3.12 TRANSPORTATION AND CIRCULATION

3.12.1 Introduction

This section evaluates the potential transportation-related effects associated with development and operation of the Yosemite Avenue-Gardner Avenue to Hatch Road Annexation Project (proposed project). This section describes the existing transportation conditions around the project site; outlines applicable federal, state, and regional regulations pertaining to transportation; and identifies potential project-specific and cumulative impacts on transportation and measures to minimize these impacts.

As discussed in Chapter 1, Introduction, a Notice of Preparation (NOP) for this Environmental Impact Report (EIR) was initially published in December 2016 based on the original project applications. In 2019, the project applicant submitted revised applications and site plans, increasing the number of residential units from 330 to 540 and increasing the amount of onsite parking. The City issued a revised NOP in May 2020. Five comments received in response to the NOPs raised concerns regarding traffic. The comments discussed concerns regarding traffic hazards, increased traffic volumes, and the potential need for signalizing the Parsons/Gardner/Yosemite intersection. Both NOPs and the comments received in response to them are provided in Appendix A.

Resources referenced to prepare this section include the Traffic Impact Study (TIS) prepared for the project by DKS Associates (DKS 2021), which is provided in Appendix M, the Merced Vision 2030 General Plan (City of Merced 2012a) and the Merced Vision 2030 General Plan EIR (City of Merced 2012b).

Metrics for Analysis of Transportation Impacts

Until July 2020, environmental review documents prepared in compliance with the California Environmental Quality Act (CEQA) typically relied upon an analysis of how a project would alter the Level of Service (LOS) for intersections and roadway segments in a project vicinity. LOS is a measurement of the degree of congestion at intersections and a measurement of the ratio of traffic volume to roadway capacity on roadway segments. With the passage of Senate Bill 743, which modified CEQA (Public Resources Code Sections 21000 et. seq.) and adoption of the new CEQA Guidelines Section 15064.3(a)-(c), use of metrics that relate to roadway congestion for the purpose of identifying transportation impacts under CEQA is now precluded. Specifically, California Public Resources Code section 21099(b)(2) and CEQA Guidelines Section 15064.3 stated “a project’s effect on automobile delay shall not constitute a significant environmental impact.” Instead, the Guidelines provide that vehicle miles traveled (VMT) is generally the most appropriate measure of transportation impacts and set forth criteria for analyzing such impacts for land use and transportation projects.

An analysis of the project's effects related to LOS within the study area is presented in the TIS to address the project's consistency with General Plan standards for transportation infrastructure operations and to address community concerns but that analysis is not included in this EIR based on the direction in CEQA that automobile delay does not constitute an environmental effect.

3.12.2 Environmental Setting

Study Area and Roadway/Intersection Network

As shown on Figure 3.12-1, Transportation Study Area, the Study Area for the TIS prepared for the proposed project includes eight roadways within the City and County of Merced. Residential and limited commercial development within the City of Merced is present south and west of the project site, while rural residential and agricultural uses within Merced County are present north and east of the project site. The project site can be accessed by two-lane roads, including Gardner Avenue along the site's western boundary and Yosemite Avenue along the site's southern boundary. Descriptions of the local and regional roadways in the study area, as well as the Study Area intersections, are provided below.

Study Area Roadways

G Street is a north-south roadway located west of the project site, extending from Highway 99 to La Paloma Road, where it turns into Snelling Road. G Street is a four-lane roadway south of Yosemite Avenue, narrowing to two lanes north of Yosemite Avenue. G Street carries almost 26,000 vehicles per day within the City, and 6,700 daily vehicles north of the city limits.

East Bellevue Road is a two-lane east-west road located north of the project site, extending from Fox Road to its eastern terminus at Lake Road. This roadway currently carries approximately 3,700 vehicles per day, west of Lake Road. Bellevue Road provides access between newly developing portions of Merced and the UC Merced campus.

East Yosemite Avenue is a two-lane east-west road and passes along the project site's southern boundary. It extends from R Street to its eastern terminus at Arboleda Drive. This roadway carries between 15,100 vehicles per day east of G Street, decreasing to 2,150 vehicles per day east of Kibby Road. West of G Street, West Yosemite Avenue provides access to Merced College. East of G Street, East Yosemite Avenue provides access to Lake Road.

Lake Road is a two-lane north-south road extending from Yosemite Avenue to its northern terminus at Lake Yosemite. Lake Road is planned to become a local access road in the future. Campus Parkway would replace its function for through access. Lake Road currently provides primary access to the UC Merced campus.

Mercy Avenue is a two-lane east-west collector street that provides primary access to Mercy Medical Center. Mercy Avenue begins at G Street and continues east to just east of Paulson Road. West of G Street, Mercy Avenue becomes Community College Drive North and provides access to the northern portions of Merced College.

North Parsons Avenue is a north-south two lane minor arterial roadway between East Bear Creek Drive to the south and East Yosemite Avenue to the north. Parsons Avenue becomes Gardner Avenue north of East Yosemite Avenue, starting at the southwest corner of the project site.

Gardner Avenue is currently a two-lane north-south road designated as a minor arterial in the City's General Plan. It currently acts as an extension of Parsons Avenue from East Yosemite Avenue to its terminus approximately one-half mile north of Dunn Road. In the future, the City's General Plan designates this street as a four-lane minor arterial extending north to connect to East Bellevue Road.

Dunn Road is a two-lane east-west street between Paulson Road to the west and Lake Road to the east. The segment between Gardner Avenue and Lake Road is currently in Merced County. Dunn Road serves predominantly rural residential land uses and consists of a narrow (24 feet) unimproved road (without curb, gutter and sidewalk) with moderate to poor pavement conditions. In the future, the adopted UC Merced Community Plan identifies Dunn Road connecting to the planned Campus Parkway east of Lake Road.

Transit and Rail Facilities

Amtrak provides train service to the City of Merced and vicinity on its San Joaquin route. The San Joaquin route runs multiple times daily between the San Francisco Bay Area (or Sacramento) and Bakersfield, where Amtrak Thruway buses connect to Southern California destinations. Stops in addition to Merced include Stockton, Modesto, Martinez, and Fresno. The northbound and southbound trains currently stop in Merced seven times daily. The Amtrak station is located in downtown City of Merced, approximately 3.5 miles from the project site.

The local bus transit, The Bus, is operated by the Transit Joint Powers Authority for Merced County and provides regular fixed-route bus service within Merced County. The Bus currently operates nearly thirty bus lines throughout the County, seven of which serve the City and surrounding communities. Other routes connect the City with other cities located further away in the County. The existing transit routes within the project vicinity are shown on Figure 3.12-2, Existing Merced Transit Routes. Six bus routes provide either direct service or nearly direct service to the project site.

- **Route M1** (Merced West): This bus route provides access to Merced College and its nearest stop is at the western edge of Merced College (on M Street), approximately 1.5 miles from the project site. This route operates every 30 minutes throughout the day and provides connections to downtown Merced and other portions of the City of Merced to the south and west.
- **Route M2** (R Street Shuttle): This bus route also provides access to Merced College and its nearest stop is at the western edge of Merced College (on M Street), approximately 1.5 miles from the project site. This route operates every 30 minutes throughout the day and provides connections to downtown Merced and other portions of the City of Merced to the south.
- **Route M3** (M Street Shuttle): This bus route provides access to Merced College and Mercy Medical Center and its nearest stop is on East Yosemite Avenue near Paulson Road, approximately ½ mile from the proposed project site. This route operates every 30 minutes throughout the day and provides connections to downtown Merced and other portions of the City of Merced to the south.
- **Route M4** (G Street Shuttle): This bus route provides access to Merced College and Mercy Medical Center and its nearest stop is on East Yosemite Avenue near Paulson Road, approximately ½ mile from the proposed project site. This route operates every 30 minutes throughout the day and provides connections to downtown Merced and other portions of the City of Merced to the south.
- **Route M6** (Olive Loops) provides access to Merced College and Mercy Medical Center and its nearest stop is on East Yosemite Avenue near Parsons Avenue, across the street from the proposed project site. This route operates every 30 minutes throughout the day.
- **Route UC** (UC Merced) provides access to UC Merced, Merced College, and Mercy Medical Center and its nearest stop is on East Yosemite Avenue near Parsons Avenue, across the street from the proposed project site. This route operates every 30 minutes throughout the day and provides connections to downtown Merced.

Other bus options within the project vicinity include CatTracks, which is a bus system funded by the UC Merced campus. It connects the campus and surrounding areas, including downtown Merced and research facilities located on the closed Castle Air Force base. CatTracks operates a number of routes in the vicinity of the proposed project. A number of CatTracks routes include on-demand stops along East Yosemite Avenue within walking distance of the proposed project. The StaRT (Stanislaus Regional Transit) bus system provides one round trip each direction daily between Modesto, Turlock, and Merced along State Route 99. It connects with The Bus in the City of Merced. The YARTS (Yosemite Area Regional Transit) bus system connects the City of Merced to Yosemite National Park.

Bicycle and Pedestrian Facilities

The Merced Vision 2030 General Plan notes that the climate and terrain in the City and surrounding areas encourage the use of bicycles for both recreation and transportation, and the City is committed to providing bicycle facilities to meet the community's transportation needs (City of Merced 2012a). The City adopted a Bicycle Transportation Plan in 2008 and updated it in 2013 (City of Merced 2013), and the City's Development Services Department partners with the Merced County Association of Governments to implement the plan. While overall development of non-motorized facilities is a responsibility of local government, Caltrans provides state-level funds through the Bicycle Transportation Account and Safe Routes to School programs.

The City's existing bikeway system consists of Class I paths (separated from roadways) and Class II on-street bike lanes. Most of the Class II bike lanes are on streets within the urban area of Merced, while the Class I bike paths run along portions of Black Rascal Creek and Bear Creek. Few dedicated bicycle facilities exist in the unincorporated areas of Merced County.

The County does have one Class I Bike Path (Lake Road) and plans to construct an additional Class I Bike Path along Segments 2 and 3 of Campus Parkway. Figure 3.12-3, Existing Bicycle Facilities, shows existing bicycle facilities in the vicinity of the proposed project.

The city's Bicycle Transportation Plan identifies several improvements to the bikeway system to be developed over time to improve bicycle accessibility, particularly within five target areas: the Western Industrial Area; Merced College area and UC Merced; South Merced, including the Airport Industrial Park; Southeast Merced, including Golden Valley High School; and local government centers in the downtown area. A variety of new bicycle facilities and improvements to existing bicycle facilities are proposed throughout the city and particularly within these target areas (City of Merced 2013).

Pedestrian facilities surrounding the project site include sidewalks along the southern side of East Yosemite Avenue, and along the western side of Gardner Avenue. The eastern side of Gardner Avenue and the northern side of East Yosemite Avenue, which border the project site, do not contain existing sidewalks.

3.12.3 Regulatory Setting

Federal Regulations

There are no federal standards that inform the analysis of the project's transportation and circulation impacts.

State Regulations

Senate Bill 375

Senate Bill 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional greenhouse gas (GHG) reduction targets, and land use and housing allocations. Senate Bill 375 requires each metropolitan planning organization, such as the Sacramento Area Council of Governments, to adopt a sustainable communities strategy or alternative planning strategy that will prescribe land use allocation in that metropolitan planning organization's Regional Transportation Plan.

The California Air Resources Board, in consultation with metropolitan planning organizations, provides each region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for 2020 and 2035. These reduction targets are updated every 8 years, but can be updated every 4 years, if needed, based on changing technology.

Technical Advisory on Evaluating Transportation Impacts in CEQA

California Senate Bill 743 (SB 743) was signed in 2013 and later incorporated into CEQA in 2018. Starting July 1, 2020, all new land-use development and transportation projects are expected to evaluate transportation impacts under CEQA using VMT instead of LOS, as discussed in Section 3.12.1. Calculating baseline VMT for SB 743 requires data on the amount of vehicle trips, trip lengths, and vehicle occupant classification (resident vs. employee).

The California Governor's Office of Planning and Research (OPR) published the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) to provide technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. This technical advisory is one in a series of advisories provided by the Governor's Office of Planning and Research (OPR) as a service to professional planners, land use officials, and CEQA practitioners. OPR issues technical assistance on issues that broadly affect the practice of land use planning and the California Environmental Quality Act (CEQA). .

Local Regulations

Merced Vision 2030 General Plan

The City of Merced adopted its Merced Vision 2030 General Plan in January 2012. The Transportation and Circulation chapter of the City's General Plan includes goals and policies intended to plan for circulation while enhancing the community and protecting the environment. The Plan's goals and objectives include roadways and vehicular access, active transportation, and the coordination of land use planning and circulation. The Plan identifies a one-mile grid

system of arterial roadways, which will be extended to serve Merced's new growth areas in the area between the proposed project site and the UC Merced campus. The policies contained in the Merced Vision 2030 General Plan relevant to this CEQA analysis of transportation impacts are:

Policy T-1.1 Design streets consistent with circulation function, affected land uses, and all modes of transportation.

Policy T-1.2 Coordinate circulation and transportation planning with pertinent regional, State, and Federal agencies.

Policy T-1.3 Design major roads to maximize efficiency and accessibility.

Implementing Actions

1.3a Adhere, to the greatest possible extent, to the standards adopted for spacing streets that intersect arterials and higher order roadways

1.3c Work to ensure that land use fronting major streets have shared access across adjacent properties and provide sufficient on-site parking to avoid depending upon on-street parking

1.3d Continue to require the provision of on-site visitor parking in multi-family projects

1.3f Whenever feasible avoid, or eliminate, unnecessary or poorly placed median openings and consider limiting left turns at uncontrolled intersections during peak hours on arterials

1.3k Approve driveway access locations only if consistent with approved minimum acceptable distances from major intersections, except in unusual circumstances

Policy T-1.4 Promote traffic safety for all modes of transportation.

Policy T-1.5 Minimize unnecessary travel demand on major streets and promote energy conservation.

Policy T-1.6 Minimize street system impacts on residential neighborhoods and other sensitive land uses.

Policy T-2.1 Provide for and maintain a major transit way along "M" Street and possibly along the Bellevue Road/Merced-Atwater Expressway and Campus Parkway corridors.

Policy T-2.2 Support and enhance the use of public transit.

Policy T-2.3 Support a safe and effective public transit system.

Policy T-2.4 Encourage the use of bicycles.

Policy T-2.5 Provide convenient bicycle support facilities to encourage bicycle use.

Policy T-2.6 Maintain and expand the community's existing bicycle circulation system.

Policy T-2.7 Maintain a pedestrian-friendly environment.

Policy T-2.8 Improve planning for pedestrians.

Policy T-2.9 Ensure that new development provides the facilities and programs that improve the effectiveness of Transportation Control Measures and Congestion Management Programs.

2018 Regional Transportation Plan & Sustainable Communities Plan (RTP/SCS)

The goals and objectives for the 2018 RTP/SCS were established to meet the regulatory requirements of the Fixing America's Surface Transportation Act, which was adopted in 2015 to establish and fund new programs to support critical transportation projects to ease congestion and facilitate the movement of freight on the Interstate System and other major roads, the Clean Air Act, Title VI of the Civil Rights Act, SB 375, the California Complete Streets Act, and CEQA. They were tailored specifically to the unique needs of Merced County and the feedback that was received from the public during the planning process. Each goal was associated with specific performance measures to compare different planning alternatives against current conditions.

Goal 1. Highways, Streets, and Roads: Provide a safe and efficient regional road system that accommodates the demand for movement of people and goods.

Goal 9. Land Use Strategies: Provide economical, long-term solutions to transportation problems by encouraging community designs that encourage walking, transit, and bicycling.

Goal 12. Sustainable Communities: Reduce per capita greenhouse gas emissions by coordination compact growth with alternative transportation strategies. Protect and enhance the natural environment. Support vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.

Goal 17. Social Equity and Environmental Justice: Promote and provide equitable transportation and housing options for all populations and ensure that all populations share in the benefits of transportation investments.

3.12.4 Impacts

Methods of Analysis

Various methodologies exist to estimate project VMT statistics and compare it to that of the existing environment, including travel demand models, tabulation of existing known trip lengths for the proposed project, and "Big Data" sources. The TIS prepared for this project used a "Big Data" source provided by Streetlight Data to estimate existing VMT per capita in the region and for the proposed project. This data is based on a large sample size of mobile location sources, including mobile phones and other location-enabled devices. Streetlight Data uses trip patterns to determine home and work locations for each device, and then can approximate daily trip patterns for that device. Sampled devices and people are anonymized and then factored to determine total trips and trip lengths per resident and employee, and results are then summarized by a specific geography, in this case Census Block Groups. The data set obtained for the purposes of this study consisted of ten Census Block Groups, including the Block Group where the project is located, and nine others in the immediate vicinity of the project site.

While the VMT analysis is based on "big data" and not localized/project-specific traffic modeling, the LOS-based analysis included in the TIS also provides some information relevant to considering VMT. Specifically, it discusses the daily vehicle trip generation associated with the project, noting several features of the project and/or project vicinity that can help to reduce generation of new traffic trips and thus help to reduce total VMT and VMT per capita. These include:

- A five percent reduction was applied to the trip generation of the residential component to reflect the site's proximity to public transit lines and the UC Merced and Merced College campuses.
- A forty percent "pass-by" reduction was applied to the retail uses within the commercial component of the proposed project, based on data from Institute of Transportation Engineers Trip Generation Handbook, as cited in Appendix M, for estimating trip generation for commercial developments. Pass-by trips are considered to be vehicle trips that are on the way from an origin location to a primary destination that make an intermediate stop at the site while passing by on an adjacent street.
- Trip generation for both the residential and the commercial components of the project were adjusted for internal capture. Internal capture are trips estimated as part of the total trip generation of each individual land use within multi-use developments, but are trips between one land use and another land use on the same site (e.g., between residential and retail or restaurant). Internal capture trips can be made on the site by walking or by vehicles using internal roadways without using the major street system and thus can be

subtracted from the total site trip generation. A twelve percent and ten percent internal capture reduction was applied to the residential and commercial components of the project, respectively.

Thresholds of Significance

Thresholds of significance are based on the VMT analysis guidance from OPR and from policies contained within the Transportation and Circulation chapter of the Merced Vision 2030 General Plan.

VMT

CEQA provides that a lead agency may develop its own thresholds of significance for evaluating environmental effects. Section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. In preparation of this EIR, the City has reviewed the guidelines presented in OPR Technical Advisory on Evaluating Transportation Impacts Under CEQA (OPR 2018) to determine appropriate thresholds of significance.

For residential uses, the Technical Advisory recommends a threshold of generating VMT that is 15 percent below the existing local VMT, noting that “Fifteen percent reductions in VMT are achievable at the project level in a variety of place types” and “a fifteen percent reduction is consistent with SB 743’s direction to OPR to select a threshold that will help the State achieve its climate goals” (OPR 2018).

For commercial uses, the Technical Advisory notes that “By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant” (OPR 2018).

While the Technical Advisory recommends a general standard that retail development with more than 50,000 square feet could be considered regional-serving, it also recognizes that “many cities and counties define local-serving and regional-serving retail in their zoning codes. Lead agencies may refer to those local definitions when available, but should also consider any project- specific information, such as market studies or economic impacts analyses that might bear on customers’ travel behavior” (OPR 2018).

Further, the Technical Advisory provides that internal capture of trips should be considered in the context of a mixed-use project.

Based on the guidance in the Technical Advisory, the City has determined that the following thresholds of significance are applicable to consideration of this project's potential VMT impacts; specifically that the project would have a significant impact if:

- VMT per capita for the residential portion of the proposed project would exceed 85 percent of the regional (in this case Merced County) average; OR,
- Net VMT would increase due to construction of regional-serving commercial development.

Roadway System

Traffic deficiencies would be considered inconsistent with the General Plan if a project would result in:

- Substantial increases in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
- An intrusion of traffic on neighborhood streets sufficient to cause a 0.1 increase the Traffic Infusion on Residential Environments (TIRE) Index for a street currently at a TIRE Index above 3.0.
- Inadequate emergency access to the project site.

Bicycle System

Bicycle impacts would be considered significant if a project would:

- Disrupt existing bicycle facilities.
- Interfere with planned bicycle facilities. This includes failure to dedicate right-of way for planned on- and off-street bicycle facilities included in an adopted Bicycle Master Plan or the General Plan.
- Conflict with or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards.

Pedestrian System

Pedestrian impacts would be considered significant if a project would:

- Disrupt existing pedestrian facilities. This can include adding new vehicular, pedestrian or bicycle traffic to an area experiencing pedestrian safety concerns.

- Interfere with planned pedestrian facilities.
- Conflict with or create inconsistencies with adopted pedestrian system plans, guidelines, policies or standards.

Impacts and Mitigation Measures

Impact 3.12-1: The proposed project would not conflict with a program, plan, ordinance, or policy, addressing the circulation systems, including transit, roadway, bicycle and pedestrian facilities but could create demand for additional pedestrian facilities. This impact is considered to be potentially significant.

The Crossings

Transit Systems

The proposed project includes construction of a public bus stop on East Yosemite Avenue directly in front of the project site and a public bus stop internal to the project site. The proposed project would likely increase ridership on the route(s) using the stop, which would help increase fare box recovery for area transit providers. Given typical ridership rates among the community, it is not anticipated that the proposed project would result in over-capacity conditions on local bus routes (Appendix M). Therefore, impacts to transit systems would be **less than significant**.

Bicycle Facilities

The project site is served by existing bike lanes on both East Yosemite Avenue and Gardner Avenue. The City of Merced 2013 Bicycle Transportation Plan includes planned bikeway improvements adjacent to the proposed Project, including the following:

- Extend bike lane along Yosemite Avenue (on north side) between McKee Road and Parsons Avenue (this improvement is part of the frontage improvements required of the project).
- Extend bike lanes on Gardner Avenue north of East Yosemite Avenue (providing a bike lane on the east side of Gardner Avenue is part of the frontage improvements required of the project).

The proposed project would provide bicycle facilities that connect to the existing bicycle transportation system as well as construct portions of the City's planned bicycle system. The proposed project would not hinder any planned bicycle facility nor conflict with any General Plan policy or standard. Impacts to bicycle transportation would be **less than significant**.

Pedestrian Facilities

The proposed project site is located at a corner that currently lacks pedestrian improvements on the east side of Gardner Avenue and the north side of East Yosemite Avenue. The proposed project would include new sidewalk facilities on both of these roadways, which would close gaps in the existing pedestrian network. However, the project could create a demand for pedestrian connections to the west and south and there are no existing or proposed pedestrian crosswalks on Gardner Avenue or East Yosemite Avenue. This could expose pedestrians to hazards when crossing the street, and thus the impact is **potentially significant.**

Remainder Area

No development is currently proposed within the Remainder Area, however the portions of the Remainder Area proposed to be zoned R-1-10 could support development of single-family residences.

Transit Systems

Future residents within the Remainder Area would have access to same existing transit routes in the vicinity as The Crossings component and access to the bus stops constructed by the project on East Yosemite Avenue and within The Crossings development. Additional ridership on the route(s) using the proposed stops is likely to occur and would help increase fare box recovery for area transit providers but would not result in over-capacity conditions on local bus routes (Appendix M). Therefore, impacts to transit systems would be **less than significant**.

Bicycle Facilities

Future development within the Remainder Area would introduce new bicycle riders to the area. These riders could access the bicycle system improvements constructed by The Crossings development and access other existing bicycle facilities in the vicinity. Development within the Remainder Area would not be expected to hinder any planned bicycle facility or conflict with any General Plan policy or standard. Impacts to bicycle facilities would be **less than significant**.

Pedestrian Facilities

Future development within the Remainder Area would introduce new pedestrians to the area. These pedestrians could access the sidewalks on East Yosemite Avenue and Gardner Avenue constructed by The Crossings development and access other existing pedestrian facilities in the vicinity. Development within the Remainder Area would not be expected to hinder any planned pedestrian facility or conflict with any General Plan policy or standard. Impacts to pedestrian transportation and facilities would be **less than significant**.

Mitigation Measures

The following mitigation measure would reduce potential impacts to pedestrian safety to a less-than-significant level by ensuring that a contiguous pedestrian route is provided from the project site to potential destination points to the west. When combined with the new sidewalk facilities that would be constructed along the project site frontage as required by the City's development standards, this mitigation measure would ensure that the project's impacts to pedestrian travel would be **less than significant**.

The Crossings

3.12a The applicant shall provide for striping of crosswalks on the north and east legs of the East Yosemite Avenue/Gardner Avenue intersection to facilitate pedestrian access to points west and south of the project site.

Remainder Area

No mitigation is required for the Remainder Area.

Impact 3.12-2: The proposed project would result in residential VMT per capita that is at least 15 percent below the regional average and would not develop regional-serving commercial development. This impact would be less than significant.

Residential Development VMT Analysis

The Crossings

The proposed project would add residents and employees to the study area. Vehicles driven by residents of the proposed apartments and employees of the proposed commercial square footage would be added to the existing environment.

As noted in the Methods of Analysis section, a "Big Data" source provided by Streetlight Data was utilized to estimate project VMT per capita and compare it to the existing environment. The data set obtained for the purposes of this study consisted of ten Census Block Groups, including the Block Group where the project is located and nine others in the immediate vicinity of the project site. The existing countywide residential average trip length is 10.6 miles per day and the weighted average VMT per capita is 18.6 miles (Appendix M).

The locations of the ten Block Groups are shown on Figure 3.12-4, VMT per Capita by Census Block Group. The figure shows that of the ten Block Groups, seven have VMT per capita at least

15 percent lower than the County average, while one is only 7 percent below the County average, and two are greater than the County average.

The Block Group where the project site is located (Block Group 060470018011) shows VMT per capita that is approximately 55.4 percent of the Merced County Average, or approximately 10.3 miles per day. This Block Group includes a majority of the University of California (UC) Merced campus, and therefore its trip characteristics are skewed by the large number of University students living in the Block Group. University students are more likely to have fewer and shorter daily vehicle trips than other residents because much of their daily routine is centered around the university campus and many may not own or drive cars.

Additionally, the project site is located on the border of three Census Block Groups, and it is therefore likely that the travel characteristics of residents within the project would reflect a blend of the characteristics in each of these three Block Groups. Therefore, the TIS calculates a weighted average (weighted by relative population in each Block Group) for the three Block Groups that either contain or are directly adjacent to the project site.

Table 3.12-1 shows the relative weighted VMT per capita (compared to the County as a whole) for the single Block Group the project is located within, the three Block Groups adjacent to the proposed project, and the ten Block Groups for which data was obtained.

Table 3.12-1
VMT Per Capita by Census Block Group

	Countywide	Project Block Group (060470018011)	Three Adjacent Block Groups	All Ten Block Groups
Total Population	269,075	5,432	8,375	29,786
Resident Average Trip Length	10.6 miles	8.0 miles	8.0 miles	8.1 miles
Weighted VMT per Capita As Percent of Countywide	18.6 100 percent	10.3 55.4 percent	11.1 59.6 percent	14.4 77.3 percent

Source: Appendix M

As shown in Table 3.12-1, each of these three options yields weighted VMT per capita that is greater than 15 percent below the countywide average. Therefore, based on the residential VMT per capita rates presented above, the impact of the proposed residential land uses in The Crossings component of the project on VMT is considered to be **less than significant**.

Remainder Area

At this time, no development is proposed for the Remainer Area; thus, implementation of the proposed project would not result in the generation of additional vehicle trips from this area. However, the portions of the Remainder Area proposed to be zoned R-1-10 could support single-family residential development. The VMT generated by new residences within the Remainder area would be expected to be similar to the average VMT generated by residential uses in three Block Groups adjacent to the project site because the residential development that could occur under the proposed R-1-10 zoning within the Remainder Area would be similar to that of the existing low-density residential development surrounding the project site, as described above. Therefore, impacts would be **less than significant**.

Commercial Development VMT Analysis

The Crossings

The commercial portion of The Crossings component of the proposed project includes development of approximately 66,000 square feet of retail space. As discussed in the Thresholds of Significance discussion above, the OPR Technical Advisory suggests that commercial uses with more than 50,000 square feet may be considered regional-serving retail, and that regional-serving retail could result in a significant VMT impact by increasing existing shopping trip lengths. However, the Technical Advisory also recognizes that local zoning codes may offer local definitions and standards that can help determine whether a commercial development would be local-serving or regional-serving; and that "retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns" (OPR 2018).

The project proposes to zone the commercial portion of The Crossings component of the project Neighborhood Commercial (CN), which is defined in the Merced Municipal Code as providing "areas for shopping centers and other commercial uses that serve the day-to-day needs of residential neighborhoods. The C-N districts shall have a minimum area of three (3) acres and shall be located only where analysis of the residential population demonstrates that the facilities are justified." Further, the specific uses permitted in the CN district include local-serving uses such as general retail, professional and medical offices, banks, and restaurants but excludes regional-serving uses such as hotels/motels, building supplies and home improvement stores, equipment sales and rental, educational facilities, community assembly facilities, and vehicle sales (City of Merced 2020). Some regional-serving uses may be allowed subject to a Conditional Use Permit, but issuance of a Conditional Use Permit for any such uses is not requested as part of this project.

The project site is adjacent to three existing residential subdivisions that were constructed in the early and mid 1990s (Oakmont Village, Silverado, and Camelot, an approximate total of over 1,200 dwelling units) as well as over 2,000 residences in the Northeast Yosemite Specific Plan area located north of Yosemite Avenue and between G Street and Gardner Avenue. Additional residences are currently under construction approximately one mile east of the project site. These include the Moraga at Merced master-planned community, and Merced Station, a student housing apartment complex. Combined these communities are planned to consist of 540 dwelling units.

There is a generally low ratio of commercial uses to residential units in the project vicinity. There is a small medical office complex, University Surgery Center, in the southwest quadrant of the Parsons Avenue/East Yosemite Avenue intersection. The commercial businesses nearest to the project site are located approximately one mile west along East Yosemite Avenue at Paulson Avenue and at G Street, approximately 1.5 miles west of the project site. Additionally, the Northeast Yosemite Specific Plan (City of Merced 1999) includes 3.8 acres of neighborhood commercial within the 640-acre planning area; the majority of land uses in that specific plan area are residential, with parks, schools, and churches to support the residential community. As a future development area, the Bellevue Community Corridor Plan (City of Merced 2015), located north of the project site, anticipates additional commercial uses to be developed in mixed-use and commercial areas, however no development has occurred or been proposed within this plan area to-date.

Thus, there are more than 3,700 existing and under-construction residences within 1 mile of the project site, not including the 570 residential units proposed as part of this project, and a limited amount of existing commercial businesses within 2 miles of the project site. This shows that there is a large population of local residents with limited access to local-serving commercial businesses and thus it is reasonable to expect that the proposed commercial development would predominantly serve the local population.

Additionally, the proposed project implements several of the project design elements that the OPR Technical Advisory recommends as features that may reduce vehicle miles traveled, specifically:

- The project is proposed in an area of the region that already exhibits low VMT, as shown in Table 3.12-1;
- The project is proposed in an area where transit service is already available, and the project would construct a new bus stop to support transit use;
- The project proposes a higher density of land uses compared to many surrounding properties; and

- The project proposes a mix of commercial and residential land uses and would increase the variety of land uses within the project vicinity by including commercial space, which is limited in the local area.

Given the location of this project, including proximity to UC Merced, the lack of local-commercial development in the immediate vicinity, and the existing and planned residential population proximate to the site, it is highly likely that the commercial development proposed as part of the project would be mainly local-serving in nature. Therefore, the impact of the proposed commercial portion of The Crossings component of the project related to VMT is considered to be **less than significant**.

Remainder Area

Under the proposed land use and zoning designations for the Remainder Area, no commercial development would be permitted in that portion of the project site. Thus, implementation of the proposed project would not result in the generation of additional vehicle trips and associated changes in VMT from this area. Therefore, the Remainder Area would result in **no impact** associated with VMT generated by commercial uses.

Mitigation Measures

No mitigation measures are required.

Impact 3.12-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersection(s) or incompatible uses (e.g. farm equipment). This impact is considered less than significant.

The Crossings

The proposed project would not involve alterations to the existing roadway network surrounding the project site. The proposed project would construct two access driveways on East Yosemite Avenue: the main driveway located approximately 885 feet east of Gardner Avenue and a secondary driveway serving the commercial element of the site located approximately 365 feet east of Gardner Avenue. In addition, the project proposes two access driveways on Gardner Avenue: the main driveway located about 540 feet north of East Yosemite Avenue which would provide access to both the commercial and residential portions of this development, and a secondary driveway serving the commercial element located approximately 275 feet north of East Yosemite Avenue. These driveways are located along sections of roadway that do not contain horizontal or vertical curves that limit sight distance and the adjacent roadways have posted speed limits of 45 miles per hour. Further, the TIS found that the four access driveways would

have sufficient capacity for project-related traffic to enter and leave the site without causing vehicle queues that extend into the public right of way. With adequate sight distance, adequate capacity, and no proposed land uses that would typically be accessed by heavy equipment, the four new driveways would not create any safety hazards. No dangerous intersections or sharp curves would be constructed as part of the proposed project. Thus, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

In addition, the proposed project would implement street improvements along its frontage on East Yosemite Avenue and Gardner Avenue. These frontage improvements would complete gaps in the City's circulation system and connect the proposed project to the surrounding pedestrian and bicycle system. The project also proposes to provide a public bus stop and turnout on westbound Yosemite Avenue located approximately 720 feet east of Gardner Avenue.

Remainder Area

At this time, no development is proposed for the Remainer Area; thus, implementation of the proposed project would not result in the potential to substantially increase hazards due to a geometric design feature or incompatible uses. However, under the proposed land use and zoning designations, some future residential development would be possible. It is reasonable to assume that the existing residences within the Remainder Area and the Yosemite Church and associated private school would not be redeveloped into new single-family lots. Under the proposed zoning of R-1-10, the currently vacant portions of the Remainder Area could support approximately 25 new single-family residences. The currently vacant portions of the Remainder Area are generally located in the southeast corner and north of the Yosemite Church property. Providing access to new single-family residences in these portions of the site would not require modifications to East Yosemite Avenue, and new residences would not introduce heavy equipment or other vehicle types that would be incompatible with general roadway safety. Thus, future development within the Remainder Area would not substantially increase hazards due to a geometric design feature or incompatible uses and this impact would remain **less than significant.**

Mitigation Measures

No mitigation measures are required.

Impact 3.12-4: The proposed project could increase traffic on neighborhood streets within the study area, but the additional traffic volumes would not cause a change in the character of those streets and this impact would be less than significant.

The TIS considered the degree to which the proposed project could result in traffic volume increases on existing collector and local streets and whether such increases would result in

adverse effects to quality of life for residents of those streets. This could occur if individuals choose driving routes that rely upon collectors and local streets in lieu of arterial streets. Primary factors that might influence the route that drivers take include intersection spacing, prohibited movements at certain intersections (e.g., "no left turn" restrictions), and a perception that the routes preferred by the City are not the most direct route to a given destination. As demonstrated in the following discussion, there is a potential for a minor increase in traffic volumes on one route that could be used to bypass the arterial street route to common destinations, but those volume increases would not reach a level that causes material changes in the character of the residential environment and thus, this impact would remain less than significant.

Merced's Vision 2030 General Plan adopted polices to reduce the impacts of new development on residential neighborhoods, particularly where street design encourages traffic to "cut-through" existing neighborhoods as a real or perceived shortcut. Specifically, implementing actions associated with Policy T-1.7 (Minimize Street System Impacts on Residential Neighborhoods and Other Sensitive Land Uses) call for the City to provide major roadways routed between, rather than through, neighborhoods and to approve street circulation patterns that discourage non-local traffic from cutting through neighborhoods.

As documented in the TIS, the proposed project internal circulation and access points are consistent with the City's policy because the circulation is entirely self-contained within the site and the access points are located on minor arterials rather than local or collector streets. This project design would not directly lead to traffic cutting through neighborhoods.

However, the TIS considered the potential for traffic generated by the project to cut through other neighborhoods in an attempt to reach nearby destinations more quickly or along a route that is perceived to be quicker, more direct, and/or more efficient. For this analysis, the UC Merced campus was assumed to be a primary destination for project residents; other primary destinations include the Merced College campus and commercial businesses along G Street.

Two of the key factors that affect drivers' route choice are intersection spacing and prohibited movements. The City's design standards for minor arterials requires that the roadway include a raised median and a minimum spacing of 1/8 mile between an arterial or arterial intersection and any full-access (no turn restrictions) minor intersections or driveways. Because East Yosemite Avenue and Gardner Avenue are arterials, these standards require that traffic exiting the proposed project's main driveway on Gardner Avenue would be restricted to right turns only (with both right and left turns into the driveway permitted), and the secondary driveway on Gardner Avenue would be restricted to right turns in and out.

Drivers with UC Merced as their destination would typically be expected to exit the site at the main Yosemite Avenue driveway and travel east on Yosemite Avenue to Lake Road. These drivers

may perceive the route as longer/less direct compared to exiting the site from the Gardner Avenue driveway, traveling north of Gardner Avenue to Dunn Road to Lake Road. This would result in undesirable traffic on Dunn Road which, once annexed into the City of Merced, would be classified as either a local residential street or residential collector.

Similarly, drivers destined to locations west of the site, such as Merced College and commercial centers on G Street, may perceive using the residential streets of Hunters Drive to White Dove Avenue to Yosemite Avenue as a more convenient route than exiting the site via the main driveway on East Yosemite Avenue and traveling westerly on Yosemite Avenue through Gardner Avenue.

To determine the potential cut-through traffic on residential streets to cause a significant impact, the TIS first compares the travel times for the desired and potential cut-through routes, assumes 40 percent of project trips would use any cut-through route that has a similar travel time as the desired route (less than 60 seconds difference), and analyze whether the cut-through traffic would cause a significant increase in the traffic volumes on the neighborhood streets used by that cut-through traffic.

Table 3.12-2 shows that the extent of traffic that might use these alternative routes would not cause a noticeable change in the perceived character of the affected roadways, as determined by the Traffic Infusion on Residential Environments (TIRE) Index. The TIRE Index is a numerical representation of a resident's perception of the effect of traffic using the residential street. The TIRE index is an industry-standard tool for evaluating the effects of changes in traffic volumes on quality of life issues such as walking, cycling, playing and daily tasks such as maneuvering a car out of a residential driveway. Streets are designated with a TIRE index (on a scale of 1.5 to 5) based on the existing daily traffic volume. Streets with TIRE indices above 3.6 are considered to be traffic dominated, while those below 3.6 are better suited for residential activities. Cut-through traffic volumes causing a +0.1 change in the TIRE Index when the Index without the cut-through traffic is already above 3.0 is considered an impact. As shown in Table 3.12-2, although the project could increase daily traffic volumes on Gardner Avenue, the TIRE Index rating for Gardner Avenue would not be changed and thus the project would have **no impact.** Table 3.12-2 shows that no additional traffic is expected to use the Gardner to Hunters to White Dove to Yosemite route because this route would take 62 seconds longer than exiting the site via the main driveway on East Yosemite Avenue and continuing westerly.

Table 3.12-2
Summary of Potential Neighborhood Intrusion Impacts

Potential Cut-Through Route	Travel Time Difference from Desired Route (sec)[1]	Peak Hour Project Traffic Using Cut-Through Route	Without Project	With Project
			Average Daily Traffic	Average Daily Traffic[2]
			TIRE Index	TIRE Index[3]
Gardner to Dunn to Lake	39	20	900	1,100
			3.0	3.0
Gardner to Hunters to White Dove to Yosemite	62	0	Negligible Impact	

Notes:
[1] When the cut-through route is greater than sixty seconds longer than the desired route, it is considered to have a negligible impact.
[2] Assumes 40 percent of the outbound peak hour trips would use the route. For use in the TIRE Index, the peak hour volume is converted to an average daily volume assuming a 10 percent peak to daily ratio.
[3] Traffic Infusion on Residential Environments (TIRE) index.
Source: Appendix M

Mitigation Measures

No mitigation measures are required.

Impact 3.12-5: The proposed project would not result in inadequate emergency access. This impact is considered less than significant.

The Crossings

The proposed project would construct two access driveways on East Yosemite Avenue: the main driveway located approximately 885 feet east of Gardner Avenue and a secondary driveway serving the commercial element of the site located approximately 365 feet east of Gardner Avenue. In addition, the project proposes two access driveways on Gardner Avenue: the main driveway located about 540 feet north of East Yosemite Avenue, and a secondary driveway serving the commercial element located approximately 275 feet north of East Yosemite Avenue. All uses within the project site would be served with two or more vehicular access points, thus there would be sufficient emergency access to and from the site. In addition, the proposed project would be reviewed by the City's Fire Department in order to ensure adequate emergency access is provided. Impacts would be **less than significant**.

Remainder Area

At this time, no development is proposed for the Remainer Area; thus, implementation of the proposed project would not result in inadequate emergency access. As discussed above, under the proposed land use and zoning designations, portions of the Remainder Area could support future single-family residential development. The Merced Municipal Code requires that direct roadway access be provided for each residence (City of Merced 2020), thus emergency access would be required to be provided at the time that any new residential lots are created within the project site. Therefore, this impact would remain **less than significant.**

Mitigation Measures

No mitigation measures are required.

3.12.5 Cumulative Impacts

Transportation impacts are evaluated based on the local land use agency's standards and policies and the potential effect of ongoing development that could generate traffic that would enter or pass through the land use planning area. Development in the unincorporated Merced County area that is proximate to the City boundaries is generally limited to rural residential, agricultural, and some industrial land uses. These uses do not contribute substantial volumes of traffic to and through the City of Merced Area, and limited new development is expected o occur in the unincorporated areas under the cumulative context. Thus, the geographic area for consideration of cumulative transportation impacts is the City of Merced including the SOI/SUDP area and the cumulative development scenario is ongoing implementation of the General Plan, including development within the City's SOI/SUDP area.

Impact 3.12-6: The proposed project would not contribute to cumulative impacts due to conflicts with a program, plan, ordinance, or policy, addressing the circulation systems, including transit, roadway, bicycle and pedestrian facilities. This impact is considered less than significant.

Demand for transit, bicycle and pedestrian facilities and services would increase over time as the City's residential population increases. However, under the General Plan and other planning efforts, such as the Bicycle Transportation Plan, the City has anticipated these increases and identified a range of improvements that would help meet the demands.

The City's General Plan EIR notes that bicycling activity is expected to increase as development under the General Plan occurs and it is important to provide adequate bicycle facilities to meet those increased demands by ensuring there are direct routes of bicycle access between destinations while minimizing conflicts with automobiles. The City's Bicycle Transportation Plan

meets these needs by identifying a robust set of new and improved bicycle facilities to ensure access throughout the City, including a point of bicycle connection into the UC Merced campus. The General Plan EIR found that implementation of the 2030 General Plan would have no impact to bicycle and pedestrian transportation because it "includes transportation policies that provide for future transit stations/transitways and an integrated system of pedestrian and bicycle trails and implementation of the Plan will not conflict with other policies supporting all modes transportation, including bicycles, pedestrians, and public transit." Thus, there is no anticipated cumulative impact to bicycle, pedestrian, and transit transportation to which the project could contribute.

As discussed in Impact 3.12-1, the project would provide transit, bicycle, and pedestrian facilities that support the transportation needs of the residents and visitors to the project site. Future residential development within the Remainder Area would contribute additional residential population that would also use these facilities. Thus the project would be consistent with the General Plan and the analysis in the General Plan EIR and the cumulative impact would remain **less than significant.**

Mitigation Measures

No mitigation measures are required.

Impact 3.12-7: The proposed project would not result in cumulative impacts associated with VMT. This impact would be less than significant.

As noted in the OPR Technical Advisory, legislation passed in the State of California over the last 15 years has prioritized long-term sustainability and reducing GHG emissions, in part by encouraging denser infill development and reduced reliance on individual vehicles and improved mass transit. This legislative focus demonstrates that if land use development continues to reflect development patterns prevalent throughout older and more recently development areas in California, the total amount of statewide, regional, and local VMT that would be generated would contribute to increasing GHG emissions and prevent the State from achieving the adopted GHG reduction goals. Thus, there is a demonstrated potentially significant cumulative VMT impact in the state. VMT generated at the individual project level as well as regional VMT would contribute to this potentially significant cumulative impact.

The ORP Technical Advisory states that when a project-specific impact analysis demonstrates that a project will attain an efficiency metric, such as VMT per capita, that is aligned with long-term environmental goals and relevant plans, the project "would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa." Thus, the analysis of proposed project's impact related to residential VMT presented in Impact 3.12-2 above addresses

the project's contribution to cumulative VMT and associated climate change effects, and demonstrates that the project's contribution to residential VMT would not make a substantial contribution to the significant cumulative (statewide) VMT impact.

Additionally, the analysis in Impact 3.12-2 finds that the project would develop commercial uses that would serve existing and planned local residential population and thus would not lead to substantial increases in VMT in the near-term. As the City's General Plan is implemented, additional commercial and residential uses are anticipated to be developed in the project vicinity, including expansion of UC Merced and implementation of the Bellevue Community Corridor Plan. With increased residential density in the project vicinity, the proposed commercial uses within the project would have a greater local population service base and would not be expected to become a regional-serving commercial area and the project's contribution to commercial VMT would not make a substantial contribution to the significant cumulative (statewide) VMT impact.

Mitigation Measures

No mitigation measures are required.

Impact 3.12-8: The proposed project would not contribute to cumulative impacts regarding roadway hazards or emergency access. This impact is considered less than significant.

The General Plan EIR found that the City's Roadway Design Standards "include street cross sections designed to create a community circulation network to move people efficiently and safely throughout the City, whether by automobile, bicycle, or foot" and "provide for adequate street width and secondary access to ensure that emergency vehicles have adequate access to development throughout the Plan Area." The General Plan EIR concluded that compliance with the General Plan policies and Roadway Design Standards would ensure there would be no significant cumulative impact associated with hazards and emergency access because there would not be a significant increase in hazards due to design features or incompatible uses and sufficient emergency access would be provided to all development areas. Thus, there is no significant cumulative impact to which the project could contribute.

As discussed in Impact 3.12-3, the project would not create any hazards due to the project design and would not introduce any incompatible uses to the roadway network. The project could expose pedestrians to hazards if pedestrians crossed the north and/or east legs of the East Yosemite Avenue/Gardner Avenue intersection, where there currently are no crosswalks. However, Mitigation Measure 3.12a requires the project applicant to provide these crosswalks to create a contiguous pedestrian network which would avoid this hazard. As discussed in Impact 3.12-5 the project would provide sufficient access to the project site to accommodate emergency access.

The project would be consistent with the General Plan and the findings of the General Plan EIR and this impact would remain **less than significant.**

Mitigation Measures

No mitigation measures are required.

3.12.6 References

California Governor's Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Transportation Impacts Under CEQA. December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

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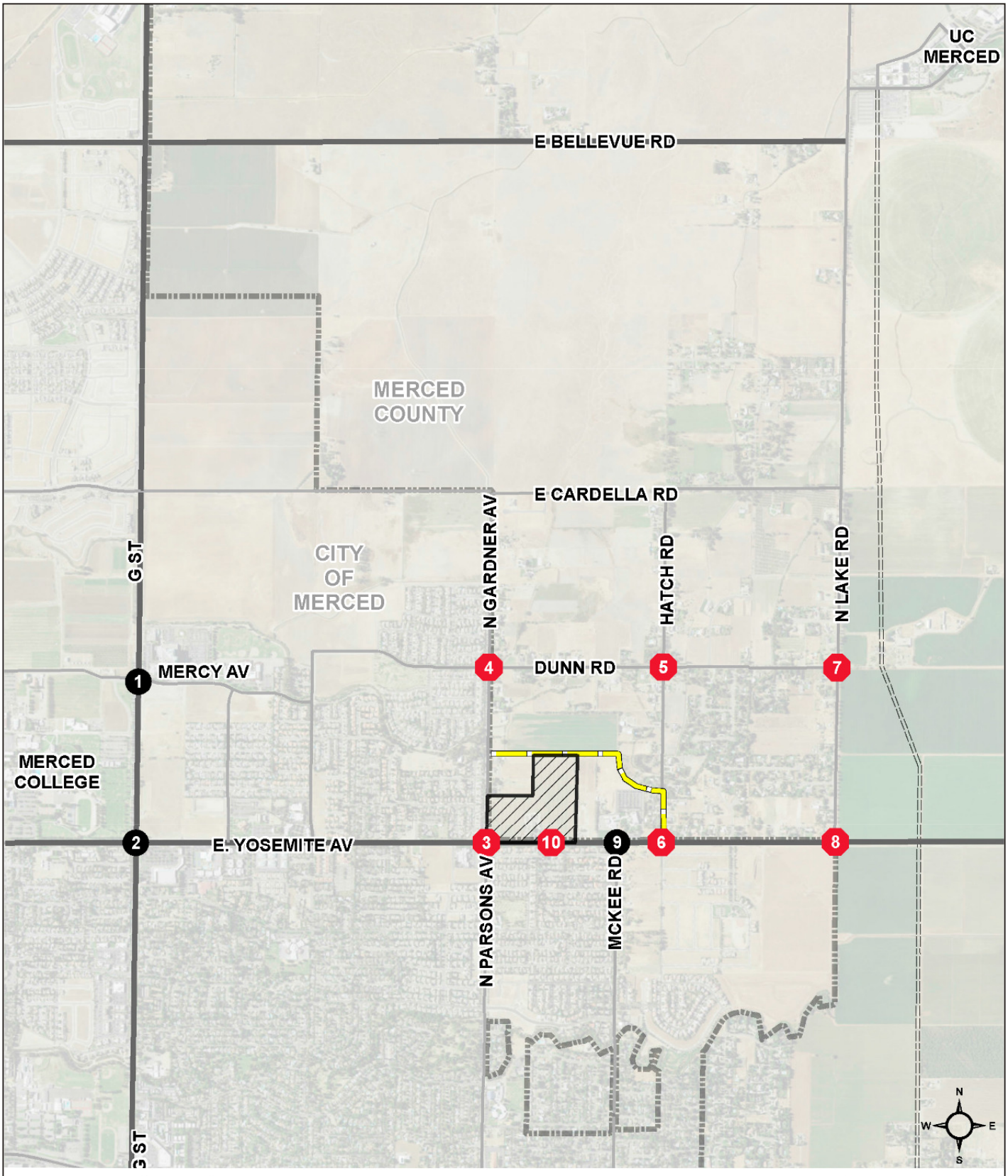

SOURCE: DKS 2020

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FIGURE 3.12-1
Transportation Study Area

Yosemite Avenue - Gardner Avenue to Hatch Road Annexation Project

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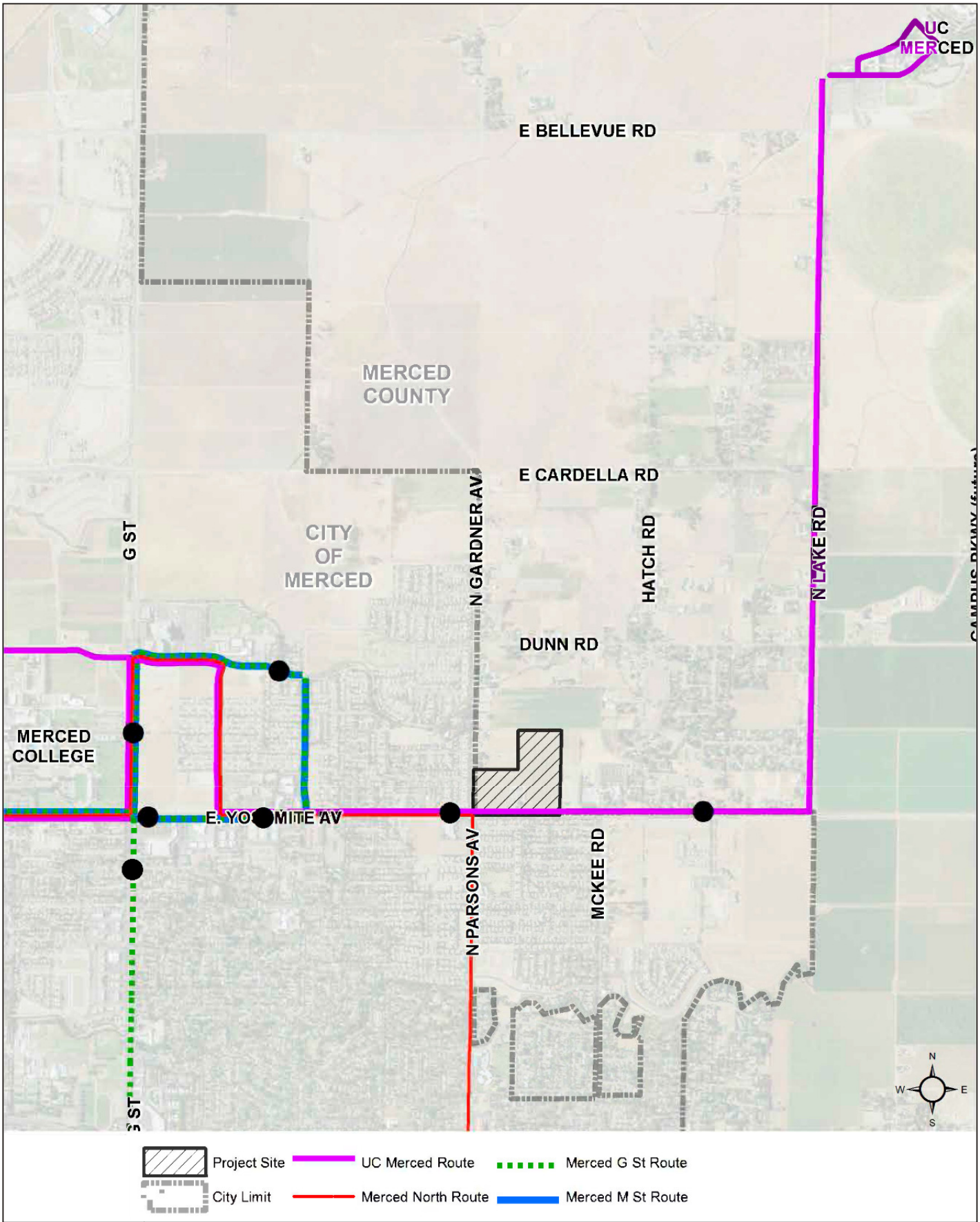

SOURCE: DKS 2020

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FIGURE 3.12-2

Existing Merced Transit Routes

Yosemite Avenue - Gardner Avenue to Hatch Road Annexation Project

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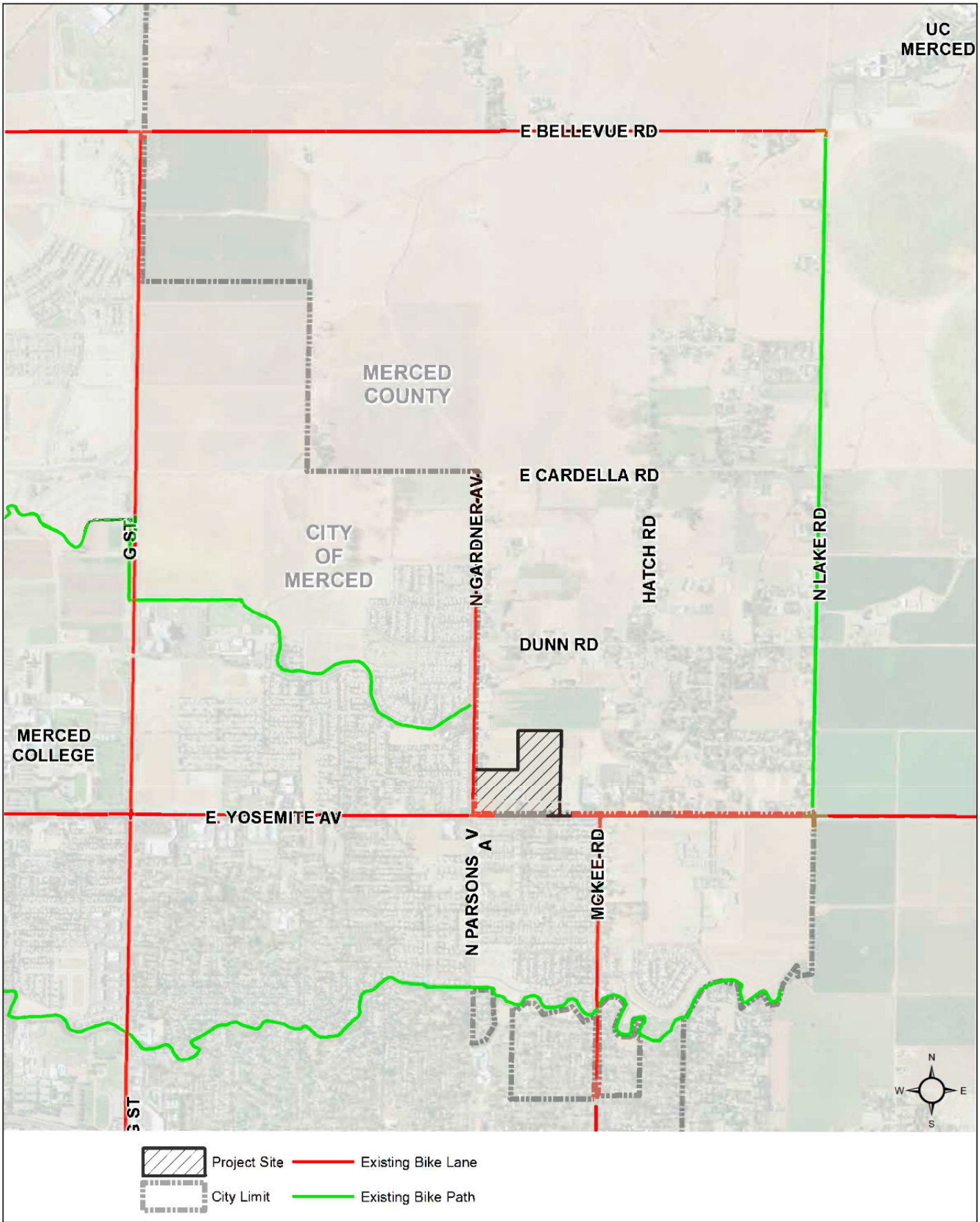

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SOURCE: DKS 2020

FIGURE 3.12-3
Existing Bicycle Facilities

Yosemite Avenue - Gardner Avenue to Hatch Road Annexation Project

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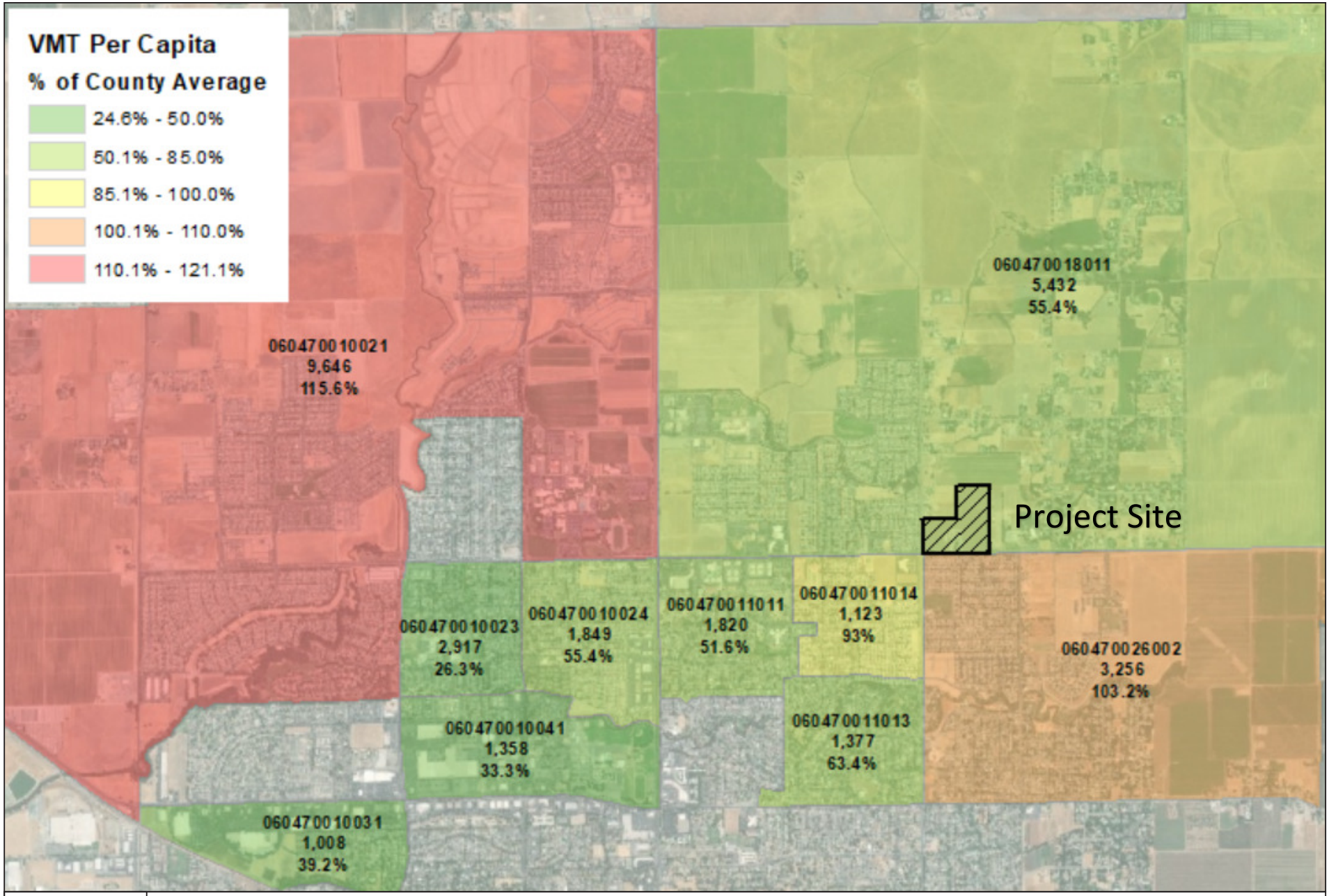

SOURCE: DKS 2020

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FIGURE 3.12-4

Vehicle Miles of Travel per Capita by Census Block Group (Compared to Merced County Average)

Yosemite Avenue - Gardner Avenue to Hatch Road Annexation Project

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