Appendix 4.13-1
Transportation Impact Study

Downtown Davis Specific Plan

Transportation Impact Study

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Placeworks

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FEHR PEERS

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1. Introduction

This study describes existing transportation conditions (environmental and regulatory) and analyzes the potential for the Downtown Davis Specific plan (the DSP) to affect the surrounding transportation environment in accordance with the CEQA Guidelines. The analysis evaluates potential impacts to vehicle miles traveled (VMT) and transit, bicycle, and pedestrian components of the transportation system that may result from the proposed project, as well as impacts during project construction. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

This impact analysis supports the Environmental Impact Report (EIR) prepared for the DSP.

2. Environmental Setting

This section describes the existing environmental setting, which is the baseline scenario upon which project-specific impacts are evaluated. The environmental setting components include roadway, pedestrian, bicycle, and transit networks in the vicinity of the DSP area.

DSP Area Planning Context

The DSP area is situated at the center of the southern edge of the City of Davis and immediately east of the University of California at Davis (UC Davis) main campus. The DSP area is comprised of the following:

- The area bounded by the Union Pacific railroad tracks to the south, A Street to the west, Fifth Street to the north, and the California Northern Railroad tracks to the east.
- The G Street corridor between Fifth Street and Eighth Street (i.e., the G Street Shopping Center and surrounding vicinity)
- The half-block east of the California Northern Railroad tracks between Third Street and Fifth Street
- The Davis Commons Shopping Center on the south side of First Street
- The Davis Train Depot property

Figure 1 displays the project site and surrounding roadway network.

Downtown Davis has well-defined edges around its boundaries that clearly demarcate Downtown from adjacent neighborhoods. Railroad tracks form a hard edge near the eastern boundary of Downtown, with a series of at-grade crossings representing gateways to and from East Davis and beyond. Fifth Street, B Street, and First Street serve as edges between Downtown and Old North Davis, UC Davis, and the Richards Drive/Olive Drive area, respectively.

Primary vehicular gateways surround the periphery of Downtown, the most noteworthy being the Richards Boulevard tunnel. This historic subway provides grade-separated access underneath the Union Pacific Railroad tracks and into Downtown from Interstate 80 (I-80) and South Davis.

The historic Davis Train Depot is the primary transit gateway into Downtown. Situated at the end of Second Street, all Downtown visitors arriving by train enter through the Second Street and G Street intersection.

While bicyclists and pedestrians enter the Downtown area from all directions, two locations serve as primary gateways for major active transportation trip generators. The Third Street and B Street intersection channelizes high volumes of bicyclists and pedestrians traveling between Downtown and the UC Davis campus. The connection to the citywide bicycle network along Putah Creek and the Arboretum Trail south of First Street also serves as a major gateway for UC Davis bicyclists, as well as bicyclists accessing Downtown from South Davis.

Downtown Specific Plan Area

Figure 1

Study Area

Roadway System

The DSP area is served by an extensive system of local and regional roadways. Within the DSP area, the roadway system is a grid-based network of lettered north-south streets and numbered east-west streets. Downtown Davis blocks are 240 feet by 400 feet with roadway widths ranging from 50 feet to 80 feet. Roadways within the DSP area serve a variety of users, including people traveling by foot, bike, bus, and vehicle, as well as delivery trucks serving businesses.

Local Roadways

The City of Davis organizes local roadways using a hierarchical system, whereby individual roadways are classified by their intended function within the overall roadway system. These classifications – arterials, minor arterials, collectors, and local streets and alleys – define the desired functional and operational characteristics of a roadway, such as traffic volume capacity and level of service. Several arterials serve as the primary vehicle routes in and out of the DSP area, including Richards Boulevard (via the Richards Tunnel), First Street, B Street, Russell Boulevard/Fifth Street, and F Street. In addition to providing access to Downtown, the Richards Boulevard-First Street-B Street-Russell Boulevard corridor also serves as a major through route for vehicles traveling to UC Davis and other Davis neighborhoods.

Designated trucks routes are identified for trucks in excess of three tons of gross vehicle weight. In the DSP area, designated truck routes generally coincide with arterial streets, such as Richards Boulevard, First Street, Third Street, B Street, and Russell Boulevard/Fifth Street. Trucks making deliveries to Downtown businesses are permitted to detour from the designated truck routes to access loading areas.

Downtown roadways are controlled by a variety of traffic control devices. Most intersections internal to Downtown are controlled by all-way stop signs, consistent with the low-speed and walkable nature of the Downtown grid. Traffic signals are present along arterials surrounding the edge of the Downtown area to facilitate higher volumes of traffic flow at major intersections. Generally, roadways within the Downtown area have a posted speed limit of 25 MPH.

Regional Roadways

Regional travel to and from Downtown is provided by I-80 and State Route 113 (SR 113), both facilities that are owned, operated, and maintained by Caltrans. I-80 is a freeway that extends from the San Francisco Bay Area east though Davis towards Sacramento and the Sierra Nevada. Within the vicinity of Downtown Davis, I-80 is three to four lanes in each direction and carries approximately 132,000 vehicles per day. SR 113 is a north-south state highway that runs north from I-80, through Davis, and towards Woodland and destinations beyond along the Interstate 5 (I-5) corridor.

Congestion levels on I-80 can cause freeway traffic to detour onto City streets during peak travel periods or when incidents occur on the freeway. This can increase congestion levels on parallel City streets within the DSP area vicinity such as Russell Boulevard/Fifth Street, First Street, and Richards Boulevard. This is particularly prevalent on eastbound I-80 during Thursday and Friday afternoons and evenings.

Caltrans, in collaboration with the City of Davis, Yolo County, UC Davis, and other local and regional planning partners, has initiated the preparation of the I-80 Comprehensive Multimodal Corridor Plan (CMCP). The CMCP will identify long-range multi-modal improvements on the I-80 corridor between the Carquinez Bridge in Solano County, Yolo County, and the interchange with State Route 51 (SR 51) Sacramento County. The primary goals of the CMCP are to manage congestion, maximize people and goods traffic flow, reduce air pollution, and reduce greenhouse gas emissions. A number of improvement alternatives are currently being evaluated as part of the CMCP planning process, including the provision of managed lanes on I-80 between Davis and Sacramento.

Access between the DSP area and the regional freeway network is available at the I-80 interchange at Richards Boulevard and the SR 113 interchange at Russell Boulevard. Additionally, an off-ramp from westbound I-80 is currently provided at Olive Drive.

The City of Davis and Caltrans have partnered to design and construct the I-80/Richards Boulevard Interchange Improvements project. This project will reconfigure the existing interchange, including modifications to on- and off-ramps (into a tight diamond configuration), the installation of a traffic signal at the westbound ramp terminal intersection, and the construction of a Class I shared-use path under the westbound on-ramp to improve bicycle and pedestrian connectivity between South Davis and Downtown Davis. Additional modifications include the elimination of the channelized northbound right-turn lane at the Richards Boulevard/Olive Drive intersection and the closure of the westbound I-80 off-ramp at Olive Drive. The project is programmed in the SACOG 2021-2024 Metropolitan Transportation Improvement Program (MTIP) with an identified completion year of 2023.

Vehicle Miles Traveled

VMT is a measure of traffic flow, determined by multiplying the number of automobile trips within a given geography by the average trip length. Unlike level of service, which is a measure of automobile delay, VMT is a measure of automobile travel. The efficacy of VMT is a result of several factors:

- VMT is relatively easy to measure by counting traffic on roadways at different locations. It is one of the few measures of transportation performance that has been consistently and comprehensively monitored and documented over time, primarily for the purpose of estimating air quality and GHG emissions.
- VMT bears a direct relationship to vehicle emissions, although this relationship is becoming more complex as vehicular technologies evolve. State and federal policies pertaining to vehicle efficiency and formulation of vehicle fuels suggest that on a per capita basis, emissions for most pollutants and GHG emissions will decline relative to today. However, even with emission reductions due to fuel and vehicle technology changes, future reductions in VMT per capita will result in lower air quality and GHG emissions.
- VMT can be influenced by policy in a number of different ways. Land use projects that are close to high quality transit service, located in highly walkable or bikeable areas, have higher densities, include a mix of project uses, support a better citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa), and/or are close the core of the city would generate less VMT than projects that do not have these characteristics.

Pedestrian Facilities

Downtown Davis is strongly defined by its highly walkable and pedestrian-friendly environment. The pedestrian experience is an important part of the overall Downtown environment, since every Downtown visitor is a pedestrian for at least some portion of their trip. In addition to basic pedestrian facilities such as sidewalks and crosswalks, traffic control devices present within the Downtown area maintain low automobile speeds and deter through traffic in order to facilitate a comfortable pedestrian environment.

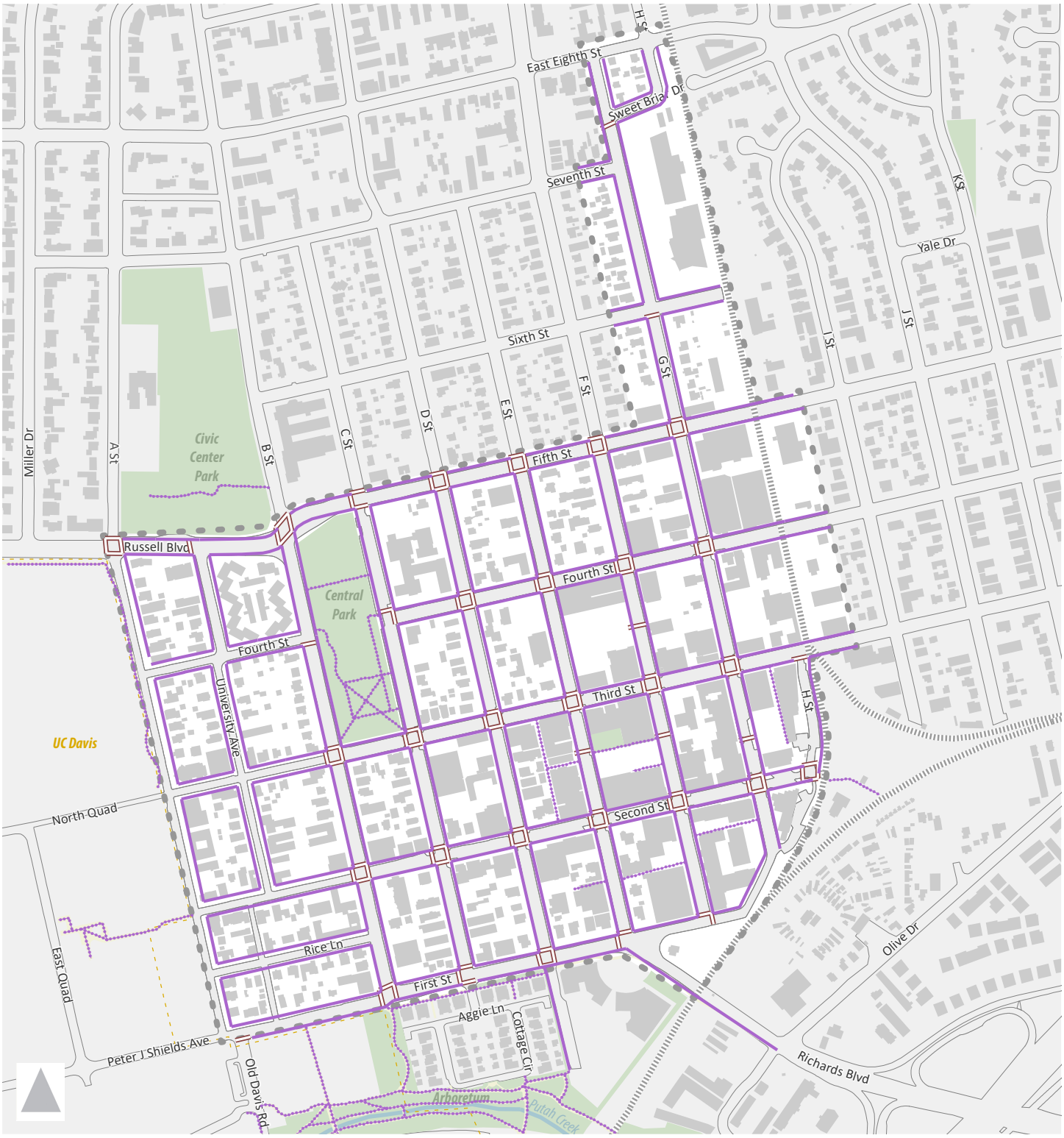
Figure 2 illustrates existing pedestrian facilities within the DSP area. Sidewalks or shared-use paths are generally present along all streets within Downtown Davis. A few exceptions exist, such as the west side of H Street between Second and Third Streets, the south side of First Street east of E Street, and the north side of Richards Boulevard between First Street and Olive Drive. In addition to sidewalks, off-street pedestrian pathways are scattered throughout the Downtown area, enabling pedestrians to walk through blocks rather than around blocks. Together, this network of pedestrian pathways enables a high degree of permeability throughout the Downtown built environment.

Marked crosswalks facilitate pedestrian crossings at most Downtown intersections. Generally, marked crosswalks are present on all legs of signalized or all-way stop controlled intersections. Some side-street stop-controlled intersections have a single marked crosswalk across the major street, including Fifth Street/C Street, B Street/Fourth Street, and First Street/C Street. The City has recently installed enhanced pedestrian crossing features at intersections where higher vehicle volumes require longer wait times for crossing pedestrians, such as a rapid-rectangular flashing beacon (RRFB) at the Firth Street/C Street intersection. Downtown also features several midblock crosswalks in active pedestrian areas, such as E Street, F Street, and G Street between Second Street and Third Street.

Downtown locations with high volumes of foot traffic generally coincide with concentrations of attractions, or along routes that link activity centers. For example, the concentration of restaurants and bars in the southeast quadrant of Downtown (e.g., along the G Street corridor) experiences surges in pedestrian activity during the lunchtime and evening hours. Similarly, Central Park and the surrounding pedestrian network accommodates thousands of users during the Saturday morning Farmer's Market and Wednesday evening Picnic in the Park during the summer months. The Second Street and Third Street corridors, which provide a natural linkage between Downtown and the UC Davis campus core, are among the more well-traveled east-west pedestrian routes in Downtown.

The Downtown Davis pedestrian realm features amenities that foster the prolonged use of the streetscape by Downtown visitors. Street furniture (e.g., benches), landscaping, and outdoor dining areas foster a comfortable pedestrian environment where people are encouraged to linger, socialize, and meander on Downtown streets. The recent installation of parklets and on-street dining spaces on Downtown streets have further expanded the pedestrian realm, as roadway space previously allocated to vehicles is now reserved for exclusive use by pedestrians.

According to the Statewide Integrated Traffic Records System (SWITRS), 10 pedestrian-involved collisions occurred within the DSP area between 2016 and 2018.



Downtown Specific Plan Area

Marked Crosswalk

Sidewalk

Path

Figure 2

Existing Pedestrian Facilities

Quality of the Pedestrian Environment

Various factors influence pedestrian comfort on sidewalks and paths. These factors can be analyzed using Pedestrian StreetScore+, a measure of pedestrian comfort developed using parameters and best practice guidance provided by the National Association of City Transportation Officials (NACTO) Urban Street Design Guide. Factors influencing StreetScore+ include:

- Sidewalk width
- Sidewalk quality
- Frequency of driveway curb cuts
- Presence of landscape buffer and street trees
- Number of travel lanes on the street
- Prevailing speed on the street
- Lighting along the sidewalk

Pedestrian StreetScore+ is represented using a 1 through 4 scale, with 1 being the most comfortable and 4 being the least comfortable or impossible:

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

Figure 3 presents the pedestrian StreetScore+ results are presented for all Downtown sidewalks. Overall, the StreetScore+ results reinforce the notion of Downtown Davis as a highly walkable urban environment, with all roadway segments where sidewalks are present being considered either 'generally comfortable' or 'highly comfortable' from a pedestrian standpoint. Key factors that contribute to these results include the presence of sidewalks, narrow roadways, and generally low traffic speeds common throughout the Downtown roadway network.

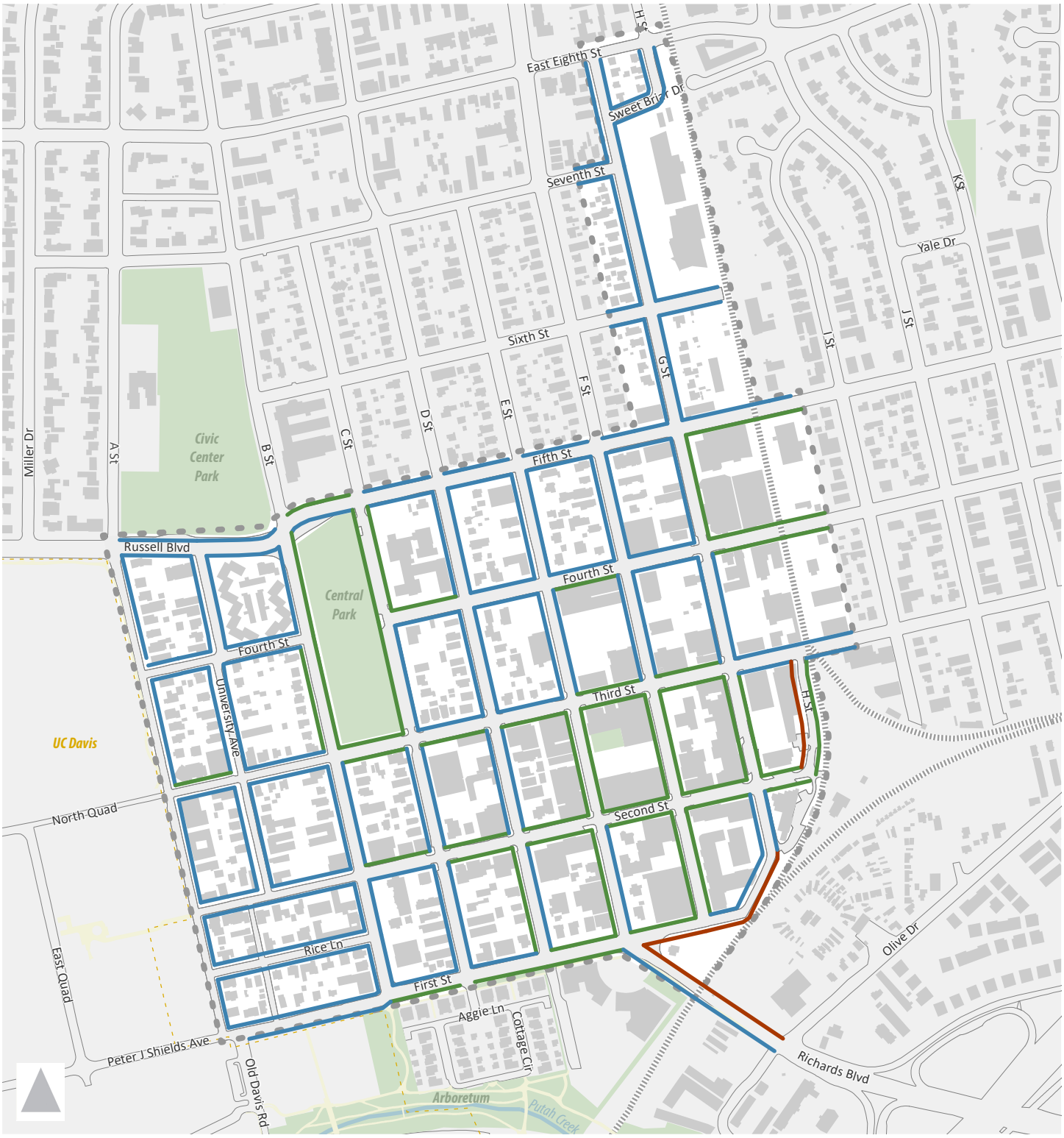
Individual components of StreetScore+ help to provide further details regarding the condition of the Downtown pedestrian environment (refer to **Figure 4**):

- Sidewalk width is indicative of the physical space allocated to pedestrians while utilizing a pathway. The majority of the Downtown area features sidewalks that are four or five feet wide,

while wider sidewalks of six feet or more are located almost exclusively in the southeast quadrant where the greatest concentration of activity generators are located. Five feet is considered the minimum threshold for sidewalks that enable two pedestrians to comfortably pass each other or walk side-by-side, indicating that a significant portion of the Downtown pedestrian network is not conducive to use by large groups of pedestrians. Some factors that affect sidewalk width include the presence of outdoor dining, signage, and landscaping maintenance.

- Sidewalk quality refers to the physical condition of the sidewalk with regards to cracks, paving, and surface quality. Most Downtown sidewalks are of generally good quality, except in locations with older sidewalk infrastructure such as Fifth Street and the University Avenue neighborhood.
- Sidewalk access refers to the frequency of curb cuts, driveways, and other physical characteristics that introduce potential conflicts with vehicles within the pedestrian realm. Most of the Downtown area features fairly limited sidewalk interruptions, except along roadways with numerous driveway curb cuts serving off-street parking areas, including E Street, F Street, and G Street north of Third Street.
- Sidewalk lighting refers to the presence of street lighting that maintains adequate visibility for pedestrians during the nighttime hours. Most of the southern half of Downtown is well-lit, while older portions of the study area (particularly the University Avenue neighborhood) feature less street lighting.

The pedestrian network characteristics described above are particularly important for individuals with disabilities or mobility impairments. Maintaining a high-quality pedestrian network, including the presence of ADA-compliant curb ramps, midblock crossings, and alleyway access, is an important component of providing a universally accessible Downtown for pedestrians of all abilities.



Downtown Specific Plan Area

StreetScore+ 1

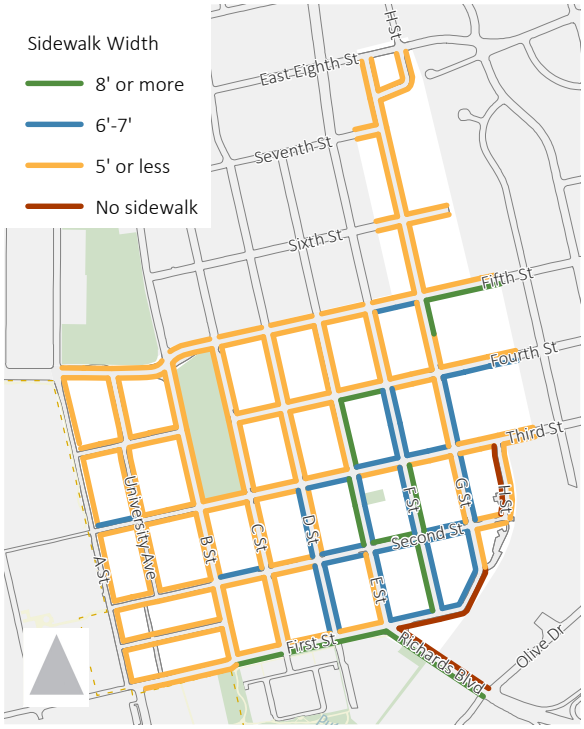
StreetScore+ 2

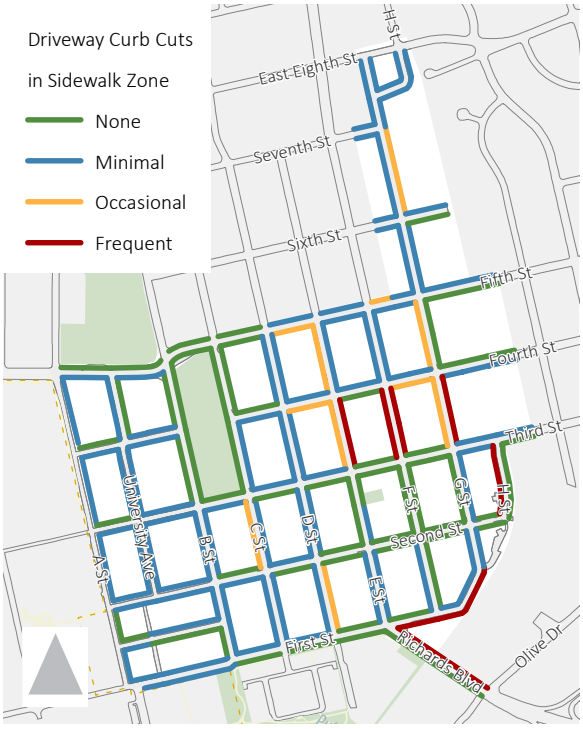
StreetScore+ 3

StreetScore+ 4

Figure 3

Pedestrian StreetScore+





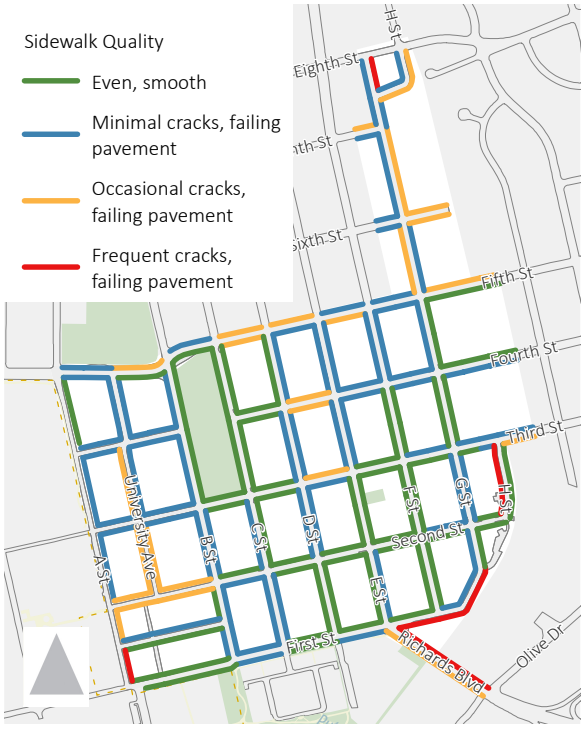


Figure 4

Pedestrian StreetScore+ Criteria

Bicycle Facilities

Caltrans recognizes four classifications of bicycle facilities:

- **Class I.** Commonly referred to as a bike path or bikeway, is a facility separated from automobile traffic for the exclusive use of bicyclists.
- **Class II.** Commonly referred to as bike lanes, are dedicated facilities for bicyclists immediately adjacent to automobile traffic.
- **Class III.** Commonly referred to as bike routes, are on-street routes where bicyclists and automobiles share the road.
- **Class IV.** Commonly referred to as cycle tracks or protected bike lanes, are facilities that combine elements of Class I and Class II facilities to offer an exclusive bicycle route immediately adjacent to a roadway similar to a Class II facility, but provides a physical separation from traffic with raised curb, plastic delineators, or parked automobiles.

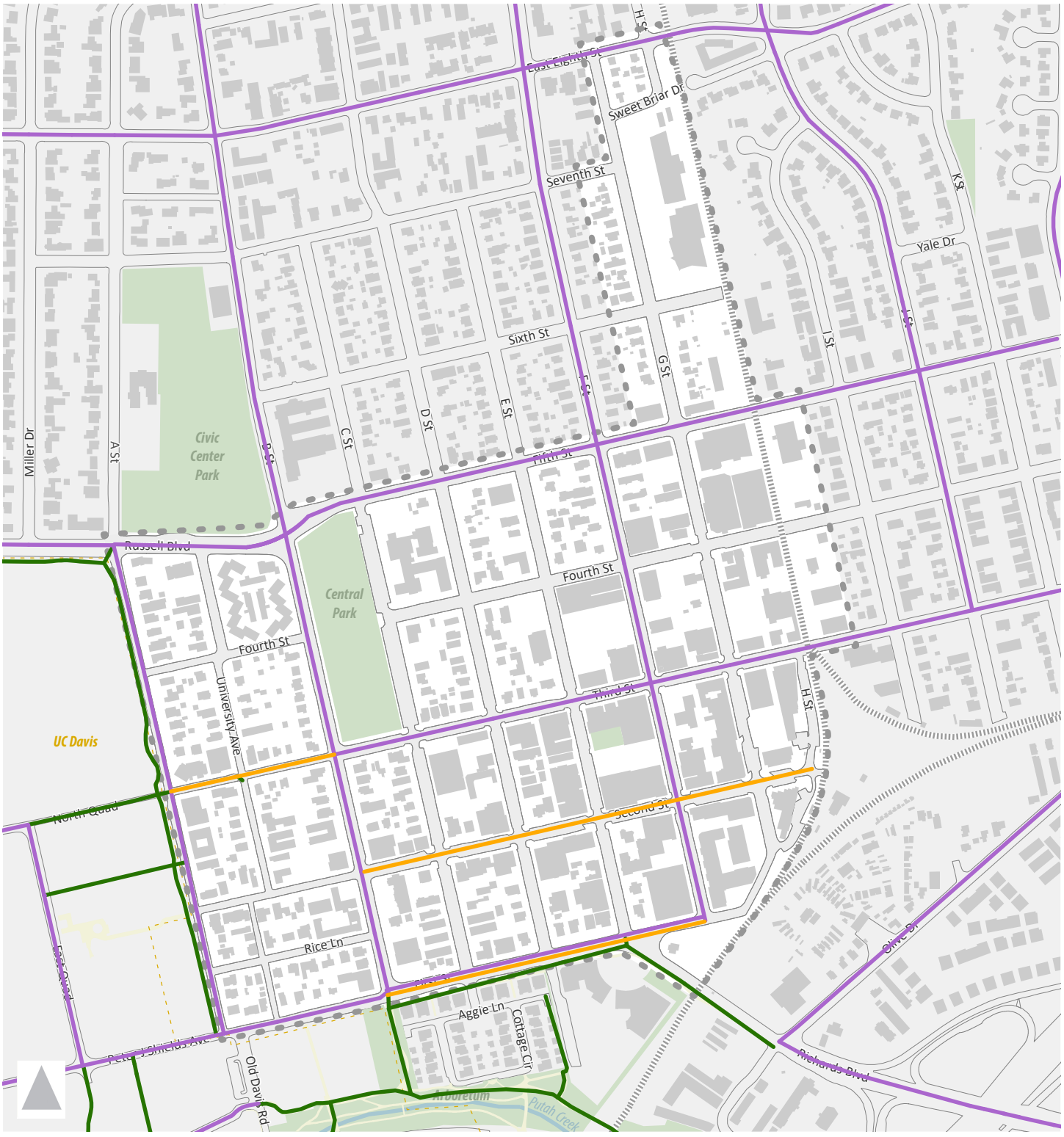
Figure 5 displays existing bicycle facilities in the DSP area vicinity. Within Downtown, bicycle facilities include Class II bike lanes on Third Street, Fifth Street, B Street, and F Street and the combined Class I (eastbound) and Class II (westbound) facility on First Street. Elsewhere, bicyclists are expected to mix with general traffic to access Downtown destinations.

Bicyclists traveling to the Downtown area utilize a series of on- and off-street bicycle facilities to access the DSP area. The primary bicycle routes to and from the DSP area are described below:

- **To/from the west (UC Davis, West Davis, Central Davis)**: Routes are provided via Russell Boulevard/Fifth Street (Class I path west of A Street and Class II bike lanes east of A Street), Third Street/North Quad (bicycle-only street west of A Street, shared street between A Street and B Street, and Class II bike lanes east of B Street), First Street/Shields Avenue (bicycle-only street west of A Street, Class I/Class II facilities west of A Street), and the Class I Arboretum/Putah Creek Trail.
- **To/from the north (Central Davis, North Davis)**: North-south routes include Class II bike lanes on B Street and F Street.
- **To/from the east (East Davis)**: East-west routes include the Class II bike lanes on Third Street, Fifth Street, and Eighth Street.
- **To/from the south (South Davis)**: Routes include the Class I Arboretum Trail/Putah Creek Trail (including a grade-separated crossing of I-80) and the Class I path through the Richards Tunnel.

The I-80/Richards Boulevard interchange poses a barrier to bicycle travel between the DSP area and South Davis. While Richards Boulevard features Class II bike lanes through the interchange area, the uncontrolled vehicular movements at the westbound on- and off-ramps create lengthy mixing zones between bicyclists and vehicles, increasing bicyclist exposure time while traversing through the interchange area. As noted previously, the multi-modal improvements in the I-80/Richards Boulevard Interchange Project will address this barrier, including the construction of a Class I path on the south side of Richards Boulevard underneath the westbound on-ramp.

According to (SWITRS), 31 bicycle-involved collisions occurred in the DSP area between 2016 and 2018.



Downtown Specific Plan Area

Class I Bikeway - Bike Path

Class II Bikeway - Bike Lane

Class II Bikeway - Bike Route

Class IV Bikeway - Separated Bikeway

Figure 5

Existing Bicycle Facilities

Quality of the Bicycling Environment

Bicycle level of traffic street (LTS) refers to the comfort associated with roadways, or the mental ease people experience riding on them. Metrics for bicycling LTS were developed at the Mineta Transportation Institute (MTI) and published in the report "Low-Stress Bicycling and Network Connectivity."

Factors influencing LTS include:

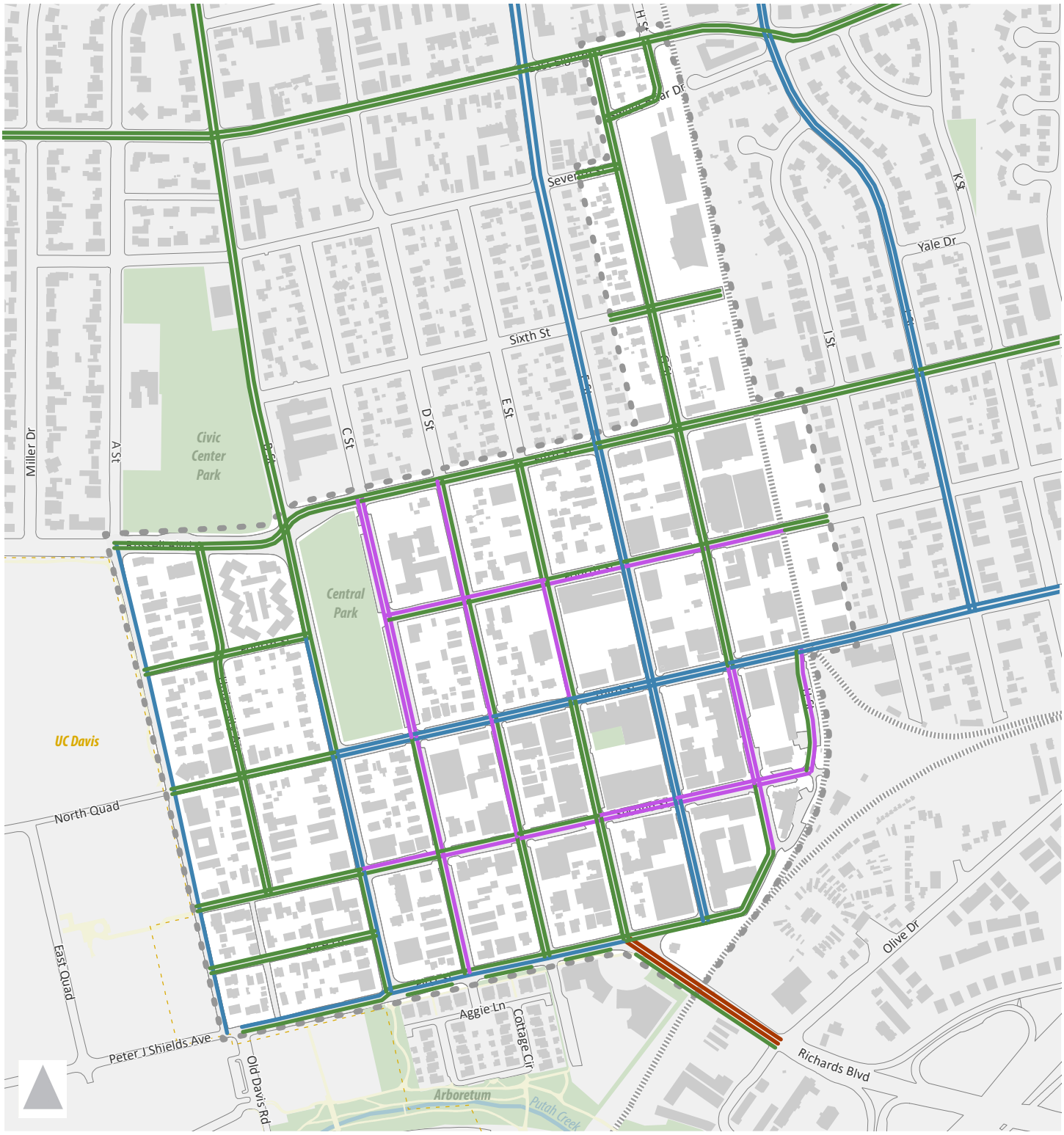
- Number of travel lanes
- Speed of traffic
- Presence of bike lanes
- Presence of on-street parking
- Width of bike lanes
- Presence of physical barrier

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

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

The LTS metric does not account for angled on-street parking, which can affect the ability for reversing vehicles to see oncoming bicyclists. As such, Downtown locations with angled parking are identified separately from the LTS criteria.

The majority of the Downtown area is considered either 'highly comfortable' or 'generally comfortable' according to the LTS metrics. Factors contributing to these results include the presence of bike lanes, minimal number of travel lanes, low vehicle speeds, and the on-street parking on roadways throughout the Downtown area.



Downtown Specific Plan Area

Level of Traffic Stress 1

Level of Traffic Stress 2

Level of Traffic Stress 3

Level of Traffic Stress 4

Angled Parking

Figure 6

Bicycle Level of Traffic Stress

Transit Service and Facilities

The DSP area is served by several transit service types, ranging from fixed route bus to passenger rail. Bus routes operate on a variety of Downtown roadways, connecting Downtown Davis with surrounding Davis neighborhoods, the UC Davis campus, and communities beyond the city limits.

Figure 7 displays the bus stops and routes serving the project site vicinity.

Local Bus Service

Unitrans is the primary fixed route bus service provider within Downtown Davis. Jointly operated by UC Davis and the City of Davis, Unitrans provides local fixed route bus service between Downtown Davis, the UC Davis campus, and residential neighborhoods throughout the City of Davis.

The primary Unitrans alignments serving Downtown include Russell Boulevard/Fifth Street, B Street, F Street, First Street, and Richards Boulevard. Russell Boulevard and First Street are the primary alignments for routes serving both Downtown and the UC Davis campus. Unitrans routes connecting passengers to the Davis Train Depot utilize Second Street through Downtown Davis. Within the Downtown area, the Richards Boulevard tunnel prohibits the use of Unitrans double-decker buses from operating on routes destined for South Davis.

While the Downtown area is served by a significant amount of Unitrans bus service, only half of all Unitrans trips actually travel through the core Downtown area. This can be partly attributed to the travel time delay incurred on bus route operations due to the numerous all-way stops and high pedestrian volumes within the core Downtown area. As such, some Unitrans passengers must walk to bus stops on the edge of Downtown – on Russell Boulevard, B Street, and First Street – in order to catch their desired route.

Unitrans operates a regular weekday schedule Monday through Thursday to coincide with UC Davis class schedules, with limited service spans and frequencies on Fridays and weekends. Unitrans charges a one-dollar cash fare, and many types of prepaid discounted tickets and passes are available. UC Davis undergraduates pay a portion of their quarterly ASUCD fees to Unitrans and can show a valid student ID as fare payment.

Unitrans is supplemented by Davis Community Transit, the primary ADA service provider within the City of Davis. Davis Community Transit provides door-to-door subscription transit service to eligible riders.

Regional Bus Service

Yolobus, operated by the Yolo County Transportation District, provides intercity and commuter bus service throughout Yolo County and downtown Sacramento. Within Downtown Davis, Yolobus service includes peak-only commuter bus service to Woodland and downtown Sacramento and all-day Route 42A/42B service to Woodland, Sacramento International Airport, West Sacramento, and downtown Sacramento.

Yolobus service within the Downtown area is concentrated on F Street, Russell Boulevard/Fifth Street, B Street, and First Street. Nearly all Yolobus routes operating in the area utilize the Richards Boulevard tunnel to enter and exit the Downtown area.

Bus Stop Facilities

Bus passengers access Unitrans and Yolobus services at a variety of bus stops distributed throughout the Downtown area. Passenger amenities provided at bus stops vary depending on the number of routes and level of ridership activity at each individual location. More heavily utilized bus stops – including the Davis Train Depot stop near the H Street and Second Street intersection and the Third Street and E Street stop – are equipped with shelters, benches, and trash receptacles. Generally, other Downtown area bus stops with lower levels of ridership activity feature a bus stop flag sign and minimal other amenities.

Passenger Rail Service

Amtrak provides passenger rail service to Davis at the Davis Train Depot located near Second Street and G Street in the southeast corner of Downtown. 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. Existing Capitol Corridor service levels provide 15 daily round-trips during typical weekdays at the Davis Train Depot at approximately hourly headways. With over 500 daily boardings, Davis generates the second highest average weekday ridership of all stations located along the Capitol Corridor, trailing only Sacramento Valley Station.

Davis Train Depot

The Davis Train Depot is the primary transit center in Downtown. Served by Unitrans and Amtrak rail and bus service, the depot provides connections to both the regional and local transit networks. According to recent surveys, Capitol Corridor passengers access the depot via a variety of modes, including automobile (55%), transit (5%), walking (15%), and biking (25%). The depot and surrounding passenger parking lot are bounded on all sides by railroad tracks. For all modes, the depot is accessible via a single at-grade rail crossing located near the intersection of H Street and Second Street.

Freight Rail Service

The Union Pacific Railroad Company (UPRR) operates a railroad line that runs east-west through the City of Davis. The UPRR tracks border the southern edge of the DSP area and are grade-separated with Richards Boulevard.

The California Northern Railyard Company (CFNR) operates a railroad line that runs north-south through the City of Davis. The CFNR tracks border the eastern edge of the DSP area. At-grade crossings exist within the DSP area at Second Street, Third Street, Fourth Street, Fifth Street, and Eighth Street. The rail crossings include advanced warning signs, pavement markings, and crossing arms.

Figure 7

Existing Transit Service and Facilities

Disruptive Trends in Travel

Transportation and mobility are being transformed through a number of forces ranging from new technologies, different personal preferences, and the unique effects of the COVID-19 pandemic, the combination of which could alter traditional travel demand relationships in the near- and long-term. These disruptive trends increase uncertainty in forecasting future travel conditions, especially considering that new technologies such as automated vehicles (AVs) may be operating on future transportation networks once the California Tower Project would be complete and operational. Information about how technology is affecting and will affect travel is accumulating over time.

Furthermore, the COVID-19 pandemic and subsequent actions by federal, state, and local governments to curtail mobility and encourage physical distancing (i.e., limit in-person economic and social interactions) has temporarily but profoundly changed travel conditions. While travel activity will likely return to some form of normality after government shelter-in-place orders are lifted and the pandemic has subsided, it is possible that some of these temporary changes will influence people's travel choices into the future, including either accelerating or diminishing some of the emerging trends in transportation that were already underway prior to the pandemic. Some of the emergent changes already influencing travel behavior that could accelerate in the future include the following.

- Substituting internet shopping and home delivery for some shopping or meal-related travel.
- Substituting participating on social media platforms for social/recreational travel.
- Substituting telework for in-office work/commute travel.
- Using new travel modes and choices. Transportation network companies such as Uber and Lyft, car sharing, bicycle/scooter sharing, and on-demand microtransit services have increased the options available to travelers in the Sacramento area, and have contributed to changes in traditional travel demand relationships. For example, combined bus and rail ridership on SacRT has declined by approximately 19 percent between 2016 and 2019. The SACSIM model was calibrated to 2016 conditions and may not fully capture all the factors influencing transit ridership declines today or in the future.
- Automation of vehicles. Both passenger vehicles and commercial vehicles and trucks are evolving to include more automation. Research, development, and deployment testing is proceeding on AVs; AVs do not require an operator and navigate roadways autonomously. Forecasts of how quickly research, development, and deployment testing will transition to full deployment and marketing of AVs vary widely both on the pace of the transition and the market acceptance of fully automated operation. More uncertainty exists around the behavioral response to AVs. In terms of VMT impacts on the transportation system and the environment, the worst-case scenario would be one in which AVs are privately owned, as they are now, but the automated function of AVs would cause them to be used more as described below.
    - AVs could be repositioned to serve different members of a household (e.g., have an AV drop a worker at their workplace, then drive back home empty to serve another trip such as taking a student to school). The repositioning of AVs could add significantly to traffic volumes and VMT.

- AVs could reduce the value travelers place on time spent in a vehicle, resulting in an increase in willingness to make longer trips. For example, if a person could read or do work in an AV instead of focusing on driving, they might be willing to commute longer distances to work. Conversely, a worker who would prefer to live in a rural area but is unwilling to drive far enough to act on that preference in a conventional vehicle may be willing to do so using an AV.
- AVs could increase willingness to drive more to avoid parking costs or tolls. For example, a person going to a sporting event in an area that charges for parking might use an AV to be dropped off at the venue, and then re-position and park the AV in an area that does not charge for parking.
- Connected vehicles (CVs) can communicate wirelessly with its surroundings, including other vehicles, bicyclists, pedestrians, roadway infrastructure (i.e., traffic signals, toll facilities, and traffic management facilities), and the internet. The influence that CVs may have is still speculative but includes potential for reductions in collisions and congestion and greater overall network performance optimization.

3. Regulatory Setting

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

State

The State of California has enacted several pieces of legislation that outline the state's commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT)and contribute to reductions in greenhouse gas (GHG) emissions in line with state climate goals. This legislation includes:

- Assembly Bill (AB) 32 (2006)
- Senate Bill (SB) 375 (2008)
- SB 226 (2011)
- SB 743 (2013)

Assembly Bill 32

AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that "(a) the statewide GHG emissions limit shall remain in effect unless otherwise amended or repealed; (b) it is the intent of the Legislature that the statewide GHG emissions limit continues in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020; (c) the CARB shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020."

Senate Bill 375

SB 375 requires metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their regional transportation plans (RTPs). The SCS demonstrates how the region will meet its GHG reduction targets through integrated land use, housing and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

In 2017, the State Legislature passed SB 150, which requires CARB to prepare a report beginning in 2018 and every four years thereafter analyzing the progress made by each MPO in meeting regional GHG emission reduction targets.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands in the Lake Tahoe Basin. The Sacramento Campus is in Sacramento County and therefore is within the SACOG MPO.

SB 375 also provides streamlining (i.e., limited CEQA review) for certain transit priority projects that are consistent with the SCS.

Senate Bill 226

SB 226 revises the CEQA Guidelines to set forth a streamlined review process for infill projects, including performance standards to determine an infill project's eligibility for that streamlined review. One of the requirements for streamlined review is that the project be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a SCS or an alternative planning strategy.

Senate Bill 743

SB 743 creates or encourages several statewide changes to the evaluation of transportation and traffic impacts under CEQA. First, it directs the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines 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 new metrics beyond TPAs. In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric and applied their discretion to recommend its use statewide. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018. The amended CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts" and the provisions requiring the use of VMT shall apply statewide as of July 1, 2020. The amended CEQA Guidelines further state that land use "projects within 0.5 mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less-than-significant transportation impact."

Second, 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.

Third, SB 743 added Section 21099 to the Public Resources Code, which states that automobile delay, as described by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the CEQA Guidelines by the California Natural Resources Agency. Since the amended CEQA Guidelines were certified in December 2018, LOS or similar measures of vehicular capacity or traffic congestion are not considered a significant impact on the environment.

Lastly, SB 743 establishes a new CEQA exemption for a residential, mixed-use, and employment center project a) within a TPA, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with an SCS. This exemption requires further review if the project or circumstances changes significantly.

Technical Advisory on Evaluating Transportation Impacts in CEQA

To aid in SB 743 implementation, OPR released a Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

The Technical Advisory identifies screening thresholds to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT.

- Small projects—projects consistent with a SCS and local general plan that generate or attract fewer than 110 trips per day.
- Projects near major transit stops—certain projects (residential, retail, office, or a mix of these uses) proposed within 0.5 mile of an existing major transit stop or an existing stop along a high-quality transit corridor
- Affordable residential development—a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- Local-serving retail—local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant impact).
- Projects in low-VMT areas—residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential, office, and retail projects, as described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.
- Office projects that would generate vehicle travel exceeding 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- Retail projects that results in a net increase in total VMT may indicate a significant transportation impact.

For mixed-use projects, the Technical Advisory suggests evaluating each component independently and applying the significance threshold for each project type included. Alternatively, the lead agency may consider only the project's dominant use.

The Technical Advisory also provides guidance on impacts to transit. Specifically, the Technical Advisory suggests that lead agencies generally should not treat the addition of new transit users as an adverse impact. As an example, the Technical Advisory suggests that "an infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the SHS within the study area would need to be approved by Caltrans. The following Caltrans planning documents emphasize the State of California's focus on transportation infrastructure that supports mobility choice through multimodal options, smart growth, and efficient development.

- Smart Mobility 2010: A Call to Action for the New Decade (Smart Mobility Framework) (California Department of Transportation 2010)
- Complete Streets Implementation Action Plan (California Department of Transportation 2010)
- California Transportation Plan 2040 (California Department of Transportation 2016)
- Strategic Management Plan 2015-2020—2019 Update (California Department of Transportation 2019)

Within the study area, Caltrans has developed the following plans and studies that set expectations for the performance of I-80.

- Caltrans District 3 Interstate 80 Transportation Concept Report (TCR) (August 2017)
- District System Management and Development Plan, Caltrans District 3 (California Department of Transportation 2013).

VMT-Focused Transportation Impact Study Guide

On May 20, 2020, Caltrans adopted the VMT-Focused Transportation Impact Study Guide (TISG) to provide updated guidance to Caltrans Districts, lead agencies, tribal governments, developers, and consultants based on changes to Caltrans' review process for transportation analysis of land use projects and plans under the updated CEQA Guidelines. The VMT-Focused TISG outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and GHG emission reduction goals; the VMT-Focused TISG identifies land use projects' possible transportation impacts to the SHS and potential non-capacity increasing mitigation measures. The VMT-Focused TISG emphasizes that VMT analysis is Caltrans' primary review focus, and references OPR's Technical Advisory as a basis for the guidance in the TISG. Notably, the VMT-Focused TISG recommends use of the recommended thresholds in the Technical Advisory for land use projects. The VMT-Focused TISG also references the Technical Advisory for screening thresholds that would identify projects and areas presumed to have a less-than-significant transportation impact. Caltrans supports streamlining for

projects that meet these screening thresholds because they help achieve VMT reduction and mode shift goals.

Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance

On December 18, 2020, Caltrans released the Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance (Safety Guidance) to provide updated guidance to Caltrans Districts, lead agencies, developers, and consultants conducting safety review for proposed land use projects and plans that would affect the State Highway System. The interim guidance recommends that safety analyses include a review of three primary elements related to transportation safety—design standard compliance, collision history, and collision risk (consistent with the FHWA Systemic Approach to Safety). The interim guidance does not establish specific analysis methods or significance thresholds for determining safety impacts under CEQA. Additionally, Caltrans notes that local agencies may use the interim guidance at their own discretion as a guide for review of local facilities.

Local and Regional

City of Davis General Plan

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

Goal #1: Davis will provide a comprehensive, integrated, connected transportation system that provides choices between different modes of transportation.

Performance Objective #1.1: Achieve at least the following mode share distribution for all trips by 2035:

- 10% of trips by walking
- 10% of trips by public transportation
- 30% of trips by bicycle

Performance Objective #1.2: Increase use of walking, bicycling, and public transportation to and from the following places:

- Work
- Schools (elementary, junior high, and senior high)
- UC Davis,
- Downtown

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) by 39 percent by 2035.

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

Goal #3: Davis will provide a safe and convenient Complete Streets network that meets the needs of all users, including children, families, older adults, and people with disabilities.

Performance Objective #3.1: Improve the quality of service for all users of the transportation system.

Performance Objective #3.2: Reduce the total number of collisions between motor vehicles and bicyclists or pedestrians by 50% by 2035.

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.

Performance Objective #4.1: Commit a minimum amount of funding for bicycle programming and infrastructure as identified in the "Beyond Platinum – Bicycle Action Plan".

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

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

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

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

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

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

- Design/redesign residential and collector streets to slow vehicular traffic to 25 mph or less.
- Design travel lanes to prioritize pedestrians and bicycles, including provisions for a marked "buffer space" to further separate bicycles from both moving and parked motor vehicles, where right-of-way allows.
- Eliminate intersection standards that allow high speed right turns for motor vehicles.
- Adjust intersection signal operations to smooth traffic flow, reduce automobile idle time, and to adequately service bicycles and pedestrians by giving priority and to maintain momentum.

Roadways within the study area with a Greenstreet designation include Mace Boulevard, Covell Boulevard, Second Street, Chiles Road, Cowell Boulevard, and Pole Line Road.

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

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

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

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

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

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

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

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

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

Action: Develop "corridor plans" for selected streets which warrant special treatment because of existing impact problems or operational issues. Corridor plans should take into consideration adjacent land uses and result in streets that are both functional and aesthetic. The plans should utilize innovative means of slowing traffic, where appropriate, and provide safe access for pedestrians and bicyclists. Mitigation shall be incorporated to protect residences and sensitive receptors from noise, air pollution and other traffic related impacts. The corridor plans may deviate from the standards established in the General Plan, if deviates improve the livability of the area. Covell Boulevard from SR 113 to the west City limit is included in this program.

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

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

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

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

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

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

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

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

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

Davis Gateway/Olive Drive Specific Plan

This section provides the policies regarding the movement of people and goods via various modes of transport that was originally adopted in 1996 and last updated in 2018. Implementation of the specific plan does not require major modification to existing roadways.

Vehicle Circulation

- West Olive Drive shall be extended to accommodate vehicle trips generated by the Nishi property.

Richards Boulevard

The Davis General Plan calls for widening and capacity and safety improvements to the Richards Boulevard corridor and underpass. The improvements are necessary for the roadway to operate at acceptable levels of service.

- Richards Boulevard shall be improved to accommodate vehicular, pedestrian and bicycle traffic consistent with the Davis General Plan and the ultimate final design determined through the Richards Corridor EIR process.
- All improvements to the intersection of Richards Boulevard and Olive Drive shall recognize the importance of the intersection as a gateway to Davis. Use of paver materials and extensive use of landscaping shall be a high priority.

Safety Issues

The speed at which vehicles enter East Olive Drive after exiting I-80 has long been a concern of residents in the area. The options available for addressing the concern are various traffic calming measures or closure of the Olive Drive off-ramp.

- City staff and Safety Advisory Commission shall identify applicable traffic calming measures to slow traffic exiting I-80.
- As part of the review of any development in the plan area, the effects of trip generation shall be reviewed, and if warranted due to adverse impacts on traffic, shall be conditioned to provide traffic calming measures as part of site improvements. After 5 years the city shall reevaluate the need for closing the I80/East Olive Drive exit (i.e. off-ramp).
- The Olive Drive corridor needs to be reviewed immediately and traffic calming implemented.

Emergency Vehicle Access

Due to the physical barriers of the SP tracks and I-80, ensuring that acceptable emergency vehicle access has been provided is a high priority. City policy has been that all large projects have more than one emergency vehicle access.

Construction Traffic

The following policies apply:

- All construction traffic should use designated truck routes and the freeway, to the extent feasible.
- With the exception of construction activities in East Olive Drive, no construction vehicles shall be exiting I-80 at the East Olive Drive exit.

Local and Regional Transit

The following policies apply:

- Maintain current Yolobus and Unitrans routes with stops on First Street.
- The SP Depot shall continue to have land set aside and available for a potential light rail station.

Key Pedestrian/Bicycle Connections

The following policies apply:

- The following pedestrian/bicycle linkages connecting the specific plan to the rest of Davis are included as part of the plan:
  - Aggie Village to the Southern Pacific Depot.
  - East Olive Drive to the SP Depot via Hickory Lane.
  - Undercrossing of I-80 at Putah Creek with a possible extension under the West Olive Drive extension.

Beyond Platinum – City of Davis Bicycle Action Plan

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

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

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

In addition, Appendix C of this document shows a variety of proposed bicycle facilities throughout the City, including the following proposed bicycle facility enhancements within the DSP area:

- Shared lane markings on C Street, D Street, E Street, and F Street (between First Street and Fifth Street), G Street (between First Street and Eighth Street), H Street (between Second Street and Third Street), Second Street (between A Street and B Street), Third Street (between B Street and H Street), and Fourth Street (between C Street and the railroad tracks)
- Bike lane conflict markings at the First Street/B Street intersection

- Stop sign at the Second Street/B Street intersection
- Bike boxes at the Russell Boulevard/Fifth Street/B Street intersection (already installed) and at the Russell Boulevard/A Street intersection

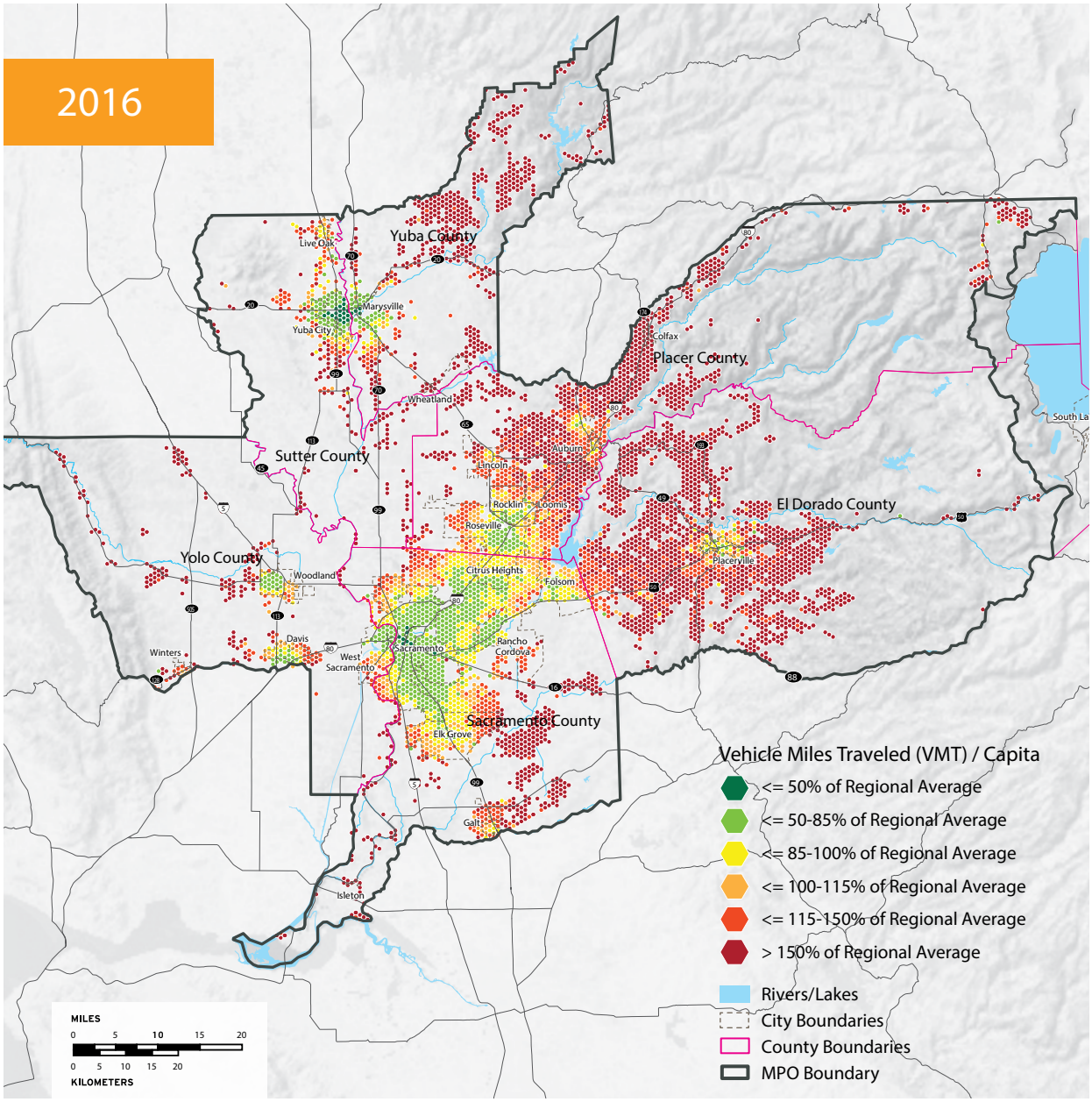
Sacramento Area Council of Governments

SACOG is the MPO governing the six-county Sacramento region consisting of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 cities. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (Sacramento Area Council of Governments 2019) and the associated Metropolitan Transportation Improvement Program (MTIP) for the six-county region. The SACOG 2020 MTP/SCS provides a 20-year transportation vision and corresponding list of transportation projects. The MTIP identifies short-term projects (i.e., project with a 7-year horizon) in more detail. The current SACOG 2020 MTP/SCS was adopted by the SACOG board on November 18, 2019.

The SACOG 2020 MTP/SCS (Sacramento Area Council of Governments 2019) provides the basis for air quality conformity findings related to the national Clean Air Act and determinations of whether the region is complying with GHG reduction targets for automobiles and light trucks established under SB 375. Major projects that are inconsistent with the plan could jeopardize the plan's effectiveness for air pollution and GHG reduction. Consequently, consistency with the MTP/SCS is a potential basis for determining adverse impacts related to these environmental topics.

The SACOG 2020 MTP/SCS acknowledges that "a more compact land development pattern and providing alternatives to driving alone are critical strategies for reducing the amount of driving we do in our daily lives. Location within the region is likely the most important variable in determining how much time people spend in their vehicles. Communities within existing urban areas, and with a mix and density of uses, tend to produce less VMT per resident than places that are farther away and spread out. These 'lower VMT' areas also tend to have the density and mix of uses to support better transit service and are friendlier to biking and walking for some trips." To this end, the SACOG 2020 MTP/SCS includes two figures showing the distribution of VMT generation in the SACOG region presented in VMT per capita. One figure presents the VMT generation for the base year (2016) and one presents the VMT generation in the horizon year of the MTP/SCS (2040). These maps are presented as **Figure 8** and **Figure 9**. It is important to note that the 2020 MTP/SCS maps exclude VMT generated outside of the SACOG region.

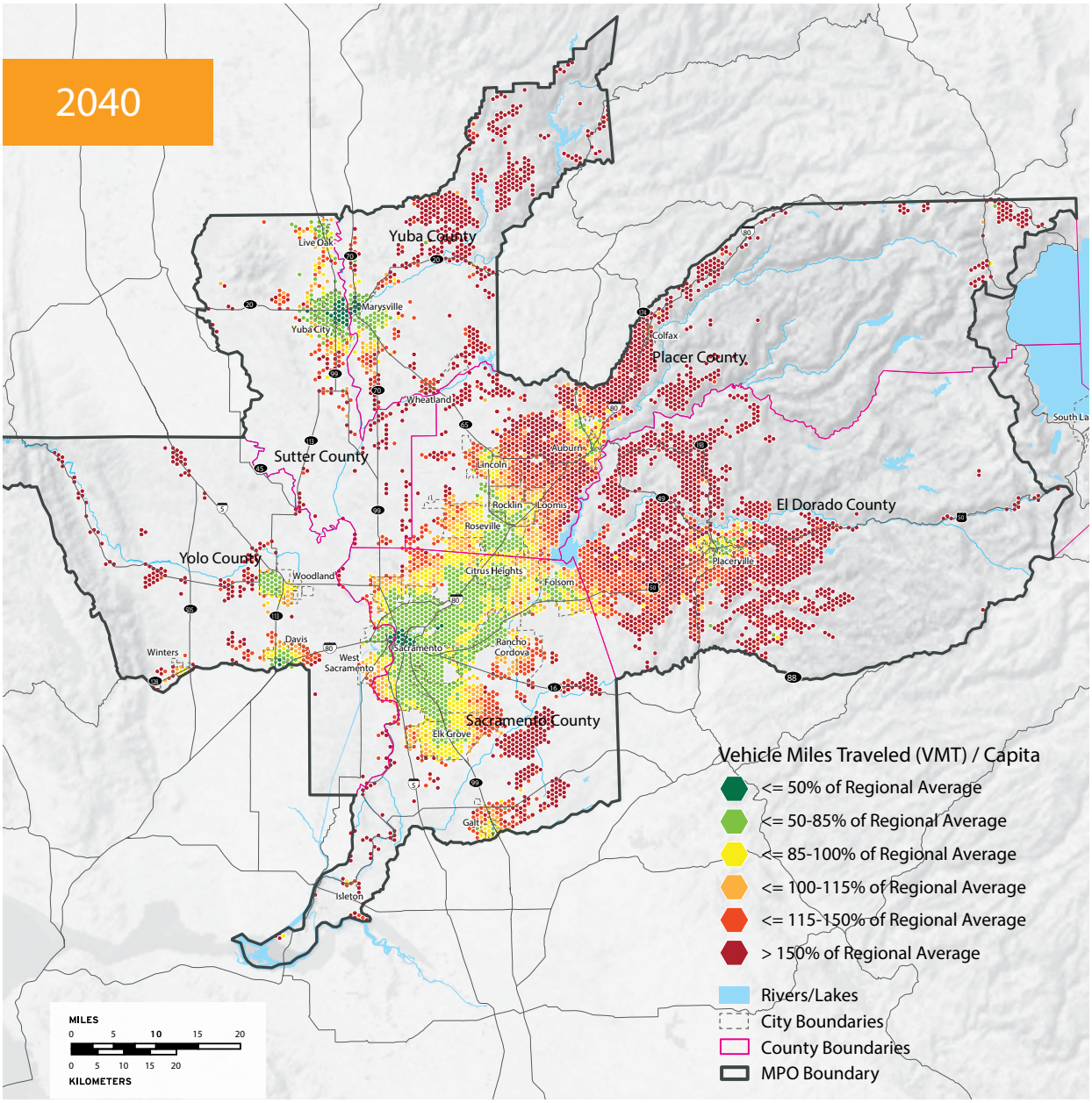
In early 2021, SACOG updated the 2016 base year maps to include VMT generated outside of the SACOG region. These maps were prepared separately for household VMT per capita and work-tour VMT per employee. These maps are presented as **Figure 10** and **Figure 11**. The inclusion of VMT outside of the SACOG region is particularly relevant for the DSP given the location of Davis on the edge of the SACOG region and the proportion of trips that travel to/from areas west of Davis and the SACOG region along the I-80 corridor.



Source: SACOG 2020 MTP/SCS, Figure 3.10

Figure 8

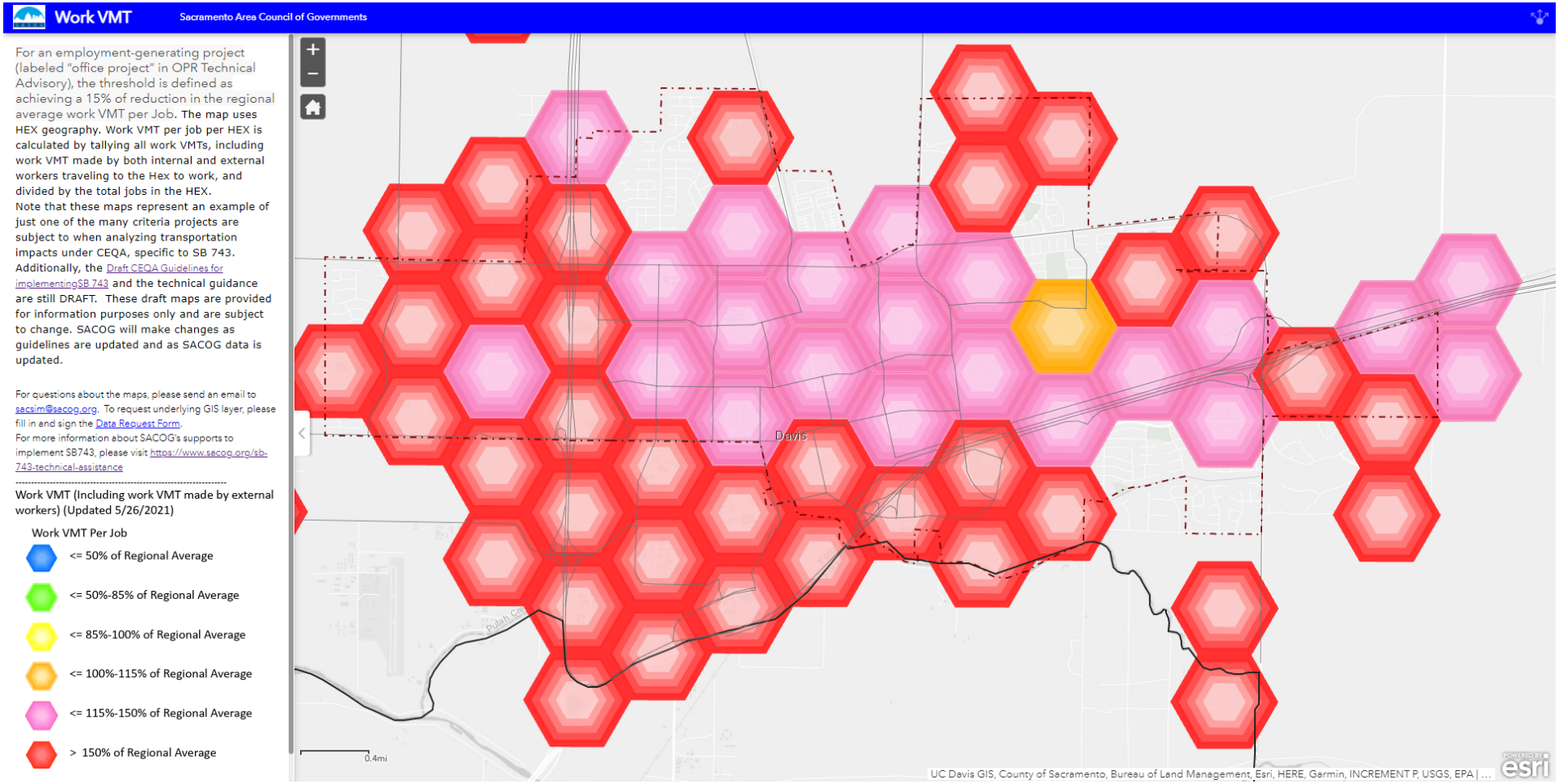
2016 Vehicle Miles Traveled per Capita – SACOG 2020 MTP/SCS



Source: SACOG 2020 MTP/SCS, Figure 3.11

Figure 9

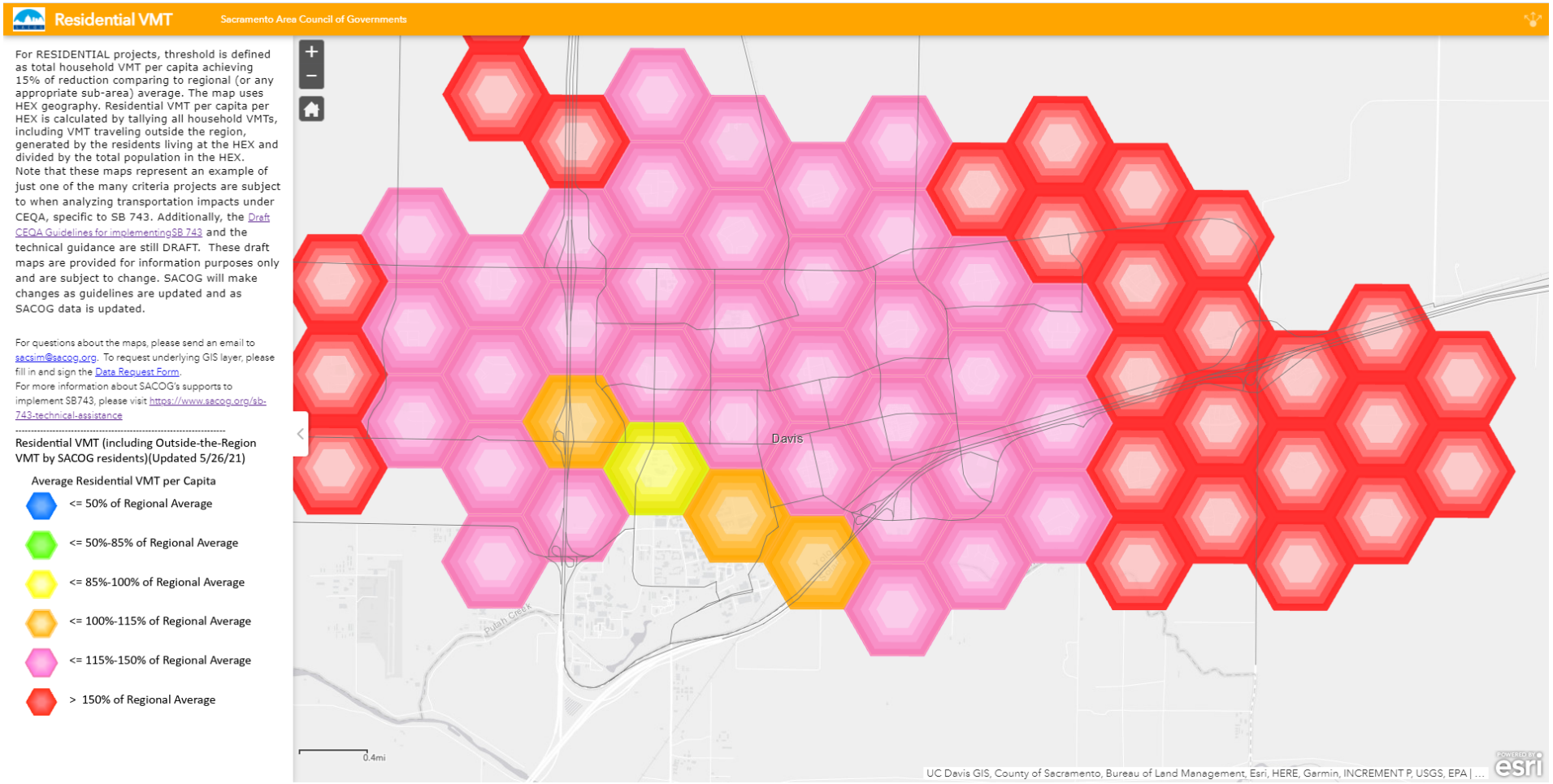
2040 Vehicle Miles Traveled per Capita – SACOG 2020 MTP/SCS



Source: SACOG, https://www.arcgis.com/apps/webappviewer/index.html?id=d2338e53b7524c21aa19001e677f2b82&extent=-13567654.7115%2C4600993.0408%2C-13330394.1757%2C4791168.3671%2C102100

Figure 10

2016 Workplace Vehicle Miles Traveled Per Employee – SACOG



Source: SACOG, https://sacog.maps.arcgis.com/apps/webappviewer/index.html?id=0eac172e44514776b2f30e4324652f88&extent=-13567338.6225%2C4599309.7898%2C-13330078.0867%2C4789485.1162%2C102100

Figure 11

2016 Household Vehicle Miles Traveled Per Capita – SACOG

4. Significance Criteria

This section describes the thresholds or criteria that determine whether the project would cause an adverse effect to the roadway system (via its VMT contribution) as well as to the bicycle, pedestrian, and transit systems. These thresholds are based on policies from the *City of Davis General Plan*, policies from owner/operators of affected transportation facilities (e.g., Caltrans), criteria utilized in previous transportation studies prepared by the City, and professional judgment.

Roadway System VMT Criteria

The project is considered to result in a significant impact to the roadway system (via its VMT contribution) if the project-generated VMT per service population exceeds any of the following thresholds relative to existing local or regional VMT per service population averages:

- VMT Threshold #1: Project-generated VMT per service population would be less than or equal to local or regional VMT per service population averages, as analyzed for recent City of Davis CEQA documents;
- VMT Threshold #2: Project-generated VMT per service population would be less than or equal to 15 percent lower than the local or regional VMT per service population averages, as recommended by OPR in the Technical Advisory on Evaluating Transportation Impacts in CEQA; and
- VMT Threshold #3: Project-generated VMT per service population would be less than or equal to 14.3 percent lower than the local or regional VMT per service population averages, the threshold needing to be met in order to be consistent with the 2017 Scoping Plan Update and to achieve State climate goals as defined by the California Air Resources Board (CARB) in the Technical Advisory on Evaluating Transportation Impacts in CEQA.

Bicycle Facility Criteria

The project is considered to result in a significant impact to bicycle facilities if:

- The project conflicts with existing, planned, or possible future bicycle facilities; or
- The project otherwise decreases the performance or safety of such facilities.

Pedestrian Facility Criteria

The project is considered to result in a significant impact to pedestrian facilities if:

- The project conflicts with existing, planned, or possible future pedestrian facilities; or
- The project otherwise decreases the performance or safety of such facilities.

Transit Service and Facilities Criteria

The project is considered to result in a significant impact to transit facilities and services if:

- The project conflicts with existing, planned, or possible future transit facilities and services; or
- The project otherwise decreases the performance or safety of such facilities and services.

Other Transportation Considerations

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

- Result in a geometric design feature that is inconsistent with applicable design standards;
- Result in a change to the volume, mix, or speed of traffic that is not compatible with the existing facility design; or
- Result in inadequate emergency access.

5. Analysis Methodology

This transportation evaluation was prepared in accordance with the requirements of CEQA to determine if significant transportation impacts are likely to occur in conjunction with future development that would be accommodated by the DSP.

Analysis Scenarios

The planning horizon of the DSP is the year 2040. The following scenarios are analyzed in this study:

- **2019 Baseline No Project –** The existing setting is based on the land use and transportation system characteristics present during the Fall of 2019. This scenario serves as the baseline or point of comparison for environmental impact significance determination related to the implementation of the DSP.
- **2019 Baseline Plus DSP –** This scenario considers changes to travel demand and the transportation system that would result from the implementation of the DSP relative to the existing conditions scenario.
- **2040 Cumulative No Project –** This scenario represents reasonably foreseeable local and regional land use and transportation system conditions during 2040. This scenario assumes the development of the DSP area in a manner consistent with pre-existing land use and transportation plans for the DSP area.
- **2040 Cumulative Plus DSP –** This scenario considers changes to travel demand and the transportation system that would result from the implementation of the DSP relative to the Cumulative No Project analysis scenario.

Project Description

The DSP establishes the vision for Downtown Davis through 2040. The DSP refines the vision and policy direction for the future of Downtown Davis as they pertain to the built environment, historic resources, mobility, and infrastructure. The DSP envisions an increase in the density and diversity of land uses within Downtown Davis and organizes future development into small, medium, and large neighborhood and main street building typologies. The DSP also establishes new zoning standards through a form-based code for the DSP area.

Table 1 summarizes the land use changes within the DSP area that would result from the implementation of the DSP. Relative to existing conditions, the DSP envisions the addition of 1,000 dwelling units and 600,000 square feet of non-residential space within the DSP area. In contrast to the existing Core Area Specific Plan (CASP), the DSP anticipates that most non-residential development within Downtown Davis would cater towards office uses rather than retail/food/services uses. The DSP anticipates that all new residential development within the DSP area would be multi-family housing.

Table 1: Downtown Specific Plan Area – Population and Employment Forecasts

Scenario	Population		Employment		
	Dwelling Units	Residents	Retail/Food Employees	Non-Retail/Food Employees	Total Employees
2019 Baseline No Project	506	1,083	1,499	1,289	2,788
2019 Baseline Plus DSP	1,506	3,243	1,643	2,646	4,289
2040 Cumulative No Project	650	1,394	2,176	1,474	3,650
2040 Cumulative Plus DSP	1,506	3,243	1,643	2,646	4,289

Source: Downtown Davis Specific Plan, Public Review Draft, October 2019; City of Davis, 2021.

To support the anticipated population and employment growth, the DSP would include improvements to the multi-modal transportation system within the DSP area. Overall, the transportation system modifications identified in the DSP focus on maintaining a high-quality pedestrian and bicycling environment within the inner portion of the DSP area while concentrating higher volumes of vehicle traffic and through vehicle traffic on roadways around the edges of the DSP area, including First Street, B Street, and Fifth Street. The DSP would increase the allocation of Downtown Davis roadway space that is dedicated to pedestrian facilities, bicycle facilities, and placemaking amenities, including the construction of new dedicated bicycle facilities on multiple roadways throughout the DSP area. The DSP would reconfigure existing intersections, enhance bicycle/pedestrian crossings, and install new traffic control devices to minimize the potential for conflicts between pedestrians, bicyclists, and vehicles. Finally, the DSP would include new grade-separated bicycle and pedestrian crossings to improve active transportation access across existing barriers to walking and bicycling surrounding the DSP area.

Table 2 summarizes the transportation strategies identified in the DSP. **Table 3** summarizes the physical and operational improvements to Downtown Davis transportation infrastructure that would result from the implementation of the DSP. The DSP additionally recommends a variety of programs and policies to manage parking demand, transportation demand, and activity at the curb. Refer to Chapter 6 (Mobility and Parking) of the DSP for a detailed description of the proposed transportation system and program changes that would result from the DSP.

Table 2: Downtown Specific Plan – Proposed Transportation Strategies

Transportation System Component	Strategy
Street Design	Implement layered network of streets with defined modal priorities.
	Design streets to make bicycling, walking, and taking transit safe and comfortable for everyone.
	Design streets to ensure that they are readily accessible to and usable by all users, especially individuals with disabilities.
	Design streets as places as well as corridors for movement
	Design streets to maximize opportunities to support ecosystems and the surrounding natural environment.
	Design streets to accommodate the movement and transfer of goods to support the basic functions and operations of downtown businesses.
	Design streets with safety as a top priority and to minimize multimodal conflicts.
	Design streets to accommodate emergency response provider needs.
	Adopt a fair-share transportation impact fee for new development to raise funds for improving all modes of transportation.
	Adopt funding mechanisms to support ongoing operations and maintenance of transportation infrastructure and services.
Pedestrian Network	Construct shared streets on Third Street and E Street.
	Continue to upgrade existing pedestrian crossings to reduce pedestrian exposure to competing travel modes and increase pedestrian visibility in conflict zones.
	Organize the sidewalk realm into clearly defined frontage, through, and furniture zones.
	Construct wide pedestrian through zones (10 to 15 feet) in locations with high pedestrian volumes.
	Eliminate existing and minimize future driveways and curb cuts along major pedestrian corridors, to the extent feasible.
	Provide pedestrian scale wayfinding signage.
	Provide pedestrian scale street lighting.
	Provide a variety of formal and informal seating options within the sidewalk realm.
	Accommodate outdoor dining amenities within appropriately sized frontage and furniture zones, clear of the pedestrian through zone.
	Install a system of signage to reinforce the image of the downtown, mark edges or entry points, and give information about directions, destinations, or downtown in general.
Bicycle Network	Continue to construct a network of high-quality, well-connected bicycle facilities serving the downtown.
	Continue to upgrade existing bicycle crossings to reduce bicyclist exposure to competing travel modes and increase bicyclist visibility in conflict zones.
	Eliminate existing and minimize future driveways and curb cuts along major bicycle corridors, to the extent feasible.

	Monitor bicycle parking demand and increase short- and long-term bicycle parking supply in the public realm, as warranted.
	Continue to support the operations and expansion of bicycle share programs and related infrastructure.
	Explore near-term opportunities to construct pilot projects to introduce new bicycle facility concepts.
Transit Network	Implement transit network improvements along transit priority corridors.
	Enhance transit stop amenities to include benches, shelters, and real-time arrival information.
	Implement multimodal access improvements identified in the ongoing Davis Train Depot Access Study.
Vehicular Network	Preserve the existing rectilinear grid network to maximize routing options.
	Construct gateway elements at key vehicular entry locations along Russell Boulevard/Fifth Street, First Street, and Richards Boulevard.
	Signalize key intersections on First Street and B Street to facilitate vehicle demand around the edge of downtown.
	Enhance intersection controls, geometrics, and crossing facilities to physically separate competing travel modes and minimize the potential for multimodal conflicts.
	Design streets based on target speed of 25 mph for Russell Boulevard/Fifth Street, First Street, Richards Boulevard, and B Street, and 20 mph for all other streets.
	Utilize vehicle miles traveled per capita as the primary metric for evaluating transportation impacts.
	Partner with UC Davis to explore TDM strategies that would reduce peak hour vehicle trips through downtown.

Source: Downtown Davis Specific Plan, Public Review Draft, October 2019

Table 3: Downtown Specific Plan – Proposed Transportation System Improvements

Location	Type	Description
A Street	Bicycle Improvement	Construct bike lanes on A Street between First Street and Russell Boulevard.
B Street	Bicycle Improvement	Construct a protected cycle track on B Street between First Street and Fifth Street.
C Street	Pedestrian Improvement	Enhance sidewalks and streetscape on C Street between Third Street and Fifth Street.
D Street	Bicycle & Pedestrian Improvement	Construct bike lanes on D Street between First Street and Fifth Street. Enhance sidewalks and streetscape on D Street between Third Street and Fifth Street.
E Street	Bicycle Improvement (Demonstration Project)	Construct a protected cycle track demonstration project on E Street between First Street and Third Street.
E Street	Bicycle & Pedestrian Improvement (Full Implementation)	Construct a shared street on E Street between First Street and Third Street. Improve bicycle crossings and configuration at the First Street and E Street intersection.
E Street	Pedestrian Improvement	Enhance sidewalks and streetscape on E Street between Third Street and Fifth Street.
F Street	Bicycle Improvement (Demonstration Project)	Construct a protected cycle track demonstration project on F Street between First Street and Fifth Street.
F Street	Bicycle & Pedestrian Improvement (Full Implementation)	Construct a raised cycle track on F Street between First Street and Fifth Street. Enhance sidewalks and streetscape on F Street between First Street and Fifth Street.
G Street	Pedestrian Improvement	Widen sidewalk and enhance streetscape on G Street between First Street and Fifth Street.
G Street	Bicycle Improvement	Construct bike lanes on G Street between Fifth Street and Eighth Street.
H Street	Bicycle Improvement	Construct a two-way raised cycle track on the east side of H Street between Second Street and Third Street.
First Street	Bicycle & Pedestrian Improvement	Improve the shared use path on First Street between B Street and E Street. Extend the shared use path to A Street to the west and G Street to the east. Improve bicycle crossings and configuration at the First Street and E Street intersection.
Second Street	Pedestrian Improvement	Enhance sidewalks and streetscape on Second Street between D Street and H Street.
Third Street	Bicycle Improvement (Demonstration Project)	Construct a protected cycle track demonstration project on Third Street between B Street and H Street.
Third Street	Bicycle & Pedestrian Improvement (Full Implementation)	Construct a shared street on Third Street between B Street and H Street.

Fifth Street	Bicycle & Pedestrian Improvement	Construct a protected cycle track on Fifth Street between A Street and G Street. Enhance sidewalks and streetscape on Fifth Street between A Street and H Street.
Putah Creek Trail	Bicycle & Pedestrian Improvement	Construct a shared use path between the Putah Creek Trail and G Street on the west side of the UPRR mainline.
		Construct a shared use path overcrossing over Richards Boulevard.
First Street and A Street	Intersection Improvement	Reconfigure intersection
First Street and B Street	Intersection Improvement	Signalize the First Street and B Street intersection. Reconfigure intersection.
First Street and E Street	Intersection Improvement	Reconfigure intersection. Remove the southbound right-turn pocket.
First Street and F Street	Intersection Improvement	Signalize the First Street and F Street intersection.
Second Street and B Street	Intersection Improvement	Signalize the Second Street and B Street intersection.
Russell Boulevard/Fifth Street and A Street	Intersection Improvement	Reconfigure intersection.
Russell Boulevard/Fifth Street and B Street	Intersection Improvement	Construct a protected intersection at the Russell Boulevard/Fifth Street and B Street intersection.

Source: Downtown Davis Specific Plan, Public Review Draft, October 2019

Travel Demand Forecasting

This study utilizes several tools to forecast travel demand changes associated with the proposed project as well as planned local and regional land use development and transportation system modifications.

The local UC Davis/City of Davis travel demand model (the local model) was used for the purposes of forecasting travel demand within the City of Davis and UC Davis vicinity. For this effort, the local model 2016 base year was updated to a new 2019 base year and the 2036 cumulative year was updated to a new 2040 cumulative year to be consistent with the baseline land use and transportation data collected for this evaluation and to align with the 2040 horizon year identified in the DSP and in the 2020 Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

The local 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 original 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 Long Range Development Plan (LRDP) growth, approved development projects, pipeline development projects, and other reasonably foreseeable land development activities. For this effort, land use inputs for the new 2019 base year and 2040 cumulative year models were updated based on new land use information identified in the SACOG 2016 parcel database used in developing regional model inputs for the 2020 SACOG MTP/SCS, as well from input provided by City staff.
- **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 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. 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
    - 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. This 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 2020 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.

Consistent with standard practice, the base year model was calibrated and then validated against actual travel conditions. The model passed all applicable validation tests.

Vehicle Miles Traveled (VMT)

As discussed above, LOS can no longer be used for evaluating project traffic impacts under CEQA with the passage of SB 743 and adoption of the amended CEQA Guidelines implementing SB 743 (see State CEQA Guidelines Section 15064.3). Per State CEQA Guidelines Section 15064.3, subdivision (c), the provisions in Section 15064.3 recommending VMT as the primary metric for analyzing traffic impacts applies as of July 1, 2020.

This study uses vehicles miles traveled (VMT) as the primary metric for transportation impacts. By definition, one VMT is defined as a motor vehicle being driven one mile. VMT is expressed on a daily basis, and in this context, for a typical weekday. VMT values in this study represent the full length of a given trip, and are not truncated at city, county, or region boundaries.

Give the mixed-use nature of the DSP, this analysis uses the VMT per service population metric for the purposes of analyzing potential impacts to VMT. This methodology calculates VMT by summing the "VMT from" and "VMT to" a specified area. The VMT accounting is:

$$VMT = (II + IX) + (II + XI) = (2 \times II) + IX + XI$$

- Internal-internal (II): The full length of all trips made entirely within the geographic area limits is counted.
- Internal-external (IX): The full length of all trips with an origin within the geographic area and destination outside of the area is counted.
- External-internal (XI): The full length of all trips with an origin outside of the geographic area and destination within the area is counted.

The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are both in the study area are double counted. To cancel out the double counting, the VMT is divided by the service population (residential population plus employment population), the generators of both trip ends of the VMT. This is necessary when expressing VMT as an efficiency metric that also represents the VMT generation rate of

the service population. The resulting VMT is then compared to the existing VMT and a determination made as to whether the project VMT exceeds the applicable thresholds.

VMT estimates were prepared utilizing the UC Davis/City of Davis travel demand model, the SACOG SACSIM travel demand model, and the California Statewide Travel Demand Model.

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

- **Project-generated VMT and 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 ends within the model boundaries (i.e., the City of Davis sphere of influence and the UC Davis campus). This model was selected for this purpose due to its 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 added to trips with trip ends outside of the local model boundaries using the SACSIM travel demand model and the California Statewide Travel Demand Model (e.g., to capture longer trips to/from the Bay Area that would not otherwise be reflected in the local model). For Existing Plus Project and Cumulative Plus Project conditions, land use inputs for the TAZs containing the DSP area were updated to represent the DSP project description.
- **Regional VMT generated by the SACOG region –** The SACSIM travel demand model, prepared by SACOG for regional travel demand forecasting purposes, was utilized to estimate VMT associated with trips with trip ends within the model boundaries (i.e., the SACOG region). Extra distance was added to trips with trip ends outside of the SACSIM model boundaries (e.g., based on actual distance from edge of model to destinations within Solano or Napa Counties, for instance) using the California Statewide Travel Demand Model. VMT associated with SACSIM 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.

The resulting project-generated VMT per service population estimate is then compared to the local and regional VMT per service population estimates to determine whether the DSP would exceed the applicable VMT significance thresholds.

Table 4 summarizes the weekday VMT and vehicle trips that would be generated by the DSP area for each of the four analysis scenarios

Table 4: Downtown Specific Plan Area – VMT and Vehicle Trips Estimates

Scenario	Weekday Vehicle Trips	Weekday VMT
2019 Baseline No Project	85,253	389,697
2019 Baseline Plus DSP	104,252	480,369
2040 Cumulative No Project	120,892	615,650
2040 Cumulative Plus DSP	102,252	483,717

Source: Fehr & Peers, 2021.

Bicycle and Pedestrian Facilities

The impact assessment for bicycle and pedestrian travel considers existing and planned bicycle and pedestrian facilities and reviews the DSP to determine whether it would physically disrupt an existing facility or prevent the implementation of a planned facility. This assessment also considers the extent to which the DSP would increase conflicts between bicyclists and pedestrians and other modes of travel.

Transit Service and Facilities

The impact assessment for transit considers existing and planned transit facilities and services and reviews the DSP to determine whether it would physically disrupt an existing service or facility or prevent the implementation of a planned service or facility.

Other Impacts

Potential transportation impacts related to transportation hazards and emergency access are based on a review of project changes to the transportation network and a qualitative assessment of whether those changes would conflict with applicable standards or result in detrimental conditions based on the thresholds of significance. Analysis of potential impacts related transportation hazards was focused on whether the changes would create conditions that are no longer compatible with the physical network such that the volume, mix, or speed of traffic was not anticipated as part of the original transportation network design.

6. Impacts and Mitigation Measures

This section describes the evaluation of potential transportation impacts associated with the implementation of the DSP and, in instances where the DSP would cause a significant impact, identifies potential mitigation measures that would lessen the severity of the impact.

Project Impacts and Mitigation Measures

Impact 1: Impacts to vehicle miles traveled (VMT) on the roadway system.

Implementation of the DSP would not change local and regional VMT per service population in a manner that would exceed relevant local and State thresholds. This impact would therefore be **less than significant**.

The potential impact to VMT was evaluated by comparing the estimated VMT per service population (defined as residents plus employees) that would be generated by the implementation of the DSP to the existing local and regional VMT per service population averages.[1] Project-generated, local, and regional VMT per service population estimates were derived from the processes previously described in the Analysis Methodology section. For the purposes of this study, the VMT impact analysis considers the net new service population and VMT that would result from the implementation of the DSP.

The ARC Project is considered to result in a significant impact if the project-generated VMT per service population exceeds any of the following thresholds relative to the existing local or regional VMT per service population averages:

- VMT Threshold #1: Project-generated VMT per service population would be less than or equal to the existing local or regional VMT per service population averages, as analyzed for recent City of Davis CEQA documents;
- VMT Threshold #2: Project-generated VMT per service population would be less than or equal to 15 percent lower than the local or regional VMT per service population averages, as recommended by OPR in the Technical Advisory on Evaluating Transportation Impacts in CEQA; and
- VMT Threshold #3: Project-generated VMT per service population would be less than or equal to 14.3 percent lower than the local or regional VMT per service population averages, the threshold needing to be met in order to be consistent with the 2017 Scoping Plan Update and to achieve

[1] Use of service population defined in this manner allows for a like-to-like comparison with local and regional VMT.

State climate goals as defined by the California Air Resources Board (CARB) in the Technical Advisory on Evaluating Transportation Impacts in CEQA.

Table 5 presents the results of the VMT analysis. The DSP is estimated to generate 90,672 VMT (net new) and 24.8 VMT per service population under 2019 Baseline Plus DSP conditions on a typical weekday. The total VMT that would be generated by the DSP is equal to three percent of the total VMT generated by the City of Davis under existing conditions.

As shown in Table 5, DSP-generated VMT per service population would measure more than 15 percent below the average VMT per service population generated by the City of Davis, by the City of Davis with UC Davis, and by the SACOG region. Therefore, the DSP would not exceed thresholds #1, #2, or #3 listed above, and a **less than significant** impact would occur.

Table 5: Weekday VMT per Service Population – 2019 Baseline Plus DSP Conditions

Metric	DSP Area[1]	City of Davis[2]	City of Davis & UC Davis[3]	SACOG Region[4]
Total VMT	90,672	3,411,358	4,268,554	123,034,634
Residents	2,160	71,755	80,794	2,374,910
Employees	1,501	13,987	26,365	940,683
Service Population	3,661	85,742	106,159	3,315,593
Total VMT per Service Population	24.8	39.8	40.2	37.1
VMT Significance Criteria Comparison				
% Difference between DSP-generated VMT per service population and existing local/regional VMT per service population		-37.7%	-38.4%	-33.3%
Exceed VMT Threshold #1 (+0%)?		No	No	No
Exceed VMT Threshold #2 (-15%)?		No	No	No
Exceed VMT Threshold #3 (-14.3%)?		No	No	No

Notes: [1] DSP area resident estimates for the 1,000 new dwelling units that would result from the DSP are provided in the Draft Downtown Davis Specific Plan. DSP area employee estimates for the 600,000 sf of non-residential uses that would result from the DSP were derived as follows in consultation with City of Davis staff: (360,000 sf office/R&D @ 500 sf per employee) + (120,000 sf office/traditional @ 275 sf per employee) + (30,000 sf retail @ 425 sf per employee) + (30,000 sf food @ 415 sf per employee) + (60,000 sf government @ 300 sf per employee) = 1,501 total employees. VMT and service population estimates for the DSP area represent net new quantities that would be generated by the DSP.
[2] Resident and employee totals derived from the UC Davis/City of Davis Travel Demand Model land use inputs. Includes UC Davis residential uses located off-campus in the City of Davis (e.g., 8th and Wake Apartments).
[3] Resident and employee totals derived from the UC Davis/City of Davis Travel Demand Model land use inputs. Includes both City of Davis residents and employees and UC Davis on-campus residents and employees.
[4] Resident and employee totals derived from the UC Davis/City of Davis Travel Demand Model and SACSIM travel demand model land use inputs.
City of Davis, City of Davis with UC Davis, and SACOG region VMT per service population represent existing conditions.
Source: Fehr & Peers, 2021.

This VMT analysis result can be attributed to several land use and transportation system factors that influence travel behavior:

- The DSP would result in infill development within the DSP area, which currently exhibits a mix of land uses within a relatively small geographic area.
- The DSP would result in an increase in the diversity and density of land uses and destinations within the DSP area.
- The DSP would result in a three-fold increase in the number of residents living in Downtown Davis. The DSP would result in 1.44 new residents for every new job, which would improve the local jobs-housing balance (taking into account both the City of Davis and UC Davis).
- The vast majority of employment growth that would result from the DSP would be office employment, which generates substantially less VMT per service population when compared to retail, food, services, and other more customer-facing employment uses.
- New uses introduced by the DSP would complement existing residential, employment, and recreational uses within the DSP area, the City of Davis, and on the UC Davis campus.
- New development generated by the DSP would be situated within an established multi-modal transportation system featuring a variety of travel options capable of fulfilling a variety of trip purposes, including extensive bicycle, pedestrian, and transit systems

Altogether, these factors would enable a greater share of person trips generated by new DSP residents, employees, and visitors to be fulfilled by walking, bicycling, and riding transit. Additionally, for DSP residents, employees, and visitors who do choose to drive or who have no choice but to drive, their vehicle trips would be relatively short in length given the proximity to other local uses.

Additional VMT Considerations

Emerging Trends and Travel Demand Model Limitations

This analysis concludes that the DSP would have a less-than-significant impact on VMT. This includes reliance on the City of Davis/UC Davis travel demand model and the SACSIM travel demand model. While these models represent state of the practice or advanced practice, travel behavior and the transportation systems are changing quickly in response to emerging trends, new technologies, and different preferences, as noted in the Environmental Setting section. These changes combined with the current effects of the COVID-19 pandemic increase uncertainty about how VMT generation rates may change by the time the DSP would be implemented.

The trajectory of deployment, market acceptance, and government regulation of these new travel options and technologies is difficult to predict, and these elements directly influence the inputs and algorithms for the travel demand models. As such, these travel demand models have limitations in the ability to capture the full range of potential travel effects from emerging travel options and technologies.

The SACSIM model does include some scenario testing capabilities that can begin to test different hypotheses of these impacts, but until more research is done about the likely behavioral responses to new modes and technologies is completed, travel models cannot fully capture these changes in a reliable way. Initial testing of automated vehicles effects using SACSIM, such as lowering costs to use vehicles and

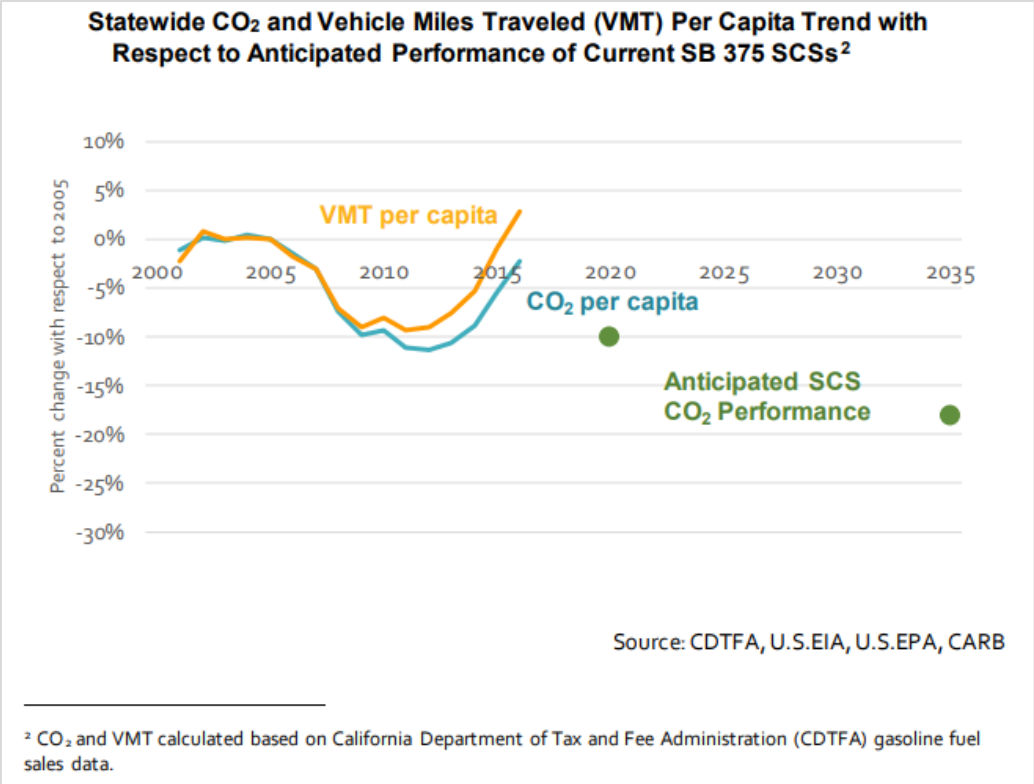
making them more convenient by eliminating parking at trip ends, does generate increases in overall vehicle travel and reductions in transit ridership with all else being equal. The information suggests the model is sensitive to how cost and convenience influence travel behavior but within the limits of the observed data used to develop the model.

Historical VMT Trends

When making a final VMT impact determination, other available evidence related to VMT trends should be considered. This analysis identified the following two relevant studies.

- *2018 Progress Report, California's Sustainable Communities and Climate Protection Act*, California Air Resources Board, November 2018 (Progress Report).
- *California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals*, Auditor of the State of California, February 2021 (Audit Report).

The Progress Report measures the effect of SB 375 revealing that VMT and GHG per capita increased in California between 2010 and 2016 and are trending upward (see image below).



[2] CO_2 and VMT calculated based on California Department of Tax and Fee Administration (CDTFA) gasoline fuel sales data.

The Audit Report is a more recent assessment of CARB's GHG reduction programs, which also found that VMT and its associated GHG emissions were trending upward through 2018. Per the audit, the state is not on track to achieve 2030 GHG reduction goals, and emissions from transportation have not been declining.

The evidence from these two reports does not refute the project's VMT impact finding but does suggest greater action on the part of the state may be needed to achieve the state's GHG reduction goals. The project contributes to the basic objectives of SB 743 for local agencies such as adding development in a land use efficient area where the short-trip lengths to destinations allows for more multi-modal choices and low VMT generation. The monitoring of state performance indicates that the state may need to take further action to discourage vehicle travel (i.e., increasing the cost of driving) while reducing the barriers or constraints that prevent more efficient use of vehicles and greater use of transit, walking, and bicycling. If these types of actions are taken, residents, employees, and visitors resulting from the DSP would have multiple travel options to further reduce their vehicle use because of the proximity to existing complementary uses within the City of Davis and on the UC Davis campus.

Vehicle Miles Traveled Effects of COVID-19 Pandemic

The COVID-19 pandemic decreased VMT as a result of government orders that curtailed mobility and suppressed economic activity. While this sudden decline in VMT is expected to be temporary, it is uncertain what long-term effects the COVID-19 pandemic will have on travel behavior. By necessity, sizable portions of the public adapted to a notable increase in teleworking, distance learning, telemedicine, internet shopping, and home delivery. The current physical distancing recommendations have also reduced demand for mass transit and shared mobility options. The combination of these effects could result in increased or decreased VMT per capita levels in the future, depending on how permanent these behavioral changes become. Since the VMT effects of emerging trends and the COVID-19 pandemic are uncertain, and because the COVID-19 pandemic has disrupted the VMT trends documented in the 2018 Progress Report, any definitive conclusions for how these other VMT considerations will affect project VMT-generation is speculative.

Conclusion

The DSP would increase the density and diversity of land uses and expand complementary land uses within the DSP area and in Davis as a whole, which would increase internal trip capture and reduce VMT per service population.

DSP-generated VMT per service population would measure more than 15 percent below the average VMT per service population generated by the City of Davis, by the City of Davis with UC Davis, and by the SACOG region. Therefore, the DSP would not exceed thresholds #1, #2, or #3 listed above, Altogether, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact 2: Impacts to bicycle and pedestrian facilities.

Implementation of the proposed project would increase bicycle and pedestrian trips and introduce bicycle and pedestrian facility improvements in and near the DSP area. The DSP would not conflict with existing, planned, or possible future bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities. This impact would therefore be **less than significant**.

The DSP lays out a future transportation vision for Downtown Davis in which the transportation system provides improved multi-modal access (both internal to Downtown and to surrounding areas), improves the interaction of transportation modes, and supports an appropriate amount of parking at the appropriate price levels.

The DSP would include extensive improvements to on- and off-street bicycle and pedestrian facilities and roadway/intersection crossings within the DSP area, as described in the Bicycle Network Improvements and Pedestrian Network improvements sections of the DSP and in the Project Description section of this study. The DSP bicycle facility improvements would include a variety of bicycle facility types to provide a range of route choices for bicyclists of varying abilities, experience levels, and tolerance to traffic stress. The DSP would include the construction of Class IV separated bikeways on key north-south and east-west bicycle routes, in addition to intersection crossing enhancements along corridors with separated bikeways. These facilities would physically separate bicyclists from competing travel modes along roadway segments and through intersections and form the core of the DSP area's "low stress" bicycle network.

New population and employment growth resulting from the DSP would increase the number of walking and bicycling trips to, from, and within the DSP area. Areas expected to experience the greatest increases in walking and bicycling activity generally coincide with those that would be expected to experience the greatest amount of new development. Increases in walking and bicycling activity would be particularly prevalent within the vicinity of the "Heart of Downtown" area where the density and diversity of uses would be at its greatest. Other locations that would experience increases in walking and bicycling activity include the G Street corridor north of Fifth Street, the Davis Train Depot vicinity, and the major walking and bicycling routes between the DSP area and the UC Davis campus, including First Street, Second Street, Third Street, and Russell Boulevard/Fifth Street. New walking and bicycling trips would be accommodated by existing bicycle and pedestrian facilities within and near the DSP area, as well as the planned bicycle and pedestrian facilities identified in the DSP. New walking and bicycling trips generated by the DSP would also be accommodated by planned active transportation improvement projects outside of the DSP area, including the I-80/Richards Boulevard Interchange Improvements project (in design with a 2023 completion date) and the Pole Line/Olive Drive Bicycle Connection project (under construction with a late 2021/early 2022 completion date).

A review of the DSP did not identify any disruption to existing bicycle or pedestrian facilities. The bicycle facility improvements identified in the DSP are not consistent with the specific improvements identified in the City's *Beyond Platinum Bicycle Action Plan*. The DSP bicycle facility improvements include a range of Class I through Class IV bicycle facilities and include recommendations for either dedicated bicycle facilities or shared facilities (where bicyclists physically mix with vehicular traffic) based on the specific operating characteristics of each roadway segment. Conversely, the *Beyond Platinum Bicycle Action Plan*

recommends shared facilities for all Downtown roadways with bicycle facilities. Therefore, the bicycle facility improvements identified in the DSP would be considered to exceed the performance and quality of the improvements identified in the *Beyond Platinum Bicycle Action Plan* by physically separating bicyclists from vehicles on roadways with higher speeds or volumes of vehicle traffic, or equal the performance and quality of the improvements identified in the *Beyond Platinum Bicycle Action Plan* on roadways where shared facilities are appropriate.

The implementation of the DSP would support City of Davis General Plan policies related to the bicycle and pedestrian environment, including promoting complete streets design principles (Policy TRANS 2.1), creating a network of street and bicycle facilities that provides for multiple routes between various origins and destinations (Policy TRANS 2.5), implementing transportation improvements specifically targeted at bicycles (Policy TRANS 4.3), and improving bicycle/pedestrian access, comfort, and safety (Policy TRANS 2.2).

Altogether, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact 3: Impacts to transit service and facilities.

Implementation of the proposed project would increase transit trips and introduce transit facility improvements in and near the DSP area. The DSP would not conflict with existing, planned, or possible future transit services or facilities or otherwise decrease the performance or safety of such facilities. This impact would therefore be **less than significant**.

The entirety of the DSP area is located within a SACOG MTP/SCS transit priority area (TPA), which are designated in areas that are in close proximity to major transit stops or terminals. One primary goal of the SACOG MTP/SCS TPA designation is to encourage transit-oriented development and multi-modal connectivity including pedestrian-friendly design and improved accessibility for all people. Therefore, future development that would result from the DSP would be designed to increase transit access and safety as well as maximize the use of existing transit services.

The DSP would include improvements to transit operations within the vicinity of the DSP area, including the implementation of transit priority measures on roadways serving higher volumes of transit trips such as First Street, Richards Boulevard, and Russell Boulevard/Fifth Street. Potential measures include transit-only lanes, queue jumps, transit signal preemption, and enhanced bus stop amenities. The DSP also includes multi-modal access improvements within the vicinity of the Davis Train Depot to improve first-/last-mile walking and bicycling access to Amtrak and Capitol Corridor passenger rail service.

New transit ridership demand would be generated by DSP growth commensurate with projected growth in population and employment. Additional transit ridership demand would increase bus and passenger rail boarding and alighting activity at existing bus stops located within the DSP area and at the Davis Train Depot.

A review of the DSP did not identify any disruption to existing, planned, or possible future transit services or facilities.

The implementation of the DSP would support City of Davis General Plan policies related to transit, including promoting complete streets design principles (Policy TRANS 2.1), facilitating the provision of convenient, reliable, safe, and attractive transit (Policy TRANS 3.1), and maximizing transit potential for new development (Policy TRANS 3.3).

Altogether, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact 4: Impacts to emergency vehicle access.

Implementation of the DSP would not interfere with emergency access. This impact would therefore be **less than significant**.

The DSP area is served by the City of Davis Fire Department Headquarters (located within the DSP area near the Fifth Street/D Street intersection) and the City of Davis Police Department Headquarters (located approximately 1.2 miles east of the DSP area on Fifth Street). The transportation network in the DSP area is a grid configuration that provides several alternative east-west and north-south streets for emergency access routes.

The development described in the proposed DSP would not interfere with existing emergency access. No existing rights of way or emergency access routes would be closed. This impact would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

Impact 5: Transportation hazards impacts.

Implementation of the DSP would not increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) This impact would therefore be **less than significant**.

The development included in the DSP would be infill development consistent with the existing land use context in Downtown Davis. As such, it would generate a mix of traffic that would be similar to existing conditions. With more residents, employees, and visitors, the volume of traffic across modes would increase and this could result in slower travel speeds for some modes. These changes would not cause conditions that would warrant modification of the existing transportation system beyond the transportation improvements identified in the DSP. The transportation improvements identified in the DSP

would improve the compatibility of transportation modes on various roadways in and near the DSP area. The design of transportation improvements identified in the DSP would be designed to applicable design standards to avoid creating a geometric hazard.

Altogether, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts and Mitigation Measures

Impact 6: Cumulative impacts to vehicle miles traveled (VMT) on the roadway system.

Under cumulative conditions, implementation of the DSP would not change local and regional VMT per service population in a manner that would exceed relevant local and State thresholds. This impact would therefore be **less than significant**.

Impact 1 provides an evaluation of potential project impacts to VMT under 2019 Baseline Plus DSP conditions. Under 2019 Baseline Plus DSP conditions, the project would cause a less than significant impact to VMT. The VMT impact analysis for 2019 Baseline Plus DSP conditions applies to 2040 Cumulative Plus DSP conditions for the following reasons:

- The VMT significance threshold compares project-generated VMT per service population to that of existing local and regional development. This comparison is useful because it provides information regarding how the project aligns with long-term environmental goals related to VMT established based on existing development levels. Use of VMT significance thresholds based on existing development levels is recommended in the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA.
- The OPR Technical Advisory on Evaluating Transportation Impacts in CEQA indicates that VMT efficiency metrics, such as VMT per service population, are not appropriate for CEQA cumulative analysis. Instead, the Technical Advisory recommends that an impact finding from an efficiency-based project-specific VMT analysis (i.e., Existing Plus Project conditions) would imply an identical impact finding for a cumulative VMT analysis. An example provided by OPR explains that a project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact.

Based on the above, the DSP's cumulative VMT impact would be considered **less than significant**.

Mitigation Measures

No mitigation measures are required.