

3.15

TRANSPORTATION/TRAFFIC

3.15 Transportation/Traffic

This section of the Draft EIR describes transportation and circulation conditions in the proposed General Plan SUDP/SOI and identifies impacts associated with implementation of the proposed General Plan. The City of Merced General Plan Update Traffic Analysis (Fehr and Peers, May 9, 2009) was used as a basis for this section of the Draft EIR. The traffic analysis was prepared to investigate anticipated traffic conditions with implementation of the proposed General Plan. The analysis focuses on the projected roadway and intersection operations at buildout of the *Merced Vision 2030 General Plan* and investigates the adequacy of the proposed Circulation Plan, primarily as it pertains to vehicle traffic on the planned roadways and intersections. Traffic count data and a summary of the traffic impact modeling are presented in [Appendix K](#).

During the Notice of Preparation (NOP) period, comments were received from the Merced County Public Works Department and the California Public Utilities Commission (Rail Safety) regarding the City's urban expansion and generation of increased traffic resulting from implementation of the proposed General Plan.

Implementation of the proposed *Merced Vision 2030 General Plan* will generate increased traffic that will affect circulation conditions on the local and regional roadway network. The General Plan Circulation Element includes a broad range of policies for managing and optimizing the function of the transportation system to accommodate this additional traffic and the proposed Circulation Plan included in the Circulation Element identifies the location of the physical circulation system planned throughout the City. The Circulation Plan is presented in [Figure 3.15-1](#).

3.15.1 SETTING

Environmental Setting

CURRENT REGIONAL ACCESS

Three routes currently provide regional access for the City of Merced ([Figure 3.15-2](#)). State Route 99 is an important north/ south highway connecting the major cities of the Central Valley although Route 99 runs east/west through the City of Merced. It is a four to six lane facility extending from Interstate 5 near Bakersfield at its southern end to Interstate 5 near Redding at its northern end. It passes through a number of Valley communities, including Bakersfield, Tulare, Fresno, Merced, Modesto, Lodi, Stockton, and Sacramento. State Route 99 serves as the primary farm-to-market route for the transportation of agricultural products, as a major commuter route within many of the cities it serves, and as a popular route for recreational traffic. SR 99 is also a major freight corridor, with trucks comprising up to 21 percent of total traffic on a typical weekday.

State Route 59 is a north/south facility extending from Route 152 south of El Nido to Snelling north of Merced. It enters Merced from the south via Martin Luther King Jr. Way (South J Street), crosses the City via Route 99, and continues northward on its own Highway 59 corridor. This route primarily serves local and truck traffic.

State Route 140 is an east/west facility connecting I-5 and Yosemite National Park. It is a two-lane road serving local traffic and a high volume of recreational traffic. It enters the City from the west at the intersection of 13th and V Streets, crosses the City via Route 99, and continues eastward on its Route 140/Yosemite Park Way corridor.

G Street and Santa Fe Drive play more limited regional roles by connecting Merced with the nearby communities of Snelling and Atwater respectively.

EXPANDED REGIONAL ACCESS

As a part of the *Merced 2030* General Plan process, the City is proposing adoption of a circulation plan of major streets (arterials) and two expressways (Atwater/Merced Expressway and Campus Parkway) for prospective growth areas. That system has been subsequently modified and expanded in concept over time. An interchange was constructed in 2008 at Mission Avenue/Highway 99 that will connect with Campus Parkway. The completion of Campus Parkway depends on the timing of build-out of UC Merced, and will be phased in over the next 10 to 20 years as traffic conditions warrant.

MAJOR ROAD SYSTEM

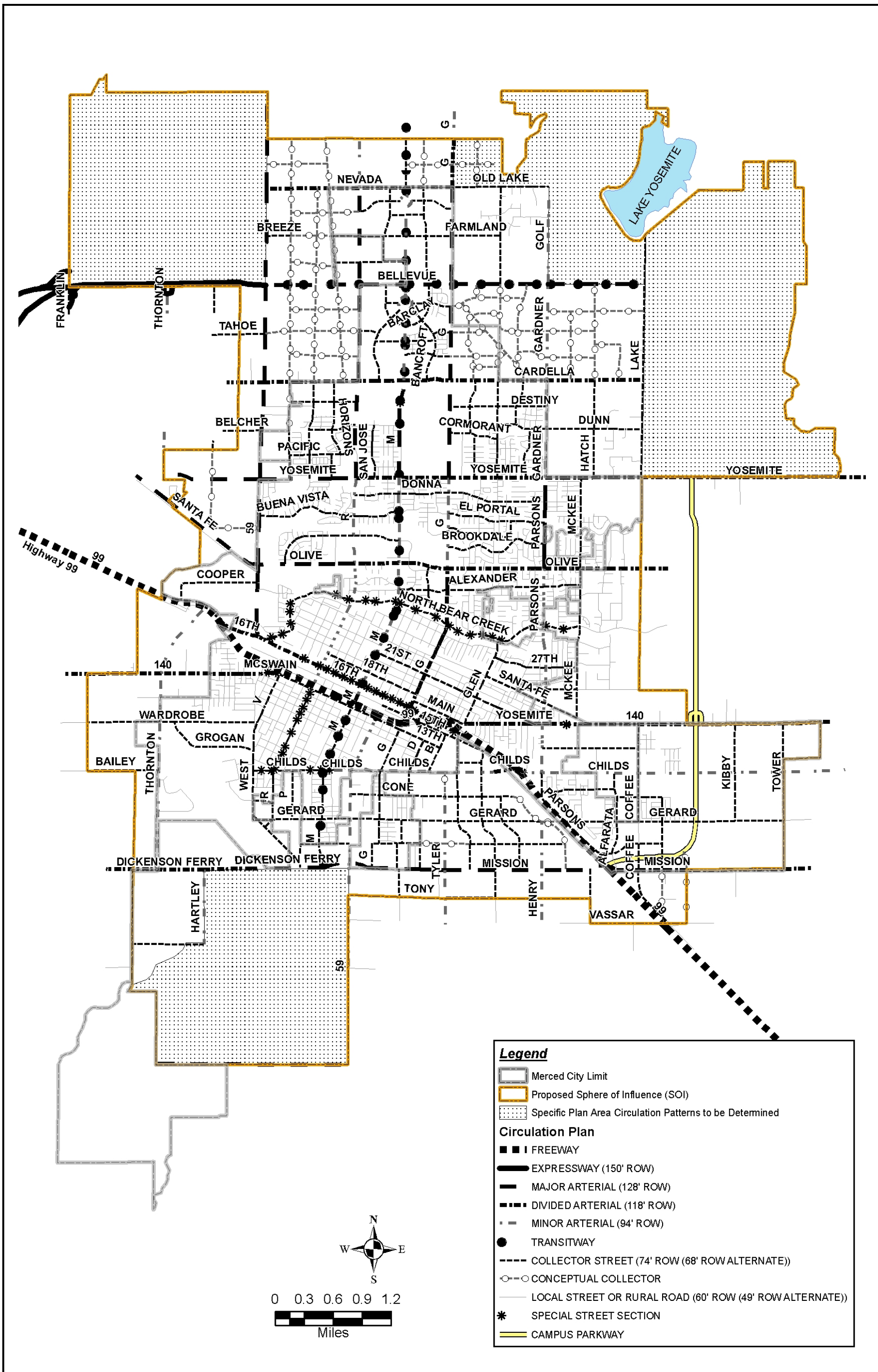
The City has had a one-mile grid system of major north-south roadways identified for many years (Highway 59, R Street, G Street, and Parsons/Gardner Avenue are all one mile apart). This existing system will be extended and expanded to the north and south to serve Merced's new growth areas.

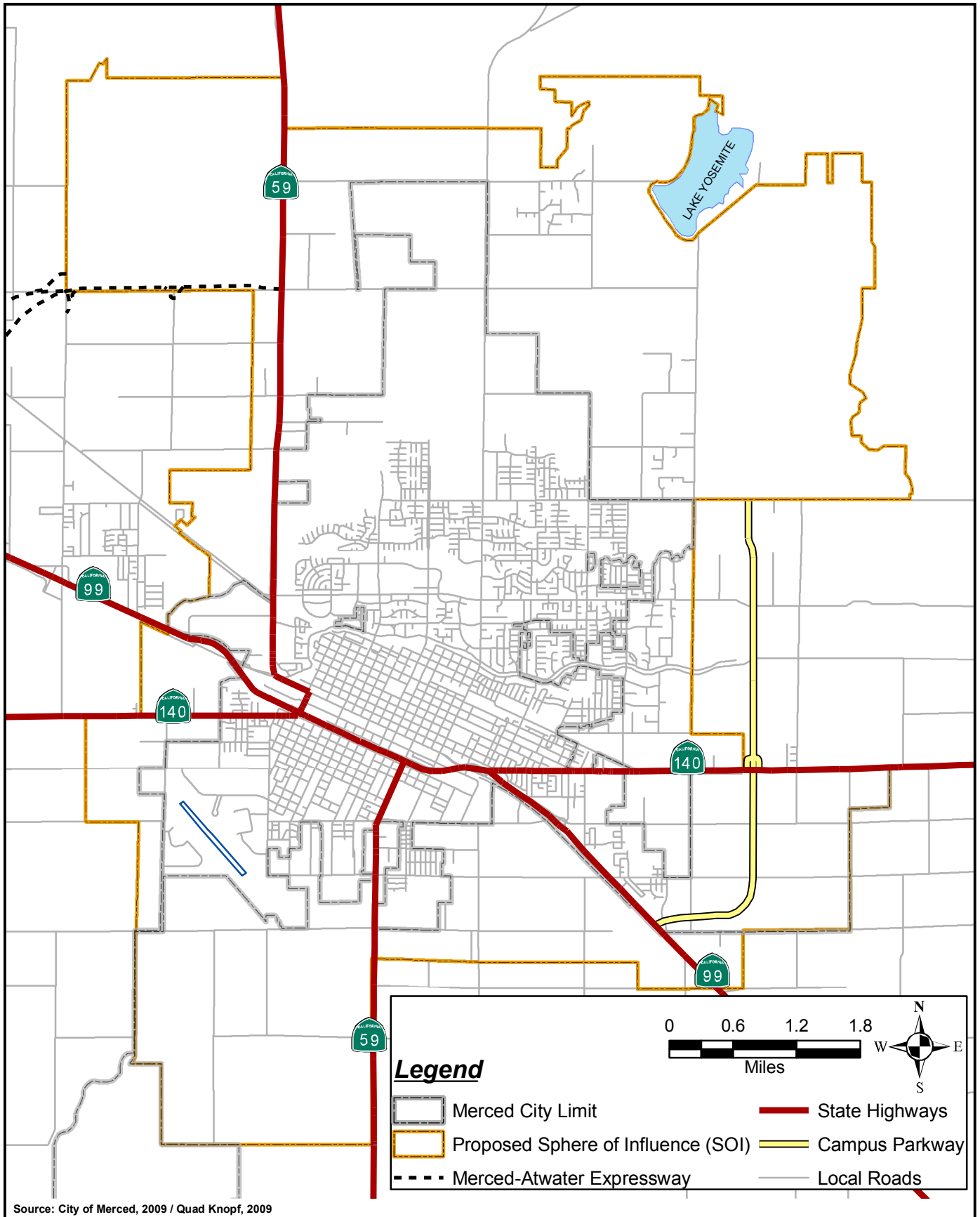
The circulation system concept for projected new growth areas to the north of Merced provides for one-mile grids formed by major arterial and arterial roadways. The north-south major arterials in the City's primary growth area would distribute traffic throughout the community. East-west arterials would carry traffic to a convenient north-south major arterial or expressway for ultimate distribution to the downtown, other more distant community destinations, or to Highway 99 (Figure 3.15-3). Major east-west roadways include Olive Avenue, Yosemite Avenue, Cardella Road, and Bellevue Road.

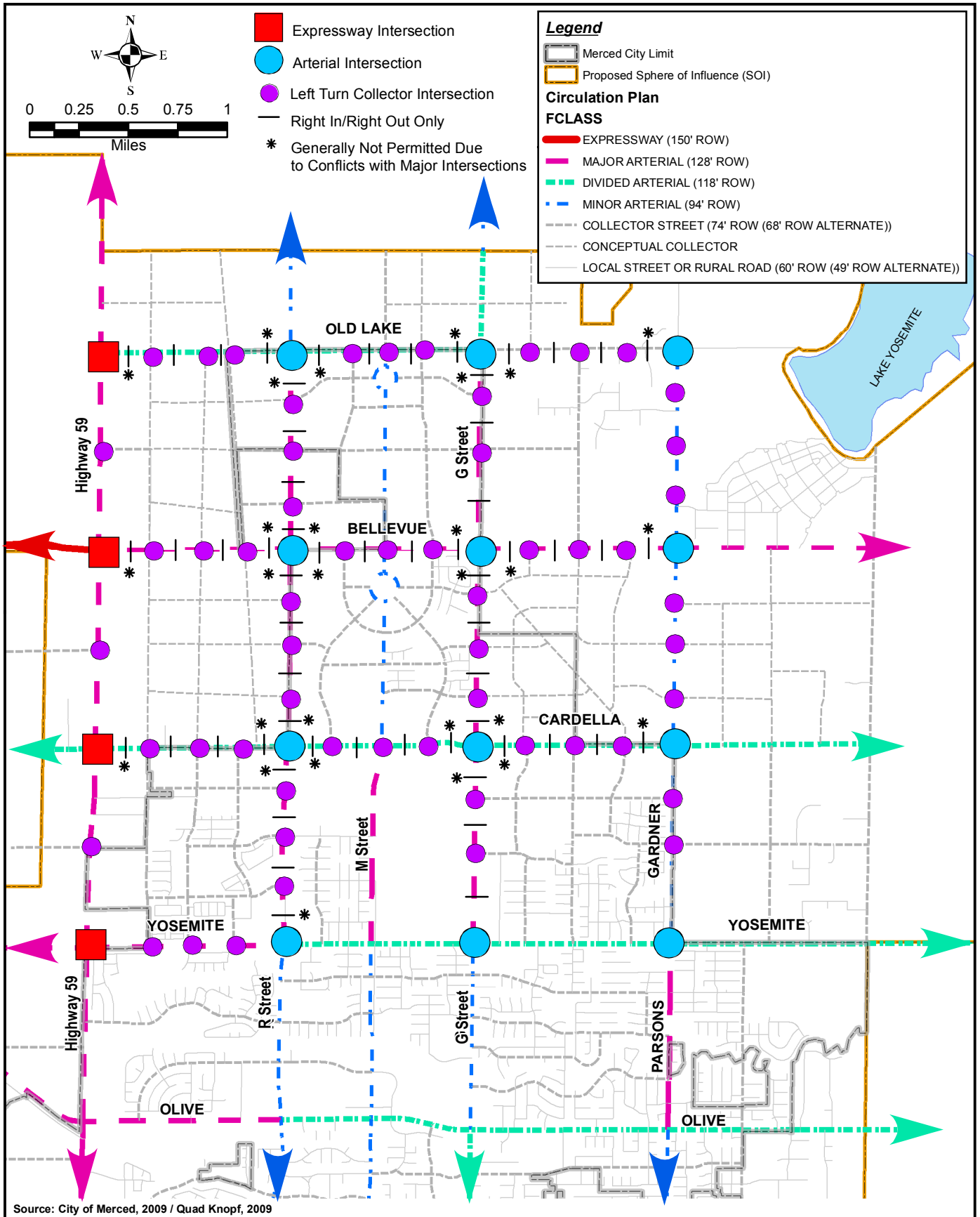
TRANSIT SYSTEM

The City of Merced is served by a local public bus system, inter-regional private bus companies, and private taxi-cabs, as well as rail and air passenger services. The public bus system, created in 1974, served the community as the Merced Transit System (MTS)/City Shuttle for more than two decades. Its primary goal over time remained to serve senior citizens, low-income people and the disabled, even as the system expanded. Originally created solely as a demand responsive Dial-A-Ride operation, the service extended as time passed to include a number of fixed routes within the City.

In 1996, this system merged with other transit systems within the County to form "The Bus"-Merced County Transit. The consolidated system includes the City Shuttle plus the former Merced County MARTS and the Los Banos system. "The Bus" operates on 16 fixed routes and







MERCED VISION 2030 GENERAL PLAN EIR
NORTH MERCED STREET GRID

Figure 3.15-3



also provides demand responsive service. Weekday and Saturday service is provided. The Bus also contracts with UC Merced to run a student shuttle service known as “Cat Tracks.”

The intent of the combined operations has been to retain as much as possible previous local service options to City transit riders, while reducing overall system costs and enhancing regional transit opportunities for all riders.

Transit routes within the City connect downtown Merced, adjacent neighborhoods, and major trip generators such as the Merced Civic Center, hospitals, shopping areas, and many local schools including Merced College (Figures 3.15-4a, 4b, 4c and 4d). Rural destinations throughout the County are also served. In addition, the service continues to provide Dial-A-Ride for seniors and disabled individuals.

Through MCAG, the City continues to contribute its representative portion of funds necessary for the operation of the expanded, regional system. These funds help to maintain the existing system as well as provide for new equipment such as communications gear, bus shelters, and replacement vehicles.

A public bus system is expected to remain the most cost-effective method of public transportation for the community in the foreseeable future. A key factor is the amount of assistance contributed by other levels of government to help operate and maintain the system.

Transitways

The City of Merced has maintained a strong north-south growth pattern for many years, consistent with its proposed expansion areas. This pattern has contributed to a relative clustering of major destinations in proximity to “M” Street (Figure 3.15-5). This M Street “core” has been formally designated a “Transitway” or “Transit Corridor.” This corridor is a logical location for centralized bus service to run along or closely parallel to “M” Street throughout the entire north-south length of the City.

In this location, public transit would be able to provide convenient access to nearly all major Merced destinations. A pattern of intersecting bus routes could tie the entire community into an efficient public transit system.

The pattern of major destinations in proximity to this central transit corridor has been continued through the City’s proposed North Merced growth area. As Bellevue Ranch is built-out, additional major commercial sites will be constructed along the M Street corridor.

Bellevue Road has also been designated as a Transit Corridor in the City’s Circulation Plan (Figure 3.15-1). The area near the intersection of M Street and Bellevue Road, the location of proposed future major commercial and office park sites, would also be the central transfer point between these two transit corridors.

Ultimately, Bellevue Road offers the opportunity for direct public transit access eastward to UC Merced. The opportunity should also be studied regionally for extending such a transitway westward to provide a tie-in to the prospective regional employment site at the Castle Airport.

PRIVATE TRANSPORTATION

The future of private transit operators (taxis, vanpools, etc.) is difficult to predict because of the volatile nature of the business in recent years. Future service levels of intercity transit will be influenced by changing market forces and state and federal government regulations.

Demand for service to and from the Merced area can be expected to increase. With increasing demands brought about by efforts to improve air quality and congestion, the private intercity operations in Merced County and the San Joaquin Valley could be expanded. It should be noted that if the private sector is unable to respond to this commuter demand, some of the demand could shift to the public sector.

SOCIAL SERVICE

The City of Merced partners with several agencies, public and private, to provide social service transportation. Demand response service is available for senior citizens and disabled citizens residing within the community through the Consolidated Transit System of Merced County. Special fare discounts are typically provided for seniors and disabled persons.

RAIL SERVICE

Passenger Service

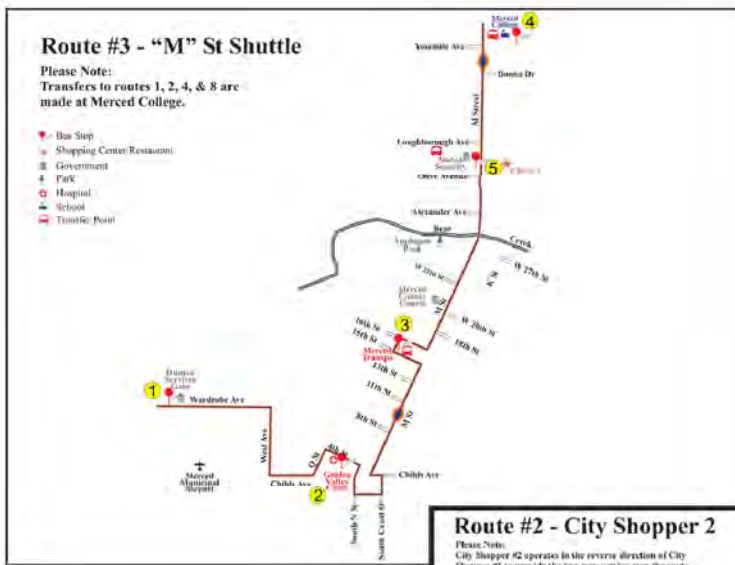
There are two railroad companies that operate through Merced County and the City of Merced. Both the Union Pacific Railroad (UPRR) and Burlington Northern/Santa Fe (BNSF) railroad provide freight service to Merced, while the BNSF provides Amtrak passenger service.

The UPRR rail line parallels 16th Street through much of the City. The BNSF line runs primarily along segments of Santa Fe Avenue (Figure 3.15-6). The Amtrak passenger station is located at 24th and K Streets.

The Amtrak San Joaquins have been serving Merced since 1974. These trains provide direct passenger service from Oakland and Sacramento to Bakersfield, with a bus feeder route running to southern California. Provision of direct rail service to Los Angeles remains both a local and State objective as a primary way for improving service and increasing ridership.

Much attention was focused in the past on possible rerouting of Amtrak onto the UPRR tracks. In anticipation of this possibility, local jurisdictions renovated the old Southern Pacific Rail Depot at 16th and N Streets, as part of an expanded Transpo Center complex completed in 1990.

Shifted State priorities make it unlikely that Amtrak will be rerouted in the foreseeable future. Nonetheless, the Transpo Center does serve as the center for all other land-based area



Note: Transit Routes Are Subject to Change

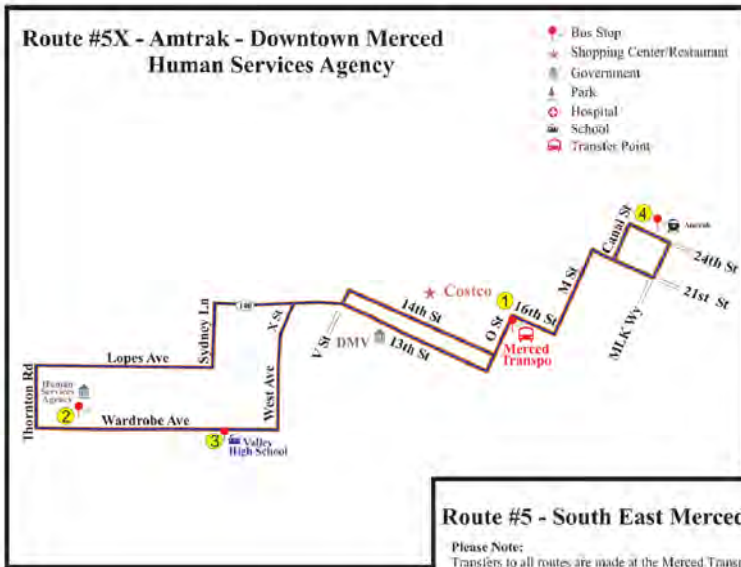
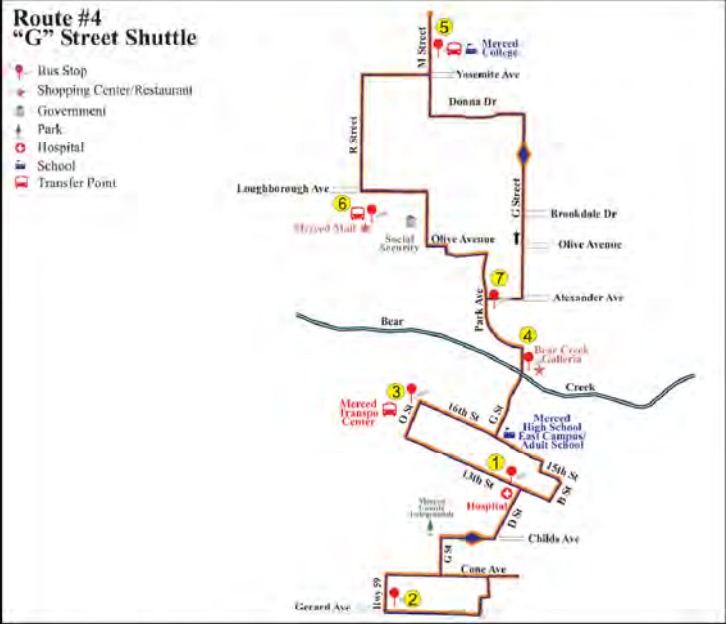


Source: City of Merced, 2009 / Quad Knopf, 2009

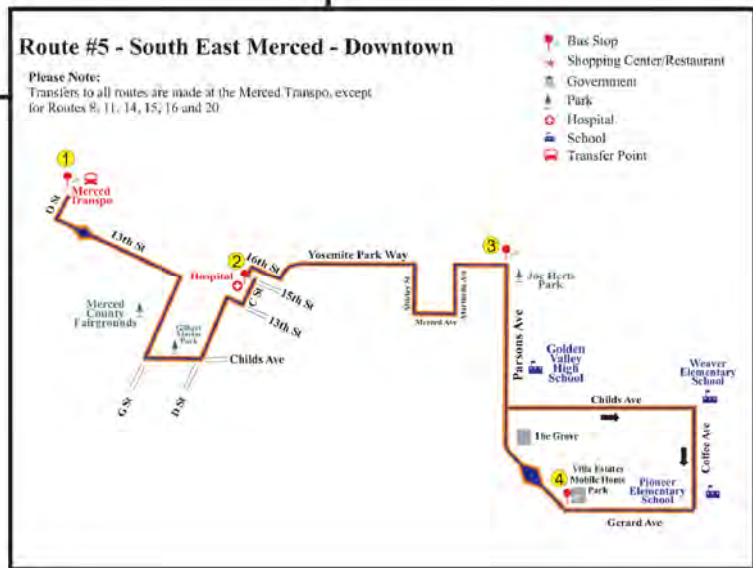


MERCED VISION 2030 GENERAL PLAN EIR BUS ROUTES

Figure 3.15-4a



*Note: Transit Routes
Are Subject to Change*



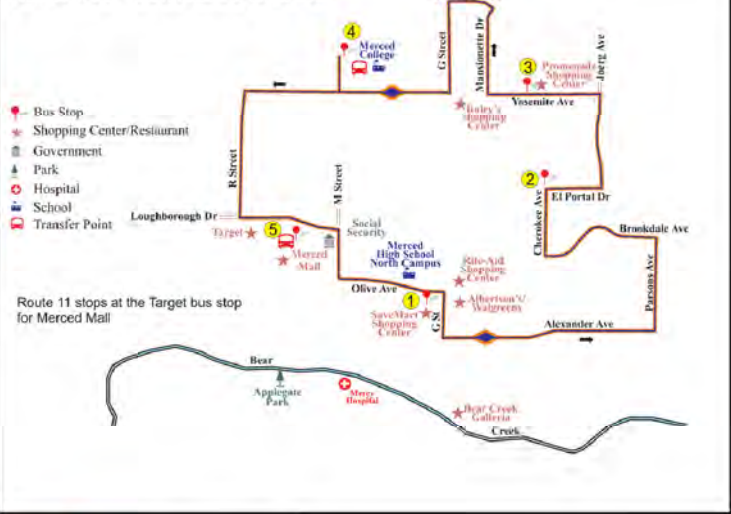
Source: City of Merced, 2009 / Quad Knopf, 2009



MERCED VISION 2030 GENERAL PLAN EIR BUS ROUTES

Figure 3.15-4b

Route #11 - Crosstown Shuttle



Route #12 - The R Street Shuttle



Note: Transit Routes Are Subject to Change

Route #15 - Sierra Gardens - Mall - WalMart



Source: City of Merced, 2009 / Quad Knopf, 2009



MERCED VISION 2030 GENERAL PLAN EIR BUS ROUTES

Figure 3.15-4c

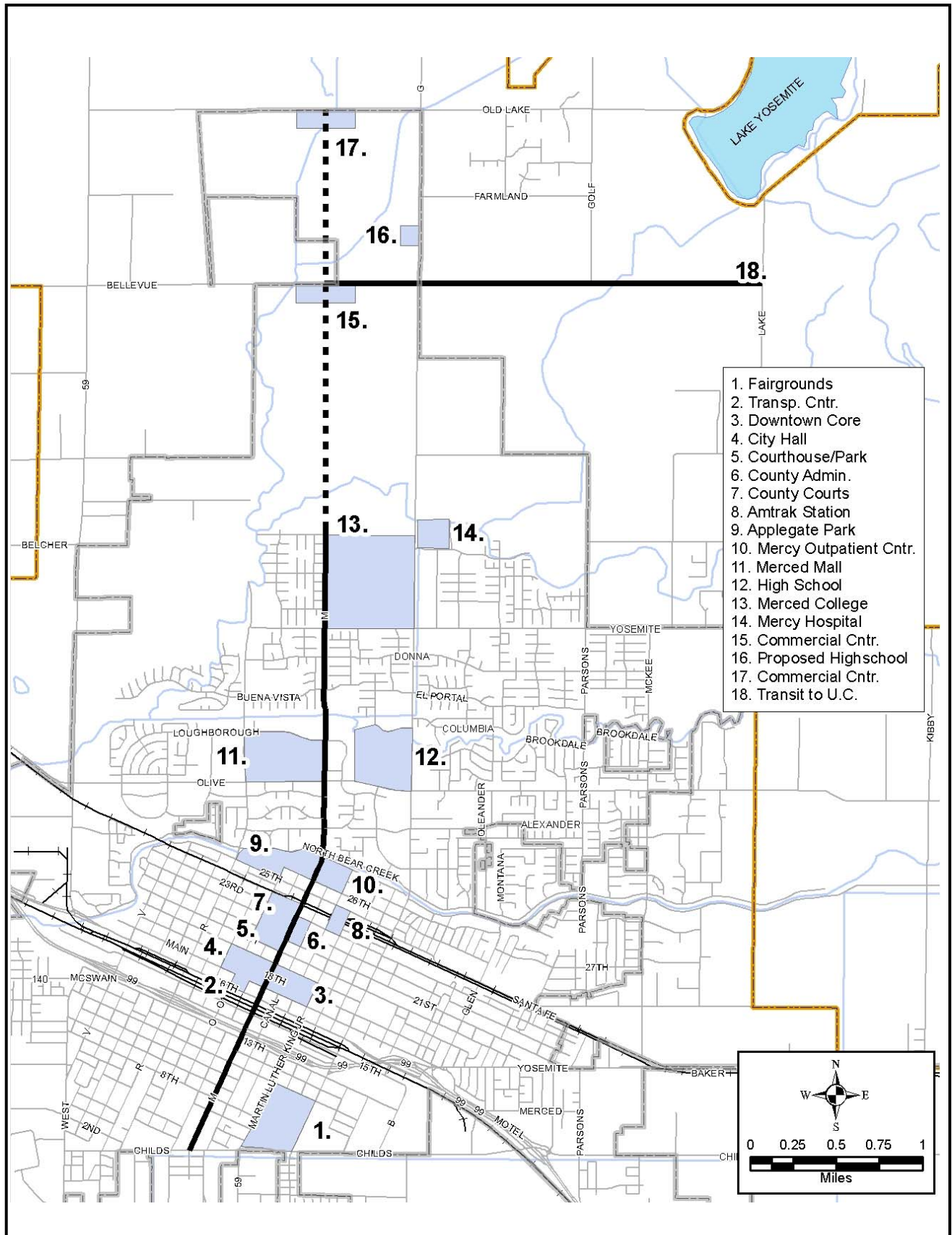
Route 22 Merced College to U.C. Merced

- 1 Bus Stop
- ★ Shopping Center/Restaurant
- Government
- Park
- + Hospital
- School
- Transfer Point



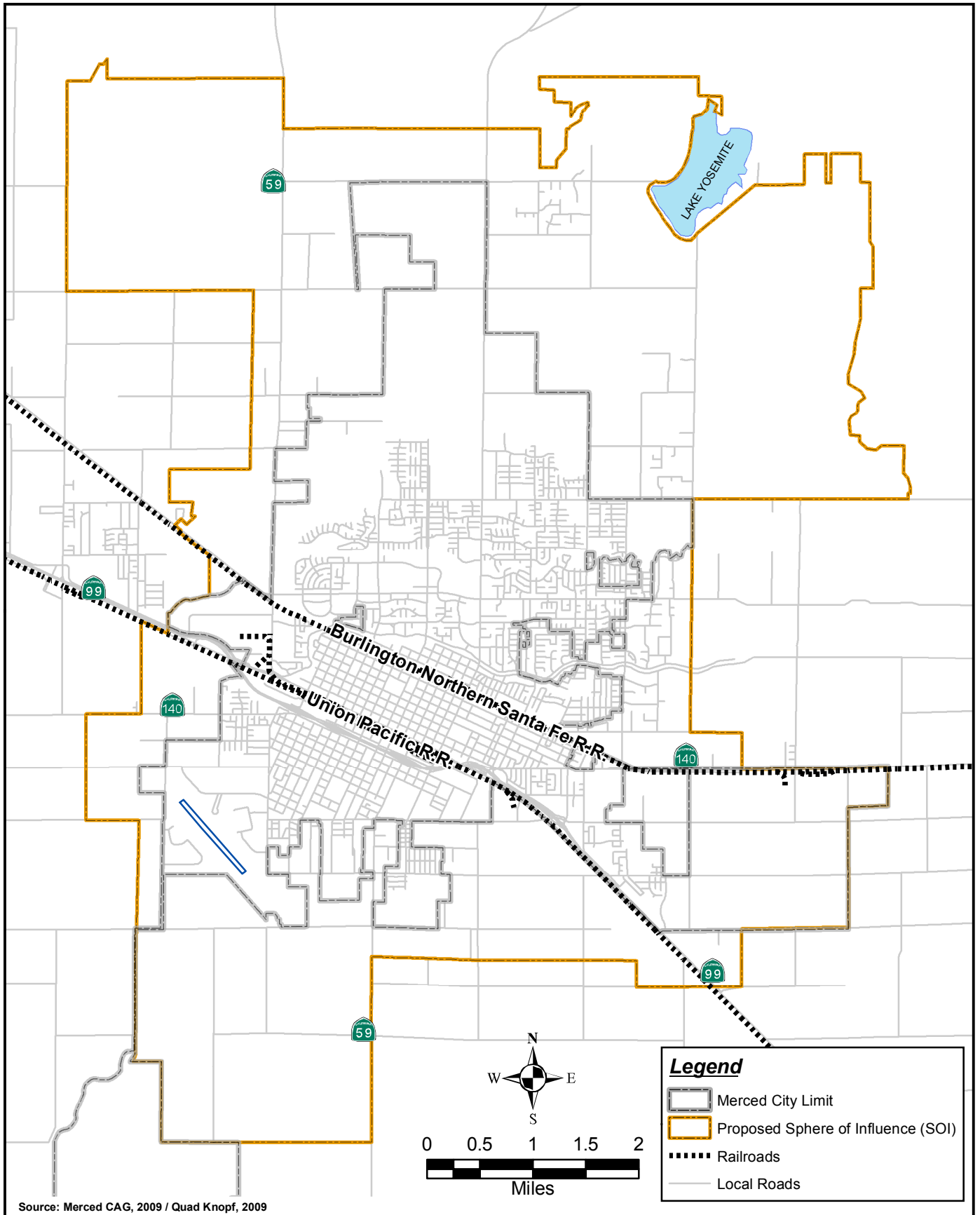
*Note: Transit Routes
Are Subject to Change*

Source: City of Merced, 2010 / Quad Knopf, 2010



**MERCED VISION 2030 GENERAL PLAN EIR
M STREET TRANSITWAY**

Figure 3.15-5



transportation, including private bus lines and taxi-cabs, as well as the central transfer point for public bus service.

High Speed Rail

An additional regional issue is proposed high speed rail service between San Diego and San Francisco, passing through the Central Valley. In 1996, the California Intercity High Speed Rail Commission selected a Highway 99 route rather than an Interstate 5 route due to the larger number of people and communities which could be served along Highway 99. The preferred route has been selected and would locate a station in Downtown Merced. Stops are anticipated in Bakersfield, Tulare, Fresno, and Merced before the trains continue over SR 152 into the Bay Area. A 2nd line to Sacramento will be added in future phases.

The project was approved by California voters on November 4, 2008 with the passage of Proposition 1A authorizing \$9.95 billion for the project. The California High-Speed Rail Authority (CHSRA) is currently tasked with completing final planning, design, and environmental efforts. Construction efforts are anticipated to begin as early as 2011.

BICYCLE/TRAIL SYSTEM

Bicycles

Bicycles are an important mode of transportation in the community. Merced has both a favorable climate and terrain to encourage the use of bicycles for both recreation and transportation functions. As bicycle use increases, adequate facilities should be provided to furnish direct routes of access between destinations while minimizing conflicts with automobiles.

Bicycle routes are categorized by the degree in which they separate bicycle movement from vehicular movement. There are two major types of bikeways: (1) off-street bikeways, and (2) on-street bikeways.

Based on the State Department of Transportation classification system, off-street bikeways should be Class I (Bike Paths or Bike Trails) whenever possible. Class I bike paths provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians, with cross flows by motorists minimized. In Merced, Class I bike paths generally take advantage of creekside locations and other non-street facilities, such as canals or railroad corridors. Although the off-street bikeways provide extensive recreational opportunities, another primary focus is on safe and efficient transportation linking major land uses and connecting with on-street bikeways at strategic locations.

On-street bikeways are intended to be Class II (Bike Lanes) whenever possible. Class II bike lanes provide a restricted right-of-way on the street for the exclusive or semi-exclusive use of bicycles. Through travel by motor vehicles or pedestrians is prohibited, but cross flows by pedestrians and motorists are permitted. The on-street bikeway system may use Class III (Bike Route) designations occasionally where Class II bike lanes are not feasible.

Class III bike routes provide a right-of-way generally designated by signs and shared with pedestrians or motorists. Class III bike routes, to be avoided if possible, are used only to connect or continue Class I or II facilities for short distances. On-street bikeways should utilize existing or proposed major streets that provide the quickest, shortest, and safest route to take for bicyclists.

Bicycle Circulation Plan

The City of Merced has a significant number of existing and proposed Class I off-road bicycle/pedestrian trail systems. Much of this system is located along existing waterways (Bear, Black Rascal, Cottonwood, and Fahrens Creeks). Details of the existing and planned system are presented in the Merced Bicycle Plan, adopted in 2008 (Figure 3.15-7).

As proposed, the current Class I system will ultimately be extended to form one complete loop sub-route along Bear/ Black Rascal Creeks, between McKee Road and Highway 59. The system will also be extended to complete a larger loop sub-route along Fahrens Creek, to Lake Yosemite and down Lake Road to Black Rascal Creek. Ultimately, this could allow the system to be extended to provide regional bicycle access to the UC campus. Class I bikeways could also extend along power line easements and the old Yosemite Valley Railroad corridor that criss-cross the northern growth area.

The Merced Bicycle Plan, adopted in 2008, also identifies regional bicycle connections to provide bicycle mobility though the region. Area bicycle planning has, to a major degree, focused on development of an off-street trail system along the region's existing creeks. Because these creeks are located in central and north Merced, the off-street system has developed there. The Merced Bicycle Plan identifies a number of Class II and III facilities to be constructed as new development occurs throughout the City.

PEDESTRIAN CIRCULATION

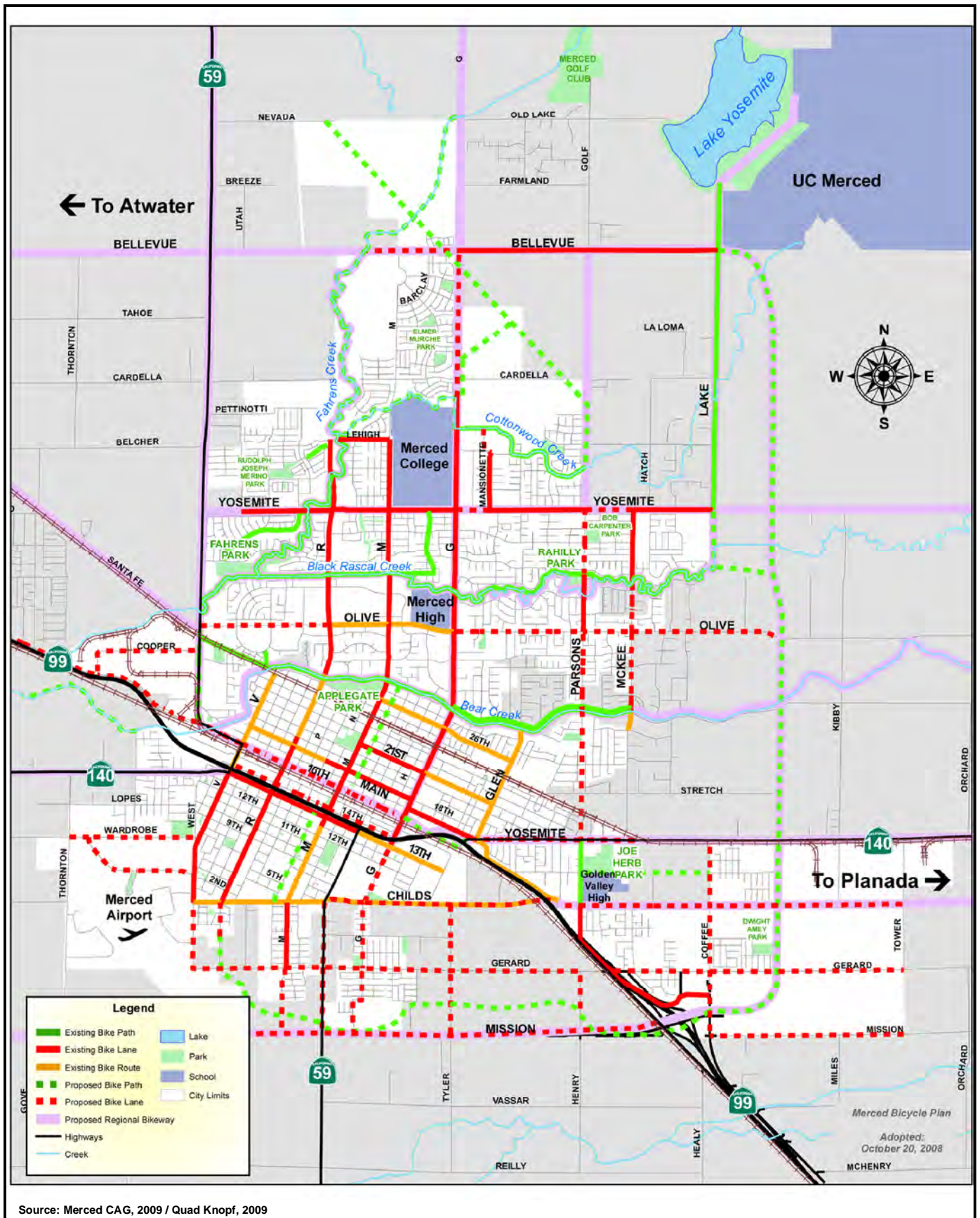
Pedestrian-ways should provide safe and convenient movement to major pedestrian destinations. The needs of school children and the problems of the disabled are of special importance. Care must be taken where development is phased or non-contiguous to provide adequate and safe pedestrian facilities at all times.

Both sidewalks and separate paths can be provided for pedestrian movement. As with bicycles, separate public easements or rights-of-way provide unique opportunities for pedestrian circulation. City street design standards require that sidewalks be installed on all new roadways and the City has made significant efforts over the years to add sidewalks to older roadways (previously developed in the County) that lack sidewalks.

AIR SERVICE

Merced Regional Airport

Merced Regional Airport is a publicly owned, public use facility. It is a basic transport airport, providing commercial air service, general aviation, and freight air cargo service. Runway length



Source: Merced CAG, 2009 / Quad Knopf, 2009



MERCED VISION 2030 GENERAL PLAN EIR BICYCLE ROUTES

Figure 3.15-7

is approximately 5,900 feet, capable of handling jet aircraft. Available hangar space in 2010 was approximately 100,000 square feet.

In 2009, Great Lakes Aviation (in conjunction with United Airlines) provided two daily flights to Ontario airport in Southern California. In 2010, the Ontario service was discontinued and three daily flights to Las Vegas, Nevada were added. Connections are available from Las Vegas to other areas. The airport is the only “regionally significant” airport in the County according to criteria used by the Civil Aeronautics Board.

The Great Lakes Aviation service as well as its predecessors is subsidized by the federal government under the Essential Air Service (EAS) Program. EAS was designed to provide smaller communities access to the national air transportation system by subsidizing airline service should it be necessary.

EAS was established after air service was deregulated in the late 1970’s. It was originally approved through 1988. The subsidy would expire on August 31, 2010 and at this time it is not known whether EAS would be renewed. If not, Merced would need to obtain alternative funding or seek other solutions in order to maintain this air service. The City’s current intent is to keep its regional airport operating.

Castle Airport

The closure of Castle Air Force Base (CAFB) was completed in 1995. The closure impacted the surrounding economy, including reductions in population and employment in Merced. The County of Merced now operates the renamed Castle Airport.

In recent years, Castle Airport has served businesses specializing in training foreign pilots. Activity related to these schools makes up the majority of the air traffic at Castle. In early 2007, the control tower was reopened to handle increased training traffic.

EXISTING TRAFFIC VOLUME

The Merced County Association of Governments employs the *Florida Department of Transportation Quality/Level of Service Handbook*, 2002, in defining level of service (LOS) as a qualitative measure describing operational characteristics within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. [Table 3.15-1](#) presents daily roadway segment level of service thresholds by roadway type and LOS characteristics for unsignalized and signalized intersections. Based on the Transportation Research Board *Highway Capacity Manual*, 2000, (HCM), Level of Service Characteristics for Unsignalized Intersections and Level of Service Characteristics for Signalized Intersections are presented in [Tables 3.15-2 and 3.15-3](#), respectively.

Transportation Research Board *Highway Capacity Manual*, 2000, (HCM), are presented in [Tables 3.15-2 and 3.15-3](#), respectively.

Table 3.15-1
Daily Roadway Segment Level of Service Thresholds by Roadway Type

Type of Roadway	LOS A Threshold	LOS B Threshold	LOS C Threshold	LOS D Threshold	LOS E Threshold
4 Lane Freeway	25,900	42,600	57,800	68,400	76,000
6 Lane Freeway	40,000	65,800	89,200	105,600	117,400
8 Lane Freeway	54,000	89,000	120,600	142,800	158,800
10 Lane Freeway	68,000	112,000	152,200	180,200	200,200
2 Lane Expressway	-	-	16,800	23,200	24,400
4 Lane Expressway	-	3,000	27,800	36,000	37,800
6 Lane Expressway	-	5,900	38,900	48,900	51,300
8 Lane Expressway	-	9,600	60,600	73,500	77,100
2 Lane Highway	2,300	7,600	14,200	20,000	27,400
4 Lane Highway	20,500	33,200	48,000	62,200	70,600
2 Lane County Road	-	-	7,700	15,000	16,100
4 Lane County Road	-	-	18,000	32,200	34,000
2 Lane Arterial	-	-	11,600	16,000	16,800
4 Lane Arterial	-	4,100	26,800	33,700	35,400
6 Lane Arterial	-	6,600	41,800	50,700	53,200
2 Lane Collector	-	-	4,800	10,300	13,200
4 Lane Collector	-	-	11,300	22,200	26,400

Source: *City of Merced, Fehr & Peers, Florida Department of Transportation Quality/Level of Service Handbook, 2002.*

Table 3.15-2
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Little or no delay.	0-10
B	Short delays.	>10-15
C	Average delays.	>15-25
D	Long delays.	>25-35
E	Very long delays.	>35-50
F	Extremely long delays.	>50

Reference: *Highway Capacity Manual*, Transportation Research Board

Table 3.15-3
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Extremely favorable progression. Most vehicles arrive during green phase. Many vehicles do not stop.	≤10
B	Good progression.	>10-20
C	Fair progression. Significant number of vehicles stopped. Some queues do not clear.	>20-35
D	Noticeable congestion. Many vehicles stop. Individual cycle failures are noticeable. Queues often do not clear.	>35-55

Level of Service	Description	Average Vehicle Delay (seconds)
E	Poor progression. Individual cycle failures are frequent. Queues frequently do not clear.	>55-80
F	Poor progression. Oversaturation. Many individual cycle failures and queues not cleared.	>80

Reference: *Highway Capacity Manual*, Transportation Research Board

Traffic volumes and LOS on key roadway segments are shown in [Table 3.15-4](#) for existing, no project and General Plan Buildout conditions.

**Table 3.15-4
Merced SUDP/SOI Arterial Street System
Traffic Volume & Level of Service – Existing, No Project, and 2030**

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
NORTH/SOUTH ARTERIALS:									
Thornton Avenue									
Mission to SR 140	2	3,800	C+	4	18,490	C+	4	33,140	D
Belcher to Bellevue	2	--	C+	2	5,750	C+	2	14,190	D
North SR 59									
16th to Olive	2	21,740	F	4	42,100	F	6	44,040	D
Olive to Yosemite	2	19,300	F	4	26,060	C+	6	48,030	D
Yosemite to Cardella	2	8,100	C+	2	10,440	C+	4	30,030	D
Cardella to Bellevue	2	6,000	C+	2	10,450	C+	4	33,690	D
Bellevue to Old Lake	2	5,090	C+	2	12,920	D	6	40,790	C
Old Lake to Castle Farms	2	5,090	C+	2	15,980	D	6	44,990	D
Castle Farms to Oakdale Road	2	5,090	C+	2	15,980	D	6	38,520	C
“R” Street									
Mission to Childs	2	500	C+	2	1,220	C+	2	10,850	E
Childs to SR 99	2	10,750	E	2	12,410	E	2	17,260	F
SR 99 to Bear Creek	4	19,100	C+	4	24,140	C+	4	25,800	C+
Bear Creek to Olive	4	23,370	C+	4	29,990	D	4	34,380	E
Olive to Yosemite	4	18,380	C+	4	40,610	F	4	43,480	F
Yosemite to Cardella	n/a	n/a	n/a	4	32,910	D	6	34,900	C+
Cardella to Bellevue	n/a	n/a	n/a	4	27,940	D	6	35,290	C+
Bellevue to Old Lake	n/a	n/a	n/a	4	26,630	C+	6	34,740	C+
Old Lake to Area of Influence boundary	n/a	n/a	n/a	2	600	C+	2	9,990	C+
“M” Street									
Mission to Childs	2	4,500	C+	2	7,130	D	2	12,890	E
Childs to SR 99	2	8,600	D	2	11,440	E	2	15,190	F
SR 99 to Bear Creek	4	20,440	C+	4	25,580	C+	4	25,560	C+
Bear Creek to Olive	4	21,140	C+	4	28,080	D	4	30,250	D
Olive to Yosemite	4	20,710	C+	4	38,490	F	4	41,350	F

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
Yosemite to Cardella	4	9,600	C+	4	31,640	D	4	35,710	E
Cardella to Bellevue	n/a	n/a	n/a	2	11,660	E	4	12,920	C+
Bellevue to Old Lake	n/a	n/a	n/a	2	10,020	D	4	11,910	C+
Martin Luther King Jr. Way/South SR 59									
Roduner to Mission	2	8,900	C+	4	24,850	C+	4	30,160	D
Mission to Gerard	2	9,800	C+	4	24,770	C+	4	28,970	D
Gerard to Childs	2	15,430	D	4	32,640	D	4	38,100	F
Childs to SR 99	4	16,300	C+	4	22,180	C+	4	29,260	D
SR 99 to 16th	4	17,200	C+	4	19,360	C+	4	24,740	C+
“G” Street									
Mission to Childs	2	6,500	D	2	8,400	D	2	12,110	E
Childs to SR 99	2	21,300	F	2	26,560	F	2	33,890	F
SR 99 to Bear Creek	4	22,060	C+	4	27,840	D	4	32,520	D
Bear Creek to Olive	4	25,950	C+	4	30,860	D	4	33,990	E
Olive to Yosemite	4	22,182	C+	4	28,840	D	4	32,330	D
Yosemite to Cardella	2	6,650	C+	4	23,310	C+	4	26,680	C+
Cardella to Bellevue	2	6,350	C+	4	26,690	C+	4	30,380	D
Bellevue to Old Lake	2	3,020	C+	4	24,090	C+	6	36,750	C+
Old Lake to Snelling	2	3,020	C+	2	14,130	D	4	26,020	C
Parsons Avenue/Gardner Road									
Campus Parkway/Coffee to Gerard	2	620	C+	2	1,020	C+	2	14,390	F
Gerard to Childs	2	6,240	D	2	7,450	D	2	16,760	F
Childs to SR 140	2	9,600	D	4	31,260	D	4	32,420	D
SR 140 to Bear Creek (part of this segment is incomplete)	2	11,300	E	4	32,450	D	4	35,320	E
Bear Creek to Olive	2	4,330	C+	4	26,730	C+	4	29,380	D
Olive to Yosemite	2	5,600	D	4	25,750	C+	6	34,590	C+
Yosemite to Cardella	2	1,580	C+	4	19,070	C+	4	33,410	D
Cardella to Bellevue	n/a	n/a	n/a	4	6,410	C+	4	30,580	D
Bellevue to Old Lake	n/a	n/a	n/a	2	3,180	C+	4	17,350	C+
Old Lake to Golf Club	n/a	n/a	n/a	n/a	n/a	n/a	2	9,670	D
McKee Road (Collector)									
Hwy 140/Santa Fe to Bear Creek	2	5,700	D	2	9,580	D	2	13,840	F
Bear Creek to Olive	2	8,250	D	2	13,000	E	2	16,130	F
Olive to Yosemite	2	5,250	D	2	10,590	E	2	13,200	E
Campus Parkway									
SR 99/Mission to Childs	n/a	n/a	n/a	4	20,840	C+	6	46,200	D
Childs to SR 140	n/a	n/a	n/a	4	25,170	C+	4	35,110	D
SR 140 to Olive	n/a	n/a	n/a	4	28,910	D	4	32,060	D
Olive to Yosemite	n/a	n/a	n/a	4	28,400	D	4	33,950	D

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
Yosemite to Cardella	n/a	n/a	n/a	4	32,080	D	4	35,720	D
Cardella to Bellevue	n/a	n/a	n/a	4	30,850	D	4	34,350	D
Tyler Road									
Childs to Mission	n/a	n/a	n/a	2	1,600	C+	2	9,830	D
EAST/WEST ARTERIALS									
Old Lake Road									
SR 59 to "R" St.	n/a	n/a	n/a	2	9,320	C+	4	20,840	C+
"R" St. to "M" St.	n/a	n/a	n/a	2	6,280	C+	4	17,890	C
"M" St. to "G" St.	n/a	n/a	n/a	2	7,220	C+	4	17,040	C
"G" St. to Parsons/ Gardner	2	1,700	C+	2	1,700	C+	2	8,630	D
Parsons/Gardner to Lake	2	340	C+	2	340	C+	2	3,830	C+
Bellevue Road									
Atwater/Merced Expy to Thornton	2	3,800	C+				8	55,380	C+
Thornton to SR 59	2	3,800	C+				8	74,340	D
SR 59 to "R" St.	2	5,630	D	6	29,980	C+	6	58,400	F
"R" St. to "M" St.	2	5,460	D	6	32,350	C+	6	55,310	F
"M" St. to "G" St.	2	5,460	D	6	33,760	C+	6	57,470	F
"G" St. to Parsons/Gardner	2	6,620	D	6	39,360	C+	6	52,950	E
Parsons/Gardner to Campus Pkwy	2	3,700	C+	6	27,610	C+	6	50,120	D
Cardella Road									
SR 59 to "R" St.	n/a	n/a	n/a	4	23,360	C+	4	31,840	D
"R" St. to "M" St.	2	5,000	C+	4	28,710	D	6	35,340	C+
"M" St. to "G" St.	2	6,800	C+	4	25,370	C+	4	33,520	D
"G" St. to Parsons/Gardner	n/a	n/a	n/a	4	26,950	D	4	33,430	D
Parsons/Gardner to Campus Pkwy	n/a	n/a	n/a	4	28,590	D	4	32,590	D
Yosemite Avenue									
SR 59 to "R" St.	4	12,160	C+	4	11,670	C+	4	26,130	C+
"R" St. to "M" St.	4	15,940	C+	4	27,170	D	4	38,430	F
"M" St. to "G" St.	4	19,720	C+	4	28,600	D	4	38,770	F
"G" St. to Parsons/ Gardner	2	15,100	D	4	24,710	C+	4	38,990	F
Parsons/Gardner to Campus Pkwy	2	7,550	D	4	20,280	C+	4	29,600	D

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
Olive Avenue									
West of Hwy 59 (Santa Fe Ave)	4	22,800	C+	4	27,620	D	6	33,880	C
SR 59 to "R" St.	6	32,250	C+	6	40,650	C+	6	45,830	D
"R" St. to "M" St.	6	30,560	C+	6	36,780	C+	6	41,060	C+
"M" St. to "G" St.	6	28,210	C+	6	38,100	C+	6	45,030	D
"G" St. to Parsons/Gardner	4	18,500	C+	4	29,880	D	4	34,970	E
Parsons/Gardner to Lake	2	7,460	C+	2	14,110	D	2	16,770	E
North Bear Creek Drive									
SR 59 to "R" St.	2	4,490	C+	2	10,200	D	2	14,620	F
"R" St. to "M" St.	2	6,480	D	2	10,710	E	2	14,530	F
"M" St. to "G" St.	2	8,360	D	2	11,280	E	2	14,840	F
"G" St. to Parsons/Gardner	2	8,780	D	2	12,960	E	2	15,510	F
Parsons/Gardner to Lake	2	2,400	C+	2	3,990	C+	2	6,400	D
SR 140									
Tina to Thornton	2	10,900	C+	2	13,800	C+	2	19,240	D
Thornton to "V" St.	2	10,200	C+	2	12,920	C+	4	18,020	C+
"G" St. to Parsons	4	10,400	C+	4	19,120	C+	4	34,720	E
Parsons to Campus Pkwy	2	7,550	C+	2	9,560	C+	2	13,330	D
16th Street									
SR 99 to "V" St.	4	20,210	C+	4	25,830	C+	4	28,590	D
"V" St. to "R" St.	4	23,200	C+	4	27,430	D	4	28,830	D
"R" St. to "M" St.	4	19,140	C+	4	19,760	C+	4	24,340	C+
"M" St. to "G" St.	4	11,950	C+	4	19,250	C+	4	26,250	C+
"G" St. to SR 99	4	8,630	C+	4	20,420	C+	4	22,840	C+
SR 99									
Atwater/Merced Expy to Franklin	4	66,000	D	4	71,050	E	6	96,210	D
Franklin to 16th	4	66,000	D	4	71,690	E	6	97,920	D
16th to "V" St.	4	53,000	C+	4	64,190	D	6	87,770	C+
"V" St. to "R" St.	4	53,000	C+	4	63,360	D	6	93,930	D
"R" St. to Martin Luther King	4	42,500	C+	4	61,490	D	6	66,820	C+
Martin Luther King to "G" St.	4	55,000	C+	4	65,440	D	6	83,050	C+
"G" St. to SR 140	4	55,000	C+	4	63,560	D	6	89,060	C+
SR 140 to Childs	4	42,500	C+	4	65,490	D	6	76,980	C+
Childs to Gerard	4	42,500	C+	4	60,890	D	6	66,820	C+
Gerard to Mission	4	66,000	D	4	53,890	D	6	97,920	D
Mission to Mariposa	4	55,000	C+	4	58,080	D	6	84,680	C+

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
14th Street									
“V” St. to “R” St.	3	6,550	C+	3	9,110	C+	3	10,600	C+
“R” St. to “M” St.	2	4,900	D	2	10,530	C+	2	14,490	D
“M” St. to Martin Luther King	2	700	C+	2	9,570	C+	2	15,220	D
13th Street									
“V” St. to “R” St.	3	6,680	C+	3	11,850	C+	3	11,930	C+
“R” St. to “M” St.	2	4,070	C+	2	8,870	C+	2	9,360	C+
“M” St. to Martin Luther King	2	6,900	D	2	13,460	D	2	15,400	D
Martin Luther King to “G” St.	2	7,400	D	2	7,940	D	2	9,100	D
“G” St. to “B” St.	2	5,000	D	2	8,790	D	2	13,150	E
Childs Avenue									
West Ave to SR 59	2	6,260	D	2	7,700	D	2	10,090	D
SR 59 to Tyler	2	4,700	C+	4	13,750	C+	4	27,520	D
Tyler to SR 99	2	6,610	C+	4	29,730	D	4	46,600	F
SR 99 to Parsons/Gardner	2	11,770	E	4	32,660	D	4	41,870	F
Parsons/Gardner to Coffee	2	6,600	D	4	8,640	C+	4	24,590	C+
Coffee to Campus Pkwy	2	4,420	D	4	11,530	C+	4	32,120	D
Campus Pkwy to Tower	2	3,300	D	2	6,370	C+	4	19,390	C+
Gerard Avenue (Collector)									
M to SR 59	2	1,400	C+	2	2,750	C+	2	12,580	E
SR 59 to Tyler	2	1,300	C+	2	4,200	C+	2	8,810	D
Tyler to Henry	2	850	C+	2	2,100	C+	2	4,600	C+
Parsons/Gardner to Coffee	2	2,720	C+	2	13,430	F	2	18,650	F
Coffee to Campus Pkwy	2	2,480	C+	2	6,230	C+	2	35,230	F
Campus Pkwy to Tower	2	1,000	C+	2	3,480	C+	2	7,640	D
Dickenson Ferry/Mission Avenue									
Gove to Thornton	2	1,900	C+	2	6,340	C+	2	13,200	D
Thornton to West Ave	2	1,900	C+	4	17,340	C+	4	29,980	D
West Ave to SR 59	2	1,900	C+	4	17,770	C+	6	35,950	C+
SR 59 to Tyler	2	1,800	C+	4	16,150	C+	6	34,870	C+
Tyler to Henry	2	1,250	C+	4	14,350	C+	6	33,800	C+
Henry to SR 99	4	2,020	C+	4	15,630	C+	6	63,350	F
SR 99 to Coffee (Future Campus Parkway)	2	890	C+	4	20,840	C+	6	46,200	D
Coffee to Tower	2	600	C+	2	640	C+	4	1,890	C+

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾	Planned Number of Lanes ⁽³⁾	Traffic Volume ⁽¹⁾	LOS ⁽²⁾
<p>NOTES: (1) Traffic Volume is measured in ADT's (Average Daily Trips). (2) "C+" indicates Level-of-Service (LOS) "C+" or better, including LOS A and B. (3) The number of lanes shown is the number of lanes planned in the Circulation Element; additional travel lanes, or provision of additional turn lanes at intersections may be needed to provide acceptable roadway operations with the planned level of development.</p>									

EXISTING ROADWAY OPERATIONS DEFICIENCIES

Existing Conditions Road Segment Analyses

The results of the existing-conditions road segment analyses are summarized above in Table 3.15-4. As indicated in the table, the following road segments currently operate at substandard levels of service (LOS shown in bold type):

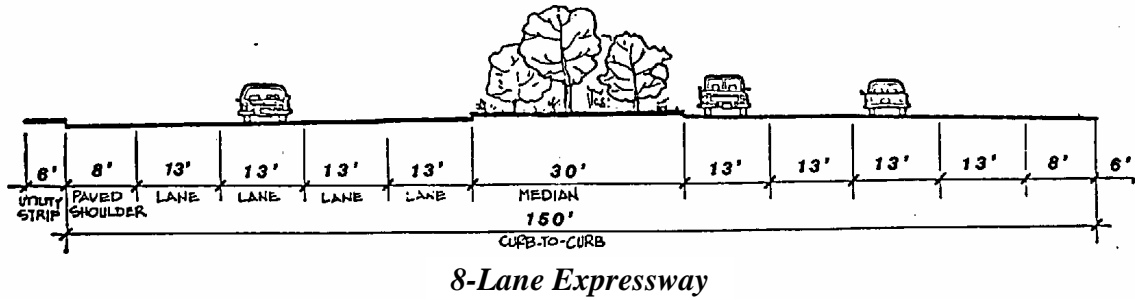
- North SR 59 - 16th to Olive
- North SR 59 – Olive to Yosemite
- "R" Street - Childs to SR 99
- "G" Street - Childs to SR 99
- Parsons Avenue/Gardner Road - SR 140 to Bear Creek (This roadway is incomplete with gaps remaining to be constructed)
- Childs Avenue - SR 99 to Parsons

The Land Use and Circulation Map designates roadways as state highways (including freeways), expressways, major arterials, divided arterials, minor arterials, transitways or collectors. Streets not designated on the map would be considered minor collectors or local roads. The various City street cross sections are illustrated in [Figure 3.15-8 through 3.15-13](#).

The proposed Circulation Map generally maintains the existing grid layout of roadways with alternating arterials and collectors at quarter-mile and half-mile spacing.

Table 3.15-4 presents the planned number of lanes, and the existing number of lanes for the City of Merced arterial street system. It should be noted that in some cases where the existing number of lanes equals the planned number of lanes, or the planned number of lanes to be added results in Level of Service E or F at General Plan buildout, physical constraints exist that preclude road widening to achieve Level of Service D or better in accordance with General Plan policy. Although additional travel lanes may not be possible along these corridors, additional improvements such as constructing sidewalks, curb and gutter, or bicycle facilities may be possible.

**Figure 3.15-8
EXPRESSWAY CROSS-SECTION**



**Figure 3.15-9
MAJOR ARTERIAL/ARTERIAL CROSS-SECTIONS**

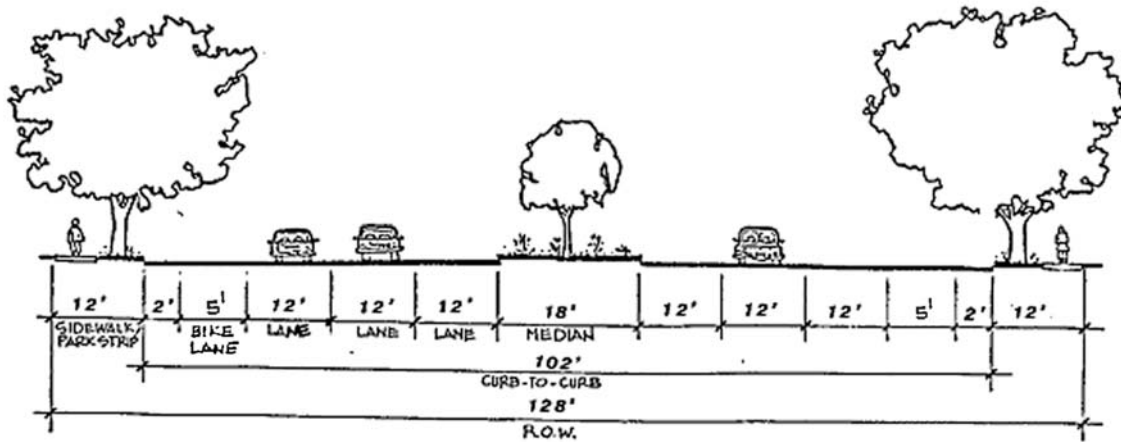
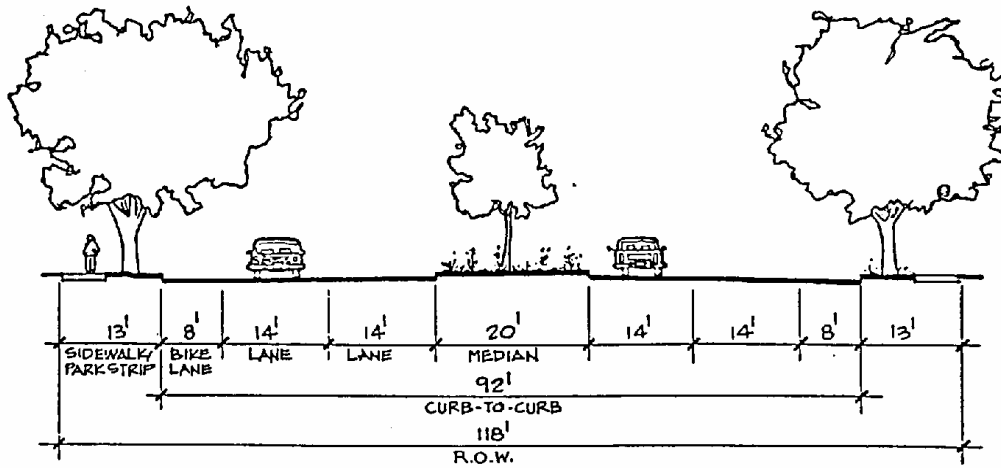
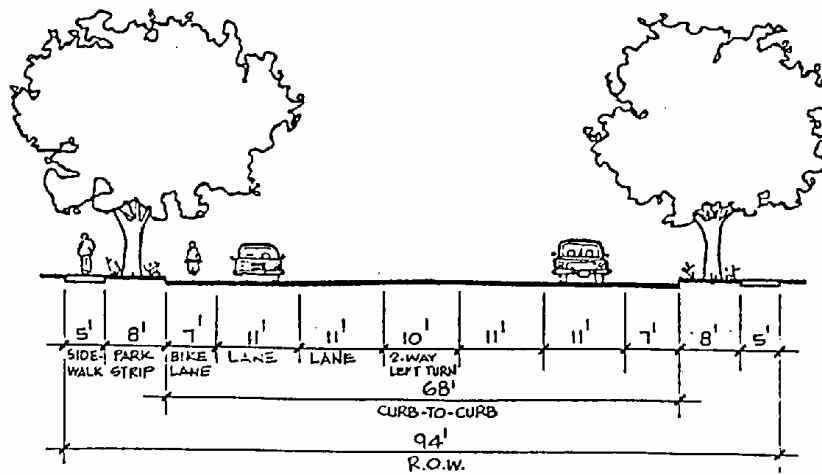


Figure 3.15-10
DIVIDED/MINOR ARTERIAL CROSS-SECTIONS



Divided Arterial



Minor Arterial

Figure 3.15-11
TRANSITWAY CROSS-SECTION
(“TRANSIT-ONLY PORTIONS”)

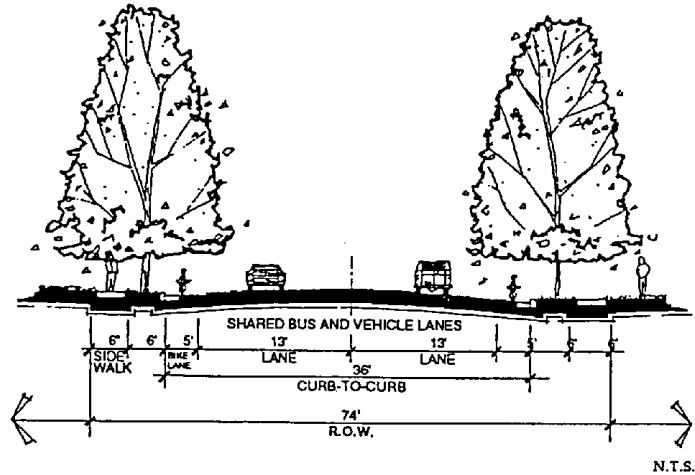
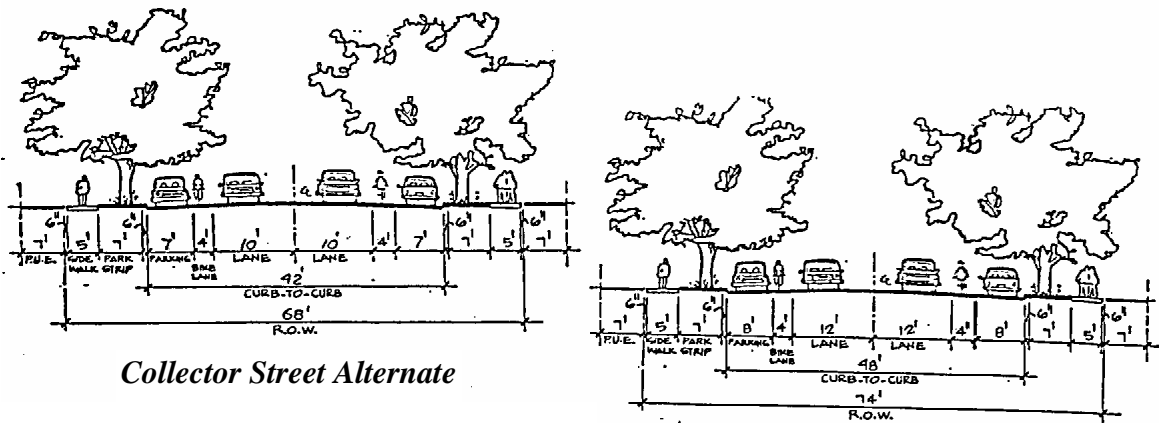


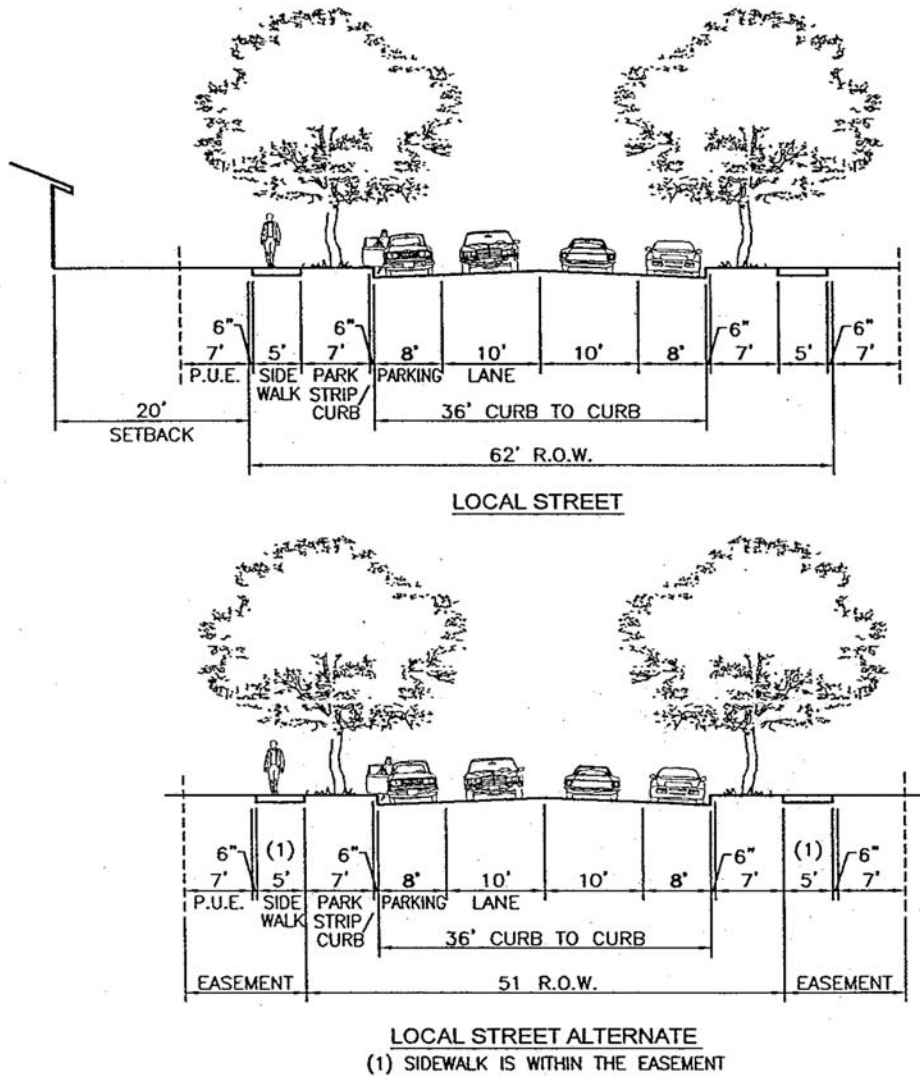
Figure 3.15-12
COLLECTOR STREET CROSS-SECTIONS



NOTES FOR ALTERNATE COLLECTOR:

- 1) 68 feet of right-of-way may be permitted where supported by a traffic analysis to assure that the narrower street would not be overloaded. Analysis would include trip generation and distribution based on existing and future land use and circulation system. Additional width may be necessary at intersection where analysis shows need for turn lane(s).
- 2) Fronting lots would be permitted on collectors where a traffic analysis shows daily traffic volumes will not exceed 1,500 vehicles under ultimate conditions.
- 3) On-street parking may be deleted if adequate, convenient off-street parking is provided in a subdivision design.
- 4) A subdivision design with deletion of on-street bike lanes may be permitted if adequate, convenient Class I bikepath is available.

**Figure 3.15-13
LOCAL STREET CROSS-SECTIONS**



NOTES:

1. THE LOCAL STREET ALTERNATE PLACES THE SIDEWALK IN AN EASEMENT.
2. ON-STREET PARKING MAY BE DELETED ON LOCAL AND CUL-DE-SAC STREETS IF ADEQUATE CONVENIENT OFF-STREET PARKING IS PROVIDED IN A SUBDIVISION DESIGN.
3. 41 FOOT RIGHT-OF-WAY (28 FOOT CURB TO CURB) IS PERMITTED FOR A CUL-DE-SAC UP TO 150 FEET IN LENGTH MEASURED FROM CENTER OF BULB TO RIGHT-OF-WAY LINE OF INTERSECTING STREET.

Regulatory Setting

FEDERAL

There are no federal or state regulations applicable to transportation/traffic.

STATE

The State has adopted Level-of-Service (LOS) “C” as the LOS threshold standard for traffic operations on State highways.

LOCAL

General Plan Consistency

The *Merced Vision 2030 General Plan* contains a number of policies that apply to Transportation/traffic impacts in conjunction with ultimate build-out of the City in accordance with the General Plan. The specific policies listed below contained in the Urban Expansion, Land Use, Sustainability and Transportation and Circulation Elements of the General Plan are designed to ensure that transportation/traffic impacts are minimized as development occurs in accordance with the *Merced Vision 2030 General Plan*.

Land Use Policies:

- L-1.7** Encourage the location of multi-family developments on sites with good access to transportation, shopping, employment centers, and services.
- L-1.9** Ensure connectivity between existing and planned urban areas.
- L-2.7** Locate and design new commercial development to provide good access from adjacent neighborhoods and reduce congestion on major streets.
- L-3.1** Create land use patterns that will encourage people to walk, bicycle, or use public transit for an increased number of their daily trips.
- L-3.3** Promote site designs that encourage walking, cycling, and transit use.

Sustainability Policies:

- SD-1.3** Integrate land use planning, transportation planning, and air quality planning for the most efficient use of public resources and for a healthier environment.
- SD-1.4** Educate the public on the impact of individual transportation, lifestyle, and land use decisions on air quality.

Transportation and Circulation Policies:

- T-1.1** Design streets consistent with circulation function, affected land uses, and all modes of transportation.
- T-1.2** Coordinate circulation and transportation planning with pertinent regional, State and Federal agencies.
- T-1.3** Design major roads to maximize efficiency and accessibility.

- T-1.4** Promote traffic safety for all modes of transportation.
- T-1.5** Minimize unnecessary travel demand on major streets and promote energy conservation.
- T-1.6** Minimize adverse impacts on the environment from existing and proposed road systems.
- T-1.7** Minimize street system impacts on residential neighborhoods and other sensitive land uses.
- T-1.8** Use a minimum peak hour Level of Service (LOS) “D” as a design objective for all new streets in new growth areas and for most existing City streets except under special circumstances.
- T-2.1** Provide for and maintain a major transitway along "M" Street and possibly along the Bellevue Road/Merced-Atwater Expressway and Campus Parkway corridors.
- T-2.2** Support and enhance the use of public transit.
- T-2.3** Support a safe and effective public transit system.
- T-2.4** Encourage the use of bicycles.
- T-2.5** Provide convenient bicycle support facilities to encourage bicycle use.
- T-2.6** Maintain and expand the community’s existing bicycle circulation system.
- T-2.7** Maintain a pedestrian-friendly environment.
- T-2.8** Improve planning for pedestrians.
- T-2.9** Ensure that new development provides the facilities and programs that improve the effectiveness of Transportation Control Measures and Congestion Management Programs.

AIR

- T-3.1** Preserve the Merced Regional Airport and its protective zones from incompatible encroachment and incompatible development within the Airport Industrial Park.
- T-3.2** Promote and encourage the orderly and timely development of commercial and general aviation facilities.
- T-3.3** Provide adequate ground transportation systems that complement air transportation facilities.

RAIL

- T-3.4** Reduce rail system impacts on circulation within the urban area.
- T-3.5** Support enhanced railroad passenger service and high speed rail service for Merced.
- T-3.6** Retain and expand as needed rail facilities serving industrial development.

3.15.2 THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on the environment if it will:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicles trips, the volume to capacity ratio on roads, or congestion at intersections)
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Result in inadequate parking capacity
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)

3.15.3 IMPACTS AND MITIGATION MEASURES

Impact #3.15-1: Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system and/or exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

Discussion/Conclusion: The Circulation Plan designates roadways as state highways (including freeways), expressways, major arterials, arterials, or collectors. Conceptual Collectors and selected local streets/rural roads are also shown on the Plan. The various street cross sections are illustrated in Figures 3.15-8 through 3.15-13.

Table 3.15-4 presents the planned number of lanes, and the existing number of lanes for the City of Merced arterial street system.

ANALYSIS OF PROPOSED MERCED 2030 GENERAL PLAN CONDITIONS

The study area includes the proposed planning area presented in the Circulation Plan Diagram (Figure 3.15-1). The study locations for purposes of this traffic analysis are the roadways listed in Table 3.15-4.

Daily roadway operations were analyzed for the following scenarios:

- Existing Conditions;
- No Project; and
- Year 2030 Conditions with Plan Update.

The Merced County Association of Governments (MCAG) regional travel demand model was modified to use as the tool to evaluate the impacts of the proposed General Plan on the local and regional transportation system. The MCAG model forecasts average weekday daily traffic volumes on the freeways, arterials, and major collector roads in the Merced region. Modifications were made to the model to better replicate the proposed circulation and land use plan. The General Plan buildout analysis considers roadway improvements contained in the 2007 MCAG Regional Transportation Plan (Tier 1), and roadway improvements that would be constructed to support development of the proposed land use plan (Table 3.15-5).

**Table 3.15-5
Major Street Improvement Projects**

Project #	Project Type	Location/Improvement Summary
1	Upgrade Arterial	Thornton from SR 140 to Mission and Yosemite to Bellevue
2	Upgrade Arterial	SR 59 from 16th to Oakdale Road
3	Upgrade Arterial	SR 59 from Childs to Roduner
4	Extend/Upgrade Arterial/Collector	R St. from Gerard to Area of Influence Boundary
5	Upgrade Arterial/Extend Transitway	M St. from Yosemite to Old Lake
6	Upgrade Arterial	M.L.K. Jr. Way from Roduner to Gerard
7	Upgrade Arterial	G St. from Yosemite to Snelling Hwy.
8	Upgrade Arterial	Parsons/Gardner from Coffee to Golf Club
9	Extend Expressway	Campus Parkway from Mission to Yosemite Avenue
10	Extend/Upgrade Arterial	Old Lake from SR 59 to Lake
11	Upgrade Arterial/Expressway	Bellevue from Campus Parkway to Atwater/ Merced Expressway
12	Extend Arterial	Tyler Road from Childs to Mission
13	Extend Arterial	Cardella from Thornton to Campus Parkway
14	Upgrade Arterial	Yosemite from Thornton to Campus Parkway
15	Upgrade Arterial	Olive Ave. West of SR 59 (Santa Fe Ave.)
16	Upgrade Arterial	SR 140 from Parsons Avenue to Tower Road

Project #	Project Type	Location/Improvement Summary
*17	Upgrade to 6 Lanes, with the potential for auxiliary lanes between major interchanges.	SR 99 through Merced
18	Modify Ramps & Complete 13th/14th 1-way Couplet	SR 99 @ Martin Luther King Jr. Way, G St., & Childs Avenue
19	Upgrade Arterial	Childs from SR 59 to Tower
20	Upgrade Arterial	Dickenson Ferry/Mission from Thornton to Tower
21	Extend Expressway	Atwater/Merced Expressway from SR 99 to Bellevue Avenue
22	Interchange	Atwater/Merced Expressway @ SR 99
23	Interchange	Atwater/Merced Expressway @ Santa Fe Drive
24	Interchange	Atwater/Merced Expressway @ Bellevue Road
* This project (which is the responsibility of the State) is currently included in the SR 99 concept plan and is listed as a Tier I project in the MCAG Regional Transportation Plan (RTP).		

The model assumes a level of development outside of the Merced SUDP/Sphere of Influence consistent with County growth projections from the California Department of Finance and with presently-adopted general plans of MCAG jurisdictions. These development forecasts are considered to be an adopted “summary of projections” for purposes of determining Cumulative impacts, as defined in Section 15130(b)(1)(B) of the CEQA Guidelines.

The forecast volumes were not used directly from the MCAG Model. Instead, forecast traffic volumes were adjusted based on the incremental change between the Base year model estimates and the Future model forecasts using the following formula:

$$\text{Adjusted Forecast Volume} = \text{Base Year Count} + (\text{Model Forecast Volume} - \text{Base Year Model Volume})$$

This adjustment process helps minimize model error in the forecasts where the error is known (i.e. where base year counts are available).

The proposed Circulation Element states that the City shall strive to maintain LOS D or better on all streets under the jurisdiction of the City of Merced. State highways and freeways shall be subject to LOS criteria established by Caltrans. The Caltrans *Guide for the Preparation of Traffic Impact Studies*, dated December 2002, indicates that Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D. In practice, this typically is interpreted as a minimum acceptable LOS C, with LOS D being unacceptable except in urban areas where LOS C is not feasible.

EXISTING ROADWAY SEGMENT CONDITIONS

As indicated in Table 3.15-4, the following road segments currently operate at substandard levels of service:

- North SR 59 - 16th to Olive (LOS F)
- North SR 59 – Olive to Yosemite (LOS F)
- “R” Street - Childs to SR 99 (LOS E)

- “G” Street - Childs to SR 99 (LOS F)
- Parsons Avenue/Gardner Road - SR 140 to Bear Creek (LOS E) (This roadway section is incomplete with gaps remaining to be constructed, including a bridge over Bear Creek and a railroad undercrossing.)
- Childs Avenue - SR 99 to Parsons (LOS E)

PROPOSED 2030 GENERAL PLAN ROADWAY SEGMENT CONDITIONS

Generally accepted traffic engineering principles and methods were employed to analyze current traffic conditions and those expected to occur with implementation of the proposed 2030 General Plan. The traffic conditions analysis has concluded that many of the existing and planned roadways within the planning area are expected to operate at acceptable levels of service at General Plan buildout. However, the following road segments are components of the Major Street Improvement projects listed in Table 3.15-5 that, while widened with additional lanes, are still anticipated to operate at LOS E or F (a significant impact) due to projected daily trip volume increases:

1. Childs Avenue from Tyler to SR 99 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=F
2. Childs Avenue from SR 99 to Parsons/Gardner (2 lanes to 4 lanes) Existing LOS=E /Future LOS=F
3. Dickenson Ferry Rd./Mission Ave. from West Avenue to SR 59 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=F
4. Dickenson Ferry Rd./Mission Ave. from SR 59 to Tyler (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=E
5. Dickenson Ferry Rd./Mission Ave. from Tyler to Henry (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=E
6. Dickenson Ferry Rd./Mission Ave. from Henry to SR 99 (4 lanes to 6 lanes) Existing LOS=C+ / Future LOS=F
7. Dickenson Ferry Rd./Mission Ave. from SR 99 to Coffee (Future Campus Parkway) (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=F
8. “R” Street Extension from Yosemite to Cardella (no lanes to 4 lanes) Existing LOS=none / Future LOS=E
9. “R” Street Extension from Cardella to Bellevue (no lanes to 4 lanes) Existing LOS=none / Future LOS=E
10. “R” Street Extension from Bellevue to Old Lake (no lanes to 4 lanes) Existing LOS=none / Future LOS=E

11. "M" Street Transitway Extension from Bellevue to Old Lake (no lanes to 2 lanes) Existing LOS=none / Future LOS=E
12. Cardella Road from "R" Street to "M" Street (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=E
13. Parsons/Gardner from SR 140 to Bear Creek (2 lanes to 4 lanes) Existing LOS=E / Future LOS=E
14. Parsons/Gardner from Olive to Yosemite (2 lanes to 4 lanes) Existing LOS=D / Future LOS=E
15. Parsons/Gardner Extension from Bellevue to Old Lake (no lanes to 2 lanes) Existing LOS=none / Future LOS=F
16. Old Lake Road Extension from SR 59 to "R" Street (no lanes to 2 lanes) Existing LOS=none / Future LOS=F
17. Old Lake Road Extension from "R" Street to "M" Street (no lanes to 2 lanes) Existing LOS=none / Future LOS=F
18. Old Lake Road Extension from "M" Street to "G" Street (no lanes to 2 lanes) Existing LOS=none / Future LOS=F
19. Campus Parkway Expressway Extension from Mission to Childs (no lanes to 4 lanes) Existing LOS=none / Future LOS=F
20. Bellevue Road from Atwater/Merced Expressway to Campus Parkway (2 lanes to 6 lanes) Existing LOS=C+ or D / Future LOS=F or E
21. "G" Street from Bellevue to Old Lake (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=F
22. Yosemite from "G" Street to Parsons/Gardner (2 lanes to 4 lanes) Existing LOS=D / Future LOS=F

It should be noted that the LOS results presented in Table 3.15-4 represents a worst case scenario, as the roadway segment analysis is based on buildout of the Merced Vision 2030 General Plan, which most likely will not occur in its entirety by the year 2030, and the analysis does not consider the additional capacity that is provided at intersections for additional turn pockets (i.e. dual left-turn pockets), nor the benefits of signal timing coordination and advanced traffic signal technology that will be phased in over the life of the General Plan. However, in consideration of the projected LOS E and F status of these roadway segments, even after completion of capacity enhancing improvements, and absent funding guarantees for many of the roadway improvement projects identified in the traffic conditions analysis, and referenced in the mitigation measures below, the traffic impacts associated with build-out of the proposed Merced Vision 2030 General Plan are considered *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measures and the Goals, Policies, and Implementing Actions of the *Merced Vision 2030 General Plan* will reduce the impact of increased traffic on area roadways as the 2030 General Plan is implemented; however, absent funding guarantees for many of the roadway improvement projects identified in the traffic conditions analysis, and referenced in the mitigation measures below, the traffic impacts associated with build-out of the proposed *Merced Vision 2030 General Plan* are considered **significant and unavoidable**.

Mitigation Measure #3.15-1a:

Table 3.15-4 indicates the recommended number of travel lanes for several of the road segments analyzed to keep traffic levels-of-service at the City's preferred LOS "D" at General Plan buildout. Implementation of the following projects will permit the City to manage its traffic volumes at Level of Service "D", or better:

1. *SR 59 from 16th to Olive (2 lanes to 6 lanes) Existing LOS=F / Future LOS=D*
2. *SR 59 from Olive to Yosemite (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*
3. *SR 59 from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
4. *SR 59 from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
5. *SR 59 from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C*
6. *SR 59 from Old Lake to Castle Farms (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*
7. *"R" Street from Old Lake to Area of Influence Boundary (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=C+*
8. *"M" Street from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+*
9. *"M" Street from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+*
10. *Martin Luther King Jr. Way/South SR 59 from Roduner to Mission (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
11. *Martin Luther King Jr. Way/South SR 59 from Mission to Gerard (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

12. "G" Street from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+
13. "G" Street from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D
14. "G" Street from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D
15. "G" Street from Old Lake to Snelling (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C
16. Parsons/Gardner from Childs to SR 140 (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D
17. Parsons/Gardner from Bear Creek to Olive (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D
18. Parsons/Gardner from Olive to Yosemite (2 lanes to 6 lanes) Existing LOS=D / Future LOS=D
19. Parsons/Gardner from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D
20. Parsons/Gardner from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D
21. Parsons/Gardner from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+
22. Parsons/Gardner from Old Lake to Golf Club (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D
23. Campus Parkway SR 99/Mission to Childs (Future Extension 0 lanes to 6 lanes) Existing LOS= none / Future LOS=D
24. Campus Parkway from Childs to SR 140 (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D
25. Campus Parkway from SR 140 to Olive (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D
26. Campus Parkway from Olive to Yosemite (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D
27. Campus Parkway from Yosemite to Cardella (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D

28. *Campus Parkway from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*
29. *Tyler Road from Childs to Mission (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D*
30. *Old Lake Road SR 59 to "R" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+*
31. *Old Lake Road "R" Street to "M" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C*
32. *Old Lake Road "M" Street to "G" Street Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C*
33. *Bellevue Road from Atwater/Merced Expressway to Thornton (2 lanes to 8 lanes Existing LOS=C+ / Future LOS=C+*
34. *Bellevue Road from Thornton to SR 59 (2 lanes to 8 lanes Existing LOS=C+ / Future LOS=D*
35. *Bellevue Road from Parsons/Gardner to Campus Parkway (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*
36. *Cardella Road from SR 59 to "R" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*
37. *Cardella Road from "M" Street to "G" Street (2 lanes to 4 lanes) Existing LOS= C+ / Future LOS=D*
38. *Cardella Road from "G" Street to Parsons/Gardner (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*
39. *Cardella Road from Parsons/Gardner to Campus Parkway (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*
40. *Yosemite Avenue from Parsons/Gardner to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D*
41. *Olive Avenue West of Hwy 59 (Santa Fe Avenue) (4 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C*
42. *SR 99 from Atwater/Merced Expressway to Mariposa (4 lanes to 6 lanes through Merced) Existing LOS=C+ and D / Future LOS=C+ and D*
43. *Childs Avenue from SR 59 to Tyler (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

44. Childs Avenue from Parsons/Gardner to Coffee (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D
45. Childs Avenue from Coffee to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D
46. Childs Avenue from Campus Parkway to Tower (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+
47. Dickerson Ferry/Mission Avenue from Thornton to West Avenue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D
48. Dickerson Ferry/Mission Avenue from West Avenue to SR 59 (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+
49. Dickerson Ferry/Mission Avenue from SR 50 to Tyler (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+
50. Dickerson Ferry/Mission Avenue from SR 99 to Coffee (Future Campus Parkway)(2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+
51. Dickerson Ferry/Mission Avenue from Tyler to Henry (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D
52. Dickerson Ferry/Mission Avenue from Coffee to Tower (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+
53. Thornton from Dickerson Ferry/Mission to SR 140 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D

Mitigation Measure #3.15-1b:

Traffic studies should be performed to satisfy the requirements of the California Environmental Quality Act (CEQA) for all proposed General Plan Amendments which intensify development, proposed specific plans, annexations, and other projects at the discretion of the Development Services Department. Future traffic studies should generally conform to any guidelines established by the City. The studies should be performed to determine, at a minimum, opening-day impacts of proposed projects and as confirmation or revision of the General Plan. The studies should address queue lengths and (at a minimum) peak-hour traffic signals warrants in addition to LOS and provide appropriate mitigations. At the discretion of the City, a complete warrant study in accordance with the most recent edition of the California Manual on Uniform Traffic Control Devices may be required to evaluate the need for traffic signals.

Effectiveness of Mitigation Measures:

While implementation of the above mitigation measures and the Goals, Policies, and Implementing Actions of the *Merced Vision 2030 General Plan* will help reduce traffic impacts resulting from implementation of the *Merced Vision 2030 General Plan*, the traffic analysis prepared for the 2030 General Plan concludes that a significant number of roadways within the Planning Area will be operating at LOS of E or F after additional lanes are added. This conclusion, and the absence of guaranteed funding for the majority of the roadway improvement projects identified in the traffic conditions analysis makes the traffic impacts associated with build-out of the proposed *Merced Vision 2030 General Plan* **significant and unavoidable**.

Impact #3.15-2: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

Discussion/Conclusion: The Merced Regional Airport is a publicly owned, public use facility providing commercial air service and freight air cargo service. Castle Air Force Base (CAFB) was closed in 1995 and renamed the Castle Airport.

In an effort to minimize changes in air traffic patterns associated with the Merced Regional Airport, the 2030 General Plan proposes low-intensity land uses, such as industrial (and Industrial Reserve), as opposed to land uses such as commercial and residential that carry higher population densities, adjacent to the Runway Protection Zones (Zone A) in accordance with the Merced County Airport Land Use Compatibility Plan and Federal Aviation Administration recommendations. The proposed Castle Farms development within Castle Airport's influence area has proposed significant open space to address overflight concerns. The City of Merced General Plan contains policies to ensure that development within the City of Merced and SUDP/SOI Area are designed to minimize safety risks associated with air traffic patterns. Adherence to the policies and implementing actions contained in the 2030 General Plan will ensure safety risks associated with air traffic patterns are minimized in the vicinity of the Merced Regional Airport and the Castle Airport. This impact is considered to be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact #3.15 -3: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Discussion/Conclusion: Future development within the Plan area will be subject to the 2030 General Plan Circulation Plan and Circulation Element policies. Additionally, future roadways, and improvements to existing roadways, will be designed in accordance with the City's Roadway Design Standards that 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.

Compliance with the policies of the 2030 General Plan and the City's Roadway Design Standards will ensure that there will not be a significant increase in hazards due to design features or incompatible uses as the City General Plan is implemented and this impact is considered *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.15-4: Result in Inadequate Emergency Access

Discussion/Conclusion: The 2030 General Plan Circulation Plan and Policies promote emergency vehicle access to all portions of the City and Plan Area and implementation of the 2030 General Plan will not result in inadequate emergency access. Additionally, roadway improvement standards adopted by the City of Merced provide for adequate street width and secondary access to ensure that emergency vehicles have adequate access to development throughout the Plan Area.

Compliance with the policies of the 2030 General Plan and the City's Roadway Design Standards will ensure that adequate emergency vehicle access is provided throughout the City and this impact is considered to be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.15-5: Result in Inadequate Parking Capacity

Discussion/Conclusion: Future development in the 2030 General Plan Area will be subject to parking requirement provisions of the City of Merced Zoning Ordinance. These requirements are sufficient to ensure that adequate on-site and off-site parking will be provided within the Plan Area. Compliance with the parking space requirements contained in the City of Merced Zoning Ordinance will ensure that new development provides adequate parking in the Plan Area and there will be *no impact* from inadequate parking capacity.

Mitigation Measures

No mitigation measures are required.

Impact #3.15-6: Conflict with Adopted Policies Supporting Alternative Transportation

Discussion/Conclusion: The 2030 General Plan 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.. There is *no impact*.

Mitigation Measures

No mitigation measures are required.