Palomino Place

Transportation Impact Study

Prepared for:
The City of Davis

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RS22-4193

FEHR PEERS

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1. Introduction

This study describes existing transportation conditions (environmental and regulatory) and analyzes the potential of the proposed Palomino Place project to affect the surrounding transportation environment in accordance with the current California Environmental Quality Act (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.

The City of Davis is separately preparing a traffic operations analysis to evaluate the potential effects of the proposed project with respect to traffic operations (i.e., vehicle delay) on roadway facilities within the vicinity of the project site. This analysis is deliberately separate from the transportation impact study in accordance with the CEQA Guidelines, which no longer permit the use of vehicle delay or level of service (LOS) for the purposes of identifying environmental impacts for land use projects. This analysis has been prepared for two primary reasons. First, it informs other components of the transportation impact analysis (e.g., potential impacts to transit services). Second, it directly addresses the proposed project's consistency with City of Davis General Plan policies related to traffic operations and level of service. The results of the traffic operations analysis will be considered during the City's planning review of the project.

2. Regulatory Setting

This section summarizes key City of Davis, federal, state, and regional regulations, laws, and policies relevant to evaluating the project's potential impacts on transportation and circulation.

Federal

No federal plans, policies, regulations, or laws related to transportation and circulation apply to the analysis of project transportation 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 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."

While AB 32 does not contain specific expectations related to individual land use projects, it does set statewide expectations for GHG reduction that have influenced VMT reduction expectations from land development projects as part of SB 375 and SB 743.

Senate Bill 375

SB 375 requires metropolitan planning organizations (MPO) to prepare a sustainable communities strategy (SCS) as part of their regional transportation plans (RTP). The SCS demonstrates how the region could meet its GHG reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify land use and transportation strategies that combined with the RTP project list will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

Senate Bill 743

SB 743 creates or encourages several statewide changes to the evaluation of transportation and traffic impacts under the 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 (TPA) and allows OPR to extend use of the new metrics beyond TPAs. In the amended CEQA Guidelines, OPR selected automobile 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 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."

SB 743 establishes that aesthetic and parking impacts of residential, mixed-use residential, or employment center projects on an infill site within a TPA are not considered significant impacts on the environment. SB 743 added Section 21099 to the California Public Resources Code, which states that automobile delay, as described by level of service or similar measures of vehicular capacity or traffic congestion, is not 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, level of service 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 environmental impact report 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 is 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 an 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[1] or an existing stop along a high-quality transit corridor.[2] Proximity to transit is explicitly listed in the CEQA Guidelines as a reason to presume a project has no significant impacts based on VMT. In Davis, this includes projects within 0.5 mile of the existing Davis Amtrak Station or stops for bus routes with headways of 15 minutes or less.
- 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.

[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").
[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

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 result 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.

The Technical Advisory also provides guidance on impacts on 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). As part of these responsibilities, Caltrans reviews local development projects subject to CEQA to assess potential impacts on the SHS based on the following technical guidance.

- *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (VMT TISG) (California Department of Transportation 2020a)
- *Traffic Safety Bulletin 20-02-R1: Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance* (Caltrans Safety Impact Guidance) (California Department of Transportation 2020b)

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

The VMT TISG outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and GHG emissions reduction goals. The VMT TISG endorses OPR's Technical Advisory as the basis for transportation impact analysis methodology and thresholds including

the use of screening to streamline qualified projects because they help achieve the state's VMT reduction and mode shift goals.

Caltrans Safety Impact Guidance

The Caltrans Safety Impact Guidance provides technical instructions on how to evaluate potential safety impacts on the SHS. This guidance largely focuses on the actions of Caltrans district staff in performing the analysis and providing relevant impact information to lead agencies. 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 Federal Highway Administration's 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

City of Davis General Plan

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) for major intersections ("Major Intersections" are defined in the General Plan Glossary:

- 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.

This policy identifies planned lane configurations for major roadways throughout Davis. In the study area, all roadways are consistent with their planned lane configurations except for Pole Line Road north of East Covell Boulevard, which is planned for widening from two to four lanes.

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 East Covell Boulevard, Wright Boulevard, Moore Boulevard, Monarch Lane, Temple Drive, and Tulip Lane.

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 deviations improve the livability of the area. This program includes the following roadway segments near the project site:

- West Covell Boulevard between SR 113 and F Street
- East Covell Boulevard between F Street and Pole Line Road (completed 2014)
- Mace Boulevard between the Mace Curve and I-80
- F Street between East Covell Boulevard and Third Street
- L Street between East Covell Boulevard and Second Street
- Pole Line Road between the North City Limit and East Covell Boulevard
- Pole Line Road between East Covell Boulevard and I-80

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.

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 vicinity of the project site:

- Buffered bike lanes on East Covell Boulevard between F Street and Birch Lane (Second Street between Mace Boulevard and L Street (since completed in the westbound direction between Pole Line Road and J Street/Cannery Avenue).
- Bike intersection crossing markings at the East Covell Boulevard/Birch Lane intersection.
- Bike lane conflict markings (green) at the East Covell Boulevard/Pole Line Road intersection.
- Shared lane markings (green) on Birch Lane between East Covell Boulevard and Pole Line Road.
- Shared lane markings on several streets within East Davis, including Temple Drive, Tulip Lane, and Baywood Lane.
- Traffic calming on Tulip Lane between Temple Drive and Loyola Drive.

Sacramento Area Council of Governments

The 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 RTP/SCS, as explained above under SB 375. The current SACOG RTP/SCS is entitled *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (Sacramento Area Council of Governments 2019).

The SACOG 2020 MTP/SCS provides the basis for air quality conformity findings related to the federal 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.

3. 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 project site.

Project Location

The project site is located within the City of Davis and is bounded by East Covell Boulevard to the south, the Wildhorse residential neighborhood to the west and north, and an agricultural buffer to the east. The project site is currently occupied by three single-family residential dwelling units, a horse barn, and pasture/grazing land.

Approximate travel distances between the project site and other local activity centers are as follows:

- Harper Junior High School – 0.8 mile
- Birch Lane Elementary School – 1.0 mile
- Oak Tree Plaza Shopping Center – 1.1 miles
- Target Shopping Center – 1.9 miles
- Davis Senior High School – 2.4 miles
- Downtown Davis – 2.6 miles
- UC Davis (Memorial Union Building) – 3.5 miles

Figure 1 displays the location of the project site and the surrounding roadway network.

Roadway System

Vehicular access to the project site is provided via East Covell Boulevard and Monarch Lane. Other key roadways that would accommodate project-generated vehicular traffic include Mace Boulevard, Pole Line Road, State Route 113 (SR 113) and Interstate 80 (I-80). Use of these and other study area roadways for environmental impact analysis purposes focuses on how the project affects VMT.

East Covell Boulevard is a four-lane east-west major arterial that traverses the City of Davis. To the west, East Covell Boulevard connects to Pole Line Road, F Street, Anderson Road, State Route 113 (SR 113), and points west. To the east, East Covell Boulevard transitions into Mace Boulevard at the Mace Curve. East Covell Boulevard borders the south edge of the project site. Vehicular access to and from the project site

is provided via the existing East Covell Boulevard/Monarch Lane side-street stop-controlled intersection. Within the vicinity of the project site, East Covell Boulevard has a posted speed limit of 40 miles per hour (mph).

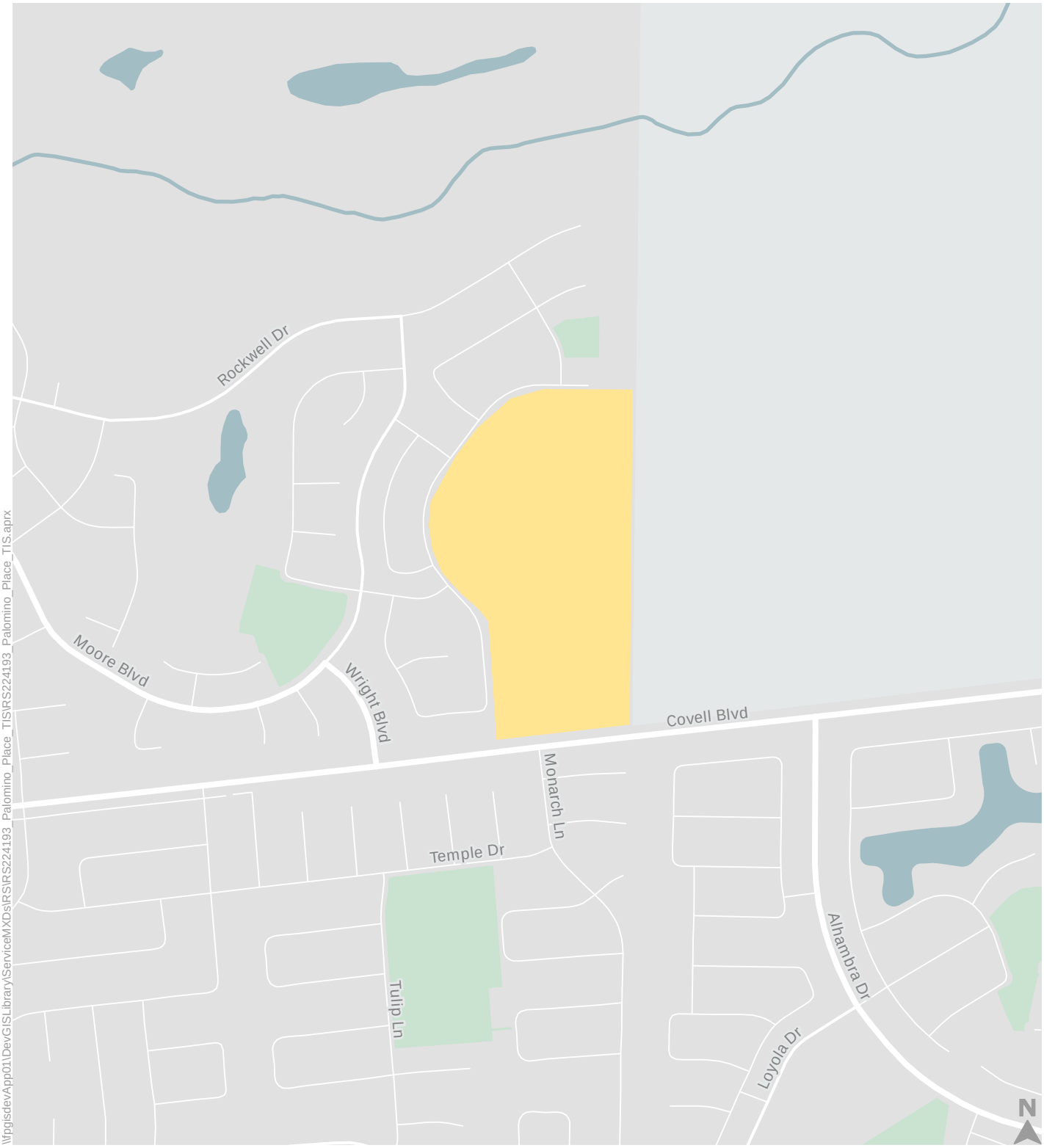
Mace Boulevard is a two- to four-lane north-south major arterial. Mace Boulevard transitions from East Covell Boulevard at the Mace Curve and extends south with connections to Interstate 80 (I-80), South Davis, and points south. Mace Boulevard is four lanes on the segment between Alhambra Drive and Cowell Boulevard and two lanes north and south of this segment.

Pole Line Road is a two-lane north-south road that connects East Davis and South Davis across I-80. Pole Line Road is a major arterial and minor arterial north and south of East Covell Boulevard, respectively. Pole Line Road transitions into Lillard Drive south of I-80 and County Road 102 north of the city limits. County Road 102 continues north to the City of Woodland and Interstate 5 (I-5).

Monarch Lane is a two-lane north-south road that extends between East Covell Boulevard and Loyola Drive in East Davis. Monarch Lane is a collector between East Covell Boulevard and Temple Drive and a residential street between Temple Drive and Loyola Drive.

State Route 113 (SR 113) is a four-lane, north-south freeway that extends from Interstate 80 (I-80) at the Yolo/Solano County line north to Interstate 5 (I-5) in Woodland. SR 113 serves Davis via interchanges at Covell Boulevard and Russell Boulevard. Additional SR 113 interchanges within the vicinity of Davis include the Hutchison Drive interchange at the UC Davis campus and the County Road 29 interchange in Yolo County. SR 113 and its interchanges are owned and operated by Caltrans.

Interstate 80 (I-80) is an east-west interstate freeway near the southern boundary of the project site. From Davis, I-80 connects with the San Francisco Bay Area to the west and Sacramento and the Lake Tahoe Basin to the east. I-80 provides three travel lanes per direction in the vicinity of the project site. I-80 serves Davis via interchanges at Mace Boulevard and Richards Boulevard, as well as a westbound off-ramp at Olive Drive. Additional I-80 interchanges within the vicinity of Davis include the Old Davis Road interchange at the UC Davis campus and the County Road 32A interchange in Yolo County. I-80 and its interchanges are owned and operated by Caltrans.



Davis City Limits

Parks

Project Site

Figure 1

Study Area

Vehicle Miles Traveled

Pursuant to CEQA Guidelines Section 15064.3, VMT is the primary metric used to identify transportation impacts under CEQA. VMT is a metric that accounts for the number of vehicle trips generated and the length or distance of those trips. VMT does not directly measure traffic operations; instead, VMT is a measure of transportation network use and efficiency, especially when expressed as a function of population (i.e., VMT per capita).

This study utilizes the *residential VMT per capita* metric to analyze potential impacts to VMT associated with the residential component of the project and the *total VMT* metric to analyze potential impacts to VMT associated with the non-residential component of the project. **Figure 2** illustrates and defines the key VMT metrics used for this analysis.

This study utilizes the SACOG travel demand model to evaluate potential project impacts on VMT. The SACOG model is known as SACSIM19 and produces 2016 VMT estimates and 2040 VMT forecasts based on the 2020 MTP/SCS. The SACSIM model is an activity/tour-based model that simulates individuals' daily travel, accounting for land use, transportation, and demographic factors that influence travel behavior. SACOG recently updated SACSIM as part of its 2020 MTP/SCS. As part of this update, SACOG conducted a validation and calibration of the SACSIM 2016 base year travel model that included using household travel surveys, transit boarding data, on-board transit surveys, traffic count data, and VMT estimates from annual Highway Performance Monitoring Systems data to verify the SACSIM model reasonably replicated observed travel behavior.

According to SACSIM19, existing residential VMT per capita for the City of Davis and the SACOG region is 30.1 and 21.7 VMT per capita, respectively. Residential VMT per capita generated by existing residential uses within the project site vicinity (e.g., Wildhorse) is approximately 33 VMT per capita, 10 percent above the existing City average and 52 percent above the existing SACOG region average. For reference, existing residential VMT per capita in more centrally located Davis neighborhoods such as Central Davis and Old East Davis measures in the range of 25 to 27 VMT per capita while existing residential VMT per capita in more outlying areas such as Mace Ranch or South Davis measures in the range of 33 to 36 VMT per capita.

Figure 2. VMT Metric Definition and Visualization

Metric	Definition	Visualization
Residential VMT per Capita	All automobile (i.e., passenger cars and light-duty trucks) vehicle-trips that start or end at the home are traced, but non-home-based trips made by residents elsewhere on the network are excluded.	
Total VMT	All vehicle-trips (i.e., passenger and commercial vehicles) assigned on the network within a specific geographic boundary (i.e., model-wide, region-wide, city-wide). Vehicle volume on each link is multiplied by link distance.	

Pedestrian Facilities

The City of Davis has an extensive system of off-street shared-use paths and sidewalks available for use by pedestrians, including the following existing facilities within the project site vicinity:

- East-west shared-use path situated on the north side of East Covell Boulevard between Pole Line Road and the easterly project site boundary. At its easterly terminus, the path connects to a grade separated bicycle/pedestrian crossing underneath East Covell Boulevard, where the path continues south into the Mace Ranch greenbelt system. Near the project site, this path provides connections into the Wildhorse neighborhood at Bearden Drive and Caravaggio Drive. This path traverses the southerly project site boundary;
- East-west shared-use path situated on the south side of East Covell Boulevard between Poplar Lane and Harper Junior High School. West of Poplar Lane, pedestrians can continue along a sidewalk on the south side of Denison Drive (which parallels East Covell Boulevard);
- Unpaved path along the Wildhorse Greenbelt, which extends north of East Covell Boulevard along the easterly project site boundary. The path continues along the entire periphery of the Wildhorse neighborhood. Near the project site, this path provides connections into the Wildhorse neighborhood at Caravaggio Drive, Duchamp Park, Bellows Court, and Rockwell Court;
- Sidewalks on both sides of nearby collectors and arterials, including Monarch Lane, Wright Boulevard, Moore Boulevard, and Alhambra Drive; and
- Sidewalks on residential streets and several off-street paths within the Wildhorse, Mace Ranch, and Slide Hill Park neighborhoods.

At the East Covell Boulevard/Monarch Lane intersection, a marked crosswalk is provided on the south leg of the intersection. Additionally, the East Covell Boulevard shared-use path extends across the north leg where a driveway currently extends into the project site. The intersection does not have marked or unmarked crosswalks across East Covell Boulevard on either its east or west legs.

From the East Covell Boulevard/Monarch Lane intersection, the nearest pedestrian crossings of East Covell Boulevard are available at a marked crosswalk on the west leg of the signalized East Covell Boulevard/Wright Boulevard intersection (approximately 900 feet to the west) and at the grade-separated bicycle and pedestrian crossing underneath East Covell Boulevard approximately 640 feet to the east.

Bicycle Facilities

The project site is situated on the edge of the City of Davis bicycle network, which is comprised of an extensive network of on- and off-street bicycle facilities. The *California Manual on Uniform Traffic Control Devices* (CA MUTCD) identifies the following four types of bikeway facilities:

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

Figure 3 displays existing bicycle facilities in the project site vicinity. In addition to the previously discussed shared-use paths, Class II bike lanes are provided on the following roadways near the proposed project site:

- East Covell Boulevard in both directions
- Wright Boulevard in both directions
- Moore Boulevard in both directions
- Rockwell Drive in both directions
- Alhambra Drive in both directions

East Covell Boulevard, which traverses the southerly project site boundary, is the only continuous east-west arterial that traverses the entire City of Davis. To facilitate bicycle and pedestrian travel across this roadway, the City of Davis has required the construction of bicycle/pedestrian grade separations for new developments located on the north side of Covell Boulevard. Existing grade separations on Covell Boulevard are located west of F Street, east of F Street (to/from The Cannery), and east of Monarch Lane (approximately 640 feet east of the East Covell Boulevard/Monarch Lane intersection that serves the project site). A future facility is planned on West Covell east of Denali Drive, as shown in the *City of Davis General Plan*.

Transit Service and Facilities

Transit serving the project site includes local bus service connecting the project site to destinations throughout the City of Davis (e.g., Downtown Davis, the Davis Train Depot, etc.) and the UC Davis campus. Additionally, the project site is served by intercity bus service that is primarily oriented towards serving Davis residents commuting to and from work in Downtown Sacramento.

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

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

  Specific service spans and frequencies vary by route. Generally, Unitrans operates from 6:30 a.m. to 11:30 p.m. Monday through Thursday and until 9:00 p.m. on Fridays. Weekend service is available from 8:30 a.m. to 7:00 p.m. Unitrans routes operate every 15 to 60 minutes during weekdays and every 60 minutes during weekends and evenings. **Table 1** summarizes the weekday and weekend frequency and span for Unitrans bus routes serving the project site.

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

Table 1: Unitrans Route Summary – Project Site Vicinity

Route	Weekday (M-Th)		Friday		Weekend	
	Peak Frequency (min)	Span	Peak Frequency (min)	Span	Peak Frequency (min)	Span
L – E 8th/Pole Line/Moore/Loyola	60	7 a.m. to 11 p.m.	60	7 a.m. to 9 p.m.	--	--
P – MU/Davis Perimeter Counter Clockwise	30	6 a.m. to 11 p.m.	30	6 a.m. to 9 p.m.	60	8 a.m. to 7 p.m.
Q – MU/Davis Perimeter Clockwise	30	6 a.m. to 11 p.m.	30	6 a.m. to 9 p.m.	60	8 a.m. to 7 p.m.

Source: Unitrans, 2024.

- **Yolobus** provides fixed route bus and paratransit service throughout Yolo County, as well as commuter bus service to downtown Sacramento. Single rides are available for $2.00, $2.25, and $3.25 for local, intercity, and express services, respectively. Discounted daily and monthly passes are also available.

  The project site is served by Yolobus express bus Route 43, which is oriented towards serving Davis residents working in Downtown Sacramento (i.e., morning service is eastbound-only and afternoon/evening service is westbound-only).

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

Figure 4 displays the bus stops and routes serving the project site vicinity. The primary bus stops serving the project site are located on Monarch Lane immediately south of East Covell Boulevard (served by Unitrans Route L and Yolobus Route 42) and on East Covell Boulevard immediately west of Wright Boulevard (served by Unitrans Routes P and Q).

Emerging Transportation Technology and Travel Options

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 project would be complete and operational. Information about how technology is affecting and will affect travel is accumulating over time.

- **COVID-19 pandemic**. 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) temporarily but profoundly changed travel conditions. While travel activity has returned to some form of normality as 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 telework for in-office work/commute travel.

    - Substituting internet shopping and home delivery for some shopping or meal-related travel.
    - Substituting participating on social media platforms for social/recreational travel.
    - Substituting telemedicine appointments for eligible in-person medical appointments.

- **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.

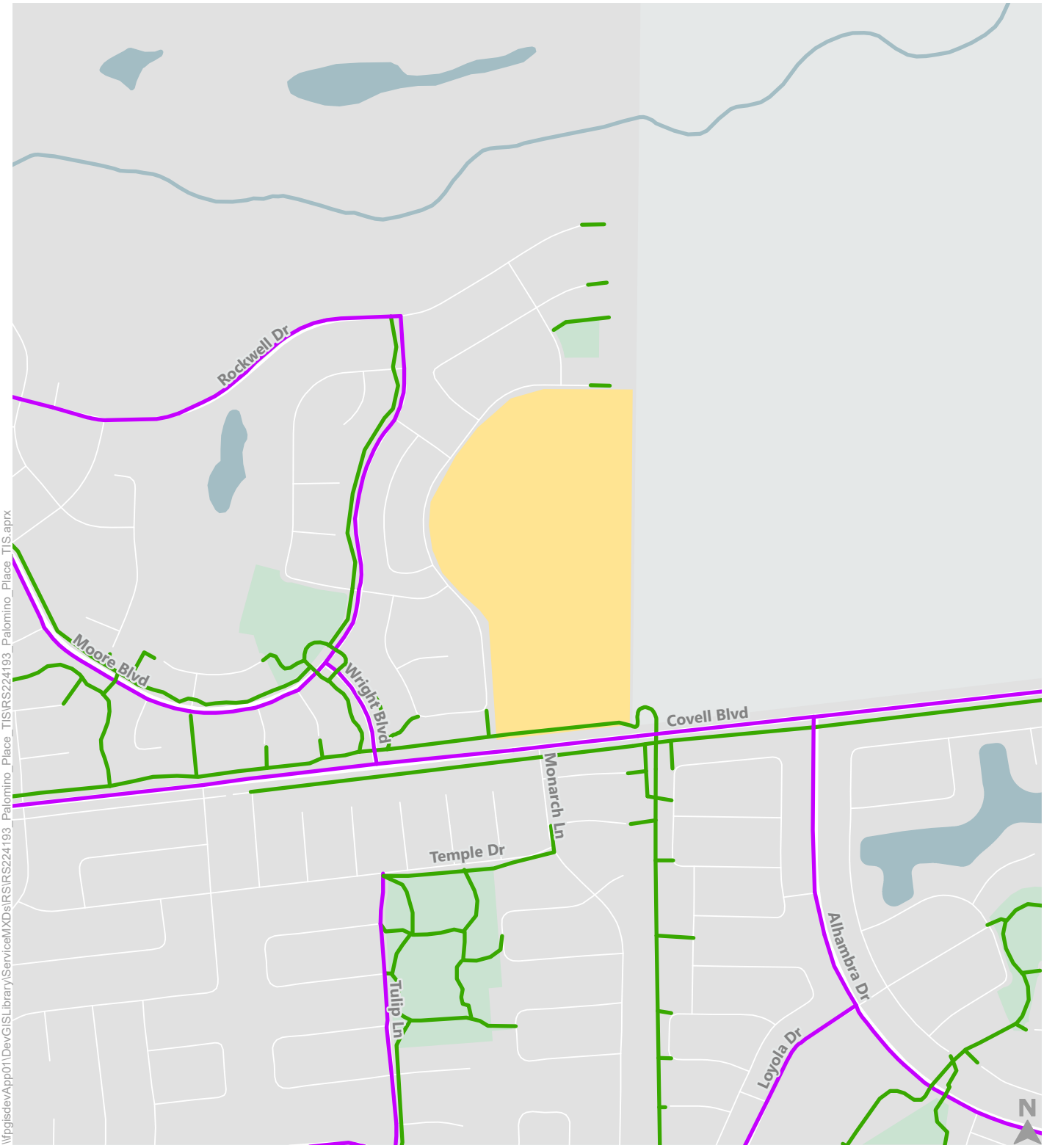
  AVs could increase willingness to drive more to avoid parking costs or tolls. For example, a person going to a sporting event in an area that charges for parking might use an AV to be dropped off at the venue, and then re-position and park the AV in an area that does not charge for parking.

- **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.

- **Navigation apps.** The increased prevalence and use of navigation apps (e.g., Google Maps, WAZE, etc.) in recent years provides motorists with real-time and predictive travel time information that can influence route selection. The use of navigation apps can result in changes to travel patterns and traffic volumes during different times of the day and days of the week, particularly during recurrent congested time periods or when incidents occur that affect travel times (e.g., a crash on the freeway that requires lane closures). Diverted local and regional traffic can occur on roadways near the project site during extended periods of very low travel speeds on eastbound I-80 from the causeway, through Davis, and into Solano County. During congested conditions, low mainline travel speeds substantially increase travel times for motorists on eastbound I-80. Hence, diverting off of I-80 onto local roadways such as Covell Boulevard and Mace Boulevard often provides a faster alternative to remaining on the freeway through Davis. Similarly, locally generated traffic utilizing eastbound I-80 can experience faster travel times by accessing I-80 as far east as possible (e.g., motorists departing Downtown Davis for Sacramento accessing I-80 at Mace Boulevard or CR 32A instead of Richards Boulevard).

While the SACSIM model represents state of the practice or advance practice, travel behavior and the transportation systems are changing quickly in response to emerging trends, new technologies, and different preferences. 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 SACSIM model. As such, SACSIM as a travel forecasting model has 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.



Davis City Limits
Parks
Project Site
Class I Shared-Use Path
Class II Bike Lane

Figure 3

Existing Bicycle Facilities

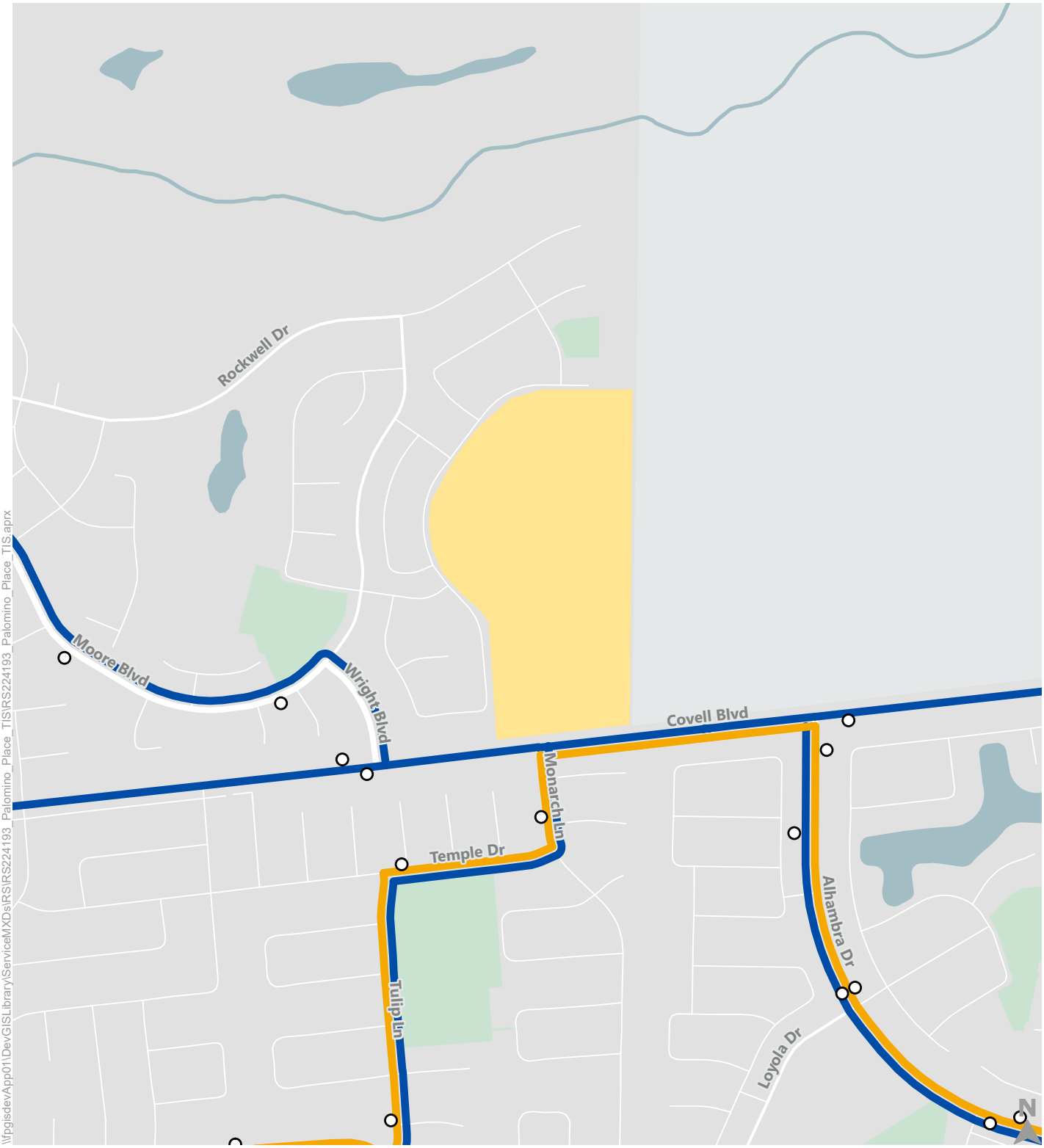


Figure 4

Existing Transit Service & Facilities

4. Project Travel Characteristics

This section describes the expected travel characteristics of the proposed Palomino Place project.

Project Description

The proposed Palomino Place project would consist of a mix of land uses including residential and athletic/recreational uses on approximately 26 acres. The project site is located within the City of Davis and is bounded by East Covell Boulevard to the south, the Wildhorse residential neighborhood to the west and north, and an agricultural buffer to the east. The project site is currently occupied by three single-family residential dwelling units, a horse barn, and pasture/grazing land. Refer to **Figure 5** for a project site plan.

Table 2 presents the buildout development program for the project as proposed by the project applicant. The project would be comprised of up to 175 residential dwelling units, an aquatic complex with one swimming pool (a deep pool), and a USA Pentathlon Training Facility with 20 fencing strips.

Based on the project application materials, it is anticipated that the aquatic center would be utilized by local aquatic programs including DART Swimming, Davis Aquatic Masters (DAM), Davis Water Polo Club, and Davis Aquastarz. The USA Pentathlon Training Facility would be used by the Davis Pentathlon Club, the Davis Fencing Academy, and for local and regional competitions. The project application materials also indicate that the site could be used as the national headquarters for USA Pentathlon Multisport.

Table 2: Palomino Place Project – Proposed Land Use Program

Land Use	Quantity[1]
Residential Component	
Halfplex Townhomes	29 DU
Cottages	19 DU
Single-Family Homes	82 DU
Multi-Family Apartments	45 DU
Residential Component Subtotal	*175 DU*
Other Uses	
Aquatic Complex	1 swimming pool
USA Pentathlon Training Facility	20 fencing strips

Notes: [1] DU = Dwelling Unit.
Source: *Notice of Preparation of a Draft Subsequent Environmental Impact Report and Scoping Meeting for the Palomino Place Project*, City of Davis, February 22, 2024.

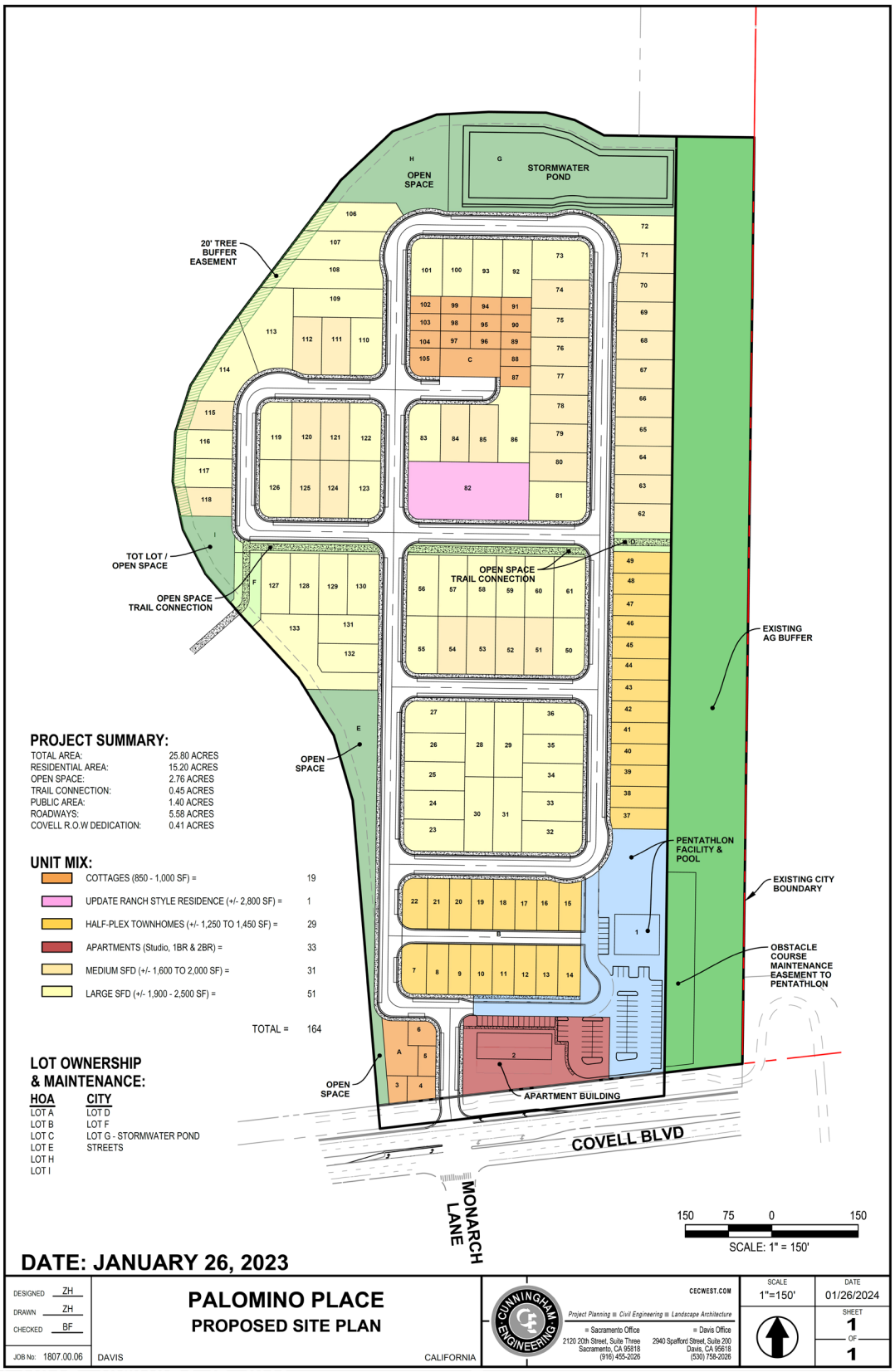


Figure 5

Project Site Plan

The project would include the construction of a partial grid internal roadway system of east-west and north-south roadways. The southeast corner of the project site would include a vehicle parking lot to serve the Aquatic Complex, the USA Pentathlon Training Facility, and an apartment building.

Vehicular access to and from the project site would be provided via the existing East Covell Boulevard/Monarch Lane side-street stop-controlled intersection. The project would include the construction of a new north leg of the intersection and new eastbound left-turn and westbound right-turn pockets. The project would not modify the existing intersection traffic control devices. The project would install a new marked crosswalk on the north leg of the intersection but would not otherwise modify existing crossings at the East Covell Boulevard/Monarch Lane intersection.

Bicycle and pedestrian access to and from the project site would be provided via East Covell Boulevard and Caravaggio Drive. The new north leg of the East Covell Boulevard/Monarch Lane intersection would include sidewalks on both sides of the street but would not include any designated bikeway facilities. A path connection would be constructed to and from an existing easement along Caravaggio Drive at Bonnard Street. The Caravaggio Drive path connection would also accommodate emergency vehicle access.

Sidewalks would be constructed on both sides of roadways internal to the project site. No on-street bikeway facilities are proposed on roadways internal to the project site.

Methodology

The *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021) is a nationally recognized source of trip generation information for a wide variety of land use types. This resource includes the Single-Family Detached Housing (210), Single-Family Attached Housing (215), and Affordable Housing (223) land use categories, which correspond with the residential components of the project.

Conversely, the USA Pentathlon Training Facility and aquatic complex components of the project are specialized land uses and are not compatible with the land use categories included in the *Trip Generation Manual, 11th Edition*. In such instances, the *Trip Generation Handbook, 3rd Edition* (Institute of Transportation Engineers, 2017) recommends that local data be used to inform project trip generation estimates.

Accordingly, this study uses the following blended approach for the purposes of estimating project trip generation:

- Residential Components – Use of the *Trip Generation Manual, 11th Edition* trip rates, with adjustments for mode split using US Census Bureau American Community Survey (ACS) journey to work mode split data.

- USA Pentathlon Training Facility and Aquatic Complex – Use of local trip generation and mode split data applied to the anticipated programming and users of each facility.

The trip generation estimation approach for each project component is described in greater detail below.

Residential Components

The project would include a total of 175 residential dwelling units of varying types. The trip generation estimates for the project residential components were derived using a blend of trip rates from the ITE *Trip Generation Manual, 11th Edition* and US Census Bureau ACS journey to work mode split data.

ITE Trip Generation Manual, 11th Edition

Table 3 presents the applicable land use categories and codes from the *Trip Generation Manual, 11th Edition* used for trip generation calculations for the project residential components. Table 3 additionally presents the computational method (i.e., average rate or fitted curve equation) utilized for each ITE land use category.

Table 3: Palomino Place Project – ITE Land Use Categories

Project Description		ITE *Trip Generation Manual, 11th Edition*		
Land Use	**Quantity[1]**	**Land Use Category (Code)**	**Quantity[1]**	**Computational Method**
Halfplex Townhomes	29 DU	Single-Family Attached Housing (215)	48 DU	Average Rate
Cottages	19 DU			
Single-Family Homes	82 DU	Single-Family Detached Housing (210)	82 DU	Average Rate
Multi-Family Apartments	45 DU	Affordable Housing (223)	45 DU	Average Rate
Residential Component Subtotal	*175 DU*	*Residential Component Subtotal*	*175 DU*	

Notes: [1] DU = Dwelling Unit.
Source: *Notice of Preparation of a Draft Subsequent Environmental Impact Report and Scoping Meeting for the Palomino Place Project*, City of Davis, February 22, 2024.

Bicycle, Walking, and Transit Trip Reductions

This analysis utilizes US Census Bureau American Community Survey (ACS) journey to work mode share data to estimate external peak hour commute vehicle trip reductions attributable to bicycle, pedestrian, and transit (i.e., non-auto) trips. Because trip rates from the ITE *Trip Generation Manual* are derived from survey sites nationwide, this process requires accounting for local and national commute mode share patterns, as follows:

1. Calculate non-auto journey to work mode share for existing residential neighborhoods near the project site with similar land use and transportation system characteristics.[3]
2. Calculate non-auto journey to work mode share for the United States.
3. Calculate the difference between local and national non-auto journey to work mode share.
4. Apply the local/national non-auto mode share difference to the raw external peak hour vehicle trip estimates attributable to home-based-work trips generated by the project's residential uses.[4]

Table 4 summarizes the non-auto journey to work mode share used in this analysis.

Table 4: Palomino Place Project – Non-Auto Journey to Work Mode Share

Mode	Journey to Work Mode Share		
	Local[1]	National	Difference (Local – National)
Public Transportation	3.2%	3.8%	-0.6%
Walked	1.7%	2.4%	-0.7%
Bicycle	6.7%	0.5%	6.2%
Non-Auto Total	**11.6%**	**6.7%**	**4.9%**

Notes: [1] Local non-auto mode share estimates represent the weighted averages for Census Tracts 105.05, 106.05, and 106.09, which include Wildhorse, Mace Ranch, and East Davis neighborhoods immediately adjacent to the project site.
Source: US Census Bureau American Community Survey (ACS) 2022 5-year estimates, Table S0801; Fehr & Peers, 2024.

Similar adjustments were considered for home-based-school (K-12) trips associated with the project's residential uses. However, a review of available data indicated that non-auto mode share for DJUSD students is similar to that of students nationwide (approximately 45%).[5,6]

[3] Journey to work commute mode share data derived from ACS 2022 5-year estimates. Non-motorized mode share estimates represent the weighted averages for Census Tracts 105.05, 106.05, and 106.09, which include Wildhorse, Mace Ranch, and East Davis (east of L Street, north of East Eighth Street, and east of Pole Line Road). Travel behavior associated with existing residential uses within these Census Tracts would reasonably be expected to approximate that of the project residential uses given a) the proximity of these Census Tracts to the project site and b) their comparable land use patterns and transportation system setting relative to those of the project site.

[4] Home-based-work trip purpose percentages for residential uses derived from the Transportation Research Board (TRB) *National Cooperative Highway Research Program (NCHRP) Report 716: Travel Demand Forecasting: Parameters and Techniques* (2012). Residential home-based-work trip purpose percentages used in this analysis are 23%, 46%, and 31% for the daily, AM peak hour, and PM peak hour time periods, respectively.

[5] DJUSD Student Travel Tally Report, Fall 2021, https://www.cityofdavis.org/home/showpublisheddocument/16531/637725629703770000.

[6] Federal Highway Administration, National Household Travel Survey (NHTS) 2022, https://nhts.ornl.gov/.

USA Pentathlon Training Facility

The modern pentathlon is a multi-sport competition comprised of five events: freestyle swimming, obstacle course, fencing, and a combined event of laser pistol shooting and cross country running. The proposed USA Pentathlon Training Facility would host pentathlon training activities for local organizations (e.g., the Davis Pentathlon Club and the Davis Fencing Club), local, regional, and national competitions, and day camps during school breaks. Additionally, the facility could be used as the national headquarters for USA Pentathlon Multisport.

To support CEQA review of the proposed project and the peak hour traffic operations analysis, this analysis focuses on estimating daily and peak hour trips that would be generated by the USA Pentathlon Training Facility during a typical weekday. In the case of the USA Pentathlon Training Facility, this would include trips associated with local organization training activities that would occur on a midweek day while local schools are in session. While the facility would also generate trips associated with local, regional, and national competitions and day camps, these activities would occur outside of typical weekdays during weekends and school breaks, respectively. Therefore, the trips generated by local, regional, and national competitions and day camps are not included in this analysis.

Details regarding the specific weekday programming and users of the proposed USA Pentathlon Training Facility are not available at this time. However, the project applicant provided the following relevant information regarding the configuration of and anticipated activities at the proposed USA Pentathlon Training Facility during a typical weekday (sourced via *Davis Pentathlon Center, Official Training Center for USA Pentathlon Multisport, Current and Projected Usage as of 3/12/2024*):

- Existing Davis Pentathlon Club fencing training and Davis Fencing Club training activities would relocate from an existing facility on Second Street in Davis to the proposed USA Pentathlon Training Facility. The existing training facility is currently leased by these programs and this study assumes that a new tenant would occupy the existing training facility with the implementation of the project.
- The facility would have capacity for 20 fencing strips. For comparison, the existing facility used for Davis Pentathlon Club fencing training and Davis Fencing Club training activities has capacity for 8 fencing strips.
- The existing training facility accommodates the following weekday training activities:
    - A small (approximately 10 athletes) youth beginning/intermediate class from 4 PM to 5 PM.
    - A large (approximately 15 to 20 athletes) mixed age beginning/intermediate class from 5 PM to 6 PM.
    - A large (approximately 25 to 35 athletes) mixed age advanced class from 6 PM to 9 PM.

- The project would enable training activities at the proposed USA Pentathlon Training Facility to expand to between 40 and 60 athletes per class.

Based on this information, this study anticipates that the proposed USA Pentathlon Training Facility would accommodate 150 athletes during a typical weekday, plus 8 coaches to facilitate trainings.

Additionally, this analysis accounts for additional trips that would be generated by athletes and coaches if the USA Pentathlon Training Facility were to become the national headquarters for USA Pentathlon Multisport. According to the project applicant, this would entail an additional 12 athletes and 3 coaches who would be on-site during a typical weekday.

Aquatic Complex

The proposed aquatic center would be utilized by local aquatic programs including DART Swimming, Davis Aquatic Masters (DAM), Davis Water Polo Club, and Davis Aquastarz.

To support CEQA review of the proposed project and the peak hour traffic operations analysis, this analysis focuses on estimating daily and peak hour trips that would be generated by the aquatic complex during a typical weekday. In the case of the aquatic complex, this would include trips associated with local aquatic program training activities that would occur on a midweek day while local schools are in session.

Details regarding the specific weekday programming and users of the proposed aquatic complex are not available at this time. Therefore, for the purposes of this study, a hypothetical weekday program for the aquatic complex was developed based on existing weekday local programming for DART Swimming and the Davis Aquatic Masters programming. This hypothetical weekday program was supplemented by trip generation and mode split observations conducted by Fehr & Peers during existing weekday DART Swimming and Davis Aquatic Masters training sessions in Spring 2022 at local pools in Davis, including afternoon/evening DART Swimming sessions at Community Pool, Manor Pool, and Arroyo Pool and morning/midday Davis Aquatic Masters sessions at Civic Center Pool.

Table 5 displays the hypothetical weekday program for the proposed aquatic complex, including the time duration, age group (youth or adult), and number of swimmers during each training session. The aquatic complex trip generation estimates were also informed by the following key inputs derived from the field observations described above:

- Travel mode split for youth swimmers were estimated as follows:
    - Drive and park: 50%
    - Pick-up/drop-off: 40%
    - Walking/Bicycling: 10%

- Travel mode split for adult swimmers were estimated as follows:
    - Drive and park: 80%
    - Pick-up/drop-off: 5%
    - Walking/Bicycling: 15%
- Average vehicle occupancy (for the purposes of this study, swimmers per vehicle) for youth and adult swimmers were estimated to be 1.1 and 1.05 persons per vehicle, respectively.

In total, an estimated 205 swimmers would utilize the aquatic complex during a typical weekday. Additionally, an estimated 20 coaches/employees would facilitate training activities at the aquatic complex.

Existing Uses

Currently, the project site is occupied by three single-family residential dwelling units, a horse barn, and pasture/grazing land. The project would eliminate or convert these existing uses. Therefore, it is appropriate to deduct the vehicle trips generated by these existing uses from the net new vehicle trips that would be generated by the project. The vehicle trips generated by these existing uses were estimated using trip rates for associated land uses presented in the *Trip Generation Manual, 11th Edition*.

Table 5: Palomino Place Project – Aquatic Complex Weekday Programming

Time	Age Group (# of Swimmers)
	Pool #1 (Deep)
5 AM - 6 AM	Youth (15)
6 AM - 7 AM	Youth (15)
7 AM - 8 AM	Adult (20)
8 AM - 9 AM	Adult (20)
9 AM - 10 AM	Adult (15)
10 AM - 11 AM	Adult (5)
11 AM - 12 PM	Adult (10)
12 PM - 1 PM	Adult (20)
1 PM - 2 PM	
2 PM - 3 PM	
3 PM - 4 PM	Youth (15)
4 PM - 5 PM	Youth (15)
5 PM - 6 PM	Youth (15)
6 PM - 7 PM	Youth (15)
7 PM - 8 PM	Youth (15)
8 PM - 9 PM	Adult (10)

Note: This table presents hypothetical programming for the aquatic complex component of the Palomino Place project during a typical weekday. Details regarding the actual programming at the project aquatic complex are not available at this time. Instead, the information presented in this table is derived from existing youth and adult aquatic programs that operate elsewhere in Davis, including DART Swimming and Davis Aquatic Masters. The project pre-application materials describe that these existing local aquatics programs could utilize the project aquatic complex. Accordingly, it is appropriate to utilize information regarding these existing local programs (e.g., schedule, age group, number of swimmers, etc.) for the purposes of estimating project travel characteristics.

Sources: *Notice of Preparation of a Draft Subsequent Environmental Impact Report and Scoping Meeting for the Palomino Place Project, City of Davis, February 22, 2024.*; Fehr & Peers, 2024.

Project Trip Generation

Table 6 summarizes the estimated weekday and peak hour trip generation for the Palomino Place project based on the methods described previously. As shown in Table 6, the project would generate an estimated 2,096 net new daily trips, 155 net AM peak hour trips, and 231 net PM peak hour trips during a typical weekday.

Table 6: Palomino Place Project – Vehicle Trip Generation

Land Use	Units	ITE Code	Quantity	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
Residential Component										
Net New Uses										
Single-Family Detached Housing	Dwelling Units	210	82	773	15	42	57	49	28	77
Single-Family Attached Housing	Dwelling Units	215	48	346	7	16	23	15	12	27
Affordable Housing (Income Limits)	Dwelling Units	223	45	217	4	12	16	12	8	20
Raw External Vehicle Trips				*1,336*	*26*	*70*	*96*	*76*	*48*	*124*
Reductions										
Internal Trip Capture & External Walk, Bike, and Transit				-58	-2	-3	-5	-4	-2	-6
Existing Uses				-28	-1	-1	-2	-2	-1	-3
Total Vehicle Trip Reductions				*-86*	*-3*	*-4*	*-7*	*-6*	*-3*	*-9*
		Net New External Vehicle Trips		**1,250**	**23**	**66**	**89**	**70**	**45**	**115**
Non-Residential Component										
Net New Uses										
USA Pentathlon Training Facility	20 fencing strips			338	15	15	30	40	38	78
Aquatic Complex	1 pool			508	18	18	36	19	19	38
		Net New External Vehicle Trips		**846**	**33**	**33**	**66**	**59**	**57**	**116**
Project Total										
		Net New External Project Trips		**2,096**	**56**	**99**	**155**	**129**	**102**	**231**

Sources: Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, 2021; Fehr & Peers, 2024.

5. Environmental Impacts

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

Thresholds of Significance

The project would have a significant impact if it would result in any of the conditions listed below.

Vehicle Miles Traveled Criteria

The City of Davis has not formally adopted guidance or thresholds related to VMT impact analysis (i.e., tailored screening criteria, preferred metrics and calculation methods, and use-specific thresholds). Therefore, this analysis relies on guidance from the OPR Technical Advisory. Per the Technical Advisory, the project would result in a significant VMT impact if it would cause the following:

- The project residential component would generate residential VMT per capita exceeding 15 percent below baseline local or regional residential VMT per capita for residential uses.
- The project non-residential component (i.e., the aquatic complex and the USA Pentathlon Training Facility) would generate vehicle travel that would result in a net increase in total VMT within the region.

Bicycle and Pedestrian Facility Criteria

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

- The project would conflict with existing, planned, or possible future bicycle or pedestrian facilities; or
- The project would otherwise decrease 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 would conflict with existing, planned, or possible future transit facilities and services; or
- The project would otherwise decrease 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:

- The project would substantially increase hazards due to a geometric design feature or incompatible uses;
- The project would not provide for adequate emergency vehicle access and on-site circulation; or
- Construction-related traffic would cause adverse effects as defined by the transportation system criteria described above.

Methods for Analysis

The transportation impact analysis methodology includes a combination of quantitative and qualitative evaluations of the transportation system. The specific analysis methods are described below.

Vehicle Miles Traveled

The VMT impact assessment relies on guidance provided in the OPR Technical Advisory. Specifically, this analysis considers the following.

- Does the project meet one or more of the screening thresholds identified in the Technical Advisory such that a detailed analysis is not necessary?
    - If so, what information or data are available to support the conclusion that the project meets the screening threshold and should be considered to have a less-than-significant transportation impact?
- If the project does not meet one or more of the screening thresholds, this analysis would proceed to a detailed analysis of the project's VMT impact. This includes quantifying the project's VMT generation rate and determining whether it would exceed the recommended thresholds of significance in the Technical Advisory.

Vehicle Miles Traveled Impact Screening

The Technical Advisory identifies screening thresholds to quickly identify, without conducting a detailed study, when a project should cause a less-than-significant transportation impact. As described in Regulatory Setting, the Technical Advisory suggests the following projects should have a less-than-significant impact on VMT.

- Small projects
- Projects near major transit stops
- Affordable residential development

- Local-serving retail
- Projects in low-VMT areas

Of these project types, only the criterion for projects near major transit stops is codified in the updated CEQA Guidelines. The remaining criteria for small projects, affordable residential development, local-serving retail, or projects in low-VMT areas are suggested in the OPR Technical Advisory.

The project does not qualify as a small project, an affordable residential development, or local-serving retail for screening purposes, nor is the project in a low-VMT area or near a high-quality transit station. Therefore, a quantitative VMT analysis is necessary.

Vehicle Miles Traveled Analysis

The SACOG SASCIM19 travel demand model was utilized to derive VMT estimates for the proposed project. The SACSIM19 model is a sophisticated activity-based model that predicts the travel demand and travel patterns for residents, workers, students, visitors, and commercial vehicles throughout the SACOG region. The model requires inputs such as population and employment to represent the land use and transportation network associated with each scenario. For the purposes of this study, the base year SACSIM19 model was refined to include traffic analysis zone (TAZ) splits, land use inputs, and centroid connectors that align with the various land use components and access locations of the project. Proposed project land uses were incorporated by updating the parcel, household, and synthetic population inputs in the SACSIM19 model.

For the project residential component VMT analysis, the SACSIM19 model was utilized to estimate residential VMT per capita that would be generated by the project residential component. Residential VMT includes all automobile (i.e., passenger cars and light-duty trucks) vehicle-trips are traced back to the residence of the trip-maker. Residential VMT includes all vehicle "tours" (both work/commute vehicle tours and non-work vehicle tours) that start and end at residential units. VMT from these tours are summed to the home location. VMT for each home is then summed by TAZ and divided by the total population in that TAZ to arrive at residential VMT per capita. From the SACOG guidelines, residential VMT includes trips #1-7 from **Figure 6**.

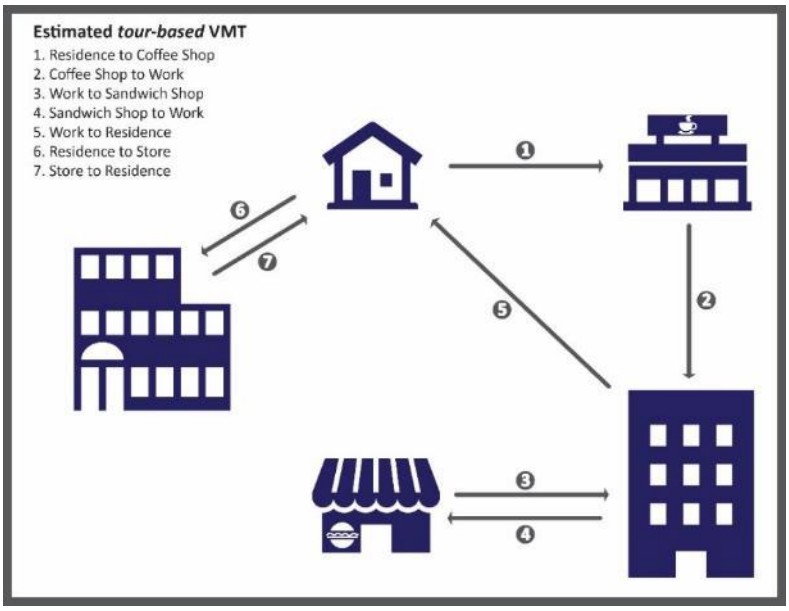


Figure 6: Typical household daily travel in tour-based travel model

Project-generated residential VMT per capita was estimated using the latest SACOG-recommended methodology, which accounts for the full amount of VMT generated by trips with a trip end located outside of the SACOG region. A select zone analysis was performed for the TAZ containing the project site to determine the number of project-generated residential vehicle trips estimated by the SACSIM19 model. The resulting project-generated residential VMT per capita was then compared to the baseline local and regional residential VMT per capita averages to determine whether the project residential component would exceed the applicable VMT threshold of significance (the project residential component would generate residential VMT per capita exceeding 15 percent below baseline local or regional residential VMT per capita for residential uses). The project-generated, baseline local (i.e., City of Davis), and baseline regional (i.e., SACOG region) residential VMT per capita metrics are summarized in **Table 7**.

Table 7: Project Residential Component Weekday Residential VMT per Capita

Scenario	Residential VMT per Capita	Significance Threshold (15% Below Existing Average)	Project Residential Component Compared to Baseline Average	Reduction Required to Meet Significance Threshold
Project Residential Component	33.0	--	--	--
Baseline City of Davis Average	30.1	25.6	+9.7%	-22.5%
Baseline SACOG Region Average	21.7	18.4	+52.6%	-44.3%

Sources: SACOG SACSIM19 travel demand model, Fehr & Peers, 2024.

For the project non-residential component VMT analysis, the SACSIM19 model was utilized to estimate the effect of the project (non-residential component) on total VMT in the region. Total VMT in the region includes all VMT on all roadway links within the SACOG region. Two analysis scenarios were prepared to isolate the VMT effects of the project non-residential component. The first analysis scenario included all baseline land use and transportation system inputs plus the project residential component. The second analysis scenario included all baseline land use and transportation system inputs plus the project residential and non-residential components. The difference in total VMT within the region between the two analysis scenarios represents the effect of the project non-residential component on total VMT within the region. The effect of the project non-residential component on total VMT within the region is summarized in **Table 8**.

Table 8: Effect of Project Non-Residential Component on Weekday Total VMT

Scenario	Total VMT[1]	Effect of Project Non-Residential Component on Weekday Total VMT
Baseline SACOG Region Plus Project Residential Component	62,836,606	--
Baseline SACOG Region Plus Project Residential and Non-Residential Components	62,835,517	-1,089

Note: [1] Includes all VMT on all roadway links within the SACOG region.
Sources: SACOG SACSIM19 travel demand model, Fehr & Peers, 2024.

Bicycle and Pedestrian Facilities

The impact assessment for bicycle and pedestrian travel considers existing and planned bicycle and pedestrian facilities and reviews the project to determine whether it would physically disrupt an existing facility or interfere with a planned facility. This assessment also considers whether the project 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 project to determine whether it would physically disrupt an existing service or facility or interfere with a planned service or facility.

Other Impacts

Potential transportation impacts related to safety, emergency access, and construction activity are based on a review of project changes to the transportation network and a qualitative assessment of whether those changes would conflict with impact threshold expectations.

Project Impacts and Mitigation Measures

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

Table 6 summarizes the residential VMT per capita that would be generated by the project residential component compared to baseline local and regional residential VMT per capita averages. As shown in Table 6, the project would generate approximately 33 residential VMT per capita, comparable to the residential VMT per capita generated by existing surrounding residential uses including those in the Wildhorse neighborhood. Residential VMT per capita generated by the project residential component would be 9.7 percent and 52.6 percent above baseline local and regional residential VMT per capita averages, respectively. Therefore, the project residential component would generate residential VMT per capita exceeding 15 percent below baseline local and regional residential VMT per capita averages.

Table 7 summarizes the effect of the project non-residential component on total VMT within the region. As shown in Table 7, the project non-residential component would reduce total VMT within the region by 1,089 VMT. Therefore, the project non-residential component would generate vehicle travel that would not result in a net increase in total VMT within the region.

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

Mitigation Measure 1.1. Implement transportation demand management (TDM) strategies to reduce project-generated residential VMT per capita.

Mitigation actions that could lessen this impact include those that would reduce the number of vehicle trips generated by the project residential component. This could be accomplished by changing the proposed land uses or by implementing transportation demand management (TDM) strategies. TDM strategies can result in reductions to a project's vehicle trip generation based on certain types of project site modifications, programming, and operational changes.

Prior to occupancy of the residential units, the applicant shall implement the following TDM strategies to reduce the number of vehicle trips that would be generated by the project residential component. These strategies are derived from the California Air Pollution Control Officers Association (CAPCOA) *Handbook for Assessing GHG Emission Reductions, Climate Vulnerabilities, and Health and Equity* (December 2021), which identifies numerous TDM strategies and quantifies their potential vehicle trip reduction effects. The project applicant and the City reviewed potential TDM strategies presented in the CAPCOA Handbook and identified those that are feasible for the purposes of this mitigation measure.

While each strategy provides standalone VMT reduction potential, multiplicative dampening[7] can limit the VMT reduction potential in instances where multiple strategies are implemented together. This analysis accounts for the potential effects of multiplicative dampening and/or category maximums for the identified TDM strategies.

1) **Implement subsidized or discounted transit program (CAPCOA Handbook Strategy T-9)** – This measure would provide subsidized or discounted, or free transit passes for residents of the project's 45 affordable housing dwelling units. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced VMT.

   As part of this mitigation action, the project applicant shall provide free transit passes to residents of the project's 45 affordable housing dwelling units. According to CAPCOA, this strategy would reduce project-generated residential VMT per capita by 0.16 percent.

[7] Multiplicative dampening captures the reality that many people who would consider using Strategy A overlap with the potential market for Strategy B, and would choose A or B for each trip, but not both A and B.

2) **Implement conventional carshare program (CAPCOA Handbook Strategy T-21-A)** – This measure would increase carshare access in the project site by deploying conventional carshare vehicles. Examples include programs like Zipcar and GIG Car Share. Carsharing offers people convenient access to a vehicle for personal or commuting purposes. This helps encourage transportation alternatives and reduces vehicle ownership, thereby avoiding VMT.

   As part of this mitigation action, the project applicant shall partner with a carshare service provider and ensure that carshare vehicles are available to project residents prior to occupancy of the first phase of the project residential component.

   According to CAPCOA, this strategy would reduce project-generated residential VMT per capita by 0.15 percent.

3) **Implement electric bikeshare program (CAPCOA Handbook Strategy T-22-B)** – This measure would establish an electric bikeshare program. Electric bikeshare program programs provide users with on-demand access to electric pedal assist bikes for short-term rentals. This encourages mode shift from vehicles to electric bicycles, displacing VMT and reducing GHG emissions.

   The project applicant shall construct hubs for use by the City's bikeshare and scootershare system operator (Spin) within the multifamily housing and Pentathlon training facility project components. Currently, Spin provides bikeshare and scootershare service to the entirety of the City of Davis and the UC Davis campus. Accordingly, it is presumed that the project site would be incorporated into the Spin service area.

   According to CAPCOA, this strategy would reduce project-generated residential VMT per capita by 0.05 percent.

4) **Implement scootershare program (CAPCOA Handbook Strategy T-22-C)** – This measure would establish a scootershare program. Scootershare programs provide users with on-demand access to electric scooters for short-term rentals. This encourages a mode shift from vehicles to scooters, displacing VMT and thus reducing GHG emissions.

   The project applicant shall construct hubs for use by the City's bikeshare and scootershare system operator (Spin) within the multifamily housing and Pentathlon training facility project components. Currently, Spin provides bikeshare and scootershare service to the entirety of the City of Davis and the UC Davis campus. Accordingly, it is presumed that the project site would be incorporated into the Spin service area.

According to CAPCOA, this strategy would reduce project-generated residential VMT per capita by 0.06 percent.

5) **Community-based travel planning (CAPCOA Handbook Strategy T-23)** – This measure would target residences in the project area with community-based travel planning (CBTP). CBTP is a residential-based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles, thereby reducing household VMT.

   The project applicant shall partner with a CBTP service provider such as Yolo Commute and ensure that CBTP services are available to all project residents prior to occupancy of the first phase of the project residential component, and renewed on an annual basis. As of early 2024, Yolo Commute annual membership dues for a housing development of 175 units is $2,250 per year.

   According to CAPCOA, this strategy would reduce project-generated residential VMT per capita by 2.3 percent.

Significance after Mitigation

Implementation of Mitigation Measure 1.1 would reduce residential VMT per capita associated with the project residential component by implementing TDM strategies to reduce external vehicle trips generated by project residents. Altogether, the TDM strategies described in Mitigation Measure 1.1 would reduce project-generated residential VMT per capita by 2.72 percent, resulting in a decrease from 33 to 32.1 residential VMT per capita. With Mitigation Measure 1.1, residential VMT per capita generated by the project residential component would be 6.6 percent and 47.9 percent above baseline local and regional residential VMT per capita averages, respectively. Therefore, with mitigation, project-generated residential VMT per capita would remain more than 15 percent below baseline local and regional residential VMT per capita averages.

Because Mitigation Measure 1.1 would not reduce VMT impacts to less-than-significant levels, this impact would be considered **significant and unavoidable**.

Impact 2: Impacts to bicycle and pedestrian facilities.

The immediate project site vicinity includes a Class I shared-use path along the northerly and southerly sides of East Covell Boulevard, an unpaved path along the Wildhorse Greenbelt, and sidewalks on residential streets within the Wildhorse and Slide Hill Park neighborhoods immediately adjacent to the project site. From the East Covell Boulevard/Monarch Lane intersection at the project site entrance, the nearest pedestrian crossings of East Covell Boulevard are available at a marked crosswalk on the west leg of the signalized East Covell Boulevard/Wright Boulevard intersection (approximately 900 feet to the west) and at the grade-separated bicycle and pedestrian crossing underneath East Covell Boulevard approximately 640 feet to the east.

The project would construct the following new bicycle and pedestrian facilities:

- Path connection between the project site and Caravaggio Drive at Bonnard Street
- Path connection between the project site and the Wildhorse Greenbelt on the eastern project side boundary.
- Sidewalks on both sides of roadways internal to the project site

The project would not provide new bikeway facilities on roadways internal to the project site. Moreover, the project would not install new bicycle or pedestrian crossings of East Covell Boulevard within the project site vicinity. The project would not physically disrupt existing bicycle or pedestrian facilities. Moreover, the project would not interfere with the implementation of planned future bicycle or pedestrian facilities.

Considering the project's proposed land uses and location within the City of Davis, the project would create new bicycle and pedestrian desire lines[8] and generate new demand for bicycle and pedestrian travel within the project site and between the project site and other local neighborhoods and activity centers. New bicycle and pedestrian travel demand would be served by the new bicycle and pedestrian facilities that would be constructed by the project, as well as by existing bicycle and pedestrian facilities elsewhere in the local active transportation system.

The proposed aquatic complex and USA Pentathlon Training Facility would be situated in the southeast corner of the project site and would generate demand for bicycle and pedestrian travel through the project site. Given the anticipated programming at these facilities, it is anticipated that bicycle and pedestrian travel demand would be generated by youth athletes, adult athletes, and coaches/employees traveling to and from trainings and competitions. The project site would lack a contiguous bikeway facility between East Covell Boulevard and the aquatic complex and USA Pentathlon Training Facility uses,

[8] A desire line is the preferred path of travel between two points.

requiring that bicyclists traveling to and from these uses physically mix with motor vehicle traffic on roadways internal to the project site. Given this condition, the project could increase the number and severity of bicycle-vehicle conflicts and increase the potential for collisions involving bicyclists.

Additionally, the project would create new bicycle and pedestrian desire lines and generate new demand for bicycle and pedestrian crossings across East Covell Boulevard within the project vicinity. For example, residents of the Slide Hill Park neighborhood located south of East Covell Boulevard would desire to travel to uses on the project site and, given the relatively short trip distance, could choose to walk or ride a bicycle to fulfill this trip. However, the East Covell Boulevard/Monarch Lane intersection, which is situated along the bicycle and pedestrian desire line between the project site and the Slide Hill Park neighborhood, currently lacks bicycle and pedestrian crossings and the project would not include the provision of such crossing facilities. Bicyclists who desire to cross East Covell Boulevard at Monarch Lane would be required to cross multiple lanes of uncontrolled vehicular traffic with a posted speed limit of 40 mph, experiencing considerable exposure to conflicting vehicular traffic. Given these conditions, as well as project-related increases to vehicular traffic within the project site vicinity, the project could increase the number and severity of bicycle-vehicle conflicts and increase the potential for collisions involving bicyclists.

Bicyclists and pedestrians who desire to access the project site to/from locations south of East Covell Boulevard could choose to utilize the existing crossing at the signalized East Covell Boulevard/Wright Boulevard intersection or the grade-separated bicycle and pedestrian crossing located east of the project site. However, use of these crossings would require substantial out of direction travel. For example, in the aforementioned example of residents living in the Slide Hill Park neighborhood, bicyclists and pedestrians attempting to access the project site would be required to travel at least one-quarter mile out of direction in order to access the nearest existing crossings of East Covell Boulevard. Considering these conditions, the existing and proposed East Covell Boulevard bicycle and pedestrian crossing facilities could pose a barrier to bicycle or pedestrian travel to and from the project site.

The lack of a contiguous bikeway facility between East Covell Boulevard and on-site uses as well as the lack of existing or proposed bicycle and pedestrian crossings of East Covell Boulevard at Monarch Lane and the resulting project-related adverse effects on bicycle and pedestrian travel and safety would be inconsistent with City plans and policies that promote bicycle and pedestrian travel, including City of Davis General Plan Goals #1, #2, #3, and #4 and Policies TRANS 1.6, 2.1, 2.2, 2.5, and 4.3 and the City of Davis Beyond Platinum Bicycle Action Plan.

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

Mitigation Measure 2.1. Install a contiguous bikeway facility between East Covell Boulevard and the project non-residential uses.

Prior to the commencement of operations at the aquatic complex or the commencement of operations at the USA Pentathlon Training Facility (whichever occurs first), the project applicant shall construct a contiguous bikeway facility with dedicated physical space for bicyclists between East Covell Boulevard and the project non-residential uses. Potential improvement options include the following:

1) Install Class II bike lanes on the new north leg of the East Covell Boulevard/Monarch Lane intersection; or
2) Construct a Class I shared-use path between East Covell Boulevard and the project non-residential uses within the Wildhorse Greenbelt along the easterly project site frontage.

Implementation of these improvements, or a set of improvements of equal effectiveness as determined by the City of Davis City Engineer, would reduce the potential for conflicts involving bicyclists that would otherwise be caused by the project and promote bicycle travel to and from the project site.

Mitigation Measure 2.2. Install a traffic signal and construct intersection modifications at the East Covell Boulevard/Monarch Lane intersection.

Prior to occupancy of the residential units at the project site, the commencement of operations at the aquatic complex, or the commencement of operations at the USA Pentathlon Training Facility (whichever occurs first), the project applicant shall install a traffic signal at the East Covell Boulevard/Monarch Lane intersection. The purpose of the traffic signal is to provide temporal separation between bicyclists, pedestrians, and conflicting vehicular movements (e.g., through the provision of pedestrian crossing phases). As part of this mitigation measure, the applicant shall also construct an eastbound left-turn pocket with a queue storage length of 105 feet and install designated bicycle and pedestrian facilities and crossings. The specific intersection geometrics, lane configurations, bicycle and pedestrian accommodations, and signal phasing are subject to review and approval by the City of Davis City Engineer.

Note that this intersection would meet the four-hour vehicular volume signal warrant (CA MUTCD Warrant 2) and the peak hour signal warrant (CA MUTCD Warrant 3B) under Existing Plus Project conditions.[9]

Implementation of these improvements, or a set of improvements of equal effectiveness as determined by the City of Davis City Engineer, would reduce the potential for conflicts involving bicyclists or pedestrians that would otherwise be caused by the project and promote bicycle and pedestrian travel to and from the project site.

Significance after Mitigation

Implementation of Mitigation Measures 2.1 and 2.2 would reduce potential significant impacts associated with bicycle and pedestrian facilities to a **less-than-significant** level by promoting bicycling and walking to and from the project site and reducing conflicts involving bicyclist or pedestrians.

Impact 3: Impacts to transit service and facilities.

The project site would be served by Unitrans and Yolobus bus routes that utilize existing bus stops on East Covell Boulevard near Wright Boulevard and on Monarch Lane south of East Covell Boulevard.

The project would not include the construction of any new transit facilities nor the implementation of any new transit services. The project would not modify or physically disrupt existing transit service or facilities. Moreover, the project would not interfere with the implementation of planned future transit facilities.

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

[9] This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The City of Davis should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Mitigation Measures

None required.

Impact 4: Impacts to emergency vehicle access.

The proposed project would include one vehicular access point at the East Covell Boulevard/Monarch Lane intersection. Additionally, the project would include an emergency vehicle access point between the project site and Caravaggio Drive at Bonnard Street.

Fire access from the South Davis fire station (located two miles southeast of the project site on Mace Boulevard) would be available via westbound East Covell Boulevard. Fire access from the Downtown Davis fire station (located nearly two and a half miles southwest of the project site) would be available via eastbound East Covell Boulevard. Medical emergency service access to/from Sutter Davis Hospital (located three miles west of the project site) would be available via eastbound East Covell Boulevard. Each of these corridors have traffic signals equipped with emergency vehicle pre-emption, providing signal priority to emergency vehicles in the event of an emergency.

The design of the on-site roadways and intersections will be subject to City of Davis code and Public Works Department staff review and approval.

Altogether, this impact is considered **less than significant**.

Mitigation Measures

None required.

Impact 5: Hazards impacts.

The project would include the construction of new on-site multi-modal transportation facilities and access intersections/driveways, as well as the modification of existing transportation facilities at the East Covell Boulevard/Monarch Lane intersection. All new roadway, bicycle, and pedestrian infrastructure improvements constructed as part of the project would be subject to, and designed in accordance with, applicable City of Davis design and safety standards to avoid creating a geometric design hazard.

The project would be mixed-use development consistent with the existing land use character of the surrounding area, which is comprised of single-family residential, multi-family residential, educational, and recreational uses. As such, the project would generate a mix of traffic that would generally be similar to existing conditions, with the exception of increases to walking and bicycling activity within the project site vicinity and between the project site and nearby destinations and activity centers. With more people

traveling to and from the project site, the volume of traffic across modes would increase and this may result in slower travel speeds for some modes and additional physical mixing between transportation modes.

Peak hour traffic operations were analyzed to determine the extent to which the project would cause off-ramp queues to spill back to the I-80 mainline. To the extent possible, Caltrans strives to prevent off-ramp queues from extending to the freeway mainline in order to minimize the potential for associated adverse operational and safety effects (e.g., speed differentials between vehicle traffic on the freeway mainline and stopped/queued off-ramp vehicle traffic that could increase the potential for conflicts).

Table 9 displays the maximum freeway off-ramp queues at the I-80/Mace Boulevard/Chiles Road interchange under Existing and Existing Plus Project conditions. Under Existing Plus Project conditions, all maximum queues would be accommodated within the available off-ramp storage.

Table 9: Freeway Off-Ramp Queuing – Existing Plus Project Conditions

Off-Ramp	Off-Ramp Distance[1]	Maximum Queue Length[2]			
		Existing Conditions		Existing Plus Project Conditions[3]	
		A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Mace Boulevard/I-80 WB Off-Ramp	1,200 feet	200 feet	200 feet	200 feet	250 feet
Chiles Road/I-80 EB Off-Ramp	1,100 feet	125 feet	175 feet	125 feet	175 feet

Notes: [1] Measured from the intersection stop bar to the gore point of the freeway off-ramp. Does not include auxiliary lane on freeway mainline.
[2] Maximum queue estimates are based on results from SimTraffic micro-simulation model. Queues are maximum per lane, rounded up to the nearest 25 feet.
[3] Shaded cells represent conditions in which the queue would spill onto the freeway mainline.
Source: Fehr & Peers, 2024.

Project-related changes to the transportation system would not cause conditions that warrant modification of the existing transportation system, with the exception of effects on bicycle and pedestrian facilities within the project site vicinity as described in Impact 2. Altogether, this impact would be **significant**.

Mitigation Measure 2.1. Install a contiguous bikeway facility between East Covell Boulevard and the project non-residential uses.

Implement Mitigation Measure 2.1.

Mitigation Measure 2.2. Install a traffic signal and construct intersection modifications at the East Covell Boulevard/Monarch Lane intersection.

Implement Mitigation Measure 2.2.

Implementation of Mitigation Measures 2.1 and 2.2 would reduce impacts to a **less-than-significant** level by reducing the potential for conflicts involving bicyclists or pedestrians in a manner consistent with City of Davis standards and policies that promote the use of walking and bicycling.

Impact 6: Construction-related impacts.

Construction of the project, including site preparation and construction, and delivery activities, would generate employee trips and a variety of construction-related vehicles. Construction activities would include disruptions to the transportation network near the project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Bicycle and transit access may also be disrupted.

These activities could also result in degraded roadway conditions. Altogether, these factors would result in a significant impact related to project construction.

Mitigation Measure 6.1. Prepare a Construction Traffic Control Plan.

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

- The number of truck trips, time, and day of street closures
- Time of day of arrival and departure of trucks
- Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting
- Provision of a truck circulation pattern that minimizes effects on existing vehicle traffic during peak travel periods and maintains safe bicycle circulation
- Resurface and/or repair any damage to roadways that occurs as a result of construction traffic

- Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas)
- Maintain safe and efficient access routes for emergency vehicles
- Manual traffic control when necessary
- Proper advance warning and posted signage concerning street closures
- Provisions for pedestrian safety

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

Significance after Mitigation

Implementation of Mitigation Measure 6.1 would reduce potential significant impacts associated with project construction activity to a **less-than-significant** level by minimizing the effects of project construction to the surrounding multi-modal transportation system.