4.9 TRANSPORTATION AND CIRCULATION

4.9.1 Introduction

This section describes potential impacts to the transportation system near the proposed McKinley Village project (proposed project) site. This transportation impact analysis examines the roadway, transit, bicycle, pedestrian, and construction components of the overall transportation system under the following scenarios or conditions:

- Existing
- Existing Plus Project
- Cumulative
- Cumulative Plus Project.

For the "plus project" scenarios, significant impacts as defined by CEQA are identified, and mitigation measures are identified to offset the impacts.

As described in Chapter 4, Introduction to the Analysis, the City of Sacramento, in conjunction with support from the Sacramento Area Council of Governments (SACOG) has concluded that the proposed project is consistent with the Sustainable Communities Strategy (SCS) prepared and adopted by SACOG (see Appendix N for a copy of the letter from SACOG). Under Senate Bill 375, projects that are determined to be SCS consistent are granted certain CEQA streamlining benefits. These include exemptions related to the analysis of projects impacts on passenger vehicle greenhouse gas emissions, the regional transportation network, and growth inducement. In this context, the "regional transportation network" means existing and proposed transportation system improvements, including the state transportation system. Therefore, in accordance with the Public Resources Code Section 21159.28, it is not necessary to determine impacts to the state transportation system (i.e., Capital City Freeway). All freeway analysis results documented in this section are for information purposes only, and not utilized for impact analysis.

In addition to the transportation system analysis, this section also describes other transportation-related issues associated with the project including site access and circulation. The City received a number of comment letters in response to the Notice of Preparation (NOP) for this EIR (see Appendix A). The following is a summary of the main concerns raised in the NOP comments received pertaining to transportation and circulation that are addressed in this section:

- The analysis of project impacts should include residential streets and intersections.

- The impact analysis should consider safety of at-grade rail crossings and identify measures to reduce adverse impacts.
- The safety of pedestrians should be considered at the 28th Street railroad crossing.
- Impacts to bicyclists and pedestrians should be considered.
- The traffic analysis should consider Caltrans' proposed closure of the E Street on-ramp to the Capital City Freeway (Business 80).
- The traffic analysis should consider the construction of Sutter's Landing Parkway.
- Appropriate traffic controls should be evaluated at project access points.
- The analysis should consider traffic impacts in the vicinity of Theodore Judah Elementary School.

Planned transportation projects in the vicinity of the proposed project could alter future travel patterns within the study area. Section 4.9.5 considers the cumulative impacts of the proposed project as well as planned transportation projects (and land use development) within the study area, including the closure of the E Street on-ramp to the Capital City Freeway (Business 80), improvements to the Capital City Freeway, and the construction of Sutter's Landing Parkway. Potential impacts to the existing transportation system as a result of the proposed project are documented in the Impacts analysis below.

The following information was used to prepare this section:

- Data from the regional SACMET travel model developed by the Sacramento Area Council of Governments (SACOG).
- Proposed project development application and site plan.
- Freeway ramp, freeway mainline segment, intersection, and roadway segment traffic count data collected by Fehr & Peers and Caltrans (see discussion below).
- Intersection signal timings provided by the City of Sacramento.

Project Description

The McKinley Village project is a proposed residential development consisting of the following trip generating land uses on approximately 48.75 acres between the Capital City Freeway and the Union Pacific Railroad (UPRR) tracks, north of the McKinley Park neighborhood in the City of Sacramento.

- 328 single-family dwelling units
- 40 secondary units[1]
- 2,000 square feet of neighborhood retail.

The proposed project would also include approximately 2.4 acres of parks, and a recreation center/pool.

- Proposed access points include a connection to 28th Street north of the UPRR tracks via the A Street Bridge, and a connection to C Street between 40th Street and Tivoli Way beneath the railroad tracks. A third bicycle/pedestrian only access would connect the project to the northern terminus of Alhambra Boulevard via an undercrossing of the UPRR tracks, if approved by UPRR. Other access locations including Alhambra Boulevard and Lanatt Street were considered and deemed infeasible (please refer to Chapter 2, Project Description for additional information).
- A Class 1 multi-use bicycle/pedestrian path would extend the length of the project site, connecting the proposed bicycle/pedestrian undercrossing (located at the northern terminus of Alhambra Boulevard) to the eastern portion of the project site.

Study Area

The study area shown on Figure 4.9-1 was selected based on the project's expected travel characteristics (i.e., project location and amount of project trips) as well as facilities susceptible to being impacted by the project. During the NOP comment period, the study area was expanded to include several additional local street facilities in response to comments received. Following is a list of 32 study intersections, 19 roadway segments, and 8 freeway facilities selected for analysis.

[1] Some home sites within the project include an option for an approximately 400 square foot "granny flat" located above a garage. While the number of home buyers that will elect to include this option is not known, for the purposes of the transportation analysis, it is conservatively assumed that 40 "granny flats" will function as secondary units that will generate additional trips.

Study Intersections

1. C Street/28th Street
2. D Street/28th Street
3. E Street/28th Street
4. H Street/28th Street
5. I Street/28th Street
6. E Street/29th Street/Southbound Capital City Freeway Off-ramp
7. H Street/29th Street/Southbound Capital City Freeway On-Ramp
8. E Street/30th Street/Northbound Capital City Freeway On-Ramp
9. H Street/30th Street/Northbound Capital City Freeway Off-Ramp
10. C Street/Alhambra Boulevard
11. E Street/McKinley Boulevard/Alhambra Boulevard
12. H Street/Alhambra Boulevard
13. C Street/33rd Street
14. McKinley Boulevard/33rd Street
15. C Street/35th Street
16. McKinley Boulevard/35th Street
17. McKinley Boulevard/36th Way
18. C Street/39th Street
19. C Street/San Miguel Way
20. C Street/San Antonio Way
21. 36th Way/San Antonio Way
22. McKinley Boulevard/San Antonio Way
23. C Street/40th Street
24. 36th Way/40th Street
25. McKinley Boulevard/40th Street
26. C Street/Tivoli Way
27. 36th Way/Tivoli Way

28. McKinley Boulevard/Tivoli Way
29. C Street/Meister Way
30. 36th Way/Meister Way
31. McKinley Boulevard/Meister Way
32. McKinley Boulevard/Elvas Avenue.

Study Roadway Segments

1. 28th Street between C Street and E Street
2. 28th Street between E Street and H Street
3. C Street between Alhambra Boulevard and 33rd Street
4. C Street between 33rd Street and 39th Street
5. C Street between 39th Street and 40th Street
6. C Street between 40th Street and Lanatt Street
7. Elvas Avenue between Lanatt Street and McKinley Boulevard
8. Elvas Avenue between McKinley Boulevard and C Street
9. 39th Street between C Street and McKinley Boulevard
10. 40th Street between C Street and McKinley Boulevard
11. Meister Way between C Street and McKinley Boulevard
12. McKinley Boulevard between 35th Street and D Street
13. McKinley Boulevard between D Street and Meister Way
14. McKinley Boulevard between Meister Way and Elvas Ave
15. C Street west of 28th Street
16. Tivoli Way between C Street and McKinley Boulevard
17. San Antonio Way between C Street and McKinley Boulevard
18. San Miguel Way between C Street and 36th Way
19. 36th Way between McKinley Boulevard and Meister Way.

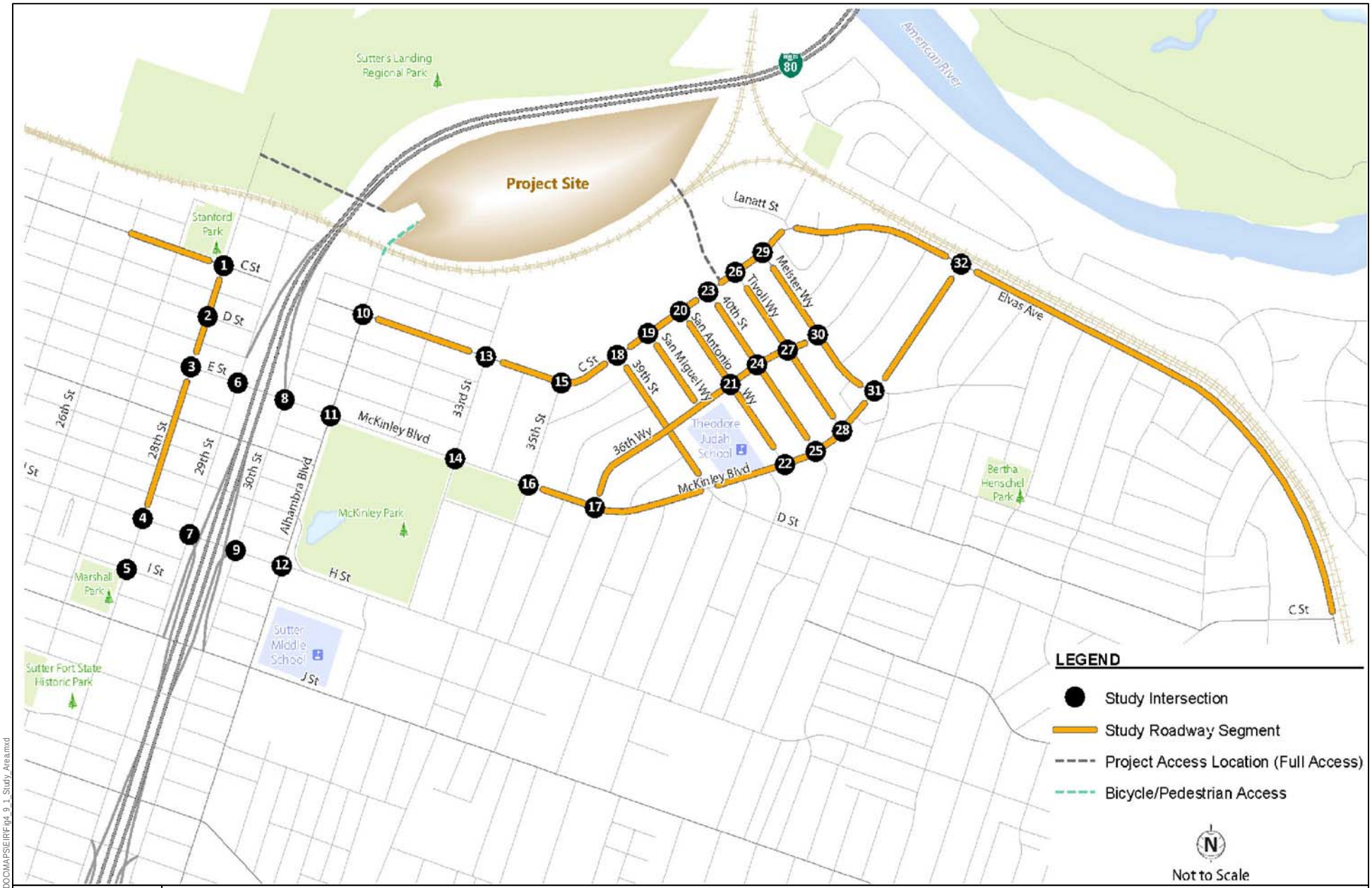
Study Freeway Facilities

1. Capital City Freeway east bound (EB) upstream of H Street off-ramp (weave segment)
2. Capital City Freeway EB H Street off-ramp (covered by weave segment analysis)
3. Capital City Freeway EB on-ramp from J Street (ramp merge)

4. Capital City Freeway EB on-ramp from E Street (ramp merge)
5. Capital City Freeway west bound (WB) off-ramp to E Street (ramp diverge)
6. Capital City Freeway WB off-ramp to J Street (ramp diverge)
7. Capital City Freeway WB on-ramp from H Street (covered by weave segment analysis)
8. Capital City Freeway WB downstream of H Street off-ramp (weave segment).

4.9.2 Environmental Setting

This section describes the environmental setting, which is the baseline scenario upon which project-specific impacts are evaluated. The baseline for this study represents conditions based on field observations conducted in April and May through October 2013. The environmental setting for transportation includes baseline descriptions for the roadway, transit, rail, and bicycle/pedestrian systems.



SOURCE: Fehr + Peers 2013

FIGURE 4.9-1

Study Area

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Existing Roadway Network – Regional Access

Regional access to the project site is provided primarily by State Route 51, also known as the Capital City Freeway or Business 80. Freeway access is provided by ramps at E Street and H Street. Additionally, C Street/Elvas Avenue provides regional access along the southern portion of the project site. These facilities are described below:

- **Capital City Freeway** (State Route 51/Business 80) is a freeway that extends from the State Route 99/US Highway 50 interchange in Midtown Sacramento to Interstate 80 near Watt Avenue. Within the study area, the Capital City Freeway is eight lanes south of E Street with four mixed-flow lanes in the eastbound/northbound direction and three lanes plus an HOV lane in the westbound/southbound direction. North of E Street (adjacent to the project site), the freeway is a six-lane facility with three mixed-flow lanes in either direction. Ramp metering is provided on the eastbound on-ramp at the E Street interchange during the PM peak period.
- **29th Street** is a three-lane, one-way southbound roadway south of D Street. North of D street, 29th Street is a two-lane, two-way local facility that ends at B Street. The northern section allows parking on both sides, while the one-way portion of the roadway allows parking on only one side. This three lane roadway travels along the west side of the Capital City Freeway until merging with W Street just north of US Highway 50, and functions as a southbound frontage road for the Capital City Freeway.
- **30th Street** is a three-lane, one-way northbound roadway that forms a couplet with the previously discussed 29th Street. Similar to 29th Street, 30th Street is a one-way facility with on-street parking on one side south of D Street, and a two-way local street for the small portion of 30th Street located north of D Street. 30th Street runs along the eastern side of the Capital City Freeway and serves as a freeway frontage road.
- **C Street / Elvas Avenue** is depicted in the City of Sacramento's 2030 General Plan as a collector roadway that extends from 30th Street at its west end to 65th Street to the east. Between 30th and 33rd Streets, C Street is a relatively narrow two-lane roadway with on-street parking, fronting residences with driveways, and a posted speed limit of 25 miles per hour (mph). East of 33rd Street the roadway widens to include Class II bicycle lanes in both the eastbound and westbound directions alongside travel lanes that are over 14 feet in width. On-street parking is also allowed in this section. As C Street approaches Lanatt Street, the roadway gains two additional travel lanes (one in either direction) for approximately 2,000 feet in place of the bicycle lanes and on-street parking that exist on either side of this segment. East of Lanatt Street, C Street changes names to Elvas Avenue. Elvas Avenue is four lanes for the short section east of Lanatt Street mentioned

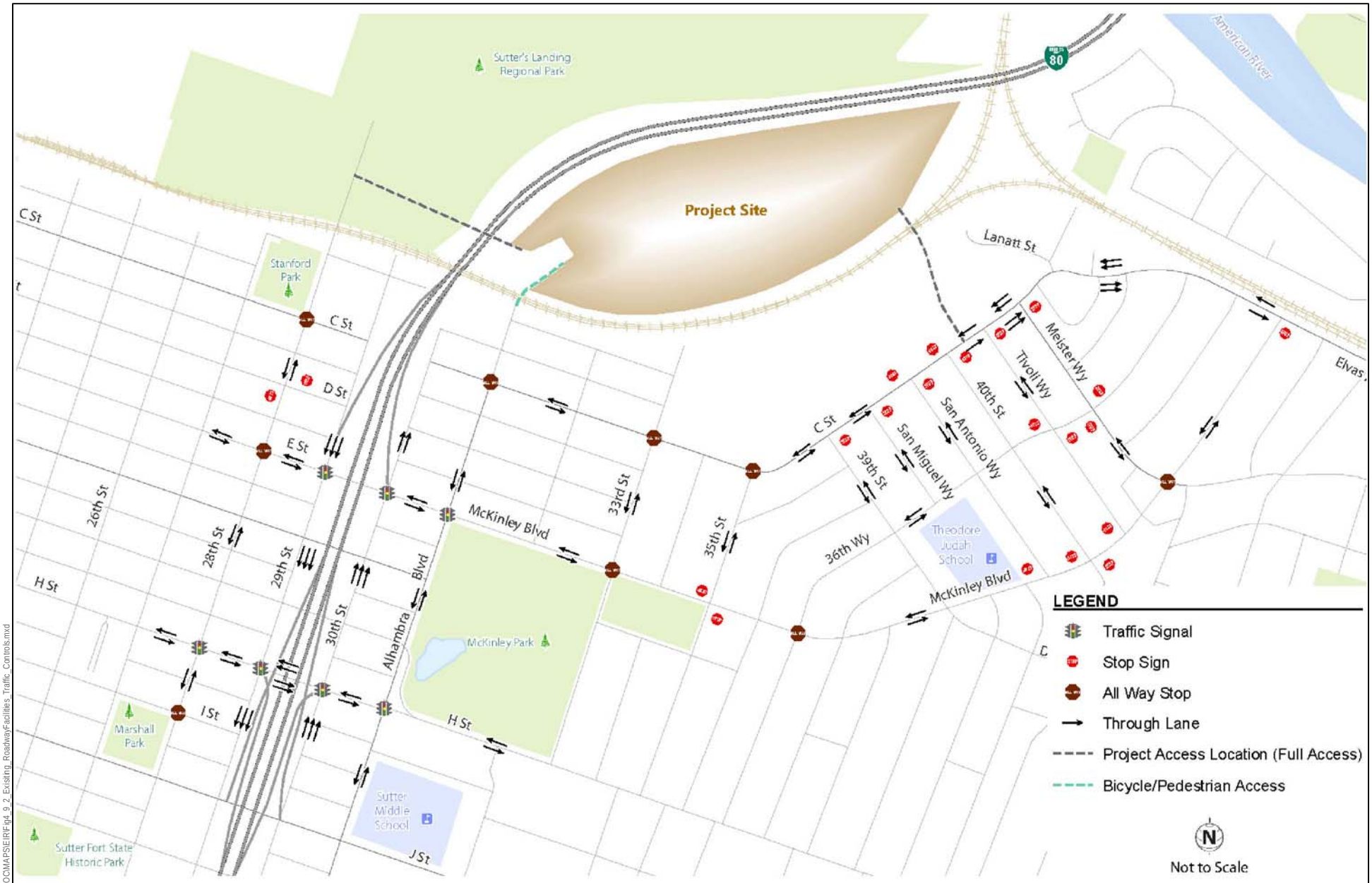
above, after which it is a two lane roadway. Elvas Avenue provides access to Sacramento State University, Arden Arcade, and US Highway 50 via 65th Street.

Existing Roadway Network – Local Access

In addition to the key regional facilities described above, the following roadways also provide for mobility and access within the study area:

- **28th Street** is a two-lane local roadway located west of the project site with on-street parking and Class II bike lanes. The roadway runs continuously from the project site in the north until it is bisected by US Highway 50 to the south.
- **McKinley Boulevard** is an east-west roadway that runs from an eastern terminus with Elvas Avenue, past McKinley Park, until it becomes E Street one block east of the Capital City Freeway. The 2030 General Plan identifies McKinley Boulevard as a minor collector. The eastern half of the roadway has speed humps installed for traffic calming, and bike lanes are installed along the segment adjacent to McKinley Park. The posted speed limit is 25 mph and on-street parking is permitted.
- **Alhambra Boulevard** is a north-south arterial roadway that runs from B Street in the north to 3rd Avenue in the south. Through the study area, Alhambra Boulevard is a two-lane facility with on-street parking. Adjacent to McKinley Park the roadway has bicycle lanes on both sides of the road. South of the study area, portions of Alhambra Boulevard widen to four lanes.
- **33rd Street** runs from the UPRR tracks in the north to H Street in the south. 33rd Street has speed humps installed and serves as a designated bicycle route. 33rd Street narrows considerably for the segment adjacent to McKinley Park and on-street parking is allowed on this facility throughout the study area. Field observations indicate that this stretch of 33rd Street is fairly congested with parking vehicles and pedestrians.

Figure 4.9-2 illustrates the study area roadway facilities including the number and direction of travel lanes, as well as existing traffic controls present at all study intersections. As noted in the descriptions of study area roadways above, several streets within the vicinity of the proposed project have traffic calming measures in place. Figure 4.9-3 depicts the location of major traffic calming devices currently in place within the Midtown neighborhood. The devices located in Midtown, particularly half street closures, alter travel patterns in the western portion of the study area and require indirect travel paths to access adjacent land uses (additional discussion of these devices is provided later in this section).



SOURCE: Fehr + Peers 2013

FIGURE 4.9-2

Existing Roadway Facilities and Traffic Controls

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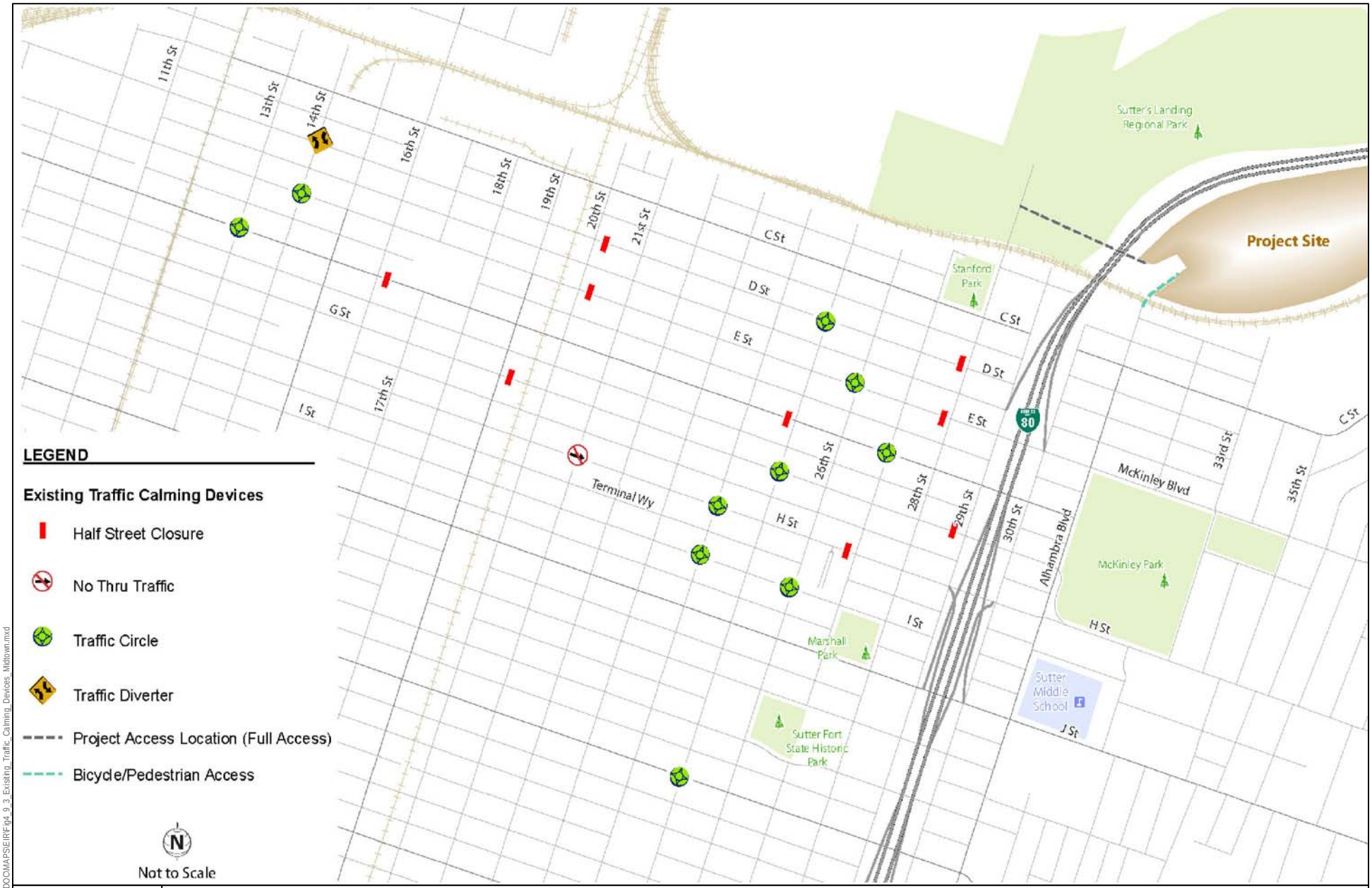

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FIGURE 4.9-3

Existing Traffic Calming Devices- Midtown

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Bicycle and Pedestrian System

Field surveys indicate significant levels of bicycle and pedestrian activity within the study area throughout much of the day, particularly adjacent to McKinley Park, located between McKinley Boulevard, H Street, 33rd Street, and Alhambra Boulevard. Field observations in the neighborhood surrounding the park indicate that bicyclists and pedestrians co-exist alongside motor vehicle traffic during even the heaviest travel periods. The grid system of local streets leading to the park provides cyclists and pedestrians with numerous low-speed, low-traffic roadways as potential travel routes. On more heavily traveled roadways, several streets within the study area feature Class II on-street bicycle lanes. Figure 4.9-4 depicts the locations of all existing bicycle facilities within the study area.

The vast majority of the streets surveyed in the study area have sidewalks on both sides of the roadway. Notable exceptions include 29th Street and 30th Street where the sides adjacent to the freeway lack sidewalks. While 28th Street has sidewalks south of B Street, they do not extend northward beyond the UPRR tracks to the proposed A Street connection or into Sutter's Landing Regional Park.

Transit System

The Sacramento Regional Transit District (RT) provides public transit service in the study area, including three bus routes located in the vicinity of the project site: Route 34, Route 67, and Route 68. All three of these routes have stops located to the south of the project site. However, existing bus stops are at least a quarter mile walking/biking distance from the three proposed site access points (the closest stop to the project site serves Route 34, and is located just over a quarter mile south of the proposed bicycle/pedestrian access point at the intersection of E Street/Alhambra Boulevard). Stops in the study area are marked by a posted sign. Select stops include a bus shelter or a bench located on a 4- to 5-foot sidewalk. Figure 4.9-5 displays existing bus routes and stop locations within the study area. Detailed descriptions of the three RT routes in the vicinity of the project site are provided below:

- **Route 34 (McKinley)** is a Radial Route that provides service between the 8th Street/O Street light rail station in Downtown Sacramento and the California State University Sacramento Transit Center in East Sacramento. Within the study area, this route operates primarily along McKinley Boulevard. Weekday headways are one hour, with service operating between 6:00 AM and 5:00 PM. Weekend and holiday service is not provided.
- **Routes 67 (Franklin) and 68 (44th Street)** are cross-town routes that provide service between Florin Mall and Arden Fair Mall. Within the study area these routes operate on 29th and 30th Streets south of E Street. North of E Street the routes

make use of the Capital City Freeway. Weekday headways for the routes are 30 minutes, while Saturday and Sunday/holiday headways are 60 minutes. Weekday service hours extend from 5:00 AM to 10:00 PM, while weekend and holiday service hours extend from 6:30 AM to 9:30 PM.

Railroad Crossings

Two UPRR tracks or lines are located within the project vicinity. These two lines, which extend from Sacramento to Roseville and Stockton, connect adjacent to the eastern end of the project site and continue west toward downtown Sacramento along the southern boundary of the project site. Within the study area, these railroad lines have two existing at-grade crossings: Lanatt Street and 28th Street. Lanatt Street ends immediately south of the railroad tracks, but there is a private driveway that crosses the railroad tracks which provides access to UPRR property just east of the project site and west of the existing River Park neighborhood. There is also a public at-grade crossing of the railroad tracks on 28th Street north of B Street. This crossing location has crossing arms, warning bells, flashing lights, pavement markings, and warning signage. No sidewalks or bicycle facilities are provided at this crossing.

Please see Chapter 2, Project Description and Section 4.6, Noise for specific information on train activity in the vicinity of the project site.

Truck Routes

All federal and state highways within the City of Sacramento have been designated as truck routes by Caltrans, including the Capital City Freeway within the study area, and are included in the National Network for Service Transportation Assistance Act (STAA) of 1982. The City identified 31 two-way streets as City truck routes in a 1983 resolution, in addition to all one-way streets. Within the study area, the following streets are considered City truck routes:

- 29th Street – south of C Street
- 30th Street
- Alhambra Boulevard – south of C Street
- C Street – 16th Street to Alhambra Boulevard.

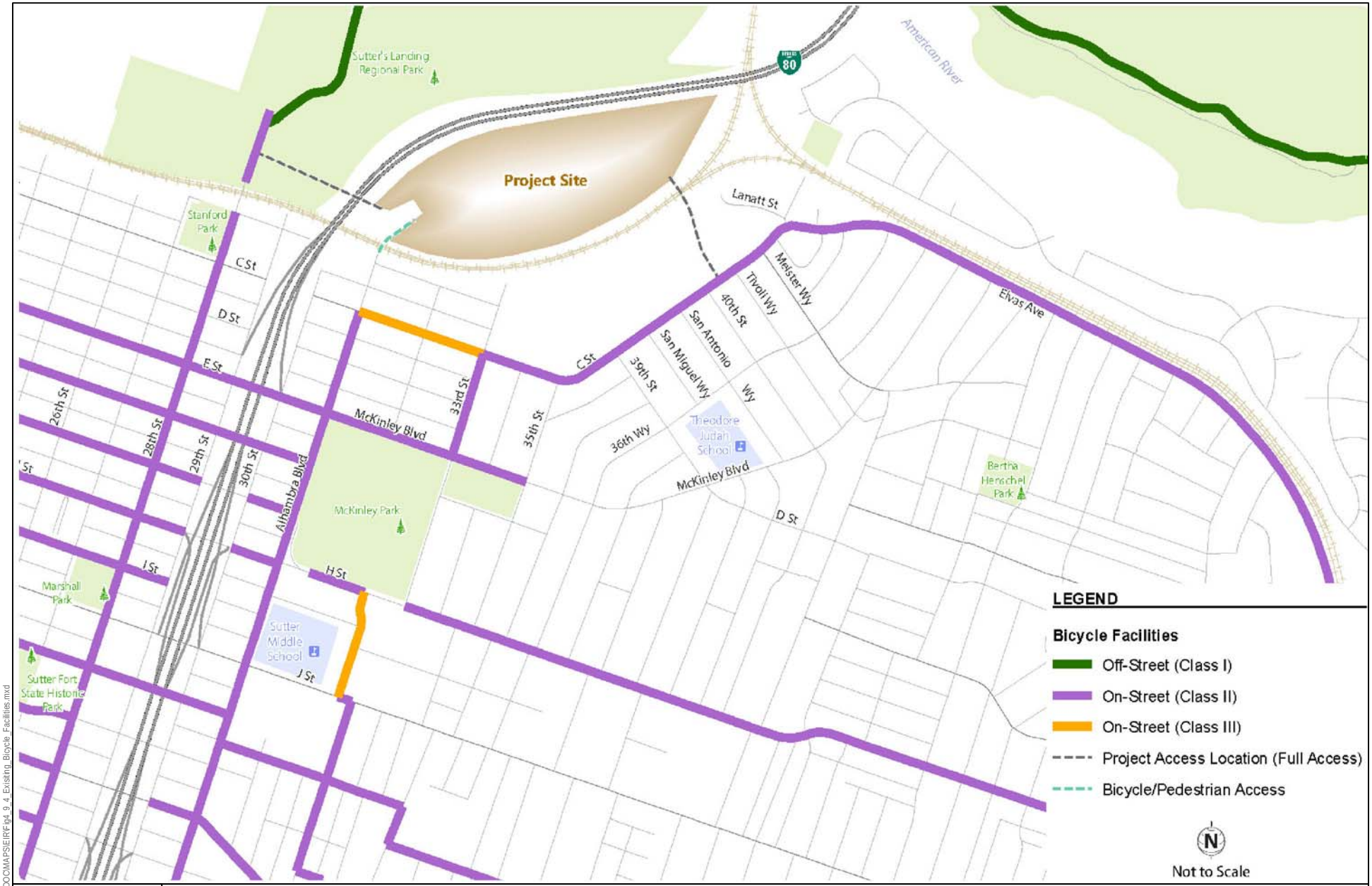

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FIGURE 4.9-4

Existing Bicycle Facilities

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SOURCE: Fehr + Peers 2013

FIGURE 4.9-5

Existing Transit Facilities

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Methodology

Each study roadway facility was analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual 2000* (HCM 2000) and the HCM 2010 (TRB 2000, 2010). These methodologies were applied using the Synchro/SimTraffic software package. A SimTraffic microsimulation model was developed for the western portion of the study area, and included all freeway ramp terminal intersections as well as intersections adjacent to these locations (intersection numbers 3, 4, 6-9, 11, 12), while the remainder of the study intersections were analyzed using Synchro.

Analysis using SimTraffic at the locations in the proximity of the freeway is appropriate given the coordinated signal timing plans, close spacing of signalized intersections, and overall levels of traffic and peak hour congestion in the vicinity. SimTraffic considers the effects of signal coordination, vehicle queue spillbacks, lane changing, and other conditions on individual intersection and overall corridor traffic operations. It presents a variety of performance measures including average delay, LOS, percent of vehicle demand served during peak hours, average travel speed, and system-wide vehicle hours of delay. Ten SimTraffic model runs were conducted with the results averaged to yield the reported condition. SimTraffic provides outputs consistent with the HCM 2010. Table 4.9-1 displays the delay range associated with each LOS category for signalized and unsignalized intersections.

Table 4.9-1
Intersection Level of Service Definitions

Level of Service	Average Control Delay (seconds per vehicle)[1]	
	Signalized	*Unsignalized*
A	0 – 10.0	0 – 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Note:
[1] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: TRB 2000, 2010.

Roadway segment capacity utilization was evaluated using daily traffic volume LOS thresholds. Table 4.9-2 displays the daily traffic volume thresholds for roadway segments for each LOS category as described in the City of Sacramento 2030 General Plan (City of Sacramento 2009).

Table 4.9-2
Roadway Segment Daily Volume Thresholds

Operational Class	Number of Lanes	Daily Volume Threshold (Level of Service)				
		A	*B*	*C*	*D*	*E*
Arterial – Low Access Control (Low access control roads generally have frequent driveways and 25-35 mph speeds)	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial – Moderate Access Control (Moderate access control roads generally have limited driveways and 35-45 mph speeds)	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,000	37,800	43,200	48,600	54,000
Arterial – High Access Control (High access control roads generally have no driveways and 45-55 mph speeds)	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector Street – Minor	2	5,250	6,125	7,000	7,875	8,750
Collector Street – Major	2	8,400	9,800	11,200	12,600	14,000
	4	16,800	19,600	22,400	25,200	28,000
Local Street	2	3,000	3,500	4,000	4,500	5,000

Source: City of Sacramento 2009, Table 6.12-2.

Freeway operations were analyzed using the procedures and methodologies contained in the HCM 2010 for basic freeway segments and ramp merge/diverge areas. For weaving sections, which are ramp merge/diverge areas where at least one lane change is required to access the freeway or desired ramp, the Leisch Method described in the HCM 2010 (TRB 2010) was applied. Table 4.9-3 presents the HCM 2010 LOS criteria for freeway mainline and freeway ramp junctions, respectively.

Table 4.9-3
Freeway Level of Service Definitions

Level of Service	Density (Passenger Cars per Mile per Lane)	
	Basic Freeway Segments	*Ramp Merge/Diverge*
A	< 11	< 10
B	> 11 to 18	> 10 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45 or any v_d/c ratio > 1.00[1]	Demand exceeds capacity[2]

Notes:
[1] vd/c ratio = demand flow rate divided by the capacity of a given segment.
[2] Occurs when freeway demand exceeds upstream (diverge) or downstream (merge) freeway segment capacity, or if off-ramp demand exceeds off-ramp capacity.
Source: TRB 2010, Exhibits 10-7 and13-2 .

Traffic Counts

Daily roadway segment and AM (7:00–9:00) and PM (4:00–6:00) peak period intersection turning movement counts used for the existing conditions analysis were conducted by Caltrans on several days in April 2013 (April 17–19 and 23–25) and by Fehr & Peers on May 30, 2013, and on several days in October 2013 (October 2, 3, and 10). During all counts, weather conditions were generally dry and the Sacramento City Unified School District was in full session.

During the collection of the October counts, utility work was on-going in the eastern portion of the study area as part of the City's East Sacramento Water Main Project. This work involved street closures that generally affected one road per day. Roads affected by closures during the collection of traffic counts were recounted on a later date when they were fully open to traffic. In all cases, the higher of the two traffic counts was used for the analysis.

Traffic counts were also conducted in the eastern portion of the study area on July 31, 2013, when the Sacramento Unified School District was not in session to quantify the effect of school-related traffic upon traffic patterns on local roadways within the study area. Based upon a comparison of one day of traffic counts, the evaluation found an approximately 21% increase in overall traffic during the AM peak hour at study intersections in the vicinity of Theodore Judah Elementary School when school is in session. This variation is outside of the realm of typical day-to-day fluctuations in traffic volume, and indicates that AM peak hour travel patterns within the area are affected by the school.

Existing Levels of Service

Table 4.9-4 summarizes the existing daily traffic volumes and the corresponding levels of service according to the thresholds shown in Table 4.9-2. As shown, all study roadway segments currently operate at LOS C or better.

Table 4.9-4
Roadway Capacity Utilization – Existing Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Average Daily Traffic	Level of Service
28th Street – C Street to E Street	Local	2	3,850	C
28th Street – E Street to H Street	Local	2	2,380	A
C Street – Alhambra Boulevard to 33rd Street	Major Collector	2	4,400	A
C Street – 33rd Street to 39th Street	Major Collector	2	5,020	A
C Street – 39th Street to 40th Street	Major Collector	2	4,830	A
C Street – 40th Street to Lanatt Street	Major Collector	2	4,500	A
Elvas Avenue – Lanatt Street to McKinley Blvd	Major Collector	4	4,290	A
Elvas Avenue –McKinley Blvd to C Street	Major Collector	2	6,030	A
39th Street – C Street to McKinley Blvd	Local	2	480	A
40th Street – C Street to McKinley Blvd	Local	2	70	A
Meister Way – C Street to McKinley Blvd	Local	2	280	A
McKinley Blvd – 35th Street to D Street	Minor Collector	2	4,540	A
McKinley Blvd – D Street to Meister Way	Minor Collector	2	2,050	A
McKinley Blvd – Meister Way to Elvas Avenue	Minor Collector	2	1,500	A
C Street – West of 28th Street	Local	2	3,640	C
Tivoli Way – C Street to McKinley Blvd	Local	2	160	A
San Antonio Way – C Street to McKinley Blvd	Local	2	390	A
San Miguel Way – C Street to 36th Way	Local	2	280	A
36th Way – McKinley Blvd to Meister Way	Local	2	820	A

Source: Fehr & Peers 2013 (see Appendix O).

Figure 4.9-6 shows the existing AM and PM peak hour intersection turning movement volumes, traffic controls, and lane configurations. All study intersections were analyzed with a peak hour factor (PHF) of 1.0 per the City of Sacramento Traffic Impact Analysis Guidelines (City of Sacramento 1996). Signalized intersections were analyzed using the current traffic signal timings provided by the City of Sacramento. In general, the AM peak hour within the study area occurred from 7:30 to 8:30, and the PM peak hour occurred from 4:45 to 5:45.

Table 4.9-5 summarizes the existing peak hour intersection operations at the study intersections (for detailed calculations, see Appendix O, Traffic Model Data Outputs). As shown, all study intersections located east of Alhambra Boulevard (numbers 13–32) operate with an average LOS of B or better.

In the western portion of the study area, peak hour traffic volumes are considerably higher due to the proximity of intersections to the Capital City Freeway. While study intersections along 28th Street all operate with an average LOS of A, operations at intersections located on 29th Street, 30th Street, and Alhambra Boulevard between E Street and H Street range from LOS B to LOS F. The H Street/Alhambra Boulevard has the highest level of delay, and operates at LOS F during the AM peak hour under existing conditions. The westbound approach to this intersection is the most heavily delayed approach during the AM peak hour, consistent with field observations that identified substantial queuing on westbound H Street adjacent to McKinley Park.

Table 4.9-5
Intersection Operations – Existing Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay1
C Street/28th Street	All-Way Stop	AM PM	A A	9 9
D Street/28th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)
E Street/28th Street	All-Way Stop	AM PM	A A	7 7
H Street/28th Street	Traffic Signal	AM PM	A A	8 9
I Street/28th Street	All-Way Stop	AM PM	A A	8 9
E Street/29th Street/SB Capital City Freeway Off-Ramp	Traffic Signal	AM PM	C C	26 22
H Street/29th Street/SB Capital City Freeway On-Ramp	Traffic Signal	AM PM	B C	19 29

Table 4.9-5
Intersection Operations – Existing Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay1
E Street/30th Street/NB Capital City Freeway On-Ramp	Traffic Signal	AM PM	C C	26 20
H Street/30th Street/NB Capital City Freeway Off-Ramps	Traffic Signal	AM PM	D D	39 36
C Street/Alhambra Boulevard	All-Way Stop	AM PM	A A	9 9
E Street/Alhambra Boulevard	Traffic Signal	AM PM	E C	61 22
H Street/Alhambra Boulevard	Traffic Signal	AM PM	**F** E	**96** 73
C Street/33rd Street	All-Way Stop	AM PM	A A	9 9
McKinley Boulevard/33rd Street	All-Way Stop	AM PM	B B	13 13
C Street/35th Street	All-Way Stop	AM PM	A A	9 9
McKinley Boulevard/35th Street	Side-Street Stop	AM PM	A (C) A (B)	2 (17) 2 (15)
McKinley Boulevard/36th Street	All-Way Stop	AM PM	B A	11 10
C Street/39th Street	Side-Street Stop	AM PM	A (A) A (B)	1 (10) 1 (10)
C Street/San Miguel Way	Side-Street Stop	AM PM	A (A) A (B)	0 (10) 0 (10)
C Street/San Antonio Way	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)
36th Way/San Antonio Way	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/San Antonio Way	Side-Street Stop	AM PM	A (A) A (A)	2 (10) 1 (9)
C Street/40th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)
36th Way/40th Street	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/40th Street	Side-Street Stop	AM PM	A (B) A (A)	2 (10) 1 (10)
C Street/Tivoli Way	Side-Street Stop	AM PM	A (A) A (B)	0 (10) 0 (11)

Table 4.9-5
Intersection Operations – Existing Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay1
36th Way/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	2 (9) 3 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	0 (9) 0 (10)
C Street/Meister Way	Side-Street Stop	AM PM	A (B) A (B)	0 (11) 0 (11)
36th Way/Meister Way	Side-Street Stop	AM PM	A (A) A (A)	6 (9) 6 (9)
McKinley Boulevard/Meister Way	All-Way Stop	AM PM	A A	8 8
Elvas Avenue/McKinley Boulevard	Side-Street Stop	AM PM	A (A) A (B)	3 (10) 2 (10)

Notes:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicle for the overall intersection and (worst approach).
Bold text indicates unacceptable operations.
Source: Fehr & Peers 2013 (see Appendix O).

Freeway facility operations were analyzed using the following data:

- AM and PM peak hour on-ramp and off-ramp counts collected by Caltrans in April 2013 as part of the intersection turning movement counts conducted at all ramp terminal intersections within the study area (Caltrans 2013).
- AM and PM peak hour Capital City Freeway mainline volumes obtained from Caltrans' Performance Measurement System (PeMS; Caltrans 2012).

According to the 2011 Average Annual Daily Truck Traffic on California State Highways (Caltrans 2011), heavy vehicles[2] represent 5.41% of the daily traffic volume on the Capital City Freeway within the study area. Thus, for analysis purposes, a heavy vehicle percentage of 5.5% was assumed for the peak hour freeway analysis. This value is considered conservative due to the fact that truck percentages are typically lower during peak hours than on a daily basis.

[2] As defined by the HCM 2010 (TRB 2010), a heavy vehicle is any "vehicle with more than four wheels touching the pavement during normal operation."

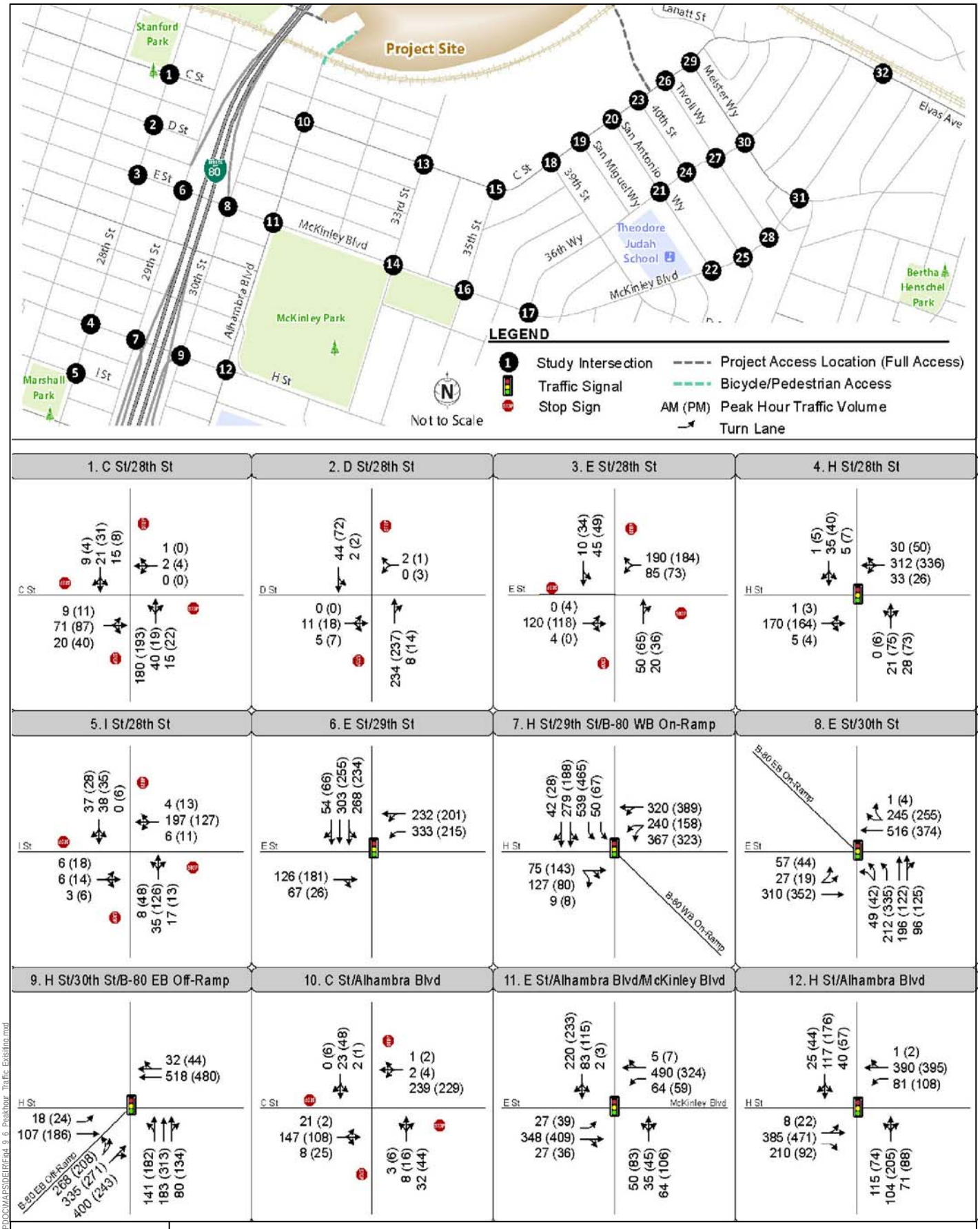
The AM and PM peak hour freeway operations are presented in Table 4.9-6 (see technical calculations included in Appendix O).

Table 4.9-6
Freeway Operations – Existing Conditions

Freeway Facility	Peak Hour	Type	Level of Service	Density[1]	Volume[2]
Capital City Freeway EB – P Street on-ramp to H Street off-ramp	AM PM	Weave	C* B*	-- --	5,540 4,828
Capital City Freeway EB - J Street on-ramp	AM PM	Merge	B* C*	19 20	231 404
Capital City Freeway EB - E Street on-ramp	AM PM	Merge	D* D*	31 32	514 627
Capital City Freeway WB - E Street off-ramp	AM PM	Diverge	D* D*	35 34	625 555
Capital City Freeway WB -J Street off-ramp	AM PM	Diverge	D* D*	33 32	441 259
Capital City Freeway WB – H Street on-ramp to P Street off-ramp	AM PM	Weave	D* C*	-- --	5,397 5,207

Notes:
[1] Measured in passenger car equivalents per lane per mile.
[2] Volumes on the merge and diverge segments represent ramp volumes; volumes on the weave segments are freeway mainline volumes.
* Observed LOS is worse than reported. The analysis methodology does not fully capture traffic operations effects in congested locations with bottlenecks.
Note: Methodology used for weaving sections (Leisch Method) does not report density, and is instead based upon service volume.
Source: Fehr & Peers 2013 (see Appendix O).

As shown in Table 4.9-6, the resulting LOS of all study area freeway facilities calculated using the previously discussed methodologies is LOS D or better. However, based on field observations, congestion frequently occurs on this section of the Capital City Freeway due to bottlenecks along the corridor, including the Capital City Freeway/US Highway 50/State Route 99 interchange, the eastbound lane drop located just west of the E Street on-ramp, and the Capital City Freeway bridge over the American River. These bottlenecks are well documented in numerous sources, including the recently released State Route 51 Preliminary Investigation (Caltrans 2013). As a result of these bottlenecks, actual peak hour conditions on the Capital City Freeway within the study area are LOS F during peak periods.



SOURCE: Fehr + Peers 2013

FIGURE 4.9-6

Peak Hour Traffic Volumes and Lane Configurations- Existing Conditions

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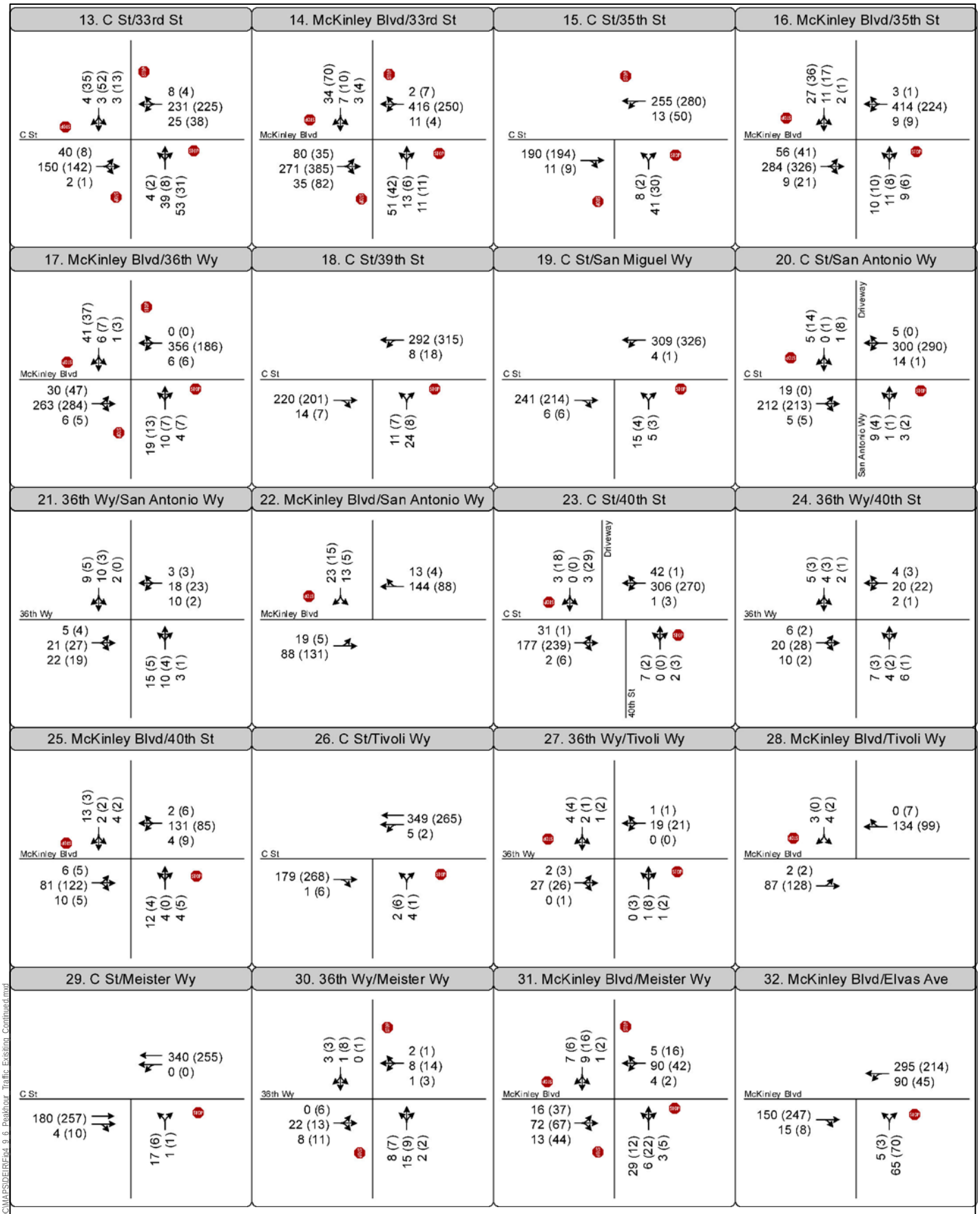

SOURCE: Fehr + Peers 2013

FIGURE 4.9-6 (Continued)

Peak Hour Traffic Volumes and Lane Configurations- Existing Conditions

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Table 4.9-7 displays 95th percentile peak hour freeway off-ramp queues within the study area calculated using SimTraffic microsimulation software, and verified through field observations. As shown, all study freeway off-ramp queues remain within the available storage area during both the AM and PM peak hours.

Table 4.9-7
Off-Ramp Queuing – Existing Conditions

Off-Ramp	Storage Length	Peak Hour	Queue[1]
Capital City Freeway Westbound – Off-ramp to E Street	1,175 feet	AM PM	225 ft. 175 ft.
Capital City Freeway Eastbound – Off-ramp to H Street	1,000 feet	AM PM	400 ft. 375 ft.

Note:
[1] Queue length is 95th percentile queue as reported by SimTraffic microsimulation software.
Source: Fehr & Peers 2013 (see Appendix O).

4.9.3 Regulatory Setting

This section describes the federal, state, and local regulatory settings and policies pertaining to transportation that may be relevant to the project.

Federal Regulations

No pertinent federal regulations affect the proposed project.

State Regulations

In May 2009, Caltrans released a Corridor System Management Report (CSMP) for the Capital City Freeway (Caltrans 2009). The segments of the freeway located within the study area are covered by this document. CSMPs are long-range comprehensive planning documents that define the current LOS on a facility and the future LOS when considering feasible long-term projects. Based on the CSMPs, the segments of the Capital City Freeway located within the project study area currently operate at LOS F conditions, and are expected to operate at LOS F conditions in the future.

According to the *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002), if a freeway facility currently operates at an unacceptable LOS (e.g., LOS F), then the existing LOS should be maintained. A project impact occurs if the addition of project trips exacerbates existing LOS F conditions and leads to a perceptible increase in density on freeway mainline segments or ramp junctions, or a perceptible increase in service volumes

in a weaving area. In addition, a project impact occurs when the addition of project trips causes a queue on the off-ramp approach to a ramp terminal intersection to extend beyond its storage area and onto the freeway mainline.

Regional Regulations

SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy (SCS) 2035 (SACOG 2012) and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The MTP/SCS 2035 was adopted by the SACOG board in 2012.

Local Regulations

City of Sacramento 2030 General Plan

The Mobility Element of the City of Sacramento's 2030 General Plan (City of Sacramento 2009) outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following LOS policy is relevant to this study:

> **Policy M 1.2.2.** The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.
>
> a. Core Area Level of Service Exemption—LOS F conditions are acceptable during peak hours in the Core Area bounded by C Street, the Sacramento River, 30th Street, and X Street. If a Traffic Study is prepared and identifies a LOS impact that would otherwise be considered significant to a roadway or intersection that is in the Core Area as described above, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the citywide transportation system in order to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to road segments in order to conform to the General Plan. This exemption does not affect the

implementation of previously approved roadway and intersection improvements identified for the Railyards or River District planning areas.

b. Level of Service Standards for Multi-Modal Districts – The City shall seek to maintain the following standards in multi-modal districts including the Central Business District, areas within ½ mile walking distance of light rail stations, and in areas designated for urban scale development (Urban Centers, Urban Corridors, and Urban Neighborhoods as designated in the Land Use and Urban Form Diagram). These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher-density development.

   - Maintain operations on all roadways and intersections at LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.

c. Base Level of Service Standard – The City shall seek to maintain the following standards for all areas outside of multi-modal districts:

   - Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or City-initiated project.

Policy M 1.2.2 applies to the study area roadway facilities as follows:

- Study intersections numbered 1–9 located on 28th, 29th, and 30th Streets are within the Core Area and are governed by M 1.2.2 (a). LOS F is acceptable during peak hours, provided that the project provides improvements to other parts of the citywide transportation system within the project site vicinity (or within the area affected by the project's vehicular traffic impacts) to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. Road widening or other improvements to road segments are not required.
- Study intersections numbered 10–12 located on Alhambra Boulevard are within a designated "urban corridor" and are governed by M 1.2.2 (b). LOS A-E is to be maintained at all times; provided, LOS F may be acceptable if improvements are made

to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.

- The remainder of the study intersections, numbered 13–32, are in an area defined as a "traditional neighborhood" and are governed by M 1.2.2 (c). LOS A-D is to be maintained at all times; provided, LOS E or F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.

The Mobility Element of the City of Sacramento's 2030 General Plan also includes the following policies related to connectivity, walking, biking, transit, and parking that are relevant to this study:

Goal M 1.1 Comprehensive Transportation System

Policy M 1.3.1 The City shall require all new residential, commercial, or mixed-use development that proposes or is required to construct or extend streets to develop a transportation network that provides for a well-connected, walkable community, preferably in a grid or modified grid.

Policy M 1.3.2 The City shall require large private developments to provide internal complete streets that connect to the existing roadway system.

Policy M 2.1.1 All new development shall be consistent with the applicable provisions of the Pedestrian Master Plan.

Policy M 2.1.5 The City shall provide a continuous pedestrian network in existing and new neighborhoods that facilitates convenient pedestrian travel free of major impediments and obstacles.

Policy M 3.1.1 The City shall support a well-designed transit system that meets the transportation needs of Sacramento residents and visitors.

Policy M 3.1.16 The City shall require developer contributions for bus facilities and improvements.

Policy M 4.1.5 The City shall continue to work with adjacent jurisdictions to establish the appropriate responsibilities to fund, evaluate, plan, design, construct, and maintain new river crossings.

Goal M 4.3 Neighborhood Traffic

Policy M 4.3.1 The City shall continue wherever possible to design streets and improve development applications in such a manner as to reduce high traffic flows and parking problems within residential neighborhoods.

Goal M 5.1 Integrated Bicycle System

Policy M 5.1.1 All proposed bikeway facilities shall be consistent with the applicable provisions of the Bikeway Master Plan.

Policy M 5.1.2 All proposed bikeway facilities are appropriate to the street classifications and types, traffic volume, and speed on applicable rights-of-way.

Policy M 5.1.4 The proposed project shall not result in conflicts between bicyclists and motor vehicles on streets, and bicyclists and pedestrians on multi-use trails and sidewalks.

Policy M 5.1.7 The proposed project shall include Class II bike lanes on all new arterial and collector streets.

Neighborhood Traffic Management Program

The City of Sacramento has a Neighborhood Traffic Management Program (NTMP) where neighborhoods can petition the City to install traffic calming devices to address residents' concerns about traffic. There are two phases of an NTMP. Phase I involves less restrictive modifications such as the installation of high visibility speed limit signs, striping of bike lanes, and the installation of speed humps. Phase II involves more restrictive measures including half- and full-street closures, diverters, and one-way/two-way street conversions. Phase II modifications are implemented if the Phase I modifications do not adequately address neighborhood concerns.

Two NTMP areas exist near the project site. Both the McKinley Park and Meister Terrace neighborhoods, which comprise the vast majority of the study area, have completed Phase I improvements. Some of the completed improvements include speed humps on McKinley Boulevard, 33rd Street, and C Street; as well as upgraded signage, roadway striping, pedestrian refuge islands, and bulb-outs at various locations.

The Midtown neighborhood, which includes the westernmost portion of the study area, has several more restrictive traffic calming devices ("Phase II" type improvements) in place. These measures include half street closures on all east-west streets between C Street and I Street (not inclusive of these streets). Half street closures prevent traffic from traveling in one

direction on a roadway at a given point, and thereby result in longer travel distances by diverting traffic to other parallel streets. Although these devices result in longer travel time for residents of the area who chose to travel by motor vehicle, these measures assist in discouraging "cut-through" traffic. Within the study area, half street closures that block westbound traffic are located at D and E Streets just west of 28th Street, and on G Street just west of 29th Street. Just outside of the study area, a half street closure blocks westbound traffic on F Street to the west of 25th Street. Figure 4.9-3 provides an overview of the traffic calming devices located west of the Capital City Freeway.

4.9.4 Impacts and Mitigation Measures

Methods of Analysis

This section describes the analysis techniques, assumptions, and results used to identify potential significant impacts of the proposed project on the transportation system. This section first describes the anticipated travel characteristics of the proposed project. It then presents the expected conditions of the transportation system with the addition of the proposed project.

As described in Chapter 4, Introduction to the Analysis, the City of Sacramento, in conjunction with support from SACOG has concluded that the proposed project is consistent with the SCS prepared and adopted by SACOG (see Appendix N). Under Senate Bill 375, projects that are determined to be SCS consistent are granted certain CEQA streamlining benefits. These include exemptions related to the analysis of projects impacts on passenger vehicle greenhouse gas emissions, the regional transportation network, and growth inducement. In this context, the "regional transportation network" means existing and proposed transportation system improvements, including the state transportation system. Therefore, in accordance with the Public Resources Code Section 21159.28, it is not necessary to determine impacts to the state transportation system (i.e., Capital City Freeway). All freeway analysis results documented in this section are for information purposes only, and not utilized for impact analysis.

In urban environments, such as the study area, roadway capacity is governed by the operations of intersections. For this reason and because roadway segments were included in the traffic analysis for the 2030 General Plan, the City of Sacramento determines impacts to the roadway system based upon the operations of intersections. Therefore, the roadway capacity utilization results contained in this section are for information purposes only, and not utilized for impact analysis.

Trip Generation

Table 4.9-8 shows the gross trip generation associated with build-out of the proposed project. Fitted curve equations from the Institute of Transportation Engineers (ITE) Trip Generation

Manual, 9th Edition (ITE 2012) were used to estimate the trips generated by residential land uses. As discussed previously, the residential trip generation calculations include 40 secondary units ("granny flats") to conservatively account for potential trips that could result from additional occupancy in homes that include this option. The residential condominium/townhouse rate was used for these calculations (ITE land use code 230).

The trip generation potential of the neighborhood retail component of the project was calculated using the standard commercial shopping center rate (ITE land use code 820) due to the fact that the exact use of the retail component is unknown at this time. The average rate per thousand square feet (ksf) was applied due to the small size of the neighborhood retail component (2,000 sf); use of the fitted curve equation for this use is not appropriate (the average retail center size in Trip Generation is 331,000 sf). A related rate, "specialty retail center" (ITE land use code 826), was also investigated for use, but deemed inappropriate based on the small sample size (four studies) and much higher standard deviation. The trip generation estimates in Table 4.9-8 conservatively include no reductions for internalized trips between project land uses, no reductions for pass-by trips, and no reduction for trips made by walking, biking, or transit.

Table 4.9-8
Project Trip Generation

Land Use	ITE Land Use Code	Quantity[1]	Trip Rates[2]			AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips
			AM	*PM*	*Daily*	*In*	*Out*	*Total*	*In*	*Out*	*Total*	
Single Family Residential	210	328 DU's	*	*	*	60	179	239	193	113	306	3,132
Secondary Units	230	40 DU's	*	*	*	4	21	25	19	9	28	290
Neighborhood Retail	820	2 KSF	0.96	3.71	42.7	1	1	2	3	4	7	85
Net New Trips						**65**	**201**	**266**	**215**	**126**	**341**	**3,507**

Notes:
1 KSF – thousand square feet; DU – dwelling unit.
2 Trip rates based on data published in Trip Generation Manual 9th Edition (ITE, 2012).
* Residential trips calculated using ITE best fit equations.
Source: Fehr & Peers 2013 (see Appendix O).

As shown in Table 4.9-8, the project is estimated to generate 3,507 daily trips, 266 AM peak hour trips, and 341 PM peak hour trips.

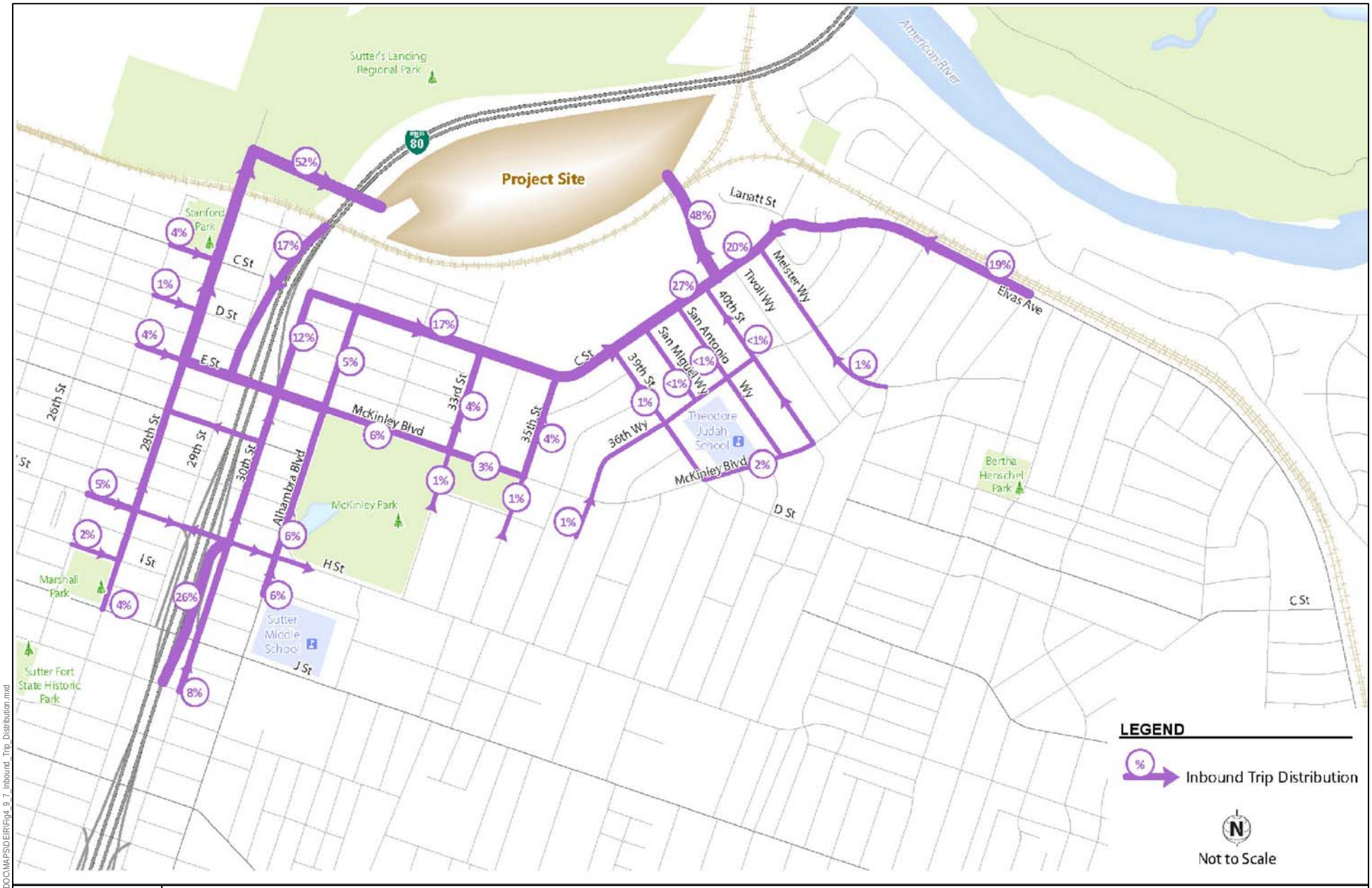
Trip Distribution / Assignment

The distribution of project trips was estimated using a variety of sources and analytical techniques. Due to the grid-based street system, it was particularly important to determine which parallel streets are most likely to be used by project traffic. The following lists the various sources and analytical techniques used to develop the inbound and outbound trip distribution percentages:

- Project-only traffic assignment using the Base Year SACMET regional travel demand model.
- Location of schools that would serve study area (Theodore Judah Elementary, Sutter Middle, and Hiram W. Johnson High).
- Relative travel time/speed comparisons between the project and key destinations (e.g., Capital City Freeway) for various travel routes.
- Review of existing traffic count data.
- Relative ease of travel on parallel routes (e.g., coordinated signals and one-way traffic using multiple lanes on 29th and 30th Streets versus bi-directional traffic and frequent stops on 28th Street and Alhambra Boulevard).

Figure 4.9-7 displays the expected distribution of inbound project trips, and Figure 4.9-8 displays the expected distribution of outbound project trips. It was necessary to develop separate distributions for inbound/outbound trips due to the number of one-way streets, the location of freeway on- and off-ramps, and the presence of traffic diverters (i.e., half street closures) within the study area.

As shown in Figures 4.9-7 and 4.9-8, local streets in Midtown located west of 28th Street are expected to carry between 1% and 5% of project trips depending upon the street. The number of project trips on east-west local streets between C Street and I Street is somewhat limited due, in part, to the previously discussed half street closures in place on these roadways, with the exception of C Street, which does not have a half street closure. Other factors that contribute to limiting through travel on east-west streets in the northern portion of Midtown include the lack of one-way streets, presence of multiple stop controlled intersections, and the presence of traffic circles; all of these factors assist with maintaining relatively low travel speeds on these roadways. One-way streets located south of the study area provide for faster east-west travel times due in part to the provision of multiple lanes in one direction and coordinated traffic signal timing plans to facilitate the progression of traffic.



SOURCE: Fehr + Peers 2013

FIGURE 4.9-7

Inbound Trip Distribution

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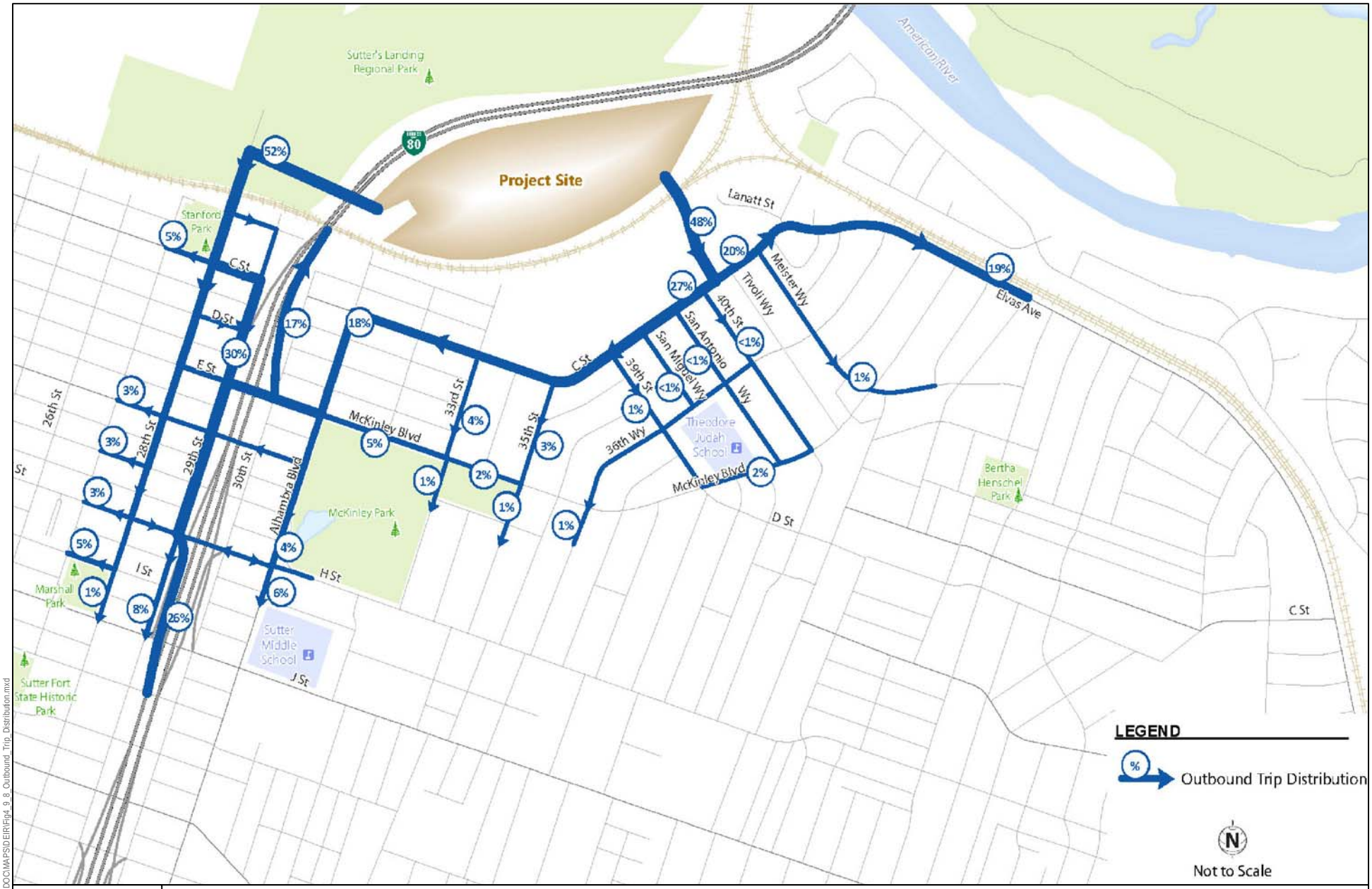

SOURCE: Fehr + Peers 2013

FIGURE 4.9-8

Outbound Trip Distribution

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In the eastern portion of the study area, north–south local streets located to the south of C Street (i.e., 39th Street, San Miguel Way, San Antonio Way, 40th Street, Tivoli Way, Meister Way) are each expected to carry no more than 1% of the project's trips. Project trips on these roadways would primarily consist of relatively short-distance trips to/from destinations located in close proximity to the proposed project (e.g., Theodore Judah Elementary School, Compton's Market). The vast majority of project trips are expected to leave the study area, and will utilize streets that provide for faster travel times and more direct routes to regional activity centers (e.g., C Street, Elvas Avenue).

Project trips were assigned to the study facilities in accordance with the trip generation and distribution calculations presented previously. Project trips were then added to the existing volumes to yield the Existing Plus Project forecasts. Figure 4.9-9 displays the resulting volumes at the study intersections that include buildout of the proposed project.

Thresholds of Significance

The significance criteria used to evaluate the project impacts are based on Appendix G of the CEQA Guidelines, the thresholds adopted by the City in applicable general plans and previous environmental documents, and professional judgment. A significant impact related to transportation and circulation would occur if the project would:

Intersections

- The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project)
- The LOS (without project) is unacceptable and project generated traffic increases the average vehicle delay by 5 seconds or more.

Note, General Plan Mobility Element Policy M 1.2.2 sets forth definitions for what is considered an acceptable LOS. As previously discussed, Policy M 1.2.2 applies to the study area roadway facilities as follows:

- Study intersections numbered 1–9 located on 28th, 29th, and 30th Streets are within the Core Area and are governed by Policy M 1.2.2 (a). LOS F is acceptable during peak hours, provided that the project provides improvements to other parts of the citywide transportation system within the project site vicinity (or within the area affected by the project's vehicular traffic impacts) to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. Road widening or other improvements to road segments are not required.

- Study intersections numbered 10–12 located on Alhambra Boulevard are within a designated "urban corridor" and are governed by Policy M 1.2.2 (b). LOS A-E is to be maintained at all times; provided, LOS F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.
- The remainder of the study intersections, numbered 13–32, are in an area defined as a "traditional neighborhood" and are governed by Policy M 1.2.2 (c). LOS A-D is to be maintained at all times; provided, LOS E or F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.

Transit

- Adversely affect public transit operations
- Fail to adequately provide access to transit.

Bicycle Facilities

- Adversely affect existing or planned bicycle facilities
- Fail to adequately provide for access by bicycle.

Pedestrian Circulation

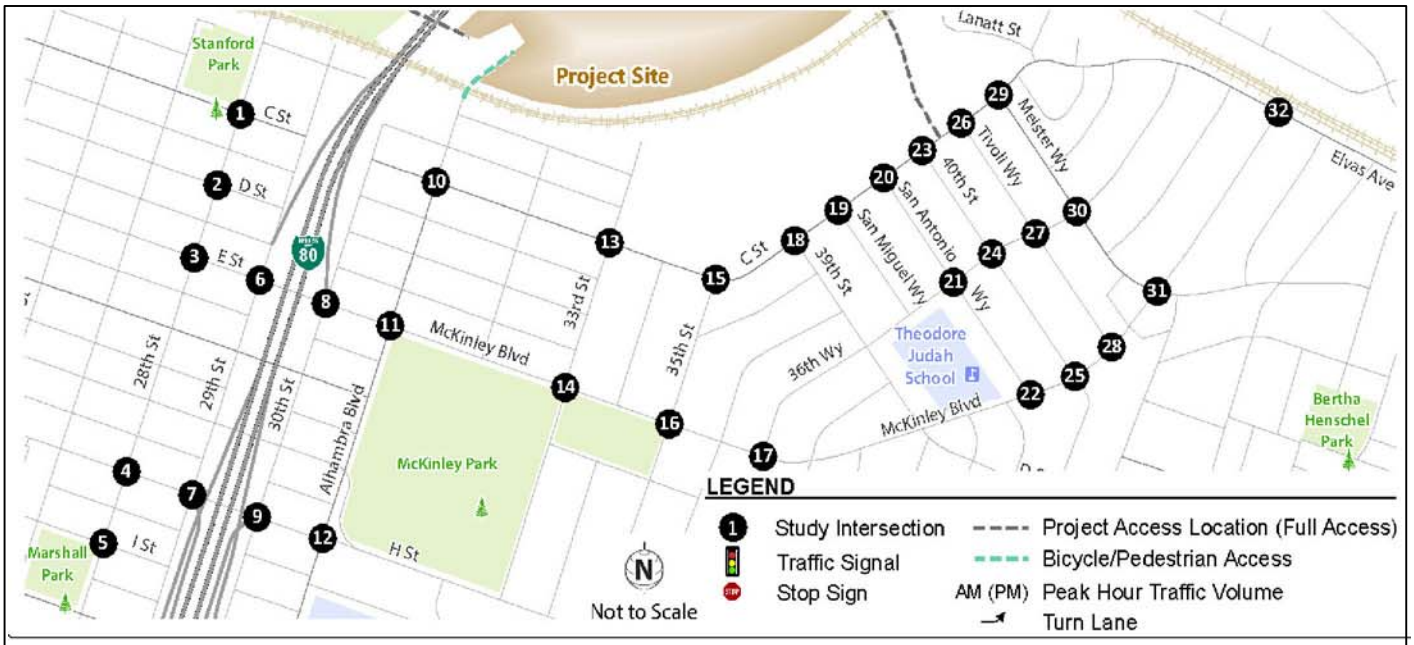
- Adversely affect existing or planned pedestrian facilities
- Fail to adequately provide for access by pedestrians.

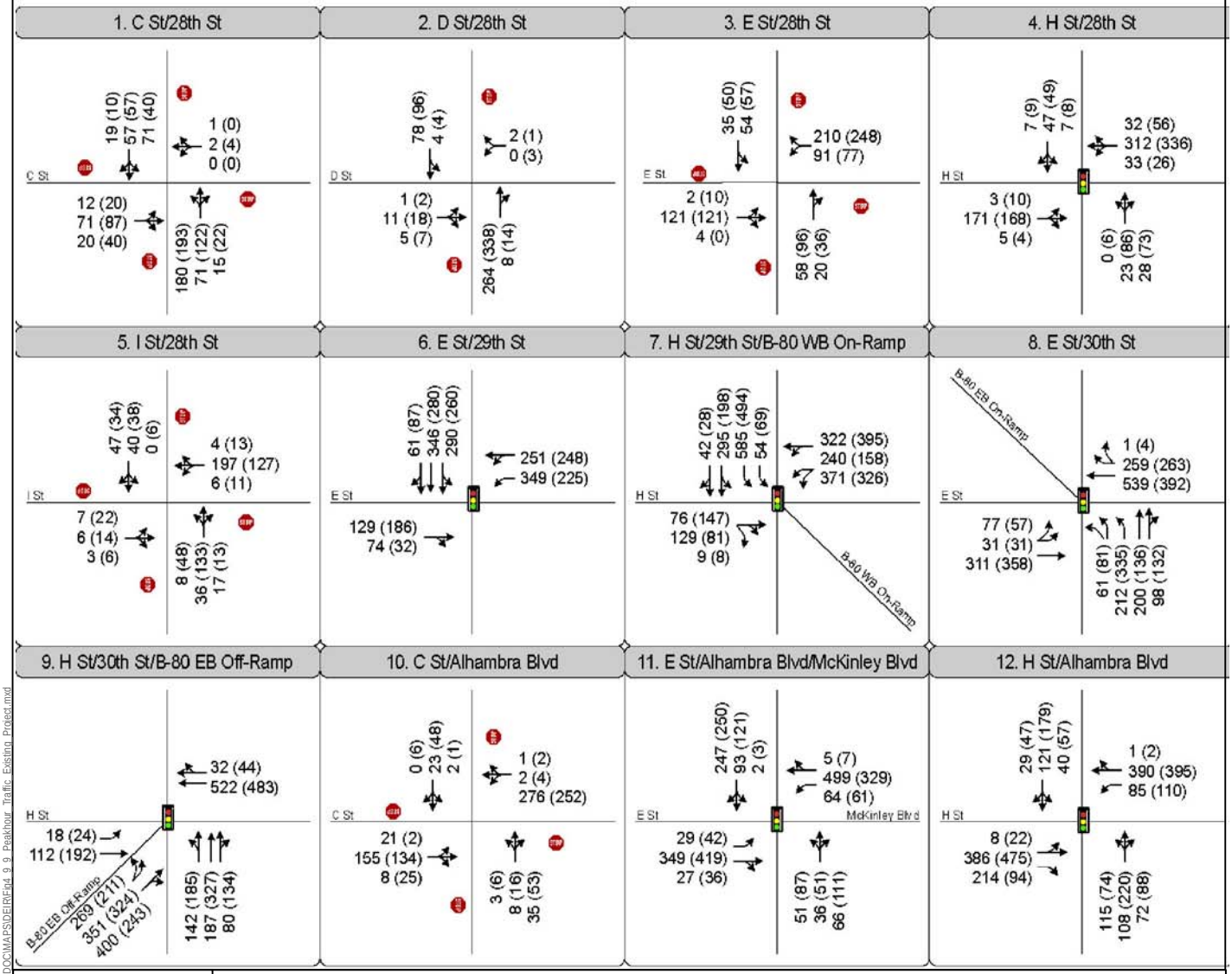
Construction-Related Traffic Impacts

- Degrade an intersection or roadway to an unacceptable level
- Cause inconveniences to motorists due to prolonged road closures
- Result in increased frequency of potential conflicts between vehicles, pedestrians, and bicyclists.

Existing Plus Project Conditions

The study roadways were reanalyzed under Existing Plus Project conditions, which includes no changes to land uses or to the transportation system within the study area other than implementation of the proposed project. Table 4.9-9 summarizes the results.





SOURCE: Fehr + Peers 2013

FIGURE 4.9-9

Peak Hour Traffic Volumes and Lane Configurations- Existing Plus Project Conditions

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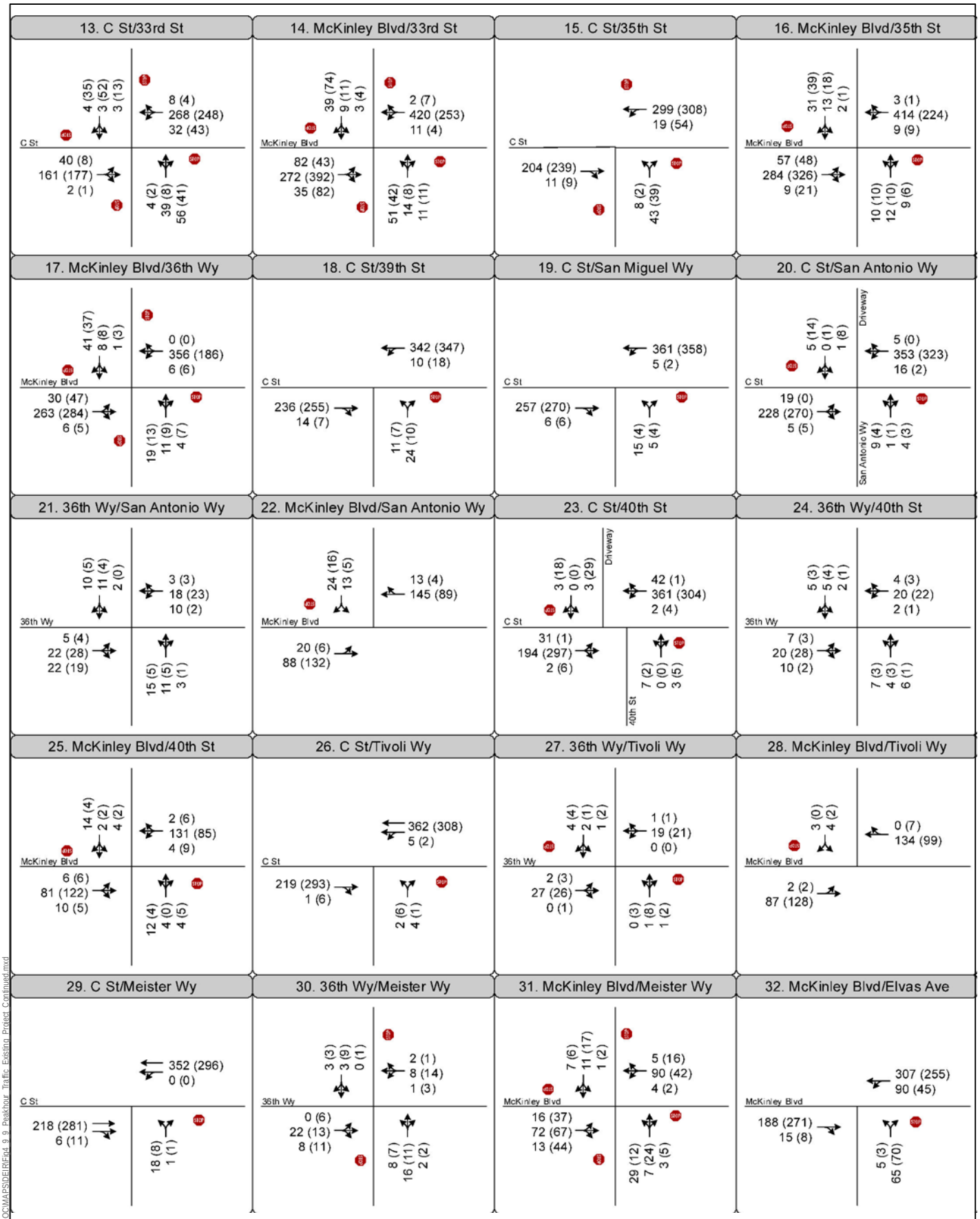

SOURCE: Fehr + Peers 2013

FIGURE 4.9-9 (Continued)

Peak Hour Traffic Volumes and Lane Configurations- Existing Plus Project Conditions

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This table indicates that the largest increases in daily traffic volumes as a result of the proposed project would occur on the northernmost segment of 28th Street (north of E Street) and on C Street, just west of the project access location (located between 40th Street and Tivoli Way); these segments would experience approximately 1,100 and 900 additional daily trips, respectively.

Table 4.9-9
Roadway Segment Capacity Utilization – Existing Plus Project Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Existing		Existing Plus Project	
			Average Daily Traffic	*Level of Service*	*Average Daily Traffic*	*Level of Service*
28th Street – C Street to E Street	Local	2	3,850	C	4,972	E
28th Street – E Street to H Street	Local	2	2,380	A	2,801	A
C Street – Alhambra Boulevard to 33rd Street	Major Collector	2	4,400	A	4,985	A
C Street – 33rd Street to 39th Street	Major Collector	2	5,020	A	5,759	A
C Street – 39th Street to 40th Street	Major Collector	2	4,830	A	5,742	A
C Street – 40th Street to Lanatt Street	Major Collector	2	4,500	A	5,201	A
Elvas Avenue – Lanatt Street to McKinley Blvd	Major Collector	4	4,290	A	4,955	A
Elvas Avenue –McKinley Blvd to C Street	Major Collector	2	6,030	A	6,695	A
39th Street – C Street to McKinley Blvd	Local	2	480	A	516	A
40th Street – C Street to McKinley Blvd	Local	2	70	A	104	A
Meister Way – C Street to McKinley Blvd	Local	2	280	A	316	A
McKinley Blvd – 35th Street to D Street	Minor Collector	2	4,540	A	4,544	A
McKinley Blvd – D Street to Meister Way	Minor Collector	2	2,050	A	2,084	A
McKinley Blvd – Meister Way to Elvas Avenue	Minor Collector	2	1,500	A	1,502	A
C Street – West of 28th Street	Local	2	3,640	C	3,798	C
Tivoli Way – C Street to McKinley Blvd	Local	2	160	A	166	A
San Antonio Way – C Street to	Local	2	390	A	408	A

Table 4.9-9
Roadway Segment Capacity Utilization – Existing Plus Project Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Existing		Existing Plus Project	
			Average Daily Traffic	*Level of Service*	*Average Daily Traffic*	*Level of Service*
McKinley Blvd						
San Miguel Way – C Street to 36th Way	Local	2	280	A	298	A
36th Way – McKinley Blvd to Meister Way	Local	2	820	A	856	A

Source: Fehr & Peers 2013 (see Appendix O).

As shown in Table 4.9-9, the vast majority of the study roadway segments would continue to operate at LOS A on a daily basis with the addition of the proposed project. Exceptions include C Street west of 28th Street, which would continue to operate at LOS C (same as existing) and 28th Street between C Street and E Street, which would degrade from LOS C to LOS E with the addition of the project.

Table 4.9-10 summarizes the Existing Plus Project intersection analysis results (see detailed technical calculations included in Appendix O). As shown, all study intersections located east of Alhambra Boulevard (numbers 13–32) would continue to operate with an overall intersection LOS of B or better.

In the western portion of the study area, intersection operations vary. In general, intersections in close proximity to the Capital City Freeway experience higher levels of delay during peak hours. One intersection would continue to operate unacceptably at LOS F with the addition of the project during the AM peak hour – H Street/Alhambra Boulevard. Vehicular delay at this location would increase by 14 seconds during the AM peak hour with implementation of the proposed project, which is considered a significant impact.

Table 4.9-10
Intersection Operations – Existing Plus Project Conditions

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
C Street/28th Street	All-Way Stop	AM PM	A A	9 9	A A	9 10

Table 4.9-10
Intersection Operations – Existing Plus Project Conditions

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
D Street/28th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)	A (B) A (B)	1 (12) 1 (12)
E Street/28th Street	All-Way Stop	AM PM	A A	7 7	D B	32 14
H Street/28th Street	Traffic Stop	AM PM	A A	8 9	A A	9 10
I Street/28th Street	All-way Stop	AM PM	A A	8 9	A A	8 9
E Street/29th Street/SB Capital City Freeway Off-Ramp	Traffic Signal	AM PM	C C	26 22	E C	66 31
H Street/29th Street/SB Capital City Freeway On-Ramp	Traffic Signal	AM PM	B C	19 29	C C	21 29
E Street/30th Street/NB Capital City Freeway On-Ramp	Traffic Signal	AM PM	C C	26 20	D C	45 27
H Street/30th Street/NB Capital City Freeway On-Ramp	Traffic Signal	AM PM	D D	39 36	D D	40 38
C Street/Alhambra Boulevard	All-Way Stop	AM PM	A A	9 9	A A	9 9
E Street/Alhambra Boulevard	Traffic Signal	AM PM	E C	61 22	E C	77 25
H Street/Alhambra Boulevard	Traffic Signal	AM PM	F E	96 73	**F** E	**110** 80
C Street/33rd Street	All-Way Stop	AM PM	A A	9 9	A A	10 10
McKinley Boulevard/33rd Street	All-Way Stop	AM PM	B B	13 13	B B	13 14
C Street/35th Street	All-Way Stop	AM PM	A A	9 9	A B	9 10
McKinley Boulevard/35th Street	Side-Street Stop	AM PM	A (C) A (B)	2 (17) 2 (15)	A (C) A (C)	2 (17) 2 (15)

Table 4.9-10
Intersection Operations – Existing Plus Project Conditions

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
McKinley Boulevard/36th Street	All-Way Stop	AM PM	B A	11 10	B A	11 10
C Street/39th Street	Side-Street Stop	AM PM	A (A) A (B)	1 (10) 1 (10)	A (A) A (A)	1 (10) 1 (10)
C Street/ San Miguel Way	Side-Street Stop	AM PM	A (A) A (B)	0 (10) 0 (10)	A (B) A (A)	0 (11) 0 (10)
C Street/ San Antonio Way	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)	A (B) A (B)	1 (11) 1 (11)
36th Way/San Antonio Way	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/San Antonio Way	Side Street Stop	AM PM	A (A) A (A)	2 (10) 1 (9)	A (A) A (A)	2 (10) 1 (9)
C Street/40th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (11)	A (B) A (B)	1 (11) 1 (11)
36th Way/40th Street	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/40th Street	Side-Street Stop	AM PM	A (B) A (A)	2 (10) 1 (10)	A (B) A (A)	2 (10) 1 (10)
C Street/Tivoli Way	Side –Street Stop	AM PM	A (A) A (B)	0 (10) 0 (11)	A (B) A (B)	0 (10) 0 (12)
36th Way/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	2 (9) 3 (9)	A (A) A (A)	2 (9) 3 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	0 (9) 0 (10)	A (A) A (A)	0 (9) 0 (10)
C Street/Meister Way	Side-Street Stop	AM PM	A (B) A (B)	0 (11) 0 (11)	A (B) A (B)	0 (11) 0 (11)
36th Way/Meister Way	Side-Street Stop	AM PM	A (A) A (A)	6 (9) 6 (9)	A (A) A (A)	6 (9) 6 (9)
McKinley Boulevard/Meister Way	All-Way Stop	AM PM	A A	8 8	A A	8 8
Elvas Avenue/McKinley Boulevard	Side-Street Stop	AM PM	A (A) A (B)	3 (10) 2 (10)	A (A) A (B)	2 (10) 2 (11)

Note:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicles for the overall intersection and (worst approach).
Bold text indicates significant impact.
Source: Fehr & Peers 2013 (see Appendix O).

As discussed in Section 4.7, Public Services and Recreation, the Sacramento City Unified School District (SCUSD) uses a value of 0.44 elementary students per household for school planning purposes. This would result in a total of 144 elementary students generated by the proposed project. Existing data for the Theodore Judah Elementary School service area provided by SCUSD show that 65.8% of elementary aged children attend Theodore Judah Elementary School, while 34.2% attend other elementary schools.[3] Using these data, it is projected that 95 elementary students from the proposed project would attend Theodore Judah Elementary School and 49 elementary students would attend other schools.

As discussed previously, the project trip distribution estimates used for the transportation analysis result in only a limited number of trips on the local streets located between the project site and Theodore Judah Elementary School, located off of McKinley Boulevard within the study area. To ensure that a larger share of project-generated traffic would not result in additional impacts to study intersections in the vicinity of Theodore Judah Elementary School under Existing Plus Project conditions, a second evaluation of these facilities was completed. This evaluation was completed for the AM peak hour, the time period that is most affected by school-related traffic (due to the fact that school-related traffic overlaps with commute traffic during the AM peak hour). The evaluation incorporated the following set of highly conservative assumptions:

- All 95 children projected to attend Theodore Judah Elementary School using the SCUSD planning value would arrive at the school during the peak hour of commute traffic (i.e., no students would attend before school programs or arrive tardy).
- All trips between the project and the school would utilize motor vehicles, and no students would walk or bike to school.
- No more than one child would ride in each vehicle (i.e., no carpooling or families with multiple children).

The resulting calculations using this modified set of assumptions account for a "worst case scenario" during the AM peak hour. Table 4.9-21 summarizes the results of the analysis (see traffic volumes and detailed calculations included in Appendix O). As shown in Table 4.9-11, all study intersections in the vicinity of Theodore Judah Elementary school would continue to operate at LOS B or better.

[3] Information provided by James C. Dobson, Director II, Planning, Construction & Operations for the SCUSD.

Table 4.9-11
Intersection Operations – Existing Plus Project Conditions
AM Peak Hour School Traffic Analysis

Intersection	Control	Existing		Existing Plus Project – School Traffic Analysis	
		Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
McKinley Boulevard/36th Street	All-Way Stop	B	11	B	11
C Street/39th Street	Side-Street Stop	A (A)	1 (10)	A (B)	1 (10)
C Street/ San Miguel Way	Side-Street Stop	A (A)	0 (10)	A (B)	1 (11)
C Street/ San Antonio Way	Side-Street Stop	A (B)	1 (11)	A (B)	2 (11)
36th Way/San Antonio Way	All-Way Yield	A (A)	7 (7)	A (A)	7 (7)
McKinley Boulevard/San Antonio Way	Side Street Stop	A (A)	2 (10)	A (A)	2 (10)
C Street/40th Street	Side-Street Stop	A (B)	1 (11)	A (B)	1 (12)
36th Way/40th Street	All-Way Yield	A (A)	7 (7)	A (A)	7 (7)
McKinley Boulevard/40th Street	Side-Street Stop	A (B)	2 (10)	A (B)	3 (11)
C Street/Tivoli Way	Side –Street Stop	A (A)	0 (10)	A (B)	0 (10)
36th Way/Tivoli Way	Side-Street Stop	A (A)	2 (9)	A (A)	2 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	A (A)	0 (9)	A (A)	0 (9)

Note:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicles for the overall intersection and (worst approach).
Source: Fehr & Peers 2013 (see Appendix O).

Table 4.9-12 displays the AM and PM peak hour freeway operations with the addition of the proposed project (see detailed technical calculations included in Appendix O). As shown in Table 4.9-12, the project would not change the LOS at any of the study freeway facilities. All freeway facilities would continue to operate at LOS D during both peak hours. However, as stated previously, actual peak hour conditions on the Capital City Freeway within the study area are LOS F during peak periods.

Table 4.9-12
Freeway Operations – Existing Plus Project Conditions

Freeway Facility	Peak Hour	Type	Existing			Existing Plus Project		
			Level of Service	*Density*[1]	*Volume*[2]	*Level of Service*	*Density*[1]	*Volume*[2]
Capital City Freeway EB – P Street on-ramp to H Street off-ramp	AM PM	Weave	C* B*	— —	5,540 4,828	C** B**	— —	5,557 4,884
Capital City Freeway EB - J Street on-ramp	AM PM	Merge	B* C*	19 20	231 404	B** C**	19 20	231 404
Capital City Freeway EB - E Street on-ramp	AM PM	Merge	D* D*	31 32	514 627	D** D**	31 32	548 648
Capital City Freeway WB - E Street off-ramp	AM PM	Diverge	D* D*	35 34	625 555	D** D**	35 34	636 597
Capital City Freeway WB -J Street off-ramp	AM PM	Diverge	D* D*	33 32	441 259	D** D**	33 32	441 259
Capital City Freeway WB – H Street on-ramp to P Street off-ramp	AM PM	Weave	D* C*	— —	5,397 5,207	D** C**	— —	5,449 5,240

Notes:
[1] Measured in passenger car equivalents per lane per mile.
[2] Volumes on the merge and diverge segments represent ramp volumes; volumes on the weave segments are freeway mainline volumes.
* Observed LOS is worse than reported. The analysis methodology does not fully capture traffic operations effects in congested locations with bottlenecks.
** Actual LOS would be worse as the project adds trips to a congested facility operating at LOS F. The analysis methodology does not fully capture traffic operations effects in congested locations.
Note: Methodology used for weaving sections (Leisch Method) does not report density, and is instead based upon service volume.
Source: Fehr & Peers 2013 (see Appendix O).

Table 4.9-13 displays 95th percentile peak hour freeway off-ramp queues within the study area calculated using SimTraffic microsimulation software. As shown, all study freeway off-ramp queues remain within the available storage area during both the AM and PM peak hours under Existing Plus Project conditions.

Table 4.9-13
Off-Ramp Queuing – Existing Plus Project Conditions

Off-Ramp	Storage Length	Existing		Existing Plus Project	
		Peak Hour	*Queue*[1]	*Peak Hour*	*Queue*[1]
Capital City Freeway Westbound – Off-ramp to E Street	1,175 feet	AM PM	225 ft. 175 ft.	AM PM	675 ft. 300 ft.
Capital City Freeway Eastbound – Off-ramp to H Street	1,000 feet	AM PM	400 ft. 375 ft.	AM PM	400 ft. 450 ft.

Notes:
[1] Queue length is 95th percentile queue as reported by SimTraffic microsimulation software.
Source: Fehr & Peers 2013 (see Appendix O).

Bicycle, Pedestrian, and Transit Operations

The proposed project would include pedestrian facilities throughout the project site, including a Class I off-street bicycle/pedestrian trail and a new bicycle/pedestrian undercrossing of the UPRR tracks at the northern terminus of Alhambra Boulevard, if approved by UPRR. In addition, sidewalks will be provided on the A Street extension to 28th Street and on the new roadway connection to C Street. All roadways within the study area would be low-volume, low-speed streets conducive to bicycle and pedestrian travel.

The project will increase pedestrian and bicycle activity across the 28th Street at-grade railroad crossing as the street would serve as one potential route for project residents to access destinations in Midtown Sacramento. However, as noted earlier, there are currently no sidewalks or bicycle facilities at this railroad crossing. The project would also result in increased bicycle and pedestrian travel along Alhambra Boulevard, which has existing bicycle and pedestrian facilities.

In addition to providing internal pedestrian and bicycle facilities, the proposed project will provide a pedestrian/bicycle link across the Capital City Freeway between established East Sacramento neighborhoods and Sutter's Landing Regional Park via the proposed bicycle/pedestrian undercrossing of the UPRR tracks, if approved by UPRR, and the extension of A Street.

No transit enhancements are proposed as part of the project. However, the project access points would result in connections to existing bus stops that are as direct as possible (i.e., bicycle/pedestrian access at Alhambra Boulevard would provide for a direct route to the nearest bus stop to project located at the Alhambra Boulevard/E Street intersection; C

Street access roadway would provide for direct route to stop located west of 40th Street/ McKinley Boulevard intersection).

Railroad Crossings

The project would result in a net increase of about 1,800 daily trips to the at-grade railroad crossing on 28th Street under Existing Plus Project conditions. The at-grade crossing currently has crossing arms, warning bells, overhead flashing lights, signage, and pavement markings. The Railroad Safety Statistics Annual Report, 2007 (Federal Railroad Administration 2009) reports motor vehicle accident rates throughout the United States at public at-grade rail crossings. Data from this publication indicates that the types of controls and warning devices present at this crossing are associated with lower levels of accident rates when considering the entire range of potential warning devices.

The 28th Street at-grade crossing is located approximately 550 feet north of the C Street/28th Street intersection. This distance allows for approximately 22 northbound vehicles to queue at the crossing when the crossing gates are down without blocking the C Street/28th Street intersection. Assuming uniform arrival of vehicles during peak hours under Existing Plus Project conditions, the gates could be closed for the following amount of time without resulting in queues that extend to the C Street/28th Street intersection:

- **AM Peak Hour:** Northbound volume of 84 vehicles = 1.4 vehicles per minute. Estimated time of gate closure before queue extends to C Street/28th Street intersection is approximately 15.7 minutes.
- **PM Peak Hour:** Northbound volume of 142 vehicles = 2.37 vehicles per minute. Estimated time of gate closure before queue extends to C Street/28th Street intersection is approximately 9.3 minutes.

Using train data collected over a period of 6 days in August 2013 as part of the noise study for the project (see Chapter 2, Project Description, and Section 4.6, Noise), it is possible to estimate peak hour queue lengths under Existing Plus Project conditions. This information was collected using a sound meter at the southern edge of the project site, and includes data on the timing and duration of train activity.

Given that the sound meter records noise before and after a train is immediately adjacent to the monitoring site, the duration data includes extra time associated with the approach and departure of trains, and corresponds with a portion of the additional time necessary for warning gates to open and close at the 28th Street crossing. This was verified through field observations, which measured the length of gate closure for four passenger train crossings on October 15, 2013, and found an average gate closure time of approximately 36 seconds.

Passenger train duration data recorded by the sound meter was found to be 12 seconds lower than the observed average passenger train duration (36 seconds). Therefore, the vehicle queue length calculations below include an extra 12 seconds of gate closure time beyond the average duration data measured using the sound meter.

- **AM Peak Hour Northbound Queue (Existing Plus Project Conditions)**
    - **Passenger Trains** (Frequency = 1 scheduled during peak hour): Average gate closure time of 36 seconds with 1.4 vehicles arriving per minute. Estimated average queue length of less than 1 vehicle (< 25 feet).
    - **Freight Trains** (Frequency = Average of 0.9 per hour on peak day): Average gate closure time of 89 seconds with 1.4 vehicles arriving per minute. Estimated average queue length of 2 vehicles (approximately 50 feet).
- **PM Peak Hour Northbound Queue (Existing Plus Project Conditions)**
    - **Passenger Trains** (Frequency = 2 scheduled during peak hour): Average gate closure time of 36 seconds with 2.37 vehicles arriving per minute. Estimated average queue length of less than 1.5 vehicles (approximately 35 feet).
    - **Freight Trains** (Frequency = Average of 0.9 per hour on peak day): Average gate closure time of 89 seconds with 2.37 vehicles arriving per minute. Estimated average queue length of 3.5 vehicles (approximately 90 feet).

Project-Specific Impacts and Mitigation Measures

4.9-1: The proposed project could cause potentially significant impacts to study intersections. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

According to Table 4.9-10, the proposed project would exacerbate LOS F conditions at the H Street/Alhambra Boulevard intersection under Existing Plus Project conditions by adding more than five seconds during the AM peak hour. This is considered a **significant impact.**

Mitigation Measures

Implementation of Mitigation Measure 4.9-1 would improve peak hour operations at the H Street/Alhambra Boulevard intersection to an acceptable LOS D during the AM peak hour. With implementation of Mitigation Measure 4.9-1, the impact would be **less than significant**.

4.9-1 The project applicant shall pay the City of Sacramento Traffic Operations Center to monitor and re-time the H Street/Alhambra Boulevard traffic signal to optimize traffic flow through the intersection.

4.9-2: Project buildout could cause potentially significant impacts to transit. Based on the analysis below the impact is *less than significant.*

The project would not adversely affect public transit operations. Project residents, visitors, and patrons would be provided adequate access to transit, including three bus routes that have stops within the study area. Transit service within the study area currently has adequate capacity, and per RT's Transit Master Plan (i.e., Transit Action Plan), ridership is periodically monitored to determine the need for additional service. Therefore, project impacts to transit are considered **less than significant**.

Mitigation Measures

None required.

4.9-3: Project buildout could cause potentially significant impacts to pedestrian facilities. Based on the analysis below the impact is *less than significant.*

The project applicant will construct curb, gutter, sidewalks and planters per City standards, in addition to a new off-street bicycle/pedestrian trail and a bicycle/pedestrian undercrossing of the UPRR tracks at the northern terminus of Alhambra Boulevard. The impact would be **less than significant.**

Mitigation Measures

None required.

4.9-4: Project buildout could cause potentially significant impacts to bicycle facilities. Based on the analysis below the impact is *less than significant.*

Implementation of the project would not remove any existing bicycle facility or interfere with any facility that is planned in the 2010 City of Sacramento Bikeway Master Plan. The project applicant will construct bicycle facilities per City standards. The impact would be **less than significant**.

Mitigation Measures

None required.

4.9-5: Project buildout could cause potentially significant impacts due to construction-related activities. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

Construction may include disruptions to the transportation network near the site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian, bicycle, and transit access may be disrupted. Heavy vehicles will access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions. Therefore, the impacts are considered **significant**.

Mitigation Measures

Implementation of this mitigation would reduce this impact to **less than significant**.

4.9-5 Prior to the beginning of construction, the applicant shall prepare a construction traffic and parking management plan to the satisfaction of City Traffic Engineer and subject to review by all affected agencies. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. At a minimum, the plan shall include:

- Description of trucks including: number and size of trucks per day, expected arrival/departure times, truck circulation patterns.
- Description of staging area including: location, maximum number of trucks simultaneously permitted in staging area, use of traffic control personnel, specific signage.
- Description of street closures and/or bicycle and pedestrian facility closures including: duration, advance warning and posted signage, safe and efficient access routes for emergency vehicles, and use of manual traffic control.
- Description of driveway access plan including: provisions for safe vehicular, pedestrian, and bicycle travel, minimum distance from any open trench, special signage, and private vehicle accesses.

Cumulative Impacts

This section describes anticipated cumulative (2035) operating conditions in the study area for the roadway, transit, and bicycle/pedestrian systems.

Traffic Forecasts

The most recent version of the SACMET regional travel demand model (TDM) developed and maintained by SACOG was used to forecast cumulative (year 2035) traffic volumes within the study area. The cumulative version of this model accounts for planned land use growth within the City of Sacramento according to the City's 2030 General Plan, as well as within the surrounding region. The SACMET model also accounts for planned improvements to the surrounding transportation system, and incorporates the current MTP/SCS for the Sacramento region. The version of the model used to develop the forecasts was modified to include the most recent planned land uses and transportation projects within the City of Sacramento.

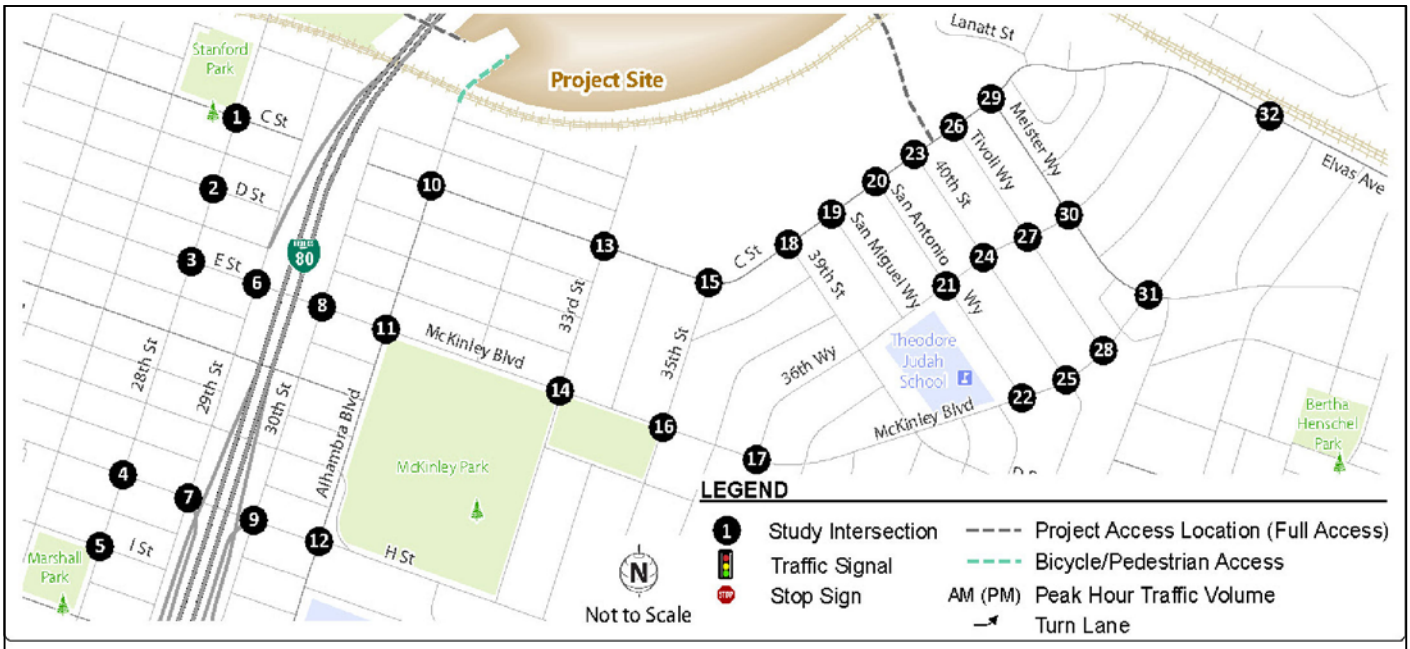
These planned land uses include employment growth in the area located on the opposite side of the Capital City Freeway from the project site. This area, located north of the UPRR tracks and west of 28th Street, has been discussed by Caltrans as one of the potential sites for a passenger rail maintenance facility. The project site has also been identified as one of the potential sites for this rail maintenance facility (see Chapter 5, Project Alternatives, for additional information). The employment growth projections included in the model for the area west of 28th Street would account for the construction of a rail maintenance facility in the event that this particular site is chosen.

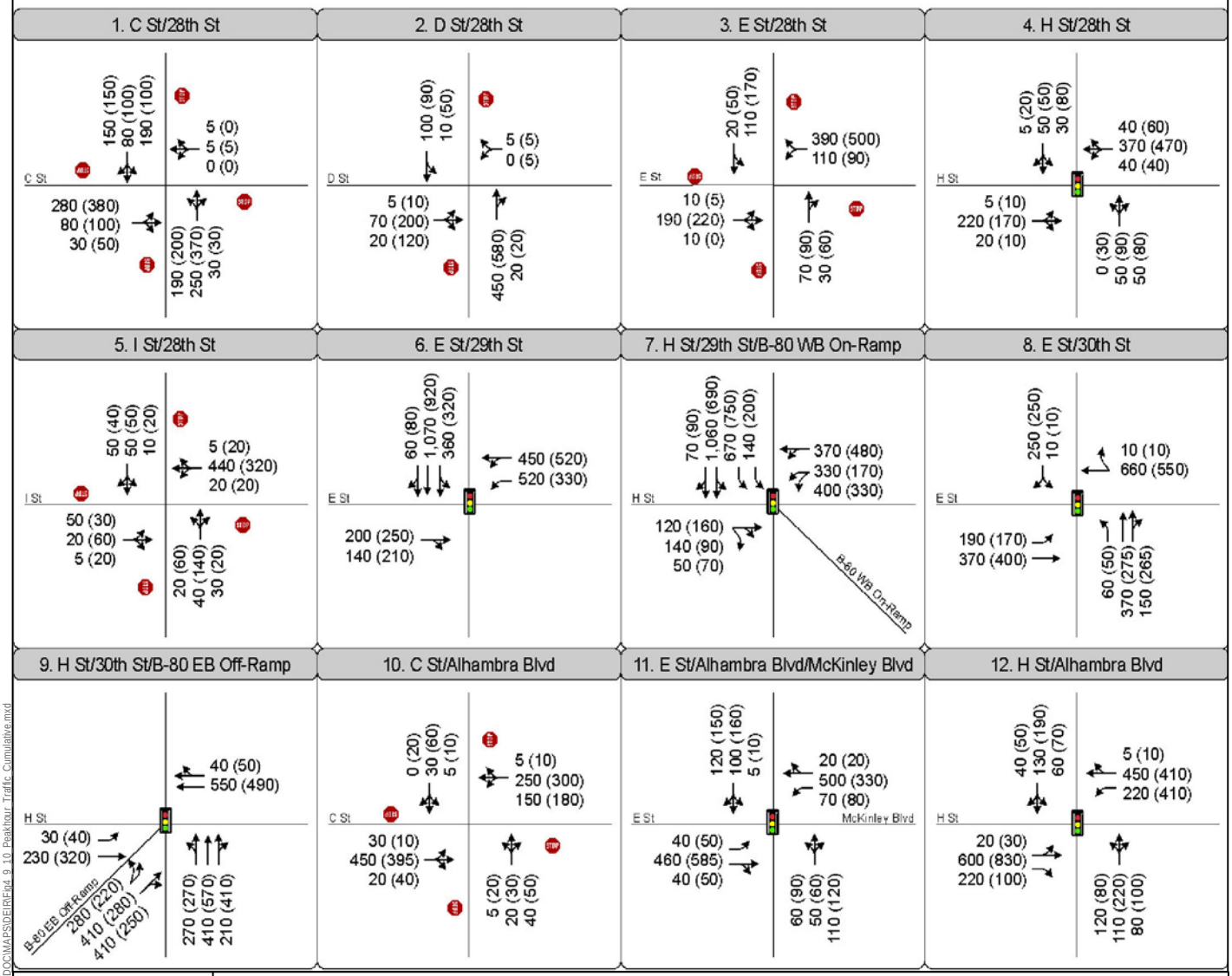
The cumulative analyses assume the following roadway improvements within the study area:

- **Sutter's Landing Parkway** – Construction of a new east-west roadway extending between 28th Street and Richards Boulevard.
- **Capital City Freeway/Sutter's Landing Parkway Interchange** – Construction of a new interchange between Sutter's Landing Parkway and the Capital City Freeway. It is assumed that this interchange would not provide access to the project site, and that all traffic would access the interchange to/from the west of the freeway.
- **Capital City Freeway Eastbound Transition Lane** – Extension of the eastbound transition lane on the Capital City Freeway to just west of the American River bridge (lane currently ends just west of the E Street on-ramp). Construction of this project would result in the closure of the E Street on-ramp to eastbound Capital City Freeway.
- **E Street Ramp Closure and 30th Street Two-Way Conversion** – Closure of the E Street on-ramp to eastbound Capital City Freeway and conversion of the one-way segment of 30th Street between D Street and E Street to two-way travel.

Figure 4.9-10 displays the resulting cumulative AM and PM peak hour traffic volumes at each of the study intersections. A comparison between existing traffic volumes and cumulative year volumes revealed the following travel trends:

- A large increase in southbound/westbound traffic exiting the Capital City Freeway and continuing southbound on 29th Street through the study area. Traffic growth under Cumulative conditions results in significantly higher levels of congestion on the Capital City Freeway during peak hours, and a corresponding increase in traffic diverting off of the freeway and onto local streets.
- A large increase in traffic on 28th Street as a result of the construction of Sutter's Landing Parkway and the Capital City Freeway/Sutter's Landing Parkway interchange.
- A decrease in southbound traffic on Alhambra Boulevard between C Street and E Street due to the conversion of the parallel segment of 30th Street to two-way operations.
- A large increase in traffic on C Street west of 28th Street, due in part to the construction of Sutter's Landing Parkway and the Capital City Freeway/Sutter's Landing Parkway interchange. It should be noted that traffic volume on this roadway increases at a much higher rate than other parallel roadways located to the south, as the parallel roadways feature half street closures, while C Street does not.





SOURCE: Fehr + Peers 2013

FIGURE 4.9-10

Peak Hour Traffic Volumes and Lane Configurations- Cumulative Conditions

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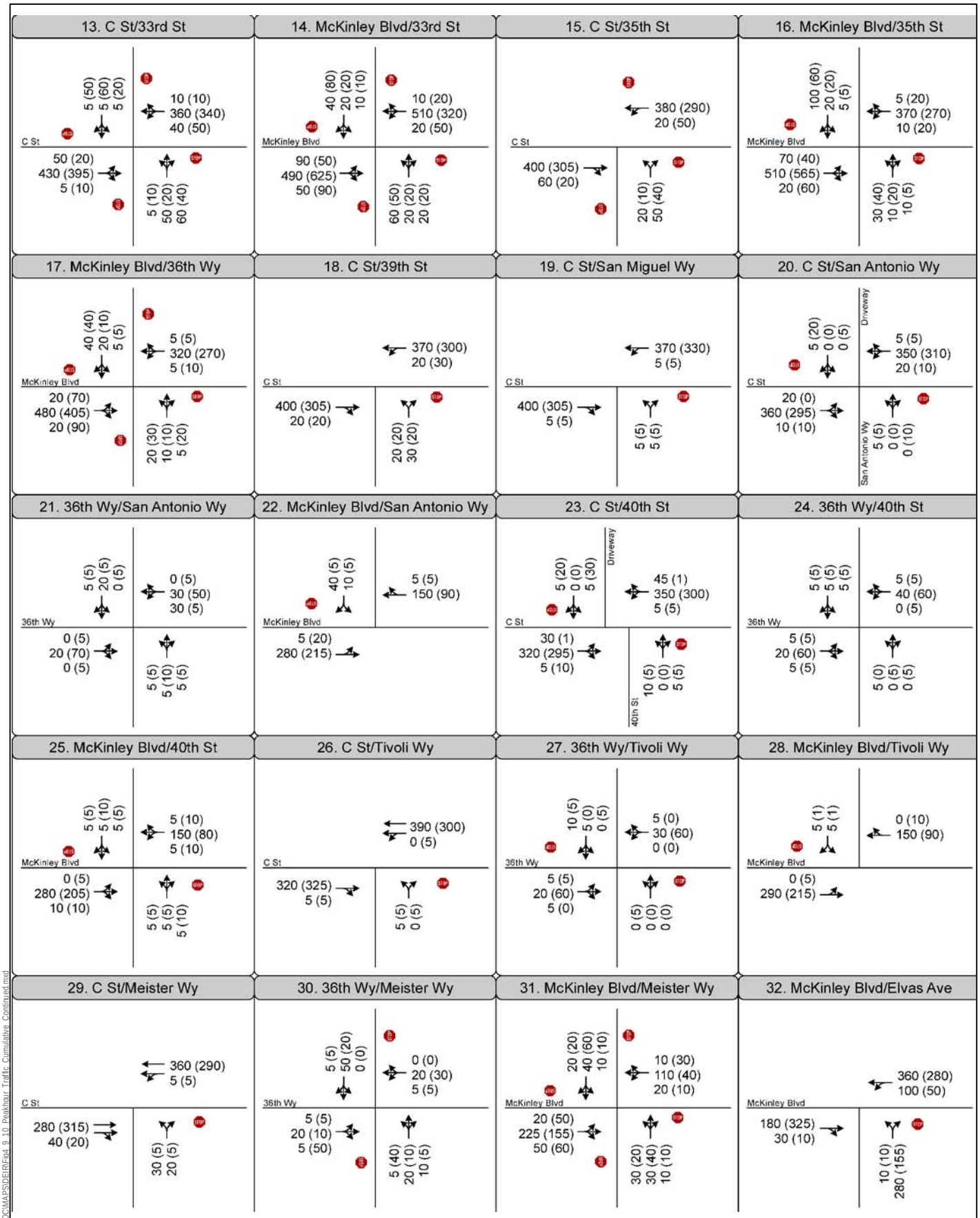

SOURCE: Fehr + Peers 2013

FIGURE 4.9-10 (Continued)

Peak Hour Traffic Volumes and Lane Configurations- Cumulative Conditions

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Cumulative Conditions

Table 4.9-14 summarizes the cumulative daily traffic volumes (without the proposed project) and the corresponding levels of service according to the thresholds shown in Table 4.9-2. As shown, the following two roadways operate at LOS F under Cumulative conditions:

- 28th Street between C Street and E Street
- C Street west of 28th Street.

Each of these roadway segments experiences a substantial amount of traffic growth due to the construction of Sutter's Landing Parkway and the Capital City Freeway/Sutter's Landing Parkway interchange.

Table 4.9-14
Roadway Segment Capacity Utilization – Cumulative Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Average Daily Traffic	Level of Service
28th Street – C Street to E Street	Local	2	6,500	F
28th Street – E Street to H Street	Local	2	2,600	A
C Street – Alhambra Boulevard to 33rd Street	Major Collector	2	8,600	A
C Street – 33rd Street to 39th Street	Major Collector	2	8,900	A
C Street – 39th Street to 40th Street	Major Collector	2	7,500	A
C Street – 40th Street to Lanatt Street	Major Collector	2	7,100	A
Elvas Avenue – Lanatt Street to McKinley Blvd	Major Collector	4	6,800	A
Elvas Avenue –McKinley Blvd to C Street	Major Collector	2	7,000	A
39th Street – C Street to McKinley Blvd	Local	2	500	A
40th Street – C Street to McKinley Blvd	Local	2	100	A
Meister Way – C Street to McKinley Blvd	Local	2	400	A
McKinley Blvd – 35th Street to D Street	Minor Collector	2	7,100	D
McKinley Blvd – D Street to Meister Way	Minor Collector	2	3,500	A
McKinley Blvd – Meister Way to Elvas Avenue	Minor Collector	2	2,000	A
C Street – West of 28th Street	Local	2	8,000	F

Table 4.9-14
Roadway Segment Capacity Utilization – Cumulative Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Average Daily Traffic	Level of Service
Tivoli Way – C Street to McKinley Blvd	Local	2	150	A
San Antonio Way – C Street to McKinley Blvd	Local	2	250	A
San Miguel Way – C Street to 36th Way	Local	2	150	A
36th Way – McKinley Blvd to Meister Way	Local	2	600	A

Source: Fehr & Peers 2013 (see Appendix O).

Table 4.9-15 summarizes peak hour intersection operations at the study intersections (see detailed calculations included in Appendix O) under Cumulative conditions (without the proposed project). As shown, all study intersections located east of 35th Street (numbers 18–32) operate with an overall intersection LOS of A, with all individual approaches to side-street stop controlled intersections operating no worse than LOS B.

Traffic growth in the western portion of the study area results in higher levels of delay at the study intersections. The following intersections would operate unacceptably under cumulative conditions:

- E Street/Alhambra Boulevard – LOS F during both peak hours
- H Street/Alhambra Boulevard – LOS F during both peak hours
- McKinley Boulevard/33rd Street – LOS F during the PM peak hour.

Table 4.9-15
Intersection Operations – Cumulative Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay[1]
C Street/28th Street	All-Way Stop	AM PM	D F	27 69
D Street/28th Street	Side-Street Stop	AM PM	A (B) A (B)	2 (15) 15 (48)
E Street/28th Street	All-Way Stop	AM PM	D E	29 49
H Street/28th Street	Traffic Signal	AM PM	C F	16 146
I Street/28th Street	All-Way Stop	AM PM	B B	12 11

Table 4.9-15
Intersection Operations – Cumulative Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay[1]
E Street/29th Street/SB Capital City Freeway Off-Ramp	Traffic Signal	AM PM	D E	49 77
H Street/29th Street/SB Capital City Freeway On-Ramp	Traffic Signal	AM PM	E D	60 47
E Street/30th Street	Traffic Signal	AM PM	D C	39 33
H Street/30th Street/NB Capital City Freeway Off-Ramps	Traffic Signal	AM PM	F F	119 266
C Street/Alhambra Boulevard	All-Way Stop	AM PM	B C	15 18
E Street/Alhambra Boulevard	Traffic Signal	AM PM	**F** **F**	**127** **127**
H Street/Alhambra Boulevard	Traffic Signal	AM PM	**F** **F**	**190** **380**
C Street/33rd Street	All-Way Stop	AM PM	B B	15 14
McKinley Boulevard/33rd Street	All-Way Stop	AM PM	D **F**	34 **56**
C Street/35th Street	All-Way Stop	AM PM	B B	13 10
McKinley Boulevard/35th Street	Side-Street Stop	AM PM	A (E) A (D)	4 (35) 4 (33)
McKinley Boulevard/36th Street	All-Way Stop	AM PM	B C	14 15
C Street/39th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 1 (11)
C Street/San Miguel Way	Side-Street Stop	AM PM	A (B) A (B)	0 (11) 0 (11)
C Street/San Antonio Way	Side-Street Stop	AM PM	A (B) A (B)	1 (13) 1 (11)
36th Way/San Antonio Way	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/San Antonio Way	Side-Street Stop	AM PM	A (A) A (A)	1 (10) 1 (10)
C Street/40th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 1 (11)
36th Way/40th Street	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)

Table 4.9-15
Intersection Operations – Cumulative Conditions

Intersection	Control	Peak Hour	Level of Service	Average Delay[1]
McKinley Boulevard/40th Street	Side-Street Stop	AM PM	A (A) A (B)	1 (12) 2 (11)
C Street/Tivoli Way	Side-Street Stop	AM PM	A (B) A (B)	0 (13) 0 (11)
36th Way/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	2 (9) 1 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	AM PM	A (B) A (A)	0 (10) 0 (10)
C Street/Meister Way	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 0 (11)
36th Way/Meister Way	Side-Street Stop	AM PM	A (A) A (A)	4 (10) 7 (10)
McKinley Boulevard/Meister Way	All-Way Stop	AM PM	A A	9 9
Elvas Avenue/McKinley Boulevard	Side-Street Stop	AM PM	A (B) A (B)	5 (12) 3 (12)

Notes:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicle for the overall intersection and (worst approach).
Bold text indicates unacceptable operations.
Source: Fehr & Peers 2013 (see Appendix O).

The AM and PM peak hour freeway operations are presented in Table 4.9-16 (see technical calculations included in Appendix O). As shown, the following freeway facilities would operate at LOS F under cumulative conditions:

- Eastbound Capital City Freeway from the P Street on-ramp to the H Street off-ramp (weave segment) – LOS F during the AM peak hour
- Westbound Capital City Freeway off-ramp to E Street – LOS F during both peak hours.

Table 4.9-16
Freeway Operations – Cumulative Conditions

Freeway Facility	Peak Hour	Type	Level of Service	Density[1]	Volume[2]
Capital City Freeway EB – P Street on-ramp to H Street off-ramp	AM PM	Weave	F* E*	— —	8,110 7,340
Capital City Freeway EB – J Street on-ramp	AM PM	Merge	D* D*	33 34	940 1,070
Capital City Freeway WB – E Street off-ramp	AM PM	Diverge	F* F*	— —	1,490 1,320
Capital City Freeway WB – J Street off-ramp	AM PM	Diverge	E* E*	38 40	450 260
Capital City Freeway WB – H Street on-ramp to P Street off-ramp	AM PM	Weave	E* D*	—	6,710 6,890

Notes:
1 Measured in passenger car equivalents per lane per mile.
2 Volumes on the merge and diverge segments represent ramp volumes; volumes on the weave segments are freeway mainline volumes.
* The analysis methodology does not fully capture traffic operations effects in congested locations with bottlenecks.
Note: Methodology used for weaving sections (Leisch Method) does not report density, and is instead based upon service volume; density not reported for LOS F facilities.
Source: Fehr & Peers 2013 (see Appendix O).

Table 4.9-17 displays 95th percentile peak hour freeway off-ramp queues within the study area calculated using SimTraffic microsimulation software. As shown, all study freeway off-ramp queues remain within the available storage area during both the AM and PM peak hours.

Table 4.9-17
Off-Ramp Queuing – Cumulative Conditions

Off-Ramp	Storage Length	Peak Hour	Queue[1]
Capital City Freeway Westbound – Off-ramp to E Street	1,175 feet	AM PM	425 ft. 800 ft.
Capital City Freeway Eastbound – Off-ramp to H Street	1,000 feet	AM PM	775 ft. 675 ft.

Note:
1 Queue length is 95th percentile queue as reported by SimTraffic microsimulation software.
Source: Fehr & Peers 2013 (see Appendix O).

Cumulative Plus Project Conditions

Table 4.9-18 compares Cumulative and Cumulative Plus Project daily traffic volumes and presents the corresponding levels of service. As shown, the addition of the project under

cumulative conditions would not change the level of service at any of the study roadway segments; however, the project would add traffic to the following two roadways operating at LOS F under cumulative conditions:

- 28th Street between C Street and E Street
- C Street west of 28th Street.

Table 4.9-18
Roadway Segment Operations – Cumulative Plus Project Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Cumulative		Cumulative Plus Project	
			Average Daily Traffic	*Level of Service*	*Average Daily Traffic*	*Level of Service*
28th Street – C Street to E Street	Local	2	6,500	F	7,616	F
28th Street – E Street to H Street	Local	2	2,600	A	3,021	B
C Street – Alhambra Boulevard to 33rd Street	Major Collector	2	8,600	A	9,095	B
C Street – 33rd Street to 39th Street	Major Collector	2	8,900	A	9,530	B
C Street – 39th Street to 40th Street	Major Collector	2	7,500	A	8,289	A
C Street – 40th Street to Lanatt Street	Major Collector	2	7,100	A	7,801	A
Elvas Avenue – Lanatt Street to McKinley Blvd	Major Collector	4	6,800	A	7,465	A
Elvas Avenue –McKinley Blvd to C Street	Major Collector	2	7,000	A	7,665	A
39th Street – C Street to McKinley Blvd	Local	2	500	A	536	A
40th Street – C Street to McKinley Blvd	Local	2	100	A	134	A
Meister Way – C Street to McKinley Blvd	Local	2	400	A	436	A
McKinley Blvd – 35th Street to D Street	Minor Collector	2	7,100	D	7,104	D
McKinley Blvd – D Street to Meister Way	Minor Collector	2	3,500	A	3,534	A
McKinley Blvd – Meister Way to Elvas Avenue	Minor Collector	2	2,000	A	2,002	A
C Street – West of 28th Street	Local	2	8,000	F	8,158	F

Table 4.9-18
Roadway Segment Operations – Cumulative Plus Project Conditions

Roadway Segment	General Plan Designation	Number of Lanes	Cumulative		Cumulative Plus Project	
			Average Daily Traffic	*Level of Service*	*Average Daily Traffic*	*Level of Service*
Tivoli Way – C Street to McKinley Blvd	Local	2	150	A	156	A
San Antonio Way – C Street to McKinley Blvd	Local	2	250	A	268	A
San Miguel Way – C Street to 36th Way	Local	2	150	A	168	A
36th Way – McKinley Blvd to Meister Way	Local	2	600	A	636	A

Source: Fehr & Peers 2013 (see Appendix O).

The previously discussed planned roadway improvements in the vicinity of the proposed project site result in altered travel patterns within the study area relative to existing conditions. To better understand how these improvements affect traffic flows under Cumulative Plus Project conditions, additional SACMET model runs were completed with varying levels of additional roadway infrastructure assumed in place. Specifically, the following three scenarios were compared:

- **With Sutter's Landing Parkway and Interchange** – Includes a new east-west roadway between Richards Boulevard and 28th Street and a new interchange at the Capital City Freeway.
- **With Sutter's Landing Parkway, without Interchange** – Includes a new east-west roadway between Richards Boulevard and 28th Street, but with no ramps to/from the Capital City Freeway.
- **Without Sutter's Landing Parkway or Interchange** – Does not include Sutter's Landing Parkway or a new interchange at the Capital City Freeway.

A comparison of daily traffic volumes forecasts for the above scenarios under Cumulative Plus Project conditions yielded the following key findings:

- If the Sutter's Landing Parkway is constructed, but the interchange is not constructed, traffic on 28th Street (particularly north of E Street) would increase. Trips to/from Richards Boulevard that would have used the Sutter's Landing Parkway interchange to access the Capital City Freeway would instead use the H Street on- and off-ramps via 28th Street, 29th Street, and 30th Street.

- Traffic on C Street west of 28th Street would be lowest with Sutter's Landing Parkway in place, but without the Sutter's Landing Parkway interchange (Sutter's Landing Parkway would provide a parallel route to relieve traffic; however the interchange would result in new east-west trips in the northern portion of Midtown).

Table 4.9-19 displays the Cumulative Plus Project roadway segment forecasts for roadway segments located in the vicinity of the planned Sutter's Landing Parkway and its associated interchange with the Capital City Freeway.

Table 4.9-19
Cumulative Plus Project Traffic Volume Comparison

Roadway Segment	Cumulative Plus Project Conditions Two-Way Daily Traffic Volume		
	With Sutter's Landing Parkway and Interchange	*With Sutter's Landing Parkway, without Interchange*	*Without Sutter's Landing Parkway or Interchange*
28th Street – C Street to E Street	7,616	12,906	8,096
28th Street – E Street to H Street	3,021	3,861	2,291
C Street – West of 28th Street	8,158	6,178	11,368
C Street – Alhambra Boulevard to 33rd Street	9,095	8,878	8,818
McKinley Boulevard – Alhambra Boulevard to 33rd Street	10,519	10,249	9,632
Alhambra Boulevard – C Street to McKinley Boulevard	4,385	4,408	4,327
Alhambra Boulevard – McKinley Boulevard to H Street	6,554	6,929	6,628

Source: Fehr & Peers 2013 (see Appendix O).

Figure 4.9-11 presents the Cumulative Plus Project intersection turning movement volumes, as well as the future lane configurations and traffic controls. Table 4.9-20 summarizes the results of the Cumulative Plus Project intersection analysis (see detailed technical calculations included in Appendix O). As shown, the addition of the proposed project under cumulative conditions would result in significant impacts at the following locations:

- E Street/Alhambra Boulevard – both peak hours
- H Street/Alhambra Boulevard – both peak hours
- McKinley Boulevard/33rd Street – both peak hours.

Table 4.9-20
Intersection Operations – Cumulative Plus Project Conditions

Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
C Street/28th Street	All-Way Stop	AM PM	D F	27 69	E F	40 108
D Street/28th Street	Side-Street Stop	AM PM	A (B) A (B)	2 (15) 15 (48)	A (C) C (F)	2 (16) 24 (84)
E Street/28th Street	All-Way Stop	AM PM	D E	29 49	F F	53 69
H Street/28th Street	Traffic Signal	AM PM	C F	16 146	D F	38 164
I Street/28th Street	All-Way Stop	AM PM	B B	12 11	B B	12 12
E Street/29th Street/SB Capital City Freeway Off-Ramp	Traffic Signal	AM PM	D E	49 77	D F	55 142
H Street/29th Street/SB Capital City Freeway On-Ramp	Traffic Signal	AM PM	E D	60 47	E D	65 45
E Street/30th Street	Traffic Signal	AM PM	D C	39 33	D E	40 51
H Street/30th Street/NB Capital City Freeway On-Ramp	Traffic Signal	AM PM	F F	119 266	F F	124 314
C Street/Alhambra	All-Way Stop	AM PM	B C	15 18	C C	16 20
E Street/Alhambra Boulevard	Traffic Signal	AM PM	F F	127 127	**F** **F**	**138** **200**
H Street/Alhambra Boulevard	Traffic Signal	AM PM	F F	190 380	**F** **F**	**208** **407**
C Street/33rd Street	All-Way Stop	AM PM	B B	15 14	C C	16 16
McKinley Boulevard/33rd Street	All-Way Stop	AM PM	D F	34 56	**E** **F**	**36** **62**
C Street/35th Street	All-Way Stop	AM PM	B B	13 10	B B	14 11

Table 4.9-20
Intersection Operations – Cumulative Plus Project Conditions

Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
McKinley Boulevard/35th Street	Side-Street Stop	AM PM	A (E) A (D)	4 (35) 4 (33)	A (E) A (D)	4 (36) 4 (35)
McKinley Boulevard/36th Street	All-Way Stop	AM PM	B C	14 15	B C	14 15
C Street/39th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 1 (11)	A (B) A (B)	1 (12) 1 (11)
C Street/ San Miguel Way	Side-Street Stop	AM PM	A (B) A (B)	0 (11) 0 (11)	A (B) A (B)	0 (11) 0 (11)
C Street/ San Antonio Way	Side-Street Stop	AM PM	A (B) A (B)	1 (13) 1 (11)	A (B) A (B)	1 (13) 1 (11)
36th Way/San Antonio Way	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)	A (A) A (A)	7 (8) 7 (8)
McKinley Boulevard/San Antonio Way	Side Street Stop	AM PM	A (A) A (A)	1 (10) 1 (10)	A(A) A(A)	1 (10) 1 (10)
C Street/40th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 1 (11)	A (B) A (B)	1 (12) 1 (12)
36th Way/40th Street	All-Way Yield	AM PM	A (A) A (A)	7 (7) 7 (7)	A (A) A (A)	7 (7) 7 (7)
McKinley Boulevard/40th Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 2 (11)	A (B) A (B)	1 (12) 2 (11)
C Street/Tivoli Way	Side – Street Stop	AM PM	A (B) A (B)	0 (13) 0 (11)	A (B) A (B)	0 (13) 0 (12)
36th Way/Tivoli Way	Side-Street Stop	AM PM	A (A) A (A)	2 (9) 1 (9)	A (A) A (A)	2 (9) 1 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	AM PM	A (B) A (A)	0 (10) 0 (10)	A (B) A (A)	0 (10) 0 (10)

Table 4.9-20
Intersection Operations – Cumulative Plus Project Conditions

Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Project	
			Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
C Street/Meister Way	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 0 (11)	A (B) A (B)	1 (12) 0 (11)
36th Way/Meister Way	Side-Street Stop	AM PM	A (A) A (A)	4 (10) 7 (10)	A (A) A (B)	4 (10) 7 (10)
McKinley Boulevard/Meister Way	All-Way Stop	AM PM	A A	9 9	A A	9 9
Elvas Avenue/McKinley Boulevard	Side-Street Stop	AM PM	A (B) A (B)	5 (12) 3 (12)	A (B) A (B)	5 (13) 3 (13)

Note:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicles for the overall intersection and (worst approach).
Bold text indicates significant impact.
Source: Fehr & Peers 2013 (see Appendix O).

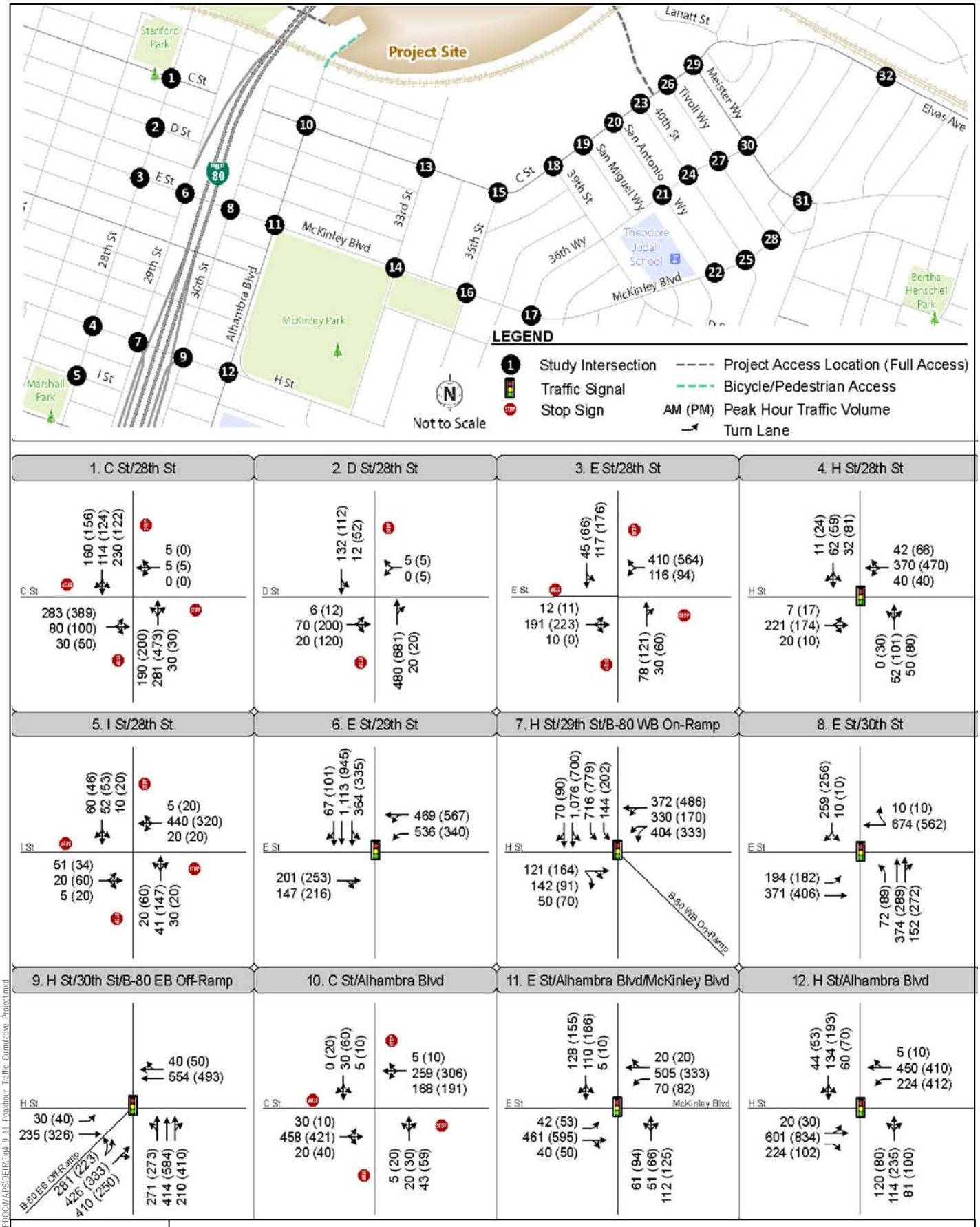
As discussed in Section 4.7, Public Services and Recreation, and above, the SCUSD uses a value of 0.44 elementary students per household for school planning purposes. This would result in a total of 144 elementary students generated by the proposed project. Existing data for the Theodore Judah Elementary School service area provided by SCUSD shows that 65.8% of elementary aged children attend Theodore Judah Elementary School, while 34.2% attend other elementary schools.[4] Using this data, it is projected that 95 elementary students from the proposed project would attend Theodore Judah Elementary School and 49 elementary students would attend other schools.

As discussed previously, the project trip distribution estimates used for the transportation analysis result in only a limited number of trips on the local streets located between the project site and Theodore Judah Elementary School, located off of McKinley Boulevard within the study area. To ensure that a larger share of project-generated traffic would not result in additional impacts to study intersections in the vicinity of Theodore Judah Elementary School under Cumulative Plus Project conditions, a second evaluation of these facilities was completed. This evaluation was completed for the AM peak hour, the time period that is most affected by school-related traffic (due to the fact that school-related traffic overlaps with

[4] Information provided by James C. Dobson, Director II, Planning, Construction & Operations for the SCUSD.

commute traffic during the AM peak hour). The evaluation incorporated the following set of highly conservative assumptions:

- All 95 children projected to attend Theodore Judah Elementary School using the SCUSD planning value would arrive at the school during the peak hour of commute traffic (i.e., no students would attend before school programs or arrive tardy).
- All trips between the project and the school would utilize motor vehicles, and no students would walk or bike to school.
- No more than one child would ride in each vehicle (i.e., no carpooling or families with multiple children).



SOURCE: Fehr + Peers 2013

FIGURE 4.9-11

Peak Hour Traffic Volumes and Lane Configurations- Cumulative Plus Project Conditions

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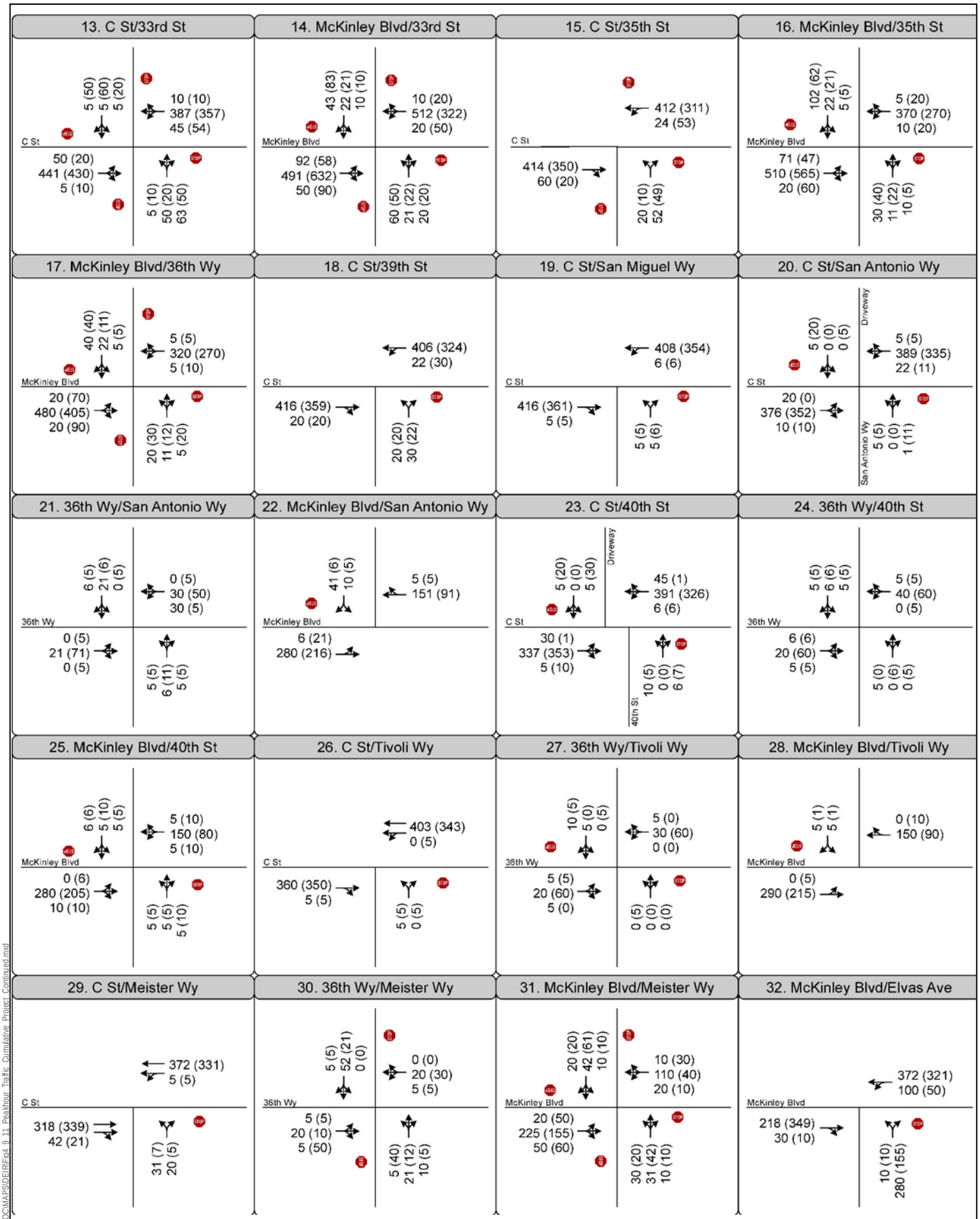

SOURCE: Fehr + Peers 2013

FIGURE 4.9-11 (Continued)

Peak Hour Traffic Volumes and Lane Configurations- Cumulative Plus Project Conditions

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The resulting calculations using this modified set of assumptions account for a "worst case scenario" during the AM peak hour. Table 4.9-21 summarizes the results of the analysis (see Appendix O for traffic volumes and detailed calculations). As shown in Table 4.9-21, all study intersections in the vicinity of Theodore Judah Elementary school would continue to operate at LOS B or better.

Table 4.9-21
Intersection Operations – Cumulative Plus Project Conditions
AM Peak Hour School Traffic Analysis

Intersection	Control	Cumulative		Cumulative Plus Project – School Traffic Analysis	
		Level of Service	*Average Delay*[1]	*Level of Service*	*Average Delay*[1]
McKinley Boulevard/36th Street	All-Way Stop	B	14	B	15
C Street/39th Street	Side-Street Stop	A (B)	1 (12)	A (B)	1 (12)
C Street/ San Miguel Way	Side-Street Stop	A (B)	0 (11)	A (B)	0 (11)
C Street/ San Antonio Way	Side-Street Stop	A (B)	1 (13)	A (B)	1 (12)
36th Way/San Antonio Way	All-Way Yield	A (A)	7 (7)	A (A)	7 (8)
McKinley Boulevard/San Antonio Way	Side-Street Stop	A (A)	1 (10)	A (B)	2 (10)
C Street/40th Street	Side-Street Stop	A (B)	1 (12)	A (B)	1 (12)
36th Way/40th Street	All-Way Yield	A (A)	7 (7)	A (A)	7 (7)
McKinley Boulevard/40th Street	Side-Street Stop	A (B)	1 (12)	A (B)	1 (12)
C Street/Tivoli Way	Side-Street Stop	A (B)	0 (13)	A (B)	0 (13)
36th Way/Tivoli Way	Side-Street Stop	A (A)	2 (9)	A (A)	2 (9)
McKinley Boulevard/Tivoli Way	Side-Street Stop	A (B)	0 (10)	A (B)	0 (10)

Note:
[1] For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for the overall intersection. For side-street stop controlled intersections, the delay is reported in seconds per vehicles for the overall intersection and (worst approach).
Source: Fehr & Peers 2013 (see Appendix O).

The AM and PM peak hour Cumulative Plus Project freeway operations are presented in Table 4.9-22 (see technical calculations included in Appendix O). As shown, implementation of the proposed project under cumulative conditions would result in additional traffic on the following freeway facilities operating at LOS F under cumulative conditions:

- Eastbound Capital City Freeway from the P Street on-ramp to the H Street off-ramp (weave segment) – LOS F during the AM peak hour
- Westbound Capital City Freeway off-ramp to E Street – LOS F during both peak hours.

Table 4.9-22
Freeway Operations – Cumulative Plus Project Conditions

Freeway Facility	Peak Hour	Type	Cumulative			Cumulative Plus Project		
			Level of Service	*Density*[1]	*Volume*[2]	*Level of Service*	*Density*[1]	*Volume*[2]
Capital City Freeway EB – P Street on-ramp to H Street off-ramp	AM PM	Weave	F* E*	— —	8,110 7,340	F* E*	— —	8,127 7,396
Capital City Freeway EB - J Street on-ramp	AM PM	Merge	D* D*	33 34	940 1,070	D* D*	33 34	940 1,070
Capital City Freeway WB - E Street off-ramp	AM PM	Diverge	F* F*	— —	1,490 1,320	F* F*	— —	1,544 1,381
Capital City Freeway WB -J Street off-ramp	AM PM	Diverge	E* E*	38 40	450 260	E* E*	38 40	450 260
Capital City Freeway WB – H Street on-ramp to P Street off-ramp	AM PM	Weave	E* D*	— —	6,710 6,890	E* D*	— —	6,762 6,923

Notes:
1 Measured in passenger car equivalents per lane per mile.
2 Volumes on the merge and diverge segments represent ramp volumes; volumes on the weave segments are freeway mainline volumes.
* The analysis methodology does not fully capture traffic operations effects in congested locations with bottlenecks. Methodology used for weaving sections (Leisch Method) does not report density, and is instead based upon service volume; density not reported for LOS F facilities.
Source: Fehr & Peers 2013 (see Appendix O).

Table 4.9-23 displays 95th percentile peak hour freeway off-ramp queues within the study area calculated using SimTraffic microsimulation software. As shown, all study freeway off-ramp queues remain within the available storage area during both the AM and PM peak hours under Cumulative Plus Project conditions, however the westbound off-ramp to E Street is projected occupy all available storage during the PM peak hour.

Table 4.9-23
Off-Ramp Queuing – Cumulative Plus Project Conditions

Off-Ramp	Storage Length	Cumulative		Cumulative Plus Project	
		Peak Hour	*Queue*[1]	*Peak Hour*	*Queue*[1]
Capital City Freeway Westbound – Off-ramp to E Street	1,175 feet	AM PM	425 ft. 800 ft.	AM PM	575 ft. 1,175 ft.
Capital City Freeway Eastbound – Off-ramp to H Street	1,000 feet	AM PM	775 ft. 675 ft.	AM PM	750 ft. 950 ft.

Note:
[1] Queue length is 95th percentile queue as reported by SimTraffic microsimulation software.
Source: Fehr & Peers 2013 (see Appendix O).

Bicycle, Pedestrian, and Transit Operations

The proposed project would include pedestrian facilities throughout the project site, including a Class I off-street bicycle/pedestrian trail and a new bicycle/pedestrian undercrossing of the UPRR tracks at the northern terminus of Alhambra Boulevard, if approved by UPRR. In addition, sidewalks will be provided on the A Street extension to 28th Street and on the connection to C Street. All roadways within the study area would be low-volume, low-speed streets conducive to bicycle and pedestrian travel.

The project will increase pedestrian and bicycle activity across the 28th Street at-grade railroad crossing as the street would serve as one potential route for project residents to access destinations in Midtown Sacramento. However, as noted earlier, there are currently no sidewalks or bicycle facilities at this railroad crossing. The project would also result in increased bicycle and pedestrian travel along Alhambra Boulevard, which has existing bicycle and pedestrian facilities.

In addition to providing internal pedestrian and bicycle facilities, the project will provide a pedestrian/bicycle link across the Capital City Freeway between established East Sacramento neighborhoods and Sutter's Landing Regional Park via the proposed bicycle/pedestrian undercrossing of the UPRR tracks and the extension of A Street (if approved by UPRR).

Under Cumulative conditions, build-out of Sutter's Landing Regional Park is anticipated to provide additional bicycle and pedestrian facilities within the study area.

No transit enhancements are proposed as part of the project, and no major transit projects/enhancements are planned within the study area.

Railroad Crossings

With the construction of Sutter's Landing Regional Parkway, traffic across the 28th Street rail crossing is expected to increase significantly. While the final design of the 28th Street/Sutter's Landing Parkway intersection has not been chosen, it would be designed to accommodate the queues under cumulative conditions and prevent northbound queues from extending to the railroad crossing. Also, as previously mentioned, additional bicycle and pedestrian traffic is anticipated to cross the railroad tracks under cumulative conditions.

The project would result in a net increase of about 1,400 daily trips to the at-grade railroad crossing on 28th Street under Cumulative Plus Project conditions. The at-grade crossing currently has crossing arms, warning bells, overhead flashing lights, signage, and pavement markings. Railroad Safety Statistics Annual Report, 2007 (Federal Railroad Administration 2009) reports motor vehicle accident rates throughout the United States at public at-grade rail crossings. Data from this publication indicates that the types of controls and warning devices present at this crossing are associated with lower levels of accident rates when considering the entire range of potential warning devices.

The 28th Street crossing is located approximately 550 feet north of the C Street/28th Street intersection. This distance allows for approximately 22 northbound vehicles to queue at the crossing when the crossing gates are down without blocking the C Street/28th Street intersection. Assuming uniform arrival of vehicles during peak hours under Cumulative Plus Project conditions, the gates could be closed for the following amount of time without resulting in queues that extend to the C Street/28th Street intersection:

- **AM Peak Hour:** Northbound volume of 569 vehicles = 9.5 vehicles per minute. Estimated time of gate closure before queue extends to C Street/28th Street intersection is approximately 2.3 minutes.
- **PM Peak Hour:** Northbound volume of 862 vehicles = 14.37 vehicles per minute. Estimated time of gate closure before queue extends to C Street/28th Street intersection is approximately 1.5 minutes.
- Average northbound Cumulative Plus Project northbound queues at the 28th Street crossing were calculated as follows (see Chapter 2, Project Description, and Section 4.6, Noise, for discussion of future train activity) using the average train duration data discussed in the Existing Plus Project section:
- **AM Peak Hour Northbound Queue (Cumulative Plus Project Conditions):**
    - **Passenger Trains** (Frequency = 5 during peak hour): Average gate closure time of 36 seconds with 9.5 vehicles arriving per minute. Estimated average queue length of 5.7 vehicles (approximately 140 feet).

- **Freight Trains** (Frequency = Average of 1.3 per hour): Average gate closure time of 89 seconds with 9.5 vehicles arriving per minute. Estimated average queue length of 14.1 vehicles (approximately 350 feet).

- **PM Peak Hour Northbound Queue (Cumulative Plus Project Conditions):**
  - **Passenger Trains** (Frequency = 5 during peak hour): Average gate closure time of 36 seconds with 14.37 vehicles arriving per minute. Estimated average queue length of less than 8.6 vehicles (approximately 220 feet).
  - **Freight Trains** (Frequency = Average of 1.3 per hour): Average gate closure time of 89 seconds with 14.37 vehicles arriving per minute. Estimated average queue length of 21.3 vehicles (approximately 530 feet).

As shown above, the estimated PM peak hour average queue length resulting from the crossing of a freight train is projected to approach the available storage between the crossing and C Street.

4.9-6: The proposed project could cause potentially significant impacts to study intersections under cumulative plus project conditions. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

According to Table 4.9-20, the proposed project would exacerbate LOS F conditions at the E Street/Alhambra Boulevard and H Street/Alhambra Boulevard intersections under "Cumulative Plus Project" conditions by more than 5 seconds during the AM and PM peak hours. The addition of project traffic would also degrade operations at the McKinley Boulevard/33rd Street intersection from LOS D to LOS E during the AM peak hour, and would exacerbate LOS F conditions at this intersection by more than 5 seconds during the PM peak hour. These are considered **significant impacts**.

Mitigation Measures

With implementation of Mitigation Measure 4.9-6(a) operations at the H Street/Alhambra Boulevard intersection would remain at LOS F during the AM and PM peak hours, but with lower levels of delay than under Cumulative conditions. With implementation of Mitigation Measure 4.9-6(a), the impact to the H Street/Alhambra Boulevard intersection would be **less than significant.**

With implementation of Mitigation Measure 4.9-6(b) operations at the E Street/Alhambra Boulevard intersection would remain at LOS F during the AM and PM peak hours, but with lower levels of delay than under Cumulative conditions during the PM peak hour, and within five seconds of the delay under Cumulative conditions during the AM peak hour. With

implementation of Mitigation Measure 4.9-6(b), the impact to the E Street/Alhambra Boulevard intersection would be **less than significant.**

Implementation of Mitigation Measure 4.9-6(c) would improve peak hour operations at the McKinley Boulevard/33rd Street intersection to an acceptable LOS A during the AM and PM peak hours. With implementation of Mitigation Measure 4.9-6(c), the impact to the McKinley Boulevard/33rd Street intersection would be **less than significant**.

Although the installation of a traffic signal would reduce the impact to less than significant, this location does not meet a peak hour traffic signal warrant under Cumulative Plus Project conditions (see traffic signal warrant analysis included in Appendix O). This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices and associated state guidelines. The future traffic signal shall be constructed when warranted, subject to review and approval of the City Traffic Engineer.

4.9-6(a) The project applicant shall contribute its fair share to the City of Sacramento Traffic Operations Center to monitor and re-time the H Street/Alhambra Boulevard, H Street/30th Street, and H Street 29th Street traffic signals to optimize flow through the corridor, and to implement the following improvements:

- Restripe the westbound approach to the H Street/Alhambra Boulevard intersection to have one shared through/right lane and one shared through/left lane.
- Remove on-street parking on the north side of H Street between 30th Street and Alhambra Boulevard to accommodate two westbound travel lanes.
- Prohibit on-street parking during peak periods (7–9 AM and 4–6 PM) on the south side of H Street to allow for two eastbound lanes between 30th Street and Alhambra Boulevard while maintaining the same lane configurations on the eastbound approach to the H Street/Alhambra Boulevard intersection.

4.9-6(b) The project applicant shall contribute its fair share to the City of Sacramento Traffic Operations Center to monitor and re-time the E Street/Alhambra Boulevard traffic signal to optimize flow, and to implement the following improvements:

- Remove the bulb-out on the southbound approach to the E Street/Alhambra Boulevard intersection and prohibit on-street parking on the west side of

Alhambra Boulevard during peak periods (7–9 AM and 4–6 PM) to allow for the installation of a dedicated southbound right-turn lane.

- Restripe the northbound approach to the E Street/Alhambra Boulevard intersection to include a northbound dedicated right-turn lane.

4.9-6(c) The project applicant shall contribute its fair share toward the installation of a traffic signal at the McKinley Boulevard/33rd Street intersection.

4.9-7: Project buildout could cause potentially significant impacts to transit. Based on the analysis below the impact is *less than significant.*

The project would not adversely affect public transit operations. Project residents, visitors, and patrons would be provided adequate access to transit, including three bus routes that have stops within the study area. Transit service within the study area currently has adequate capacity, and per RT's Transit Master Plan (i.e., Transit Action Plan), ridership is periodically monitored to determine the need for additional service. Therefore, project impacts to transit are considered **less than significant**.

Mitigation Measures

None required.

4.9-8: Project buildout could cause potentially significant impacts to pedestrian facilities. Based on the analysis below the impact is *less than significant.*

The project applicant will construct curb, gutter, sidewalks and planters per City standards, in addition to a new off-street bicycle/pedestrian trail and a bicycle/pedestrian undercrossing of the UPRR tracks at the northern terminus of Alhambra Boulevard. The impact would be **less than significant**.

Mitigation Measures

None required.

4.9-9: Project buildout could cause potentially significant impacts to bicycle facilities. Based on the analysis below the impact is *less than significant.*

Implementation of the project would not remove any existing bicycle facility or interfere with any facility that is planned in the 2010 City of Sacramento Bikeway Master Plan. The project applicant will construct bicycle facilities per City standards. The impact would be **less than significant.**

Mitigation Measures

None required.

4.9-10: Project buildout could cause potentially significant impacts due to construction-related activities. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

Construction may include disruptions to the transportation network near the site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian, bicycle, and transit access may be disrupted. Heavy vehicles will access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions. Therefore, the impacts are considered **significant**.

Mitigation Measures

Implementation of this mitigation would reduce this impact to **less than significant**.

4.9-10 Implement Mitigation Measure 4.9-5.

4.9.5 Site Access Evaluation and Recommendations

Traffic Controls at A Street/28th Street

It is recommended that the A Street/28th Street intersection be designed with single lane approaches and side-street stop control (on A Street). This would result in the following levels of service with the forecasted traffic volumes:

- **Existing Plus Project:** LOS A during both peak hours (worst case movement LOS A)
- **Cumulative Plus Project**: LOS A during both peak hours (worst case movement LOS D during PM peak hour).

Figure 4.9-12 displays the projected traffic volumes and recommended lane configurations at this location.

Traffic Controls at C Street/Project Access

It is recommended that the C Street/Project Access intersection be designed with single lane approaches and all-way stop control and include the installation of marked crosswalks on all approaches and a raised pedestrian island on C Street. All design treatments should comply with City of Sacramento design standards. This would result in the following levels of service with the forecasted traffic volumes:

- **Existing Plus Project:** LOS A during both peak hours
- **Cumulative Plus Project**: LOS B during both peak hours.

Figure 4.9-12 displays the projected traffic volumes and recommended lane configurations at this location.

A Street Overcrossing of Capital City Freeway Pedestrian Facilities

It is recommended that the bridge cross-section allow for safe and convenient pedestrian travel, and include the following facilities:

- Sidewalks on both sides of overcrossing
- Two vehicle travel lanes.

It is recommended that pedestrian facilities on either side of the bridge transition to bifurcated sidewalks with standard planter strips separating the sidewalks from the travel lanes, consistent with pedestrian facilities to be provided elsewhere within the project site.

Multi-Use Trail within Project Site

It is recommended that the multi-use trail extending through the project site conform to Class I off-street path standards, including appropriate signage and striping. Appropriate crossing treatments should be provided at all intersections to ensure the safety of users, including the following recommendations:

- **At controlled intersection:** High visibility crosswalk markings; appropriate sight distance provided for drivers and bicyclists.
- **At uncontrolled locations:** 2-way trail yield where sight distance is adequate; 2-way trail stop where sight distance is limited.

Final designs for all trail crossings are to be reviewed and approved by the City Traffic Engineer.

28th Street Traffic Volumes

As documented within this section, it is anticipated that implementation of the proposed project would add approximately 1,100 daily trips to the segment of 28th Street located south of C Street. While this increase does not constitute a significant impact, this roadway is categorized as a local street within the 2030 General Plan and is fronted by residential land uses. Given these findings, the City should monitor 28th Street traffic volumes after construction of the project to determine if a half street closure is necessary at the C Street/28th Street intersection to prevent traffic from continuing southbound on 28th Street at this location. Installation of a half street closure would result in lower traffic southbound traffic volumes on 28th Street by diverting traffic onto C Street (eastbound), where drivers would then continue southbound on 29th Street (which is designated as an arterial roadway in the 2030 General Plan).

It should also be noted that B Street provides a connection between 28th Street and 29th Street 400 feet to the north of C Street. However, the proximity of B Street to the 28th Street at-grade railroad crossing (approximately 135 feet) and the vertical curvature of the B Street approach to 28th Street makes this location less suitable for a half street closure. Additionally, B Street currently lacks standard improvements including curb, gutter, and sidewalks.

36th Way Traffic Controls

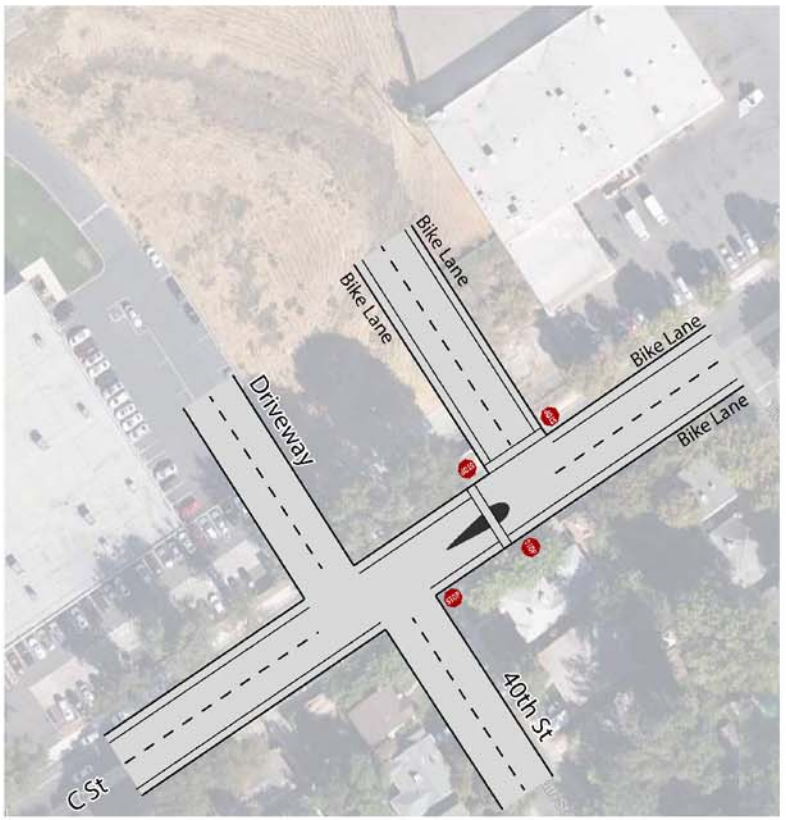
The following two intersections within the study area currently lack traffic controls:

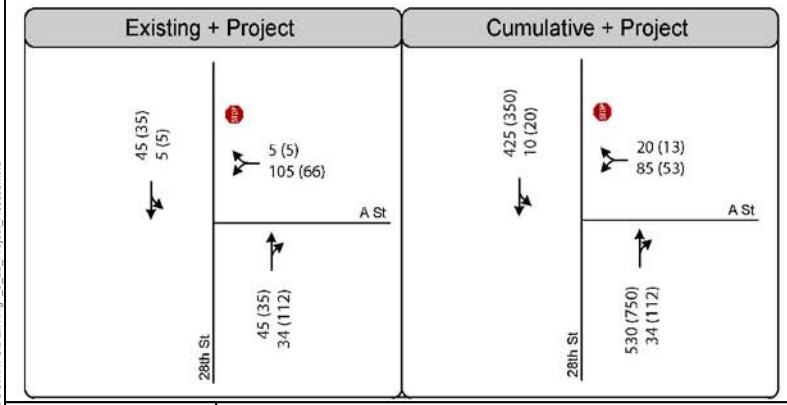
- 36th Way/San Antonio Way
- 36th Way/40th Street.

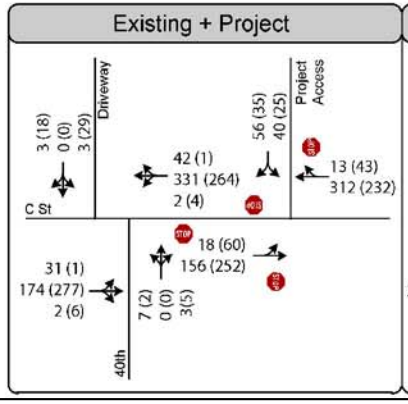
Since the proposed project would add traffic to these two intersections that do not currently conform to standard engineering design practice, it is recommended that stop controls be installed on the following intersection approaches consistent with City of Sacramento design standards:

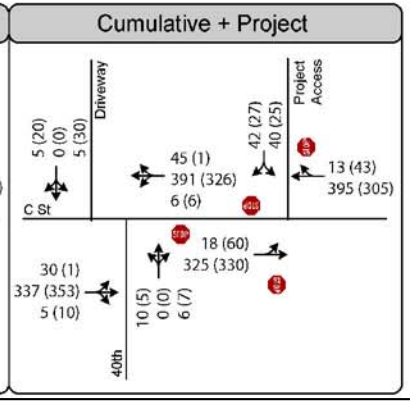
- 36th Way/San Antonio Way – northbound and southbound approaches
- 36th Way/40th Street – eastbound and westbound approaches.

Installation of stop control on these approaches would be consistent with intersection treatments installed in the surrounding neighborhoods, and may also have traffic calming benefits.









LEGEND

AM (PM) Peak Hour Traffic Volume

Turn Lane

N

Not to Scale

SOURCE: Fehr + Peers 2013

FIGURE 4.9-12

Project Access

7828

MCKINLEY VILLAGE PROJECT EIR

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Railroad Crossing

As described previously, the existing 28th Street at-grade railroad crossing is already equipped with overhead flashing lights, crossing arms, and bells, and is similar to many other railroad crossings in Midtown Sacramento. Based on the traffic analysis, the project is not expected to create any additional vehicle impacts at this location. However, as documented previously, the project is expected to increase pedestrian and bicycle travel at this crossing, which has no pedestrian or bicycle amenities. For this reason, it is recommended that the project applicant coordinate with the City and the CPUC to design and implement appropriate bicycle and pedestrian improvements at the 28th Street railroad crossing.

On-Site Circulation

Internal roadways located within the project site will include numerous traffic calming devices to assist in maintaining low vehicle travel speeds. The design of the internal roadway system and traffic calming features will also assist with limiting cut-through traffic within the project site. Although demand for cut-through traffic is projected to be minimal in the near-term, some traffic is expected to utilize internal project roadways under Cumulative conditions to travel between East Sacramento and the planned Sutter's Landing Parkway (approximately 1,800 daily trips). For this reason, the average daily traffic forecasts shown on Figure 4.9-13 includes separate forecasts for Existing Plus Project and Cumulative Plus Project conditions. It should also be noted that the impact analysis conducted for this project did not assume cut-through traffic within the project site to ensure a conservative analysis of the study facilities located to the south of the project site.

Figure 4.9-13 also displays recommended on-site traffic controls, subject to review and approval by the City Traffic Engineer.

4.9.6 Sources

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LEGEND

Average Daily Traffic Volumes

XX Existing Plus Project Conditions

(YY) Cumulative Plus Project Conditions

Stop Sign

SOURCE: Fehr + Peers 2013

FIGURE 4.9-13

On-Site Circulation

7828

MCKINLEY VILLAGE PROJECT EIR

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