4.6 TRANSPORTATION AND CIRCULATION

4.6.1 INTRODUCTION
The Transportation and Circulation section of the EIR analyzes the potential impacts of the proposed project on the surrounding transportation system, including roadways, bicycle, pedestrian, and transit facilities and services under existing and cumulative scenarios. The information contained within this section of the EIR is primarily based on the Transportation Impact Study prepared for the proposed project by Fehr & Peers (see Appendix J). Information from the Davis General Plan and associated EIR has also been referenced.

The proposed project is consistent with Sacramento Area Council of Governments’ (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and, thus, the proposed project is eligible for streamlining under Public Resources Code (PRC) 21159.28. Accordingly, this EIR is not required to include an analysis of project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on the regional transportation network. Although parking is not required to be analyzed in this EIR pursuant to the project’s eligibility for CEQA streamlining, and is not considered a CEQA issue nor required to be analyzed in this EIR per CEQA Guidelines, because parking is an important planning consideration, the Transportation Impact Study (Appendix J) includes a parking analysis. See the “CEQA Streamlining” section below for more detail.

4.6.2 EXISTING ENVIRONMENTAL SETTING
The sections below describe the physical and operational characteristics of the existing transportation system within the project vicinity, including the surrounding roadway network and, transit, bicycle, and pedestrian facilities.

Local Roadways
Vehicular access to the project site is currently available by way of nine existing driveways, including two along Sycamore Lane, three along Anderson Road, two along Russell Boulevard, and two connecting with the adjoining ARCO gas station (which can be used for vehicular access to/from Anderson Road and Russell Boulevard). Other key roadways in the project vicinity include La Rue Road, West Eighth Street, and State Route 113 (SR 113). These roadways are described as follows:

- Russell Boulevard – Russell Boulevard is a four-lane, east-west roadway that borders the southern edge of the project site. Russell Boulevard connects West Davis with Central Davis, Downtown Davis, and East Davis. The City of Davis General Plan classifies Russell Boulevard as a major arterial. Within the vicinity of the project site, traffic signals along Russell Boulevard operate in coordination during peak periods. The posted speed limit is 30 miles per hour (mph) between SR 113 and B Street. West of SR 113, the posted speed

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3 City of Davis. Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School. January 2000.
limit is 35 mph. Unrestricted on-street parking is available on the north side of Russell Boulevard within the vicinity of the project site (including along its frontage). Russell Boulevard continues east until B Street where it becomes Fifth Street. The segment of Russell Boulevard and Fifth Street from SR 113 to Pole Line Road is classified as a truck route in the City of Davis General Plan.

- **Anderson Road** – Anderson Road is a two-lane, north-south roadway that borders the eastern edge of the project site. Anderson Road connects to Central Davis and North Davis and the UC Davis campus to the south, where the roadway transitions to La Rue Road south of Russell Boulevard on the UC Davis campus. The City of Davis General Plan classifies Anderson Road as a minor arterial. The posted speed limit is 25 mph between Russell Boulevard and West Eighth Street and 30 mph north of West Eighth Street.

- **Sycamore Lane** – Sycamore Lane is a two-lane, north-south roadway that extends from Russell Boulevard north towards North Davis and borders the project on the west. The City of Davis General Plan classifies Sycamore Lane as a collector. The posted speed limit is 25 mph between Russell Boulevard and Covell Boulevard.

- **West Eighth Street** – West Eighth Street is a two-lane, east-west roadway that extends from Sycamore Lane east towards Central Davis and East Davis. The City of Davis General Plan classifies West Eighth Street as a collector between Sycamore Lane and Anderson Road and a minor arterial east of Anderson Road. The posted speed limit is 25 mph within the vicinity of the project site.

- **SR 113** – SR 113 is a four-lane, north-south freeway that extends from Interstate 80 (I-80) at the Yolo/Solano County line north to Interstate 5 (I-5) in Woodland. SR 113 would serve as the primary regional roadway providing vehicular access to the project site.

### Study Intersections

Study intersections evaluated in the Transportation Impact Study 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 23 intersections were selected for study (see Figure 4.6-1):

1. Russell Boulevard/SR 113 Southbound Ramps;
2. Russell Boulevard/SR 113 Northbound Ramps;
3. Russell Boulevard/Orchard Park Drive;
4. Russell Boulevard/Sycamore Lane;
5. Russell Boulevard/Anderson Road/La Rue Road;
6. Russell Boulevard/California Avenue;
7. Russell Boulevard/Oak Avenue;
8. Russell Boulevard/College Park/Howard Way;
9. Russell Boulevard/A Street;
10. Russell Boulevard/Fifth Street/B Street;
11. Sycamore Lane/Wake Forest Drive;
12. Sycamore Lane/West Eighth Street;
13. Anderson Road/West Eighth Street;
14. La Rue Road/Hutchison Drive;
15. Russell Boulevard/West University Mall Driveway;
16. Russell Boulevard/East University Mall Driveway;
17. Russell Boulevard/West ARCO Driveway;
18. Sycamore Lane/North University Mall Driveway;
Figure 4.6-1
Study Intersection Locations

19. Sycamore Lane/South University Mall Driveway;
20. Anderson Road/North University Mall Driveway;
21. Anderson Road/Central University Mall Driveway;
22. Anderson Road/South University Mall Driveway; and
23. Anderson Road/North ARCO Driveway.

Intersections 15 through 23 are private driveways and were included for the purposes of understanding traffic volumes between study intersections and vehicle ingress/egress and queueing at the project site driveways. Unlike intersections 1 through 14, the private driveway intersections were not studied for the purposes of identifying transportation impacts on the basis of intersection operations alone. Therefore, peak hour delay and level of service (LOS) results are not reported for intersections 15 through 23.

**Common Traffic Analysis Terms**

The Transportation Impact Study analyzes roadway operating conditions using intersection LOS as a primary measure of operational performance. Motorized vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. Typical factors that affect motorized vehicle LOS include speed, travel time, traffic interruptions, and freedom to maneuver. The *Highway Capacity Manual, 6th Edition* (HCM) published by the Transportation Research Board of the National Academies of Science defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays).

The LOS at signalized intersections is based on the average control delay (i.e., delay resulting from initial deceleration, queue move-up time, time stopped on an intersection approach, and final acceleration) experienced per vehicle traveling through the intersection. Table 4.6-1 summarizes the relationship between delay and LOS for signalized intersections.

<table>
<thead>
<tr>
<th>LOS</th>
<th>Description</th>
<th>Average Control Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short.</td>
<td>≤ 10</td>
</tr>
<tr>
<td>B</td>
<td>Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.</td>
<td>&gt; 10 to 20</td>
</tr>
<tr>
<td>C</td>
<td>Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.</td>
<td>&gt; 20 to 35</td>
</tr>
<tr>
<td>D</td>
<td>Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.</td>
<td>&gt; 35 to 55</td>
</tr>
<tr>
<td>E</td>
<td>Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.</td>
<td>&gt; 55 to 80</td>
</tr>
<tr>
<td>F</td>
<td>Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.</td>
<td>&gt; 80</td>
</tr>
</tbody>
</table>

Note: Average control delay is presented in seconds per vehicle.

*Source: Fehr & Peers, 2019.*
Similar to signalized intersections, the HCM methodology for stop-controlled intersections reports the LOS based on the control delay experienced by motorists traveling through the intersection. As shown in Table 4.6-2 below, the delay ranges for stop-controlled intersections are lower than for signalized intersections. The HCM anticipates that motorists expect signalized intersections to carry higher traffic volume that results in greater delay than a stop-controlled intersection. Stop controls are associated with more uncertainty, as delays are less predictable, which can reduce users’ delay tolerance.

<table>
<thead>
<tr>
<th>LOS</th>
<th>Average Control Delay1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤ 10</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 10 to 15</td>
</tr>
<tr>
<td>C</td>
<td>&gt; 15 to 25</td>
</tr>
<tr>
<td>D</td>
<td>&gt; 25 to 35</td>
</tr>
<tr>
<td>E</td>
<td>&gt; 35 to 50</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 50</td>
</tr>
</tbody>
</table>

Note: Average control delay is presented in seconds per vehicle.


To be consistent with both the HCM and recent City of Davis studies, this analysis shows the LOS for side-street stop-controlled intersections in two forms, as follows:

- Intersection LOS: Based on the weighted average of the control delay experienced by each movement of the intersection. Note that this is not a recognized LOS metric for side-street stop-controlled intersections per the HCM 6th Edition. However, the City of Davis has previously expressed side-street stop-controlled intersection delay using this measure.
- Worst-case LOS: Based on the movement (or shared movement) with the greatest control delay at the intersection, which may consist of minor-street stop-controlled movements or major street left-turns.

**Existing Traffic Conditions**

In order to determine existing operations at study intersections, intersection turning movement counts were conducted by Fehr & Peers during the morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods at the 23 study intersections on Tuesday, May 10, 2018. Intersection counts included volumes for vehicles, bicyclists, and pedestrians. Based on the traffic data collection, the AM peak hour within the study area occurred from 8:00 to 9:00 AM and the PM peak hour occurred from 4:30 to 5:30 PM.

**Study Intersection Operations – Existing Conditions**

Table 4.6-3 and Figure 4.6-2 present the AM and PM peak hour LOS for each study intersection under Existing Conditions. As shown in the table, all study intersections operate at or above the applicable LOS standard set by the jurisdiction controlling the intersection (see “Significance Criteria” discussion below).
### Table 4.6-3
Peak Hour Intersection Operations – Existing Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>Jurisdiction</th>
<th>Peak Hour</th>
<th>Existing Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Russell Blvd./SR 113 SB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>AM 8</td>
<td>A</td>
</tr>
<tr>
<td>2. Russell Blvd./SR 113 NB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>PM 7</td>
<td>A</td>
</tr>
<tr>
<td>3. Russell Blvd./Orchard Park Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM 3 (31)</td>
<td>A (D)</td>
</tr>
<tr>
<td>4. Russell Blvd./Sycamore Ln.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 21</td>
<td>C</td>
</tr>
<tr>
<td>5. Russell Blvd./Anderson Rd./La Rue Rd.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 28</td>
<td>C</td>
</tr>
<tr>
<td>6. Russell Blvd./California Ave.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM 5 (17)</td>
<td>A (C)</td>
</tr>
<tr>
<td>7. Russell Blvd./Oak Ave.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 12</td>
<td>B</td>
</tr>
<tr>
<td>8. Russell Blvd./College Park/Howard Way</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 17</td>
<td>B</td>
</tr>
<tr>
<td>9. Russell Blvd./A St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 21</td>
<td>B</td>
</tr>
<tr>
<td>10. Russell Blvd./Fifth St./B St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 27</td>
<td>C</td>
</tr>
<tr>
<td>11. Sycamore Ln./Wake Forest Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM 3 (18)</td>
<td>A (C)</td>
</tr>
<tr>
<td>12. Sycamore Ln./West Eighth St.</td>
<td>AWSC</td>
<td>City of Davis</td>
<td>AM 10 (10)</td>
<td>A (B)</td>
</tr>
<tr>
<td>13. Anderson Rd./West Eighth St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM 22</td>
<td>C</td>
</tr>
<tr>
<td>14. La Rue Rd./Hutchison Dr.</td>
<td>Signal</td>
<td>UC Davis</td>
<td>AM 17</td>
<td>B</td>
</tr>
</tbody>
</table>

Note: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.


During the AM peak hour, vehicle traffic on the Russell Boulevard corridor generally progresses smoothly. Queues generally do not extend to the adjacent upstream intersection and clear within one cycle at signalized intersections, with the following exceptions:

- **Eastbound left-turn pocket at the Russell Boulevard/Sycamore Lane intersection**, where AM peak hour vehicle queues spill back beyond the available turn pocket storage capacity (300 feet) and frequently block the adjacent eastbound through travel lane.
- **Southbound approach at the Russell Boulevard/Sycamore Lane intersection**, where AM peak hour vehicle queues spill back beyond the northern project site driveway on Sycamore Lane. Queues frequently block the bicycle-vehicle mixing zone provided where the southbound bike lane transitions from the curb to in between the left- and right-turn lanes.
Figure 4.6-2
Intersection LOS – Existing Conditions

• Southbound approach at the Russell Boulevard/Anderson Road/La Rue Road intersection, where AM peak hour vehicle queues spill back beyond the northern project site driveway on Anderson Road. Queues frequently block the bicycle-vehicle mixing zone provided where the southbound bike lane transitions from the curb to in between the left-turn and through lanes.

During the PM peak hour, eastbound and westbound vehicle traffic on Russell Boulevard experiences increased delay, particularly on the segment between Sycamore Lane and A Street. During a 15- to 20-minute timeframe, queues frequently extend through adjacent upstream intersections and fail to clear within one cycle at signalized intersections. Concentrations of congested conditions are the result of several factors. First, the signals along Russell Boulevard, although interconnected, do not currently operate in a manner that facilitates efficient through movement of vehicles. Second, very high northbound side-street demand (i.e., from the UC Davis campus) requires allocation of green time at signals that would otherwise be utilized to progress eastbound and westbound traffic. Third, frequent pedestrian calls for service across Russell Boulevard contribute to more lengthy queues in the east and west directions, which causes corridor operations to frequently “fall out of coordination”. The congested conditions described above can also block vehicular ingress/egress at project driveways, particularly the western driveway on Russell Boulevard. It should be noted that the congested conditions are typically concentrated within a 15- to 20-minute window and do not persist for the duration of the peak hour (as reflected in the peak hour delay and LOS results in Table 4.6-3).

The four unsignalized study intersections were evaluated to determine if the intersections satisfy the peak hour warrant for consideration of a traffic signal. The Russell Boulevard/Orchard Park Drive and Russell Boulevard/California Avenue intersections currently meet the peak hour warrant during the PM peak hour. The Sycamore Lane/Wake Forest Drive and Sycamore Lane/West Eighth Street intersections do not meet the peak hour warrant for a traffic signal.

Collision History
According to the Statewide Integrated Traffic Records System (SWITRS), 22 collisions were reported on public streets within the immediate vicinity of the project site (within 300 feet) between 2013 and 2018). Table 4.6-4 provides a summary of the collisions, including the location of each collision, the parties involved, and the primary collision factor. As shown, 19 of the 22 collisions reported involved a bicycle. The Russell Boulevard/Anderson Road/La Rue Road intersection experienced the greatest number of collisions, followed by the Russell Boulevard/Sycamore Lane intersection. As described above, both intersections experience very high levels of bicycle activity.

Bicycle Facilities
Bicycle facilities are typically categorized in the following classifications:

• Class I Multi-Use Off-Street Paths (also known as shared-use paths) are paved trails that are separated from roadways, and allow for shared use by both cyclists and pedestrians.
• Class II On-Street Bike Lanes are designated for use by bicycles by striping, pavement legends, and signs.
• Class III On-Street Bike Routes are designated by signage for shared bicycle use with vehicles but do not necessarily include any additional pavement width for bicyclists.
• Class IV Separated Bikeways, also known as protected bikeways or cycle tracks, are separated bikeways designed to improve upon buffered bike lanes by providing vertical
separation between bike lanes and the adjacent travel lanes. Vertical separation can be provided with concrete curb and gutter, bollards, or on-street parking.

Table 4.6-4
Six-Year Collision History Near Project Site

<table>
<thead>
<tr>
<th>Location</th>
<th>Parties2</th>
<th>Type</th>
<th>Primary Collision Factor</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sycamore Ln at Wake Forest Dr</td>
<td>Bicycle, Vehicle</td>
<td>Head-On</td>
<td>Unknown</td>
<td>2013</td>
</tr>
<tr>
<td>Sycamore Ln north of Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Automobile Right-of-Way</td>
<td>2016</td>
</tr>
<tr>
<td>Sycamore Ln north of Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Improper Turning</td>
<td>2017</td>
</tr>
<tr>
<td>Russell Blvd at Sycamore Ln</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Automobile Right-of-Way</td>
<td>2017</td>
</tr>
<tr>
<td>Russell Blvd at Sycamore Ln</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Other Hazardous Violation</td>
<td>2015</td>
</tr>
<tr>
<td>Russell Blvd at Sycamore Ln</td>
<td>Bicycle, Bicycle</td>
<td>Other</td>
<td>Unknown</td>
<td>2014</td>
</tr>
<tr>
<td>Anderson Rd north of Russell Blvd</td>
<td>Bicycle, Bicycle</td>
<td>Other</td>
<td>Improper Turning</td>
<td>2017</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Automobile Right-of-Way</td>
<td>2015</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Other Hazardous Violation</td>
<td>2018</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Bicycle</td>
<td>Hit Object</td>
<td>N/A</td>
<td>2014</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Vehicle, Vehicle</td>
<td>Head-On</td>
<td>Automobile Right-of-Way</td>
<td>2014</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Traffic Signals and Signs</td>
<td>2014</td>
</tr>
<tr>
<td>Anderson Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Traffic Signals and Signs</td>
<td>2014</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Vehicle, Motorcycle</td>
<td>Sideswipe</td>
<td>Improper Turning</td>
<td>2017</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Other</td>
<td>Other Hazardous Violation</td>
<td>2017</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Vehicle, Vehicle</td>
<td>Rear End</td>
<td>Unsafe Speed</td>
<td>2013</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Unsafe Speed</td>
<td>2013</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Automobile Right-of-Way</td>
<td>2013</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Automobile Right-of-Way</td>
<td>2018</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Automobile Right-of-Way</td>
<td>2014</td>
</tr>
<tr>
<td>La Rue Rd at Russell Blvd</td>
<td>Bicycle, Vehicle</td>
<td>Broadside</td>
<td>Automobile Right-of-Way</td>
<td>2018</td>
</tr>
</tbody>
</table>


Figure 4.6-3 displays existing bicycle facilities within the project vicinity. As shown in the figure, a Class I shared-use path (typically 14 feet wide) is present on the south side of Russell Boulevard on the UC Davis campus throughout the study area, providing connections between West Davis, Central Davis, UC Davis, and Downtown Davis. Between SR 113 and A Street, the Russell Boulevard shared-use path provides several connections south into the UC Davis campus off-street path network.

Two of the path connections are located immediately across Russell Boulevard from the project site on either side of the UC Davis softball field (between Sycamore Lane and Anderson Road), including a path on the west side of La Rue Road. A Class I shared-use path is also present on the north side of Russell Boulevard between Sycamore Lane and SR 113, providing bicycle connections north to the apartment complexes within the Oxford Circle vicinity. A Class I shared-use path is also present between the project site and Mulberry Lane, bisecting the Sycamore Lane Apartments immediately north of the project site.
Figure 4.6-3
Bicycle and Pedestrian Facilities – Existing Conditions

Class II bike lanes are present on Sycamore Lane and Anderson Road along the project site frontage, providing bicycle connectivity north into Central and North Davis and south into the UC Davis campus. Several crossing treatments facilitate bicycle movements across Russell Boulevard to/from these bike lanes. A dedicated bicycle signal phase serves bicyclists utilizing the Russell Boulevard/Sycamore Lane intersection. The Russell Boulevard/Anderson Road/La Rue Road intersection has a dedicated southbound left turn lane for bicyclists that connects to the southeast corner of the intersection, allowing access to the shared-use path on the south side of Russell Boulevard. Southbound left-turning bicyclists at this location are funneled through an eight-foot wide receiving area at the southeast corner of the intersection, which also serves as a staging area for bicyclists and pedestrians waiting to cross other intersection legs. The majority of the remaining bicycle crossing movements at the Russell Boulevard/Anderson Road/La Rue Road intersection are accommodated within the marked crosswalks during pedestrian crossing phases. Crosswalks vary in width from as narrow as five feet at pinch points (e.g., the north leg crosswalk) to as wide as 11 feet.

Within the project vicinity, on-street bicycle facilities are not currently provided on either Russell Boulevard or La Rue Road. Moreover, bicycle facilities do not exist along the immediate project site frontage on Russell Boulevard.

**Bicycle Facility Operations – Existing Conditions**

Figure 4.6-4 displays the peak hour bicycle volumes at the Sycamore Lane and Anderson Road intersections with Russell Boulevard. The intersections serve as primary bicycle gateways for the UC Davis campus, resulting in very high bicycle crossing volumes during peak hours (measuring over 500 peak hour bicyclists at each intersection) as students travel between the UC Davis campus and their residences along the Sycamore Lane and Anderson Road corridors. Moreover, peak hour factors for bicycle demand at these intersections are low, resulting in surges in bicycle demand within concentrated periods of time. For example, at the Russell Boulevard/Anderson Road/La Rue Road intersection, the AM peak hour has a bicycle demand peak hour factor of 0.59, resulting in 75 percent of peak hour bicyclists passing through the intersection during 50 percent (i.e., 30 minutes) of the peak hour.

High bicycle crossing volumes combined with a low peak hour factor for bicycle demand result in the following effects on multi-modal operations at these intersections:

- Lengthy bicycle queues in the southbound bike lanes at Sycamore Lane and Anderson Road, measuring as high as 25 bicyclists during the AM peak hour.
- Large groups of bicyclists gathered at bicycle crossing staging areas, which can impede the path of travel for other users. For instance, at the southeast corner of the Russell Boulevard/Anderson Road/La Rue Road intersection, large groups of bicyclists waiting to cross the east leg can impede the path of travel for southbound left-turning bicyclists attempting to occupy the same space.
- Mixing of high volumes of bicyclists and pedestrians on shared-use paths and within marked crosswalks during pedestrian crossing phases, resulting in crowding and frequent meeting events (users passing each other while traveling in opposite directions) and passing events (users passing each other while traveling in the same direction).
Figure 4.6-4
Peak Hour Bicycle and Pedestrian Volumes – Existing Conditions

Figure 4.6-5 shows the level of traffic stress (LTS) for key bicycle corridors and intersection approaches near the project site. The LTS rating is based on the average score of all factors. Generally, based on the LTS methodology, bicyclists experience lower levels of stress on shared-use paths (e.g., the Russell Boulevard shared-use path) and on roadways with bike lanes (e.g., Sycamore Lane and Anderson Road). Stress levels increase for bicyclists on roadways without on-street bicycle facilities (e.g., Russell Boulevard and La Rue Road) and at intersection approaches where bicyclists mix with vehicles, particularly the eastbound and northbound channelized right-turn lanes at the Russell Boulevard/Anderson Road/La Rue Road intersection. It should be noted that the LTS methodology does not account for demand associated with other bicycle facility users (e.g., bicycle and pedestrian volumes on a shared-use path or shared crossing), which can also affect the quality and comfort of a bicycle facility.

**Pedestrian Facilities**

The study area has an extensive system of shared-use pathways, sidewalks, and crosswalks available for use by pedestrians. The following pedestrian facilities are located near the project site (see Figure 4.6-3):

- Sidewalks (typically five feet wide) along the Russell Boulevard, Anderson Road, and Sycamore Lane project site frontages.
- Shared-use paths (typically 14 feet wide) on the south side of Russell Boulevard from West Davis to Downtown Davis and on the north side of Russell Boulevard from SR 113 to Sycamore Lane.
- Marked crosswalks and push-button pedestrian actuation are provided on all legs of the Russell Boulevard intersections at Sycamore Lane and Anderson Road. The west and east legs of the Russell Boulevard/Sycamore Lane intersection operate with an exclusive pedestrian crossing phase.
- The eastbound and northbound right-turn movements at the Russell Boulevard/Anderson Road/La Rue Road intersection include channelized right-turn triangular medians. Crosswalks are provided in these right-turn lanes with posted yield signs for motorists.

Similar to peak hour bicycle volumes, high peak hour pedestrian volumes occur at the Russell Boulevard intersections at Sycamore Lane and Anderson Road as UC Davis students travel between the UC Davis campus and off-campus residences/destinations, including University Mall. High pedestrian volumes can result in peak hour crowding within shared facilities, particularly shared-use paths and marked crosswalks utilized by both pedestrians and bicyclists.

Figure 4.6-6 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. Generally, according to the StreetScore+ methodology, study area sidewalks and paths are comfortable for pedestrians. Pedestrian crossings at the Russell Boulevard/Sycamore Lane intersection are also considered comfortable, largely due to the presence of exclusive pedestrian crossing phases for the west and east leg crosswalks.

However, the west, south, and east leg crossings at the Russell Boulevard/Anderson Road/La Rue Road intersection are considered uncomfortable for pedestrians, largely due to the long crossing distances and presence of triangular right-turn medians, which results in an uncontrolled pedestrian crossing across a “free-flow” right-turn movement.
Figure 4.6-5
Bicycle LTS – Existing Conditions

Figure 4.6-6
Pedestrian StreetScore+ – Existing Conditions

It should be noted that the StreetScore+ methodology does not account for demand associated with other pedestrian facility users (e.g., bicycle and pedestrian volumes on a shared-use path or shared crossing), which can also affect the quality and comfort of a pedestrian facility.

**Transit Systems**

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

- **Unitrans:** Unitrans provides local fixed route bus service to the project site. Jointly operated between the Associated Students, UC Davis (ASUCD) and the City of Davis, Unitrans offers 19 routes serving the UC Davis campus and City of Davis neighborhoods, shopping centers, schools, and medical centers. Unitrans operates as a radial bus system with the UC Davis campus serving as the central hub. The main terminals on the UC Davis campus are at the Memorial Union (MU) on Howard Way and at the Silo along Hutchison Drive.

Specific service spans and frequencies vary by route. Generally, Unitrans operates from 6:30 AM to 11:30 PM Monday through Thursday and until 9:00 PM on Fridays. Weekend service is available from 8:30 AM to 7:00 PM; Unitrans routes operate every 15 or 30 minutes during weekdays and every 60 minutes during weekends and evenings. Table 4.6-5 summarizes the weekday and weekend frequency and span for Unitrans bus routes serving the project site.

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Friday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Peak Frequency</td>
<td>Span</td>
<td>Peak Frequency</td>
</tr>
<tr>
<td></td>
<td>(min)</td>
<td></td>
<td>(min)</td>
</tr>
<tr>
<td>B – MU/Sycamore/Drake</td>
<td>30</td>
<td>7 AM to 9 PM</td>
<td>30</td>
</tr>
<tr>
<td>C – Silo/Sycamore/Wake Forest</td>
<td>30</td>
<td>7 AM to 10 PM</td>
<td>30</td>
</tr>
<tr>
<td>G – Anderson/Alvarado/Sycamore</td>
<td>10</td>
<td>7 AM to 11 PM</td>
<td>10</td>
</tr>
<tr>
<td>J – Anders/Alvarado/Sycamore</td>
<td>10</td>
<td>7 AM to 11 PM</td>
<td>10</td>
</tr>
<tr>
<td>K – MU/Lake Blvd./Arlington</td>
<td>30</td>
<td>7 AM to 10 PM</td>
<td>30</td>
</tr>
<tr>
<td>P – MU/Davis Perimeter CCW</td>
<td>30</td>
<td>6 AM to 11 PM</td>
<td>30</td>
</tr>
<tr>
<td>Q – MU/Davis Perimeter CW</td>
<td>30</td>
<td>6 AM to 11 PM</td>
<td>30</td>
</tr>
</tbody>
</table>

Notes: CCW = counterclockwise; CW = clockwise.


The current Unitrans one-way fare is $1.25, with monthly, quarterly, and annual passes available at a discounted price. Free rides are available to UC Davis undergraduate students (fee assessed quarterly with registration), seniors, disabled passengers, City of
Davis employees, and transferring Sacramento Regional Transit, Yolobus, Capitol Corridor, and Fairfield Transit passengers.

- **Yolobus:** Yolobus provides extensive fixed route bus and paratransit service throughout Yolo County, as well as commuter bus service to downtown Sacramento. Single rides are available for $2.25 and $3.25 for local and express services, respectively. Discounted daily and monthly passes are also available. Local bus routes serving the project site include Routes 42A, 42B, and 220. Commute bus routes serving the project site include Routes 220C (from Winters) and 242 (from Woodland).

- **Amtrak:** Amtrak serves the Davis Transit Depot near Second and G Streets in Downtown Davis, approximately one mile east of the project site. Amtrak Capitol Corridor service is available at the depot, connecting passengers to Sacramento and Roseville to the east and the Bay Area to the west. Currently, 15 daily Capitol Corridor round-trips are available at the station during regular weekday service. In addition to regular Capitol Corridor service, Amtrak serves the Davis Transit Depot with daily Coast Starlight service (to Los Angeles and Seattle) and intercity bus connections to other Amtrak rail lines (e.g., the Amtrak San Joaquin lines at Sacramento Valley Station).

Figure 4.6-7 displays the bus stops and Unitrans routes serving the project site vicinity. The primary bus stops serving the project site are located on Anderson Road north of Russell Boulevard, Sycamore Lane north of Russell Boulevard, and Russell Boulevard west of Sycamore Lane. All stops are equipped with bus stop signs. Shelters are provided at the northbound stop on Anderson Road and the southbound stop on Sycamore Lane. The southbound Anderson Road bus stop, located immediately on the eastern project site limits, is heavily utilized during the AM peak hour, particularly by UC Davis students commuting into campus. The Anderson Road stop is equipped with a bus stop sign, but lacks a shelter, seating, and a dedicated passenger waiting area. The aforementioned conditions result in passengers waiting in the sidewalk or the adjacent landscaped area.

### 4.6.3 REGULATORY CONTEXT

The following is a description of the regulatory context under which transportation issues are managed at the State and local levels.

**State Regulations**

The following are the State environmental laws and policies relevant to transportation.

**California Department of Transportation**

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining all State-owned roadways in Yolo County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State highway system within the City of Davis need to be approved by Caltrans. The City of Davis does not have the ability to unilaterally make improvements to the State highway system. Caltrans’ *Guide for the Preparation of Traffic Impact Studies* (December 2002) provides guidance on the evaluation of traffic impacts to State highway facilities. The document outlines when a traffic impact study is needed and what should be included in the scope of the study.
Figure 4.6-7
Transit Service and Facilities – Existing Conditions

Caltrans has produced a Transportation Corridor Concept Report (TCCR) for both I-80 and SR 113 in the project region. A TCCR is a long-term planning document that the District Transportation Planning Office prepares for each State highway, or portion thereof, in its jurisdiction. The purpose of a TCCR is to plan how a highway would be developed and managed so that the highway operates at the targeted LOS over a twenty-year period. In addition, Caltrans has developed a District System Management and Development Plan for SR 113.

**Senate Bill 743**

Senate Bill (SB) 743 (Stats. 2013, ch. 386) (SB 743) requires the Governor’s Office of Planning and Research (OPR) to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the metric beyond TPAs. In response, OPR selected vehicle miles of travel (VMT) as the preferred transportation impact metric and applied their discretion to require its use statewide. In addition, SB 743 establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment. Furthermore, SB 743 requires that as of April 27, 2019, vehicle LOS and similar measures related to delay shall not be used as the sole basis for determining the significance of transportation impacts.

Finally, SB 743 establishes a CEQA exemption for residential, mixed-use, and employment center projects a) within transit priority areas, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with a Sustainable Communities Strategy (SCS). The exemption requires further review if the project or circumstances changes significantly.

**Local Regulations and Policies**

The following are applicable local regulations and policies relevant to transportation.

**Sacramento Area Council of Governments**

SACOG is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the MTP/SCS for the region and the corresponding Metropolitan Transportation Improvement Program (MTIP). The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The 2016 MTP/SCS was adopted by the SACOG board in February 18, 2016.

The project site is located within the Yolo Transit Priority Area. Transit Priority Areas are areas of the region within one-half mile of a major transit stop (existing or planned light rail, street car, train station, or the intersection of two or more major bus routes) or an existing or planned high-quality transit corridor included in the MTP/SCS. The project site is entirely within one-half mile of Russell Boulevard, a high-quality transit corridor identified in the MTP/SCS.

**City of Davis General Plan**

The City of Davis General Plan Transportation Element was updated in 2013. The following goals, performance objectives, policies, and actions related to transportation and circulation are applicable to the project:

**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 1.3 Encourage higher intensity residential, commercial, and mixed-use development near existing activity centers and along corridors well served by non-motorized transportation infrastructure and public transportation (See Activity Centers, Map 2).

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.

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
Section 4.6 – Transportation and Circulation

- 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 2.6 Maintain existing bicycle facilities in good repair.

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 deviations improve the livability of the area.

The streets to consider for participation in this program are listed below. The identification and prioritization of corridors and/or segments will be established through the Davis Transportation Plan (DTP).
1. Anderson Road – Russell Boulevard to Covell Boulevard
2. Chiles Road – Drummond Avenue to east city limit
3. Covell Boulevard – Pole Line Road to F Street
4. Covell Boulevard – F Street to State Route 113
5. Covell Boulevard – State Route 113 to west city limit
6. Cowell Boulevard – I-80 to Drummond Avenue
7. 8th Street – B Street to Pole Line Road
8. E Street – 1st Street to 3rd Street
9. F Street – 5th Street to Covell Boulevard
10. 5th Street – B Street to L Street and Russell Boulevard – A to B Street
11. 5th Street – L Street to Cantrill Drive
12. 1st Street and B Street – Richards Boulevard to Russell Boulevard
13. L Street – 2nd Street to Covell Boulevard
14. Lillard Drive – Cowell Boulevard to Drummond Avenue
15. Loyola Drive – Pole Line Road to Mace Ranch
16. Mace Boulevard – Harper Junior High to I-80
17. Mace Boulevard – I-80 to south city limit
18. Olive Drive – West end to east end
19. Pole Line Road – Covell Boulevard to north city limit
20. Pole Line Road – I-80 to Covell Boulevard (upgrades)
21. Richards Boulevard – 1st Street to I-80
22. Russell Boulevard – A Street to State Route 113
23. Russell Boulevard – State Route 113 to west city limit
24. Chiles Road – Drummond Avenue to east city limit

Policy TRANS 2.9
Enhance access to downtown, including from south Davis and I-80 by improving circulation and connectivity for all modes through and across the Richards Boulevard/1st Street corridor.

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.

Goal #4  Davis will strengthen its status as a premier bicycling community in the nation by continuing to encourage bicycling as a healthy, affordable, efficient, and low-impact mode of transportation accessible to riders of all abilities, and by continuously improving the bicycling infrastructure.

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

Policy TRANS 4.10  Maintain existing bicycle paths in good repair.

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.

**Beyond Platinum Bicycle Action Plan**
The City of Davis *Beyond Platinum Bicycle Action Plan* (Bicycle Action Plan), adopted in 2014, includes discussions regarding goals and objectives, bicycle facility guidelines, engineering standards, and implementation and funding. Appendix C of the Bicycle Action Plan includes a variety of proposed bicycle facilities throughout the City, including the following proposed bicycle facility enhancements within the vicinity of the project site:

- Buffered bike lanes on Anderson Road and Sycamore Lane north of Russell Boulevard;
- Bike lanes on Russell Boulevard between SR 113 and A Street;
- Bicycle/pedestrian crossing markings at the Russell Boulevard/Anderson Road/La Rue Road intersection; and
- Bike lane conflict markings (green) at the Russell Boulevard/Anderson Road/La Rue Road and Russell Boulevard/Sycamore Lane intersections.

**UC Davis 2018 Long Range Development Plan**
The 2018 UC Davis Long Range Development Plan (LRDP) includes the following relevant policies related to streetscapes, roadways, and parking resources on and surrounding the UC Davis campus.

- **Foster A Healthier Transportation Ecosystem** – Enhance and expand travel services and programs to meet the daily mobility needs of the campus community and create a healthier transportation ecosystem; promote more sustainable travel choices to improve health of the individual, the environment and the institution.

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• **Expand Active Transportation Infrastructure** – Expand campus infrastructure to support active transportation; improve safety for both bicyclists and pedestrians; consider roadway intersection reconfigurations to minimize distance of crosswalks; consider roadway reconfiguration to reduce vehicle speed; clearly articulate the transitional spaces between bicycle-oriented core campus and the public streets on the periphery.

• **Enhance Transit Service** – Preserve and enhance transit service; continue to prioritize and improve transit access to the core campus area; consider improvements to the Hutchison Drive corridor for Unitrans buses and for safely mixing buses, bikes and pedestrians.

• **Preserve Future Roadway Corridors** – Anticipate potential alignments for future campus roadways and bikeways beyond the life of the plan; keep buildings clear of potential roadway and bikeway corridors.

• **Campus Vehicle Traffic Operations** – Allow vehicle level of service (LOS) F conditions during typical weekday a.m. and p.m. peak hours as measured by the latest version of the Highway Capacity Manual (Transportation Research Board). The allowance of LOS F conditions recognizes that the campus does not plan to expand the roadway system with the exception of modifications for safety, way finding or to better accommodate bicycle, pedestrian, or transit use.

• **Off-Campus Vehicle Traffic Operations** – Use local, regional, and state agency expectations about performance of the roadway network when analyzing potential impacts caused by operation or expansion of the UC Davis campus. For environmental impact review purposes, specific performance metrics and thresholds for impact significance should be based on the plans and policies of the affected agency unless federal or state law requires otherwise. Similar to campus expectations, projects that increase delay by more than 10 percent at an intersection with unacceptable or LOS F operations may constitute significant impacts.

• **Invest In Programs Before Parking** – Invest in transportation programs before constructing additional parking infrastructure; offer programs and services that promote more sustainable travel choices and minimize impacts to overall parking supply; balance adequate parking supply with the campus objective to reduce greenhouse gas emissions.

• **Promote Ride Sharing** – Promote carpools and vanpools as viable transportation options that reduce parking demand for the campus community; monitor the utilization of ride-hailing services and proactively manage campus circulation network to promote walking, biking and bus use as preferred travel modes.

• **Park On The Periphery** – Provide parking on the periphery of the core campus; consider a remote park and bike facility on Old Davis Road with secure bicycling parking; locate parking for large public events near SR 113 and I-80.

• **Foster Flexibility** – Foster a flexible and adaptive approach to the management of parking infrastructure; explore new and innovative technologies to aid in the management of parking; routinely evaluate and dynamically modify parking policy to align with sustainability goals; consider the formal designation of areas for ride-hailing pick up and drop off; build parking lots rather than parking structures.

### 4.6.4 IMPACTS AND MITIGATION MEASURES

The standards of significance to be used in identifying project-specific and cumulative impacts are presented below. The standards are based on policies of the City of Davis. In addition, the methods used to analyze the impacts of the project on the roadway, bicycle, pedestrian, and transit systems are provided in this section. A discussion of the project’s impacts, as well as mitigation measures where necessary, is also presented.
Standards of Significance
Consistent with Appendix G of the CEQA Guidelines, the proposed project would be considered to result in a significant adverse impact on the environment in relation to transportation and circulation if the project would result in any of the following:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Intersections
The following significance criteria are used to identify operational deficiencies based on the intersection LOS analysis. Per the City of Davis General Plan Transportation Element, LOS E is the minimum acceptable LOS for the majority of intersections within the City, and for each City-operated study intersection in the study area. LOS F is acceptable for other areas (e.g., Downtown Davis and the Richards Boulevard corridor) as established in the General Plan and contingent on approval by the City Council. LOS E is the minimum acceptable LOS established by Caltrans for SR 113 within the study area. LOS F is acceptable for all roadway facilities on the UC Davis campus. For the purposes of this analysis, significant impacts at intersections are defined when the addition of project traffic would cause any of the following:

- For signalized intersections, deterioration of overall intersection operations from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour);
- For signalized intersections, exacerbation of unacceptable (LOS F) operations by increasing an intersection’s average delay by five seconds or more;
- For unsignalized intersections, deterioration of the worst-case movement (or average of all movements for all-way stop-controlled intersections) from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour) and would meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant;
- For unsignalized intersections that operate unacceptably (LOS F in the AM or PM peak hour) and meet MUTCD’s peak hour signal warrant without the project, exacerbation of operations by increasing the overall intersection’s volume by more than one percent; or
- For unsignalized intersections that operate unacceptably, but do not meet MUTCD’s peak hour signal warrant without the project, addition of sufficient volume to meet the MUTCD peak hour signal warrant.

VMT
Per the OPR guidelines, lead agencies are recommended to set project-level thresholds for VMT analysis; however, thresholds have not yet been established by the City of Davis. At this time, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VTM is not required Statewide until July 1, 2020.

Per Section 15064.3(b)(3) of the CEQA Guidelines, a lead agency has discretion to choose the most appropriate methodology to evaluate a project’s VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. Thus, a lead agency
may analyze a project’s VMT qualitatively based on the availability of transit, proximity to destinations, etc.

**CEQA Streamlining**

The proposed project is consistent with SACOG’s MTP/SCS. Under SB 375, projects that are SCS consistent are granted certain CEQA streamlining benefits. The benefits include excluding an analysis of project impacts on the “regional transportation network” from CEQA’s requirements for this EIR. (PRC, § 21159.28, subd. (a).) In this context, the “regional transportation network” means existing and proposed transportation system improvements, including, but not limited to, the State transportation system (e.g. I-80 freeway and SR 113), that were included in the transportation and air quality conformity modeling, including congestion modeling, for the final regional transportation plan adopted by SACOG, but not including “local streets and roads.” (PRC, § 21159.28, subd. (c).)

SB 375 does not alter the City’s discretion to impose “conditions, exactions, or fees for the mitigation of the project’s impacts on the structure, safety, or operations of the regional transportation network or local streets and roads” as conditions of project approval. However, to comply with the requirements of CEQA, SB 375 provides that the City is not “required to reference, describe, or discuss…any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on…the regional transportation network.” (PRC, § 21159.28, subds. (a), (c).)

As defined in the City of Davis General Plan, a local street is defined as “[a] street, other than a collector or arterial, providing access to abutting property and designed not to accommodate or encourage through trips.” (City of Davis General Plan, Section IV.02 (Transportation), p.24.) The key roadways impacted by the proposed project, include Russell Boulevard (major arterial), Anderson Road (minor arterial), and Sycamore Lane (collector); roadways that are not classified as local roads pursuant to the City of Davis General Plan. (Id., Map 3.) Similarly, SACOG’s online mapping tool identifies these roadways as part of the regional network.

While CEQA does not require this EIR to include an analysis of project specific or cumulative impacts from cars and light-duty truck trips generated by the project on the regional transportation network, based on consultation with the City of Davis, it was determined that potential impacts on the regional transportation network would be included in the Transportation and Circulation section of this EIR to provide additional information for the public and decisionmakers to consider in evaluating the proposed project.

**Method of Analysis**

The analysis methodology provided in the Transportation Impact Study prepared for the proposed project by Fehr & Peers is discussed below.

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Analysis Scenarios

The following analysis scenarios are included in this EIR:

- **Existing Conditions**: Establishes the existing setting, which is used to measure the significance of project impacts.
- **Existing Plus Project Conditions**: Adds changes to travel demand resulting from buildout of the proposed project to existing conditions.
- **Cumulative No Project Conditions**: Represents cumulative travel demand based on reasonably foreseeable local and regional land use and transportation system changes. For the purposes of this analysis, the cumulative year is 2036. This scenario assumes the project site remains as-is (i.e., University Mall as currently occupied).
- **Cumulative Plus Project Conditions**: Adds changes to travel demand resulting from buildout of the proposed project to Cumulative No Project conditions.

**Intersection Traffic Volumes**

For the purposes of forecasting traffic volumes for the study intersections, Fehr & Peers relied on the local UC Davis/City of Davis travel demand model. The model has a base year of 2016 and forecast years of 2030 and 2036. The model was developed in close coordination with the City of Davis and UC Davis in order to incorporate planned land use and transportation system changes both within the City and its sphere of influence and on the UC Davis campus. The coordination effort included the following elements of model development:

- **TAZ system**: The traffic analysis zone (TAZ) development included review by City and UC Davis staff to ensure sufficient detail for both existing and new growth areas.
- **Land use inputs**: Inputs were initially obtained from the SACOG 2012 parcel database used in developing regional model inputs for the 2016 SACOG MTP/SCS. These inputs were reviewed for each TAZ with City and UC Davis staff to develop a complete inventory representing 2016 conditions, which is the model’s base year. Similarly, land use forecasts for 2030 and 2036 conditions were developed in cooperation with City staff and UC Davis staff. Land use forecasts for 2030 and 2036 were based on future land use changes throughout the region projected in the 2016 SACOG MTP/SCS. The land use forecasts were refined based on input from City staff and UC Davis staff according to planned City of Davis General Plan growth, planned UC Davis 2018 LRDP growth, approved development projects, pipeline development projects, and other reasonably foreseeable land development activities.
- **Roadway network inputs**: The Local Model roadway network was developed from GIS data representing local, collector, arterial, and freeway functional classifications. Input data included the number of travel lanes and free-flow travel speeds based on the previous UC Davis/City of Davis Local Model developed for the 2003 LRDP update, plus new data from field observations and Google Maps imagery. Capacity inputs for each roadway classification were estimated from reference documents including the HCM 6th Edition and the Travel Demand Forecasting: Parameters and Techniques, National Cooperative Highway Research Program, Report 716, (Transportation Research Board, 2012). Changes to the roadway networks for future year scenarios were provided by City and UC Davis staff as noted above.
- **Vehicle trip rates**: The vehicle trip rates were derived from a variety of sources including the UC Davis Campus Travel Survey, the California Household Travel Survey, local residential trip generation estimates based on observed traffic counts, and the Trip...
Generation Manual, 10th Edition (Institute of Transportation Engineers, 2017). The rates were estimated for the following trip purposes.

- Home-Based Work (HBW): trips between a residence and a workplace;
- Home-Based Shop (HBS): trips between a residence and a retail destination;
- Home-Based School (HBK): trips between a residence and a school (K-12);
- Home-Based Other (HBO): trips between a residence and any other destination;
- Non-Home-Based (OO): trips that do not begin or end at a residence, such as traveling from a workplace to a restaurant, or from a retail store to a bank;
- College (COLL): trips to and from a Community College;
- UC Davis (UCD): trips to and from UC Davis; and
- Highway Commercial (HC): trips to and from highway commercial destinations.

- Vehicle trip lengths and external trip patterns: The vehicle trip lengths and the proportion of vehicle trips that occur exclusively within the model area versus those that have origins or destinations external to the model area were obtained from the UC Davis Campus Travel Survey, the California Household Travel Survey, and the American Community Survey. Information was extracted for each trip purpose above. Trips traveling through the model area without stopping such as those on I-80, were estimated from the regional SACOG SACSIM model developed for the 2016 SACOG MTP/SCS.

- Trip assignment: Trip assignment relies on conventional algorithms that assign trips between origin and destination zones based on travel times that reflect the influence of roadway capacity and speeds. A unique aspect of the assignment process is that UC Davis generated trips had to be associated with parking areas on and off-campus since that is where trips start and end. These parking areas were mapped in collaboration with UC Davis staff and iterative testing of the assignment results was used to refine the association.

The UC Davis/City of Davis travel demand model was applied to generate study intersection traffic volume forecast inputs for the cumulative analysis scenarios described above, as well as to inform the distribution and assignment of project trips under all “plus project” analysis scenarios. Separate model runs were performed for each scenario and the model-produced volume forecasts were extracted for final adjustments to account for differences between the model’s base year volume estimates and observed traffic counts. The adjustment involves isolating the incremental change in volume between the base year model and the future year analysis scenario and adding that difference to the baseline (2018) traffic counts. This adjustment process helps to minimize potential errors in the model’s base year estimates and is based on the methodology contained in Analytical Travel Forecasting Approaches for Project-Level Planning and Design, National Cooperative Highway Research Program (NCHRP) Report 765 (Transportation Research Board, 2014).

Traffic forecasts developed for Cumulative No Project conditions used the difference method procedure, which adds the growth in traffic between the base year and future year models to the Existing conditions volumes. The difference method procedure is commonly used in forecasting because the method accounts for errors in the base year model, which could potentially translate to the cumulative forecasts if not accounted for by this method. As already discussed, the travel demand model includes reasonably foreseeable land use and transportation system changes, including the 2016 SACOG MTP/SCS and City of Davis General Plan land use growth and transportation improvement projects, as well as student, employment, and on-campus housing growth associated with the UC Davis 2018 LRDP.
The following sections describe the methodology used to determine the vehicle trip generation, mode choice, trip distribution, and VMT associated with the proposed project.

**Project Trip Generation**

The conventional approach for estimating travel characteristics for most proposed land development projects involves applying an industry-recommended trip generation rate (typically derived from the ITE Trip Generation Manual) to each relevant land use typology comprising the project. However, given that the proposed project would be mixed use, with a mix of land uses, located in close proximity to the UC Davis campus, a more site-specific approach is necessary to estimate the travel characteristics of the proposed project for the purposes of a CEQA-level transportation study.

Table 4.6-6 summarizes the steps completed to develop the project trip generation and mode choice estimates. The methodology relies primarily upon the local data collection efforts; however, in some instances, factoring was performed using trip rate data from the ITE Trip Generation Manual, 10th Edition.

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<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Collect local data to establish peak hour vehicle trip rates to be used for project residential component.</td>
</tr>
<tr>
<td>2</td>
<td>Calculate peak hour and daily vehicle trip generation for project residential component.</td>
</tr>
<tr>
<td>3</td>
<td>Collect local data to develop peak hour vehicle trip rates to be used for project commercial component.</td>
</tr>
<tr>
<td>4</td>
<td>Calculate peak hour and daily vehicle trip generation for project commercial component.</td>
</tr>
<tr>
<td>5</td>
<td>Calculate total vehicle trip generation for the project.</td>
</tr>
<tr>
<td>6</td>
<td>Utilize local data to estimate peak hour mode choice for the project.</td>
</tr>
</tbody>
</table>

*Source: Fehr & Peers, 2019.*

**Project Vehicle Trip Generation – Residential Component**

Peak hour vehicle trip rates for the residential component of the project were derived from the peak period vehicle trip counts collected at the adjacent, fully leased, 282-bedroom Sycamore Lane Apartments on Thursday, October 11, 2018. A review of the website for the Sycamore Lane Apartments indicated that the apartment complex did not include any vacant units at the time of the data collection. The data collected included person trips entering and exiting the Sycamore Lane Apartments site, as well as mode choice and vehicle occupancy observations. The data collection occurred on a mid-week day in October 2018 while UC Davis and local schools were in regular session, and weather conditions were clear. Given the close proximity between the Sycamore Lane Apartments and the UC Davis campus, a high percentage of apartment residents are UC Davis students.

Based on these counts, the observed AM and PM peak hours for vehicle trip generation occurred from 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM, respectively. Table 4.6-7 summarizes the observed peak hour vehicle trip rates per bedroom at the Sycamore Lane Apartments. By definition, these rates already consider travel made by non-vehicle modes such as walking, bicycling, and transit. For instance, during the PM peak hour, vehicle trips represented only 30 percent of all person trips made by this apartment complex.
Table 4.6-7
Sycamore Lane Apartments – Peak Hour Vehicle Trip Generation

<table>
<thead>
<tr>
<th>Category</th>
<th>Bedrooms</th>
<th>AM Peak Hour</th>
<th></th>
<th></th>
<th>PM Peak Hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In</td>
<td>Total</td>
<td>Out</td>
<td>In</td>
<td>Total</td>
</tr>
<tr>
<td>Vehicle Trips</td>
<td>282</td>
<td>31</td>
<td>9</td>
<td>22</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>Vehicle Trip Rate</td>
<td>0.11</td>
<td>0.15</td>
<td>29%</td>
<td>71%</td>
<td>0.15</td>
<td>42%</td>
</tr>
</tbody>
</table>

Note: Observed AM and PM peak hours for the Sycamore Lane Apartments were 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM, respectively.


During the AM peak hour, the Sycamore Lane Apartments generated 31 vehicle trips, equivalent to an average rate of 0.11 vehicle trips per bedroom. During the PM peak hour, the Sycamore Lane Apartments generated 43 vehicle trips, equivalent to an average rate of 0.15 vehicle trips per bedroom. Vehicle trip rates reflect vehicle trips generated by apartment resident and visitor drive alone and park, carpool and park, and pick-up/drop-off activity, including use of transportation network company (TNC) services (e.g., Uber and Lyft).

Table 4.6-8 summarizes the estimated number of peak hour vehicle trips that would be generated by the residential component of the proposed project using the observed trip rates for the Sycamore Apartments. As shown in the table, the residential component of the project would generate an estimated 69 AM peak hour and 93 PM peak hour vehicle trips. The peak hour vehicle trip generation calculation for the project residential component utilized the project's total number of bedrooms as the independent variable for size. This approach allows for use of the trip generation rates established from observed data collected at the Sycamore Lane Apartments, which similarly used the total number of bedrooms for the apartment complex as the independent variable for size.

Table 4.6-8
Project Residential Component – Peak Hour Vehicle Trip Generation

<table>
<thead>
<tr>
<th>Category</th>
<th>Bedrooms</th>
<th>AM Peak Hour</th>
<th></th>
<th></th>
<th>PM Peak Hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>In</td>
<td>Out</td>
<td>Total</td>
<td>In</td>
</tr>
<tr>
<td>Project Residential Component†</td>
<td>622</td>
<td>69</td>
<td>20</td>
<td>49</td>
<td>93</td>
<td>39</td>
</tr>
</tbody>
</table>

† Calculated as follows based on the Sycamore Lane Apartments peak hour vehicle trip generation rates:
- AM Peak Hour: T = 0.11(X), with 29% inbound and 71% outbound.
- PM Peak Hour: T = 0.15(X), with 42% inbound and 58% outbound.
T = trip ends and X = bedrooms.


The ITE Trip Generation Manual, 10th Edition can be utilized to derive the daily vehicle trips that would be generated by the residential component of the proposed project. The process entails applying a factor to the observed peak hour trip rates from the Sycamore Lane Apartments to estimate the daily trip rate. Hourly-to-daily factors are provided in Appendix A of the ITE Trip Generation Manual for ITE Land Use Category 225 – Off-Campus Student Apartment (Adjacent to Campus). Using the factoring process, the estimated daily vehicle trip rate associated with the proposed project would be 2.72 daily vehicle trips per bedroom, equivalent to 1,690 daily vehicle trips generated by the 622-bedroom residential component of the project.
**Project Vehicle Trip Generation – Commercial Component**

Peak hour vehicle trip rates for the commercial component of the project were derived from the weekday peak period vehicle trip counts collected at the existing University Mall in 2018. The data included vehicle and bicycle trips entering and exiting the project site at each of the existing University Mall driveways, as well as person trips entering and exiting the existing Trader Joe’s and Starbucks located on the project site. Trip generation data for the existing Trader Joe’s and Starbucks was collected in order to quantify their trips versus trips generated by the other retail uses at the University Mall. The data collection occurred in May and November 2018 while UC Davis and local schools were in regular session.

Based on the counts conducted by Fehr & Peers, the observed AM and PM peak hours for vehicle trip generation occurred from 8:00 AM to 9:00 AM and 4:30 PM to 5:30 PM, respectively. Table 4.6-9 summarizes the observed peak hour vehicle trip rates per occupied 1,000 square feet (ksf) for the existing University Mall. At the time of the trip counts, 96,436 ksf of the 103,853 KSF mall was occupied, equivalent to approximately 93 percent occupancy.

<table>
<thead>
<tr>
<th>Category</th>
<th>Occupied Area</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>In</td>
</tr>
<tr>
<td>Vehicle Trips</td>
<td>96,436 ksf</td>
<td>425</td>
<td>244</td>
</tr>
<tr>
<td>Vehicle Trip Rate</td>
<td>4.41</td>
<td>57%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Note: Observed AM and PM peak hours for the existing University Mall were 8:00 AM to 9:00 AM and 4:30 PM to 5:30 PM, respectively. University Mall was approximately 93 percent occupied at the time of the trip counts, equivalent to a total occupied area of 96.436 ksf.


During the AM peak hour, the existing University Mall generated 425 vehicle trips, equivalent to an average rate of 4.41 vehicle trips per occupied ksf. During the PM peak hour, the existing University Mall generated 948 vehicle trips, equivalent to an average rate of 9.83 vehicle trips per occupied ksf. Vehicle trip rates reflect vehicle trips generated by mall employee, delivery, and visitor drive alone and park, carpool and park, and pick-up/drop-off activity, including use of TNC services.

The vehicle trip rates shown in Table 4.6-9 are substantially higher than trip rates typically observed at comparable shopping centers per ITE’s Trip Generation Manual. Field observations suggested that the Trader Joe’s and Starbucks located on-site may have contributed to such unusually high trip rates due to their large number of customers and high rate of customer turnover. Consequently, vehicle trips generated by the existing Trader Joe’s and Starbucks were isolated in order to determine the trip generation characteristics for the remaining retail uses at the existing University Mall. Vehicle trip rates for the remaining retail uses at the existing University Mall were subsequently used for estimating peak hour vehicle trip generation for the expanded University Mall retail space proposed by the project. The proposed project cannot be assumed to consist entirely of future land uses that generate trips at the rates of Trader Joe’s and Starbucks.

Trip counts and field observations were conducted at the existing University Mall Trader Joe’s and Starbucks on Wednesday, November 28, 2018 and Thursday, November 29, 2018 (i.e., one week after the Thanksgiving Holiday). Data collection included peak hour person trip generation counts at the entrance/exit to each use, as well as observations related to mode choice and...
vehicle occupancy (e.g. recording the size of groups entering/exiting the use from adjacent parking spaces, bike racks, and transit stops).

Table 4.6-10 summarizes the observed peak hour vehicle trip rates per occupied ksf for the Trader Joe’s and Starbucks. After excluding such high trip generators, the remaining retail uses at the existing University Mall generate 1.28 vehicle trips per occupied ksf during the AM peak hour and 4.36 vehicle trips per occupied ksf during the PM peak hour. The rates are much more consistent with what is typically expected from a retail center, particularly a retail center located in a university setting where travel by non-vehicle modes is common.7

<table>
<thead>
<tr>
<th>Table 4.6-10</th>
<th>Existing University Mall Remaining Retail – Peak Hour Vehicle Trip Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Occupied ksf</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Existing University Mall (All uses)</td>
<td>96.436</td>
</tr>
<tr>
<td>Trader Joe’s</td>
<td>13.200</td>
</tr>
<tr>
<td>Starbucks</td>
<td>1.435</td>
</tr>
<tr>
<td>High Trip Generators Subtotal (Trader Joe’s + Starbucks)</td>
<td>14.635</td>
</tr>
<tr>
<td>Remaining Retail Uses Subtotal (Existing Mall – High Trip Generators)</td>
<td>81.801</td>
</tr>
<tr>
<td>Remaining Retail Uses Vehicle Trip Rate</td>
<td>81.801</td>
</tr>
<tr>
<td>Remaining Retail Uses Vehicle Trip Rate Adjusted for Increased Shopping Center Size</td>
<td></td>
</tr>
</tbody>
</table>


Trip generation data from the ITE Trip Generation Manual indicates that vehicle trip rates gradually decrease as the size of a shopping center increases, due to more complementary uses being present on-site. Thus, because the proposed project would increase the amount of total retail space on-site, the preliminary trip rates shown in Table 4.6-10 (i.e., 1.28 and 4.36 vehicle trips per peak hour) were adjusted to reflect the marginal increase in internalized retail-to-retail trips. With adjustments for internalization, the AM and PM peak hour vehicle trip rates for the project’s remaining retail uses would be 1.03 and 3.93 vehicle trips per hour, respectively. Vehicle trip rates observed for Trader Joe’s and Starbucks (or an equivalent coffee shop assumed as part of the project) are maintained separate from the internalization process.

Additional adjustments for internalization due to the proposed co-location of residential and commercial uses are not warranted because the base vehicle trip rates were derived from observed data collected from the existing University Mall and neighboring Sycamore Lane Apartments, and therefore already capture travel behavior that approximate internalization activity (e.g., shift to non-motorized modes).

7 For comparison, according to the ITE Trip Generation Manual, 10th Edition published rates for Land Use Category 820 (Shopping Center), a shopping center with 81.801 occupied ksf would generate 2.36 vehicle trips per occupied ksf during the AM peak hour and 5.72 vehicle trips per occupied ksf during the PM peak hour (fitted curve equivalents). It should be noted that such ITE rates were derived from shopping center sites surveyed in general urban/suburban settings nationwide and would therefore be expected to exhibit greater use of vehicle modes compared to the University Mall site.
Table 4.6-11 summarizes the estimated number of peak hour vehicle trips that would be generated by the commercial component of the proposed project. As shown in the table, the commercial component of the project would generate an estimated 459 AM peak hour and 1,122 PM peak hour vehicle trips.

<table>
<thead>
<tr>
<th>Category</th>
<th>Occupied ksf</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Trader Joe’s¹</td>
<td>13.200</td>
<td>179</td>
<td>92</td>
</tr>
<tr>
<td>Starbucks or Equivalent²</td>
<td>1.435</td>
<td>141</td>
<td>73</td>
</tr>
<tr>
<td>Remaining Retail Uses³</td>
<td>135.365</td>
<td>139</td>
<td>105</td>
</tr>
<tr>
<td>Project Commercial Component</td>
<td>150.000</td>
<td>459</td>
<td>270</td>
</tr>
</tbody>
</table>

¹ Derived from existing University Mall Trader Joe’s observed peak hour vehicle trip generation.
² Derived from existing University Mall Starbucks observed peak hour vehicle trip generation. While the proposed project does not explicitly include a Starbucks, the existing University Mall Starbucks is successful, and it or an equivalent coffee shop use would likely be included as an element of the proposed redevelopment.
³ Calculated as follows based on the adjusted vehicle trip rates to reflect increased internal trips associated with larger shopping center size:
   - AM Peak Hour: \( T = 1.03X \), with 75% inbound and 25% outbound.
   - PM Peak Hour: \( T = 3.93X \), with 56% inbound and 44% outbound.

The ITE Trip Generation Manual, 10th Edition, can be utilized to estimate the daily vehicle trips that would be generated by the commercial component of the proposed project. Similar to the methodology utilized for the project residential component, this process entails applying a factor to the observed peak hour trip rates from the existing University Mall to estimate the daily trip rate. Hourly-to-daily factors are provided in Appendix A of the ITE Trip Generation Manual for comparable land use categories. The following ITE land use categories were used for this analysis because the categories most closely correspond with the individual elements of the commercial component of the proposed project, including the Trader Joe’s, Starbucks, and remaining retail uses:

- ITE Land Use Category 850 – Supermarket (Trader Joe’s);
- ITE Land Use Category 936 – Coffee/Donut Shop without Drive-Through Window (Starbucks); and
- ITE Land Use Category 820 – Shopping Center (Remaining Retail Uses).

Using the factoring process, the 150 occupied ksf commercial component of the project would generate an estimated 14,387 daily gross vehicle trips. It should be noted that the factoring process does not rely directly on ITE trip rates; rather, the process applies the hourly to daily ratios for these land use categories from the Trip Generation Manual to the empirically observed trip data at University Mall to more accurately reflect observed conditions from the project site.

**Project Trip Generation Summary**

Table 4.6-12 summarizes the proposed project’s estimated AM peak hour, PM peak hour, and daily vehicle trip generation based on the procedures described above. The project would generate an estimated 528 AM peak hour, 1,215 PM peak hour, and 16,077 daily gross vehicle trips. When accounting for vehicle trips currently generated by the existing University Mall, the
The proposed project would generate an estimated 103 AM peak hour, 267 PM peak hour, and 3,642 daily gross vehicle trips beyond what the University Mall currently generates.

### Table 4.6-12

#### Project Vehicle Trip Generation

<table>
<thead>
<tr>
<th>Category</th>
<th>Units</th>
<th>Daily Total</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Residential Component</td>
<td>622 bedrooms</td>
<td>1,690</td>
<td>69</td>
<td>20</td>
</tr>
<tr>
<td>Commercial Component</td>
<td>150,000 occ. ksf</td>
<td>14,387</td>
<td>459</td>
<td>270</td>
</tr>
<tr>
<td><strong>Project Total (Gross)</strong></td>
<td></td>
<td>16,077</td>
<td>528</td>
<td>290</td>
</tr>
<tr>
<td>Existing University Mall</td>
<td>96,436 occ. ksf</td>
<td>-12,435</td>
<td>-425</td>
<td>-244</td>
</tr>
<tr>
<td><strong>Project Total (Gross Increase)</strong></td>
<td></td>
<td>3,642</td>
<td>103</td>
<td>46</td>
</tr>
</tbody>
</table>

1 Includes existing Trader Joe’s and all other occupied space at the existing University Mall.


Table 4.6-13 summarizes the estimated project AM peak hour, PM peak hour, and daily net new vehicle trip generation resulting from pass-by trip adjustments. Pass-by trips are trips already on the network that are diverted to and from a commercial or retail land use, and therefore would not be considered as new trips generated by the project. The pass-by trip adjustments represent 34 percent of the gross increase in project vehicle trips attributed to the proposed commercial component only. The adjustment factor is based on data provided in the ITE Trip Generation Handbook for shopping center land uses. After accounting for pass-by trips, the proposed project would generate an estimated 91 AM peak hour, 208 PM peak hour, and 2,978 daily net new vehicle trips. The aforementioned figures represent the total new vehicle trips generated by the project that would be added to the surrounding roadway network.

### Table 4.6-13

#### Project Pass-By Trip Adjustment

<table>
<thead>
<tr>
<th>Category</th>
<th>Occupied KSF</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Project Total (Gross Increase)</td>
<td>3,642</td>
<td>103</td>
<td>46</td>
</tr>
<tr>
<td>Project Total (Pass-By)1</td>
<td>-664</td>
<td>-12</td>
<td>-9</td>
</tr>
<tr>
<td>**Project Total (Net Increase in New Trips)**2</td>
<td>2,978</td>
<td>91</td>
<td>37</td>
</tr>
</tbody>
</table>

1 Calculated as 34 percent of the gross increase in project vehicle trips attributed to the project commercial component only.

2 Represents the total new vehicle trips generated by the project that would be added to the surrounding roadway network.


### Project Mode Choice

Project travel mode choice during the AM and PM peak hours was estimated based on peak period field observations and person trip generation counts conducted at the Sycamore Lane Apartments and existing University Mall. Table 4.6-14 summarizes the estimated mode choice for peak hour person trips generated by the proposed project.
Table 4.6-14
Project Peak Hour Mode Choice

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>Residential Component</th>
<th>Commercial Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
</tr>
<tr>
<td>Walk</td>
<td>18%</td>
<td>28%</td>
</tr>
<tr>
<td>Bike</td>
<td>48%</td>
<td>36%</td>
</tr>
<tr>
<td>Transit</td>
<td>13%</td>
<td>6%</td>
</tr>
<tr>
<td>Drive (Self-Park)</td>
<td>19%</td>
<td>29%</td>
</tr>
<tr>
<td>Drive (Ridehail)</td>
<td>2%</td>
<td>1%</td>
</tr>
</tbody>
</table>


Project Trip Distribution and Assignment

Trip distribution refers to the routing of vehicle trips throughout the roadway system serving the project site. Figure 4.6-8 through Figure 4.6-11 show the expected distribution of external vehicle trips to and from the project site. Trip distribution patterns were developed separately for the project residential and commercial components of the project in order to capture variations in route choices associated with project site visitors, employees, and residents. The trip distribution was developed based on the following sources:

- Separate “project-only” traffic assignments for the residential and commercial components of the project from the UC Davis/City of Davis travel demand model.
- Review of existing directional travel patterns to and from the University Mall and the Sycamore Lane Apartments apartment complex.

The majority of project vehicle trips would be routed through Russell Boulevard east and west of the project site. Other roadways that would be expected to accommodate project vehicle trips include SR 113, Sycamore Lane, Anderson Road, La Rue Road, and West Eighth Street.

Project Vehicle Miles Travelled

Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project’s transportation impacts. Per Section 15064.3, analysis of VMT attributable to a project is the most appropriate measure of transportation impacts. While changes to driving conditions that increase intersection delay are an important consideration for traffic operations and management, the method of analysis does not fully describe environmental effects associated with fuel consumption, emissions, and public health. Section 15064.3(3) changes the focus of transportation impact analysis in CEQA from measuring impact to drivers to measuring the impact of driving. It should be noted that as discussed previously, the provisions of Section 15064.3 currently apply only prospectively; determination of impacts based on VTM is not required Statewide until July 1, 2020.

For this analysis, the potential impact to VMT was evaluated by comparing the estimated VMT per capita that would be generated by the project to the local and regional VMT per capita averages. Local and regional averages included the City of Davis, UC Davis, and the SACOG region. Local VMT estimates for the proposed project were prepared by Fehr & Peers using the UC Davis/City of Davis travel demand model, the SACMET travel demand model, and the California Household Travel Survey. For project-generated VMT calculations, the estimated
Figure 4.6-8
Project Trip Distribution – Residential Component (Inbound)

Figure 4.6-9
Project Trip Distribution – Commercial Component (Inbound)

Figure 4.6-10
Project Trip Distribution – Residential Component (Outbound)

Figure 4.6-11
Project Trip Distribution – Commercial Component (Outbound)

project weekday vehicle trip generation was multiplied by average trip lengths derived from the UC Davis/City of Davis travel demand model, with extra distance appended to project trips with trip ends outside of the local model boundaries using the SACMET travel demand model and the California Household Travel survey (e.g., to capture longer trips to/from the Bay Area that would not otherwise be reflected in the local model). The process was completed separately for the residential and commercial components of the proposed project to reflect the unique travel characteristics of project site visitors, employees, and residents.

The following process was employed to prepare estimates for VMT generated at the local and regional level:

- **Local VMT generated by the City of Davis and UC Davis:** The UC Davis/City of Davis travel demand model was used to estimate VMT associated with trips with trip ends within the model boundaries (i.e., the City of Davis sphere of influence and the UC Davis campus). The model was selected for this purpose due to the model’s smaller TAZ structure relative to other available travel demand models, which allows for a more granular evaluation of trips internal to the model boundaries (i.e., to avoid underreporting VMT associated with internal-internal trips associated with a given TAZ). Extra distance was appended to trips with trip ends outside of the local model boundaries using the SACMET travel demand model and the California Household Travel survey. Land use inputs for the TAZ containing the project site were calibrated to match the observed (for Existing and Cumulative No Project conditions) and estimated (for Existing Plus Project and Cumulative Plus Project conditions) daily trip generation associated with the project site based on driveway traffic counts and the project trip generation, respectively.

- **Regional VMT generated by the SACOG region:** The SACMET travel demand model, prepared by SACOG for regional travel demand forecasting purposes, was used to estimate VMT associated with trips with trip ends within the model boundaries (i.e., the SACOG region). Extra distance was appended to trips with trip ends outside of the model boundaries using the California Household Travel survey. VMT associated with SACMET trips with trip ends within the City of Davis sphere of influence or the UC Davis campus were deleted and replaced with the VMT calculated from the UC Davis/City of Davis travel demand model as described in the previous step.

**Project-Specific Impacts and Mitigation Measures**

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above.

### 4.6-1 Impacts to study intersections under Existing Plus Project conditions. Based on the analysis below, the impact is less than significant.

For Existing Plus Project conditions, project-generated peak hour traffic volumes were layered on top of observed existing peak hour traffic volumes at each study intersection. The resulting intersection LOS for each study intersection is shown in Figure 4.6-12 below.

As shown in Table 4.6-15, the addition of traffic associated with the proposed project would cause increases in intersection delay at the study intersections. However, all study intersections would operate within acceptable LOS thresholds.
Figure 4.6-12
Intersection LOS – Existing Plus Project Conditions

### Table 4.6-15
#### Peak Hour Intersection Operations – Existing Plus Project Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>Jurisdiction</th>
<th>Peak Hour Conditions</th>
<th>Existing Conditions</th>
<th>Delay</th>
<th>LOS</th>
<th>Existing Plus Project Conditions</th>
<th>Delay</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Russell Blvd./SR 113 SB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>AM</td>
<td>8</td>
<td>A</td>
<td>8</td>
<td>A</td>
<td>8</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>7</td>
<td>A</td>
<td>6</td>
<td>A</td>
<td>6</td>
<td>A</td>
</tr>
<tr>
<td>2. Russell Blvd./SR 113 NB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>AM</td>
<td>17</td>
<td>B</td>
<td>17</td>
<td>B</td>
<td>17</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>25</td>
<td>C</td>
<td>25</td>
<td>C</td>
<td>25</td>
<td>C</td>
</tr>
<tr>
<td>3. Russell Blvd./Orchard Park Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM</td>
<td>3 (31)</td>
<td>A (D)</td>
<td>3 (35)</td>
<td>A (E)</td>
<td>3 (36)</td>
<td>A (E)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>5 (41)</td>
<td>A (E)</td>
<td>5 (36)</td>
<td>A (E)</td>
<td>5 (36)</td>
<td>A (E)</td>
</tr>
<tr>
<td>4. Russell Blvd./Sycamore Ln.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>21</td>
<td>C</td>
<td>22</td>
<td>C</td>
<td>22</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>8. Russell Blvd./College Park/Howard Way</td>
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Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.


At most intersections, peak hour delay would increase by six seconds or less. On average, signalized intersections would experience a 0.3 and 1.5 second increase during the AM and PM peak hours, respectively. The Russell Boulevard/Orchard Park Drive and Russell Boulevard/California Avenue intersections would continue to meet the peak hour warrant for a traffic signal. However, this is not considered an impact because the applicable threshold is whether the project would degrade operations from an acceptable level to an unacceptable level, which is not the case. The
Sycamore Lane/Wake Forest Drive and Sycamore Lane/West Eighth Street intersections would continue to not meet the peak hour warrant for a traffic signal.

Because all study intersections would operate at acceptable levels with implementation of the project, the proposed project would have a **less-than-significant** impact to study intersections under Existing Plus Project conditions.

**Mitigation Measure(s)**

*None required.*

### 4.6-2 Impacts to bicycle facilities under Existing Plus Project conditions. Based on the analysis below, even with mitigation, the impact is **significant and unavoidable**.

As part of the Transportation Impact Study, the potential for the proposed project impact to bicycle facilities was evaluated based on whether the project would physically disrupt an existing facility or interfere with the implementation of a planned facility. This standard reflects the goals and policies of the City’s General Plan (see, for example, Goal #4 and Policy TRANS 4.10). In addition, the project was evaluated to determine if implementation would otherwise decrease the performance or safety of bicycle facilities. With the exception of new bicycle parking, the proposed project would not include any new or modified on- or off-site bicycle facilities (e.g., bike lanes).

Project bicycle travel was estimated based on bicycle counts and observations conducted at the existing University Mall and Sycamore Lane Apartments complex. Per the Transportation Impact Study, the proposed project would generate an estimated 170 new bicycle trips during both the AM and PM peak hours. Most project bicycle demand would rely on the movements and facilities illustrated in Figure 4.6-13 to travel to/from the project site. The majority of project bicycle trips would travel between the project site and the UC Davis campus to the south, as well as east-west along the Russell Boulevard corridor (to local destinations such as Downtown Davis). Project bicycle trips would be routed through nearby existing bicycle facilities, particularly the bike lanes on Sycamore Lane and Anderson Road, the shared-use paths on the south side of Russell Boulevard and the west side of La Rue Road, and crossing facilities at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersections. As noted previously, the aforementioned facilities currently experience very high levels of peak hour bicycle and pedestrian volumes which, when combined with the dimensions of path and crossing facilities (e.g., the south leg crosswalk at the Russell Boulevard/Anderson Road/La Rue Road intersection), can degrade the performance of the facilities for both bicyclists and pedestrians.

Figure 4.6-14 illustrates peak hour bicycle volumes at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersection under Existing Plus Project conditions.
Figure 4.6-13
Primary Project Site Bicycle Access Patterns

Figure 4.6-14
Peak Hour Bicycle and Pedestrian Volumes – Existing Plus Project Conditions

At the Russell Boulevard/Sycamore Lane intersection, the proposed project would increase total intersection bicycle volume by seven percent during both the AM and PM peak hours. At the Russell Boulevard/Anderson Road/La Rue Road intersection, the project would increase total intersection bicycle volume by 29 percent and 23 percent during the AM and PM peak hours, respectively.

Additional bicycle trips generated by the project, together with increased vehicle and pedestrian trips, could exacerbate crowding on existing bicycle facilities and in shared right-of-way environments, particularly during the peak travel periods such as the morning and evening commutes to/from the UC Davis campus.

Worsened crowding could result in increased competition for physical space between the modes, which in turn could increase the potential for conflicts, including conflicts involving bicyclists, and degrade the performance of bicycle facilities. Crowding conditions would exist at the locations shown in Figure 4.6-15, as follows:

- The Russell Boulevard/Sycamore Lane intersection, at the southbound approach bike lane and upstream bicycle-vehicle mixing zone (bicycle-vehicle conflicts).
- The Russell Boulevard/Anderson Road/La Rue Road intersection, at the southbound approach left-turn bike lane and upstream bicycle-vehicle mixing zone (bicycle-vehicle conflicts), the crosswalks on all legs (bicycle-bicycle and bicycle-pedestrian conflicts), the crosswalks at the eastbound and northbound channelized right-turn lanes (bicycle-vehicle conflicts), and the bicycle and pedestrian crossing staging areas at all corners of the intersection (bicycle-bicycle and bicycle-pedestrian conflicts).
- The shared-use path on the south side of Russell Boulevard on the UC Davis campus on the segments between Sycamore Lane and the UC Davis softball field and between Anderson Road and the bicycle roundabout near Primero Grove (bicycle-bicycle and bicycle-pedestrian conflicts).

Under existing conditions, southbound vehicle queues at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersection frequently block the bicycle-vehicle mixing zones for the southbound bike lanes. With the addition of project bicycle trips, a greater number of bicyclists would be exposed to the bicycle-vehicle conflicts that emerge at the intersections.

Moreover, one of the dominant inbound bicycle movements from the UC Davis campus into the project site – the north to west movement from the southeast to the northwest corner of the Russell Boulevard/Anderson Road/La Rue Road intersection – would not be accommodated within a formal bicycle facility at the northwest corner of the intersection. The lack of a receiving bicycle facility would require project bicycle trips to utilize the westbound vehicle travel lane, the sidewalk, or the internal driveways at the ARCO gas station in order to access the project site via the Russell Boulevard/Anderson Road/La Rue Road intersection, increasing the potential for bicycle-vehicle or bicycle-pedestrian conflicts.
Figure 4.6-15
Bicycle and Pedestrian Impact Summary

The history of collisions involving bicyclists recorded at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersections, and on Sycamore Lane and Anderson Road north of Russell Boulevard, underscores the conflict potential at the locations described above based on the high bicycle volumes and existing roadway and intersection configurations.

As noted previously, Appendix C of the Bicycle Action Plan includes a variety of proposed bicycle facilities throughout the City, including the following proposed bicycle facility enhancements within the vicinity of the project site:

- Buffered bike lanes on Anderson Road and Sycamore Lane north of Russell Boulevard;
- Bike lanes on Russell Boulevard between SR 113 and A Street;
- Bicycle/pedestrian crossing markings at the Russell Boulevard/Anderson Road/La Rue Road intersection; and
- Bike lane conflict markings (green) at the Russell Boulevard/Anderson Road/La Rue Road and Russell Boulevard/Sycamore Lane intersections.

The proposed project would not conflict with any the above planned improvements. In addition, the planned improvements would be generally consistent with Mitigation Measures 4.6-2(a) through 4.6-2(f) listed below; the first two listed improvements do not overlap with the mitigation measures, and would not conflict, while the second two listed improvements are consistent with the mitigation measures provided herein.

**Conclusion**

While the project would not include the implementation of any planned bicycle facilities within the site vicinity, the project would not interfere with the implementation of planned bicycle facilities identified in the City of Davis General Plan or the Bicycle Action Plan. Planned improvements include new bike lanes on Russell Boulevard, as well as bicycle crossing improvements at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersection. In addition, the project would not interfere with planned regional bicycle projects identified in the SACOG MTP/SCS. Nonetheless, given that the additional bicycle traffic associated with the project would increase the potential for bicycle-vehicle or bicycle-pedestrian conflicts, a significant impact could occur.

**Mitigation Measure(s)**

Implementation of Mitigation Measures 4.6-2(a) through 4.6-2(f) would reduce significant impacts associated with bicycle facilities to a less-than-significant level by supporting bicycling to and from the project site and minimizing conflicts between bicycles and other travel modes. However, elements of Mitigation Measures 4.6-2(d), 4.6-2(e), and 4.6-2(f) would occur within UC Davis right-of-way and would be subject to final approval and actions by UC Davis. Given that the required improvements are outside of the City's jurisdiction, the City, as lead agency, cannot legally impose the mitigation measures. In addition, for Mitigation Measures 4.6-2(d) through (f), the final improvements will be subject to the Russell Boulevard Corridor Plan, which is identified in General Plan Policy TRANS 2.8, Action a. The City has held initial discussions with UC Davis with the intent to proceed on developing a Russell Boulevard Corridor Plan. A Corridor Plan will be prepared by the City and the formal process is expected to
begin in the near future, but a Corridor Plan has not yet been adopted. Therefore, implementation of Mitigation Measures 4.6-2(d) through (f) cannot be guaranteed. Consistent with *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, contribution of mitigation funds is not required for impacts where the City does not have full jurisdiction nor a plan in place to ensure implementation of mitigation measures. Nevertheless, the applicant has agreed to contribute mitigation funds to the City, as described in Mitigation Measures 4.6-2(d) through (f).

Due to uncertainties regarding the ability for the aforementioned mitigation measures to reduce impacts to bicycle facilities, bicycle facility impacts on the Russell Boulevard shared-use path and at the Russell Boulevard/Anderson Road/La Rue Road intersection would be considered to remain significant and unavoidable.

**Improve the Southbound Bike Lane Approach at the Russell Boulevard/Sycamore Lane Intersection**

Implementation of either alternative 1 or 2 listed under Mitigation Measure 4.6-2(a) below, or an improvement of equal effectiveness, would enhance the southbound bike lane approach at the Russell Boulevard/Sycamore Lane intersection and reduce the potential for conflicts between bicyclists and vehicles.

4.6-2(a) Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall implement modifications to improve the southbound bike lane approach at the Russell Boulevard/Sycamore Lane intersection

to reduce the potential for bicycle-vehicle conflicts, to the satisfaction of the City Engineer. Improvements shall either physically separate bicyclists and vehicles, or more clearly demarcate the existing bicycle-vehicle mixing zone if the City is unable to physically separate bicyclists and vehicles. Potential improvement alternatives include (but shall not be limited to):

1. Switch the placement of the southbound right-turn lane and the bike lane. Consistent with CAMUTCD standards (for a bicycle facility adjacent to a right-turn lane), such a configuration would place a Class IV separated bikeway immediately against the curb, enabling bicyclists to queue against the curb prior to crossing during the exclusive bicycle crossing signal phase (during which southbound right-turns for vehicles are prohibited). This configuration would eliminate the need for southbound bicyclists to weave across vehicular traffic at the intersection approach. The configuration shall include vertical separation between the bikeway and the right-turn lane, consistent with standard Class IV separated bikeway design.

2. Highlight the existing bicycle-vehicle mixing zone with additional pavement markings (e.g., green skip pavement markings) and warning signage.

**Improve the Southbound Bike Lane Approach at the Russell Boulevard/Anderson Road/La Rue Road Intersection**

4.6-2(b) Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall implement modifications to improve the southbound bike lane approach at the Russell Boulevard/Anderson Road/La Rue Road
intersection to reduce the potential for bicycle-vehicle conflicts, to the satisfaction of the City Engineer. Improvements shall more clearly demarcate the existing bicycle-vehicle mixing zone. Potential improvement alternatives include highlighting the existing bicycle-vehicle mixing zone with additional pavement markings (e.g., green skip pavement markings) and warning signage. Implementation of such improvements, or an improvement of equal effectiveness, would enhance the southbound bike lane approach at the Russell Boulevard/Anderson Road/La Rue Road intersection and reduce the potential for conflicts between bicyclists and vehicles.

Construc an enhanced Bicycle/Pedestrian Facility on the Russell Boulevard Project Site Frontage

Construction of an enhanced facility such as an off-street shared-use path, or an improvement of equal effectiveness, would improve bicycle and pedestrian access between the project site and the Russell Boulevard/Anderson Road/La Rue Road intersection and reduce the potential for bicycle-vehicle and bicycle-pedestrian conflicts.

4.6-2(c) The project applicant shall implement one of the following options prior to issuance of certificates of occupancy, with the bicycle facility and final design to be determined by the City Engineer and the City Traffic Engineer as follows:

Option A: Off-Street Shared-use Path. Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall construct an off-street shared-use path on the north side of Russell Boulevard between Sycamore Lane and Anderson Road along the project site frontage, generally along the alignment of the existing sidewalk. The path may need to be widened into the existing roadway (i.e., into the parking lane) due to right-of-way constraints such as existing trees and driveways (e.g., along the ARCO gas station frontage). The new path shall be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. The City of Davis 2016 Street Design Standards specifies a shared-use path width of 12 feet for arterial roadways, with two-foot wide all-weather shoulders on either side of the path where sufficient space exists to accommodate the standard. The City may determine that a narrower shared path, split path, combination, or alternative path design is acceptable in instances where right-of-way or design constraints, preservation of existing trees, or other considerations would limit the ability to implement the standard path width and design.

Option B: Protected Bike Lane/Cycle Track. Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall construct a protected bike lane on the north side of Russell Boulevard, between Sycamore Lane and Anderson Road along the project site frontage.

It should be noted that, if the off-street shared-use path identified in MM 4.6-2(c) as Option A is not extended into the existing roadway or designed to avoid the existing
trees, then widening the existing sidewalk along the project’s Russell Boulevard frontage would likely require removal of five trees within the existing landscape strip. These trees are identified in the project arborist report as trees #560, 561, 562, 575, and 587. Removal of these trees would require the applicant to obtain a tree removal permit and provide for the following: (1) on-site replacement; (2) off-site replacement; and/or (3) payment of in-lieu fees. However, all reasonable efforts shall be made to avoid impacting the trees.

In addition, widening improvements to accommodate a shared use path or cycle track into the parking shoulder would eliminate up to 18 on-street parking spaces. However, the on-street parking is not needed to serve the project’s parking requirements.

**Improve Crossings at the Russell Boulevard/Anderson Road/La Rue Road Intersection**

Implementation of either alternative 1 or 2 listed under Mitigation Measure 4.6-2(d) below, or a set of improvements of equal effectiveness, would improve bicycle crossings at the Russell Boulevard/Anderson Road/La Rue Road intersection by reducing the potential for bicycle-bicycle, bicycle-pedestrian, and bicycle-vehicle conflicts.

By reconfiguring the channelized right-turn lanes and modifying signal timing, alternative 2 would alter the intersection in a manner that would reduce capacity for vehicle demand. The resulting PM peak hour intersection operations would degrade from LOS D (under Existing Plus Project conditions) to LOS E. Therefore, alternative 2 would maintain acceptable operations at this intersection after mitigation under Existing Plus Project conditions.

Consistent with General Plan Policy TRANS 2.8, Action a, two current City-led corridor planning efforts will identify future complete streets modifications at this intersection and the adjoining Anderson Road and Russell Boulevard corridors (the on-going Anderson Road Streetscape Improvement Project and the soon-to-begin Russell Boulevard Corridor Plan). Therefore, the ultimate improvements constructed at this intersection should be consistent with the preferred intersection configuration identified in these plans. However, because implementation of this mitigation measure would require UC Davis approval, the City of Davis cannot legally impose these improvements, as they are outside of the City’s control. In addition, the preferred improvements cannot be determined at this time, as they will be determined through the City’s Corridor Plan process. For these reasons, the impact remains significant and unavoidable.

It should be noted that this intersection is also impacted under the Cumulative Plus Project scenario as a result of the project’s incremental contribution of vehicle trips (see Impact 4.6-9).

4.6-2(d) Consistent with cumulative Mitigation Measure 4.6-9, prior to the occupancy of the project, the project applicant shall contribute funding to

8 Per the Arborist Report, Tree #560 is a 37-inch (dbh) cork oak in fair health; Tree #561 is a 41-inch (dbh) Aleppo pine in fair-good health; Tree #562 is a 35-inch (dbh) Aleppo pine in fair health; Tree #575 is a 42-inch (dbh) cork oak in good health; and Tree #587 is a 27-inch (dbh) cork oak in fair-good health.
cover their proportionate cost of bicycle improvements to the Russell Boulevard/Anderson Road/La Rue Road intersection as determined in the Development Agreement. The funding shall be submitted to the City of Davis. Given the multi-modal nature of the intersection and future improvements, fair share calculations should consider all modes of transportation utilizing the intersection.

Modifications to improve crossings at the Russell Boulevard/Anderson Road/La Rue Road intersection shall be implemented to reduce the potential for bicycle-bicycle, bicycle-pedestrian, and bicycle-vehicle conflicts. Because intersection modifications would affect right-of-way on the UC Davis campus, the City shall coordinate with UC Davis to identify the ultimate modifications. Improvements shall, to the extent feasible, physically separate bicyclists, pedestrians, and vehicles and reduce bicycle crossing distances and exposure time. Potential improvement alternatives include (but are not limited to):

1. For all intersection crosswalks, widen crosswalks to increase the capacity for crossing bicyclists and pedestrians and reduce the frequency of meeting and passing events that diminish the performance of the crosswalks.
2. Reconfigure the intersection into a protected intersection with corner refuge islands, setback crossings, and exclusive bicycle and pedestrian crossing phases (i.e., vehicles would not be permitted to turn on red during this phase). For all intersection crosswalks, physically separate bicyclists and pedestrians by installing special pavement treatment or striping to clearly demarcate pedestrian and bicycle crossing zones, increase the capacity for crossing bicyclists and pedestrians, and reduce the frequency of meeting and passing events that diminish the performance of the crossings. This alternative would also include the removal of the eastbound and northbound channelized right-turn lanes.

Improve the Russell Boulevard Shared-Use Path Between Sycamore Lane and the UC Davis Softball Field
Implementation of any one of alternatives 1 through 3 listed under Mitigation Measure 4.6-2(e) below, would enhance the Russell Boulevard shared-use path between Sycamore Lane and the UC Davis softball field. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. However, because implementation of this mitigation measure would require UC Davis approval, the City of Davis cannot legally impose these improvements, as they are outside of the City’s control. In addition, the preferred improvements cannot be determined at this time, as they will be determined through the City’s Corridor Plan process. For these reasons, the impact remains significant and unavoidable.

4.6-2(e) Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall contribute funding to cover their proportionate cost of improvements to the shared-use path on the south side of Russell
Boulevard between Sycamore Lane and the UC Davis softball field; the project’s proportionate cost shall be determined in the Development Agreement. The funding shall be submitted to the City of Davis. The City shall negotiate funding contributions with UC Davis as part of the City’s Corridor Plan process. Path improvements shall reduce the potential for bicycle-bicycle and bicycle-pedestrian conflicts, to the satisfaction of the City Engineer. Potential improvement alternatives include (but are not limited to):

1. Widen the existing shared-use path to accommodate bicyclists and pedestrians within a shared facility. Consider installing special pavement treatment or striping to clearly demarcate pedestrian and bicycle zones.
2. Physically separate bicyclists and pedestrians by constructing a new pedestrian pathway parallel to the existing shared-use path.
3. Install pedestrian-scale lighting to improve visibility.

**Improve the Russell Boulevard Shared-Use Path Between Anderson Road and the Bicycle Roundabout Near Primero Grove**

Implementation of any one of alternatives 1 through 3 listed under Mitigation Measure 4.6-2(f) below, would enhance the Russell Boulevard shared-use path between Anderson Road and the bicycle roundabout near Primero Grove. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. However, because implementation of this mitigation measure would require UC Davis approval, the City of Davis cannot legally impose these improvements, as they are outside of the City’s control. In addition, the preferred improvements cannot be determined at this time, as they will be determined through the City’s Corridor Plan process. For these reasons, the impact remains significant and unavoidable.

**4.6-2(f)** Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall contribute funding to cover their proportionate cost of improvements to the shared-use path on the south side of Russell Boulevard between Anderson Road and the bicycle roundabout near Primero Grove; the project’s proportionate cost shall be determined in the Development Agreement. The funding shall be submitted to the City of Davis. The City shall negotiate funding contributions with UC Davis as part of the City’s Corridor Plan process. Path improvements should reduce the potential for bicycle-bicycle and bicycle-pedestrian conflicts, to the satisfaction of the City Engineer. Potential improvement alternatives include (but are not limited to):

1. Widen the existing shared-use path to accommodate bicyclists and pedestrians within a shared facility. Consider installing special pavement treatment or striping to clearly demarcate pedestrian and bicycle zones.
2. Physically separate bicyclists and pedestrians by constructing a new pedestrian pathway parallel to the existing shared-use path.
3. Install pedestrian-scale lighting to improve visibility.
4.6-3 Impacts to pedestrian facilities under Existing Plus Project conditions. Based on the analysis below, even with mitigation, the impact is significant and unavoidable.

As part of the Transportation Impact Study, the potential for the proposed project to result in impacts to pedestrian facilities was evaluated based on whether the project would physically disrupt an existing facility or interfere with the implementation of a planned facility. In addition, the proposed project was evaluated to determine if the project would otherwise decrease the performance or safety of pedestrian facilities.

The proposed project would include reconfigured on-site pedestrian facilities, including new sidewalks and crosswalks serving on-site structures and parking facilities. The project would not include any new or modified off-site pedestrian facilities. Given that existing planning documents do not identify any planned pedestrian facilities within the project vicinity, the project would not interfere with the future implementation of any planned pedestrian facilities, including facilities identified in the City of Davis General Plan and regional pedestrian projects identified in the SACOG MTP/SCS.

Project pedestrian travel was estimated based on pedestrian counts and observations conducted at the existing University Mall and Sycamore Lane Apartments complex. Per the Transportation Impact Study, the proposed project would generate an estimated 70 AM peak hour and 160 PM peak hour new pedestrian trips. The majority of project pedestrian trips would travel between the project site and the UC Davis campus to the south, as well as east-west along the Russell Boulevard corridor.

Most project pedestrian demand would utilize the surrounding sidewalk and shared-use path facilities on Sycamore Lane, Anderson Road, and Russell Boulevard, as well as the crossing facilities provided at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersections. Specific crossing facilities that would accommodate high levels of project pedestrian trips include the east leg crosswalk at the Russell Boulevard/Sycamore Lane intersection and all legs at the Russell Boulevard/Anderson Road/La Rue Road intersection (including the eastbound and northbound channelized right-turn lane crosswalks). As noted previously, the aforementioned facilities currently experience very high levels of peak hour bicycle and pedestrian volumes which, when combined with the dimensions of path and crossing facilities, can degrade the performance of the facilities for both bicyclists and pedestrians.

Figure 4.6-14 illustrates the peak hour pedestrian volumes at the Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road intersection under Existing Plus Project conditions. At the Russell Boulevard/Sycamore Lane intersection, the project would increase total intersection pedestrian volume by 15 percent and 13 percent during the AM and PM peak hours, respectively. At the Russell Boulevard/Anderson Road/La Rue Road intersection, the project would increase total intersection pedestrian volume by 50 percent and 60 percent during the AM and PM peak hours, respectively.

Additional pedestrian trips generated by the project, together with increased vehicle and bicycle trips, could exacerbate crowding on existing pedestrian facilities and in
shared right-of-way environments, particularly during the peak travel periods such as the morning and evening commutes to/from the UC Davis campus. Worsened crowding could result in the increased competition for physical space between the modes, which in turn could increase the potential for conflicts, including those involving pedestrians, and degrade the performance of pedestrian facilities. Crowding conditions would exist at the locations shown in Figure 4.6-15, as follows:

- The Russell Boulevard/Anderson Road/La Rue Road intersection, at the crosswalks on all legs (bicycle-pedestrian conflicts), the crosswalks at the eastbound and northbound channelized right-turn lanes (pedestrian-vehicle conflicts), and the bicycle and pedestrian crossing staging areas at all corners of the intersection (bicycle-pedestrian conflicts).
- The shared-use path on the south side of Russell Boulevard on the UC Davis campus on the segments between Sycamore Lane and the UC Davis softball field and between Anderson Road and the bicycle roundabout near Primero Grove (bicycle-pedestrian conflicts).

**Conclusion**

Based on the above, the proposed project would not conflict with planned pedestrian facilities identified in the City of Davis General Plan or regional pedestrian projects identified in the SACOG MTP/SCS. However, given that the additional pedestrian traffic associated with the project would increase the potential for bicycle-vehicle or bicycle-pedestrian conflicts, a **significant** impact could occur.

**Mitigation Measure(s)**

Implementation of Mitigation Measures 4.6-2(d), 4.6-2(e), and 4.6-2(f) would reduce potential significant impacts associated with pedestrian facilities to a less-than-significant level by supporting walking to and from the project site and minimizing conflicts between pedestrians and other travel modes. However, elements of Mitigation Measures 4.6-2(d), 4.6-2(e), and 4.6-2(f) would occur within UC Davis right-of-way and would be subject to final approval and actions by UC Davis. Because implementation of the measures would require UC Davis approval, the City of Davis cannot legally impose these improvements, as they are outside of the City’s control. Therefore, the implementation of the mitigation measures cannot be guaranteed. In addition, the preferred improvements cannot be determined at this time, as they will be determined through the City’s Corridor Plan process.

Due to uncertainties regarding the ability for the aforementioned mitigation measures to reduce impacts to pedestrian facilities, pedestrian facility impacts on the Russell Boulevard shared-use path and at the Russell Boulevard/Anderson Road/La Rue Road intersection would be considered **significant and unavoidable**.

4.6-3 Implement Mitigation Measures 4.6-2(d), 4.6-2(e), and 4.6-2(f).
4.6-4 Impacts to transit facilities and services under Existing Plus Project conditions. Based on the analysis below and with implementation of mitigation, the impact is less than significant.

The potential for the proposed project to result in impacts to transit service or facilities was evaluated based on whether the project would physically disrupt an existing service/facility or interfere with the implementation of a planned service/facility. In addition, the proposed project was evaluated to determine if the project would otherwise decrease the performance or safety of transit service/facilities.

The project would not include any new or modified on- or off-site transit service or facilities. Existing planning documents do not identify any planned transit facilities within the project vicinity. Therefore, the project would not interfere with the implementation of planned transit service or facilities identified in the City of Davis General Plan or the Unitrans Short Range Transit Plan. In addition, the project would not interfere with planned regional transit projects identified in the SACOG MTP/SCS.

Project transit travel was estimated based on transit passenger counts and observations conducted at the existing University Mall and Sycamore Lane Apartments complex. Per the Transportation Impact Study, the proposed project would generate an estimated 50 AM peak hour and 30 PM peak hour new transit passenger trips. The majority of project transit passenger trips would travel on existing Unitrans service between the project site and the UC Davis campus to the south.

Most outbound passengers (boarding the bus) would use the southbound bus stop on Anderson Road located on the eastern project site boundary, as well as the southbound bus stop on Sycamore Lane north of Russell Boulevard (across Sycamore Lane from the project site). Most inbound passengers (getting off the bus) would use the northbound bus stops on Anderson Road and Sycamore Lane north of Russell Boulevard. Inbound passengers getting off at the Sycamore Lane bus stop would access the project site immediately from the bus stop, while those using the Anderson Road bus stop would be required to cross the north leg crosswalk at the Russell Boulevard/Anderson Road/La Rue Road intersection before accessing the project site.

The existing southbound bus stop on Anderson Road is currently outfitted with a bus stop sign, but lacks a shelter, seating, or dedicated passenger waiting area, which results in dwelling passengers waiting in the sidewalk or in the adjacent landscaped area. The addition of project-generated transit passenger demand would exacerbate the existing conditions, which could lead to more substantial blocking of the sidewalk by dwelling passengers, as well as dwelling passengers physically blocking passengers who wish to deboard buses as passengers arrive at the stop. Worsened conditions would be detrimental to transit access and operations.

Conclusion
Based on the above, the proposed project would not conflict with planned transit facilities or services identified in the City of Davis General Plan, the Unitrans Short Range Transit Plan, or regional transit projects identified in the SACOG MTP/SCS. However, given that the additional transit use associated with the project would conflict
with operations at the southbound bus stop on Anderson Road, located on the eastern project site boundary, a **significant** impact could occur.

**Mitigation Measure(s)**

Implementation of the following mitigation measure would reduce the above impact to a **less-than-significant** level.

4.6-4 **Prior to issuance of certificates of occupancy for the proposed project, the project applicant shall enhance the existing bus stop on southbound Anderson Road north of Russell Boulevard, to the satisfaction of the City Engineer. Bus stop enhancements shall include the addition of a shelter, seating, waste receptacle, as well as an expanded dedicated passenger waiting area that can sufficiently accommodate dwelling passenger without impeding the adjacent sidewalk. Bus stop enhancements shall be developed in consultation with Unitrans staff.**

4.6-5 **Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Based on the analysis below, the impact is less than significant.**

As part of the Transportation Impact Analysis, the potential for the proposed project to result in impacts related to VMT was evaluated by comparing the estimated VMT per capita that would be generated by the project to the local and regional VMT per capita averages. Project-generated, local, and regional VMT estimates were derived using the techniques discussed in the Methods of Analysis section above. Given the mixed-use nature of the proposed project, VMT per capita figures are expressed in terms of service population (i.e., residents plus employees).

Per the Transportation Impact Analysis, the proposed project is estimated to generate a net increase of 16,495 VMT under Existing conditions on a typical weekday (see Table 4.6-16). As shown in Table 4.6-17, the VMT associated with the project would equate to an estimated 16.2 VMT per capita, which is lower than the local and regional VMT per capita averages. Factors that contribute to a lower VMT include the project’s proximity to UC Davis, the complementary on-site retail and residential land uses, and the availability of nearby high-quality bicycle facilities and transit services.

<table>
<thead>
<tr>
<th>Table 4.6-16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekday Project-Generated VMT – Existing Plus Project Conditions</strong></td>
</tr>
<tr>
<td>Weekday VMT</td>
</tr>
<tr>
<td>Residential Component</td>
</tr>
<tr>
<td>Commercial Component¹</td>
</tr>
<tr>
<td>Project Site Total</td>
</tr>
</tbody>
</table>

¹ Estimate includes a pass-by trip reduction of 34 percent for trips attributed to on-site commercial uses, per the ITE Trip Generation Handbook.

Table 4.6-17
Weekday VMT per Capita Summary – Existing Plus Project Conditions

<table>
<thead>
<tr>
<th>Metric</th>
<th>Project-Generated VMT per Capita¹</th>
<th>City of Davis VMT per Capita</th>
<th>City of Davis &amp; UC Davis VMT per Capita²</th>
<th>SACOG Region VMT per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total VMT</td>
<td>16.495</td>
<td>3,002,103</td>
<td>3,811,683</td>
<td>73,397,949</td>
</tr>
<tr>
<td>Residents</td>
<td>894</td>
<td>68,243</td>
<td>76,914</td>
<td>2,051,914</td>
</tr>
<tr>
<td>Employees</td>
<td>125</td>
<td>13,346</td>
<td>24,728</td>
<td>875,701</td>
</tr>
<tr>
<td>Capita³</td>
<td>1,019</td>
<td>81,589</td>
<td>101,642</td>
<td>2,927,615</td>
</tr>
<tr>
<td>Total VMT per Capita</td>
<td>16.2</td>
<td>36.8</td>
<td>37.5</td>
<td>25.1</td>
</tr>
</tbody>
</table>

¹ Project residents estimated based on the proposed number of beds that would comprise the residential component of the project, at one resident per bed. The project employment figure is estimated according to the typical amount of retail space occupied per employee, or 275 square feet.

² Includes both City of Davis residents and employees and UC Davis on-campus residents and employees.

³ For the purposes of this analysis, “capita” represents service population (i.e., residents plus employees).


Based on the above, the proposed project would result in a less-than-significant impact with respect to conflicting with or being inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Mitigation Measure(s)
None required.

4.6-6 Impacts related to emergency access. Based on the analysis below, the impact is less than significant.

The existing University Mall site consists of two vehicular accesses on Sycamore Lane (both full access), three vehicular accesses on Anderson Road (two full access, one right-in/right-out only), and two vehicular accesses on Russell Boulevard (no full access, both right-in/right-out only). The proposed project would eliminate one of the full access driveways on Anderson Road, but would not materially alter the remaining vehicular access points. Altogether, the connections would provide multiple opportunities and routes for emergency vehicles to access the site.

Emergency vehicle access to the project site would not change substantially from existing conditions. Fire access from the Downtown Davis fire station (located one mile east of the project site) would be available by way of westbound Russell Boulevard, or southbound Anderson Road if Russell Boulevard is otherwise blocked or inoperable. Fire access from the West Davis fire station (located 1.75 miles northwest of the project site) would be available by way of eastbound Russell Boulevard, or southbound Sycamore Lane if Russell Boulevard is otherwise blocked or inoperable. Medical emergency service access from Sutter Davis Hospital (located two miles northwest of the project site) would be available from northbound Sycamore Lane, by way of SR 113, and southbound Sycamore Lane, by way of Covell Boulevard.
By providing multiple access and egress points, the proposed project would meet City of Davis standards for providing emergency vehicle access to the site. Therefore, the Transportation Impact Study concluded that the proposed project would provide adequate emergency access and a less-than-significant impact could occur.

**Mitigation Measure(s)**
None required.

**4.6-7 Impacts related to construction vehicle traffic. Based on the analysis below and with implementation of mitigation, the impact is less than significant.**

Construction of the project, including site preparation and construction, and delivery activities, would generate contractor employee trips and a variety of other construction-related vehicle trips. The volume of construction-related traffic would not be expected to exceed the project's operational AM and PM peak hour vehicle trip generation. As such, construction traffic would not cause unacceptable operating conditions at any of the study intersections in the project area.

However, project construction activities would disrupt vehicle, pedestrian, bicycle, and emergency vehicle access to and from on-site and adjacent uses active during construction, particularly Trader Joe’s and the ARCO gas station. Moreover, project construction activities would disrupt pedestrian, bicycle, and transit stop access on highly-utilized facilities on the east side of Sycamore Lane and the west side of Anderson Road. As such, construction vehicle staging, construction vehicle ingress/egress, and any potential temporary street, sidewalk, bikeway, or transit stop closures related to project construction would block or impede access for adjacent users. Therefore, construction activities associated with the proposed project would cause a significant impact to the surrounding transportation system.

**Mitigation Measure(s)**
Implementation of the following mitigation measure would reduce the above impact to a less-than-significant level.

**4.6-7 Before commencement of any construction activities for the project site, the project applicant shall prepare a detailed Construction Traffic Control Plan and submit it for review and approval by the City Department of Public Works. The applicant and the City shall consult with Unitrans, Yolobus, and local emergency service providers for their input before approving the Plan. The Plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained during construction. At a minimum, the Plan shall include:**

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

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

4.6-8 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Based on the analysis below and with implementation of mitigation, the impact is less than significant.

The following sections provide a discussion of potential hazards related to vehicle queuing and site access/circulation, including pedestrian conflicts and bicycle, pedestrian, and transit access. It should be noted that while on-site circulation is not typically evaluated as part of CEQA review, such issues are addressed herein given the potential result in spillover effects onto off-site roadways.

**Vehicle Queuing**

The proposed project would increase AM and PM peak hour vehicle traffic at local intersections throughout the study area under Existing Plus Project conditions. As shown in Table 4.6-18, the project would increase vehicle demand for the eastbound left-turn at the Russell Boulevard/Sycamore Lane intersection. The increase would primarily be attributed to growth in peak hour traffic volumes from SR 113 to the project site.

Under Existing Plus Project conditions, peak hour maximum queues for the eastbound left-turn at the Russell Boulevard/Sycamore Lane intersection would spill back to a distance of 325 feet, 25 feet (one car length) beyond the 300 feet of available left-turn pocket storage capacity, and block the adjacent eastbound through travel lane on Russell Boulevard.

**Driveway Throat Depths**

Adequate driveway throat depths are necessary to minimize conflicting movements that disrupt on- and off-site circulation. Conflicting movements located within the driveway throat area can cause undesirable circulation effects, including vehicles that queue back into the adjacent public roadway, vehicle conflicts with pedestrians and bicyclists, and congestion within the project site. Common site design features that
cause conflicting movements include poorly placed parking stalls, internal intersections, and bicycle and pedestrian pathways.

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Movement</th>
<th>Available Storage</th>
<th>Existing Maximum Vehicle Queue AM Peak Hour</th>
<th>Existing Maximum Vehicle Queue PM Peak Hour</th>
<th>Existing Plus Project Maximum Vehicle Queue AM Peak Hour</th>
<th>Existing Plus Project Maximum Vehicle Queue PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell Blvd./SR 113 SB Ramps</td>
<td>SB LT</td>
<td>1,500 feet</td>
<td>275 feet</td>
<td>200 feet</td>
<td>300 feet</td>
<td>200 feet</td>
</tr>
<tr>
<td>Russell Blvd/SR 113 NB Ramps</td>
<td>NB RT</td>
<td>1,100 feet</td>
<td>250 feet</td>
<td>400 feet</td>
<td>275 feet</td>
<td>425 feet</td>
</tr>
<tr>
<td>Russell Blvd./Sycamore Ln.</td>
<td>EB LT</td>
<td>300 feet</td>
<td>300 feet</td>
<td>300 feet</td>
<td>325 feet</td>
<td>325 feet</td>
</tr>
<tr>
<td></td>
<td>WB TH</td>
<td>750 feet</td>
<td>125 feet</td>
<td>275 feet</td>
<td>125 feet</td>
<td>350 feet</td>
</tr>
<tr>
<td></td>
<td>SB LT</td>
<td>125 feet</td>
<td>175 feet</td>
<td>175 feet</td>
<td>175 feet</td>
<td>175 feet</td>
</tr>
<tr>
<td></td>
<td>SB RT</td>
<td>125 feet</td>
<td>250 feet</td>
<td>200 feet</td>
<td>275 feet</td>
<td>225 feet</td>
</tr>
<tr>
<td>Russell Blvd./Anderson Rd./La Rue Rd.</td>
<td>EB LT</td>
<td>100 feet</td>
<td>125 feet</td>
<td>125 feet</td>
<td>125 feet</td>
<td>150 feet</td>
</tr>
<tr>
<td></td>
<td>EB TH</td>
<td>750 feet</td>
<td>200 feet</td>
<td>150 feet</td>
<td>250 feet</td>
<td>200 feet</td>
</tr>
<tr>
<td></td>
<td>NB LT</td>
<td>125 feet</td>
<td>100 feet</td>
<td>175 feet</td>
<td>100 feet</td>
<td>175 feet</td>
</tr>
<tr>
<td></td>
<td>NB TH</td>
<td>975 feet</td>
<td>100 feet</td>
<td>275 feet</td>
<td>100 feet</td>
<td>250 feet</td>
</tr>
<tr>
<td></td>
<td>NB RT</td>
<td>225 feet</td>
<td>75 feet</td>
<td>150 feet</td>
<td>100 feet</td>
<td>175 feet</td>
</tr>
<tr>
<td></td>
<td>SB LT</td>
<td>150 feet</td>
<td>150 feet</td>
<td>150 feet</td>
<td>150 feet</td>
<td>150 feet</td>
</tr>
<tr>
<td></td>
<td>SB TH</td>
<td>1,525 feet</td>
<td>400 feet</td>
<td>325 feet</td>
<td>400 feet</td>
<td>450 feet</td>
</tr>
</tbody>
</table>

Notes:
- Estimates derived from SimTraffic micro-simulation software.
- Storage values measured from stop bar to adjacent upstream intersection.
- All values rounded to the nearest 25 feet.
- NB = northbound, SB = southbound, EB = eastbound, and WB = westbound.
- LT = left-turn, RT = right-turn, and TH = through.
- **Bold** text indicates queues that exceed available storage.


Per the Transportation Impact Analysis, as shown in Figure 4.6-16, the maximum outbound queues during the PM peak hour would exceed the driveway throat depth at several locations on the project site under Existing Plus Project conditions. In addition, inbound queues could spill into the adjacent public roadway at the following locations:

- Southern Sycamore Lane driveway;
- Southern Anderson Road driveway; and
- Western Russell Boulevard driveway.

Queue spillback would be particularly problematic at the southern Sycamore Lane driveway and the western Russell Boulevard driveway, because both driveways serve highly desirable parking stalls in close proximity to the Trader Joe’s entrance (i.e., motorists would be willing to wait longer to access a convenient parking location).
Figure 4.6-16
Vehicle Queuing – Existing Plus Project Conditions

Given that queue spillback could result in conflicts with vehicle circulation on the public roadways fronting the project site, a significant impact could occur.

**Conclusion**
Given that the proposed project could result in detrimental effects related to vehicle queuing at the Russell Boulevard/Sycamore Lane intersection, as well as spillback of vehicle queues at the site access points, the project would result in hazards due to a geometric design feature or incompatible uses, and a **significant** impact could occur.

**Mitigation Measure(s)**
Implementation of the following mitigation measures would reduce the above impact to a **less-than-significant** level.

**Extend the Eastbound Left-Turn Pocket at the Russell Boulevard/Sycamore Lane Intersection**
4.6-8(a) Prior to the issuance of demolition permits, the project applicant shall extend the eastbound left-turn pocket at the Russell Boulevard/Sycamore Lane intersection from 300 to 375 feet, which is the maximum distance feasible without affecting the adjacent westbound left-turn pocket at the Russell Boulevard/Orchard Park Drive intersection. The extension will enable the eastbound left-turn pocket to accommodate the maximum queue of 325 feet under Existing Plus Project conditions. The timing of this modification is necessary to accommodate the considerable number of truck trips related to the project’s demolition and construction.

**On-Site Circulation Improvements**
4.6-8(b) Prior to issuance of grading plans, the project improvement plans shall reflect the modifications listed below, or equivalent measures, based on the final site design, to reduce vehicle queuing spillback at the project driveways, to the satisfaction of the City Engineer. The modifications may include, but are not limited to, the following:

- **Southern Sycamore Lane Driveway**
  - Parking stalls along the Retail 6 frontage shall be eliminated; and
  - Exclusive outbound left-turn and right-turn lanes shall be provided.

- **Southern Anderson Road Driveway**
  - Parking stalls along the Retail 1, 2, and 3 frontages shall be eliminated.

- **Western Russell Boulevard Driveway**
  - The drive aisle shall be aligned north into the parking garage, shifted further east into the project site to provide additional throat depth for the southern Sycamore Lane driveway, and access for the southernmost east-west drive aisle shall be closed off to/from the west (opposite the Trader Joe’s loading dock).
Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Refer to Chapter 5, Statutorily Required Sections, of this EIR for more detail.

As discussed in the Transportation Impact Study, between Existing Plus Project and Cumulative Plus Project conditions, travel characteristics associated with the proposed project would not materially alter the project's effect on surrounding transportation system operating conditions or performance related to bicycle facilities, pedestrian facilities, transit facilities and services, and emergency vehicle access. In addition, construction activities associated with the project would be complete prior to the 2036 cumulative analysis year. Therefore, the proposed project would not result in a considerable contribution to cumulative impacts on the topics listed above beyond the impacts discussed above. The aforementioned topics are not discussed further in this EIR.

4.6-9 Impacts to study intersections under Cumulative Plus Project conditions. Based on the analysis below, even with mitigation, the impact is **cumulatively considerable** and **significant and unavoidable**.

For Cumulative Plus Project conditions, project-generated peak hour traffic volumes were layered on top of estimated Cumulative No Project peak hour traffic volumes at each study intersection. The number of peak hour project vehicle trips added to the Russell Boulevard corridor would be identical to those generated under Existing Plus Project conditions, as described previously. The resulting intersection LOS for each study intersection is shown in Figure 4.6-17 below.

As shown in Table 4.6-19 below, at most intersections, the addition of the project would increase peak hour delay by five seconds or less.

At the two intersections nearest to the project site – Russell Boulevard/Sycamore Lane and Russell Boulevard/Anderson Road/La Rue Road – the addition of project traffic would increase peak hour delay by between 15 and 20 seconds. Between Cumulative No Project and Cumulative Plus Project conditions, on average, signalized intersections would experience a 2.2 and 3.9 second increase during the AM and PM peak hours, respectively.

The following intersections would fail to meet acceptable LOS thresholds under both the Cumulative No Project and Cumulative Plus Project condition:

3. Russell Boulevard/Orchard Park Drive – LOS F (worst-case movement) during the AM and PM peak hours;
5. Russell Boulevard/Anderson Road/La Rue Road – LOS F (intersection average) during the PM peak hour; and
6. Russell Boulevard/California Avenue – LOS F (worst-case movement) during the AM and PM peak hours.
Figure 4.6-17
Intersection LOS – Cumulative Plus Project Conditions

Table 4.6-19
Peak Hour Intersection Operations – Cumulative Plus Project Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>Jurisdiction</th>
<th>Peak Hour</th>
<th>Cumulative No Project Conditions</th>
<th>Cumulative Plus Project Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Delay</td>
<td>LOS</td>
</tr>
<tr>
<td>1. Russell Blvd./SR 113 SB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>AM</td>
<td>12</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>9</td>
<td>A</td>
</tr>
<tr>
<td>2. Russell Blvd./SR 113 NB Ramps</td>
<td>Signal</td>
<td>Caltrans</td>
<td>AM</td>
<td>21</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>36</td>
<td>D</td>
</tr>
<tr>
<td>3. Russell Blvd./Orchard Park Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM</td>
<td>9 (&gt;120) A (F)</td>
<td>12 (&gt;120) B (F)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>16 (53) C (F)</td>
<td>18 (91) C (F)</td>
</tr>
<tr>
<td>4. Russell Blvd./Sycamore Ln.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>22</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>41</td>
<td>D</td>
</tr>
<tr>
<td>5. Russell Blvd./Anderson Rd./La Rue Rd.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>43</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>100</td>
<td>F</td>
</tr>
<tr>
<td>6. Russell Blvd./California Ave.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM</td>
<td>8 (37) A (E)</td>
<td>9 (42) A (E)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>87 (&gt;120) F (F)</td>
<td>86 (&gt;120) F (F)</td>
</tr>
<tr>
<td>7. Russell Blvd./Oak Ave.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>13</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>41</td>
<td>D</td>
</tr>
<tr>
<td>8. Russell Blvd./College Park/Howard Way</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>22</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>62</td>
<td>E</td>
</tr>
<tr>
<td>9. Russell Blvd./A St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>28</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>58</td>
<td>E</td>
</tr>
<tr>
<td>10. Russell Blvd./Fifth St./B St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>34</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>36</td>
<td>D</td>
</tr>
<tr>
<td>11. Sycamore Ln./Wake Forest Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>AM</td>
<td>3 (20)  A (C)</td>
<td>4 (20)  A (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>3 (20)  A (C)</td>
<td>3 (21)  A (C)</td>
</tr>
<tr>
<td>12. Sycamore Ln./West Eighth St.</td>
<td>AWSC</td>
<td>City of Davis</td>
<td>AM</td>
<td>10 (11) A (B)</td>
<td>10 (11) B (B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>9 (10)  A (A)</td>
<td>9 (10)  A (A)</td>
</tr>
<tr>
<td>13. Anderson Rd./West Eighth St.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>AM</td>
<td>24</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>23</td>
<td>C</td>
</tr>
<tr>
<td>14. La Rue Rd./Hutchison Dr.</td>
<td>Signal</td>
<td>UC Davis</td>
<td>AM</td>
<td>23</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>54</td>
<td>D</td>
</tr>
</tbody>
</table>

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.


At the Russell Boulevard/Anderson Road/La Rue Road intersection, the increase in delay attributable to the proposed project would exceed the applicable five-second standard established by the City of Davis. At the two unsignalized intersections, the increase in volume attributable to the project would exceed the City’s one percent increase threshold. Therefore, the proposed project would result in a cumulatively considerable increase in peak hour delay under Cumulative Plus Project conditions.
The Russell Boulevard/Orchard Park Drive and Russell Boulevard/California Avenue intersections would continue to meet the peak hour warrant for a traffic signal under Cumulative Plus Project conditions. The Sycamore Lane/Wake Forest Drive and Sycamore Lane/West Eighth Street intersections would continue to not meet the peak hour warrant for a traffic signal.

Based on the above, the study intersections within the project vicinity would continue to operate acceptably under Cumulative Plus Project conditions, with the exception of Intersections #3, #5, and #6, as listed above. Given that the increase in peak hour delay at the three intersections would exceed the applicable peak hour delay and traffic volume standards established by the City of Davis, and both unsignalized intersections would continue to meet peak hour warrants, the project’s incremental contribution to the significant cumulative impact would be *cumulatively considerable*.

**Mitigation Measure(s)**

As noted in the Transportation Impact Study, the Russell Boulevard corridor is currently limited in terms of physical modification or expansion due to right-of-way constraints. Moreover, any substantial widening of Russell Boulevard that would result in increased capacity for peak hour vehicle demand would be inconsistent with City policies related to non-motorized transportation prioritization (e.g., by creating longer bicycle and pedestrian crossing distances at intersections) and limits on the number of allowable arterial vehicular travel lanes. Therefore, potential modifications to Russell Boulevard may not include the addition of through vehicular travel lanes, and must instead focus on intersection and/or traffic signal modifications to increase vehicle capacity without compromising bicycle, pedestrian, or transit facilities, thereby ensuring that the modifications address any potential cumulative effects associated with alternative modes of transit. In addition, the preferred improvements cannot be determined at this time, as they will be determined through development of the Russell Boulevard Corridor Plan currently being prepared by the City.

Potential improvement alternatives include, but are not limited to, the following:

1) At the Russell Boulevard/Orchard Park Drive intersection, either:
   a. Prohibit northbound left-turns, or
   b. Prohibit northbound left-turns and westbound left-turns (i.e., right-in/right-out only).

   The turn prohibitions would eliminate side-street movements and/or major street left-turn movements that contribute to the cumulatively considerable impact at the intersection. The City has also considered converting the intersection from a side-street stop-controlled intersection to a signalized intersection. While a traffic signal would reduce delay for side-street movements that contribute to the cumulatively considerable impact at this intersection, the City has determined that a traffic signal at the Russell Boulevard/Orchard Park Drive intersection would be undesirable due to the resulting increase in eastbound and westbound major street delay on Russell Boulevard.

2) At the Russell Boulevard/Sycamore Lane intersection, construct pedestrian bulbouts at the northwest and northeast corners of the intersection to reduce pedestrian crossing distances, which in turn would allow for reduced “walk” and
“flash don’t walk” times for the north, west, and east leg crossings. The resulting excess green time would be reallocated to the major east-west through movements to improve overall corridor operations. The pedestrian bulbouts would be integrated with the design of the bike lane modification described in Mitigation Measure 4.6-2(a) (at the northwest corner) and the shared-use path described in Mitigation Measure 4.6-2(c) (at the northeast corner).

3) At the Russell Boulevard/Sycamore Lane intersection, lengthen the eastbound left-turn pocket from 300 to 375 feet, as required by Mitigation Measure 4.6-8.

4) At the Russell Boulevard/Anderson Road/La Rue Road intersection, either
   a. Install five-section traffic signal for the northbound right-turn lane and an accompanying bicycle/pedestrian signal to control crossing movements across the northbound channelized right-turn lane, or
   b. Implement Alternative 2 described in Mitigation Measure 4.6-2(d) (conversion of the Russell Boulevard/Anderson Road/La Rue Road intersection to a protected intersection).

The options would eliminate the conflict caused by northbound right-turn vehicular movements and crossing bicycle and pedestrian movements (utilizing the Russell Boulevard shared-use path), which is a source of vehicle delay at the intersection.

5) At the Russell Boulevard/Oak Avenue intersection, prohibit eastbound U-turn movements and convert the eastbound left-turn movement from a permitted to a protected left-turn signal phase. The modifications would reduce peak hour delay associated with eastbound left-turn/U-turn vehicle demand at this intersection, which would otherwise cause queueing that spills back beyond the available turn pocket storage capacity, block the adjacent eastbound through lane, and reduce the functional capacity of eastbound Russell Boulevard at this segment to a single lane. The eastbound/left-turn movement at Oak Avenue would experience high PM peak hour delay under Cumulative Plus Project conditions due to the desire for motorists departing the UC Davis campus at California Avenue (turning north-to-east onto Russell Boulevard) to complete a U-turn at Oak Avenue to proceed westbound on Russell Boulevard towards SR 113.

6) At the Russell Boulevard/College Park/Howard Way intersection, convert the northbound and southbound approaches to split phase operations and eliminate the west leg crossing. The elimination of the west leg crossing would allow for additional green time (resulting from the elimination of the “walk” and “flash don’t walk” phases associated with the west leg crossing) to be reallocated to the major east-west through movements to improve overall corridor operations. The modification would increase the capacity for high side-street vehicle demand at northbound Howard Way generated by the UC Davis campus during the PM peak hour.

7) At all signalized intersections on Russell Boulevard, increase the PM peak hour cycle length from 90 to 100 seconds, which would match the AM peak hour cycle length under existing conditions. This signal timing adjustment should be applied to all coordinated signals along the corridor between and inclusive of Sycamore Lane and G Street.

Implementation of Mitigation Measure 4.6-9 would reduce peak hour delay for select vehicular movements at intersections along Russell Boulevard under Cumulative Plus
Project conditions. However, overall Russell Boulevard corridor vehicle demand would remain high under Cumulative Plus Project conditions, which would limit the effectiveness of potential mitigation actions with regards to reducing peak hour vehicle delay at study intersections (see Table 4.6-20). Overall, the delay reductions would not be sufficient to restore acceptable intersection operating conditions at impacted study intersections, or to reduce the project’s cumulatively considerable contribution to unacceptable operating conditions.

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>Jurisdiction</th>
<th>Relevant Improvement Alternatives</th>
<th>Peak Hour</th>
<th>Cumulative Plus Project Conditions with Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Delay</td>
</tr>
<tr>
<td>3. Russell Blvd./Orchard Park Dr.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>1a, 2, 3, 7</td>
<td>AM</td>
<td>2 (16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>6 (15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1b, 2, 3, 7</td>
<td>AM</td>
<td>2 (11)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>5 (11)</td>
</tr>
<tr>
<td>5. Russell Blvd./Anderson Rd./La Rue Rd.</td>
<td>Signal</td>
<td>City of Davis</td>
<td>4a, 7</td>
<td>PM</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4b, 7</td>
<td>&gt;120</td>
</tr>
<tr>
<td>6. Russell Blvd./California Ave.</td>
<td>SSSC</td>
<td>City of Davis</td>
<td>5, 6, 7</td>
<td>PM</td>
<td>95 (&gt;120)</td>
</tr>
</tbody>
</table>

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.


Furthermore, elements of Mitigation Measure 4.6-9 would occur within UC Davis right-of-way (e.g., modifications to the Russell Boulevard/Anderson Road/La Rue Road intersection) and would be subject to final approval and actions by UC Davis. Moreover, because the remaining fair share contributions needed for the construction of Alternatives 1, 4, 5, 6, and 7 have not been identified by the City of Davis, fair share payment by the project applicant would not ensure construction. In addition, the preferred improvements cannot be determined at this time, as they will be determined through the City’s Corridor Plan process. Therefore, full implementation of Mitigation Measure 4.6-9 cannot be guaranteed. Thus, the project’s incremental contribution to the cumulative impact would remain cumulatively considerable and significant and unavoidable.

**Modify Russell Boulevard Intersections to Reduce Peak Hour Vehicle Delay 4.6-9**

Modifications to Russell Boulevard shall be implemented to reduce peak hour vehicle delay at the Russell Boulevard/Orchard Park Drive, Russell Boulevard/Anderson Road/La Rue Road, and Russell Boulevard/California Avenue intersections:
Prior to issuance of certificates of occupancy, the project applicant shall construct the pedestrian bulbouts at Russell Boulevard/Sycamore Lane, to the satisfaction of the City Engineer, as follows:

- At the Russell Boulevard/Sycamore Lane intersection, construct pedestrian bulbouts at the northwest and northeast corners of the intersection to reduce pedestrian crossing distances. The resulting excess green time shall be reallocated to the major east-west through movements to improve overall corridor operations. The pedestrian bulbouts shall be integrated with the design of the bike lane modification described in Mitigation Measure 4.6-2(a) (at the northwest corner) and the shared-use path described in Mitigation Measure 4.6-2(c) (at the northeast corner).

- Implement Mitigation Measure 4.6-8.

Prior to issuance of certificates of occupancy, the project applicant shall contribute funding, to the satisfaction of the City Engineer, to cover the proportionate cost of improvements described in Alternatives 1, 4, 5, 6, and 7 above, the requirements of which are listed below. The funding shall be submitted to the City of Davis:

- At the Russell Boulevard/Orchard Park Drive intersection, either:
  - Prohibit northbound left-turns, or
  - Prohibit northbound left-turns and westbound left-turns (i.e., right-in/right-out only).

- At the Russell Boulevard/Anderson Road/La Rue Road intersection, either
  - Install five-section traffic signal for the northbound right-turn lane and an accompanying bicycle/pedestrian signal to control crossing movements across the northbound channelized right-turn lane, or
  - Implement Alternative 2 described in Mitigation Measure 4.6-2(d) (conversion of the Russell Boulevard/Anderson Road/La Rue Road intersection to a protected intersection).

- At the Russell Boulevard/Oak Avenue intersection, prohibit eastbound U-turn movements and convert the eastbound left-turn movement from a permitted to a protected left-turn signal phase.

- At the Russell Boulevard/College Park/Howard Way intersection, convert the northbound and southbound approaches to split phase operations and eliminate the west leg crossing.

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9 Consistent with Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, contribution of mitigation funds is not required for impacts where the City does not have full jurisdiction, nor a plan in place to ensure implementation of mitigation measures. Nevertheless, the applicant has agreed to contribute mitigation funds to the City for Alternatives 1, 4, 5, 6, and 7.
At all signalized intersections on Russell Boulevard, increase the PM peak hour cycle length from 90 to 100 seconds to match the existing AM peak hour cycle length. The signal timing adjustment shall be applied to all coordinated signals along the corridor between and inclusive of Sycamore Lane and G Street. The ultimate modifications constructed along Russell Boulevard shall be consistent with the preferred improvements identified in the Russell Boulevard Corridor Plan currently being prepared by the City.

4.6-10 Result in cumulative conflicts or inconsistencies with CEQA Guidelines Section 15064.3, subdivision (b). Based on the analysis below, the cumulative impact is less than significant.

Per the Transportation Impact Analysis, the proposed project is estimated to generate a net increase of 16,710 VMT under Cumulative Plus Project conditions on a typical weekday (see Table 4.6-21).

As shown in Table 4.6-22, the VMT associated with the project would equate to an estimated 16.4 VMT per capita, which is lower than the local and regional VMT per capita averages. Changes to project-generated VMT estimates between Existing Plus Project and Cumulative Plus Project can be attributed to changes to project trip distances, as opposed to project trip generation. Changes to trip distances would result from local and regional land use patterns that would alter travel behavior within and between the City of Davis and neighboring jurisdictions (e.g., a constrained local housing supply would result in a greater number of project employees residing outside of Davis and commuting longer distances for work).

<table>
<thead>
<tr>
<th>Weekday VMT</th>
<th>Cumulative No Project Conditions</th>
<th>Cumulative Plus Project Conditions</th>
<th>Difference (Project-Generated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Component</td>
<td>--</td>
<td>8,630</td>
<td>+8,630</td>
</tr>
<tr>
<td>Commercial Component¹</td>
<td>45,540</td>
<td>53,620</td>
<td>+8,080</td>
</tr>
<tr>
<td>Project Site Total</td>
<td>45,540</td>
<td>62,250</td>
<td>+16,710</td>
</tr>
</tbody>
</table>

¹ Estimate includes a pass-by trip reduction of 34 percent for trips attributed to on-site commercial uses, per the ITE Trip Generation Handbook.

Table 4.6-22
Weekday VMT per Capita Summary – Cumulative Plus Project Conditions

<table>
<thead>
<tr>
<th>Metric</th>
<th>Project-Generated VMT per Capita¹</th>
<th>City of Davis VMT per Capita</th>
<th>City of Davis &amp; UC Davis VMT per Capita²</th>
<th>SACOG Region VMT per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total VMT</td>
<td>16.710</td>
<td>3,969,395</td>
<td>4,986,251</td>
<td>96,131,317</td>
</tr>
<tr>
<td>Residents</td>
<td>894</td>
<td>77,993</td>
<td>95,255</td>
<td>2,823,598</td>
</tr>
<tr>
<td>Employees</td>
<td>125</td>
<td>24,780</td>
<td>39,137</td>
<td>1,322,077</td>
</tr>
<tr>
<td>Capita³</td>
<td>1,019</td>
<td>102,773</td>
<td>134,392</td>
<td>4,145,675</td>
</tr>
<tr>
<td><strong>Total VMT per Capita</strong></td>
<td><strong>16.4</strong></td>
<td><strong>38.6</strong></td>
<td><strong>37.1</strong></td>
<td><strong>23.2</strong></td>
</tr>
</tbody>
</table>

1 Project residents estimated based on the proposed number of beds that would comprise the residential component of the project, at one resident per bed. The project employment figure is estimated according to the typical amount of retail space occupied per employee, or 275 square feet.

2 Includes both City of Davis residents and employees and UC Davis on-campus residents and employees.

3 For the purposes of this analysis, “capita” represents service population (i.e., residents plus employees).


Based on the above, the proposed project would result in a less-than-significant cumulative impact with respect to conflicting with or being inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

**Mitigation Measure(s)**
None required.

4.6-11 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Based on the analysis below and with implementation of mitigation, the cumulative impact is less than significant.

The proposed project would increase AM and PM peak hour vehicle traffic at local intersections throughout the study area under Cumulative Plus Project conditions. Consequently, as noted in the Transportation Impact Study, the project would increase vehicle demand for the eastbound left-turn at the Russell Boulevard/Sycamore Lane intersection. The increase would primarily be attributed to growth in peak hour traffic volumes from SR 113 to the project site. Under Cumulative Plus Project conditions, peak hour maximum queues for this movement would spill back to a distance of 350 feet and 375 feet during the AM and PM peak hours, respectively, beyond the 300 feet of available left-turn pocket storage capacity, and block the adjacent eastbound through travel lane on Russell Boulevard. Implementation of Mitigation Measure 4.6-8, which would extend the eastbound left-turn pocket at the Russell Boulevard/Sycamore Lane intersection to a length of 375 feet, would be necessary to avoid design hazards.
Given the detrimental effects driven by demand to access the project site, the proposed project could substantially increase cumulative hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), thereby resulting in a **significant** impact.

**Mitigation Measure(s)**
Implementation of the following mitigation measure would reduce the above impact to a **less-than-significant** level.

4.6-11  *Implement Mitigation Measure 4.6-8.*