the West Covell Boulevard/Risling Court/Shasta Drive intersection:

- Replace channelized northbound right-turn lane with a shared through/right lane.
- Replace channelized westbound right-turn lane with a dedicated right-turn lane controlled by the traffic signal.

The analysis was performed for the cumulative plus project (with mitigation) scenario. The above modifications resulted in an increase in the average delay of four seconds during the AM peak hour and two seconds during the PM peak hour, with operations remaining at LOS C. The northbound through/right lane would have a maximum vehicle queue of 325 feet, which would cause blockage of the University Retirement Community / Adobe Residential driveways once or twice during the PM peak hour. The westbound right-turn lane would have a maximum queue of 200 feet.

Corridor Travel Time Evaluation

The SimTraffic model was used to calculate average travel times along the West Covell Boulevard corridor. Table 3.14-22 compares the average AM and PM peak hour travel time for Routes 1 and 2

under cumulative conditions, without and with the project. As shown, the addition of project trips would cause the average travel time on Route 1 to increase by 45 seconds during the PM peak hour. This occurs due to project-added traffic added to the northbound off-ramp, which already queues back onto the freeway mainline. Project-related delay increases on Route 2 would be less than 10 seconds during the AM and PM peak hours.

TABLE 3.14-22: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – CUMULATIVE PLUS PROJECT CONDITIONS

ROUTE	START LOCATION	END LOCATION	AVERAGE TRAVEL TIME (MIN : SEC)			
			CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:40	4:11	2:46	4:55
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:19	1:12	1:27	1:13

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

Freeway Operations

Table 3.14-23 displays cumulative operations at the SR 113/West Covell Boulevard freeway ramp merge/diverge areas. As shown, all ramp junctions would continue to operate at LOS D or better.

TABLE 3.14-23: SR 113/WEST COVELL BOULEVARD FREEWAY RAMP OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

RAMP	MOVE-MENT	CUMULATIVE NO PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DENSITY	LOS	DENSITY	LOS	DENSITY	LOS	DENSITY	LOS
SR 113 SB Off-Ramp at West Covell Blvd.	Diverge	28	C	14	B	28	C	14	B
SR 113 SB On-Ramp at West Covell Blvd.	Merge	30	D	18	B	31	D	18	B
SR 113 NB Off-Ramp at West Covell Blvd.	Diverge	19	B	29	D	19	B	29	D
SR 113 NB On-Ramp at West Covell Blvd.	Merge	10	B	18	B	10	B	18	B

SOURCE: FEHR & PEERS, 2017.

Table 3.14-24 displays the maximum queue length at each off-ramp at the SR 113/West Covell Boulevard interchange under cumulative conditions, without and with the project.

The West Covell Boulevard/SR 113 NB Ramps intersection would operate at LOS F during the PM peak hour under cumulative no project conditions. As shown in Table 3.14-24, this operating condition would cause the northbound off-ramp to have a maximum queue of 2,225 feet, which would extend beyond the gore point back onto the SR 113 freeway mainline section. The addition of project trips would cause the maximum off-ramp queue to increase by 200 feet.

TABLE 3.14-24: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – CUMULATIVE PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)			
		CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 SB Off-Ramp at West Covell Blvd.	1,330 feet	275 ft.	300 ft.	275 ft.	300 ft.
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	450 ft.	2,225 ft.	450 ft.	2,425 ft.

SOURCE: FEHR & PEERS, 2017.

Impact 3.14-5: Under cumulative plus project conditions, project implementation would cause significant impacts at study intersections (Cumulatively Considerable and Significant and Unavoidable)

Table 3.14-20 indicates that the project would cause greater than a five-second increase in PM peak hour delay to the following study intersections, which are projected to operate at LOS F under cumulative conditions without the project:

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

Although the project would add traffic to other study intersections, the resulting LOS and delay values would not exceed the applicable significance criteria. Project impacts at study intersections are considered ***potentially significant***.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-1*: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:*

a) West Covell Boulevard/SR 113 NB Ramps – widen northbound off-ramp to consist of three lanes (i.e., one left, one shared left/through/right, and one right-turn lane) approaching West Covell Boulevard. The fair share funding shall be submitted to Caltrans.

b) West Covell Boulevard/Sycamore Lane – lengthen eastbound left-turn lane from 150 to 275 feet. The fair share funding shall be submitted to the City of Davis.

Table 3.14-25 displays the effectiveness of these mitigation measures at study intersections. As shown, operations would be improved to LOS C conditions at each intersection during the PM peak hour.

TABLE 3.14-25: PEAK HOUR INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

LOCATION	CONTROL	CUMULATIVE NO PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS				CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS	AVERAGE DELAY (SECS)	LOS
3. Risling Ct./Sutter Hospital Dwy.	SSSC	3 (5)	A (A)	3 (5)	A (A)	3 (6)	A (A)	6 (11)	A (B)	3 (5)	A (A)	4 (6)	A (A)
4. West Covell Blvd./ Risling Ct./Shasta Dr.	Signal	23	C	20	C	26	C	30	C	26	C	26	C
5. West Covell Blvd./John Jones Rd.	Signal	16	B	14	B	19	B	17	B	20	B	18	B
6. West Covell Blvd./SR 113 SB Ramps	Signal	24	C	24	C	24	C	25	C	26	C	28	C
7. West Covell Blvd./SR 113 NB Ramps	Signal	28	C	93	F	33	C	104	F	28	C	29	C
8. West Covell Blvd./Sycamore Ln.	Signal	31	C	153	F	34	C	173	F	30	C	67	E

NOTES: FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.

AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.

SOURCE: FEHR & PEERS, 2017.

Table 3.14-26 illustrates how these mitigations would change average corridor travel time. As shown, these improvements would achieve over a one-minute travel time savings for Route 1 (northbound off-ramp to westbound West Covell Boulevard) during the PM peak hour.

TABLE 3.14-26: WEST COVELL BOULEVARD TRAVEL TIME COMPARISON – CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION

ROUTE	START LOCATION	END LOCATION	AVERAGE TRAVEL TIME (MIN : SEC)					
			CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION	
			AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
Route 1 (Westbound Travel on West Covell Boulevard)	SR 113 NB off-ramp	West of Risling Court intersection	2:40	4:11	2:46	4:55	2:47	3:41
Route 2 (Eastbound Travel on West Covell Boulevard)	West of Risling Court intersection	SR 113 SB on-ramp	1:19	1:12	1:27	1:13	1:32	1:12

NOTE: RESULTS BASED ON OUTCOME FROM SIMTRAFFIC MICRO-SIMULATION MODEL.
SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

The widening of the SR 113 northbound off-ramp would likely occur within Caltrans right-of-way, and would therefore require Caltrans approvals. It is unknown whether additional right-of-way would be needed for this improvement, or if a design exception would be required. There are no assurances that Caltrans would approve and/or fund such a widening. Since the remaining fair share funding sources needed for construction have not been identified, fair share payment would not ensure construction.

The lengthening of the eastbound left-turn lane at the West Covell Boulevard/Sycamore Lane intersection is considered feasible because the roadway is maintained by the City of Davis, right-of-way is available, and no adjacent intersections, driveway, or turn lanes would be adversely affected. However, this turn lane lengthening is not sufficient, on its own, to restore operations to LOS E (i.e., northbound off-ramp widening is also required). Therefore, project impacts at these two study intersections are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of mitigation measures, which if implemented, would improve intersection operations to acceptable levels.

Impact 3.14-6: Under cumulative plus project conditions, project implementation would cause significant impacts at study freeway facilities (Cumulatively Considerable and Significant and Unavoidable)

Table 3.14-23 indicates that all study freeway facilities would continue to operate at an acceptable LOS D or better under cumulative plus project conditions. However, the project would contribute to vehicular queuing that extends from the SR 113 northbound off-ramp at West Covell Boulevard onto the SR 113 freeway mainline. Project impacts at study freeway facilities are considered ***potentially significant***.

MITIGATION MEASURE(S)

Implement Mitigation Measure 3.14-1(a): Pay fair share to widen northbound SR 113 off-ramp at West Covell Boulevard to consist of three lanes approaching West Covell Boulevard.

Table 3.14-27 shows how this mitigation measure would change the maximum queue in the northbound SR 113 off-ramp at West Covell Boulevard. As shown, the off-ramp widening would reduce the maximum queue during the PM peak hour from 2,425 feet to 750 feet under cumulative plus project conditions. Because 1,180 feet of storage is provided, this mitigation measure, if implemented, would result in traffic no longer spilling onto the SR 113 mainline under cumulative plus project conditions.

TABLE 3.14-27: SR 113/WEST COVELL BOULEVARD OFF-RAMP QUEUES – CUMULATIVE PLUS PROJECT CONDITIONS

OFF-RAMP	AVAILABLE STORAGE	MAXIMUM QUEUE (FEET)					
		CUMULATIVE NO PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS		CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION	
		AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR
SR 113 NB Off-Ramp at West Covell Blvd.	1,180 feet	450 ft.	2,225 ft.	450 ft.	2,425 ft.	325 ft.	750 ft.

SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

As noted previously, the widening of the SR 113 northbound off-ramp would occur within Caltrans right-of-way, and would therefore require Caltrans approvals. Because there are no assurances that Caltrans would approve and/or fund such a widening, impacts to freeway facilities are considered ***cumulatively considerable*** and ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate the queuing issue.

TRANSIT, BICYCLE, PEDESTRIAN, AND ADDITIONAL IMPACTS

Impact 3.14-7: The project would not conflict with existing / planned transit services, or create a demand for transit above that which is provided or planned (Less than Significant)

The proposed project would reconstruct the existing bus stop located in the northwest quadrant of the West Covell Boulevard/Risling Court/Shasta Drive intersection. The project would introduce new residential land uses that are situated within walking distance of this new stop as well as the existing stop on the south side of West Covell Boulevard. These stops are served by the Unitrans Route P and Q lines, as well as Yolobus Routes 220 and 230. Because the majority of project residents are expected to be retired, long distance travel via bus Routes 220 and 230 (to/from downtown Sacramento) is anticipated to be less common that use of Unitrans Routes P and Q, which can be used to access the UC Davis campus, downtown Davis, and other destinations.

According to the *Unitrans General Manager's Report Fiscal Year 2015-2016* (September 2016), certain bus lines can experience overcrowding, particularly during inclement weather conditions. The report does not specify exactly which routes experience recurring crush loading. However, it is apparent from other statistics, such as the farebox recovery ratio and passenger trips per vehicle revenue hour, that the P and Q routes are not as busy as other routes. Based on this data and the fact that 86 percent of the units would be age-restricted meaning a greater likelihood of making off-peak trips, these routes have available capacity to accommodate the project's expected transit riders. Therefore, this is considered a ***less than significant*** impact.

Impact 3.14-8: The project would not conflict with existing / planned bicycle and pedestrian facilities, and would provide connections to existing bicycle and pedestrian facilities (Less than Significant)

The proposed project would not interfere with any existing pedestrian/bicycle facilities, and would not preclude construction of any future facilities. The project would construct a Class I bike trail along the north side of West Covell Boulevard along the project frontage. This trail would be aligned behind (i.e., to the north of) the reconfigured bus stop to eliminate potential conflicts between buses and bicycles. The project would construct Class II bike lanes on both sides of the entirety of Risling Court. The project would also construct a Class I bike trail that extends easterly from Risling Court to connect with facilities along John Jones Road. The project would also include a multi-use trail on its north and west edges. Class I trails and Class II bike lanes would be provided within the project site. This, in turn, allows bicyclists to use the bike signal at the West Covell Boulevard/John Jones Road intersection to access bike facilities located south of West Covell Boulevard. In total, the project would provide 4.5 miles of walking and bicycling facilities. The project would also improve the condition of the West Covell Boulevard/Risling Court/Shasta Drive intersection by adding green bike lanes, upgraded sidewalks, and other features. This is considered a ***less than significant*** impact.

Impact 3.14-9: The proposed site plan would not provide adequate emergency vehicle access (Significant and Unavoidable)

The project consists of two vehicular accesses along West Covell Boulevard as well as several access points along Risling Court. These connections provide multiple access opportunities for emergency vehicles to access the site. Sutter Davis Hospital, which is located directly east of the project site, includes an Emergency Department. Signage is present at the Sutter Davis Hospital monument sign on West Covell Boulevard directing westbound motorists (including ambulances) to use John Jones Road to access the Emergency Department. Similarly, corridor travel time evaluations under near-term conditions revealed minimal (i.e., less than ten seconds) travel time increases along West Covell Boulevard.

If Covell Boulevard is not available during an emergency (i.e., the roadway becomes blocked or otherwise inoperable), potential emergency vehicle access issues may arise. The nearest fire station to the project site is located at Lake Boulevard / Arlington Boulevard intersection. Should the fire department need to access the project site, the fire department could use Shasta Drive / Risling Court to access the site if Covell Boulevard is not available.

Therefore, without mitigation to ensure that the site could be accessed if Covell Boulevard is unavailable, this is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-2*: By the time the final map is submitted, the final map shall indicate that the project shall dedicate an emergency vehicle access easement from the project site to John Jones Road. Best efforts shall be made by the project applicant to work with Sutter Davis Hospital to obtain the easement.*

SIGNIFICANCE AFTER MITIGATION

Because there are no assurances that this easement would be provided, impacts related to adequate emergency vehicle access are considered ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate this impact.

Impact 3.14-10: The proposed site plan would not provide adequate project access (Significant and Unavoidable)

Under cumulative conditions, the addition of project trips would cause the southbound Risling Court approach to West Covell Boulevard to have a maximum queue that extends back to the Sutter Hospital/Project Driveway intersection. This would inhibit egress from the project site (as well as from Sutter Davis Hospital). This is considered a ***potentially significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-3*: No later than recordation of the final map creating the 200th market-priced lot, the project applicant(s) shall contribute fair share funding to cover their proportionate cost of the following intersection improvements:*

a) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the southbound right-turn lane from 85 to 200 feet. The fair share funding shall be submitted to the City of Davis.

b) West Covell Boulevard/Risling Court/Shasta Drive – lengthen the eastbound left-turn lane from 175 to 250 feet. The fair share funding shall be submitted to the City of Davis.

Table 3.14-28 displays the effectiveness of these mitigation measures at this intersection. As shown, improvement "a)" would result in maximum queues in the left and shared through/right lanes of 425 feet and 250 feet, respectively, during the more critical PM peak hour. Thus, traffic would no longer queue back to the upstream intersection. This improvement would require minor widening along the project's frontage, which is considered feasible. Similarly, lengthening of the eastbound left-turn lane is considered feasible and would provide adequate storage to accommodate the maximum vehicle queue expected under cumulative plus project conditions. Improvement a) described above would not adversely affect bicycle travel on southbound Risling Court. The conceptual intersection geometrics show a Class II on-street bike lane along the shoulder as well as another Class II lane situated between the left-turn and shared through/right lanes. These conditions represent a substantial improvement over the current condition.

TABLE 3.14-28: MAXIMUM QUEUE LENGTH ESTIMATES – CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION

INTERSECTION	*MOVEMENT*	*AVAILABLE STORAGE*	*MAXIMUM VEHICLE QUEUE (FEET)*					
			CUMULATIVE NO PROJECT		*CUMULATIVE PLUS PROJECT*		*CUMULATIVE PLUS PROJECT WITH MITIGATION*	
			AM PEAK HOUR	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*	*AM PEAK HOUR*	*PM PEAK HOUR*
West Covell Blvd./ Risling Court/ Shasta Drive	Eastbound LT	175 feet (250 feet)	225 ft.	150 ft.	225 ft.	200 ft.	225 ft.	200 ft.
	Southbound LT	150 feet (600 feet)	125 ft.	175 ft.	325 ft.	600 ft.	275 ft.	425 ft.
	Southbound TH/RT	150 feet (250 feet)	125 ft.	275 ft.	125 ft.	150 ft.	175 ft.	250 ft.

NOTES: ALL VALUES ROUNDED TO THE NEAREST 25 FEET. AVAILABLE STORAGE REPRESENTED BY X (Y) = EXISTING STORAGE (PROPOSED PROJECT OR WITH MITIGATION STORAGE). LT = LEFT TURN, RT = RIGHT TURN, AND TH = THROUGH.
SOURCE: FEHR & PEERS, 2017.

SIGNIFICANCE AFTER MITIGATION

Because there are no assurances that this improvement would be funded and constructed, impacts related to adequate project access are considered ***significant and unavoidable*** despite the presence of a mitigation measure, which if implemented, would alleviate this impact.

Impact 3.14-11: Construction traffic would not cause any significant intersection impacts (Less than Significant)

This section demonstrates that project buildout under existing conditions would not cause any significant intersection impacts. Construction of the project, including site preparation, construction, and delivery activities, would generate employee trips and a variety of construction-related vehicles. However, the volume of construction-related traffic would be substantially less during peak hours when compared to the project's AM and PM peak hour trip generation. Therefore, construction traffic/activities would not cause any intersection impacts. This is considered a ***less than significant*** impact.

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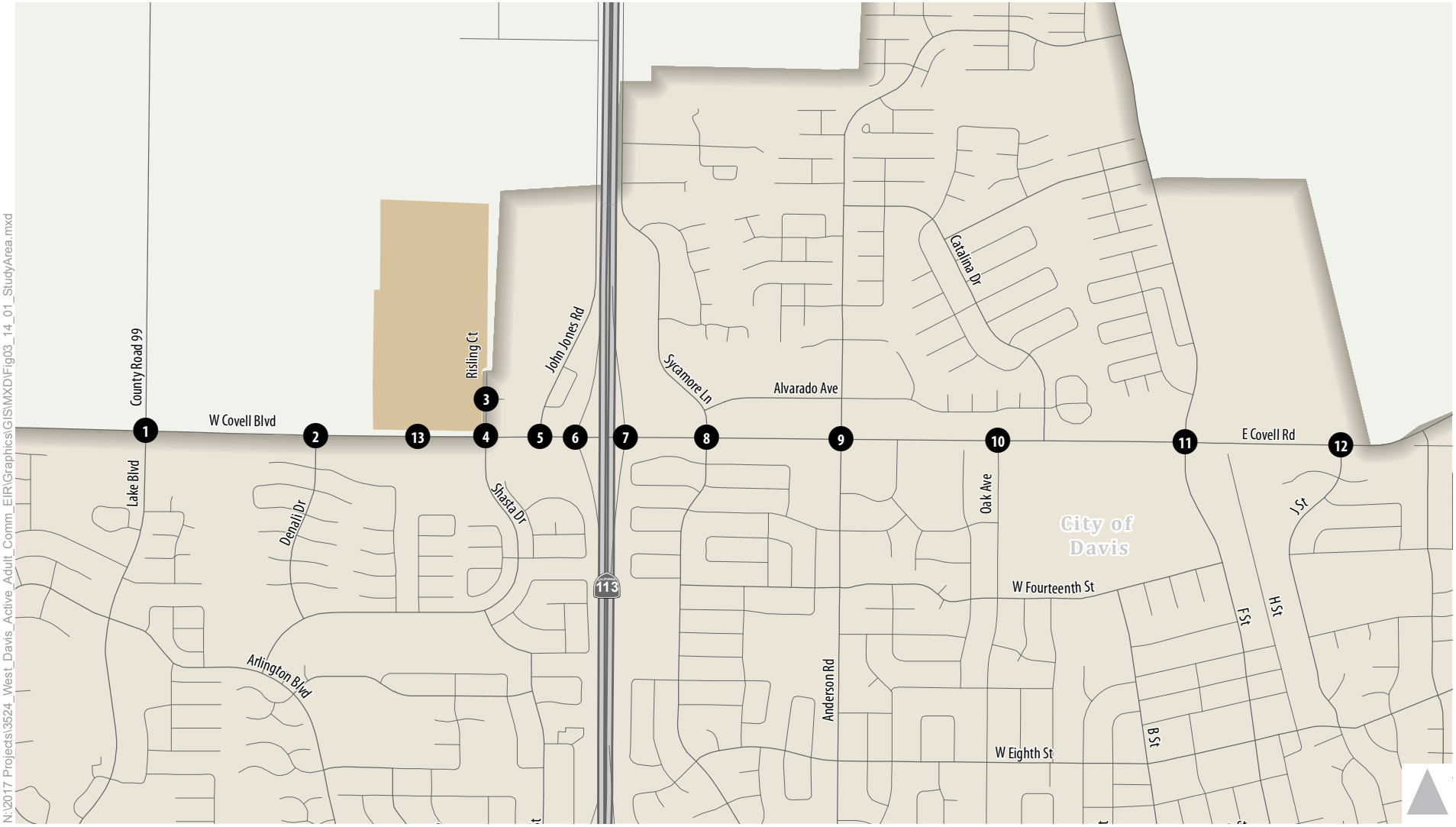

Figure 3.14-1

Study Area

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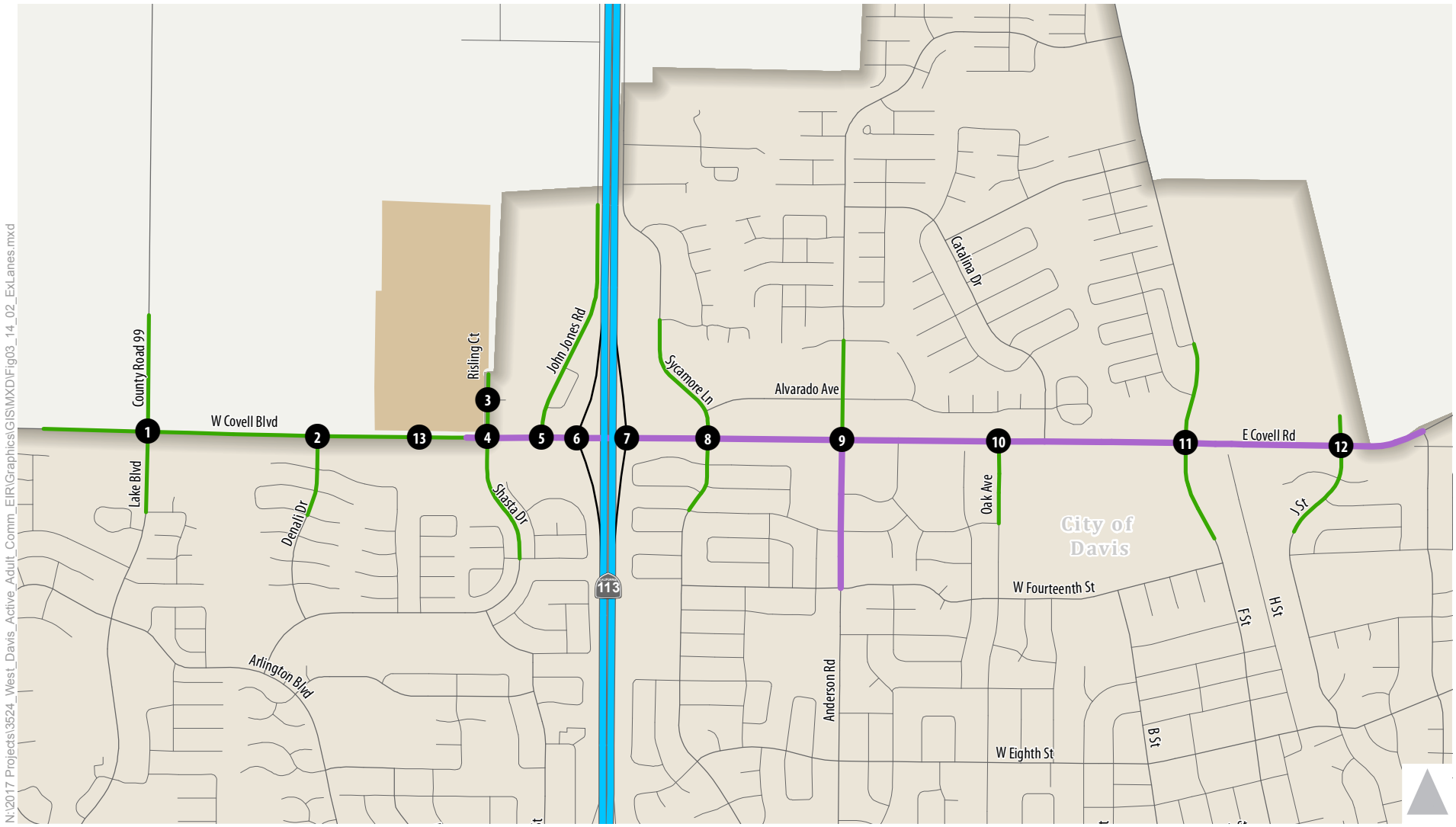

Figure 3.14-2

Existing Number of Lanes

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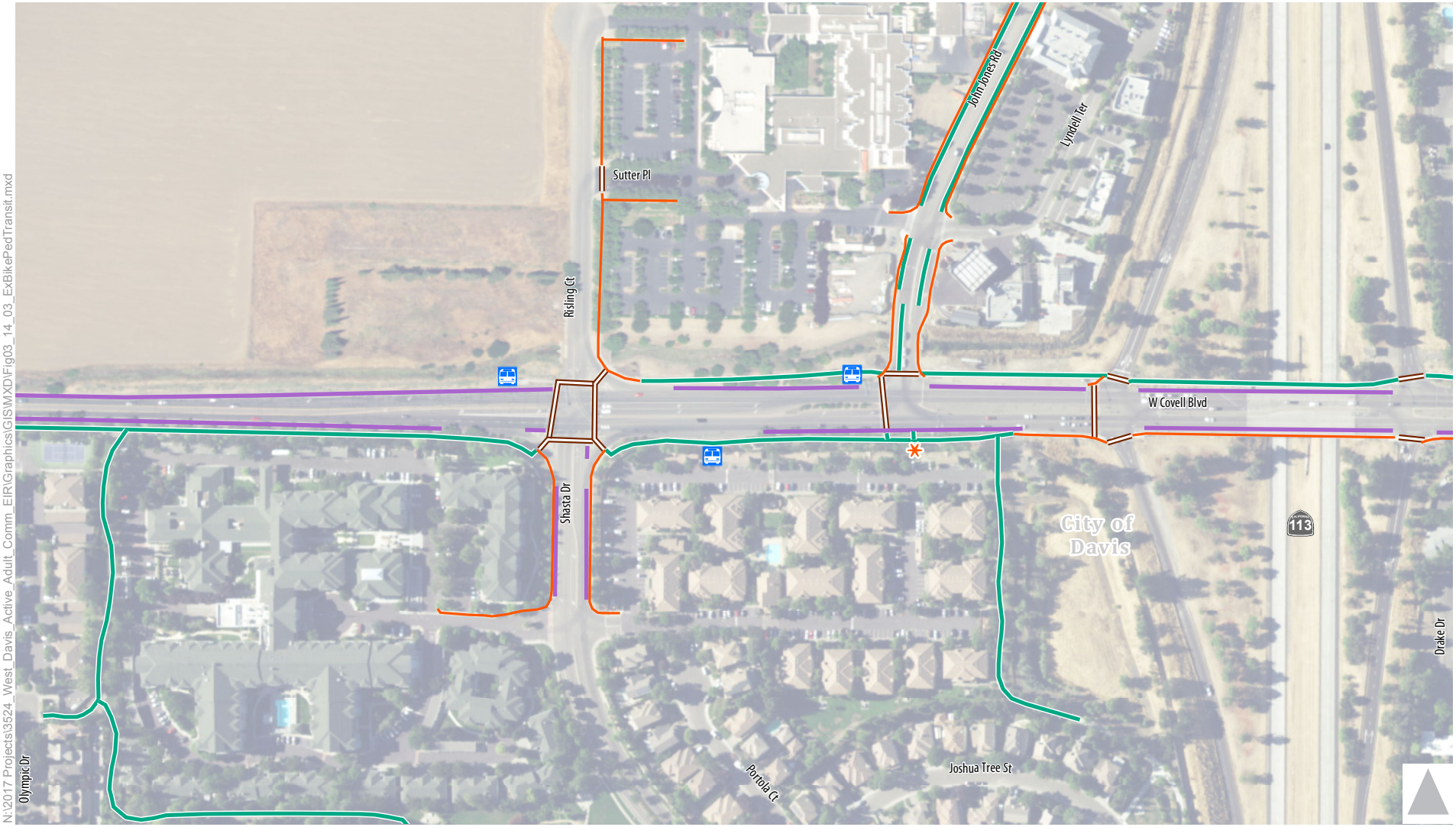

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Class I (Off-Street) Shared-Use Path

Class II (On-Street) Bike Lane

Sidewalk

Crosswalk

Bus Stop

Bicycle Signal Present for Northbound Bicyclists

Figure 3.14-3

Existing Bicycle, Pedestrian, and Transit Facilities

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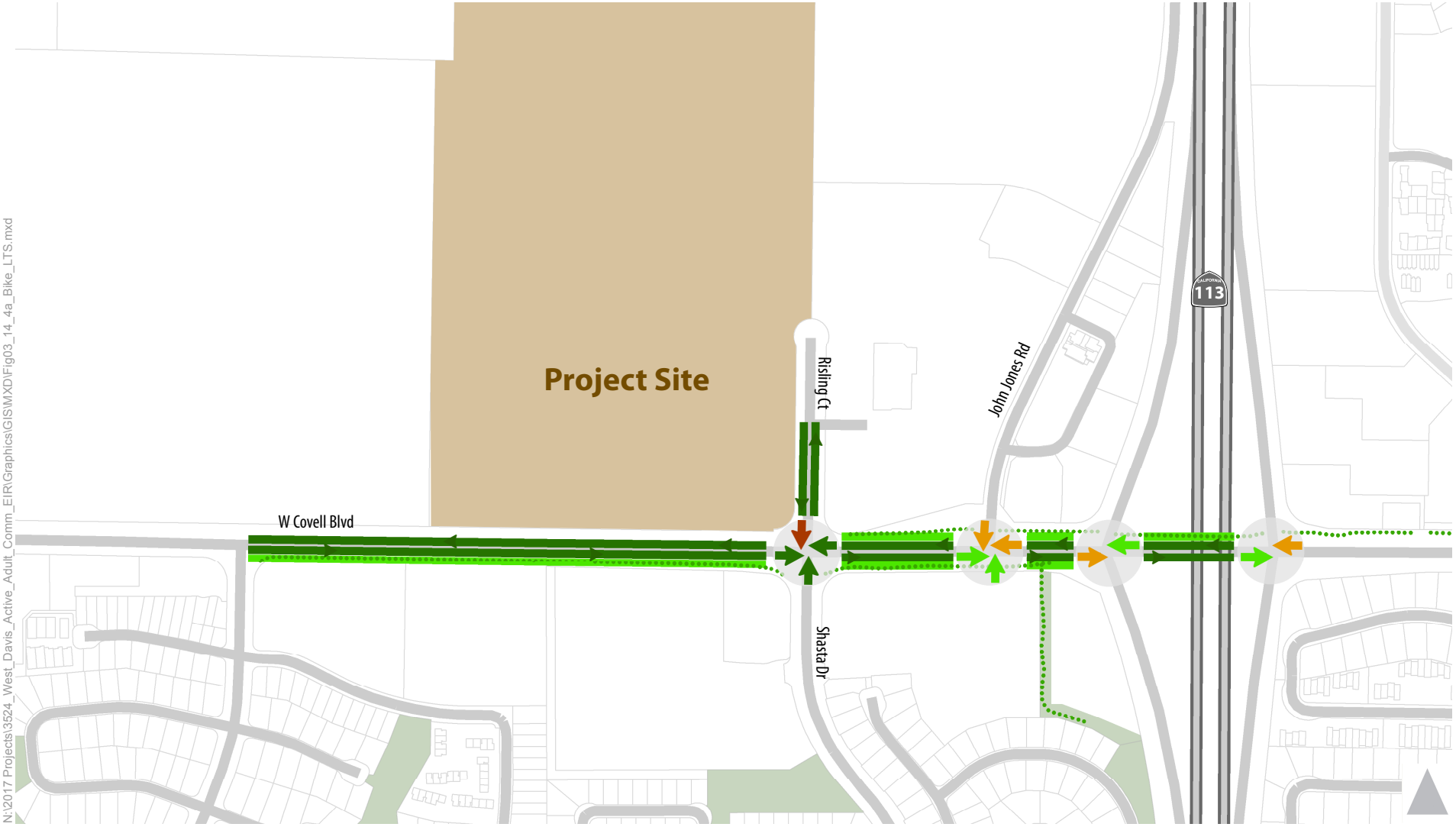

Project Site

Class I (Off-Street) Shared-Use Path

Roadway Level of Traffic Stress (LTS)

- Highly Comfortable
- Generally Comfortable
- Uncomfortable But Possible
- Very Uncomfortable or Impossible

Intersection Level of Traffic Stress (LTS)

- Highly Comfortable
- Generally Comfortable
- Uncomfortable But Possible
- Very Uncomfortable or Impossible

Notes:
Level of Traffic Stress rating based on the average score of the following criteria:
•Corridors - bicycle separation from vehicle traffic, presence of parking, street width, bike lane width, vehicle speeds, and bike lane blockage.
•Intersections – bicycle separation from vehicle traffic, bike lane separation from vehicle right turn lane, bike lane straight or shifted approach to the intersection, right turn lane length, and right turn vehicle speeds.

Figure 3.14-4a

Bicycle Level of Traffic Stess (LTS)

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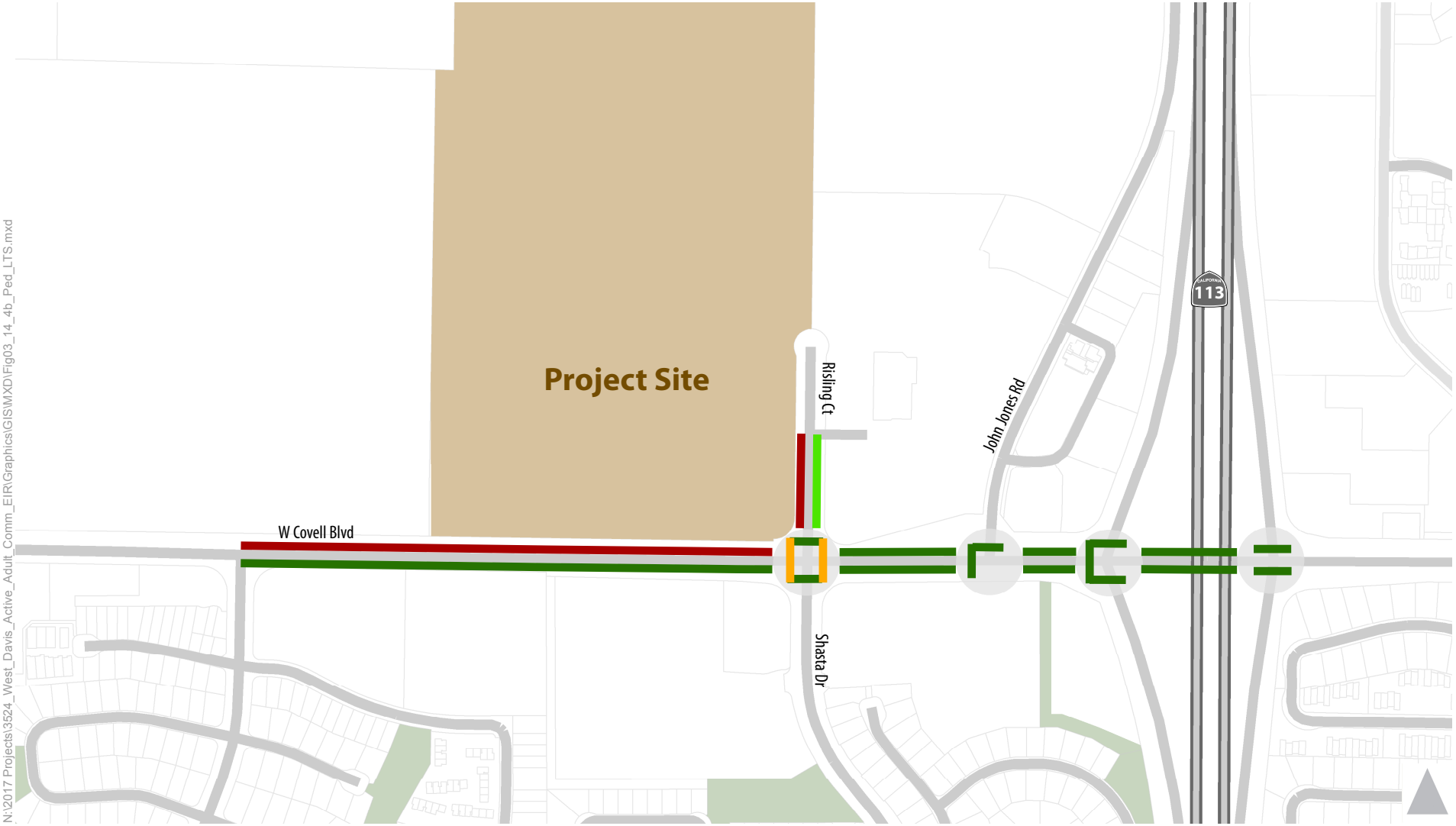

Project Site

Pedestrian StreetScore+

- Highly Comfortable
- Generally Comfortable
- Uncomfortable But Possible
- Very Uncomfortable or Impossible

Notes:
Streetscore+ rating based on the average score of the following criteria:
• Corridors – sidewalk width, sidewalk pavement quality, driveways within sidewalk zone, landscape buffer/street trees, number of roadway lanes, vehicle speeds, lighting, percentage of heavy vehicles on roadway, and crosswalk frequency.
• Intersections – crossing distance, pedestrian signal accessibility, curb ramp accessibility, and presence of channelized right turns.

Figure 3.14-4b

Pedestrian StreetScore+

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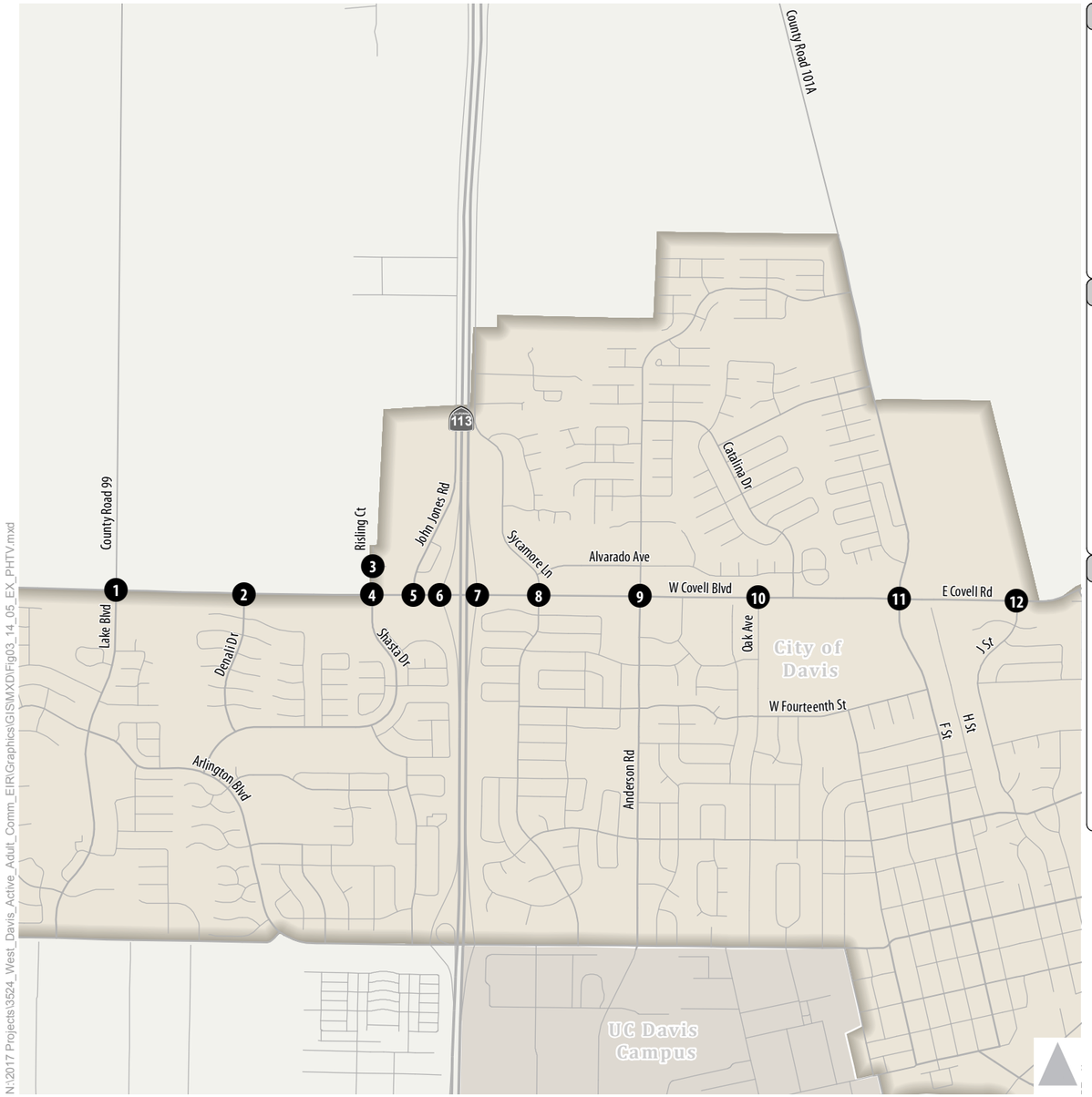

Figure 3.14-5

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

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Figure 3.14-6

Trip Distribution for Residential Uses

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Figure 3.14-7

Trip Distribution for Non-Residential Uses

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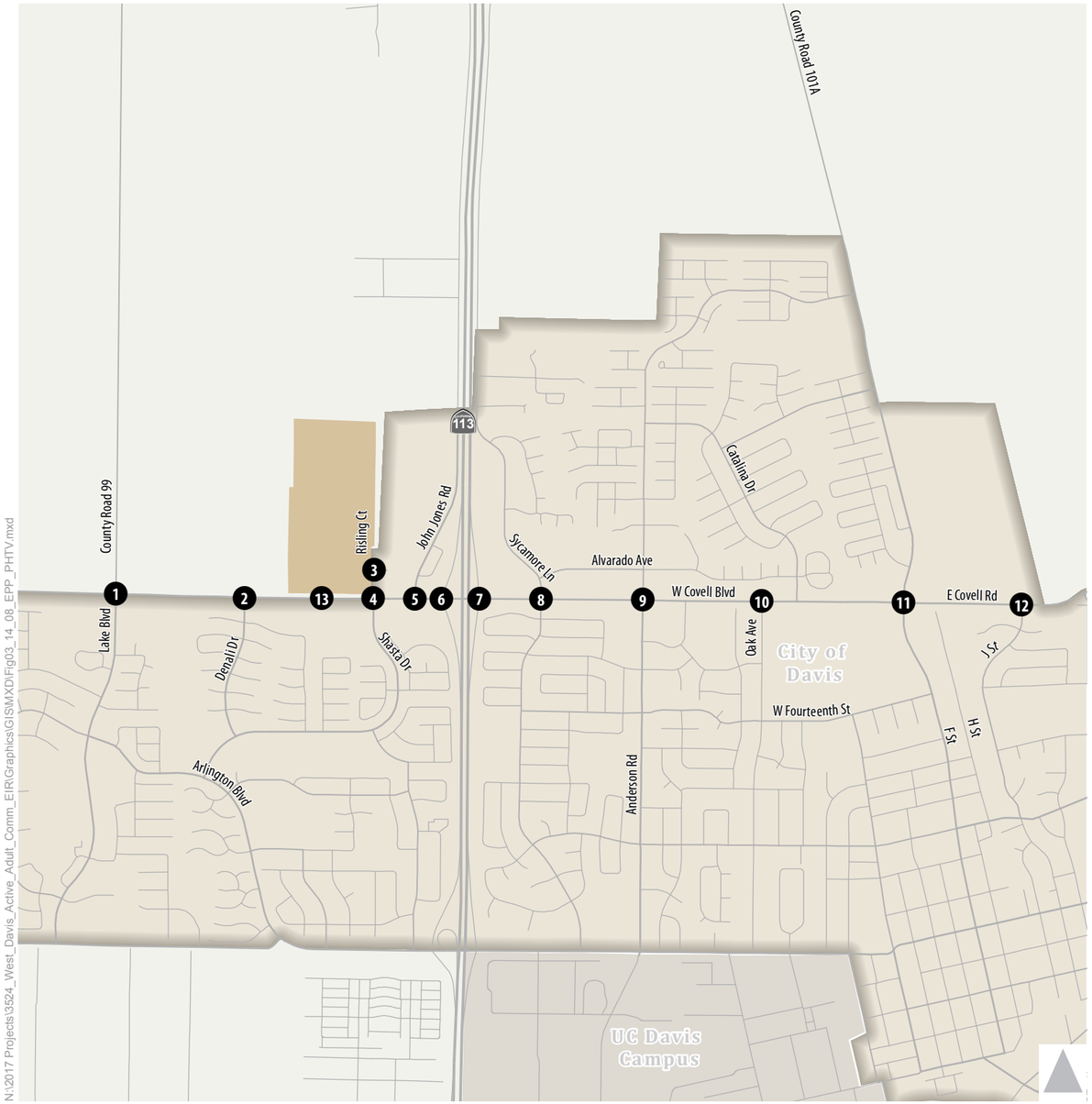

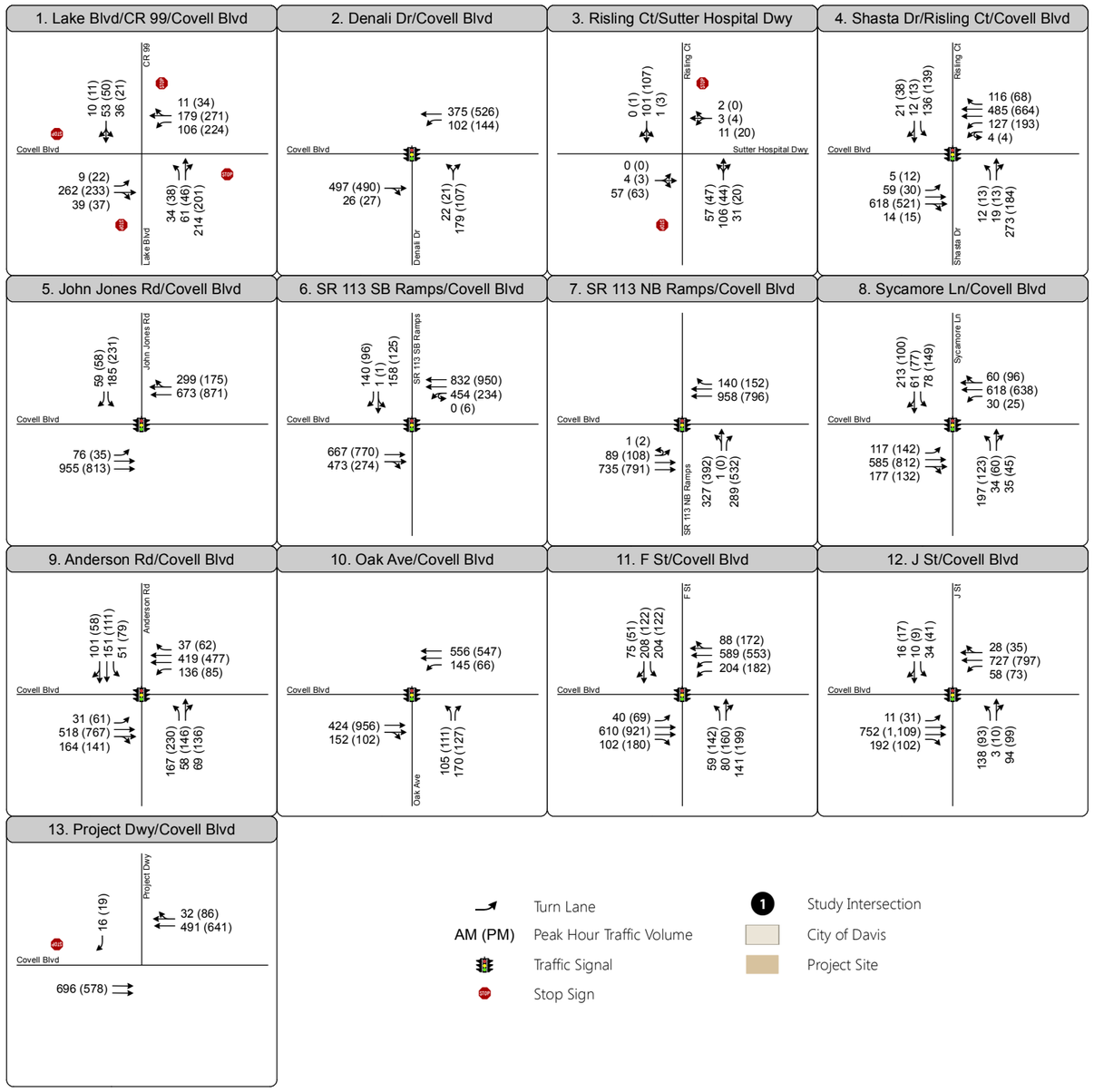

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Figure 3.14-08

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

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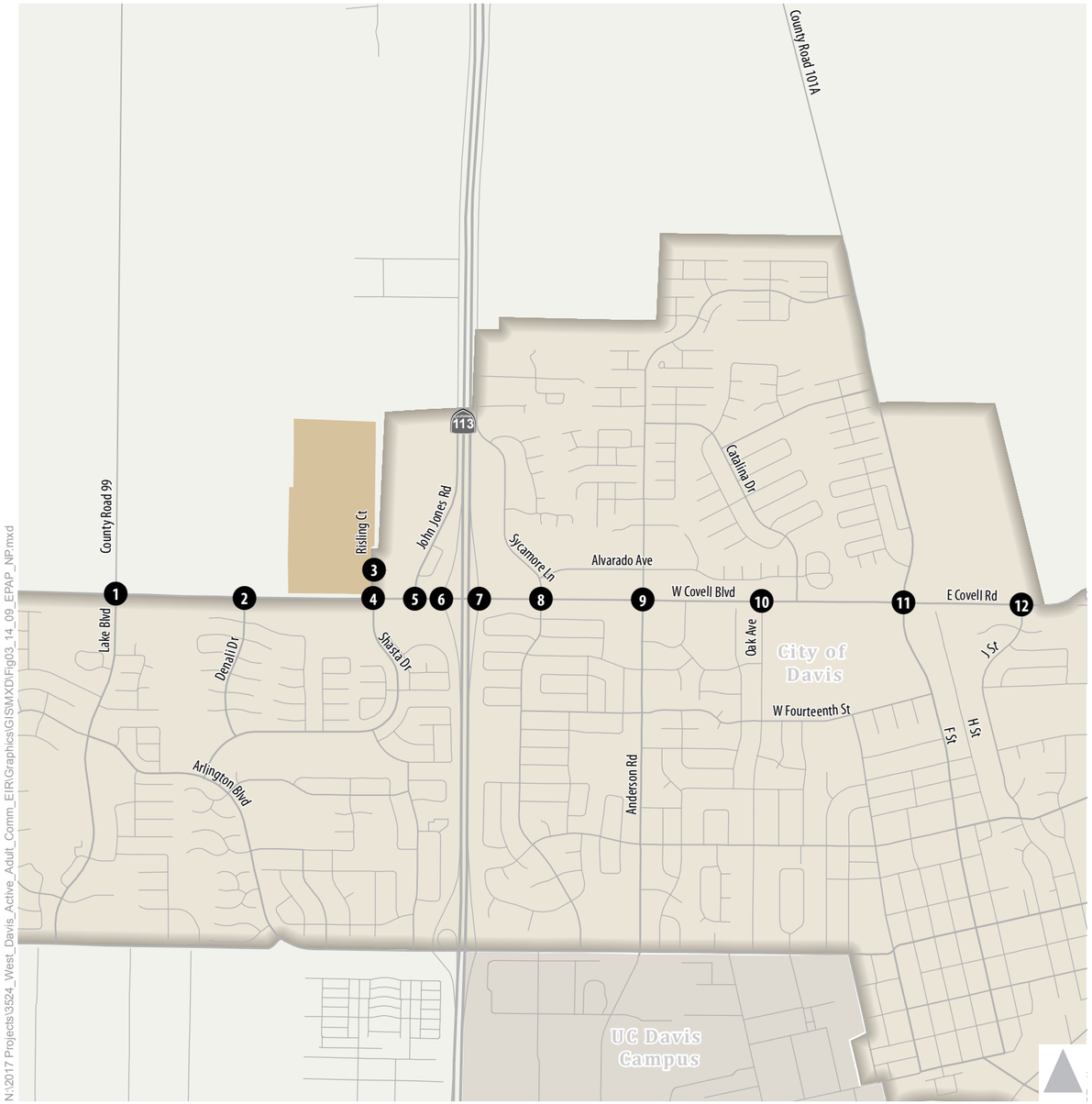

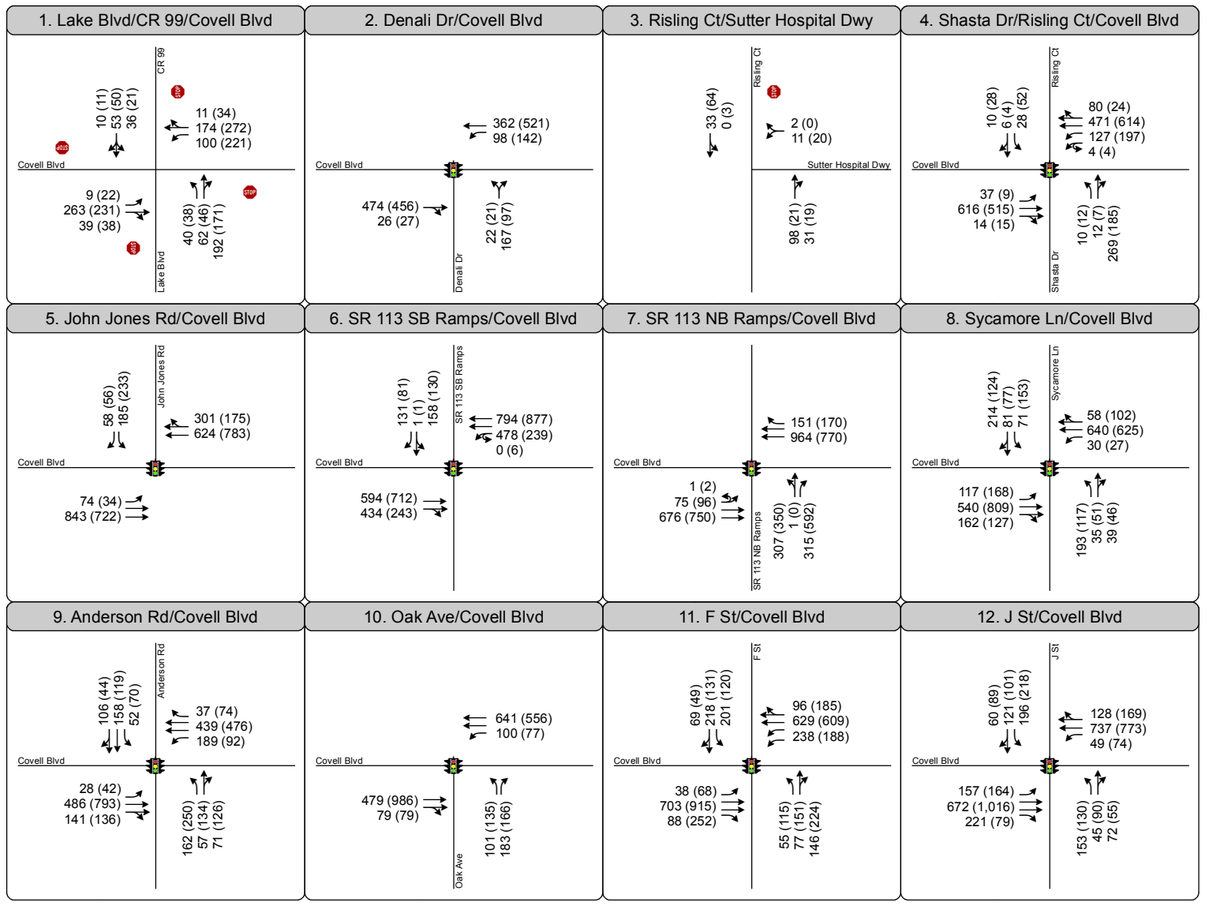

Figure 3.14-09

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Project Conditions

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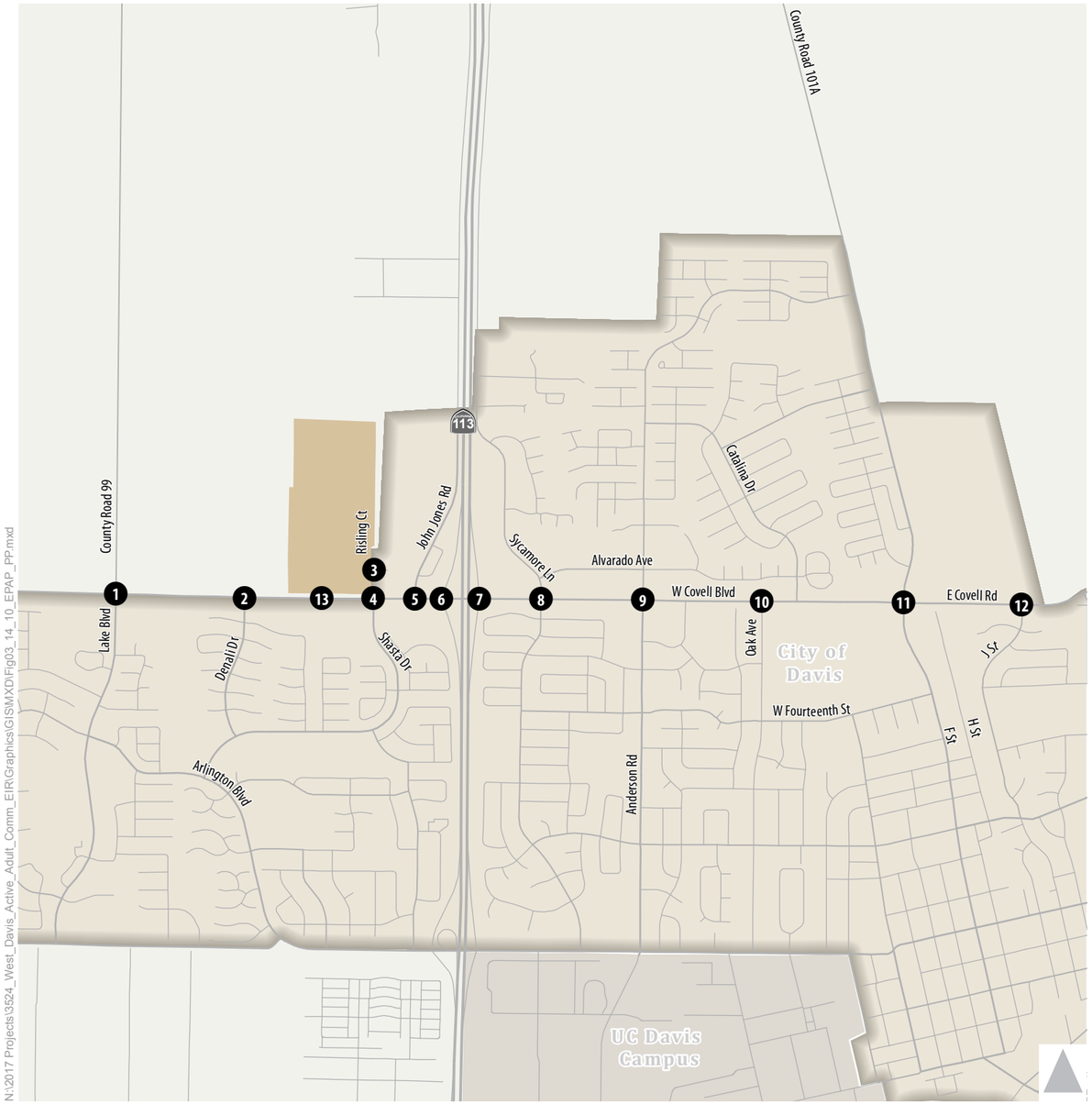

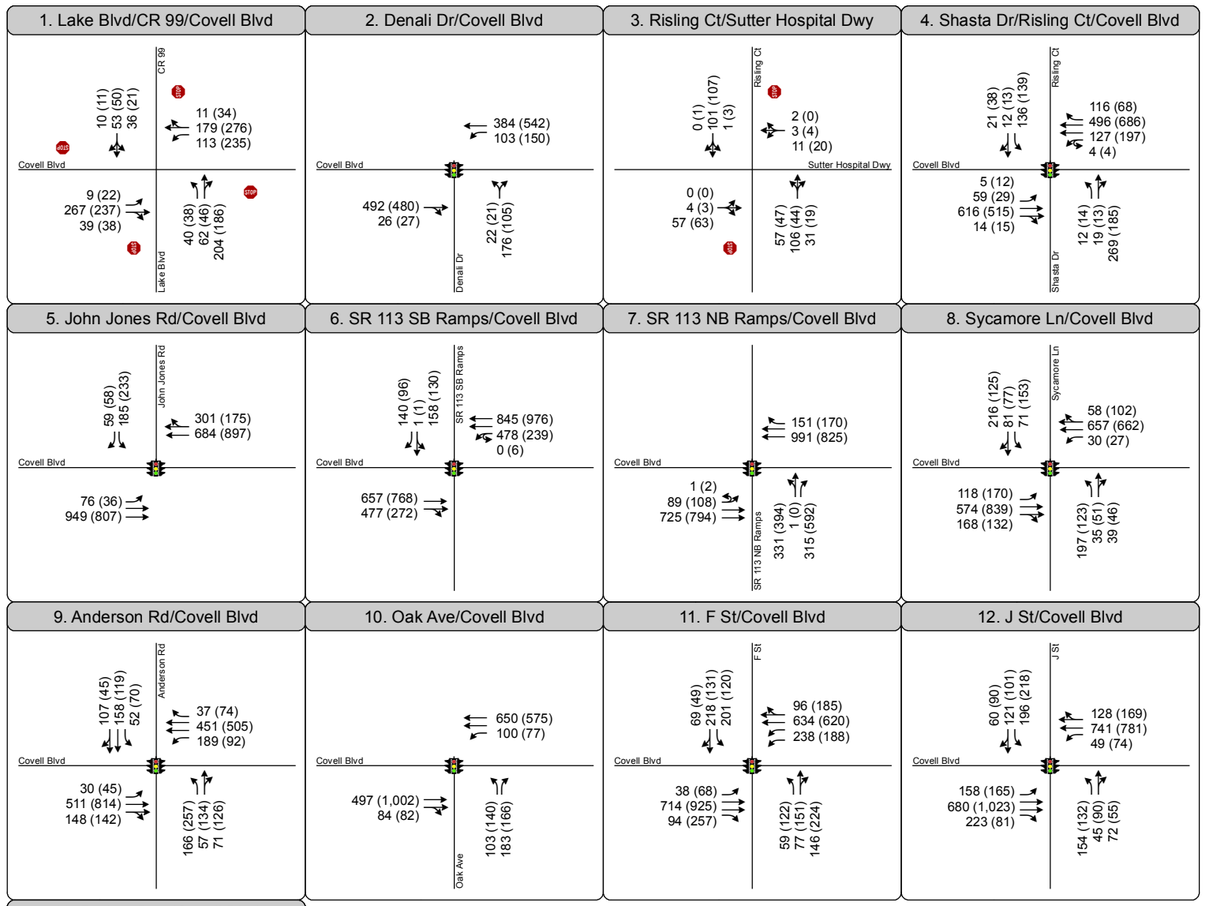

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Figure 3.14-10

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Projects Plus Project Conditions

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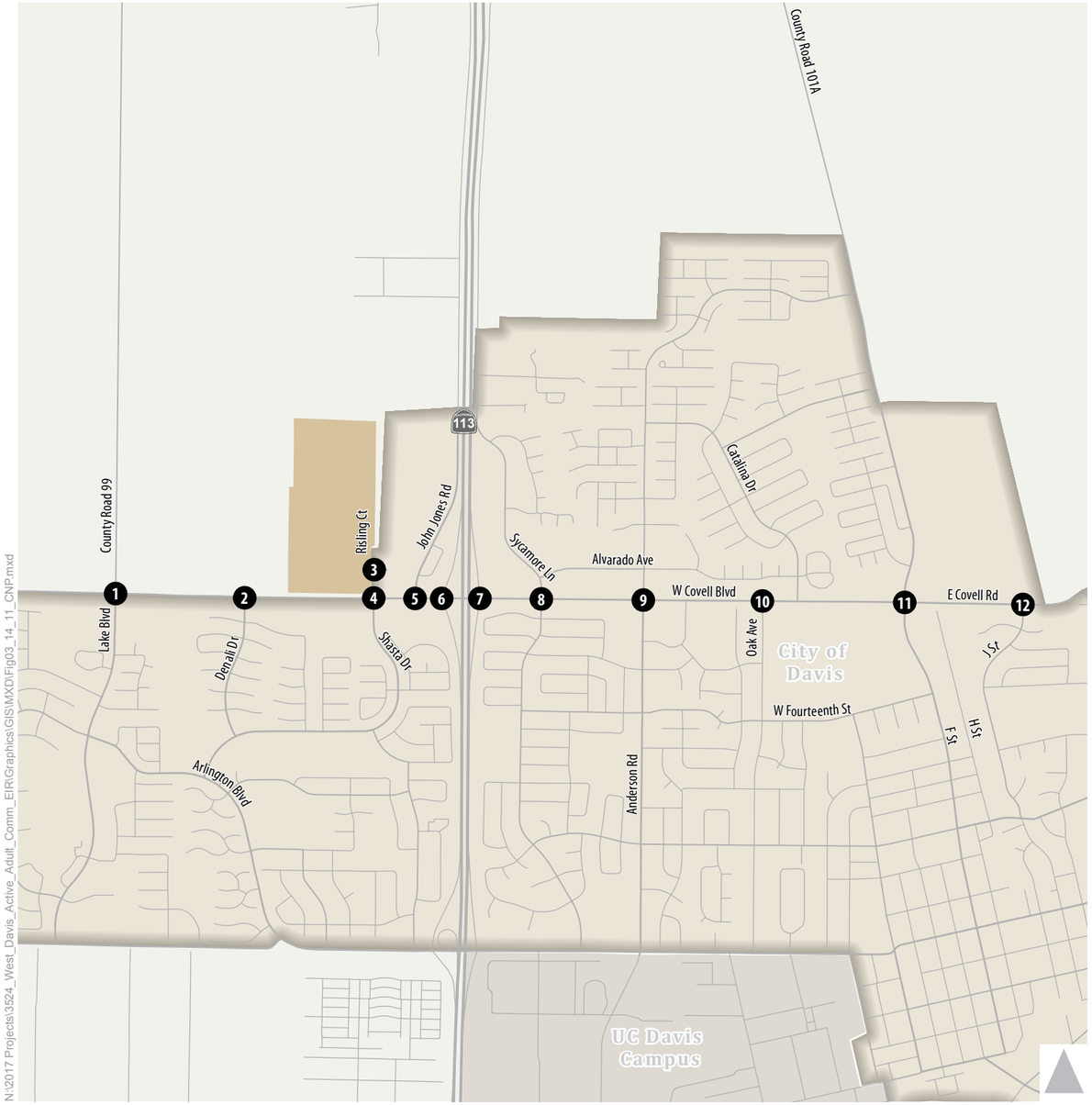

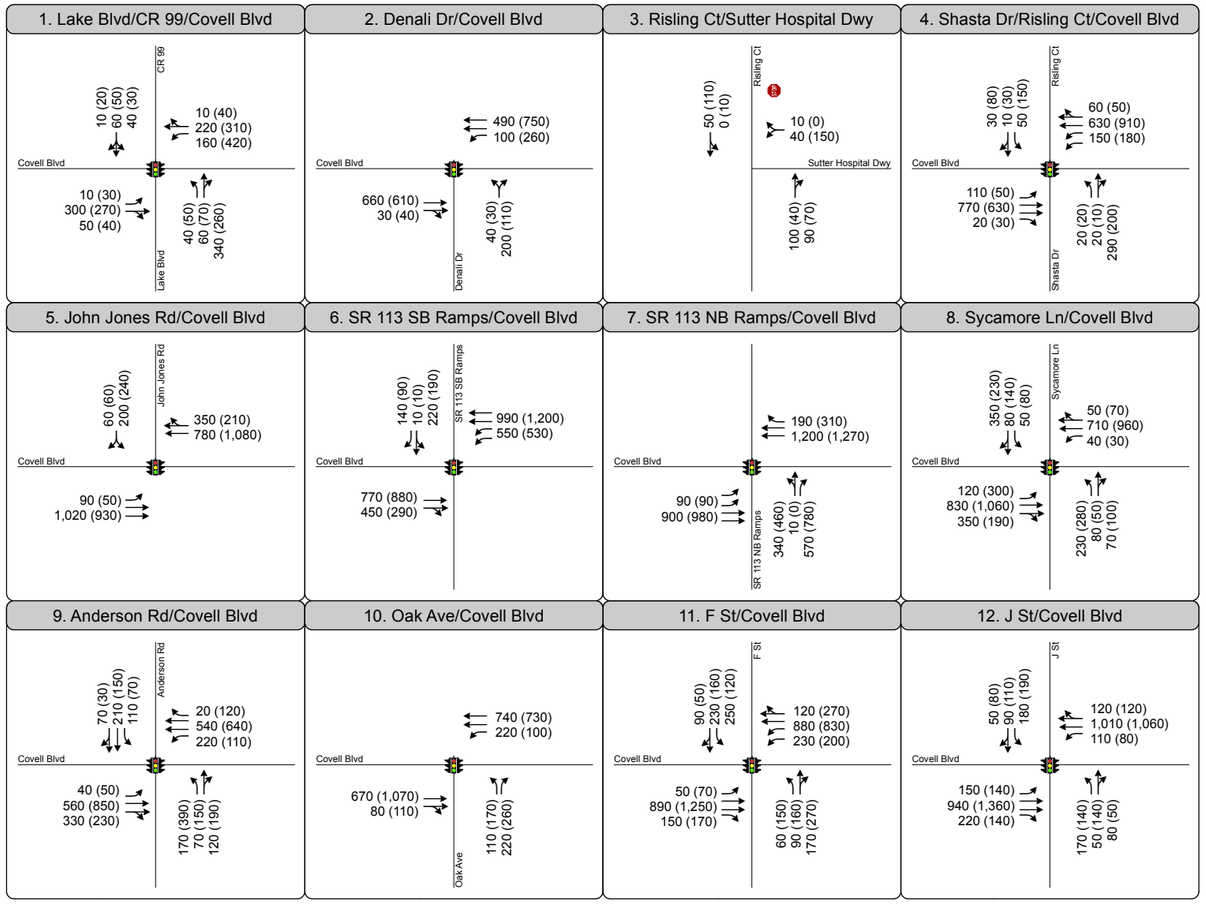

Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign
1 Study Intersection
City of Davis
Project Site

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Figure 3.14-11

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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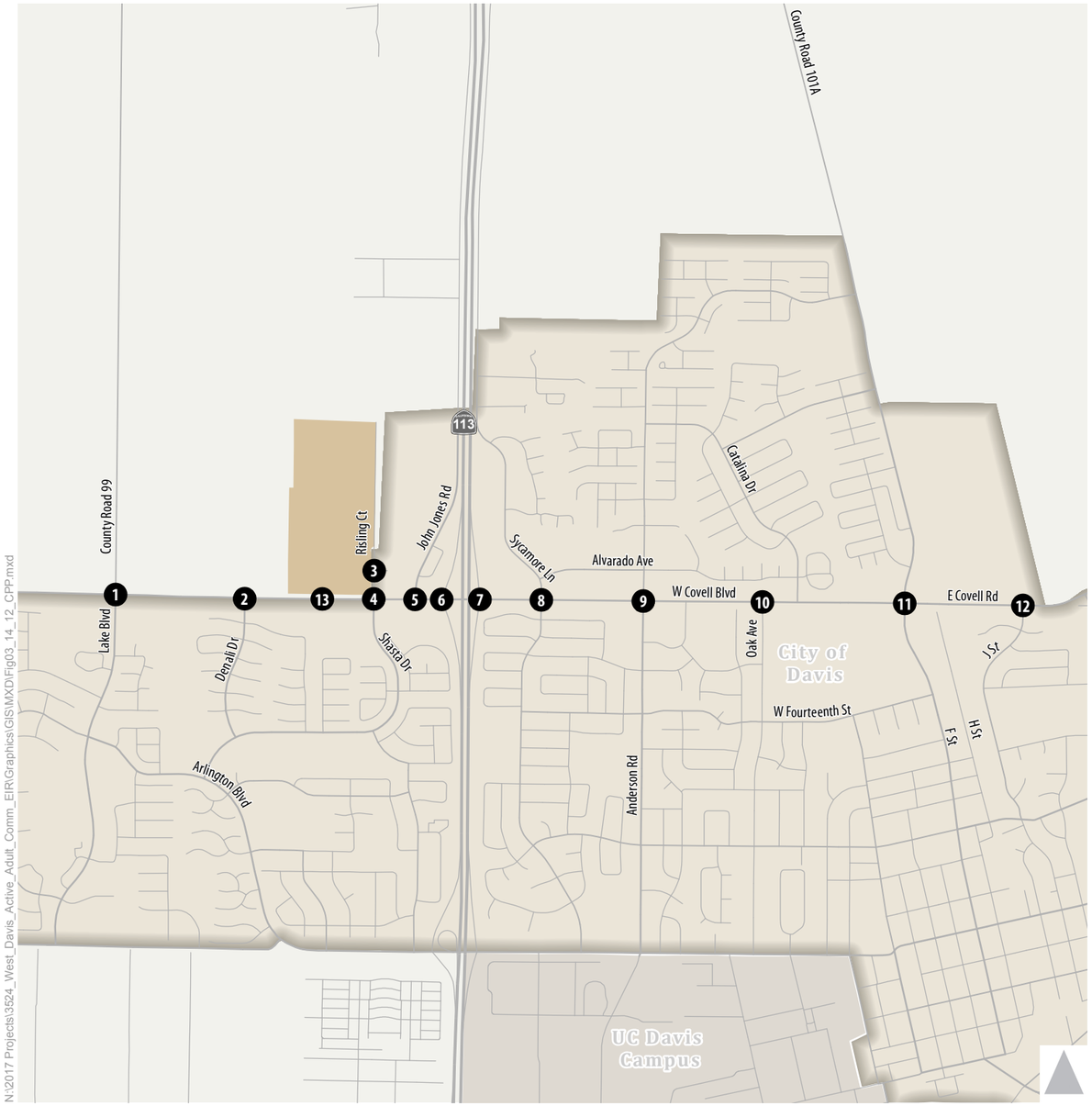

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Figure 3.14-12

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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