

## **5.9 Transportation and Circulation**

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## 5.9 TRANSPORTATION AND CIRCULATION

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### INTRODUCTION

As noted in Chapter 1, Introduction, the project is an anticipated subsequent project identified in the 2030 General Plan Master EIR. This EIR addresses only the project's additional potentially significant environmental effects and any new or additional mitigation measures or alternatives that were not identified in the Master EIR. The Master EIR evaluated the effects of development that could occur under the new general plan, and identified and evaluated the effects of the project and future development, including analysis of growth-inducing effects and irreversible environmental effects. The discussion of transportation in the Master EIR (see Chapter 6.12) is incorporated here by reference pursuant to CEQA Guidelines section 15050. The Master EIR may be reviewed at [www.sacgp.org](http://www.sacgp.org).

Specifically, the transportation and circulation analysis in this DEIR will address the following impact categories:

- Intersections
- Freeway facilities - ramps
- Construction-related traffic impacts
- Transit
- Bicycle facilities
- Pedestrian circulation
- Parking

The cumulative impacts on roadway segments, freeway segments, transit, bicycle facilities, pedestrian circulation, and parking from development associated with the general plan were identified and analyzed in the Master EIR, and this DEIR reviews such issues on a project-specific basis only. Project impacts on roadway segments and freeway segments were included in the traffic study to determine the project's conformity with the Mobility Element of the 2030 General Plan; to confirm that no substantial new or additional information shows that the impacts on roadway segments and freeway segments are more significant than as described in the Master EIR, or shows the existence of feasible mitigation measures that will avoid or reduce significant effects on the roadway segments or freeway segments; and to assist in the implementation of Master EIR Mitigation Measure 6.12-3 by determining the project's fair share contribution to Caltrans ITS improvements to Interstate 5 (I-5).

This chapter analyzes the potential impacts of the proposed project on the surrounding transportation system. The impact analysis examines the roadway, transit, bicycle, and pedestrian components of the overall transportation system under the following scenarios:

- Existing
- Existing Plus Phase 1
- Existing Plus Project Buildout
- Cumulative Conditions

Significant impacts of the proposed project are defined according to City and CEQA standards, and mitigation measures are recommended to lessen their significance.

The following information was used to prepare this chapter:

- Data from the regional travel model provided by the Sacramento Area Council of Governments (SACOG)
- A list of funded and probable long-term transportation projects as provided by City of Sacramento Staff and as listed in the SACOG 2035 Metropolitan Transportation Plan
- Proposed project land use description and site plan
- Freeway ramp, freeway mainline, intersection, and roadway segment traffic count data collected by Fehr & Peers
- Freeway traffic count data provided by Caltrans and available through the Caltrans Performance Measurement System (PeMS)

In addition to the transportation system analysis described above, this chapter also describes other transportation-related issues associated with the project including parking, transit, bicycle impacts, pedestrian impacts, site access, circulation, and construction impacts. The City received several comment letters in response to the Notice of Preparation (NOP) for this EIR. Following are many of the NOP comments pertaining to transportation and circulation that are addressed in this chapter:

- The analysis of project impacts should examine the project's compliance with the City's "Pedestrian Friendly Street Standards" and relevant General Plan policies pertaining to walking and bicycling;
- Impacts on bicycle safety and level of service for bicycles should be evaluated;
- The impact analysis should consider safety at at-grade rail crossings and identify measures to reduce adverse impacts to rail safety;
- Traffic impacts should be assessed at the I-5/Broadway, I-5/5<sup>th</sup> Street, and US Highway 50 (US-50)/11<sup>th</sup> Street facilities including ramp intersections, freeway merge/diverge and mainline sections;
- A queuing analysis and merge/diverge analysis should be completed, particularly where the highway facility is already at LOS F.

### **Project Description**

The proposed Northwest Land Park project would be a residential/mixed-use project to be developed on approximately 32 acres located east of I-5 and south of Business 80/US-50. The

project site is situated directly south of Broadway and west of 5<sup>th</sup> Street within the City of Sacramento. As described in the project description provided to the City, buildout of the Northwest Land Park project would include the following trip-generating land uses:

- 934 condominiums
- 44 mixed-use housing units
- 15,000 square feet of neighborhood-serving retail
- 17,000 square-foot neighborhood center

The project would include an approximately 4.3-acre public park within the central area of the project site. In addition, the project would construct “Setzer Run,” which would be a linear park that would extend in an east-west direction through the project site connecting 5<sup>th</sup> Street with an existing undercrossing of I-5. The undercrossing would ultimately be upgraded (as a separate project) into a bike path that would interconnect the project site and surrounding land uses with Miller Park and the existing multi-use path along the Sacramento River.

The project would be constructed in four phases. Phase 1 of the project would consist of 214 condominiums located west of 5<sup>th</sup> Street between 1<sup>st</sup> Avenue and McClatchy Way.

It should be noted that subsequent to the preparation of the transportation analysis, the project description was modified to include ten fewer residential units. Since this traffic analysis was based upon a higher unit total than the final project description, it provides for a slightly more conservative analysis of project impacts, and all conclusions reached within this chapter and all mitigation measures proposed remain valid.

## **Study Area**

The study area shown on Figure 5.9-1 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. Following is a list of 27 study intersections, 6 roadway segments, and 11 freeway facilities selected for analysis.

## **Study Intersections**

1. W Street / 5<sup>th</sup> Street / I-5 NB On-ramp
2. W Street / 6<sup>th</sup> Street
3. W Street / 8<sup>th</sup> Street
4. W Street / 9<sup>th</sup> Street
5. W Street / 10<sup>th</sup> Street
6. W Street / 11<sup>th</sup> Street
7. X Street / 3<sup>rd</sup> Street / I-5 SB Off-ramp
8. X Street / 5<sup>th</sup> Street / Business 80 – US-50 EB Off-ramp



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**STUDY AREA**

**FIGURE 5.9-1**

9. X Street / 6<sup>th</sup> Street
10. X Street / 8<sup>th</sup> Street
11. X Street / 9<sup>th</sup> Street
12. X Street / 10<sup>th</sup> Street
13. X Street / Riverside Boulevard
14. Broadway / I-5 NB Off-ramp
15. Broadway / 3<sup>rd</sup> Street (south)
16. Broadway / 3<sup>rd</sup> Street (north)
17. Broadway / 5<sup>th</sup> Street
18. Broadway / 6<sup>th</sup> Street
19. Broadway / 8<sup>th</sup> Street
20. Broadway / Muir Way
21. Broadway / 9<sup>th</sup> Street
22. Broadway / 10<sup>th</sup> Street
23. Broadway / Riverside Boulevard
24. 1<sup>st</sup> Avenue / 3<sup>rd</sup> Street
25. 1<sup>st</sup> Avenue / 5<sup>th</sup> Street
26. McClatchy Way / 5<sup>th</sup> Street
27. Vallejo Way / 5<sup>th</sup> Street

### **Study Roadways**

1. Broadway – between Front Street and 3rd Street
2. Broadway – between 3rd Street and 5th Street
3. Broadway – between 5th Street and 9th Street
4. 5th Street – between Broadway and 1st Avenue
5. 5th Street – between 1st Avenue and McClatchy Way
6. 5th Street – between McClatchy Way and Vallejo Way

### **Study Freeway Facilities**

1. I-5 Northbound – Off-ramp to Business 80/US-50
2. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway
3. I-5 Northbound – Business 80/US-50 to P Street
4. I-5 Southbound – Off-ramp to Business 80/US-50
5. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3rd Street
6. I-5 Southbound – Business 80/US-50 to Sutterville Road
7. Business 80/US-50 Eastbound – Off-ramp to 5th Street

8. Business 80/US-50 Eastbound – On-ramp from X Street (East of Riverside Boulevard)
9. Business 80/US-50 Westbound – Off-ramp to W Street (East of 11th Street)
10. Business 80/US-50 Westbound to I-5 Northbound Connector – On-ramp from 5th Street
11. Business 80/US-50 Westbound – On-ramp from 5th Street

## ENVIRONMENTAL SETTING

This section describes the environmental setting, which is the baseline scenario upon which project-specific impacts are evaluated. This section describes the existing condition of the roadway, transit, rail, and bicycle/pedestrian systems.

This section also describes the existing land uses (i.e., industrial, manufacturing, warehouse, and office operations) on the project site. Because these trip generating land uses would be eliminated if the proposed project were developed, their current trip generation was also measured, and the net trip generation was used to determine the project impacts.

### Roadway System

Regional access to the project site is provided by I-5 and Business 80/US-50, also known as the Capital City Freeway. Freeway access is provided by ramps at Broadway, 3<sup>rd</sup> Street, 5<sup>th</sup> Street, W Street, and X Street.

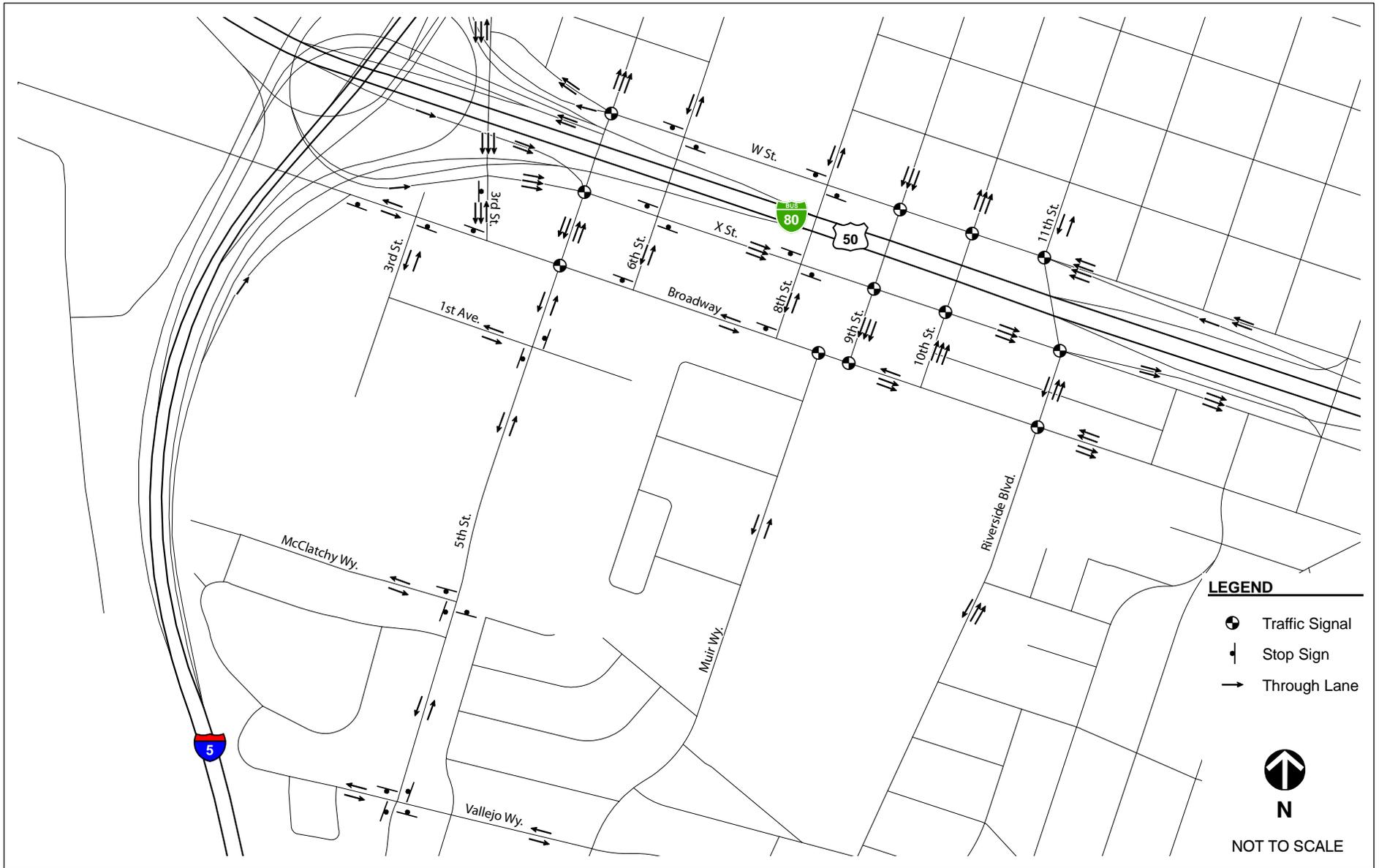
- **Business 80/US-50** is a freeway that extends from Interstate 80 in West Sacramento to the State Route 99/US-50 interchange in Midtown Sacramento. Business 80 then extends northward to rejoin Interstate 80 near Watt Avenue, while US-50 continues east to South Lake Tahoe and points beyond. Within the study area, Business 80/US-50 has twelve lanes east of the I-5 interchange with five mainline lanes plus one auxiliary lane in the eastbound direction, and four mainline lanes plus two lanes that exit to I-5 in the westbound direction. On the structure crossing I-5 and the Sacramento River, Business 80/US-50 has eight lanes with four mainline lanes in the eastbound direction, and three mainline lanes plus one auxiliary lane in the westbound direction. Local access from Business 80/US-50 is provided by on- and off-ramps at 5th Street, an EB on-ramp on X Street, and a WB off-ramp at W Street.
- **Interstate 5** is a freeway that extends the length of California into Oregon and Washington. Within the study area, I-5 serves as a vital link between primarily residential neighborhoods in South Sacramento and the Central Business District. Immediately south of the interchange with Business 80/US-50, I-5 is a ten lane freeway. At its undercrossing of Business 80/US-50, I-5 is a six lane freeway with three mainline lanes in each direction. Local access from I-5 is provided by a northbound off-ramp at Broadway and a southbound off-ramp at 3<sup>rd</sup> Street (via the US-50 EB connector ramp).
- **Broadway** is an east-west roadway designated as an arterial by the City of Sacramento General Plan. Broadway runs from the Sacramento River in the west to 65<sup>th</sup> Street. Broadway narrows from two westbound travel lanes to a single lane at Riverside Boulevard. Similarly, the eastbound direction of Broadway widens from one to two travel lanes at Muir Way. Broadway west of Muir Way features one travel lane in each direction, a two-way left-turn lane, on-street parking and bicycle lanes. It has a posted speed limit of 30 mph.

- **W Street** is a one-way westbound arterial roadway that travels along the north side of Business 80/US-50, and functions as a frontage road for the freeway. Within the study area, most segments of W Street have three lanes (see Figure 5.9-2). On-street parking is allowed on the north side of the roadway. W Street has a posted speed limit of 35 mph.
- **X Street** is a one-way eastbound arterial that forms a couplet with W Street. X Street begins at 3<sup>rd</sup> Street (north), and ends at Alhambra Boulevard. It runs along the south side of Business 80/US-50 and serves as a frontage road for the freeway. X Street has three lanes with on-street parking allowed on the south side. It has a posted speed limit of 35 mph.
- **3<sup>rd</sup> Street** is a north-south street on the western side of the study area. As shown on Figure 5.9-2, 3<sup>rd</sup> Street is discontinuous on either side of Broadway, creating two nearby intersections. North of Broadway, 3<sup>rd</sup> Street is a one-way southbound arterial between W Street and X Street. South of Broadway, 3<sup>rd</sup> Street is a two-lane collector that extends through the project site of the proposed project, terminating south of 1<sup>st</sup> Avenue.
- **5<sup>th</sup> Street** is a two-lane collector south of Broadway with a posted speed limit of 30 mph. Portions of this street permit on-street parking. North of Broadway, 5<sup>th</sup> Street is classified as an arterial. The segment immediately north of Broadway has two lanes in each direction, and north of X Street it becomes a one-way street with three northbound lanes. The proposed project would include five public street connections to 5<sup>th</sup> Street between 1<sup>st</sup> Avenue and McClatchy Way.
- **Vallejo Way** is a two-lane residential street that begins west of 5<sup>th</sup> Street and extends easterly through the Swanston Palms neighborhood. It intersects Muir Way, Riverside Boulevard, and Land Park Drive. It has a posted speed limit of 25 mph. Between 5<sup>th</sup> Street and Muir Way, Vallejo Way features median refuge islands, speed legend pavement markings, striped crosswalks, centerline striping, and all-way stop-controlled residential intersections, which act as traffic calming devices. Project access to Vallejo Way would be limited to one or more residential street connections.

Figure 5.9-2 illustrates the study area roadway facilities including the number and direction of travel lanes, as well as existing traffic controls at all study intersections.

### **Transit System**

Sacramento Regional Transit District (RT) provides public transit service in the study area, including three bus routes: Route 38, Route 2, and Route 51. Bus stops in the study area are marked by a posted sign. Select stops include a bus shelter or a bench located on a four- to five-foot sidewalk. The nearest light rail station is the Broadway Station located approximately 1.25 miles from the eastern edge of the proposed project. Figure 5.9-3 illustrates the existing transit routes and stops within the study area. Details of the RT bus routes as of March 2010 are described below (in June 2010, service modifications affecting all three routes went into effect):

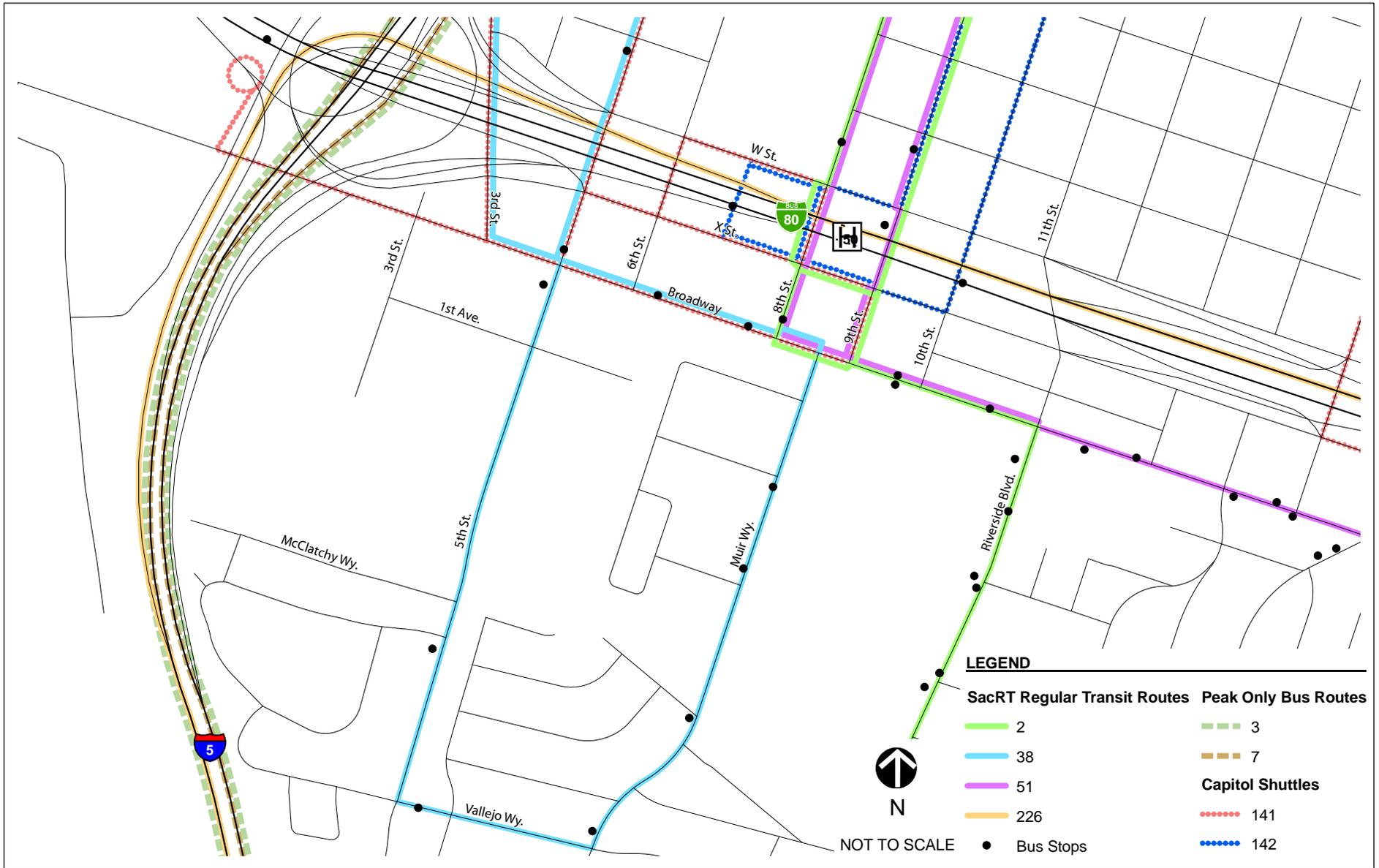


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**EXISTING ROADWAY FACILITIES  
AND TRAFFIC CONTROL**

**FIGURE 5.9-2**



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**EXISTING TRANSIT ROUTES**

**FIGURE 5.9-3**

- **Route 2** is a radial route that travels between the Pocket Transit Center and F Street in Downtown Sacramento. Within the study area, Route 2 operates primarily on Riverside Boulevard, 8<sup>th</sup> Street, and 9<sup>th</sup> Street, and a short section of Broadway. The route has connections with the following light rail stations in Downtown Sacramento: 8<sup>th</sup> & O, St. Rose of Lima Park, 8<sup>th</sup> & K, 7<sup>th</sup> & I/County Center, 8<sup>th</sup> & Capitol. Route 2 runs weekdays between 5:30 AM and 7:00 PM with 35 minute headways. This route does not provide service on weekends or holidays.
- **Route 38** is a cross-town route that provides service between Vallejo Way in Upper Land Park to the University/65<sup>th</sup> Street Light Rail Station in eastern Sacramento. This route has the closest stops to the proposed project, with stop located on 5<sup>th</sup> Street just north and south of Broadway. Within the study area, Route 38 travels on 3<sup>rd</sup> Street, 5<sup>th</sup> Street, Vallejo Way, Muir Way, Broadway, and 5<sup>th</sup> Street. Weekday service runs from 5:15 AM to 10:00 PM, generally with 30 minute headways. Saturday service runs between 7:45 AM and 8:30 PM with one hour headways. Sunday and holiday service runs between 8:00 AM and 6:30 PM with one hour headways.
- **Route 51** is a radial route that travels between the Florin Mall Transit Center and Downtown Sacramento. Within the study area, Route 51 operates on Broadway, 8<sup>th</sup> Street, and 9<sup>th</sup> Street. The route has connections with the following light rail stations in Downtown Sacramento: 8<sup>th</sup> & O, St. Rose of Lima Park, 8<sup>th</sup> & K, 7<sup>th</sup> & I/County Center, 8<sup>th</sup> & Capitol. Weekday service on this route runs from 5:30 AM to 11:30 PM with headways as frequent as 8 minutes during peak periods, and as long as 45 minutes during off peak travel times. Saturday service runs from 6:15 AM to 11:00 PM with 30 minute AM headways, 20 minute mid-day headways, and one hour late night headways. Sunday and holiday service runs from 6:15 AM to 10:30 PM with 30 to 45 minute headways.

## **Rail Crossings**

Two railroad lines are located within the project vicinity. Railroad tracks extend in a north-south direction approximately one mile to the east of the site. These tracks serve freight and light rail trains, and feature an at-grade crossing with Broadway just east of Freeport Boulevard. The at-grade crossing has crossing arms, warning bells, flashing lights, pavement markings, and a raised median. According to the Federal Railroad Administration website, this line averages 146 trains per day, the majority of which are Regional Transit trains. In the last 20 years, two accidents were reported at this location. An accident in 2006 involved a train hitting a vehicle that had stopped between the tracks and the crossing arm. In 1994, a pedestrian was fatally injured by an approaching train while crossing the tracks.

Railroad tracks are also located approximately ½-mile west of the project site. These tracks accommodate Sacramento Southern Railroad excursion trains, which depart Old Sacramento for a six-mile trip along the banks of the Sacramento River. The train operates on weekends. An at-grade crossing is located on Broadway west of Front Street. The crossing has crossing arms, flashing lights, and stop lines. No accident data was available for this location.

## **Bicycle/Pedestrian System**

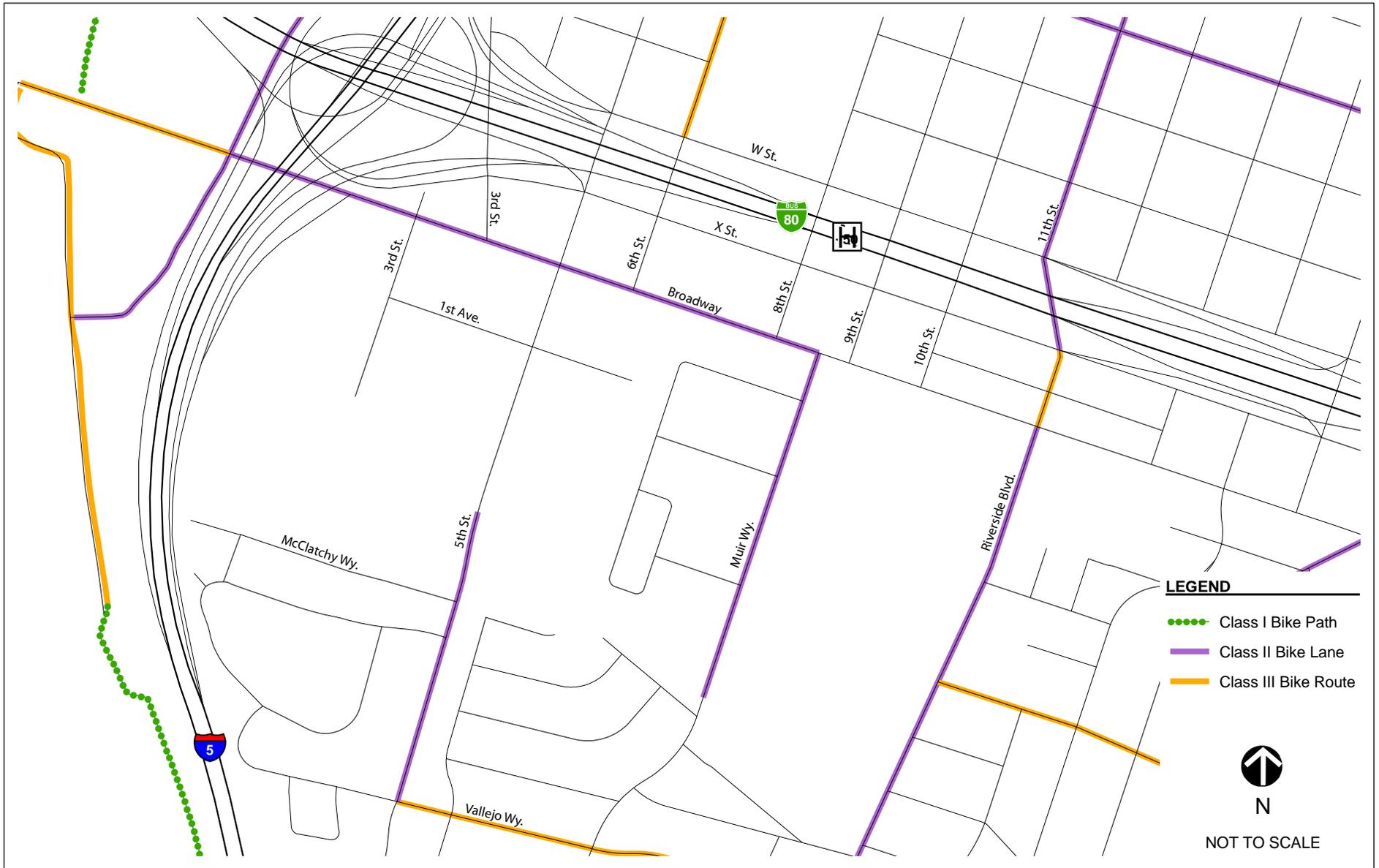
Field surveys indicate moderate levels of pedestrian and bicycle activity along Broadway adjacent to the project site. At the easternmost study intersection located along Broadway (Broadway/Riverside Boulevard), field counts recorded 50 pedestrian crossings during the AM peak hour, and nearly 60 during the PM peak hour. In addition to pedestrian and bicycle activity along Broadway, numerous cyclists were also observed using less traveled north-south streets including 6<sup>th</sup> Street and 8<sup>th</sup> Street to travel between Downtown and the residential neighborhoods located south of Broadway.

Dedicated bicycle and pedestrian facilities near the proposed project include Class II on-street bicycle lanes on Broadway between Front Street and Muir Way, and on 5<sup>th</sup> Street from north of McClatchy Way to Vallejo Way. West of Front Street, an off-street bicycle/pedestrian trail travels northward from Broadway parallel to the Sacramento River. Figure 5.9-4 displays the existing bicycle facilities within the study area.

Sidewalk connectivity within the study area is intermittent. Although some roadways have continuous sidewalks lining both sides of the street, many have discontinuous sidewalks or lack sidewalks on one side. The following describes sidewalk coverage near the project site:

- **1<sup>st</sup> Avenue:** only a small portion of this roadway has sidewalk coverage within the study area.
- **3<sup>rd</sup> Street:** the segment south of Broadway has sidewalk coverage on only a small portion of the roadway. North of Broadway, sidewalks are present on one or both sides of the street, but no marked crosswalk exists at the 3<sup>rd</sup> Street/X Street intersection.
- **Broadway:** sidewalks are provided on both sides of the street within the project vicinity with the exception of several parcels on the northern side of the roadway near 5<sup>th</sup> Street. Crosswalks are provided on all legs of the signalized Broadway/5<sup>th</sup> Street intersection.
- **5<sup>th</sup> Street:** Sidewalks exist on both sides of 5<sup>th</sup> Street between Broadway and 1<sup>st</sup> Avenue. Most pedestrians on 5<sup>th</sup> street (including students) were observed to travel on the east side of 5<sup>th</sup> Street, which features a continuous sidewalk south of 1<sup>st</sup> Avenue (although interruptions in the sidewalk occur at private driveways).

It was noted during field observations that drivers frequently failed to yield the right-of-way to pedestrians at unsignalized crosswalk locations within the study area, especially along W Street and X Street. These three-lane one-way arterial roadways also have crosswalks at signalized intersections that lack pedestrian signal heads at some locations. This requires pedestrians to rely on the traffic signal green/yellow/red indication to determine the appropriate time to cross at these locations. These signalized intersection that lack pedestrian signal heads provide only 3.5 seconds of warning time (i.e., the yellow signal interval) to pedestrians that on-coming traffic will have a green signal.



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**EXISTING BICYCLE FACILITIES**

**FIGURE 5.9-4**

## 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* (HCM), Transportation Research Board, 2000. These methodologies were applied using the Synchro software package. Table 5.9-1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the HCM.

Level of Service	Average Control Delay (seconds/vehicle)	
	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

Notes:  
 1. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.  
 Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Roadway segment operations were analyzed using daily traffic volume LOS thresholds. Table 5.9-2 displays the daily traffic volume thresholds for roadway segments for each LOS category as described in the *City of Sacramento 2030 General Plan*.

Freeway operations were analyzed using the procedures and methodologies contained in the HCM. Table 5.9-3 and 5.9-4 describe the *HCM* LOS criteria for freeway mainline and freeway ramp junctions, respectively. Consistent with the methodology described in the *Highway Design Manual* (Caltrans, last updated July 1, 2008), the Leisch Method was used to analyze weaving areas.

Fehr & Peers conducted daily roadway segment and AM (7:00 – 9:00) and PM (4:00 – 6:00) peak period intersection turning movement counts on March 9-11, 2010. During the counts, weather conditions were generally dry, no unusual traffic patterns were observed, and California State University Sacramento and the Sacramento City Unified School District were in full session. The following sections summarize the results of the traffic operations analysis.

TABLE 5.9-2

## ROADWAY SEGMENT DAILY VOLUME THRESHOLDS

Operational Class	Number of Lanes	Daily Volume Threshold (Level of Service)				
		A	B	C	D	E
Freeway Segments	2	14,000	21,600	30,800	37,200	40,000
	4	28,000	43,200	61,600	74,400	80,000
	6	42,000	64,800	92,400	111,600	120,000
	8	56,000	86,400	123,200	148,800	160,000
	10	70,000	108,000	154,000	186,000	200,000
	12	84,000	129,600	184,800	223,200	240,000
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	2	5,250	6,125	7,000	7,875	8,750
Local	2	3,000	3,500	4,000	4,500	5,000

Source: City of Sacramento 2030 General Plan

TABLE 5.9-3

## FREEWAY MAINLINE LOS CRITERIA

LOS	Description	Density <sup>1</sup>
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 to 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45
F	Represents a breakdown in flow.	**

Notes:  
 Density in passenger cars per mile per lane.  
 \*\* Demand flow exceeds capacity.  
 Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

LOS	Description	Density <sup>1</sup>
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 10 to 20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 20 to 28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 28 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 43 <sup>2</sup>
F	Represents a breakdown in flow.	**

Notes:

- Density in passenger cars per mile per lane.
- The maximum density for ramp junctions under LOS E is not defined in the *HCM 2000*. This report uses the maximum density of 43 passenger cars per mile per lane identified for weaving sections in the *HCM 2000*.

\*\* Demand flow exceeds capacity.  
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

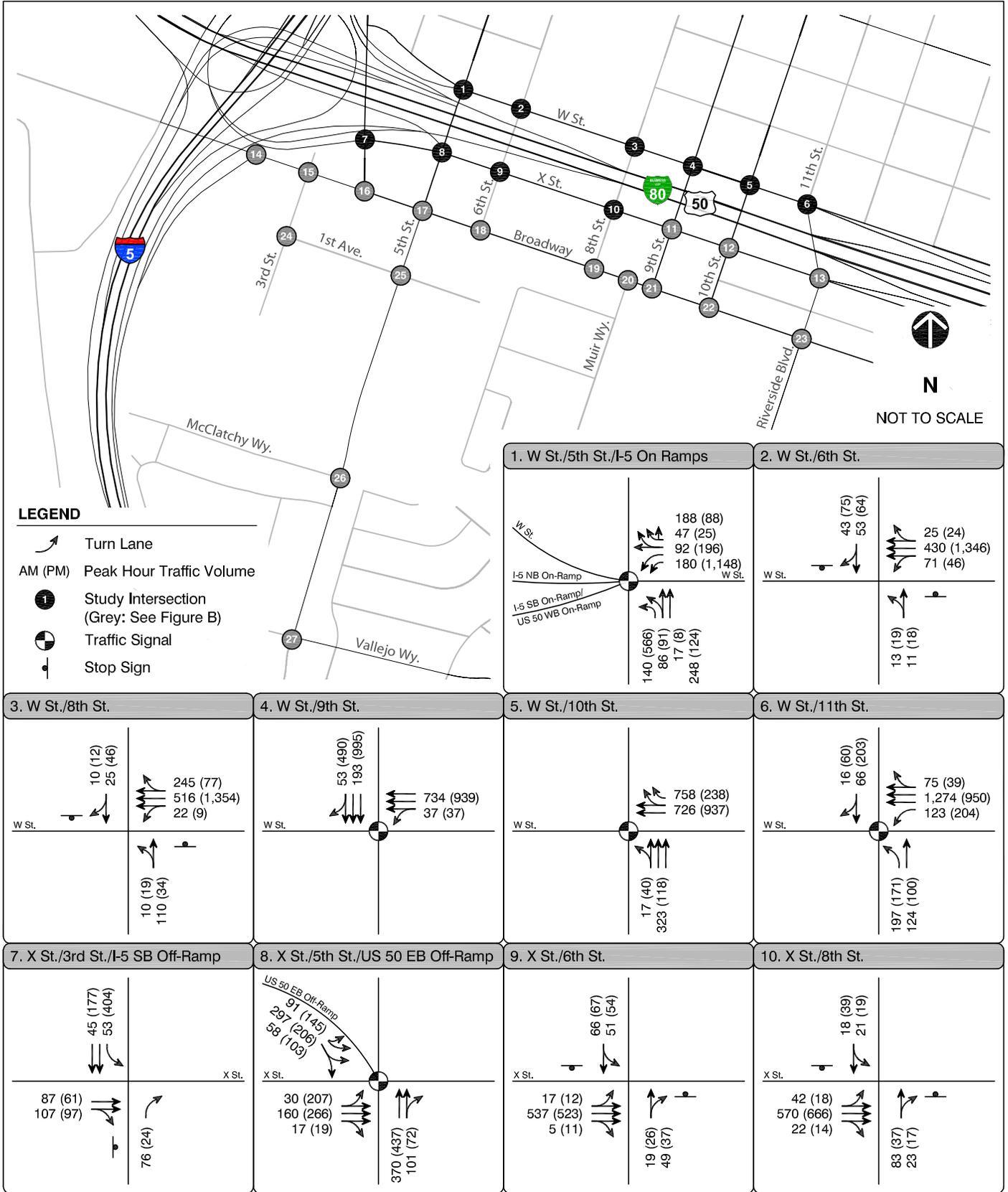
### **Existing Levels of Service**

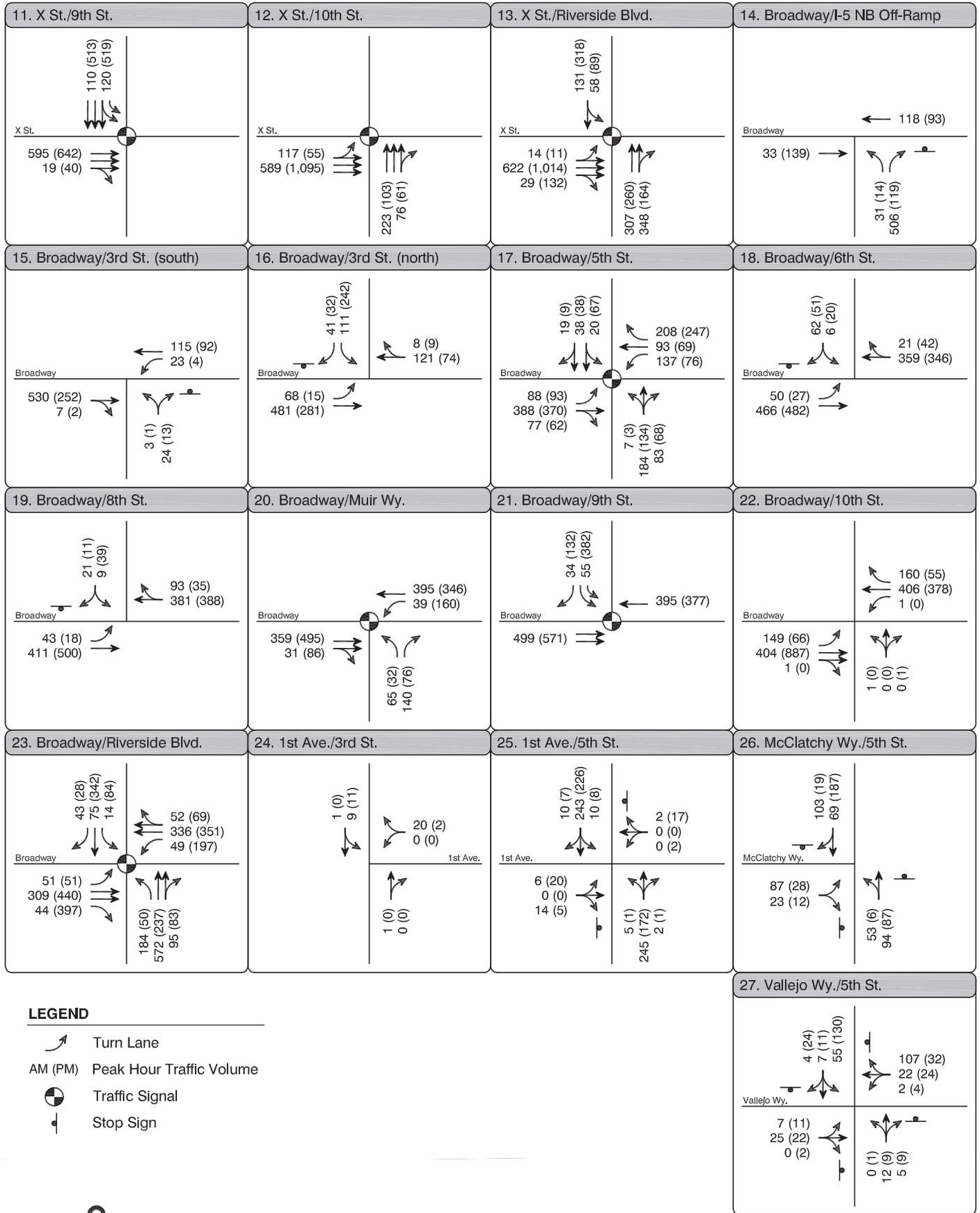
Table 5.9-5 summarizes the existing daily traffic volumes and the corresponding levels of service according to the thresholds shown in Table 5.9-2. As shown, all study roadway segments currently operate acceptably. As is described later, LOS E is considered acceptable on the study segments of Broadway because they are situated in an urban corridor. The segment of 5<sup>th</sup> Street between Broadway and McClatchy Way is part of an urban neighborhood, and therefore the LOS standard is "E". South of McClatchy Way, the LOS standard is "D".

Roadway Segment	General Plan Designation	Number of Lanes	Average Daily Traffic	Level of Service
1. Broadway – between Front Street and 3rd Street	Arterial	2	5,900	A
2. Broadway – between 3rd Street and 5th Street	Arterial	2	7,200	A
3. Broadway – between 5th Street and 9th Street	Arterial	2	9,900	B
4. 5th Street – between Broadway and 1st Avenue	Collector	2	6,100	B
5. 5th Street – between 1st Avenue and McClatchy Way	Collector	2	5,800	B
6. 5th Street – between McClatchy Way and Vallejo Way	Collector	2	3,000	A

Source: Fehr & Peers, 2010.

Figure 5.9-5 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* (February 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 4:30 to 5:30.





**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign

Table 5.9-6 summarizes the existing peak hour intersection operations at the study intersections (refer to Appendix S for detailed calculations). As shown, all signalized and all-way stop controlled intersections operate at LOS C or better, and all side-street stop controlled intersections operate with an average LOS of A. The longest delay for individual approaches to side-street stop controlled intersections occurs at the W Street/6<sup>th</sup> Street intersection during the PM peak hour (46 seconds of delay on the southbound approach).

Intersection	Control	Peak Hour	Level of Service	Average Delay <sup>1</sup>
1. W Street / 5 <sup>th</sup> Street / I-5 NB On-ramp	Traffic Signal	AM PM	A B	8 17
2. W Street / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) A (E)	3 (14) 5 (46)
3. W Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) A (D)	3 (20) 2 (32)
4. W Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	A B	6 12
5. W Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	A A	6 8
6. W Street / 11 <sup>th</sup> Street	Traffic Signal	AM PM	C B	22 15
7. X Street / 3 <sup>rd</sup> Street / I-5 SB Off-ramp	Side-Street Stop	AM PM	A (B) A (D)	6 (11) 8 (31)
8. X Street / 5 <sup>th</sup> Street / Business 80 – US-50 EB Off-ramp	Traffic Signal	AM PM	C C	26 23
9. X Street / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) A (B)	4 (15) 4 (15)
10. X Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) A (C)	3 (17) 2 (16)
11. X Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	B A	14 7
12. X Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	A A	6 9
13. X Street / Riverside Boulevard	Traffic Signal	AM PM	B A	13 10
14. Broadway / I-5 NB Off-ramp	Side-Street Stop	AM PM	A (B) A (A)	9 (12) 4 (10)
15. Broadway / 3 <sup>rd</sup> Street (south)	Side-Street Stop	AM PM	A (B) A (A)	1 (12) 1 (10)
16. Broadway / 3 <sup>rd</sup> Street (north)	Side-Street Stop	AM PM	A (C) A (B)	3 (16) 6 (14)
17. Broadway / 5 <sup>th</sup> Street	Traffic Signal	AM PM	B B	12 12
18. Broadway / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (12)
19. Broadway / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) A (B)	1 (12) 1 (14)
20. Broadway / Muir Way	Traffic Signal	AM PM	B B	10 13
21. Broadway / 9 <sup>th</sup> Street	Traffic Signal	AM PM	B B	13 19
22. Broadway / 10 <sup>th</sup> Street	N/A <sup>2</sup>	AM PM	A (D) A (B)	1 (32) 1 (11)
23. Broadway / Riverside Boulevard	Traffic Signal	AM PM	B C	16 24

Intersection	Control	Peak Hour	Level of Service	Average Delay <sup>1</sup>
24. 1 <sup>st</sup> Avenue / 3 <sup>rd</sup> Street	N/A <sup>2</sup>	AM PM	A A	7 7
25. 1 <sup>st</sup> Avenue / 5 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) A (B)	1 (11) 1 (12)
26. McClatchy Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A A	8 8
27. Vallejo Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A A	7 8
Notes:				
1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, the delay and LOS for the most-delayed individual movement is shown in parentheses next to the average intersection delay and LOS.				
2. There is no posted control at these intersections.				
Source: Fehr & Peers, 2010.				

In summary, the existing roadway system can be characterized as operating efficiently. Motorists typically incur modest delays, do not experience substantial vehicle queues, and benefit from the coordinated traffic signal system.

Freeway facility operations were analyzed using the following data:

- AM and PM peak hour on-ramp and off-ramp counts collected in March 2010.
- AM and PM peak hour off-ramp queuing observations conducted in March 2010.
- AM and PM peak hour freeway mainline count on Business 80/US-50 conducted in March 2010.
- AM and PM peak hour I-5 mainline and I-5/US-50 freeway-to-freeway connector ramp volumes obtained from Caltrans' Performance Measurement System (PeMS).

According to the *2008 Average Annual Daily Truck Traffic on California State Highways* (Caltrans, September 2009), heavy vehicles<sup>1</sup> represent 9.6 percent of the daily traffic volume on I-5, and 2.7 percent of the daily traffic volume on Business 80/US-50 within the study area. Thus, for analysis purposes, a heavy vehicle percentage of ten percent was assumed for the I-5 peak hour analysis, and three percent for the Business 80/US-50 peak hour analysis.

The AM and PM peak hour freeway operations are presented in Table 5.9-7 (see Appendix S for technical calculations).

1 As defined by the *Highway Capacity Manual*, a heavy vehicle is any "vehicle with more than four wheels touching the pavement during normal operation."

Freeway Facility	Peak Hour	Type	Level of Service	Density <sup>1</sup>	Volume
1. I-5 Northbound – Off-ramp to Business 80/US-50	AM PM	Major Diverge	F A	-- 9	3,722 1,911
2. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway	AM PM	Diverge	C B	24 13	537 133
3. I-5 Northbound – Business 80/US-50 to P Street	AM PM	Mainline	D F <sup>2</sup>	32 --	7,038 5,503
4. I-5 Southbound – Off-ramp to Business 80/US-50	AM PM	Major Diverge	B F	14 --	3,801 4,232
5. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3rd Street	AM PM	Diverge	D D	35 34	194 158
6. I-5 Southbound – Business 80/US-50 to Sutterville Road	AM PM	Mainline	B F <sup>2</sup>	15 --	3,348 7,758
7. Business 80/US-50 Eastbound – Off-ramp to 5 <sup>th</sup> Street	AM PM	Diverge	C B	20 18	446 454
8. Business 80/US-50 Eastbound – On-ramp from X Street (East of Riverside Boulevard)	AM PM	Merge	D C	28 26	523 778
9. Business 80/US-50 Westbound – Off-ramp to W Street (East of 11th Street)	AM PM	Diverge	E D	36 32	1,193 452
10. Business 80/US-50 Westbound to I-5 Northbound Connector – On-ramp from 5 <sup>th</sup> Street	AM PM	Weave	D D	--	3,580 3,257
11. Business 80/US-50 Westbound – On-ramp from 5 <sup>th</sup> Street	AM PM	Merge	B C	20 23	221 306

Notes:

- Density measured in passenger car equivalents per lane per mile. Density not calculated for weaving segments.
- The LOS calculations report LOS C during the PM peak hour for the I-5 NB mainline segment between Business 80/US-50 and P Street, and LOS E during the PM peak hour for the I-5 SB segment between Business 80/US-50 and Sutterville Road. However, the 2008 Caltrans' HICOMP report indicates congestion indicative of LOS F conditions due to upstream capacity constraints.

Source: Fehr & Peers, 2010.

As shown, the following freeway facilities operate at LOS F in the AM or PM peak hour:

- I-5 Northbound – Off-ramp to Business 80/US-50 (AM peak hour)
- I-5 Northbound – Business 80/US-50 to P Street (PM peak hour)
- I-5 Southbound – Off-ramp to Business 80/US-50 (PM peak hour)
- I-5 Southbound – Business 80/US-50 to Sutterville Road (PM peak hour)

The northbound segment of I-5 between Business 80/US-50 and P Street, and the southbound segment of I-5 between Business 80/US-50 and Sutterville Road are congested due to upstream capacity constraints and the measured PM peak hour volumes are constrained. Therefore, although the calculation sheets in Appendix S report LOS D and LOS E respectively, actual conditions in the field are indicative of LOS F.

The LOS F conditions on I-5 at the interchange with Business 80/US-50 are not unexpected as peak period congestion on these facilities occurs consistently, and is well documented. The Caltrans 2008 *Highway Congestion Monitoring Program (HICOMP)* report indicates that eastbound Business 80/

US-50 is congested (defined as travel speeds below 35 mph for at least 15 consecutive minutes) through the entire study area for nearly two hours during the AM peak period. Additionally, the HICOMP report indicates that the segments of northbound I-5 through Downtown Sacramento, southbound I-5 between Downtown Sacramento and Fruitridge Road, and westbound Business 80/US-50 east of Riverside Boulevard are congested for approximately two hours during the PM peak period.

Freeway off-ramp queues were observed under existing conditions. As shown in Table 5.9-8, the queues at all study freeway off-ramps are within their storage areas during the AM and PM peak hours. The Business 80/US-50 off-ramp to X Street (east of 11<sup>th</sup> Street) was not included in this analysis since the ramp merges with X Street rather than terminating at a controlled intersection, and the distance from the freeway mainline to the nearest traffic signal on X Street is over 2,100 feet.

<b>OFF-RAMP QUEUING – EXISTING CONDITIONS</b>			
<b>Off-Ramp</b>	<b>Storage Length</b>	<b>Peak Hour</b>	<b>Queue<sup>1</sup></b>
1. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway	1,000 feet	AM PM	125 feet 50 feet
2. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3 <sup>rd</sup> Street	1,175 feet	AM PM	100 feet 75 feet
3. Business 80/US-50 Eastbound – Off-ramp to 5 <sup>th</sup> Street	1,250 feet	AM PM	175 feet 200 feet

Notes:  
1. Queue length is the maximum queue observed during peak period field observations conducted in March 2010, rounded to the nearest 25 feet.  
Source: Fehr & Peers, 2010.

### **Existing Trip Generating Land Uses on Project Site**

According to information provided by the project applicant, the occupied buildings on the project site total approximately 221,000 square feet of space. Two office buildings comprise 23,300 square feet of this total with the remaining being a mix of manufacturing, distribution/warehouse, and factory-type uses. An additional 144,000 square feet of building space is currently vacant or underutilized.

Traffic counts were conducted at the project site roadways and driveways on Thursday, March 11 and Tuesday, March 16, 2010. Table 5.9-9 displays the daily trip generation at each count location on each day. Driveways A – D are located on the west side 5<sup>th</sup> Street south of 1<sup>st</sup> Avenue. They serve the Farmers Market and an unrelated parcel with industrial uses.

Table 5.9-9 shows that the observed daily trip generation of the site was remarkably similar during each count day. The site generated approximately 1,670 average daily trips, with 6.5 percent of those trips being made by heavy vehicles.

Table 5.9-10 shows the existing trip generation of the project site on each count day during the AM and PM peak hours. On each day, the AM peak hour occurred from 8 to 9, and the PM peak hour occurred from 4 to 5. The AM and PM peak hour counts were quite similar on each count day, varying by only 12 vehicles during the AM peak hour and 8 vehicles during the PM peak hour.

TABLE 5.9-9

## DAILY PROJECT SITE TRIP GENERATION – EXISTING CONDITIONS

Count Location	Thursday, March 11, 2010	Tuesday, March 16, 2010
	Daily Volume	Daily Volume
3 <sup>rd</sup> Street south of Broadway	510 (6% HV)	369 (7% HV)
1 <sup>st</sup> Avenue east of 3 <sup>rd</sup> Street	258 (4% HV)	318 (4% HV)
Driveway A on 5 <sup>th</sup> Street	403 (10% HV)	380 (9% HV)
Driveway B on 5 <sup>th</sup> Street	526 (5% HV)	637 (5% HV)
Driveway C on 5 <sup>th</sup> Street	86 (0% HV)	86 (1% HV)
Driveway D on 5 <sup>th</sup> Street	26 (0% HV)	12 (25% HV)
On-Street Parking on 5 <sup>th</sup> Street	13 (0% HV)	26 (0% HV)
<b>Adjustments</b>		
Non-Site Through Traffic 1 <sup>st</sup> Avenue to 3 <sup>rd</sup> Street (and vice versa)	- 120 (0% HV)	- 120 (0% HV)
Non-Site Trips from News 10 Driveway on 1 <sup>st</sup> Avenue	- 29 (0% HV)	- 26 (0% HV)
Internal Trips Between Driveways A, B, and C	- 8 (0% HV)	- 12 (0% HV)
<b>Total</b>	<b>1,665 (6.5% HV)</b>	<b>1,670 (6.5% HV)</b>
Notes: Daily non-site through traffic traveling between 1 <sup>st</sup> Avenue and 3 <sup>rd</sup> Street has been estimated based on percentages of through traffic during peak periods. (X% HV) = percentage of trips made by heavy vehicles (defined as having 3 or more axles)		

TABLE 5.9-10

## PEAK HOUR PROJECT SITE TRIP GENERATION – EXISTING CONDITIONS

Thursday, March 11, 2010						Tuesday, March 16, 2010					
AM Peak Hour Trips			PM Peak Hour Trips			AM Peak Hour Trips			PM Peak Hour Trips		
In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
77	59	136	22	28	50	80	68	148	17	41	58
Notes: Trip generation based on count locations listed in Table 5.9-9 with described adjustments.											

The data from Tables 5.9-9 and 5.9-10 reveal the following travel behaviors for the existing site uses:

- A considerable proportion of the site's daily trip generation occurs outside of the typical weekday AM and PM peak hours. Approximately 8 percent of daily trips occur during the AM peak hour, and 3 percent of daily trips occur during the PM peak hour. This is fairly typical of industrial, warehouse, manufacturing, and distribution uses.
- The AM peak hour counts show a fairly even inbound versus outbound mix of trips, most likely due to inbound employee trips and outbound delivery trips.

The trip generation potential of the vacant and underutilized buildings on the project site is described later in this chapter.

## 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**

No pertinent federal regulations affect the proposed project.

## **State**

In May 2009, Caltrans released Corridor System Management Plans (CSMPs) for I-5 and US-50. The segments of these freeways located within the study area are covered by these documents. CSMPs are long-range comprehensive planning documents that define the current level of service (LOS) on a facility and the future LOS when considering feasible long-term projects. Based on the CSMPs for I-5 and US-50, the segments of these facilities located within the project study area currently operate at LOS F conditions, and are expected to operate at LOS F conditions in the future. LOS F is an unacceptable level of service.

According to the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, December 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 is said to occur 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 is said to occur 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.

## **Local**

The *Mobility Element of the City of Sacramento's 2030 General Plan* outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following level of service 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:

- The twelve study intersections located along W Street and X Street 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 roadway segments and intersections located on Broadway 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 study intersections of 3<sup>rd</sup> Street/1<sup>st</sup> Avenue and 5<sup>th</sup> Street/1<sup>st</sup> Avenue, as well as the study roadway segments on 5th Street north of McClatchy Way, are within a designated

planned “urban neighborhood” 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 5th Street/Vallejo Way intersection as well as the segment of 5<sup>th</sup> Street south of McClatchy Way 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:

Policies

- 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.
- M 1.3.2 The City shall require large private developments to provide internal complete streets that connect to the existing roadway system.
- M 2.1.1 All new development shall be consistent with the applicable provisions of the Pedestrian Master Plan.
- 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.
- M 3.1.1 The City shall support a well-designed transit system that meets the transportation needs of Sacramento residents and visitors.
- M 3.1.16 The City shall require developer contributions for bus facilities and improvements.
- 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.
- 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.
- M 5.1.1 All proposed bikeway facilities shall be consistent with the applicable provisions of the Bikeway Master Plan.
- 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.
- 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.
- M 5.1.7 The proposed project shall include Class II bike lanes on all new arterial and collector streets.

- M 6.1.1 The City shall ensure that appropriate parking is provided considering access to existing and funded transit, shared parking opportunities for mixed-use development, and implementation of Transportation Demand Management plans.

### **Neighborhood Traffic Management Program**

The City of Sacramento has a Neighborhood Traffic Management Program (NTMP) whereby 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.

There are two NTMP areas located near the Northwest Land Park project site. The Swanston Palms neighborhood located south of the proposed project along Vallejo Way has completed Phase I improvements and the Southside Park neighborhood (located north of Business 80/US-50 between I-5 and 9<sup>th</sup> Street) is beginning Phase I improvements. Some of the proposed improvements in the Southside Park neighborhood include new marked crosswalks at the 3<sup>rd</sup> Street/S Street and 6<sup>th</sup> Street/T Street intersections, and conversion of side street stop-controlled intersections to all-way stop control at the following locations: 3<sup>rd</sup> Street/S Street, 6<sup>th</sup> Street/T Street, 6<sup>th</sup> Street/S Street, and 7<sup>th</sup> Street/S Street.

### **STANDARDS OF SIGNIFICANCE**

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For the purposes of this analysis, an impact is considered significant if implementation of the project would have any of the effects described below.

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, policies from the City of Sacramento 2030 General Plan have been used. For the freeway system, Caltrans' standards were used.

### **Intersections**

A significant traffic impact occurs when:

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

General Plan Mobility Element Policy M 1.2.2 sets forth definitions for what is considered an acceptable level of service.

### **Freeway Facility Ramps**

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway (i.e., exceed the available storage capacity);
- Project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service.

### **Transit**

Impacts to the transit system are considered significant if the proposed project would:

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

### **Bicycle Facilities**

Impacts to bicycle facilities are considered significant if the proposed project would:

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

### **Pedestrian Circulation**

Impacts to pedestrian circulation are considered significant if the proposed project would:

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

### **Parking**

Impacts to parking are considered significant if the proposed project would:

- Eliminate or adversely affect an existing parking facility, interfere with the implementation of a proposed parking facility, or result in an inadequate supply of parking.

### **Construction-Related Traffic Impacts**

The project would have a temporarily significant impact during construction if it would:

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

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

This section describes the analysis techniques, assumptions, and results used to identify the 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 project.

### **Trip Generation / Mode Choice**

The trip generation of Phase 1 and project buildout is based on the following three-step process for determining the number of net new vehicle trips the project would add over traffic already being generated by existing land uses on the project site:

- Step 1 – Estimate gross trip generation of proposed land uses.
- Step 2 – Estimate expected internalization of trips and number of external trips made by walking/bicycling or transit.
- Step 3 – Calculate difference in external vehicle trips generated by proposed land uses and existing uses on project site.

Prior to proceeding with these steps, an overview of travel behavior characteristics in the Land Park area is provided for context.

### Travel Behavior of Land Park Residents

According to the 2000 US Census, residents of Upper Land Park (i.e., located west of Freeport Boulevard and north of Sutterville Road) exhibited the following journey-to-work travel characteristics:

- Drive Alone/Carpool/Cab: 88%
- Public Transit: 7.6%
- Bike/Walk: 4.4%

The transit mode share for the City as a whole was 4.4 percent, which indicates that Upper Land Park residents make home-based work trips by transit to a greater degree than elsewhere in the City.

The *2000 Sacramento Area Household Travel Survey* (SACOG) revealed the following transit and walk/bike mode splits for the Sacramento region:

<u>Trip Type</u>	<u>Walk/Bike Mode Split</u>	<u>Transit Mode Split</u>
Work Trips	5.9%	3.4%
Non-Work Trips	6.8%	0.8%
All Trips	6.7%	1.3%

The survey also indicated that use of transit and walk/bike modes for work and non-work attractions in downtown Sacramento were much higher than these regional averages. However, from the data, it is not possible to quantify the mode splits within the immediate project vicinity. The region-wide average trip length was 12 minutes for walk trips and 15 minutes for bike trips.

The 2005 version of the SACSIM travel demand model developed by SACOG includes average vehicle, transit, and bike/walk mode shares for households in communities throughout the six-county region. The project site would be situated in the very north end of the “Land Park - Pocket - Meadowview” area, which is estimated to have the following travel behavior characteristics for all home-based trips.

<u>Area</u>	<u>Walk/Bike Mode Split</u>	<u>Transit Mode Split</u>
Sacramento Region	7.5%	1.2%
Land Park - Pocket - Meadowview	8.3%	2.2%

### Destinations within One-Mile of Project Site

Numerous shopping, employment, recreational, spiritual, and entertainment attractions are located in the vicinity of the project site. The list below indicates that various complementary land uses are located less than ½ mile from the project site. Many larger potential attractions are situated between ½ and 1 mile from the project (as measured from the 5<sup>th</sup> Street/1<sup>st</sup> Avenue intersection).

#### *Existing Land Uses Located Less than ½ Mile Walk From Project Site*

- Several restaurants, businesses, and churches
- Southside Park, O’Neil Park, and access to Sacramento River bike trail

#### *Existing Land Uses Located ½ to 1 Mile Walk From Project Site*

- State Office Buildings on Q and P streets (CalPERS, DGS, DHS, SSD)
- Target and Walgreens stores on Broadway
- Crocker Art Museum on 3<sup>rd</sup> Street
- Capital Athletic Club on 8<sup>th</sup> Street
- Tower Theater on Land Park Drive
- Numerous churches, restaurants, coffee shops

A class II bicycle lane is provided on Broadway from I-5 to Muir Way to accommodate bicyclists. On-street Class II or Class III bicycle facilities are provided on several north-south streets into the downtown CBD. Sidewalks are provided on many of the streets within the study area.

### Quality of Transit Service

Residents of the project site would have to walk less than ½ mile to access bus stops for five different RT bus routes or shuttles. These routes provide access to key destinations including: Capitol Mall, Old Sacramento, Downtown Plaza, K Street Mall, Sacramento County Center, Midtown, California State University Sacramento (CSUS) and various light rail/bus service connections. During weekdays, these routes generally operate with 30 minute headways, though headways on Route 51 during peak periods are as little as 8 minutes. This suggests that existing transit service is relatively abundant in the project vicinity.

### Expected Internal Trip Capture, and External Transit and Bike/Walk Mode Shares

Many of the trips generated by the neighborhood retail center and optional neighborhood center are likely to be made by project residences (i.e., internally captured). However, some external trips (e.g., employees, special neighborhood center gatherings, etc.) will occur. Based on the expected interaction between these uses, 33 percent retail and neighborhood center trips are assumed to be internally captured by the residential uses. The internal trip capture methodology developed by ITE (as presented in *Trip Generation Handbook*, 2004) predicts an internal trip capture rate of 38 percent for residential attractors, such as retail and neighborhood centers. Thus, the assumption of 33 percent internalization is considered conservative.

The vehicle trip rates to be applied to the project land uses already consider modest levels of transit, walk, and bike mode shares. However, from the above data, it is apparent that the additional adjustments documented below are warranted given the level of transit and proximity to complementary land uses.

#### *Additional Adjustments (Beyond Mode Splits Already Assumed in ITE Trip Rates).<sup>2</sup>*

- External Walk/Bike Trip Percentage: 4%
- External Transit Trip Percentage: 2%

### Trip Generation – Phase 1

Table 5.9-11 shows the gross trip generation of Phase 1 of the proposed project. This table also shows the adjustments to external trips based on the bike/walk and transit percentages described previously.

2 The following documents how the walk/bike percentage was developed (a similar approach for the transit mode split was used):

- If ITE predicts a land use will generate 100 vehicle trips, it may generate 107 total external trips if walk/bike trips are also considered (this assumes about 6.5% bike/walk mode, which is similar to what exists in the Sacramento region).
- Given the location and adjacent uses near the project site, it is reasonable to assume a 10% bike/walk mode split given SACSIM data. However, the ITE rates already include a certain level of bike/walk trips. To account for this, the external vehicle trip generation would be  $107 \times 90\% = 96$  vehicle trips, which is a 4% reduction from the ITE predicted value.

TABLE 5.9-11

## PROJECT TRIP GENERATION – PHASE 1

Land Use	Quantity	ITE Land Use Code	Trip Rate <sup>1</sup>			Trips						
			Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour			PM Peak Hour		
							In	Out	Tot	In	Out	Tot
Condominiums	214 du's	230	4.78	0.33	0.40	1,023	12	59	71	58	28	86
Adjustments – External Trips Made by Bike/Walk <sup>2</sup>						- 41	-1	-2	-3	-2	-1	-3
Adjustments – External Trips Made by Transit <sup>2</sup>						-20	0	-1	-1	-1	-1	-2
External Trips Made by Vehicle						962	11	56	67	55	26	81
External Trips Generated by Existing Uses on Project Site						- 20	-2	-1	- 3	0	0	0
<b>Net Difference (Proposed Project Minus Existing Site Trips)</b>						<b>942</b>	<b>9</b>	<b>55</b>	<b>64</b>	<b>55</b>	<b>26</b>	<b>81</b>

Notes:  
1. Trip rates from *Trip Generation* (ITE, 2008).  
2. Refer to previous pages for assumptions regarding transit, and walk/bike trips.  
du's = dwelling units.

After accounting for the modest number of trips to be removed with Phase 1 (about 20 trips per day), the resulting Phase 1 land uses would generate approximately 940 daily vehicle trips with 65 trips during the AM peak hour and 80 trips during the PM peak hour. The vast majority of existing trip generating land uses on the project site would remain in place with Phase 1.

### Trip Generation – Project Buildout

Table 5.9-12 shows the gross trip generation associated with buildout of the proposed project. The fitted curve equations from *Trip Generation* (ITE, 2008) were used to estimate the trips generated by the residential uses. It was more appropriate to use the average trip rates for the retail and neighborhood centers given their small square footages. Use of the fitted curve equations would have over-predicted the trip generation of these uses.

This table shows the adjustments for external bike/walk trips and transit trips. It also displays the expected levels of “pass-by” activity for the retail center to be located on Broadway. Based on data in the *Trip Generation Handbook* (ITE, 2004), retail pass-by percentages are expected to be 25 percent during the PM peak hour and 15 percent during the AM peak hour and on a daily basis. These percentages are within the mid-point of the typical range of pass-by rates based on data in the *Trip Generation Handbook*. Pass-by trips are not added to the surrounding roadway system, but are included in the project site access evaluation.

After accounting for internal, pass-by, transit, and walk/bike trips, the proposed project is estimated to generate approximately 4,670 daily vehicle trips with 315 trips during the AM peak hour and 385 trips during the PM peak hour.

Table 5.9-12 indicates that the proposed land uses would replace existing uses that currently generate approximately 1,670 daily trips, 140 AM peak hour trips, and 55 PM peak hour trips. After subtracting these trips (which are reflected in the existing traffic counts) from the above totals, the

proposed project would cause a net increase of approximately 3,000 daily vehicle trips with 170 trips during the AM peak hour and 330 trips during the PM peak hour.

Land Use	Quantity	ITE Land Use Code	Trip Rate <sup>1</sup>			Trips						
			Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour			PM Peak Hour		
							In	Out	Tot	In	Out	Tot
Condominiums	978 du's <sup>2</sup>	230	4.78	0.33	0.40	4,677	54	266	320	261	129	390
Neighborhood Retail	15 ksf	820	42.94	1.00	3.73	644	9	6	15	27	29	56
Neighborhood Center	17 ksf	495	22.88	1.62	1.45	389	17	11	28	9	16	25
Gross Trips						5,710	80	283	363	297	174	471
Internal Trips Between Retail/Neighborhood Center and Residential <sup>3</sup>						-682	-17	-11	-28	-24	-30	-54
Retail Pass-by Trips <sup>3</sup>						-65	-1	-1	-2	-5	-5	-10
Total (New) External Trips						4,963	62	271	333	268	139	407
Adjustments – External Trips Made by Bike/Walk <sup>3</sup>						-199	-2	-11	-13	-11	-5	-16
Adjustments – External Trips Made by Transit <sup>3</sup>						-99	-1	-5	-6	-5	-3	-8
External Trips Made by Vehicle						4,665	59	255	314	252	131	383
External Trips Generated by Existing Uses on Project Site						-1,668	-78	-64	-142	-20	-34	-54
<b>Net Difference (Proposed Project Minus Existing Site Trips)</b>						<b>2,997</b>	<b>-19</b>	<b>191</b>	<b>172</b>	<b>232</b>	<b>97</b>	<b>329</b>
Notes:												
1. Trip rates from <i>Trip Generation</i> (ITE, 2008).												
2. Includes 44 mixed-use units.												
3. Refer to previous pages for assumptions regarding internal, pass-by, transit, and walk/bike trips.												
du's = dwelling units. ksf = thousand square feet.												

In 2007-2009, Fehr & Peers worked with several academic researchers to develop a state-of-the-art mixed-use trip generation model. The MXD model estimates the percentage of trips that remain internal to a project site as well as external transit, walk, and vehicle mode splits. The model is based on surveys of residents and employees in 240 mixed-use projects in six major metropolitan areas (Sacramento, Houston, Boston, Atlanta, Portland, and Seattle) in the United States. The MXD model considers a variety of project attributes including project density, mix of uses, surrounding land uses, expected household size, vehicle ownership, and transit service.

The MXD model was used to check the reasonableness of the internal trip capture and transit and bike/walk mode splits shown in Table 5.9-12. The model output (see Appendix S) yielded the following results:

<u>Time Period</u>	<u>Percent Internal Trips</u>	<u>External Walk/Bike Trip Percentage</u>	<u>External Transit Trip Percentage</u>
Daily	3%	7%	2%
AM Peak Hour	3%	6%	2%
PM Peak Hour	3%	6%	2%

The MXD model results generally match the calculated percentages described previously.

## Trip Distribution / Assignment

Separate trip distribution/assignment percentages were calculated for the existing site trips (to be removed) and proposed project trips (to be added). Due to the number of one-way streets and location of freeway on- and off-ramps, it was necessary to develop separate trip percentage exhibits for inbound and outbound trips.

### Trip Distribution/Assignment – Existing Site Trips

Appendix S displays the distribution of existing site trips for the inbound and outbound travel directions. The majority of AM peak hour inbound trips are likely made by employees traveling to work in the industrial, warehouse, and office uses on the project site. Conversely, many of the AM peak hour outbound trips are likely to be deliveries to other manufacturers, businesses, and restaurants in the area. Thus, the inbound and outbound directional trip percentages will not necessarily be identical.

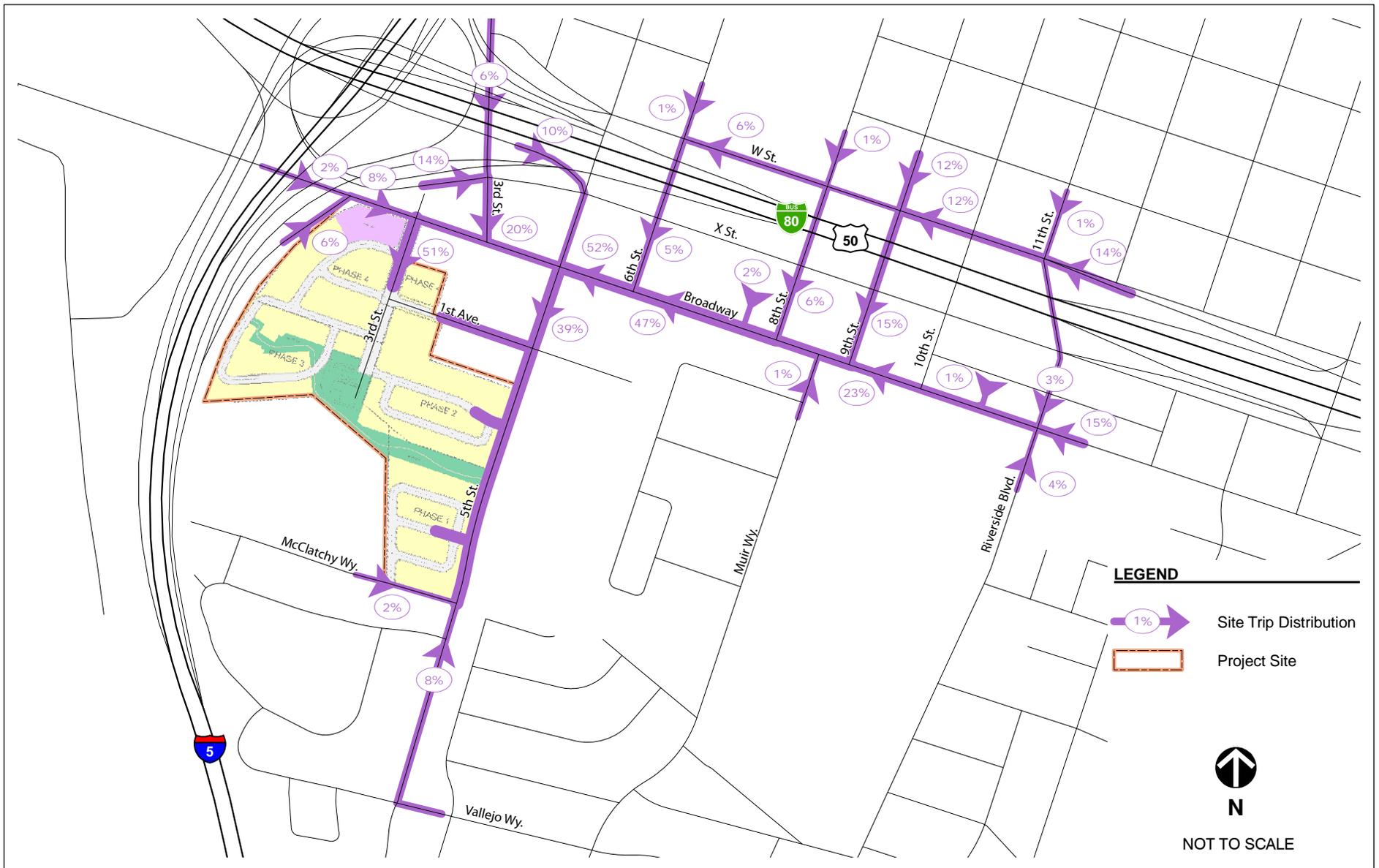
### Trip Distribution/Assignment – Proposed Project Trips

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
- Geographic distribution of work locations for residents in Upper Land Park from 2000 Census
- Directionality of residential trips traveling on Broadway from 5<sup>th</sup> Street and Muir Way
- Location of schools that would serve study area (Jedediah Smith Elementary, California Middle, and McClatchy High according to the Sacramento City School District website)
- Relative travel time/speed comparisons between the project and key destinations (e.g., McClatchy High School) for various travel routes
- Review of intersection turning movement volumes and daily traffic volumes (from the City's website) to assess relative usage among parallel streets
- Relative ease of travel on parallel routes (e.g., coordinated signals on X Street versus clustered signal timing and frequent stops on Broadway)

Figure 5.9-6 displays the expected distribution of project trips.

Project trips were assigned to the study facilities in accordance with the trip generation and distribution calculations presented previously. Figure 5.9-7 displays trips associated with project buildout during the AM and PM peak hours at the study intersections.



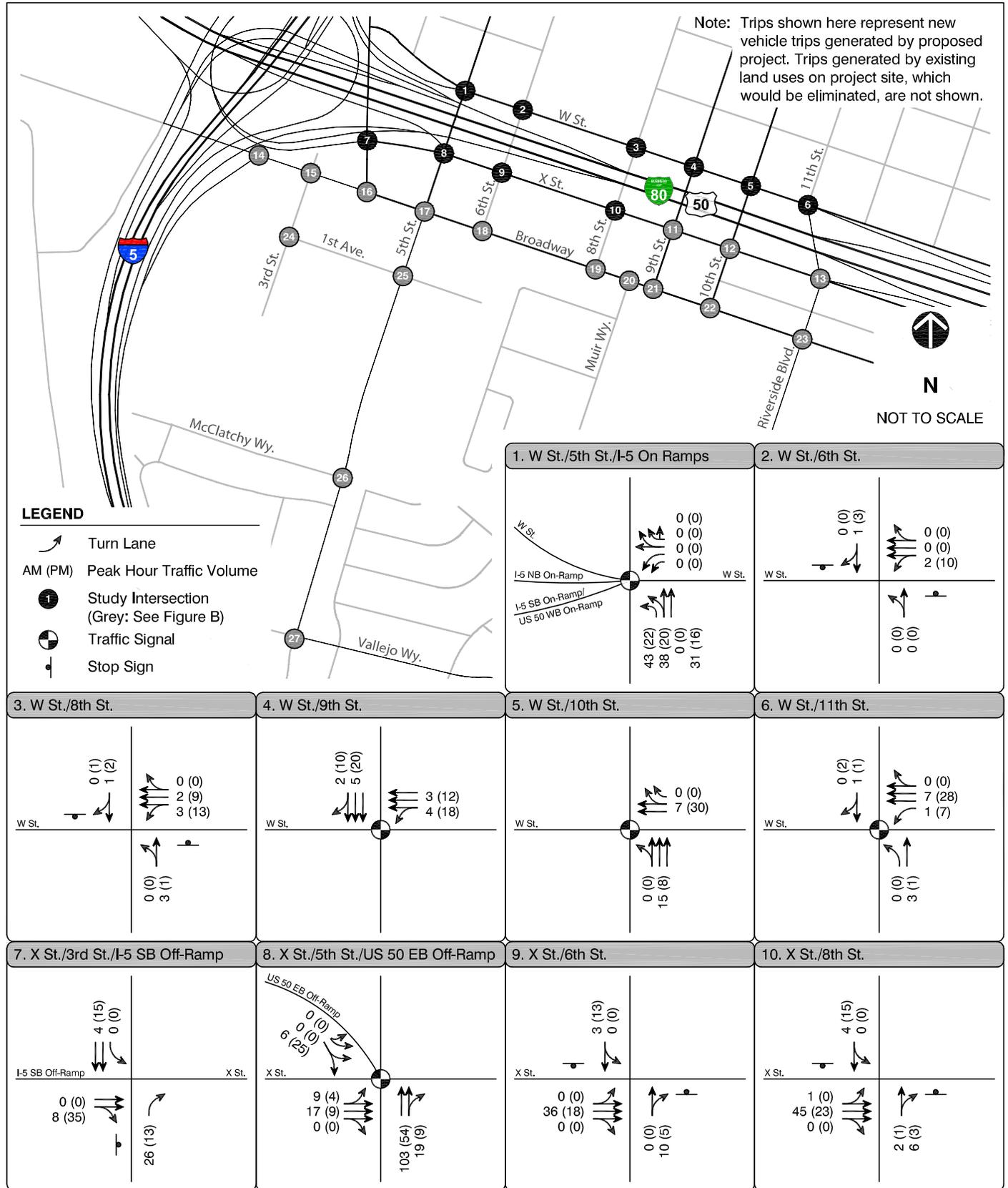
**FEHR & PEERS**  
TRANSPORTATION CONSULTANTS

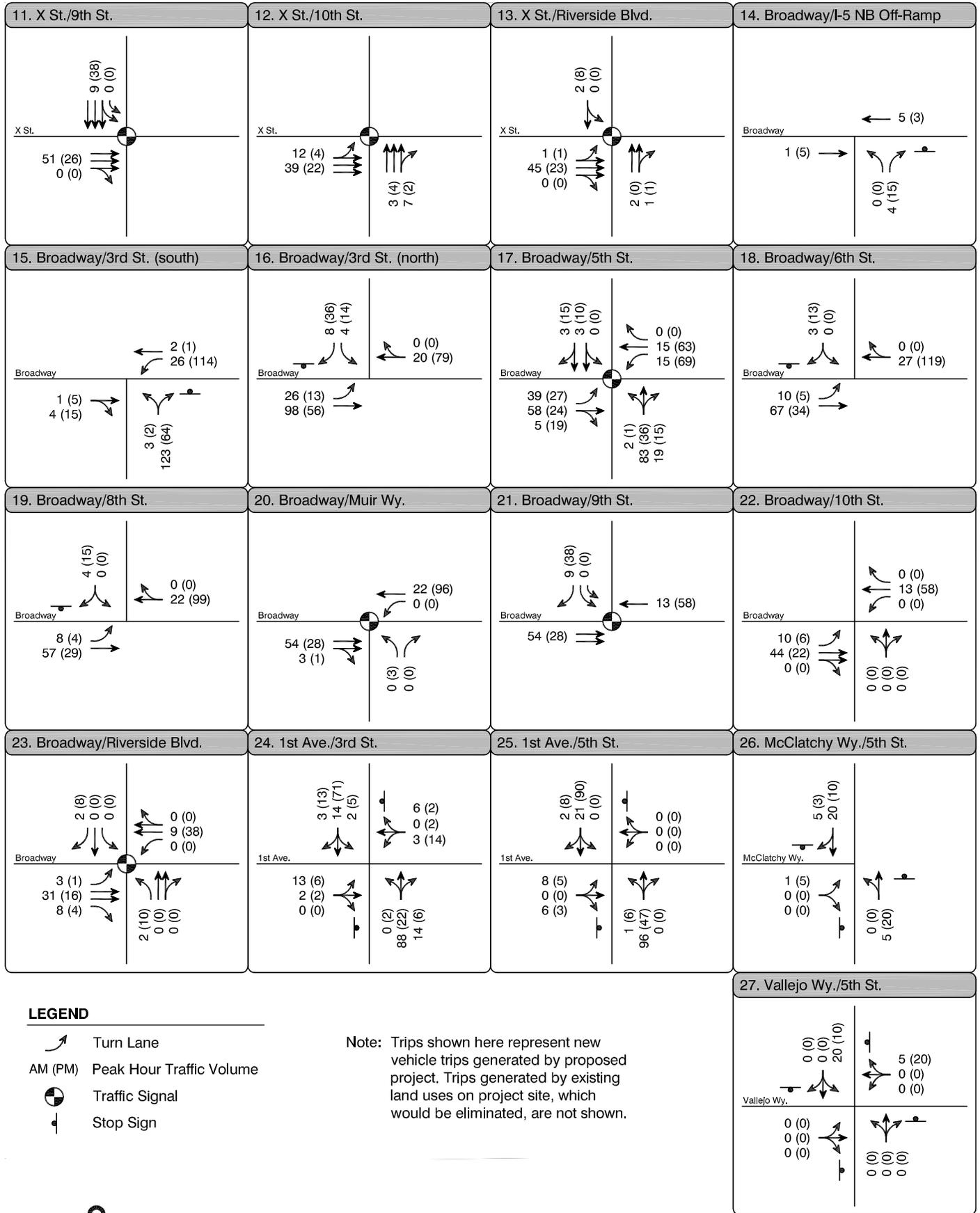
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**PROJECT TRIP DISTRIBUTION -  
INBOUND TRIPS**

**FIGURE 5.9-6A**







**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign

Note: Trips shown here represent new vehicle trips generated by proposed project. Trips generated by existing land uses on project site, which would be eliminated, are not shown.

Project-only trips were then added to the existing volumes (along with subtracted trips from the existing land uses that are to be removed) to yield “existing plus Phase 1” and “existing plus Project Buildout” conditions. Traffic forecasts associated with these scenarios are illustrated on Figures 5.9-8 and 5.9-9, respectively. Figure 5.9-9 indicates that several turning movements go down slightly in the inbound direction during the AM peak hour because the proposed uses generate fewer inbound AM trips than the existing uses currently generate. Also, the existing uses show a slightly greater degree of use of the freeway ramps (i.e., for deliveries, commuting, etc.) than the proposed uses.

### Existing Plus Project Conditions

The study roadways were reanalyzed under “existing plus Phase 1” and “existing plus Project Buildout” conditions. Table 5.9-13 summarizes the results.

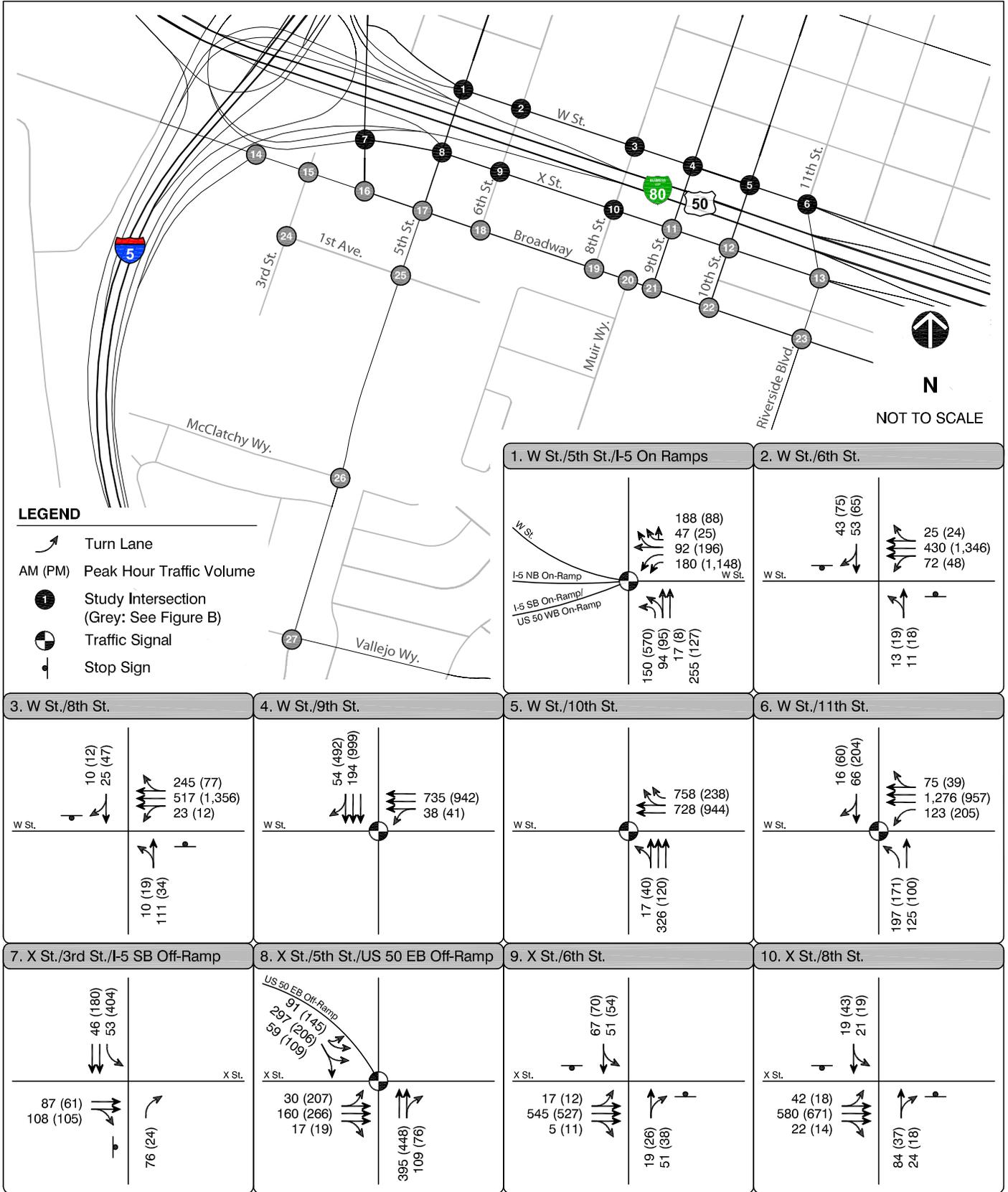
<b>ROADWAY SEGMENT OPERATIONS – EXISTING PLUS PROJECT CONDITIONS</b>				
Roadway Segment	Number of Lanes	Average Daily Traffic – Level of Service		
		Existing Conditions	Existing Plus Phase 1	Existing Plus Project Buildout
1. Broadway – between Front Street and 3rd Street	2	5,900 – A	5,900 – A	6,100 – A
2. Broadway – between 3rd Street and 5th Street	2	7,200 – A	7,400 – A	8,700 – A
3. Broadway – between 5th Street to 9th Street	2	9,900 – B	10,300 – B	11,300 – C
4. 5th Street – between Broadway and 1st Avenue	2	6,100 – B	7,000 – C	6,900 – C
5. 5th Street – between 1st Avenue and McClatchy Way	2	5,800 – B	6,700 – C	6,500 – C
6. 5th Street – between McClatchy Way and Vallejo Way	2	3,000 – A	3,100 – A	3,400 – A

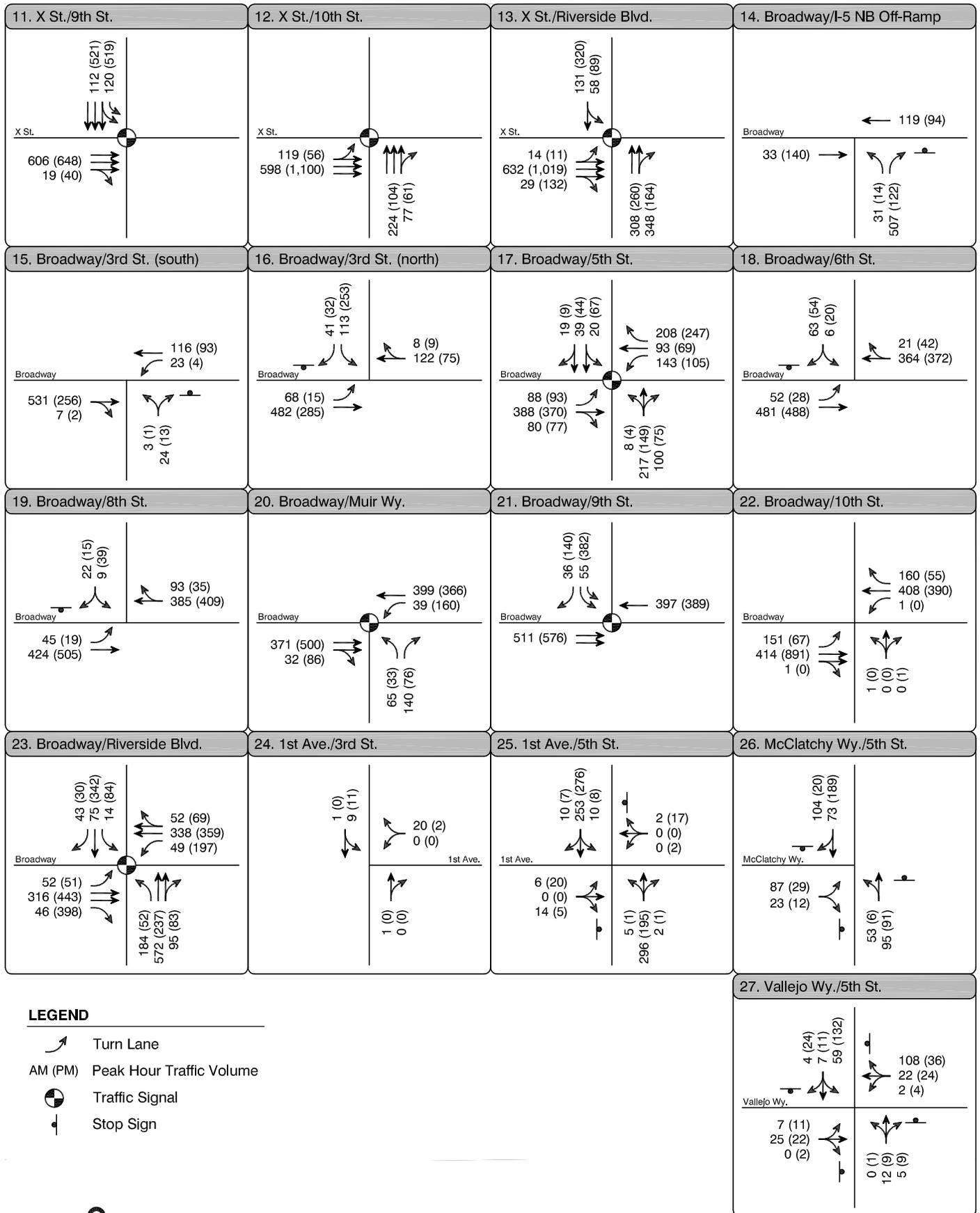
Source: Fehr & Peers, 2010.

This table indicates that traffic volumes on 5<sup>th</sup> Street between Broadway and McClatchy Way are marginally higher with Phase 1 traffic versus Project Buildout. This result is caused by the modest amount of trips generated by the existing land uses on Phase 1 of the project site. Existing uses generate only 20 daily trips, which is about one percent of the site’s total existing land use. By contrast, the proposed land uses on Phase 1 generate about 20 percent of the project’s total daily trip generation. Phase 1 does not eliminate many existing trips, and as a result, volumes are somewhat higher on 5<sup>th</sup> Street.

Table 5.9-13 shows that all study roadway segments would continue operating at an acceptable LOS C or better under “existing plus Phase 1” and “existing plus Project Buildout” conditions.

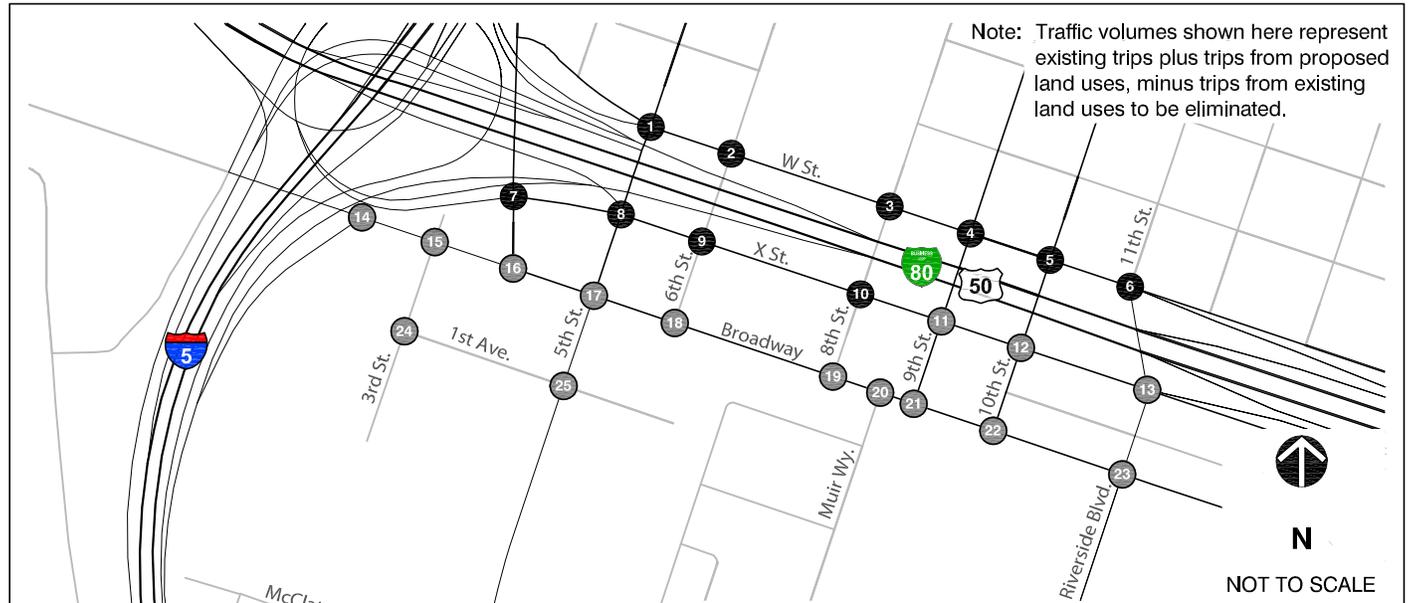
Table 5.9-14 summarizes the intersection analysis results (refer to Appendix S for technical calculations). This table shows that all signalized and all-way stop-controlled study intersections would continue to operate at LOS C or better under existing plus Project Buildout conditions. All side-street stop-controlled intersections would operate at an overall LOS A with the worst minor street movement generally ranging from LOS B to D with the exception of the 6<sup>th</sup> Street approach to W Street, where LOS F is reported during the PM peak hour.





**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign

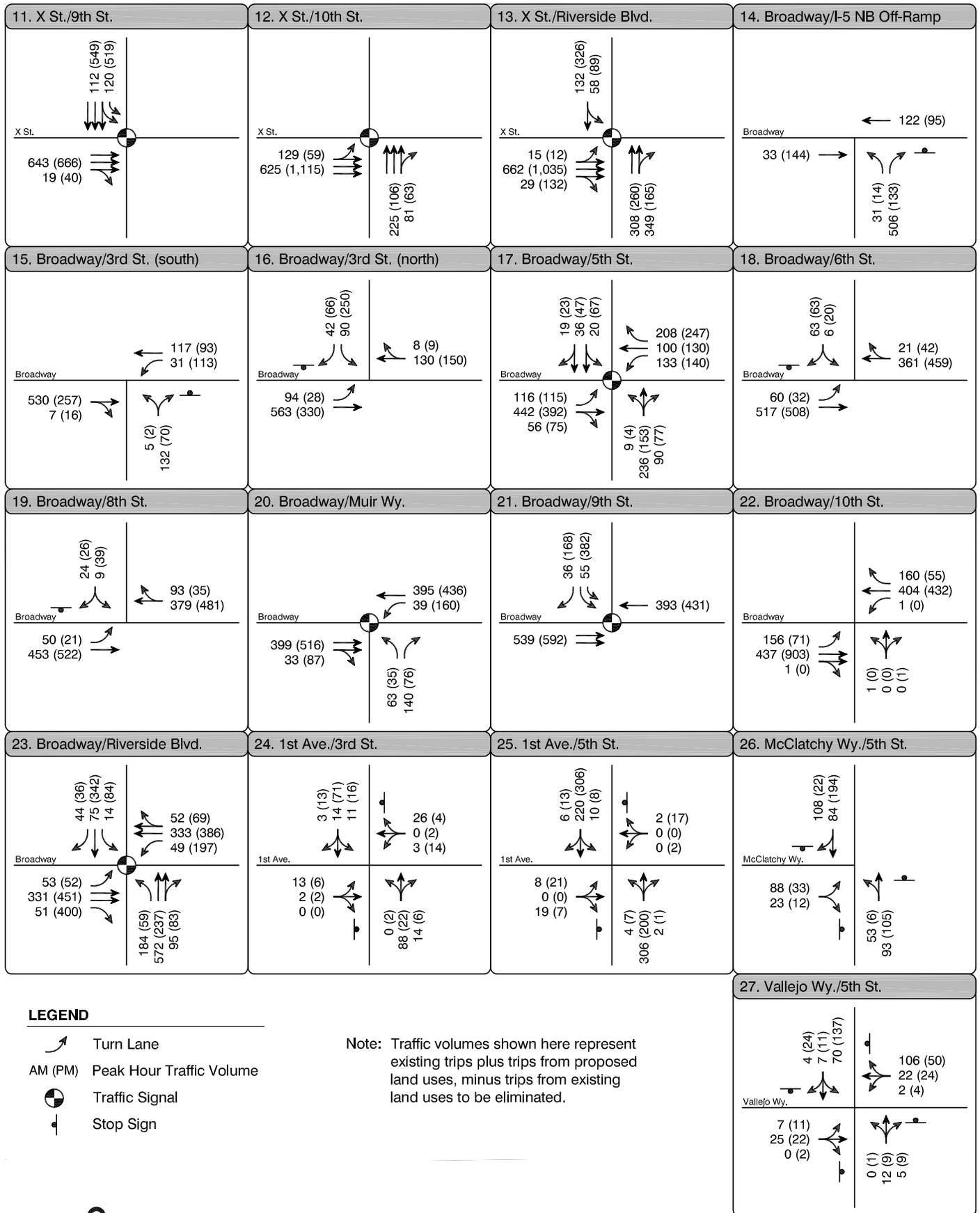


Note: Traffic volumes shown here represent existing trips plus trips from proposed land uses, minus trips from existing land uses to be eliminated.

**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Study Intersection (Grey: See Figure B)
- Traffic Signal
- Stop Sign

1. W St./5th St./I-5 On Ramps		2. W St./6th St.	
3. W St./8th St.		4. W St./9th St.	
5. W St./10th St.		6. W St./11th St.	
7. X St./3rd St./I-5 SB Off-Ramp		8. X St./5th St./US 50 EB Off-Ramp	
9. X St./6th St.		10. X St./8th St.	



**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign

Note: Traffic volumes shown here represent existing trips plus trips from proposed land uses, minus trips from existing land uses to be eliminated.

TABLE 5.9-14

## INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Peak Hour	Level of Service – Average Delay <sup>1</sup>		
			Existing Conditions	Existing Plus Phase 1	Existing Plus Project Buildout
1. W Street / 5 <sup>th</sup> Street / I-5 NB On-ramp	Traffic Signal	AM PM	A – 8 B – 17	A – 8 B – 17	A – 8 B – 17
2. W Street / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) – 3 (14) A (E) – 5 (46)	A (B) – 3 (14) A (E) – 5 (47)	A (B) – 3 (14) A (F) – 6 (51)
3. W Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) – 3 (20) A (D) – 2 (32)	A (C) – 3 (20) A (D) – 2 (32)	A (C) – 3 (20) A (D) – 3 (34)
4. W Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	A – 6 B – 12	A – 6 B – 12	A – 6 B – 12
5. W Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	A – 6 A – 8	A – 6 A – 8	A – 6 A – 8
6. W Street / 11 <sup>th</sup> Street	Traffic Signal	AM PM	C – 22 B – 15	C – 22 B – 15	C – 22 B – 15
7. X Street / 3 <sup>rd</sup> Street / I-5 SB Off-ramp	Side-Street Stop	AM PM	A (B) – 6 (11) A (D) – 8 (31)	A (B) – 6 (11) A (D) – 8 (31)	A (B) – 6 (11) A (D) – 8 (33)
8. X Street / 5 <sup>th</sup> Street / Business 80 – US-50 EB Off-ramp	Traffic Signal	AM PM	C – 26 C – 23	C – 26 C – 24	C – 26 C – 24
9. X Street / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) – 4 (15) A (B) – 4 (15)	A (B) – 4 (15) A (B) – 4 (15)	A (C) – 4 (16) A (C) – 4 (15)
10. X Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) – 3 (17) A (C) – 2 (16)	A (C) – 4 (17) A (C) – 2 (16)	A (C) – 4 (17) A (C) – 3 (17)
11. X Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	B – 14 A – 7	B – 14 A – 7	B – 14 A – 8
12. X Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	A – 6 A – 9	A – 6 A – 8	A – 5 A – 8
13. X Street / Riverside Boulevard	Traffic Signal	AM PM	B – 13 A – 10	B – 14 A – 10	B – 14 A – 10
14. Broadway / I-5 NB Off-ramp	Side-Street Stop	AM PM	A (B) – 9 (12) A (A) – 4 (10)	A (B) – 9 (12) A (A) – 4 (10)	A (B) – 9 (12) A (A) – 4 (10)
15. Broadway / 3 <sup>rd</sup> Street (south)	Side-Street Stop	AM PM	A (B) – 1 (12) A (A) – 1 (10)	A (B) – 1 (12) A (A) – 1 (10)	A (B) – 3 (14) A (B) – 3 (10)
16. Broadway / 3 <sup>rd</sup> Street (north)	Side-Street Stop	AM PM	A (C) – 3 (16) A (B) – 6 (14)	A (C) – 3 (16) A (B) – 6 (14)	A (C) – 3 (18) A (C) – 6 (17)
17. Broadway / 5 <sup>th</sup> Street	Traffic Signal	AM PM	B – 12 B – 12	B – 13 B – 12	B – 13 B – 13
18. Broadway / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) – 1 (11) A (B) – 1 (12)	A (B) – 1 (11) A (B) – 1 (13)	A (B) – 1 (12) A (B) – 1 (14)
19. Broadway / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) – 1 (12) A (B) – 1 (14)	A (B) – 1 (12) A (B) – 1 (15)	A (B) – 1 (12) A (C) – 1 (15)
20. Broadway / Muir Way	Traffic Signal	AM PM	B – 10 B – 13	B – 11 B – 13	B – 10 B – 13
21. Broadway / 9 <sup>th</sup> Street	Traffic Signal	AM PM	B – 13 B – 19	B – 13 B – 19	B – 13 C – 21
22. Broadway / 10 <sup>th</sup> Street	N/A <sup>2</sup>	AM PM	A (D) – 1 (32) A (B) – 1 (11)	A (D) – 1 (33) A (B) – 1 (11)	A (D) – 1 (35) A (B) – 1 (11)
23. Broadway / Riverside Boulevard	Traffic Signal	AM PM	B – 16 C – 24	B – 16 C – 24	B – 16 C – 23
24. 1 <sup>st</sup> Avenue / 3 <sup>rd</sup> Street	Side-Street Stop <sup>3</sup>	AM PM	A – 7 A – 7	A – 7 A – 7	A (A) – 3 (10) A (A) – 3 (10)
25. 1 <sup>st</sup> Avenue / 5 <sup>th</sup> Street	Side-Street Stop	AM PM	A (B) – 1 (11) A (B) – 1 (12)	A (B) – 1 (11) A (B) – 1 (13)	A (B) – 1 (11) A (B) – 1 (13)
26. McClatchy Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A – 8 A – 8	A – 8 A – 8	A – 8 A – 8
27. Vallejo Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A – 7 A – 8	A – 7 A – 8	A – 8 A – 8

TABLE 5.9-14					
INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS					
Intersection	Control	Peak Hour	Level of Service – Average Delay <sup>1</sup>		
			Existing Conditions	Existing Plus Phase 1	Existing Plus Project Buildout
Notes:					
1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, the delay and LOS for the most-delayed individual movement is shown in parentheses next to the average intersection delay and LOS.					
2. There is no posted control at this intersection.					
3. With the addition of the proposed project a fourth leg will be added to this intersection. It is assumed that stop control will be present on the 1st Avenue approaches under the plus project scenarios (there is no posted control under existing conditions).					
Source: Fehr & Peers, 2010.					

Table 5.9-15 displays AM and PM peak hour freeway operations with the addition of Phase 1 and project buildout (refer to Appendix S). This table shows that the addition of project buildout trips would not change the LOS at any study facilities. The four study segments that currently operate at an unacceptable LOS F will remain at LOS F with the project.

The proposed project results in a net increase of between 4 and 35 peak hour trips to the four facilities operating at LOS F. This represents less than a 1 percent increase in traffic over the existing volume on each facility. As described below, the addition of proposed project trips would not cause any freeway off-ramp vehicle queues to exceed the available storage:

- I-5 NB Off-ramp At Broadway – Maximum queue length would be unchanged.
- I-5 SB to Bus. 80 Connector off-ramp to 3<sup>rd</sup> Street – volume on off-ramp would decrease by 25 vehicles during the AM peak hour and increase by 30 vehicles during the PM peak hour. Resulting maximum queue would be 100 feet, which is less than the 1,175 feet of storage.
- Business 80 off-ramp to 5<sup>th</sup> Street – volume on off-ramp would be unchanged during the AM peak hour and increase by 25 vehicles during the PM peak hour. Resulting maximum queue would increase from 200 to 225 feet, which is less than the 1,250 feet of available storage.

## Cumulative Conditions

This section describes anticipated cumulative (2030) operating conditions in the study area for the roadway, transit, and bicycle/pedestrian systems.

### Land Use / Roadway Network Assumptions

The cumulative conditions analysis of City streets and intersections uses the version of the SACMET regional travel demand model developed for the City's 2030 General Plan. The following specific land use assumptions are made in the cumulative conditions analysis:

- Docks Specific Plan – This approved specific plan is assumed to be fully built out. It consists of a mix of residential, retail, and office and is located west of I-5 between Broadway and Old Sacramento.

- Northwest Land Park Project – the proposed project is assumed to be fully built out for this analysis scenario.

Freeway Facility	Peak Hour	Type	Existing Conditions		Existing Plus Phase 1		Existing Plus Project Buildout	
			LOS - Density <sup>1</sup>	Volume	LOS - Density <sup>1</sup>	Volume	LOS - Density <sup>1</sup>	Volume
1. I-5 Northbound – Off-ramp to Business 80/US-50	AM PM	Major Diverge	F – – A – 9	3,722 1,911	F – – A – 9	3,723 1,914	F – – A – 9	3,726 1,926
2. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway	AM PM	Diverge	C – 24 B – 13	537 133	C – 24 B – 13	538 136	C – 24 B – 13	541 148
3. I-5 Northbound – Business 80/US-50 to P Street	AM PM	Mainline	D – 32 F <sup>2</sup> – –	7,038 5,503	D – 32 F <sup>2</sup> – –	7,046 5,507	D – 32 F <sup>2</sup> – –	7,076 5,523
4. I-5 Southbound – Off-ramp to Business 80/US-50	AM PM	Major Diverge	B – 14 F – –	3,801 4,232	B – 14 F – –	3,802 4,240	B – 14 F – –	3,809 4,267
5. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3rd Street	AM PM	Diverge	D – 35 D – 34	194 158	D – 35 D – 34	195 166	D – 35 D – 34	202 193
6. I-5 Southbound – Business 80/US-50 to Sutterville Road	AM PM	Mainline	B – 15 F <sup>2</sup> – –	3,348 7,758	B – 15 F <sup>2</sup> – –	3,352 7,760	B – 15 F <sup>2</sup> – –	3,365 7,767
7. Business 80/US-50 Eastbound – Off-ramp to 5th Street	AM PM	Diverge	C – 20 B – 18	446 454	C – 20 B – 18	447 460	C – 20 B – 19	452 479
8. Business 80/US-50 Eastbound – On-ramp from X Street (East of Riverside Boulevard)	AM PM	Merge	D – 28 C – 26	523 778	D – 28 C – 26	533 783	D – 29 C – 27	569 802
9. Business 80/US-50 Westbound – Off-ramp to W St. (East of 11th St.)	AM PM	Diverge	E – 36 D – 32	1,193 452	E – 36 D – 32	1,195 460	E – 36 D – 32	1,201 487
10. Business 80/US-50 Westbound to I-5 Northbound Connector – On-ramp from 5th Street	AM PM	Weave	D – – D – –	3,580 3,257	D – – D – –	3,588 3,261	D – – D – –	3,618 3,277
11. Business 80/US-50 Westbound – On-ramp from 5th Street	AM PM	Merge	B – 20 C – 23	221 306	B – 20 C – 23	227 308	B – 20 C – 23	247 319

Notes:  
1. Density measured in passenger car equivalents per lane per mile. Density not calculated for weaving segments or segments operating at LOS F.  
2. The LOS calculations report LOS C during the PM peak hour for the I-5 NB mainline segment between Business 80/US-50 and P Street, and LOS E during the PM peak hour for the I-5 SB segment between Business 80/US-50 and Sutterville Road. Field observations indicate congestion indicative of LOS F conditions due to upstream capacity constraints.

Source: Fehr & Peers, 2010.

The analysis also assumes development of various other significant land uses in the vicinity such as the Railyards, River District Specific Plan, and Curtis Park Village. Anticipated new development in the study area (excluding the project site) is rather limited given its built-out nature. The 2005 and 2030 travel demand models show a net increase of approximately 340 dwelling units in the area bounded by Broadway, 5<sup>th</sup> Street, Vallejo Way, and 21<sup>st</sup> Street.

The cumulative conditions analysis assumes the following roadway improvements in the study area:

- Both directions of I-5 are assumed to have HOV lanes from north of I-80 to south of Business 80/US-50. This assumption is based on this improvement being included as a Tier I project in the *Metropolitan Transportation Plan (SACOG, 2008)* and listed as a key capital project in the *State Route 99/Interstate 5 Corridor System Management Plan (Caltrans, 2009)*.

- The City plans to install a traffic signal at the 6<sup>th</sup> Street/W Street intersection in the near future. This traffic signal is assumed in place under cumulative conditions. The 6<sup>th</sup> Street/W Street traffic signal was not assumed to be in place under Existing Plus Project conditions.
- Broadway is assumed to be widened to two travel lanes in each direction throughout the study area. This improvement is included in the City of Sacramento General Plan and would not require additional right-of-way.

A proposed Broadway bridge across the Sacramento River has been mentioned as one of several potential crossings that would connect the Cities of Sacramento and West Sacramento. The City's Mobility Element of its General Plan shows potential bridge locations between the confluence of the American and Sacramento Rivers south to the Sacramento/San Joaquin County line. Broadway is one of several bridge crossings currently being evaluated as part of the City's River Crossing Alternatives Study. A river crossing at Broadway was not assumed in place for the cumulative conditions analysis for the following reasons:

- Preferred locations have not yet been identified for future river crossings
- Funding sources for any future crossing are uncertain
- The extension of Broadway over the Sacramento River was not assumed in place for the purposes of developing traffic forecasts for the City's General Plan.

The segment of Broadway from 3<sup>rd</sup> Street easterly to Riverside Boulevard has sufficient pavement width to accommodate two travel lanes in each direction, and the City of Sacramento General Plan shows this segment as ultimately being four lanes. For these reasons, this improvement is assumed in place for the cumulative conditions roadway segment analysis. However, specifics pertaining to the lane configurations, signal phasing, and crosswalks at signalized intersections have not been determined for this segment if it were to be widened. Therefore, the cumulative intersection analysis conservatively assumes that the existing lane configurations on Broadway's approaches to study intersections will remain in place.

The *Highway 50 Corridor System Management Plan* (Caltrans, 2009) identifies the concept facility for Business 80/US-50 east of I-5 as the current facility plus the addition of HOV lanes in each direction. For purposes of this study, HOV lanes were not assumed in place due to past controversy of adding such lanes, the lack of identified funding, and their exclusion from the model used to develop cumulative traffic forecasts for the City's General Plan.

### Traffic Forecasting

To account for potential inaccuracies in the base year SACMET travel demand model that could otherwise transfer to the cumulative forecasts, a forecasting procedure known as the difference method was applied using the formula below:

$$\text{Cumulative Turning Movement Volumes} = \text{Existing Turning Movement Counts} + (2030 \text{ GP Traffic Model Turning Movement Volumes} - 2005 \text{ SACMET Model Turning Movement Volumes})$$

Figure 5.9-10 displays the cumulative weekday AM and PM peak hour traffic forecasts at the study intersections. Table 5.9-16 displays the cumulative average daily traffic volumes on the study roadway segments.

<b>ROADWAY SEGMENT OPERATIONS – CUMULATIVE CONDITIONS</b>				
Roadway Segment	General Plan Designation	Number of Lanes	Average Daily Traffic	Level of Service
1. Broadway – between Front Street and 3rd Street	Arterial	4	13,400	A
2. Broadway – between 3rd Street and 5th Street	Arterial	4	17,300	A
3. Broadway – between 5th Street and 9th Street	Arterial	4	19,300	B
4. 5th Street – between Broadway and 1st Avenue	Collector	2	8,300	E
5. 5th Street – between 1st Avenue and McClatchy Way	Collector	2	7,400	D
6. 5th Street – between McClatchy Way and Vallejo Way	Collector	2	4,100	A

Source: Fehr & Peers, 2010.

The cumulative traffic forecasts for study segments of I-5 and US-50/Business 80 were also based on the application of the difference method. The version of the SACMET model used for the River District Specific Plan EIR and I-5/Richards Boulevard Interchange Project Study Report (PSR) was selected for use. This model was chosen because it includes the I-5 freeway HOV improvements described previously and was found acceptable for use by Caltrans for the I-5/Richards Boulevard Interchange study.

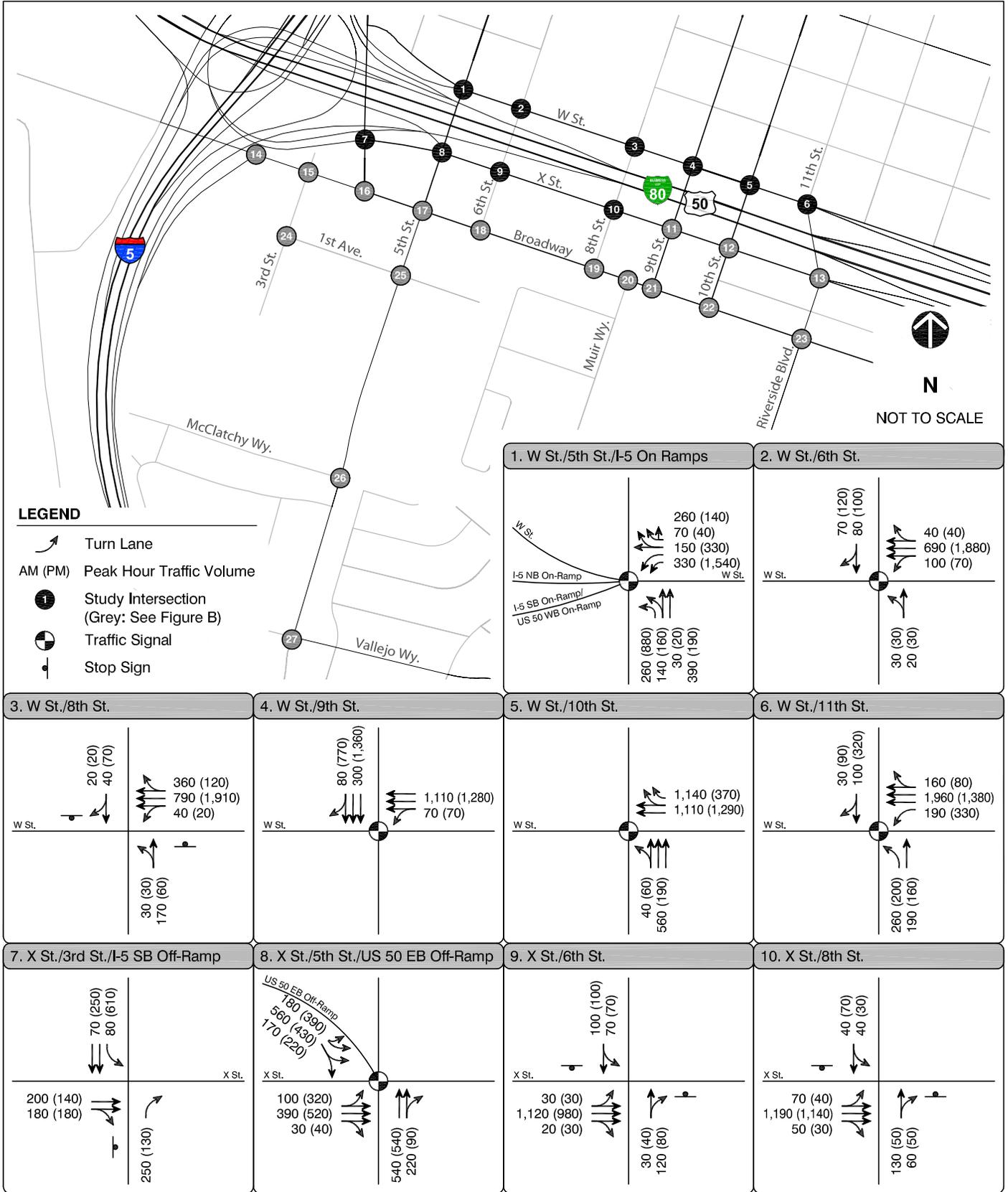
A comparison of the existing plus project buildout and cumulative forecasts shows several interesting travel trends including:

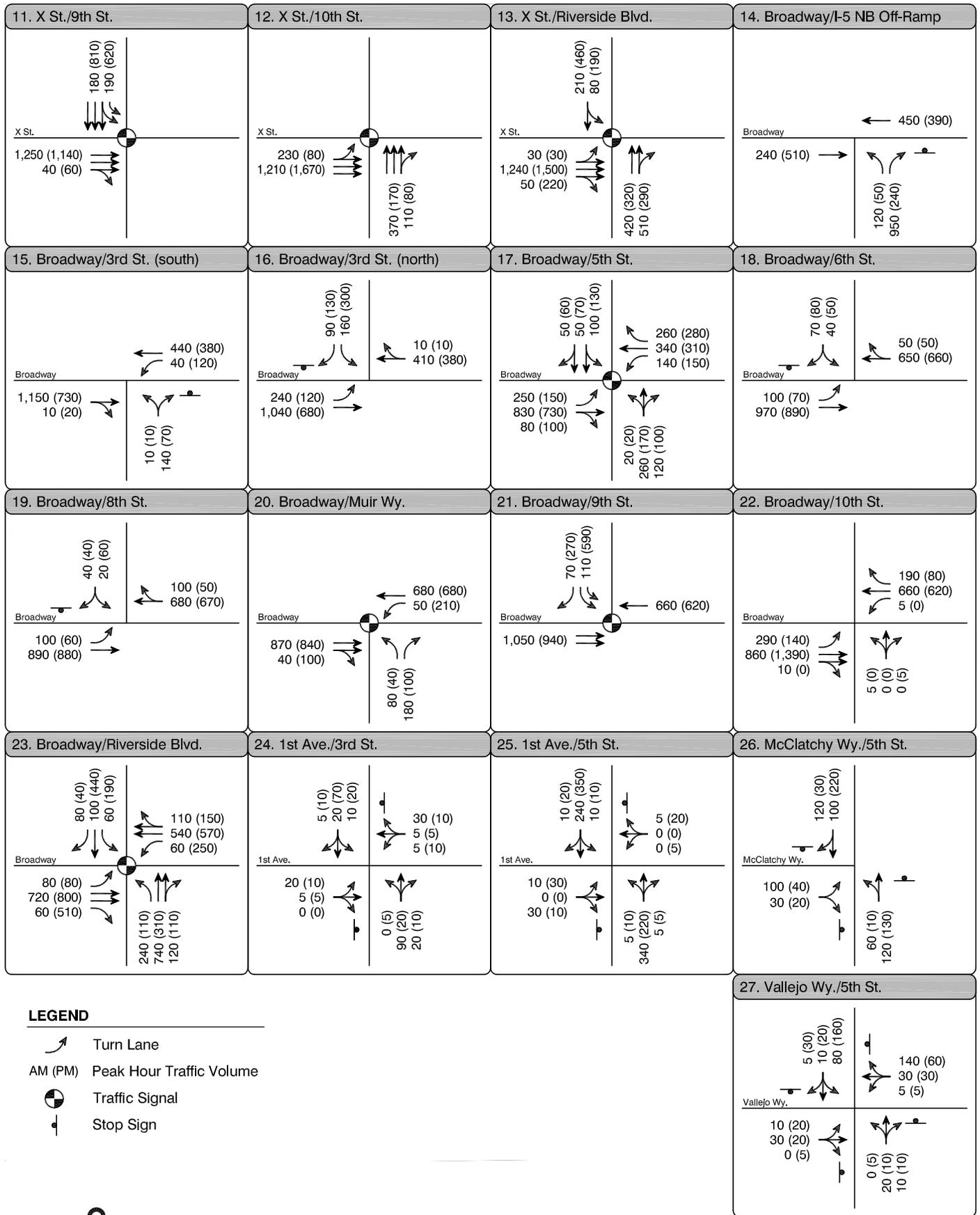
- During the AM peak hour, a large increase in non-project traffic (approximately 450 vehicles) is anticipated to exit northbound I-5 and travel eastbound on Broadway to bypass congestion on I-5 and Business 80/US-50.
- A review of traffic to/from the downtown CBD (north of US-50 via 3<sup>rd</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> streets) shows an approximately 50 percent growth in traffic between existing and cumulative conditions.
- Traffic growth on east-west parallel surface streets (W Street, X Street, and Broadway) is approximately 64 percent east of 6<sup>th</sup> Street. Traffic growth is fairly balanced on these three parallel streets.

### Traffic Operations

Table 5.9-16 shows that all study segments would operate at acceptable levels.

For the cumulative conditions intersection analysis, a SimTraffic micro-simulation model was selected for use. Micro-simulation analysis more accurately assesses the impact of queuing between adjacent intersections along a congested corridor. The model created for this project considers the effects of lane drops downstream of intersections, coordinated signal timing plans, and bottlenecks that cause traffic to spill back to upstream locations.





**LEGEND**

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign

Per standard practice, 10 SimTraffic runs were made for each scenario and the results were averaged to yield the reported conditions. Table 5.9-17 summarizes the intersection analysis results (refer Appendix S for technical calculations). The following study intersections would operate unacceptably under cumulative conditions:

4. W Street/9<sup>th</sup> Street (LOS F for signalized intersection during PM peak hour)
14. Broadway/I-5 NB Off-ramp (LOS F overall and LOS F on stop-controlled I-5 NB off-ramp during AM peak hour)

Intersection	Control	Peak Hour	Level of Service	Average Delay <sup>1</sup>
1. W Street / 5 <sup>th</sup> Street / I-5 NB On-ramp	Traffic Signal	AM PM	B B	12 19
2. W Street / 6 <sup>th</sup> Street	Traffic Signal	AM PM	A B	8 19
3. W Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (D) A (D)	6 (28) 4 (31)
4. W Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	A F	10 305
5. W Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	B A	15 8
6. W Street / 11 <sup>th</sup> Street	Traffic Signal	AM PM	D C	41 26
7. X Street / 3 <sup>rd</sup> Street / I-5 SB Off-ramp	Side-Street Stop	AM PM	A (A) A (D)	4 (9) 8 (27)
8. X Street / 5 <sup>th</sup> Street / Business 80 – US-50 EB Off-ramp	Traffic Signal	AM PM	C D	26 43
9. X Street / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) A (C)	4 (17) 4 (16)
10. X Street / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) A (C)	5 (22) 3 (18)
11. X Street / 9 <sup>th</sup> Street	Traffic Signal	AM PM	B B	15 12
12. X Street / 10 <sup>th</sup> Street	Traffic Signal	AM PM	A A	8 9
13. X Street / Riverside Boulevard	Traffic Signal	AM PM	C C	21 21
14. Broadway / I-5 NB Off-ramp	Side-Street Stop	AM PM	F (F) A (C)	246 (477) 6 (21)
15. Broadway / 3 <sup>rd</sup> Street (south)	Side-Street Stop	AM PM	D (F) A (C)	27 (465) 4 (23)
16. Broadway / 3 <sup>rd</sup> Street (north)	Side-Street Stop	AM PM	B (C) B (D)	10 (24) 10 (34)
17. Broadway / 5 <sup>th</sup> Street	Signalized	AM PM	E C	57 32
18. Broadway / 6 <sup>th</sup> Street	Side-Street Stop	AM PM	C (F) A (E)	16 (89) 6 (49)
19. Broadway / 8 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) C (D)	4 (25) 16 (26)
20. Broadway / Muir Way	Signalized	AM PM	B C	11 30
21. Broadway / 9 <sup>th</sup> Street	Signalized	AM PM	B C	12 32
22. Broadway / 10 <sup>th</sup> Street	N/A <sup>2</sup>	AM PM	A (D) A (C)	4 (27) 7 (19)

23. Broadway / Riverside Boulevard	Signalized	AM PM	B C	20 33
24. 1 <sup>st</sup> Avenue / 3 <sup>rd</sup> Street	N/A <sup>2</sup>	AM PM	C (E) A (A)	24 (44) 2 (6)
25. 1 <sup>st</sup> Avenue / 5 <sup>th</sup> Street	Side-Street Stop	AM PM	A (C) A (A)	4 (22) 2 (8)
26. McClatchy Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A (A) A (A)	6 (8) 6 (7)
27. Vallejo Way / 5 <sup>th</sup> Street	All-Way Stop	AM PM	A (A) A (A)	5 (7) 6 (8)
Notes:				
1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, the delay and LOS for the most-delayed individual movement is shown in parentheses next to the average intersection delay and LOS.				
2. There is no posted control at these intersections.				
<b>Bold</b> text indicates project impact.				
Source: Fehr & Peers, 2010.				

Table 5.9-18 displays AM and PM peak hour freeway operations under cumulative conditions (refer to Appendix S for technical calculations). As shown, 6 of the 11 freeway study facilities would operate at LOS F under this condition.

TABLE 5.9-18					
FREEWAY OPERATIONS – CUMULATIVE CONDITIONS					
Freeway Facility	Peak Hour	Type	Level of Service	Density <sup>1</sup>	Volume
1. I-5 Northbound – Off-ramp to Business 80/US-50	AM	Major Diverge	F	--	4,430
	PM		F	--	2,300
2. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway	AM	Diverge	D	30	1,070
	PM		B	16	290
3. I-5 Northbound – Business 80/US-50 to P Street	AM	Mainline	E	43	9,420
	PM		F <sup>2</sup>	--	7,650
4. I-5 Southbound – Off-ramp to Business 80/US-50	AM	Major Diverge	F	--	5,310
	PM		F	--	5,800
5. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3rd Street	AM	Diverge	F	--	380
	PM		F	--	320
6. I-5 Southbound – Business 80/US-50 to Sutterville Road	AM	Mainline	C	19	4,940
	PM		F <sup>2</sup>	--	9,580
7. Business 80/US-50 Eastbound – Off-ramp to 5th Street	AM	Diverge	D	30	910
	PM		C	25	1,040
8. Business 80/US-50 Eastbound – On-ramp from X Street (East of Riverside Boulevard)	AM	Merge	D	33	590
	PM		D	32	1,200
9. Business 80/US-50 Westbound – Off-ramp to W Street (East of 11th Street)	AM	Diverge	F	--	1,260
	PM		D	34	630
10. Business 80/US-50 Westbound to I-5 Northbound Connector – On-ramp from 5th Street	AM	Weave	E	--	4,710
	PM		E	--	4,440
11. Business 80/US-50 Westbound – On-ramp from 5th Street	AM	Merge	C	24	460
	PM		C	26	440
Notes:					
1. Density measured in passenger car equivalents per lane per mile. Density not calculated for weaving segments.					
2. The LOS calculations report LOS D during the PM peak hour for the I-5 NB mainline segment between Business 80/US-50 and P Street, and LOS E during the PM peak hour for the I-5 SB segment between Business 80/US-50 and Sutterville Road. However, field observations indicate congestion indicative of LOS F conditions due to upstream capacity constraints.					
Source: Fehr & Peers, 2010.					

Table 5.9-19 displays the maximum expected off-ramp queue length during the AM and PM peak hours under cumulative conditions (refer to Appendix S for technical calculations). This table indicates that the vehicle queue on the I-5 NB off-ramp at Broadway would exceed the available storage during the AM peak hour.

<b>OFF-RAMP QUEUING – CUMULATIVE CONDITIONS</b>			
<b>Off-Ramp</b>	<b>Storage Length</b>	<b>Peak Hour</b>	<b>Queue<sup>1</sup></b>
1. I-5 Northbound to Business 80/US-50 Eastbound Connector – Off-ramp to Broadway	1,000 feet	AM PM	<b>1,240 feet</b> 120 feet
2. I-5 Southbound to Business 80/US-50 Eastbound Connector – Off-ramp to 3rd Street	1,175 feet	AM PM	130 feet 120 feet
3. Business 80/US-50 Eastbound – Off-ramp to 5th Street	1,250 feet	AM PM	270 feet 450 feet

Notes:  
 1. Queue length is the 95<sup>th</sup> percentile queue as reported in SimTraffic simulation software.  
**Bold** indicates that queue length exceeds available storage resulting in a project impact.  
 Source: Fehr & Peers, 2010.

According to the project description, sidewalks would be provided on all new public streets to access all residential and mixed-use areas and would be designed to be Americans with Disabilities (ADA) compliant.

The proposed project would add bicyclists and pedestrians to segments of 3<sup>rd</sup> Street and 5<sup>th</sup> Street south of Broadway. These segments currently lack or have discontinuous bicycle and pedestrian facilities. Broadway has Class II bicycle lanes and sidewalks in the project vicinity.

The project would result in a net increase of about 300 daily trips to the at-grade railroad crossing on Broadway east of Freeport Boulevard. This corresponds to an approximately 1.5 percent increase in traffic at this crossing. The at-grade crossing currently has crossing arms, warning bells, flashing lights, pavement markings, and a raised concrete median (to physically prevent motorists from driving around gates). *Railroad Safety Statistics 2007 Final Annual Report* (Federal Railroad Administration, April 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 project would also add an insignificant amount of traffic to the seldom-used railroad line that crosses Broadway west of Front Street.

## **Project-Specific Impacts and Mitigation Measures**

This section describes the project-specific transportation impacts of Phase 1 and Project Buildout.

### **Phase 1 Impacts and Mitigation Measures**

**5.9-1 Phase 1 of the proposed project could cause potentially significant impacts to study intersections.**

According to Table 5.9-14, all study intersections would continue to operate at an acceptable level under “Existing plus Phase 1” conditions. Therefore, this is considered a ***less-than-significant impact***.

#### Mitigation Measure

*None required.*

#### **5.9-2 Phase 1 of the proposed project could cause potentially significant impacts to study freeway ramps.**

According to Table 5.9-15, all study freeway ramps would continue to operate at the same level of service (and at the same density) under “Existing plus Phase 1” conditions. In addition, Phase 1 traffic would not cause any vehicle queues to exceed the available off-ramp storage. Therefore, this is considered a ***less-than-significant impact***.

#### Mitigation Measure

*None required.*

#### **5.9-3 Phase 1 of the proposed project could cause potentially significant impacts to transit.**

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 along 5<sup>th</sup> Street and Broadway. Therefore, project impacts to transit are considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **5.9-4 Phase 1 of the proposed project could cause potentially significant impacts to pedestrian facilities.**

The project applicant will construct curb, gutter, sidewalks and planters per City standards. The impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **5.9-5 Phase 1 of the proposed project could cause potentially significant impacts to bicycle facilities.**

Implementation of Phase 1 of the project would not remove any existing bicycle facility or any facility that is planned in the 2010 City of Sacramento Bikeway Master Plan. The project applicant will construct bicycle lanes per City standards. The impact would be ***less than significant***.

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### Mitigation Measure

*None required.*

#### **5.9-6 Phase 1 of the proposed project could cause potentially significant impacts on parking.**

Phase 1 of the proposed project would not eliminate or adversely affect an existing parking facility or interfere with the implementation of a proposed parking facility. The project applicant will provide a parking supply consistent with City standards. The impact would be ***less than significant***.

### Mitigation Measure

*None required.*

#### **5.9-7 Phase 1 of the proposed project could cause potentially significant impacts due to construction-related activities.**

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 Measure

5.9-7 *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 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.*

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

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## Project Buildout Impacts and Mitigation Measures

### 5.9-8 Project buildout could cause potentially significant impacts to study intersections.

According to Table 5.9-14, all study intersections would continue to operate at an acceptable level under “Existing plus Project Buildout” conditions. Therefore, this is considered a ***less-than-significant impact***.

#### Mitigation Measure

*None required.*

### 5.9-9 Project buildout could cause potentially significant impacts to study freeway ramps.

According to Table 5.9-15, all study freeway ramps would continue to operate at the same level of service under “Existing plus Project Buildout” conditions. In addition, project buildout traffic would not cause any vehicle queues to exceed the available off-ramp storage. Therefore, this is considered a ***less-than-significant impact***.

#### Mitigation Measure

*None required.*

### 5.9-10 Project buildout could cause potentially significant impacts to transit.

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 along 5<sup>th</sup> Street and Broadway. Transit service within the study area currently has adequate capacity, and per RT’s *Transit Master Plan (i.e., TransitAction Plan)*, ridership is periodically monitored to determine the need for additional service. Therefore, project impacts to transit are considered ***less than significant***.

#### Mitigation Measure

*None required.*

### 5.9-11 Project buildout could cause potentially significant impacts to pedestrian facilities.

The project applicant will construct curb, gutter, sidewalks and planters per City standards. The impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

**5.9-12 Project buildout could cause potentially significant impacts to bicycle facilities.**

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

Mitigation Measure

*None required.*

**5.9-13 Project buildout could cause potentially significant impacts on parking.**

The proposed project would not eliminate or adversely affect an existing parking facility or interfere with the implementation of a proposed parking facility. The project applicant will provide a parking supply consistent with City standards. The impact would be *less than significant*.

Mitigation Measure

*None required.*

**5.9-14 Project buildout could cause potentially significant impacts due to construction-related activities.**

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 Measure

5.9-14 *Implement Mitigation Measure 5.9-7.*

This mitigation measure would reduce the impact to a *less-than-significant level*.

**Cumulative Impacts and Mitigation Measures**

This section describes the cumulative transportation impacts of Project Buildout.

**5.9-15 The proposed project would contribute to unacceptable peak hour operations at the W Street/9<sup>th</sup> Street intersection.**

According to Table 5.9-17, cumulative PM peak hour operations at the signalized intersection of W Street/9<sup>th</sup> Street would be at LOS F. Therefore, this would be a *significant cumulative impact*.

Mitigation Measure

5.9-15 *The project applicant shall contribute its fair share toward restriping the southbound approach to the W Street/9<sup>th</sup> Street intersection to add an exclusive right-turn lane while maintaining the two existing through lanes and one existing shared through/right lane.*

Implementation of Mitigation Measure 5.9-15 would improve PM peak hour operations at the W Street/9<sup>th</sup> Street intersection to an acceptable LOS C during the PM peak hour. Implementation of Mitigation Measure 5.9-15 would require the removal of several existing on-street parking spaces on 9<sup>th</sup> Street.

Since this intersection is in the Core Area as defined by the General Plan Mobility Element, LOS F may be 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. With implementation of Mitigation Measure 5.9-15, the impact would be ***less than significant***.

**5.9-16 The proposed project would contribute to unacceptable peak hour operations at the I-5 NB Off-Ramp/Broadway intersection and vehicular queuing that extends onto the freeway mainline.**

According to Table 5.9-17, cumulative AM peak hour operations at the side-street stop-controlled intersection of I-5 NB Off-Ramp/Broadway would be at LOS F. Additionally, Table 5.9-19 indicates that the queue from the ramp terminal intersection would exceed the available storage by 250 feet. Therefore, this would be a ***significant cumulative impact***.

Mitigation Measure

5.9-16 *The project applicant shall contribute its fair share toward the installation of a traffic signal at the I-5 NB Off-Ramp/Broadway intersection.*

Implementation of Mitigation Measure 5.9-16 would improve AM peak hour operations at the I-5 Northbound Ramp/Broadway intersection to an acceptable LOS D during the AM peak hour, and reduce vehicular queuing so that it does not extend beyond the available storage (see Appendix S for technical calculations). Implementation of Mitigation Measure 5.9-16 would be subject to approval from Caltrans. Cumulative traffic volumes at this intersection would satisfy the peak hour warrant for consideration of a traffic signal. With implementation of Mitigation Measure 5.9-16, the impact would be ***less than significant***.

**5.9-17 The proposed project could cause potentially significant impacts to transit.**

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

along 5<sup>th</sup> Street and Broadway. Therefore, project impacts to transit are considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **5.9-18 The proposed project could cause potentially significant impacts to pedestrian facilities.**

The project applicant will construct curb, gutter, sidewalks and planters per City standards. The impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **5.9-19 The proposed project could cause potentially significant impacts to bicycle facilities.**

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

#### Mitigation Measure

*None required.*

#### **5.9-20 The proposed project could cause potentially significant impacts on parking.**

The proposed project would not eliminate or adversely affect an existing parking facility or interfere with the implementation of a proposed parking facility. The project applicant will provide a parking supply consistent with City standards. The impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **5.9-21 The proposed project could cause potentially significant impacts due to construction-related activities.**

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 Measure

### 5.9-21 *Implement Mitigation Measure 5.9-7.*

This would reduce this impact to ***less than significant***.

## Site Access Evaluation and Recommendations

This section evaluates traffic conditions in the immediate vicinity of the project site and recommends improvements to enhance circulation.

### **Vehicle Queuing on Broadway**

According to Table 5.9-17, cumulative AM peak hour operations on the stop-controlled 3<sup>rd</sup> Street (south) and 6<sup>th</sup> Street approaches to Broadway are at LOS F due to vehicle spillbacks from the Broadway/5<sup>th</sup> Street intersection (which operates at LOS E during the AM peak hour). This condition would occur regardless of whether the proposed project is developed. The following recommendation is offered:

- The project applicant should contribute its fair share to the City Traffic Operations Center (TOC) to monitor queuing and implement the following improvements at the Broadway/5<sup>th</sup> Street intersection:
  - A. Convert the eastbound and westbound left-turn movements on Broadway from permitted to protected signal phasing.
  - B. Restripe the northbound 5<sup>th</sup> Street approach to Broadway to have a shared left/through lane and an exclusive right-turn lane with 100 feet of storage per lane. Restripe the southbound 5<sup>th</sup> Street approach to Broadway to have an exclusive left-turn lane and a shared through/right-turn lane. Maintain permitted north/south signal phasing, and crosswalks on all approaches.

Protected left-turn phasing on Broadway is necessary to provide capacity for the left-turning vehicles. The proposed intersection improvements would not increase the intersection crossing distance for pedestrians or eliminate any on-street bicycle facilities. Field measurements indicate that 5<sup>th</sup> Street has at least 44 feet of pavement on either side of Broadway. The recommended lane configurations can be fit within this cross-section. The improvements would benefit operations as follows (see Appendix S for technical calculations):

- Broadway/5<sup>th</sup> Street intersection would improve from LOS E to C during the AM peak hour.
- Vehicle queuing in the westbound left-turn lane at Broadway/5<sup>th</sup> Street intersection would block 6<sup>th</sup> Street less frequently, thereby improving the operations of the Broadway/6<sup>th</sup> Street intersection. In particular, delay on the 6<sup>th</sup> Street approach during the AM peak hour would be reduced by approximately 50 percent.
- The frequency and severity of vehicle queues on eastbound Broadway would be reduced. However, vehicle queues would still occasionally block 3<sup>rd</sup> Street (south) resulting in queues on the northbound approach to this intersection.

Table 5.9-20 compares intersection operations surrounding the Broadway/5<sup>th</sup> Street intersection with and without the improvements discussed above. The LOS analysis also assumed the construction of a traffic signal at the Broadway/3<sup>rd</sup> Street (north) intersection, which is identified as a mitigation in this EIR and is a conditions of the Docks Area Specific Plan.

<b>INTERSECTION OPERATIONS – CUMULATIVE WITH SITE ACCESS IMPROVEMENTS</b>							
Intersection	Peak Hour	Cumulative Conditions			Cumulative with Site Access Improvements		
		Control	Level of Service	Average Delay <sup>1</sup>	Control	Level of Service	Average Delay <sup>1</sup>
16. Broadway / 3 <sup>rd</sup> Street (north)	AM	Side-Street Stop	B (C)	10 (24)	Traffic Signal	B	20
	PM		B (D)	10 (34)		B	19
17. Broadway / 5 <sup>th</sup> Street	AM	Traffic Signal	E	57	Traffic Signal	C	32
	PM		C	32		C	26
18. Broadway / 6 <sup>th</sup> Street	AM	Side-Street Stop	C (F)	16 (89)	Side-Street Stop	A (E)	5 (46)
	PM		A (E)	6 (49)		A (D)	4 (34)

Notes:  
 1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, the delay and LOS for the most-delayed individual movement is shown in parentheses next to the average intersection delay and LOS.  
 Source: Fehr & Peers, 2010.

It should be noted that substantial queuing on the northbound approach of the Broadway/3<sup>rd</sup> Street (south) intersection would still occur with these improvements in place due to the inability of drivers to find adequate gaps in traffic on Broadway during the AM peak hour. Although the installation of a traffic signal at this location would reduce queuing on the northbound approach, this improvement is not recommended. Mitigation Measure 5.9-16 requires the installation of a traffic signal at the I-5 NB off-ramp, which is located 300 feet west of the Broadway/3<sup>rd</sup> Street (south) intersection, and the Docks Area Specific Plan EIR calls for the installation of a traffic signal 300 feet to the east of the intersection at Broadway/3<sup>rd</sup> Street (north). When considering the existing traffic signal at Broadway/5<sup>th</sup> Street, the potential installation of a traffic signal at Broadway/3<sup>rd</sup> Street (south) would result in four signalized intersections within a 1,100 foot segment along Broadway. This density of traffic signals would cause significant delays to traffic on Broadway, and would reduce the effectiveness of Mitigation Measure 5.9-16, potentially resulting in queuing onto the freeway mainline.

### Location and Traffic Controls at Project Access Points

The project includes five new public street accesses located between 1<sup>st</sup> Avenue and McClatchy Way. These accesses would be spaced an average of 230 feet apart. This segment of 5<sup>th</sup> Street is projected to carry approximately 7,400 ADT under cumulative conditions.

The east side of 5<sup>th</sup> Street between 1<sup>st</sup> Avenue and McClatchy Way features various existing industrial/office developments. These properties are served by nine driveways on 5<sup>th</sup> Street. The five accesses on the west side of 5<sup>th</sup> Street would result in offset driveways, which is not desirable because it introduces conflicts for left-turning traffic. To address these concerns, the following is

recommended (project accesses are referenced according to the street names listed in the July 1, 2010 site plan submitted to the City):

- Street VVV: Relocate project access so that it intersects 5<sup>th</sup> Street a short distance southerly (relative to its currently proposed location) to be situated directly across from driveway serving 2625 5<sup>th</sup> Street.
- Street WWW: Maintain in current location as it is situated nearly equidistant from two existing driveways on east side of 5<sup>th</sup> Street.
- Street XXX: Relocate project access so that it intersects 5<sup>th</sup> Street a short distance northerly (relative to its currently proposed location) to be directly across from a driveway serving 2681 5<sup>th</sup> Street.
- Street YYY: Maintain in current location as it is situated directly opposite an existing driveway on the east side of 5<sup>th</sup> Street.
- Street ZZZ: This driveway would be situated slightly north (i.e., offset from) of an existing driveway on the east side of 5<sup>th</sup> Street. This driveway configuration is considered acceptable because the vast majority of movements will be to/from the north (i.e., relatively few conflicting major street left-turns) and both driveways will be modestly used.

All five project accesses to 5<sup>th</sup> Street are recommended to have minor-street stop-control. Given that the project accesses are evenly spaced and assuming an even distribution of residential land use being served by each access, each street is projected to have a daily volume of approximately 300 vehicle trips. This level of vehicular traffic would not satisfy the minimum volume warrants for consideration of a traffic signal or an all-way stop.

An alternative to the above recommendations would be to consolidate one or more driveways along the project frontage of 5<sup>th</sup> Street to reduce left turn conflicts. Fewer driveways would also benefit pedestrians and bicyclists on the west side of the roadway by limiting the number of points at which they would potentially conflict with vehicle traffic. Consolidation of one or more driveways could affect the layout of units within the project site.

The segment of 5<sup>th</sup> Street directly north of McClatchy Avenue has approximately 48 feet of pavement plus sidewalks on both sides of the street. Class II bicycle lanes are striped in both directions along with centerline striping. This configuration is present along the southerly half of 5<sup>th</sup> Street between McClatchy Avenue and 1<sup>st</sup> Avenue. The northerly half of 5<sup>th</sup> Street (i.e., south of 1<sup>st</sup> Avenue) has approximately 36 feet of pavement (not including five foot-wide concrete gutter pans on either side), no on-street bicycle lanes, and no sidewalks on the west side.

To accommodate left-turning vehicles at the project accesses on 5<sup>th</sup> Street, the following is recommended:

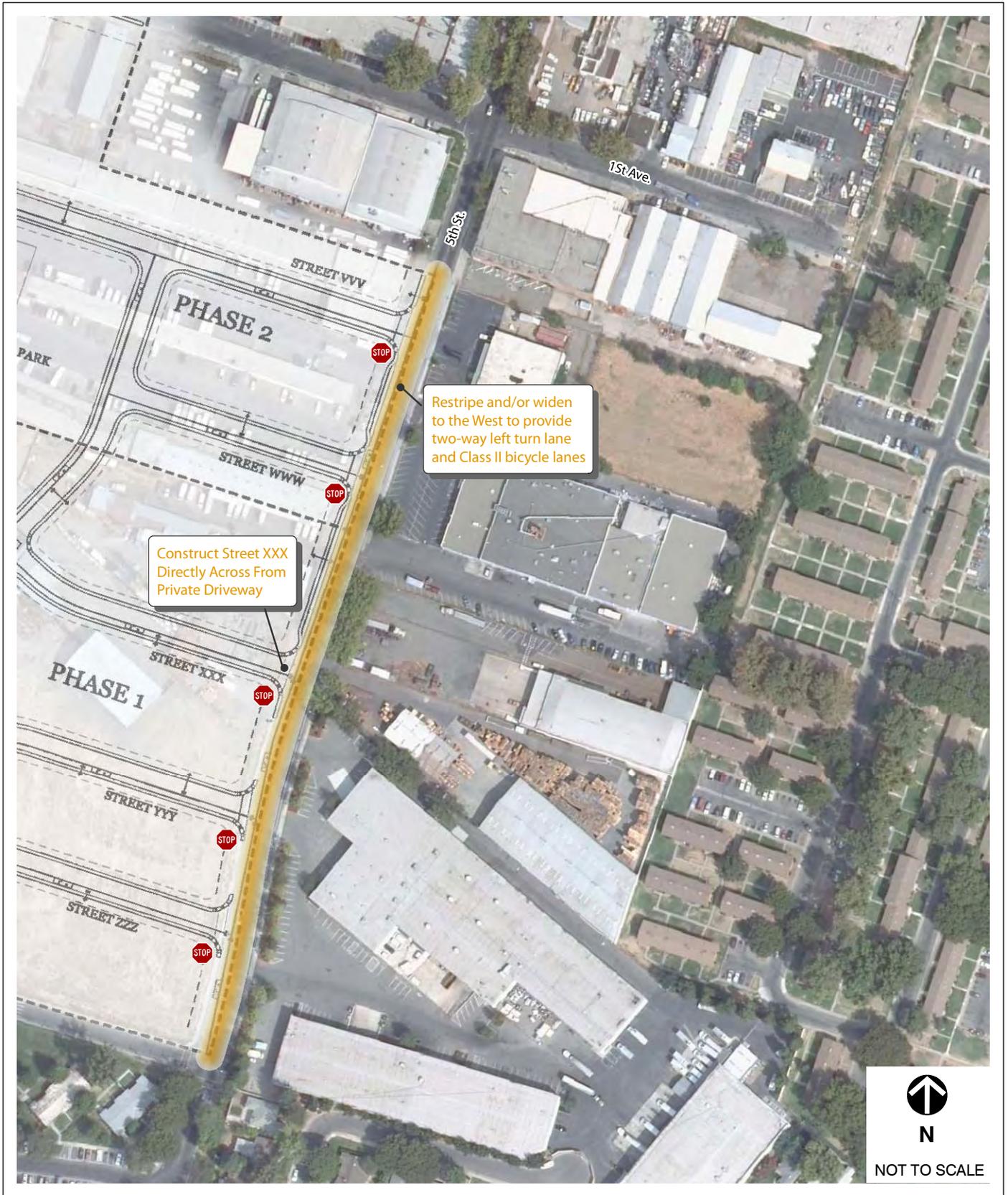
- *Restripe 5th Street to include one travel lane and a Class II bicycle lane in each direction separated by a continuous two-way left-turn lane.* The southerly portion of 5<sup>th</sup> Street along the project frontage has sufficient pavement width to accommodate this cross-section.

Repaving of the concrete gutter pans and installation of standard curb and gutter would be required along the northerly portion of this segment.

The above recommendations for project access to/from 5<sup>th</sup> Street are illustrated on Figure 5.9-11.

The McClatchy Way/5<sup>th</sup> Street intersection operates at an acceptable LOS A under cumulative conditions. A traffic signal is not warranted at this intersection.

The 3<sup>rd</sup> Street/1<sup>st</sup> Avenue intersection is recommended to consist of stop-control on the 1<sup>st</sup> Avenue approaches. However, due to queues extending from the intersection of 3<sup>rd</sup> Street and Broadway, the worst performing approach of this intersection will operate at LOS E during the AM peak hour.



## **5.10 Urban Design and Visual Resources**

## 5.10 URBAN DESIGN AND VISUAL RESOURCES

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### INTRODUCTION

This section provides a description of the existing visual character on the proposed project site and its surrounding areas, evaluates potential physical and visual changes that could result from the proposed project, and analyzes potential impacts of the project site related to light and glare and the potential change to the existing visual character of the site and its surroundings. For a discussion regarding existing and proposed land uses and the consistency and compatibility of the proposed uses with existing adjacent uses, refer to Chapter 4.0, Land Use and Planning/Population and Housing.

Information used to prepare this section includes the Northwest Land Park Planned Unit Development (PUD) Guidelines, the Sacramento 2030 General Plan Master Environmental Impact Report (Master EIR), and observations gathered on a visit to the project site in September 2010.

The Master EIR certified in connection with adoption of the 2030 General Plan in March 2009 included an extensive analysis of urban design and visual resources. The Master EIR evaluated the effects of development that could occur under the new general plan, and identified and evaluated the effects of the project and future development, including analysis of growth-inducing effects and irreversible environmental effects. The discussion of urban design and visual resources in the Master EIR (see Chapter 6.13) is incorporated here by reference pursuant to CEQA Guidelines section 15050. The Master EIR may be reviewed at [www.sacgp.org](http://www.sacgp.org).

No comment letters addressing urban design and visual resources were received in response to the Notice of Preparation (see Appendix A).

### ENVIRONMENTAL SETTING

#### Site Characteristics

The project site is located within the boundaries of the Land Park Community Plan Area and the Land Park Community Association in an area identified as "Upper Land Park." The site is bounded by Broadway to the north, 5th Street to the east, McClatchy Way to the south, and Interstate 5 (I-5) to the west. The Sacramento River is located one half mile to the west. Also to the west, across I-5, are Miller Park and the Sacramento Marina that provide recreational access to the Sacramento River. An existing rail spur connects to the site, via a tunnel under I-5, to Front Street and Miller Park. Vehicular and pedestrian access points to the project site are provided by Broadway, 3rd and 5th streets, 1st Avenue, and McClatchy Way.

The site topography is characterized as generally flat. The general visual character of the project site is one- and two-story commercial buildings and one-, two-, and three-story light-industrial warehouse buildings and various storage and distribution structures. Most of the warehouse,

storage, and distribution buildings include roll-up garages, large bay doors, and elevated receiving and loading docks. Building facades include brick, wood, masonry, stucco, and corrugated metal. Several of the buildings visible from 5th street have siding that is weathered with peeling paint and aging brick. The project site is predominantly covered with impervious paved surfaces and gravel that provide for internal circulation and surface parking. In between buildings, overhead utility wires are present.

A vacant field with overgrown weeded vegetation is located on the southern portion of the site, west of 5th Street and north of McClatchy Way. Other vegetation surrounding the project site buildings is sparse and consists of trees and shrubs controlled by weed abatement. Some maintained landscaping surrounds the office building at the northeast corner of 3rd Street and 1st Avenue.

The majority of the site perimeter is screened by chain-linked security fencing with barbed wire in some areas. Fencing surrounding the site along 5th Street adjacent to the vacant field is setback approximately 15 to 20 feet from the roadway. Buildings are setback approximately 5 to 10 feet along 5th Street, 1st Avenue, and 3rd Street, and approximately 20 feet from building to roadway along Broadway. Sidewalks are intermittently present along 5th Street, 1st Avenue, and 3rd Street. Perpendicular parking associated with the industrial and commercial buildings is predominant along 1st Avenue and 3rd Street adjacent to the project site.

### **Surrounding Area Characteristics**

Buildings located along Broadway and the northern project boundaries are characterized as light industrial and commercial (e.g., ABC News 10 local affiliate) with brick and concrete facades. The streetscape along 3rd Street, 1st Avenue, and 5th Street includes one-, two-, and three-story commercial and industrial buildings, intermittent sidewalks, and paved surface parking lots. The east side of 5th Street is characterized by brick, stucco, concrete, and metal commercial and warehouse-style buildings with large loading bays. The north side of 1st Avenue, west of 5th Street includes commercial and industrial buildings with elevated loading bays and paved surface receiving areas with perpendicular parking adjacent to the buildings. The western portion of the project site abuts undeveloped land adjacent to the railroad tracks and I-5.

Existing residential neighborhoods are along McClatchy Way, San Luis Court, and Dudley Way located south and east of the project site in the Upper Land Park neighborhood. Directly to the south of the project site, south of McClatchy Way, are one- and two-story brick and stucco multi-family buildings surrounded by a wrought iron fence with grass and other maintained landscaping. To the south and west of the site are two educational facilities. Jedediah Smith opened in 1953 and is an established neighborhood elementary school. Arthur A. Benjamin Health Professions High School opened in 2005 and is a multi-million dollar facility for students interested in pursuing healthcare as a career. Further east, the area transitions to multi-family residential areas and a city cemetery.

## **Freeways**

The majority of the western area of the project site is not directly visible from I-5 due to the freeway masonry sound wall; however, the project site is visible from the elevated Broadway off ramp exiting the Capitol City Freeway/Interstate-80 connector. Although large trees along the western project boundary provide additional screening of views into the western area of the project site as motorists exit the elevated section of the roadway toward Broadway.

## **Existing Light and Glare Conditions**

Existing ambient light sources in the project site include nighttime lighting on buildings for security purposes and roadway lighting along 5th Street, 1st Avenue, and 3rd Street, and Broadway. The site is generally darker along the southern boundary adjacent to the vacant field and the two schools. Additional ambient lighting in the project vicinity is generated from vehicle headlights and nearby light industrial, commercial, and residential buildings along 5th Street, McClatchy Way, and Broadway.

The industrial warehouse, storage, and distribution buildings that are the predominant uses on the project site have fewer single- or double-pane windows that could produce glare than the traditional commercial and office buildings located along 1st Avenue and 3rd Street.

## **REGULATORY SETTING**

### **Federal**

There are no federal regulations associated with urban design and visual resources that apply to the proposed project.

### **State**

There are no State regulations associated with urban design and visual resources that apply to the proposed project.

### **Local**

#### **City of Sacramento 2030 General Plan**

The following goals and policies from the 2030 General Plan are relevant to urban design and visual resources within the project area.

##### Policies

- LU 6.1.12 **Visual and Physical Character.** The City shall promote development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by:

- Enhancing the definition of the corridor by locating buildings at the back of the sidewalk, and establishing a consistent street wall
- Introducing taller buildings that are in scale with the wide, multi-lane street corridors
- Locating off-street parking behind or between buildings (rather than between building and street)
- Reducing visual clutter by regulating the number, size and design quality of signs
- Removing utility poles and under-grounding overhead wires
- Adding street trees

LU 6.1.14 **Compatibility with Adjoining Uses.** The City shall ensure that the introduction of higher-density mixed-use development along major arterial corridors is compatible with adjacent land uses, particularly residential uses, by requiring such features as:

- Buildings setback from rear or side yard property lines adjoining single-family residential uses
- Building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect privacy and solar access
- Landscaped off-street parking areas, loading areas, and service areas screened from adjacent residential areas, to the degree feasible
- Lighting shielded and directed downward to minimize impacts on adjacent residential uses

#### **ENVIRONMENTAL RESOURCES (ER)**

##### Policies

ER 7.1.4 **Standards for New Development.** The City shall seek to ensure that new development does not significantly impact Sacramento's natural and urban landscapes.

ER 7.1.5 **Lighting.** The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

ER 7.1.6 **Glare.** The City shall require that new development avoid the creation of incompatible glare through development design features.

### **City of Sacramento Zoning Ordinance**

The Zoning Ordinance includes aesthetic review mechanisms used by the City to maintain or improve aesthetic qualities within the City. Established codes regulate location, height, and size of buildings or structures, as well as signs, parking, and landscaping.

#### Planned Unit Development Designation

The Planned Unit Development (PUD) concept, a sub-section of the Zoning Ordinance, encourages the design of well-planned facilities through creative and imaginative planning. The PUD designation is intended to be utilized for large acreage development capable of achieving distinct environmental characteristics.

## Design Review Code

The City of Sacramento includes 14 design review districts where developments within those districts are subject to design review as outlined within the Design Review Code (Sacramento City Code Chapter 17.132). In accordance with the Code, development applications are reviewed to ensure that the desirability of adjacent and surrounding properties is enhanced; the benefits of occupancy of adjacent and surrounding properties are improved; the value of surrounding properties is increased; appropriate development of adjacent and surrounding properties is encouraged; and the maintenance and improvement of surrounding properties is encouraged, resulting in the enhancement of the health, safety, aesthetics, and general welfare of the inhabitants of the area and the inhabitants of the city at large.

In addition to establishing design review guidelines for properties within design review districts, the Sacramento City Council can establish minimum design requirements applicable to development projects outside of design review districts (Sacramento City Code Section 17.132.180). The Northwest Land Park project site is not within a City-defined design review district.

## Multi-Family Residential Design Criteria

In addition, the City has design criteria that apply to large multi-family residential projects (100+ units). These criteria cover general building design and orientation, off-street parking design, onsite circulation, bicycle storage, landscaping and open space, trash enclosures, signage, and personal safety. The 2030 General Plan design objective is to keep the sense of uniqueness and individuality of the traditional neighborhood by protecting and enhancing features such as scale and quality of housing, neighborhood character, and housing choice. However, the traditional neighborhood does allow diverse developments with attributes that emulate the neighborhood form and character. Design elements that achieve this objective include separate landscape buffering between projects; variation in building elevations and configurations between projects; variation in building heights; use of different building materials or a combination of different materials; and contrasting color schemes between projects.

## Applicable Mitigation Measures from the City of Sacramento 2030 General Plan

The following mitigation measure from the City of Sacramento 2030 General Plan is applicable to the proposed project.

- 6.13-1 The City shall amend the Zoning Code to prohibit new development from:
- 1) using reflective glass that exceeds 50 percent of any building surface and on the ground three floors;
  - 2) using mirrored glass;
  - 3) using black glass that exceeds 25 percent of any surface of a building; and
  - 4) using metal building materials that exceed 50 percent of any street-facing surface of a primarily residential building.

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## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

The description of the proposed project site was prepared from a visit to the site in September 2010. The analysis focuses on the manner in which development could change the visual elements or features that exist on the proposed project site. The visual impacts of the proposed project are analyzed in relation to existing conditions, which are light industrial and commercial uses. The visual effects of construction activities are not evaluated in this section because they would be intermittent and temporary.

### Standards of Significance

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- cast glare in such a way as to cause public hazard or annoyance for a sustained period of time;
- cast light onto oncoming traffic or residential uses; or
- result in a substantial adverse change to the existing visual character or quality of the site and its surroundings.

### Project-Specific Impacts and Mitigation Measures

#### **5.10-1 Implementation of the proposed project could cast glare in such a way as to cause a public hazard or annoyance for a sustained period of time.**

Glare results when a light source directly in the field of vision is brighter than the eye can comfortably accept. Glare can be reduced by design features that block direct line of sight to the light source and that direct light downward, with little or no light emitted at high (near horizontal) angles, since this light would travel long distances. Cutoff-type light fixtures minimize glare because they emit relatively low intensity light at these angles.

Impact 6.13-1 of section 6.13, *Urban Design and Visual Resources*, of the Master EIR states that the city of Sacramento is primarily built-out, and a significant amount of glare from urban uses already exists. The analysis also states, however, that new development permitted under the 2030 General Plan could create new sources of glare from parking lots, structures, and reflective building surfaces. These new sources would typically be more noticeable from new development in large infill areas or previously undeveloped sites outside of the downtown area. As a result, these new sources of glare could affect the day or nighttime views of adjacent sensitive land uses. The Master EIR analysis also states that daytime glare could be produced by the increased amount of surface area of proposed commercial and residential structures, which could reflect or concentrate sunlight.

General Plan Policy ER 7.1.6 requires that new development avoid creating unsafe and incompatible glare by incorporating design features to reduce or eliminate glare. Nonetheless, because details of

the type of glass material to be used in proposed projects were unknown at the time the Master EIR was prepared, the Master EIR states that exterior materials used to construct new buildings could include materials that could result in glare if the surfaces are highly reflective. The Master EIR identified this as a potentially significant impact.

A four-phase project buildout is proposed. Phase 1 of the proposed project would commence at the southeast corner of the project site and would include development of medium-density multi-family residential, public streets, landscaping, and a portion of the central park. Detailed information on project elements that would be included in Phases 2 through 4 is not available; however, development of these phases would be required to comply with the PUD Guidelines. For example, the PUD Guidelines explain a coordinated palette of colors shall be applied to all buildings, concrete and stucco walls, and architectural elements where colors should be responsive to the natural environment and project low reflectivity in radiant sunlight.<sup>1</sup> However, the PUD Guidelines do not speak to prohibiting the use of reflective and/or mirrored glass. Building materials proposed generally include plaster, stone, brick, stucco, concrete tile, and shingle siding.<sup>2</sup> No metal building materials are described in the PUD Guidelines with the exception of the potential for adaptive reuse of the Metal Burner cylindrical structure located near the railroad undercrossing to provide a freeway-visible icon for the proposed project.<sup>3</sup>

Mitigation Measure 6.13-1 in the Master EIR requires the City to amend the Zoning Code to prohibit new development from using mirrored glass and reflective glass, black glass, and metal building materials that exceed a certain percent of any building or street-facing surface. As of the publication of this DEIR, the City has not yet amended the Zoning Code as provided in the mitigation measure. Therefore, impacts related to glare for the proposed project would be considered *potentially significant*.

### Mitigation Measure

The following mitigation measure, developed consistent with Master EIR Mitigation Measure 6.13-1, restricts the amount of reflective materials on structures within the project to reduce the potential for glare. Implementation of the mitigation measure would ensure that glare associated with new development within the proposed project site would be reduced to a ***less-than-significant level***.

5.10-1 *The proposed project shall prohibit new development within the project site from:*

- 1) *using reflective glass that exceeds 50 percent of any building surface and on the ground three floors;*
- 2) *using mirrored glass;*
- 3) *using black glass that exceeds 25 percent of any surface of a building; and*

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1 Cardno WRG, 2010, *Northwest Land Park PUD Guidelines*, September 3, p. 22.

2 *Ibid*, pp. 23–28.

3 *Ibid*, p. 59.

- 4) *using metal building materials that exceed 50 percent of any street-facing surface of a primarily residential building.*

#### **5.10-2 Implementation of the proposed project could cast light onto oncoming traffic or residential uses.**

Minimizing the forms of obtrusive light is an important environmental consideration. Light that falls beyond the intended area is referred to as light trespass. Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, these lights have the potential to produce spill light, and if designed incorrectly, could be considered unattractive or hazardous. One type of light trespass is spill light. Spill light is the light that illuminates surfaces beyond the area intended to be illuminated. Spill light can adversely affect light sensitive uses, such as residential neighborhoods at night.

The proposed project would include a variety of medium- and high-density residential building types, including, but not limited to, apartments, condominiums, and townhouses. The buildings are proposed as two-, three-, and four-story structures, with some buildings designed to have living space over covered parking and direct access garages, and some utilizing surface parking areas.

Impact 6.13-2 of section 6.13, *Urban Design and Visual Resources*, of the Master EIR states that the city of Sacramento is primarily built-out, and a significant amount of ambient light from urban uses already exists. The analysis also states, however, that new development permitted under the 2030 General Plan could create new sources of light from exterior building lighting, new street lighting, parking lot lights, and/or headlights of vehicular traffic. As a result, the Master EIR analysis states these new sources of light could affect the day or nighttime views of adjacent sensitive land uses. Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, lighting at night has the potential to produce spill light, which could also adversely affect light sensitive land uses (e.g., residential uses adjacent to commercial or industrial areas) or cast light onto oncoming traffic.

A four-phase project buildout is proposed. Because the proposed project would be a more intense day and nighttime use of the site than current use, the project would increase nighttime lighting within the project area. Most of the new light sources would be attributed to proposed residential and mixed-use development and the associated evening activity of residents and guests. Proposed residential uses would include lighting conservation elements (e.g., low voltage, pre-wired LED lighting systems).<sup>4</sup> Project roadways also would be illuminated, along with pedestrian spaces and architectural features.

An active park is proposed within the project site that would provide less intensive recreational activities including playgrounds, small play fields, sports courts, trails, and picnic areas to serve the Northwest Land Park community and the immediately surrounding neighborhoods. Although the park could generate additional light from light fixtures, the PUD Guidelines state that lights within the

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4 *Ibid*, p. 56.

park are to be designed to not create adverse affects on adjacent residential uses.<sup>5</sup> An area of mixed use is proposed in the northwest portion of the site that would include approximately 15,000 square feet of commercial neighborhood-serving retail space on the lower floors, with residential uses above. Near the commercial area, there could be light in the evening hours adjacent to residential uses; however, the proposed project would be subject to the City's General Plan policies including General Plan Policy LU 6.1.14, which requires compatibility with adjoining uses by requiring lighting to be shielded and directed downward to minimize impacts on adjacent residential uses and Policy ER 7.1.5 that minimizes obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

Compliance with general plan policies would ensure that lighting internal to the project would be appropriate to the task and directed in such a way that adjacent uses are not substantially affected by spill light. Shielding and directing light downward would also prevent casting light into oncoming traffic. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

#### Mitigation Measure

*None required.*

#### **5.10-3 Implementation of the proposed project could result in a substantial adverse change to the existing visual character or quality of the site and its surroundings.**

The City of Sacramento 2030 General Plan land use designations for the project site are Urban Neighborhood Medium Density and Urban Corridor Low. No changes to the General Plan land use designations or the configurations are proposed as part of the project; therefore, the proposed project is consistent with the land use assumptions of the 2030 General Plan and Master EIR.

As described in the Environmental Setting section, no significant visual or scenic resources are located on or near the project site. The project would replace existing light industrial and commercial uses on the project site with residential and commercial uses and parks and open space.

The proposed project would include a variety of medium-density residential building types, including, but not limited to, apartments, condominiums, and townhouses. The project would include development of a public park within the central portion of the project site and a private park-like open space area located through the middle of the project connecting with pedestrian and bicycle trails on 5th Street, the public park, and to western portions of the project site. Other pedestrian pathways would connect with street sidewalks on the new streets and to existing 3rd and 5th streets.

Urban landscaping would be an integral element of the proposed project. Street trees would be planted throughout the project consistent with city requirements and extensive landscaping is proposed to keep the project in character with the surrounding established communities. Common areas would be landscaped to provide community recreation space.

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<sup>5</sup> *Ibid*, p. 35.

General Plan Policy ER 7.1.4 is intended to ensure that new development does not significantly impact Sacramento's natural and urban landscapes. Policy 6.1.12 promotes development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by enhancing the definition of the corridor by locating buildings at the back of the sidewalk, and establishing a consistent street wall; introducing taller buildings that are in scale with the wide, multi-lane street corridors; locating off-street parking behind or between buildings (rather than between building and street); reducing visual clutter by regulating the number, size and design quality of signs; removing utility poles and under-grounding overhead wires; and adding street trees.

The land uses proposed under the Northwest Land Park project are consistent with the Sacramento General Plan in terms of the types of uses that would be developed on the project site, and the changes that would occur under the proposed project have been anticipated by the City and discussed in the General Plan and Master EIR. The proposed uses would be consistent with the urban character of the surrounding area and would provide transitions for differing uses, including commercial uses to the north and east and the residential uses to the south.

The project site is designated as a "center" under the general plan, which provides additional guidance on character of these areas. Generally, the character for these areas is relatively urban, a greater mix of uses, reduced parking and greater lot coverage and floor area ratios, compared to suburban development. Consequently, existing general plan policies and the PUD Guidelines created for the project provide the City with abundant opportunity to guide the character and design of the development to ensure consistency with the existing development in the project vicinity.

The general alteration of landscape that typically occurs as part of most development projects does not by itself constitute a significant effect on the environment. Changes to the landscape that occur as part of development must be considered in the urban context, which is based on a general plan that contemplates continued urban development within the city limits. New development on the project site would increase the intensity of development compared to existing conditions, but the new development would not result in a substantial adverse change to the existing visual character or quality of the site and its surroundings. Development that occurs, including the proposed project, must be consistent with the general plan and would be subject to zoning and building regulations that are uniformly applied to development. Application of those policies, particularly Policies ER 7.1.4 and 6.1.12, discussed above, would ensure that the project would be in keeping with the character of the neighborhood within the urban context promoted by the general plan and the Land Park Community Plan. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

## **Cumulative Impacts**

The Master EIR evaluated cumulative impacts on Urban Design and Visual Resource that could be affected by light and glare from development anticipated under the 2030 General Plan. The Master EIR concluded that cumulative development within the Policy Area as well as in Sacramento County and neighboring West Sacramento could increase daytime glare primarily through intensified infill development, and was a potentially significant cumulative effect. Mitigation Measure 6.13-1 in the Master EIR requires the City to amend the Zoning Code to prohibit new development from using reflective glass that exceeds 50 percent of any building surface and on the ground three floors; using mirrored glass; using black glass that exceeds 25 percent of any surface of a building; and using metal building materials that exceed 50 percent of any street-facing surface of a primarily residential building. As of the date of publication of this DEIR, Mitigation Measure 6.13-1 has not yet been implemented. Mitigation Measure 6.13-1 would, however, be implemented through Mitigation Measure 5.10-1. With implementation of the mitigation measure, impacts related to glare for the development of the proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

## **5.11 Utilities and Service Systems**

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## 5.11 UTILITIES AND SERVICE SYSTEMS

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This section of the EIR describes existing utilities and service systems available to serve the proposed project and evaluates the effects of project development on the capacity of these utility systems to serve the project. In addition, this section evaluates impacts related to on-site storm drainage and hydrology and water quality, which includes groundwater and flooding. The utilities and service systems evaluated in this section include the following:

- Water Supply;
- Hydrology and Water Quality;
- Wastewater and Storm Drainage;
- Solid Waste; and
- Electricity and Natural Gas.

The Master EIR certified in connection with adoption of the 2030 General Plan in March 2009 included an extensive analysis of public utilities, including water supply, sewer and storm drainage, solid waste, electricity and natural gas, and telecommunications (telephone and cable television). The Master EIR evaluated the effects of development that could occur under the new general plan, and identified and evaluated the effects of the project and future development, including analysis of growth-inducing effects and irreversible environmental effects. The discussion of public utilities in the Master EIR (see Chapter 6.11) is incorporated here by reference pursuant to CEQA Guidelines section 15050. The Master EIR may be reviewed at [www.sacgp.org](http://www.sacgp.org).

### WATER SUPPLY

#### INTRODUCTION

The Water Supply section describes the water supply that would serve the proposed project in relation to overall water supplies provided by the City of Sacramento. In doing so, this section assesses the expected water demand resulting from the proposed project, evaluates the effects of the proposed project on existing and future water infrastructure, and recommends mitigation measures where appropriate.

No comments were received during the NOP review period regarding water supply.

Information in this section is based on the Water Supply Assessment (WSA) prepared for the proposed project (see Appendix T), the City's General Plan Technical Background Report, the City's 2006 Urban Water Management Plan (UWMP), and information from City staff.

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## ENVIRONMENTAL SETTING

### Existing Water Sources and Supplies

The City obtains the majority of its water supply from two surface water sources: the Sacramento and American rivers. Groundwater makes up the balance of supply.

#### Surface Water

Most of the City's water supply comes from surface water that the City diverts pursuant to the City's surface water rights and entitlements. These consist of water rights established before 1914, water rights established after 1914, and a settlement contract the City has with the United States Bureau of Reclamation (USBR).

The City has pre-1914 appropriative rights, which entitle the City to water from the Sacramento River. The City's right is based on use of Sacramento River water since 1854; this pre-1914 appropriative right allows for direct diversion of 75 cubic feet per second (cfs) from the Sacramento River.

The City's post-1914 Sacramento River rights are reflected in five water rights permits issued by the State Water Resources Control Board (SWRCB) or its predecessor, the State Water Rights Board. Permit 992 authorizes the City to take water from the Sacramento River by direct diversion, and has a priority date of March 30, 1920. Permit 992 authorizes the City to divert up to 81,800 acre-feet per year (AFY) with a maximum diversion of 225 cfs. This permit allows the City to use diverted Sacramento River water within the city limits, as this area changes from time to time through annexations.

The City has four additional water right permits authorizing diversions of American River water. Permits 11358 and 11361 authorize the City to divert water from the American River by direct diversion, and have priority dates of October 29, 1947, and September 22, 1954, respectively. These permits allow for diversions at the City's E.A. Fairbairn Water Treatment Plant (FWTP), and specify a combined maximum allowable rate of diversion of 675 cfs. The authorized place of use (POU) for both permits is 79,500 acres within and adjacent to the City.

The final two permits (Permits 11359 and 11360) authorize re-diversion for consumptive uses of American River tributary water previously diverted by the Sacramento Municipal Utility District's (SMUD's) Upper American River Project (UARP). Permits 11359 and 11360 have priority dates of February 13, 1948, and July 29, 1948, respectively, and the POU for both permits is 96,000 acres within and adjacent to the City, that includes the POU authorized under Permits 11358 and 11361. These permits allow for diversions at the FWTP, and at the City's Sacramento River Water Treatment Plant (SRWTP). The combined maximum allowable diversion under these permits includes re-diversion of up to 1,510 cfs of UARP direct diversion water and up to 589,000 AFY of UARP stored water.

The City also has a water rights settlement contract entered into in 1957 by the City and the USBR. The essence of the City/USBR settlement contract is that the City agreed (1) to limit its combined rate of diversion under its American River water rights permits to a maximum of 675 cfs, up to a maximum amount of 245,000 AFY in the year 2030, and (2) to limit its rate of diversion under its Sacramento River water rights permit to a maximum of 225 cfs and a maximum amount of 81,800 AFY. This limits the City's total diversions of Sacramento and American River water under the City's water right permits to 326,800 AFY in the year 2030 as shown in Table 5.11-1. The contract also specifies an annual build-up schedule to this maximum amount, as shown in Table 5.11-2; the maximum diversion specified for 2010 is 227,500 AFY.

Permit	Supply Source	Maximum Permitted Diversion	
		AFY	cfs
1957 USBR 2030 Contractual Maximum	American River	245,000	675
	Sacramento River	81,800	225
	<b>Total</b>	<b>326,800</b>	<b>900</b>

Source: City of Sacramento 2009.

Source	2005	2010	2015	2020	2025	2030
American River	123,200	145,700	170,200	196,200	222,200	245,000
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
<b>Total</b>	<b>205,000</b>	<b>227,500</b>	<b>252,000</b>	<b>248,000</b>	<b>304,000</b>	<b>326,800</b>

Source: City of Sacramento 2009.

The City's diversions of American River water at the FWTP are also subject, during certain time periods, to limitations specified in the Water Forum Agreement (WFA). As part of the WFA, each water purveyor signed a purveyor-specific agreement (PSA) that specified that purveyor's Water Forum commitments. The City's PSA limits the quantity of water diverted from the American River at the FWTP during two hydrologic conditions: extremely dry years (i.e., "Conference Years") and periods when river flows are below the so-called "Hodge Flow Criteria." These limiting criteria are as follows: 2,000 cfs from October 15 through February; 3,000 cfs from March through June; and, 1,750 cfs from July through October 14.

### Future Water Production Capacity

The City was participating as a cost-sharing partner in the Sacramento River Water Reliability Study (SRWRS), which includes a feasibility study for a new Sacramento River diversion. This project has been temporarily suspended primarily due to the economic slowdown in the United States,

California, and the Sacramento region. The USBR is the lead agency for federal review and Placer County Water Agency (PCWA) is the lead agency for local review.<sup>1</sup>

One of the alternatives being evaluated in the SRWRS is for an additional WTP with a treatment capacity of 235 mgd (325 cfs) off the Sacramento River near Elverta Road, north of the Sacramento International Airport. The City would acquire up to 145 mgd of new capacity when the new WTP is operational. With the addition of this WTP, the maximum combined production of potable water at all three WTPs would be 505 mgd, or a total annual production capacity of 311,800 AFY, under continuous operation. The potential completion date of a new water treatment plant is uncertain.

The City is currently updating its water master plan, and will be reviewing several different alternatives for producing potable water. The plan is expected to be completed in 2011, and will identify if the City should continue to pursue the SRWRS project, or construct another project (for example, expand the existing Sacramento River Water Treatment Plant, or new groundwater wells, etc.).

## Groundwater

The City maintains 32 wells, two of which are located south of the American River, for potable use.<sup>2</sup> The total capacity of the wells is 20 mgd and they produce up to 22,400 AFY. The 2005 to 2009 annual average groundwater pumping was 19,740 acre-ft.<sup>3</sup> The wells pump primarily from the DWR-identified North American Subbasin (5-21.64), with two active drinking water wells pumping from the South American Subbasin (5-21.65).

The supply of groundwater in the Subbasins from which the City's wells pump groundwater is sufficient to meet the city's cumulative groundwater demands projected through 2030, and this is consistent with the sustainable yields determined for these areas by the WFA.<sup>4</sup>

## Water Treatment, Storage, and Distribution

The City provides more than 45 billion gallons of water for drinking, household use, fire suppression, landscaping, and commercial and industrial use on an annual basis. The distribution system is a pipeline network, where surface water and groundwater is mixed within the system.<sup>5</sup> The Department of Utilities operates and maintains the City's two water treatment plants, eight pump

1 City of Sacramento, Sacramento River Water Reliability Study, Initial Alternatives Report. Final Version, March 2005. Updated by: SRWRS' Revised Assessment of Water Supply Needs, August 2007.

2 Jim Peifer, City of Sacramento Utilities Department, personal communication, September 13, 2010.

3 Calculated from Table 3-1 in Chapter 3 of the City of Sacramento's *Water Supply Master Plan* (2010).

4 PBS&J/EIP, Railyards Specific Plan Draft Environmental Impact Report (PO5-097), prepared for the City of Sacramento, p. 6.11-21, 2007,

5 City of Sacramento, *Urban Water Management Plan*, <[http://www.cityofsacramento.org/utilities/urbanwater/management\\_plan.htm](http://www.cityofsacramento.org/utilities/urbanwater/management_plan.htm)>, 2006, p. 2-7.

stations, 10 storage reservoirs, 32 municipal wells, thousands of hydrants, and nearly 1,500 hundred miles of pipeline to convey water to homes and businesses throughout the City.<sup>6</sup>

### Water Treatment

The City owns and operates two surface water diversion and treatment facilities: the SRWTP and the FWTP on the American River. The WTPs operate as demands dictate, in other words treatment is directly related to consumer demands. In 2000, the City Council certified an environmental impact report for the City's Water Facilities Expansion Project and approved the project, to expand the treatment capacity of the SRWTP to 160 mgd and expand the treatment capacity of the FWTP to 200 mgd. The SRWTP expansion was completed in 2005, and the FWTP expansion was completed in 2003. The water supply permit issued by the Department of Public Health (DOPH) for the SRWTP currently allows the SRWTP to produce up to 160 mgd, which equates to 179,288 AFY. The DOPH water supply permit for the FWTP currently allows the FWTP to produce up to 160 mgd – increasing the DOPH-permitted limit to the full 200 mgd capacity provided under the Water Facilities Expansion Project would require additional treatment modifications and testing to verify satisfactory water purification. ~~The 2006 UWMP states that the FWTP would be operational 334 days a year and could produce 205,000 AFY.~~<sup>7</sup>

### Water Storage

Water storage is used to meet water demand for periods when peak hour demand exceeds maximum daily supply rates. These high demand periods usually occur for four to six hours during hot summer days and for potentially longer periods during large fire events. The City has nine above-ground storage reservoirs, each with a capacity of 3 million gallons (mg) and one underground reservoir with a capacity of 15 mg. In addition, 34.5 mg of on-site storage exists at the water treatment plants (14.5 mg at the SRWTP and 20 mg at the FWTP). Therefore, the total water storage capacity in the City is 76.5 mg. This capacity represents approximately 67 percent of the City's 2009 average daily water demand of 113.7 mgd, or approximately 40 percent of the 2009 average maximum day demand of 192.0 mgd.<sup>8</sup>

### Water Supply Distribution and Existing Onsite Infrastructure

In the city, water distribution mains range from four inches to 12 inches in diameter and convey water for municipal and industrial services, fire services and fire hydrants. City policy requires new commercial areas to install 12-inch mains in order to maintain fire flow capacities. Transmission mains are 18 inches and larger and are used to transport large volumes of water from the treatment plants throughout the distribution system.

6 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006 as discussed in City of Sacramento 2009.

7 ~~City of Sacramento, *Urban Water Management Plan, 2006*, <[http://www.cityofsacramento.org/utilities/urbanwater/management\\_plan.htm](http://www.cityofsacramento.org/utilities/urbanwater/management_plan.htm)>, p. 5-3.~~

8 City of Sacramento, *Draft Water Supply Master Plan*. 2010. Prepared by West Yost Associates.

The City supplies water to existing commercial uses on the project site from the existing water conveyance infrastructure underlying adjacent public streets. At the project site, the existing water system includes 8-inch water lines that are connected to 8-inch and/or 42-inch water mains underlying Broadway and 5<sup>th</sup> Street. The existing water distribution system is presented on Figure 2-7 in Chapter 2, Project Description.

### Current Water Use

As of 2009, the City's average water demand was 47.1 mgd at the FWTP, 48.7 mgd at the SRWTP, and 17.9 mgd from groundwater; peak demand totaled 192 mgd, 82 mgd at FWTP and 87 mgd at SRWTP,<sup>9</sup> an additional 20.0 mgd from groundwater, and approximately 3.0 mgd of distribution storage contributions. The total amount of surface water and groundwater supplied in 2009 was 127,344 AF (an average daily demand of approximately 113.7 mgd).<sup>10</sup> Table 5.11-3 presents the City's historical water deliveries.

Year	Surface Water and Groundwater Supplies <sup>2</sup>			Total Water Delivered <sup>2</sup>				
	Population	Annual Surface Water Delivered (AFY)	Annual Groundwater Delivered (AFY)	Maximum Day Water Delivered (mgd)	Maximum Day to Average Day Ratio	Total Annual Water Delivery (AFY)	Average (mgd)	Percent Increase
1998	392,800	93,131	22,692	212.7	2.06	115,822	107.5	
1999	396,200	109,695	23,694	219.7	1.85	133,389	112.3	15.2%
2000	405,963	110,150	24,130	213.0	1.78	134,280	103.4	0.7%
2001	418,711	115,984	24,156	214.5	1.71	140,140	119.1	4.4%
2002	426,013	115,628	23,236	226.8	1.83	138,864	119.9	-0.9%
2003	433,400	114,674	25,607	223.2	1.78	140,281	125.2	1.0%
2004	441,000	128,903	17,924	NA	NA	146,827	131.1	4.7%
2005	452,959	116,452	22,521	NA	NA	138,974	124.1	-5.3
2006 <sup>1</sup>	453,781	120,150	18,522	239.9	1.21	138,671	123.5	-0.2%
2007	467,120	130,368	20,272	239.0	1.78	150,640	134.5	8.6%
2008	474,925	121,296	19,376	217.0	1.73	140,672	125.6	-6.6%
2009 <sup>3</sup>	481,356	107,296	20,048	192.0	1.69	127,344	113.7	-9.5%

Notes:

- All information for years 1998 through 2005 is adapted from the City of Sacramento's Operational Statistics Reports as shown in City of Sacramento 2009; 2006 population from US Census Bureau: <http://quickfacts.census.gov/qfd/states/06/0664000.html>.
- Other data for years 2007-2009 is from City of Sacramento, Draft Water Supply Master Plan, 2010. Prepared by West Yost Associates. For 2007-2009, the total maximum daily water delivered includes distribution storage contributions to demand so totals do not match the maximum surface water and groundwater production totals provided in footnote c below.
- The maximum daily production for 2009 was 82.0 mgd for Fairbairn WTP and 87.0 mgd for the Sacramento River WTP. Maximum groundwater production in 2009 was 20.0 mgd. The average daily productions from groundwater and the combined surface water sources are provided in AFY above. These average daily values are 47.1 mgd for the Fairbairn WTP, 48.7 mgd for the Sacramento River WTP, and 17.9 mgd for groundwater sources.
- The decline in water demand in 2009 is explained in the City's Water Master Plan which states "Recent declines in water use have been due to a combination of factors, including drier weather patterns, the economic downturn and water conservation efforts that are reducing per capita use."

N/A = Not available.  
Source: Adapted from City of Sacramento Utilities Department, Operational Statistics Reports as discussed in City of Sacramento 2009; and the City of Sacramento, *Draft Water Supply Master Plan 2010*, prepared by West Yost Associates.

9 *Ibid.*

10 *Ibid.*

## REGULATORY SETTING

### Federal

#### **U.S. Environmental Protection Agency (U.S. EPA)**

The U.S. EPA established primary drinking water standards in the Clean Water Act (CWA) Section 304 and states are required to ensure that potable water for the public meets these standards. Standards for 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1996. The U.S. EPA may add additional constituents in the future.

### State

#### **Water Management Planning Act**

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFY, must prepare an UWMP. DWR provides guidance to urban water suppliers in the preparation and implementation of UWMPs. UWMPs must be updated at least every five years on or before December 31, in years ending in five and zero. The City adopted its most recent UWMP on November 14, 2006.

#### **Senate Bill 610 - Water Supply Assessments**

Senate Bill (SB) 610 was adopted in 2001 and reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. SB 610 amended the statutes of the Urban Water Management Planning Act, as well as the California Water Code Section 10910 et seq. The foundation document for compliance with SB 610 is the UWMP, which provides an important source of information for cities and counties as they update their general plans. Likewise, planning documents such as general plans and specific plans form the basis for the demand information contained in an UWMP, as well as WSAs required under SB 610.

Water Code Section 10910 (c)(4) states "If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

Water supply planning under SB 610 and SB 221 (see below) requires reviewing and identifying adequate available water supplies necessary to meet the demand generated by a project, as well as the cumulative demand for the general region over the next 20 years, under a broad range of water conditions. This information is typically found in the current UWMP for the project area. SB 610

requires the identification of the public water supplier; the City has been identified in the WSA as the public water supplier to the proposed project.

In addition, SB 610 requires the preparation of a WSA if a project meets the definition of a “Project” under Water Code Section 10912 (a). The code defines a “Project” if it meets any of the following criteria:

- A proposed residential development of more than 500 dwelling units (du);
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

Alternately, if a public water system has less than 5,000 service connections, the definition of a “Project” includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system. The proposed project includes more than 500 du, and, therefore, qualifies as a “Project” under Section 10912 (a) of the Water Code. Thus, the City has prepared a WSA as required by these criteria under SB 610 (included as Appendix T).

The City prepared the Draft WSA in July 2010 for the proposed project using technical information included in the City’s UWMP, which satisfies the documentation requirements of SB 610, CEQA 10583.5, and Water Code sections 10631, 10910, and 10912. The WSA concludes that the project site is within the city’s service area and the City provides domestic water to all development in the City’s General Plan area. The WSA finds that the City has sufficient water supply under the City’s existing water rights and entitlements to serve the proposed project and projected future growth in the city over the next 20 years (see Appendix T).<sup>11</sup>

### **Senate Bill 221- Written Verification of Water Supply**

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. Senate Bill 221 is designed as a “fail-safe” mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the

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11 City of Sacramento. SB 610/SB 221 *Water Supply Assessment and Certification Form for the Northwest Land Park project*. July 2010.

previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code section 66473.7 (b)(1) states “The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.” In other words, as a result of the information contained in the written verification, the city or county may attach conditions to assure there is an adequate water supply available to serve the proposed project as part of the tentative map approval process. SB 221 verification will be required for the proposed project.

### **Model Water Efficient Landscape Ordinance**

The most recent Model Water Efficient Landscape Ordinance (MWELo) became effective after January 1, 2010. (California Code of Regulations’ Title 23, Division 2, Chapter 2.7 as amended) The purposes of MWELo are to:

- promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- establish a structure for planning, designing, installing, maintaining and managing water-efficient landscapes in new construction and rehabilitated projects;
- establish provisions for water management practices and water waste prevention for existing landscapes;
- use water efficiently without waste by setting a Maximum Applied Water Allowance (MAWA) as an upper limit for water use and reduce water use to the lowest practical amount;
- promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;
- encourage local agencies and water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered-rate structure; and
- encourage local agencies to designate the necessary authority that implements and enforces the provisions of the MWELo or its local landscape ordinance.

The MWELo is applicable to public and private projects, including single- or multi-family developments, that have a landscape area of at least 2,500 sf and require a building or landscape permit, plan check, or design review. Additionally, MWELo has limited applicability to existing landscapes and existing, new, or rehabilitated cemeteries. Implementation of MWELo is performed through a project applicant’s submittal of a Landscape Documentation Package for review and approval by a local agency. The Landscape Documentation Package is required to contain information including but not limited to: project information, a Water Efficient Landscape Worksheet, a soil management report, a landscape design plan, an irrigation design plan, and a grading design

plan. The MWELo defines the requirements of each of the components of the Landscape Documentation Package and details the local agency's process for approving the landscape irrigation plans of each project applicant. Water demands in open space areas for the proposed project were calculated in the WSA in accordance with the MWELo's MAWA guidance.

The City adopted its own ordinance (Sacramento City Code Chapter 15.92) to implement the state law on December 15, 2009, effective January 13, 2010 – so City ordinance is the applicable framework.

## **Drinking Water Quality**

The California Department of Public Health (DPH) is responsible for implementing the federal Safe Drinking Water Act of 1974 and its updates, as well as California statutes and regulations related to drinking water. As part of their efforts, the DPH inspects and provides regulatory oversight for public water systems within California. In addition, in the Sacramento area the CVRWQCB has the responsibility for protecting the beneficial uses of the State's waters, including groundwater, and these include municipal drinking water supply, as well as various other uses.

Public water system operators are required to regularly monitor their drinking water sources for microbiological, chemical, and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants that reflect the natural environment, as well as human activities. Examples of potential primary inorganic contaminants are aluminum and arsenic, while radiological contaminants can include uranium and radium.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor, and appearance, but these are generally non-enforceable guidelines. However, in California secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers.<sup>12</sup> The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

## **Local**

### **City of Sacramento 2030 General Plan**

The following goals and policies from the 2030 General Plan are relevant to water supply within the project area.

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12 California Department of Water Resources, *California's Groundwater, Bulletin 118*, <[www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm](http://www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm)>, 2003.

**UTILITIES (U)**

**Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high-quality public infrastructure facilities and services throughout the city.**

Policies

- U 1.1.1 **Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide these City services.
- U 1.1.5 **Timing of Urban Expansion.** The City shall assure that new public facilities and services are phased in conjunction with the approved urban development it is intended to service.
- U 1.1.6 **Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.

Water Systems

**Goal U 2.1 High-Quality and Reliable Water Supply. Provide water supply facilities to meet future growth within the City's Place of Use and assure a high-quality and reliable supply of water to existing and future residents.**

Policies

- U 2.1.3 **Water Treatment Capacity and Infrastructure.** The City shall plan, secure funding for, and procure sufficient water treatment capacity and infrastructure to meet projected water demands.
- U 2.1.9 **New Development.** The City shall ensure that water supply capacity is in place prior to granting building permits for new development.
- U 2.1.10 **Water Conservation Programs.** The City shall implement conservation programs that increase water use efficiency, including providing incentives for adoption of water efficiency measures.

**City of Sacramento Design Standards**

Section 13 of the City's Design Standards sets forth requirements regarding the design and operation of water distribution facilities. Those requirements include standards for pipe design, fire hydrants, and specific requirements for residential, commercial, and industrial water service.

**Sacramento City Code Chapter 15.92**

The City developed Water Efficient landscape Requirements in response to the Water Conservation in Landscaping Act, California Government Code Sections 65591 et seq. This chapter allows that no person shall construct or install a new landscape project or rehabilitated landscape project to which this chapter applies unless a landscape document package for the project has been approved as required by this chapter. This chapter applies to all of the following landscape projects:

- New landscape projects and rehabilitated landscape projects with a landscape area equal to or greater than two thousand five hundred (2,500) square feet that are installed by or under the direction of the city, or by or under the direction of another public agency for which a city-issued building or landscape permit, plan check, plan review, or design review is required under this code;
- Developer-installed new landscape projects and rehabilitated landscape projects with a landscape area equal to or greater than two thousand five hundred (2,500) square feet and for which a city-issued building or landscape permit, plan check, plan review, or design review is required under this code;
- Owner-installed new landscape projects and rehabilitated landscape projects with a landscape area equal to or greater than two thousand five hundred (2,500) square feet and for which a city-issued building or landscape permit, plan check, plan review, or design review is required under this code;
- Homeowner-installed landscape project that is a new landscape project with a landscape area equal to or greater than five thousand (5,000) square feet for which a city-issued building or landscape permit, plan check, plan review, or design review is required under this code.

### **Applicable Mitigation Measures from the City of Sacramento 2030 General Plan**

The following mitigation measure from the City of Sacramento 2030 General Plan is applicable to the provision of water to the proposed project.

- 6.11-2 a) Implement Diversion and WTP as cost-sharing partner in Sacramento River Water Reliability Study.

The City shall agree to a cost-sharing partnership for the construction and operation of a second Sacramento River diversion and WTP to divert and treat water which could result, at a minimum, in the following potentially significant environmental impacts associated with the construction and operation. This project is currently being analyzed under a separate EIR/EIS:

- Exposure of soils to erosion and loss of topsoil during construction;
- Surface water quality degradation;
- Destruction or disturbance of subsurface archeological or paleontological resources;
- Construction-related air emissions;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Loss of protected species and degradation or loss of their habitats;
- Conversion of existing agricultural lands or resources;
- Degradation of fisheries habitat and other in-stream impacts above and downstream of diversion; and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

Mitigation measures would need to be developed to reduce any potentially significant impacts to less-than-significant levels, to the extent feasible. The following are

illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above to less-than-significant levels:

- Reduction in operational and construction air emissions as required by SMAQMD;
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;
- Minimization of operational and construction noise through the use of noise attenuation measures;
- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;
- Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;
- Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and
- Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.
- The City, as a cost-sharing local partner participating in the Sacramento River Water Reliability Study project, would be a responsible agency required to implement all mitigation measures within its control.

OR

- b) Implement a City of Sacramento-Only Sacramento River Diversion and WTP.

The City shall be solely responsible for the construction and operation of a second Sacramento River diversion and WTP to divert and treat water. This would be a separate project that would require its own environmental review, in addition to compliance with all applicable regulatory requirements. The construction and operation of this facility to divert and treat water, although having a smaller capacity than the regional facility, would have the same potentially significant environmental impacts as discussed above, and would entail the same types of mitigation measures, discussed above. The City would be the lead agency if this option were selected.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in levels of water use compared with existing and projected water use on the project site and in the City's water service area. The City's 2006 UWMP forecasted water demand increases through 2030 based on regional growth projections from the Sacramento Area Council of Governments (December 2005).<sup>13</sup> The Master EIR analyzed the water demand increases that are expected to occur as a result of

13 City of Sacramento. *Urban Water Management Plan*. <[www.cityofsacramento.org/utilities/urbanwater/management\\_plan.htm](http://www.cityofsacramento.org/utilities/urbanwater/management_plan.htm)>, 2006, Chapter 6, Figure 6-1.

buildout of the 2030 General Plan, including increases from redevelopment of currently developed areas within the city, including the project site. Because the land uses proposed under the project are consistent with the land use designations for the site in the 2030 General Plan, demand from the proposed project was already considered in the Master EIR analysis.

To determine potential project impacts, water demand was estimated from demand projection calculations and a quantitative evaluation of data relative to the proposed project, along with existing land uses and proposed development. The cumulative impact discussion analyzes the proposed project's impact in the context of the Master EIR's analysis of the increase in water demand that are expected to occur as a result of buildout of the 2030 General Plan.

### **Water Demand Analysis**

As presented in Current Water Use above, Table 5.11-3 shows the historical comparison of City-wide water demands based on population and treated water delivered.

Water use or demand of the proposed project was determined by analyzing each parcel and building use and assigning a demand factor. To determine the water demand factors, water use demand factors were formulated based on data from a number of water supply planning sources including regional water resource studies, current or historical uses at similar facilities, City of Sacramento Draft Water Master Plan (2010), and personal communication with the City's Department of Utilities. Table 5.11-4 shows the proposed project would potentially use approximately 38.5 AFY during Phase 1 and approximately 165 AFY during Phases 2-4 for a gross total of approximately 204 AFY (approximately 0.18 mgd) at project completion. Demands for each parcel are quantified and aggregated by land use designation and project phase. The calculated demand represents the upper range of the potential demand for the proposed project for a more conservative estimation. Table 5.11-4 also shows the demand factors for each of the facilities at the proposed project site.

### **Standards of Significance**

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- increase demand for potable water in excess of existing supplies;
- result in inadequate capacity in the City's water supply facilities to meet the water supply demand, so as to require the construction of new water supply facilities;
- result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments; and
- require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

TABLE 5.11-4						
NORTHWEST LAND PARK DEVELOPMENT LAND USE AND WATER DEMAND SUMMARY						
Land Use Designation and Development	Area	Dwelling Units (DU)	Water Demand			
			Water Demand Factor	Gallons/Day (annual average)	MGD	AFY
<b>Phase 1<sup>1</sup></b>						
Medium Density – MFR	5.1 ac	208	134 gpd/unit <sup>2</sup>	27,872.00	0.03	31.22
<b>Non-Residential Areas</b>						
ROW-Streets	1.8 ac					
Open Space-Park (Public)	0.8 ac					
Setzer Run Open Space (Private)	0.1 ac					
Irrigated Lands Total <sup>3</sup>	2.7 ac			6,523.82 <sup>3</sup>	0.01 <sup>3</sup>	7.31 <sup>3,4</sup>
<b>Phase 1 Total – Projected Water Demand</b>	<b>7.80 ac</b>			<b>34,397.95</b>	<b>0.03</b>	<b>38.53</b>
<b>Phases 2 – 4<sup>1</sup></b>						
Medium Density - MFR	14.1 ac	690				
High Density - MFR		70				
Total (Medium-High Density Residential)		760	134 gpd/unit <sup>2</sup>	102,600	0.10	114.93
<b>Non-Residential Areas</b>						
Commercial-Retail (includes 1.2 Acres of Mixed-Use) <sup>5</sup>	67,272 ft <sup>2</sup>		0.35 gpd/ft <sup>2</sup>	23,545	0.02	26.37
Open Space-Park (Public)	3.5 ac					
ROW-Public Streets	4.1 ac					
Setzer Run Open Space (Private)	1.0 ac					
Turf Play Area <sup>6</sup>	0.39 ac					
Irrigated Lands Total <sup>7</sup>	8.99 ac			21,720.42 <sup>7</sup>	0.02 <sup>7</sup>	24.33 <sup>7,8</sup>
<b>Phases 2-4 Totals - Projected Water Demand</b>	<b>23.9 ac</b>	<b>760</b>		<b>147,865.62</b>	<b>0.15</b>	<b>165.63</b>
<b>Project Totals - Projected Water Demand</b>	<b>31.70 ac</b>	<b>968</b>		<b>182,263.57</b>	<b>0.18</b>	<b>204.16</b>
Existing Commercial Demand (Warehouse/Light Industrial) <sup>9</sup> (Calculated)	31.7 ac		1.2 AFY/acre <sup>9</sup>	33,959	0.03	38.04
<b>Net Change in Water Demand with Project</b>				<b>148,303.65</b>	<b>0.15</b>	<b>166.12</b>
Notes:						
MGD = million gallons per day; AFY = acre-feet per year						
1. Phase 1, 2-4 development is planned to occur between 2011 – 2019 and is based on the proposed land use rezoning to R4 and R4a designations.						
2. City of Sacramento Draft Water Master Plan Table 3-11 for Mixed Use Higher Density (0.15 AFY/DU or 134.0 gpd/DU).						
3. Phase 1: Water demand in open space areas calculated with MWELo – MAWA for conservative water supply planning. MWELo Effective Precipitation = water used by plants is 25% of annual precipitation (25% of 17.22 inches = 4.31 inches).						
4. [2.7 acres] planted with Native plants or Drought Tolerant Landscaping could save roughly 25.2% annually.						
5. Mixed Use area includes high-density multi-family residential and commercial-retail areas.						
6. Irrigated Turf replaces Neighborhood Center with slightly more water demand [17,000 ft <sup>2</sup> = 0.39 acres].						
7. Phase 2: Water demand in open space areas calculated with MWELo – MAWA for conservative water supply planning. MWELo Effective Precipitation = water used by plants is 25% of annual precipitation (25% of 17.22 inches = 4.31 inches).						
8. [8.99 acres] planted with Native Plants or Drought Tolerant Landscaping could save roughly 46.1% annually.						
9. City of Sacramento Draft Water Master Plan Table 3-12 Average (1.2 AFY/ac) of Industrial (0.9 AFY/ac) and Commercial (1.5 AFY/ac) Gross Water Demand.						
Source: City of Sacramento. 2010. SB 610/SB 221 Water Supply Assessment and Certification Form for the Northwest Land Park project.						

## Project-Specific Impacts and Mitigation Measures

### 5.11-1 Implementation of the proposed project could increase demand for potable water.

The Master EIR states that in 2010 the total water supplies would be sufficient to meet the total water demands of buildout of the General Plan. (see Impact 6.11-1 in Section 6.11, Public Utilities). As shown in Table 6.11-4 in the General Plan Master EIR, the 2010 anticipated surface water

supplies of 227,500 AFY would exceed the estimated 2010 water demands of 156,379 AFY. The Master EIR concludes that these demands are less than the total surface water diversion amount authorized under the City's water right permits and USBR contract.

The proposed project would replace existing light industrial and commercial uses on the project site with up to 968 residential units, commercial-retail uses, and parks and open space. These uses are consistent with the land use assumptions used in the Master EIR to determine water demand on the project site. The project would not have any project-specific impacts that were not identified as significant effects in the Master EIR. The proposed uses would result in a total net increase in water demand of approximately 0.15 mgd over existing conditions and generate a total net water demand of approximately 166 AFY, as shown in Table 5.11-4. Because the land uses under the proposed project are consistent with the assumptions for the project site in the Master EIR, the proposed project would not result in impacts on potable water demands beyond those already addressed in the City of Sacramento General Plan Master EIR.

### Mitigation Measure

*None required.*

#### **5.11-2 Implementation of the proposed project could result in an increase in demand for potable water in excess of the City's existing diversion and treatment capacity, and could require the construction of new water supply facilities.**

As discussed in Impact 6.11-2 in Section 6.11, Public Utilities, of the General Plan Master EIR, the City would be able to provide sufficient treatment and diversion capacity to meet the projected 2010 to 2030 water demands, except during certain conditions. As shown in Tables 5.11-5 and 5.11-6, the City's existing diversion and treatment capacity would meet peak daily water demands during normal water year conditions until sometime between 2025 and 2030. The City would not be able to meet peak daily demands beginning in 2010 if no groundwater supplies (20 mgd) were available during years restricted by the PSA Limitations (e.g., below "Hodge Flow" criteria). As previously discussed, the City's existing groundwater wells supply the city with about 22,500 AFA of municipal water supply, which equates to an average annual aggregate capacity of approximately 20 mgd. The City's water supply infrastructure is designed to serve the entire city-wide service area with new infrastructure that ties into the existing system to meet average and maximum day demands. System-wide, the city relies primarily on surface water, and supplements the surface water capacity by pumping groundwater, if necessary, to help meet maximum day demands. With the use of the existing groundwater supplies, the City would have sufficient treatment and diversion capacity to meet the water demands during any supply or demand conditions until sometime between 2010 and 2015.

General Plan Policies U 1.1.1, U 1.1.5, U 1.1.6, U 2.1.3, U 2.1.9, and U 2.1.10 were included in the General Plan Master EIR, and as described in Impact 5.11-1 above, these policies would require that the City provides adequate water supply infrastructure and treatment facilities to meet increasing water demands and to ensure sufficient capacity. Impact 6.11-2 in the General Plan

TABLE 5.11-5

**PEAK DAY SURFACE WATER SUPPLY CAPACITY (EXISTING FACILITIES) AND DEMAND COMPARISON DURING NORMAL (ABOVE-HODGE) FLOW CONDITIONS (MGD)**

	2005	2010	2015	2020	2025	2030
American River <sup>1,2</sup>	160	160	160	160	160	160
Sacramento River <sup>1</sup>	160	160	160	160	160	160
<b>TOTAL SURFACE WATER SUPPLY</b>	<b>320</b>	<b>320</b>	<b>320</b>	<b>320</b>	<b>320</b>	<b>320</b>
Groundwater Supply	20	20	20	20	20	20
<b>Total Water Supplies</b>	<b>340</b>	<b>340</b>	<b>340</b>	<b>340</b>	<b>340</b>	<b>340</b>
City Demand and Wholesale/Wheeling Demands	254	271	294	325	369	433
Project Demand	~	0.15	0.15	0.15	0.15	0.15
<b>TOTAL WATER DEMAND</b>	<b>254</b>	<b>271.15</b>	<b>294.15</b>	<b>325.15</b>	<b>369.15</b>	<b>433.15</b>
<b>Available Capacity without new facilities</b>	<b>~</b>	<b>68.85</b>	<b>45.85</b>	<b>14.85</b>	<b>-29.15</b>	<b>-93.15</b>

Notes:  
1. Surface supply is based on nominal plant capacity.  
2. Plant capacity based on information provided by the City. Jim Peifer (2010).  
Source: General Plan Master EIR, Table 6.11-7.

TABLE 5.11-6

**PEAK DAY SURFACE WATER SUPPLY CAPACITY (EXISTING FACILITIES) AND DEMAND COMPARISON DURING BELOW-HODGE FLOW CONDITIONS (MGD)**

	2005	2010	2015	2020	2025	2030
American River <sup>1</sup>	100	100	100	100	100	100
Sacramento River <sup>1</sup>	160	160	160	160	160	160
<b>TOTAL SURFACE WATER SUPPLY<sup>2</sup></b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>
City Demand and Wholesale/Wheeling Demands <sup>3</sup>	254	271	294	325	369	433
Project Demand	~	0.15	0.15	0.15	0.15	0.15
<b>TOTAL WATER DEMAND<sup>4</sup></b>	<b>254</b>	<b>271.15</b>	<b>294.15</b>	<b>325.15</b>	<b>369.15</b>	<b>433.15</b>
<b>Available Capacity without new facilities</b>	<b>~</b>	<b>-11.15</b>	<b>-34.15</b>	<b>-65.15</b>	<b>-109.15</b>	<b>-173.15</b>
<b>Available Capacity without new facilities with groundwater supplies (20 mgd)</b>	<b>~</b>	<b>8.85</b>	<b>-14.15</b>	<b>-45.15</b>	<b>-89.15</b>	<b>-153.15</b>

Notes:  
1. American River diversion is limited to 100 mgd during below-Hodge flow conditions.  
2. Sacramento WTP peak day supply is based on the nominal capacity of the plant.  
3. Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.  
4. Reduced by 20 mgd during below-Hodge Flow or Conference Year when sales to Sacramento Suburban Water District are not required. A new Sacramento River diversion and WTP potentially could be used to make up this reduction during below-Hodge Flow or Conference Year conditions (not reflected in "Available Capacity without new facilities").  
Source: General Plan Master EIR, Table 6.11-8.

Master EIR, requires implementation of Mitigation Measure 6.11-2, described above, to expand the City's existing treatment and diversion capacity. Implementation of applicable General Plan policies, in addition to the City's existing treatment and diversion capacity, would provide sufficient capacity to meet the city's 2010 projected demands during any supply or demand conditions and would meet water demands during normal water year conditions until sometime between 2025 and 2030. Implementation of this mitigation measure would be required to ensure sufficient treatment and diversion capacity through 2030 is provided during any water supply or demand conditions. Therefore, the Master EIR found there is insufficient existing diversion and treatment capacity to meet the maximum day demands projected for buildout of the proposed 2030 General Plan, with the most significant capacity deficit occurring during the below Hodge flow conditions specified in the City's purveyor specific agreement. These projected deficits in diversion and treatment capacity

could require the construction of new water supply facilities and were, therefore, considered a significant and unavoidable impact in the Master EIR.

The proposed project would replace existing light industrial and commercial uses on the project site with up to 968 residential units, commercial-retail uses, and parks and open space. These uses are consistent with the land use assumptions used in the Master EIR to determine water demand on the project site. While the proposed project would comply with General Plan Policy U 1.1.6 that requires new development to pay its fair share of facilities needed to accommodate growth or provide adequate facilities and would include new water supply infrastructure within the project site, the City could still experience insufficient diversion and treatment capacity to meet the maximum day demands. However, because the land uses under the proposed project are consistent with the assumptions for the project site in the Master EIR, the proposed project would not result in impacts on potable water demands beyond those already addressed in the City of Sacramento General Plan Master EIR.

### **Mitigation Measure**

*None required.*

### **Cumulative Impacts**

The geographic context for the analysis of cumulative impacts related to water supply is the City's water supply area as discussed in the Master EIR. The effects of buildout of the general plan and a determination related to adequate water supply and water infrastructure to support future growth are evaluated in Impacts 6.11-1 and 6.11-2 and not in a separate cumulative impact discussion.

The proposed project is located within the Sacramento 2030 General Plan Policy Area and its related potable water demands were considered as part of the assumed conditions for anticipated buildout of the general plan. No changes to the 2030 General Plan land use designations or their configurations are proposed as part of the project, and therefore the proposed project is consistent with the land use assumptions of the 2030 General Plan and the analysis contained in the Master EIR. Although the Master EIR determined that cumulative impacts on water treatment facilities addressed in the 2030 General Plan would be significant and unavoidable, the proposed project would not contribute to cumulative impacts beyond those already addressed in the Master EIR.

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## HYDROLOGY AND WATER QUALITY

### INTRODUCTION

This section addresses potential impacts of the proposed project on local and regional hydrology, and water quality. The hydrology analysis addresses the evaluation of surface water and groundwater, including water quality and flooding. This section focuses on the potential for the proposed project to affect the existing groundwater quality or quantity. Issues related to any existing groundwater contamination near the project area and the proposed project's potential to affect public health and safety are discussed in Section 5.5, Hazards and Hazardous Materials.

Impacts associated with water supply, wastewater (sewer), and storm drainage are evaluated in other discussions within this section.

For the purposes of this analysis, there would be no environmental effects related to seiche, tsunami, or mudflow. The project area is not located close to any large water bodies and historically has not been affected by tsunamis. In addition, the site topography is flat, and mudflows are an unlikely scenario. A seiche in the Sacramento River is theoretically possible; however, the risk of this event is considered very low because the river channel is not completely enclosed. Therefore, these issues are not discussed further in this EIR.

One comment letter was received during the NOP review period regarding hydrology and water quality. The Central Valley Regional Water Quality Control Board's (CVRWQCB) letter recommended that the City incorporate low impact development (LID) standards in order to mitigate some of the impacts related to urbanization. The letter also states that the project area is within the regulated area covered by a joint NPDES Permit, held by the County of Sacramento and the Cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt, which is regulated by the Central Valley Regional Board. In addition, the letter states that a component of the NPDES permit is the SQIP, which requires the implementation of LID strategies. The new General Construction Activity Stormwater Permit (Order 2009-0009-DWQ) is also referenced in the letter as requiring project's to implement post-construction controls. These issues are addressed in this section along with the applicability of the joint NPDES permit and the General Construction Activity Stormwater Permit. Neither permit is applicable to areas that discharge stormwater to the City's combined sewer system (CSS).

Information reviewed to prepare this section included various technical documents, information from the City staff, information from the project applicant's stormwater and utility infrastructure engineers, and regulatory agency information from various websites which are cited in the footnotes. The primary sources of information referenced for this section include the Nolte Engineers' Project Drainage Technical Memorandum for the Northwest Land Park Project, June 30, 2010; DWR's Bulletin 118 (North and South American subbasins), updated 2003; Federal Emergency Management Agency (FEMA), Current FEMA Issued Flood Maps—Sacramento County, California, 2008; Section 6.7, *Hydrology and Water Quality*, of the General Plan Master EIR; the California Regional Water Quality Control Board, Central Valley Region, The Water Quality Control Plan (Basin

Plan), Fourth Edition – 1998, revised 2004; and information from staff at the City's Department of Utilities.

## ENVIRONMENTAL SETTING

### Hydrology

#### Regional Hydrology

The city is located at the confluence of two major rivers, the Sacramento River and the American River. The project site is located south of the confluence, with the Sacramento River located approximately 0.3 miles west of the site and the American River located approximately 2.3 miles north of the site.

The average runoff from the basin is estimated to be 21.3 million acre-feet per year (AFY). The melting snow pack in the Sierra Nevada Mountains maintains stream flow during most of the summer.

The Sacramento River system experiences variations in water levels during different parts of the year and during different parts of the month. Two factors affecting the water level are the amount of runoff entering the system from the rivers' watersheds and the amount of water being released from dams upriver. The system is also subject to tidal action from the Sacramento-San Joaquin Delta (Delta). Finally, the river channel is confined by a levee system on each bank of the river. The Sacramento River, beginning at the "I" Street Bridge and including all portions downstream, is considered part of the Delta. Flooding has historically been a problem for Sacramento, prompting the City to build levees beginning in the 1860's. The project site is located approximately 1.3 miles downstream of the I Street Bridge, on the east side, left bank of the river.

#### Local Hydrology and Drainage

The project site is primarily covered with impervious surfaces such as buildings and pavement, except for the southern and western portions of the project site, which are generally gravel or dirt areas. Approximately 68 percent of the existing overall project site and 29 percent of the existing Phase 1 site is impervious.<sup>14</sup> The site is generally flat with an elevation of approximately 16 feet above mean sea level (msl). There are no natural drainages or surface waters occurring within the project site. Drainage from the site generally flows from the northwest to the southeast where it enters the City's existing CSS. The existing site drainage connects to the CSS through a series of 8- to 24-inch pipes at several points along the existing collection system street grid on Broadway, 3rd Street, and 1st Avenue. The existing main 60-inch pipeline located in 5th Street drains CSS flows from Broadway, 1<sup>st</sup> Avenue, and 3<sup>rd</sup> Street to the south through the Land Park area. An additional description of the existing wastewater and stormwater infrastructure at the project site and within the

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14 Nolte Engineers. 2010. Project Drainage Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

City is provided in the Wastewater and Storm Drainage section. There are no existing flooding issues known within the project site.<sup>15</sup>

### **Floodplain**

According to the FEMA Flood Insurance Rate Map (FIRM), the project area is located in a Shaded X Zone floodplain. Zone Shaded X indicates “areas of 0.2 percent (500-year) annual chance flood; areas of 1 percent (100-year) annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent (100-year) annual chance flood.”<sup>16</sup> The project site is located approximately 0.3 miles east of the Sacramento River and is protected from 100-year flood events by the river’s existing levee system.

### **Surface Water Quality**

The Sacramento River and the Delta have been classified by the Central Valley Regional Water Quality Control Board (CVRWQCB) as having numerous beneficial uses, including providing a municipal, agricultural, and recreational water supply. Other beneficial uses include freshwater habitat, spawning grounds, wildlife habitat, and navigation on both the Sacramento River and the Delta.<sup>17</sup> Ambient water quality in the Sacramento River and the Delta is influenced by agricultural drainage, mine drainage, urban runoff, and industrial, municipal and construction discharges.

The Delta and the Sacramento River are considered impaired and listed on the CWA Section 303(d) list of impaired and threatened waters for California.<sup>18</sup> Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards, requiring the states to identify streams in which water quality is impaired (affected by the presence of pollutants or contaminants) and to establish the TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. The Sacramento River reach Knights Landing to the Delta (i.e., I Street bridge) is located upstream of the project area and is identified on the 303(d) list as having impairments for mercury, diazinon, and unknown toxicity. The 303(d) list indicates that the Delta is impaired for chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, polychlorinated biphenyls (PCBs), and selenium. Sources of the Delta’s water quality impairments as indicated on the 303(d) list are nonpoint sources, unknown sources, agriculture, industrial point sources, ballast water, and atmospheric deposition.

15 *Ibid.*

16 FEMA. 2008. Current FEMA Issued Flood Maps—Sacramento County, California Maps 0602660160G and 0602660170G. <<http://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10001&storeId=10001&categoryId=12001&langId=-1&userType=G&type=1&dfirmCatId=12009&future=false>>. Last posted or revised: December 8, 2008. Accessed: July 7, 2010.

17 Central Valley Regional Water Quality Control Board. 2009. *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition*. Revised September 2009 (with Approved Amendments). <[http://www.waterboards.ca.gov/centralvalley/water\\_issues/basin\\_plans](http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans)>, accessed: May 20, 2010. Last posted or revised: September 2009.

18 State Water Resources Control Board. 2007. 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments. <[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists2006\\_epa.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml)>, accessed: May 20, 2010. Last posted or revised: June 28, 2007.

## **Urban Runoff Water Quality**

Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a site, vehicle traffic, and percentage of impervious surface. In the Sacramento area, there is a natural weather pattern of a long dry period from May to October. During this dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulate within the urban watershed. Precipitation during the early portion of the annual wet season (November to April) washes these pollutants into the stormwater, which can elevate pollutant concentrations in the initial wet weather runoff. This initial runoff with peak pollutant levels is referred to as the "first flush" of a storm event or events.

Stormwater discharge monitoring data has been collected from Sacramento urban area monitoring stations since 1990. From this monitoring data, the 2009 "target pollutant groups" have been identified as: sediment erosion surrogates, pathogen indicators, pesticides, mercury, polycyclic aromatic hydrocarbons (PAHs), unquantified sources (e.g., Bis(2-ethylhexyl)phthalate), drinking water issues (e.g., total organic carbon [TOC], total dissolved solids [TDS], and nutrients), metals, petroleum products, and legacy pollutants.<sup>19</sup> These pollutants were determined based on their controllability, treatability, and the impact of urban runoff on beneficial uses.

## **Groundwater**

### **Groundwater Hydrology**

As described in the Water Supply section, the City's potable groundwater supply wells are located in the North American and South American subbasins, which lie within the Sacramento Valley Groundwater Basin.<sup>20</sup> Groundwater flows generally in a west-southwest direction in this subbasin. The estimated groundwater storage capacity of the North American subbasin is 4.9 million acre-feet (MAF).<sup>21</sup>

The project site overlies the 248,000-acre South American subbasin. DWR calculated the groundwater storage capacity of this subbasin as approximately 4.8 MAF. The geotechnical study prepared for the project states that groundwater has been encountered at approximately four feet below the existing ground surface on the project site, and groundwater monitoring performed at monitoring wells in 2006 indicates fluctuations in groundwater depths from approximately 4 to 12 feet

19 County of Sacramento and cities of Sacramento, Citrus Heights, Elk Grove, Folsom, Galt and Rancho Cordova. 2009. Stormwater Quality Improvement Plan (SQIP) for Sacramento County and cities of Sacramento, Citrus Heights, Elk Grove, Folsom, Galt and Rancho Cordova. Submitted to the Central Valley Regional Water Quality Control Board. Adopted on January 29, 2010. April 2009. <[http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders)>, accessed: July 7, 2010.

20 California Department of Water Resources, Bulletin 118 Updated 2003, Sacramento Valley Groundwater Basin. Descriptions of the: North American Sub-Basin (5-21.64), updated January 20, 2006, and the South American Sub-Basin (5-21.65), updated February 27, 2004. <[http://www.water.ca.gov/groundwater/bulletin118/sacramento\\_river.cfm](http://www.water.ca.gov/groundwater/bulletin118/sacramento_river.cfm)>.

21 California Department of Water Resources, Bulletin 118 Updated 2003, Sacramento Valley Groundwater Basin. Descriptions of the: North American Sub-Basin (5-21.64), updated January 20, 2006. <[http://www.water.ca.gov/groundwater/bulletin118/sacramento\\_river.cfm](http://www.water.ca.gov/groundwater/bulletin118/sacramento_river.cfm)>.

below ground surface. The study states that fluctuations in the groundwater level can occur due to variations in seasonal rainfall, flow in the Sacramento River, and changing uses on the project site.<sup>22</sup>

### Groundwater Quality

Groundwater quality in the South American subbasin is typically characterized by a calcium magnesium bicarbonate or magnesium calcium bicarbonate but may also include areas of sodium calcium bicarbonate or calcium sodium bicarbonate.<sup>23</sup> Concentrations of total dissolved solids in the subbasin range from 24 to 581 milligrams per liter (mg/l) and averaged 221 mg/l. The groundwater quality generally has few impairments of primary inorganics, radiological substances, nitrates, pesticides, volatile organic compounds or semi-volatile organic compounds. However, there are seven sites within the subbasin with significant groundwater contamination and almost a third of the wells sampled in the area (46 out of 144 wells) have impairments for secondary inorganics.<sup>24</sup> The impaired areas include Kiefer Boulevard Landfill, an abandoned PG&E site on Jiboom Street near Old Sacramento, the Southern Pacific and Union Pacific Railyards in downtown Sacramento, and three U.S. EPA-designated Superfund sites. The three Superfund sites include Aerojet, Mather Field, and the Sacramento Army Depot. Any contaminated groundwater plumes or remediation activities near the project area are discussed further in Section 5.5, Hazards and Hazardous Materials.

## REGULATORY SETTING

As discussed above and detailed in the Wastewater and Storm Drainage discussion later in this section, the project site is located within the City's CSS service area. The CSS collects and conveys the existing stormwater and sewer flows from the site for treatment and ultimately discharge. As such, some of the regulations discussed below are included to provide a background or context for the General Plan Master EIR's analyses and/or potentially applicable General Plan Policies. Where appropriate, regulations that may not be directly applicable to the proposed project have been identified.

### Federal

#### Surface Water Quality

Water quality objectives for all waters of the United States (including the Sacramento River) are established under applicable provisions of section 303 of the CWA. The CWA prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Additional information regarding this

22 RMA Group of Northern California. Geotechnical Investigation for Setzer Forest Products Property Development, 2555 3rd St., Sacramento, California. July 2010. Prepared for Northwest Land Park, LLC. p. 7.

23 California Department of Water Resources, Bulletin 118 Updated 2003, Sacramento Valley Groundwater Basin. Descriptions of the South American Sub-Basin (5-21.65), updated February 27, 2004. <[http://www.water.ca.gov/groundwater/bulletin118/sacramento\\_river.cfm](http://www.water.ca.gov/groundwater/bulletin118/sacramento_river.cfm)>.

24 *Ibid.*

permit is discussed under the “State” subheading, below. Standards for a total of 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1996. The U.S. EPA may add additional constituents in the future.

### **National Pollutant Discharge Elimination System (NPDES) Permits**

The NPDES permit system was established in the CWA to regulate municipal and industrial point discharges to surface waters of the U.S. Each NPDES permit for point discharges contains limits on allowable concentrations and mass emissions of pollutants contained in discharges. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that U.S. EPA must consider in setting effluent limits for priority pollutants.

The CWA was amended in 1987 to require NPDES permits for non-point source (i.e., stormwater) pollutants in discharges. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” (MEP) through the use of structural and non-structural Best Management Practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures, and structural measures (filter strips, grass swales and detention ponds).

### **Federal Emergency Management Agency (FEMA)**

FEMA is responsible for determining flood elevations and floodplain boundaries based on Corps studies. FEMA is also responsible for distributing the FIRMS, which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain.

FEMA allows non-residential development in the floodplain. However, construction activities are restricted within the flood hazard areas depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR). FEMA does not have building regulations for development in areas designated Zone Shaded X and would not require mandatory flood insurance for structures in Zone Shaded X.

## **State**

### **Surface Water Quality**

The SWRCB and CVRWQCB have established water quality standards that are required by section 303 of the CWA and the Porter-Cologne Water Quality Control Act. The Porter-Cologne Act states that basin plans consist of beneficial uses, water quality objectives, and a program of implementation for achieving water quality objectives. The Water Quality Control Plan, or Basin Plan, prepared by

the CVRWQCB, has established water quality numerical and narrative standards and objectives for rivers and their tributaries within its jurisdiction. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria, such as U.S. EPA water quality criteria developed under section 304(a) of the CWA apply.

Water quality objectives for the Sacramento River are specified in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the California Water Code (section 13240). The Basin Plan establishes water quality objectives, and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento-San Joaquin River Basin. Because the project area is located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

### **Construction Dewatering**

Dewatering during construction is sometimes necessary to keep trenches or excavations free of standing water when improvements or foundations/footings are installed where groundwater levels tend to be shallow. Clean or relatively pollutant-free wastewater that poses little or no threat to water quality may be discharged directly to surface water under certain conditions. The CVRWQCB has adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Permit conditions for the discharge of these types of wastewaters to surface water are specified in "General Order for Dewatering and Other Low-Threat Discharges to Surface Waters" (Order No. R5-2008-0081, NPDES No. CAG995001). Discharges may be covered by the permit provided they are (1) either four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd. Construction dewatering, well development water, pump/well testing, pipeline testing, and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. The general permit also specifies standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

It should be noted that this permit is not intended for use on groundwater where contamination exists even if the project and/or proponent have no connection with the contamination. Additionally, it is not intended for ground water cleanup projects or to regulate discharges that contain acute or chronic toxicity, chemical or organic constituents, bacteria, herbicides, pesticides, oil and grease, radioactivity, salinity or temperature that may adversely impact beneficial uses or exceed any water quality objective or standard.

### **Construction Site Runoff Management**

In accordance with NPDES regulations, to minimize the potential effects of construction runoff on receiving water quality, the state requires that any construction activity affecting one acre or more, with certain exceptions, must obtain a General Construction Activity Stormwater Permit (General Permit). The first General Permit was issued in 1992. The SWRCB adopted a revised General Permit in September 2009. Performance standards for obtaining and complying with the General

Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ. Under the 2009 General Permit, all construction activity over one acre must obtain a General Permit except for the following construction activities: agriculture-related land disturbances, discharges to combined sewer systems, activities covered by an individual NPDES permit, conveyances that discharge storm water runoff combined with municipal sewage, etc. Because the proposed project's construction activities would discharge to the City's CSS, this permit would not be applicable.

### **Wastewater Treatment Plant NPDES Permits**

As detailed further in the Wastewater and Storm Drainage discussion later in this section, the CSS transports flows to the City's Combined Wastewater Treatment Plant (CWTP), the Pioneer Reservoir treatment plant, and to the Sacramento Regional Wastewater Treatment Plant (SRWTP) for treatment and disposal. The NPDES Permit regulates waste discharge requirements from the CSS (NPDES No. CA0079111 and Order No. R5-2010-0004, adopted on January 29, 2010), as well as operation of the CSS, and grants the discharge of up to 380 mgd of treated wastewater from the CSS.

During wet weather, the SRWTP is contracted to accept up to 60 mgd of combined wastewater and stormwater runoff from the CSS. The Sacramento Regional County Sanitation District (SRCSD) holds a NPDES permit for discharges from the SRWTP into the Sacramento River. The original permit for the WTP was issued in October of 1974. The permit issued (No. CA 0077682) is a NPDES Self-Monitoring Permit that outlines performance standards for the effluent discharged into the Sacramento River. The permit has been renewed and amended several times since 1974 to reflect updated and changing water quality requirements and specific discharge limits. The most current permit was adopted in August 2000 by the CVRWQCB.

### **State of California Uniform Building Code**

The State of California Building Code (CBC) contains requirements for constructing structures in flood hazard zones as described below. These requirements are consistent with FEMA requirements for non-residential development in a 100-year floodplain.

Section 3106 of the CBC outlines the requirements of new or replacement mechanical and electrical systems proposed within flood hazard zones. This section only allows the placement of mechanical and electrical systems below the base flood elevation if properly protected to prevent water from entering or accumulating within the system components.

### **Low Impact Development**

Low Impact Development (LID) is a "sustainable practice that benefits water supply and contributes to water quality protection."<sup>25</sup> LID uses site design techniques that infiltrate, filter, store, evaporate,

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25 State Water Resources Control Board. 2010. *Low Impact Development – Sustainable Storm Water Management*. <[http://www.waterboards.ca.gov/water\\_issues/programs/low\\_impact\\_development](http://www.waterboards.ca.gov/water_issues/programs/low_impact_development)>. Accessed July 7, 2010. Last posted or revised January 28, 2010.

and detain runoff close to the source of rainfall to maintain a project site's pre-development runoff rates. It is an alternative to traditional stormwater management that collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility. The benefits of LID are both economical and environmental because implementation of LID results in less disturbance of the development area, conservation of natural features, and less expensive techniques than traditional storm water controls.

The SWRCB sets forth specific techniques, tools, and materials used in LID to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices may include:

- Bioretention and Rain Gardens;
- Rooftop Gardens;
- Sidewalk Storage;
- Vegetated Swales, Buffers and Strips, and Tree Preservation;
- Roof Leader Disconnection;
- Rain Barrels and Cisterns;
- Permeable Pavements;
- Soil Amendments;
- Impervious Surface Reduction & Disconnection; and
- Pollution Prevention and Good Housekeeping.

LID practices are incorporated into project design, as shown in the Northwest Land Park Planned Unit Development Guidelines (see Appendix B).

## **Local**

### **Joint NPDES Permit and Stormwater Quality Improvement Plan**

The County of Sacramento and the cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt have a joint NPDES permit (No. CAS082597) that was most recently adopted on September 11, 2008. The NPDES permit is for regulating stormwater discharges from municipal separate storm sewer systems (MS4), which do not include combined sewer systems and therefore would not be applicable areas within the City's CSS service area. The permittees listed under the joint permit have the authority to develop, administer, implement, and enforce storm water management programs within their own jurisdiction. The permit is intended to implement the Basin Plan through the effective implementation of BMPs to reduce pollutants in stormwater discharges to the MEP. The permit requires that the City impose water quality and watershed protection measures for all development projects. The NPDES permit prohibits discharges from causing violations of applicable water quality standards or result in conditions that create a nuisance or water quality

impairment in receiving waters. A key component of the NPDES permit is the implementation of the Stormwater Quality Improvement Plan (SQIP).

Urban storm water runoff is defined in the permit as including stormwater and dry weather flows from a drainage area that reaches a receiving water body or subsurface. The permit regulates the discharge of all wet and dry weather urban storm water runoff within the City and requires the City to implement a stormwater management program to reduce pollutants in stormwater to the MEP. The City created the SQIP to reduce the pollution carried by stormwater into local creeks and rivers to the MEP. The comprehensive plan includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The program also includes an extensive public education effort, target pollutant reduction strategy and monitoring program. The Central Valley RWQCB adopted the SQIP on January 29, 2010 (Order No. R5-2010-0017).

### **City of Sacramento Construction Site Stormwater Controls**

The City's Land Grading and Erosion Control Ordinance requires project applicants to prepare erosion, sediment and pollution control plans for both during and after construction of a project, and grading plans. The Ordinance applies to projects where 350 cubic yards or more of soil is excavated and/or disposed and requires BMPs that must be approved of by the City's Department of Utilities. In addition, the City's Stormwater Management and Discharge Control Ordinance minimizes or eliminates sediment and pollutants in construction site stormwater discharges.

### **Dewatering**

All new groundwater discharges to the CSS are regulated and monitored by the City's Utilities Department pursuant to Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council, and in accordance with Section 16. *Water Quality* of the City's Standard Specifications. Groundwater discharges to the City's sewer system are defined as construction dewatering discharges, treated or untreated contaminated groundwater cleanup discharges, and uncontaminated groundwater discharges. Unless approved in writing by the City's Utilities Department, groundwater and/or water from trench dewatering shall be free of sediment and other construction materials before entering the City sewer or storm drain system. A dewatering plan, including a water de-sedimentation plan, shall be submitted to the City's Department of Utilities for approval prior to any pumping or discharging of water to the CSS.

The City also requires that any short-term discharge be permitted, or an approved Memorandum of Understanding (MOU) for long-term discharges be established, between the discharger and the City. Short-term limited discharges of seven days duration or less must be approved through the City Department of Utilities by acceptance letter. Long-term discharges of greater duration than seven days must be approved through the City Department of Utilities and the Director of the Department of Utilities through a MOU process. The MOU must specify the type of groundwater discharge, flow rates, discharge system design, a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents, and a City-approved effluent

monitoring plan to ensure contaminant levels remain in compliance with State standards or SRCSD- and CVRWQCB-approved levels. All groundwater discharges to the sewer must be granted a SRCSD discharge permit. If the discharge is part of a groundwater cleanup or contains excessive contaminants, CVRWQCB approval is also required.

## City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to hydrology and water quality resources within the project area.

### ENVIRONMENTAL RESOURCES (ER)

**Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.**

#### Policies

- ER 1.1.3 **Stormwater Quality.** The City shall control sources of pollutants and improve and maintain urban runoff water quality through stormwater protection measures consistent with the city's National Pollution Discharge Elimination System (NPDES) Permit.
- ER 1.1.4 **New Development.** The City shall require new development to protect the quality of water bodies and natural drainage systems through site design, source controls, storm water treatment, runoff reduction measures, best management practices (BMPs) and Low Impact Development (LID), and hydromodification strategies consistent with the city's NPDES Permit.
- ER 1.1.5 **No Net Increase.** The City shall require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.
- ER 1.1.6 **Post-Development Runoff.** The City shall impose requirements to control the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.
- ER 1.1.7 **Construction Site Impacts.** The City shall minimize disturbances of natural water bodies and natural drainage systems caused by development, implement measures to protect areas from erosion and sediment loss, and continue to require construction contractors to comply with the City's erosion and sediment control ordinance and stormwater management and discharge control ordinance.

### ENVIRONMENTAL CONSTRAINTS (EC)

**Goal EC 2.1 Flood Protection. Protect life and property from flooding.**

#### Policies

- EC 2.1.3 **Funding for 200-year Flood Protection.** The City shall continue to cooperate with local, regional, State, and Federal agencies in securing funding to obtain the maximum level of flood protection that is practical, with a minimum goal of achieving at least 200-year flood protection as quickly as possible.

- EC 2.1.4 **Floodplain Storage Maintenance.** The City shall encourage the preservation of urban creeks and rivers to maintain existing floodplain storage.
- EC 2.1.5 **Floodplain Requirements.** The City shall regulate development within floodplains in accordance with State and Federal requirements and maintain the City's eligibility under the National Flood Insurance Program.
- EC 2.1.6 **New Development.** The City shall require evaluation of potential flood hazards prior to approval of development projects.
- EC 2.1.7 **Levee Setbacks for New Development.** The City shall prohibit new development within a minimum distance of 50 feet from the landside toe of levees. Development may encroach within this 50-foot area provided that "oversized" levee improvements are made to the standard levee section consistent with local, regional, State and Federal standards.
- EC 2.1.12 **Roadway Systems as Escape Routes.** The City shall require that roadway systems for areas protected from flooding by levees be designed to provide multiple escape routes for residents in the event of a levee failure.
- EC 2.1.14 **Comprehensive Flood Management Plan.** The City shall maintain, implement, update, and make available to the public the Local Comprehensive Flood Management Plan.
- EC 2.1.16 **Flood Risk Notification.** The City shall annually notify owners of residential development protected from flooding by a levee and/or subject to inundation in the event of levee failure of the risk.

## UTILITIES (U)

- Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.**

### Policies

- U 4.1.1 **Adequate Drainage Facilities.** The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.
- U 4.1.2 **Master Planning.** The City shall implement master planning programs to:
  - Identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding,
  - Ensure that public facilities and infrastructure are designed pursuant to approved basin master plans, and
  - Ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations).
- U 4.1.4 **Watershed Drainage Plans.** The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City's National Pollutant Discharge Elimination System (NPDES) permit.

- U 4.1.5 **New Development.** The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures to prevent on- or off-site flooding.

## **Applicable Mitigation Measures from the City of Sacramento 2030 General Plan**

No applicable mitigation measures.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The analysis of potential hydrology and water quality impacts is based on a review of the proposed project and information provided by the applicant's engineer. Potential impacts on flooding were evaluated qualitatively through review of the Nolte Engineer's Technical Memorandum on the Northwest Land Park's Drainage (2010), existing floodplain determinations by FEMA, and the General Plan Master EIR's analysis of potential flood hazards.

Impacts to surface and groundwater quality were analyzed by reviewing existing groundwater and surface water quality literature that pertains to the project area, identifying existing onsite ground and surface waters, including the depth to groundwater, and evaluating existing and potential sources of water quality pollutants based on the types of land uses and operational activities in the project area. Additionally, the applicability of federal and state regulations, ordinances, and/or standards to surface and groundwater quality of the project area and subsequent receiving waters were assessed.

### **Standards of Significance**

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- substantially degrade water quality and violate any water quality objectives set by the SWRCB, due to increases in sediments and other contaminants generated by consumption and/or operational activities; or
- substantially increase exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

### **Project-Specific Impacts and Mitigation Measures**

#### **5.11-3 Implementation of the proposed project could result in construction activities that could degrade water quality and violate state water quality objectives by increasing sedimentation and other contaminants entering streams and rivers.**

Construction activities associated with the approximately 31.7-acre proposed project would result in earth disturbing activities such as grading, excavation, and trenching for utility and infrastructure installation as well as the potential for dewatering due to the depth to groundwater in this area.

When portions of the project site are excavated or otherwise disturbed by construction activities, the potential for soil erosion and sedimentation in runoff discharging from the site would substantially increase during a rainstorm. In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials such as pipe sealant may also pose a threat to surface water quality. Through stormwater runoff, these sediments and contaminants would be transported to the CSS system and may, during large storm events, be transported directly to the Sacramento River with minimal prior treatment.

The General Plan Master EIR states that the 2030 General Plan would result in new development, redevelopment, infill development, and maintenance and upgrade activities for city infrastructure and facilities that would require land-disturbing construction activities (see Impact 6.7-1 in Section 6.7, Hydrology and Water Quality). These earth-disturbing construction activities could increase the potential for soil erosion and sedimentation in stormwater runoff. In addition, the Master EIR analysis states that the improper use of fuels, oils, and other construction-related hazardous construction materials may result in the transport of these hazardous materials to groundwater or surface waters and subsequent effects on the quality of these waters.

The 2030 General Plan requires compliance with NPDES requirements and implementation of a Spill Prevention and Control Program (SPCP). However, as described in the setting section above, in areas within the City's CSS collection area, compliance with the General Construction NPDES permit would not be applicable<sup>26</sup> and the City would only require construction activities to comply with the City's Grading, Erosion and Sediment Control Ordinance. Compliance with this control ordinance would include preparing an erosion and sediment control plan that identifies and implements a variety of Best Management practices (BMPs) to reduce the potential for erosion or sedimentation. A SPCP would include BMPs that minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities. The Master EIR found that implementation of an erosion and sediment control plan and a SPCP during construction activities would effectively mitigate any construction-related water quality impacts and would result in a less-than-significant impact.

The proposed project would potentially generate new sources of polluted runoff that could violate water quality standards through an increase in impermeable surfaces or groundwater dewatering during construction activities. Trenching and excavation activities associated with the proposed project could reach a depth that would expose the water table, in which case a direct path to the groundwater basin would become available for contaminants to enter the groundwater. Primary contaminants that could reach groundwater would include oil and grease, and construction-related hazardous materials. The proposed project's construction activities are anticipated to excavate to a maximum depth of 10 feet. As described previously, groundwater levels in the project area may

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26 State Water Resources Control Board. 2009. National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. <[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml)>, accessed June 24, 2010.

range from approximately four to 12 feet below the ground surface.<sup>27</sup> Therefore, dewatering may be required during construction. Any water removed as part of construction would be discharged to the city's CSS. However, as discussed in Impact 5.11-1, the proposed project would comply with the City's Grading, Erosion and Sediment Control Ordinance and would implement a SPCP; these actions would minimize the potential for any pollutants to affect groundwater quality during construction activities.

If construction-related groundwater dewatering is required, the project applicant and/or contractor would be required to comply with the City's Standard Specifications for Dewatering prior to any discharges to the CSS. Section 5.5, Hazards and Hazardous Materials, addresses contaminated groundwater remediation and associated dewatering, issues related to the potential interference with contaminated groundwater, and any interference with remediation activities. The project applicant and/or contractor would be responsible for complying with all of the City's dewatering requirements, including ensuring the dewatered groundwater quality meets the applicable standards and that a permit or MOU was obtained from the City and SRCSD.

General Plan Policies ER 1.1.3, ER 1.1.4, ER 1.1.7, and U 4.1.4 were included in the 2030 General Plan to minimize the potential for construction activities under the General Plan to degrade water quality and violate state water quality objectives. These policies would control sources of pollutants through stormwater quality protection measures consistent with the City's NPDES Permit; require new development projects to implement site design, LID, BMPs, and other measures consistent with the City's NPDES Permit; require construction contractors to comply with erosion and sediment control and stormwater discharge regulations; and require preparation of watershed drainage plans to define needed drainage improvements per City standards. Based on compliance with NPDES requirements and implementation of applicable General Plan policies, the Master EIR identified this as a less-than-significant impact.

In addition to implementing a SPCP and complying with the City's Erosion and Sediment Control and Stormwater Management and Discharge Control ordinances and the city's Standard Specifications for Dewatering prior to any discharges to the CSS, each of the proposed project's phases would comply with General Plan Policies ER 1.1.4 and 1.1.7. In accordance with General Plan Policy ER 1.1.4, the proposed project would include BMPs and LID features as described in Chapter 2, Project Description. General Plan Policy ER 1.1.7 would ensure the proposed project includes measures to protect areas from erosion and sediment loss during construction activities and that construction activities comply with the City's erosion and sediment control ordinance and stormwater management and discharge control ordinance. Adherence to the City's erosion and sediment control ordinance requirements, adherence to the stormwater management and discharge control ordinance requirements, development and implementation of a SPCP as required by City standards, and compliance with the applicable General Plan policies would reduce erosion and sedimentation impacts and ensure that the proposed project would have no additional significant environmental

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27 RMA Group of Northern California. Geotechnical Investigation for Setzer Forest Products Property Development 2555 3rd St., Sacramento, California. Prepared for Northwest Land Park, LLC, July 2010, p. 7.

effect related to degrading water quality and violating state water quality objectives not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

#### **5.11-4 Implementation of the proposed project could generate new sources of polluted runoff that could violate water quality standards.**

The General Plan Master EIR states that the 2030 General Plan would result in development that would increase impervious surfaces and increase stormwater runoff to the CSS and to the Sacramento and American rivers (see Impact 6.7-2 in Section 6.7, Hydrology and Water Quality). Runoff from new development typically contains oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients from fertilizers and animal waste, sediment, pesticides, herbicides, and other pollutants. If these pollutants were transported to surface waters or groundwater, they could impact the existing water quality. The City's implementation of its SQIP, as part of its compliance with its MS4 NPDES permit, along with compliance with the City's Land Grading and Erosion Control Ordinance, and City's Stormwater Management and Discharge Control Code would minimize the potential for these pollutants to affect stormwater quality.

Implementation of General Plan Policies ER 1.1.3 through ER 1.1.8 would reduce post-construction increases in runoff rates, maintain agreements for selected on-site stormwater quality facilities through the development permit process, reduce use of chemicals applied for landscape use, provide recycling programs and facilities to prevent unauthorized dumping, and provide watershed education to City staff. The Master EIR determined that meeting these policies and the previously mentioned requirements would minimize the infiltration of urban pollutants in stormwater runoff from percolating into the soil and degrading groundwater and would result in a less-than-significant impact.

The proposed project would potentially generate new sources of polluted runoff that could violate water quality standards through an increase in impermeable surfaces. Types of pollutants in runoff from the project site would be similar to those described above as discussed in the Master EIR. Following implementation of Phase 1, the proposed project would increase impervious surfaces from approximately 29 percent under existing conditions in the Phase 1 area to approximately 53 percent. However, development within Phase 1 would use a temporary detention basin sized to hold the difference between the existing and proposed runoff volumes during a 100-year 24-hour storm event. The temporary detention basin would be a triangular shaped earthen basin located in the future Community Park/Open Space area, as shown in Figure 2-10, with an overall storage volume of 0.58 AF. The basin would be approximately five feet deep with one foot of freeboard. An outlet

structure at the easterly end of the basin would control discharges to the proposed Phase 1 drainage system that would be connected to the existing 60-inch CSS pipeline in 5<sup>th</sup> Street.<sup>28</sup>

As future phases of the project are developed (Phases 2 through 4), and the existing buildings are demolished, the temporary basin would be eliminated. The temporary plugs in the proposed drainage collection system would be removed, and the additional piping to the basin would be eliminated. The basin would be filled and made part of the open space of the future Neighborhood Center Park site. Completion of all four phases of the proposed project would decrease the impervious surfaces within the project site from approximately 68 percent to approximately 53 percent through the combination of public and private pervious open space and the use of pervious pavement in private driveways.<sup>29</sup> The proposed project's overall reduction in the impervious surface area would also allow for an increased potential for groundwater recharge. In addition, the proposed project would include CSS facilities onsite to capture stormwater runoff from the site, as shown in Figure 2-8. Thus, similar to existing conditions, stormwater runoff from the project site would be captured in the City's CSS and treated prior to discharge into the Sacramento River.

General Plan Policies ER 1.1.4, 1.1.5, 1.1.6, and 1.1.7 would be applicable to the proposed project. Compliance with these policies would reduce the impervious surface area and, subsequently, the stormwater runoff from the project site from existing conditions; would include LID features; and would contribute no net increase in stormwater runoff peak flows. Additionally, during Phase 1 of the proposed project, a temporary detention basin would be used to control and reduce peak stormwater runoff flows. The project applicant and its contractor would be required to comply with all applicable measures described in the City's Land Grading and Erosion Control Ordinance, and Stormwater Management and Discharge Control Code. Compliance with these policies along with the proposed project's inclusion of LID features and a temporary detention basin would minimize the potential for the proposed project to generate any new polluted sources of runoff that could violate water quality standards. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

#### **5.11-5 Implementation of the proposed project could increase exposure of people and/or property to risk of injury and damage from a localized 100-year flood.**

Localized flooding refers to flooding caused by failure of the storm drainage system, which typically results in street flooding. Regional flooding, on the other hand, refers to flooding caused by a river system and typically affects much larger areas.

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28 Nolte Engineers. 2010. Project Drainage Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

29 *Ibid.*

the General Plan Master EIR states that buildout of the 2030 General Plan Policy Area would result in a net decrease in stormwater runoff rates from the existing conditions (see Impact 6.7-3 in Section 6.7, Hydrology and Water Quality). A reduction in the stormwater runoff rates would occur following implementation of the 2030 General Plan associated with implementation of General Plan Policies U 4.1.1 through U 4.1.5, EC 2.1.4, EC 2.1.6, EC 2.1.14, ER 1.1.4 and ER 1.1.5. General Plan Policies U 4.1.1 through U 4.1.5 would require that the City do the following: ensure all new drainage facilities are adequately sized and constructed; implements a master planning program to prevent 10-year street flooding and 100-year event structure flooding; coordinates with Sacramento County and other agencies to develop regional stormwater facilities; requires developers to prepare watershed drainage plans that define needed drainage improvements, and require developers to submit drainage studies that adhere to City stormwater design requirements and incorporate measures to prevent on- or off-site flooding. Additionally, General Plan Policy EC 2.1.6 would require new development to evaluate potential peak flow flood hazards and prevent on- or off-site post-project flooding. Policy ER 1.1.5 requires that there be no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event. The Master EIR determined that impacts due to localized flooding as a result of the 2030 General Plan would be considered less than significant.

The proposed project would replace existing light industrial and commercial uses on the project site with up to 968 residential units, commercial-retail uses, and parks and open space. Development of the residential units and other uses would likely increase the number of people using the project site and therefore could potentially increase the exposure of people and/or property to risk of injury or damage to 100-year localized flooding. However, implementation of the proposed project would reduce the percentage of impervious surface area within the project site and the potential for localized flooding, in part through the inclusion of LID features in the project design, as described in Chapter 2, Project Description. The proposed project would reduce the total impervious surface area within the project site from approximately 68 percent under existing conditions to approximately 53 percent.<sup>30</sup> As described in Impact 5.11-2, the proposed project would increase impervious surfaces from approximately 29 percent under existing conditions in the Phase 1 area to approximately 53 percent. However, a temporary detention basin would be used to capture the increased stormwater flows and ensure no net increase in runoff from the existing Phase 1 area conditions. The proposed project would implement new stormwater collection and conveyance facilities onsite (detailed in the following Sewer and Storm Drainage section) to capture and convey runoff flows to the existing CSS system. There are no known existing flooding or stormwater capacity issues within the project site<sup>31</sup> and implementation of these stormwater collection facilities would minimize the potential for localized flooding.

The proposed project would also comply with General Plan Policies ER 1.1.4, 1.1.5, U 4.1.1, U 4.1.4, and U 4.1.5. As part of this compliance, a drainage study for the proposed project would be submitted to the City's Department of Utilities for review and approval to ensure the study adheres to

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30 *Ibid.*

31 *Ibid.*

City stormwater design requirements and prevents on- and off-site flooding. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

#### **5.11-6 Implementation of the proposed project could increase exposure of people and/or property to risk of injury and damage from a regional 100-year flood.**

The General Plan Master EIR states that future development both in undeveloped areas as well as in developed areas as part of buildout of the 2030 General Plan would increase the number of residents exposed to potential hazards from regional flooding (see Impact 6.7-4 in Section 6.7, Hydrology and Water Quality). General Plan policies that address regional floods include Policy U 4.1.1 through U 4.1.5 and EC 2.1.2 through EC 2.1.16. These General Plan policies generally require the City to implement master planning programs to prevent 100-year event structure flooding, ensure new and existing levees adequately provide flood protection, regulate development within floodplains, evaluate flood hazards prior to approval of development projects, and provide better flood evacuation and risk notification in case of flooding as a result of levee or dam failure. Policy EC 2.1.3 of the General Plan ensures funding to obtain a minimum level of 200-year regional flood protection as quickly as possible. The Master EIR identified this as a less-than-significant impact.

The proposed project would be constructed within the FEMA-designated Zone Shaded X, which indicates it is in an area protected by levees from the 100-year floodplain of the Sacramento River. The proposed project would not directly affect the nearby Sacramento River levees or the ability of these levees to protect against a 100-year flood event. However, implementation of the proposed project would result in the replacement of commercial and industrial uses in an area that is subject to flooding, which would potentially result in the increased exposure of people and/or property to risk of injury or damage from a regional 100-year flood.

The proposed project would be in compliance with the following applicable General Plan policies: EC 2.1.6, EC 2.1.12, U 4.1.4, and U 4.1.5. The proposed project allows for multiple escape routes by providing access on multiple streets in Phase 1 to 5<sup>th</sup> Street and by providing access to 5<sup>th</sup>, 3<sup>rd</sup> Street, and Broadway following development of Phases 2 through 4. In addition, the proposed project includes identified drainage improvements to prevent onsite and offsite flooding. Compliance with these measures in addition to the City's compliance with the previously-mentioned General Plan policies would ensure that the proposed project would not result in increased exposure of people or property to 100-year regional flooding. Therefore, impacts related to the exposure of people and/or property to risk of injury and damage from a regional 100-year flood as a result of the proposed project would be less than significant. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

### Cumulative Impacts

The geographic context for the analysis of cumulative hydrology and water quality impacts is the Sacramento River and the Delta watershed areas for analysis of water quality impacts. For analysis of flooding impacts, the geographic context is the General Plan Policy Area and areas upstream that would flow into localized drainage facilities (for analysis of localized flooding impacts) and the lower Sacramento River watershed (for analysis of regional flooding impacts). This analysis follows those approaches. The General Plan Master EIR determined that cumulative development in the city, in addition to other development in the watershed, could result in development of currently undeveloped land and potential increases in polluted runoff to local surface waters resulting in a potentially significant cumulative impact. However, future development subject to the NPDES MS4 permit would be required to comply with the SQIP; BMPs in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions; LID measures to reduce pollutants; the City's Stormwater Management and Discharge Control Code and Erosion and Grading Ordinance; General Plan policies related to hydrology and water quality; and the General Construction NPDES permit. Areas served by the City's CSS would require construction activities to comply with the City's Grading, Erosion and Sediment Control Ordinance, which would include preparing an erosion and sediment control plan that identifies and implements a variety of BMPs to reduce the potential for erosion or sedimentation. A SPCP would include BMPs that minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities. The proposed project is located within the General Plan Policy Area and is consistent with the land use assumptions of the 2030 General Plan and Master EIR. The proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

The General Plan Master EIR also found that development upstream of the Policy Area designated by the General Plan could result in increased impervious areas, increased runoff, and increased exposure of residents and structures to a localized 100-year flood event. In addition, an increase in the population in the lower Sacramento River's watershed could result in increased exposure to a regional 100-year flood event. However, most of the population growth would occur in areas designated by FEMA to be protected from 100-year flood events. In addition, compliance with General Plan Policies ER 1.1.5 and 4.1.5 would ensure that there would be no net increase in stormwater from buildout of the General Plan. The proposed project would be located in an area protected by levees from a 100-year flood event and would reduce the percentage of impervious surface area from existing conditions within the project site. Therefore, because the proposed project is located within the General Plan Policy Area and is consistent with the land use assumptions of the 2030 General Plan and Master EIR the proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

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## WASTEWATER AND STORM DRAINAGE

### INTRODUCTION

This section addresses the capacity of City systems for collection, conveyance, and treatment of wastewater and stormwater flows from the project site, particularly as associated with the City's combined sewer system. Issues associated with local or regional flooding, as well as water quality considerations, are evaluated above in the Hydrology and Water Quality section.

Two comment letters associated with the provision of sewer and storm drainage were received from the Sacramento Regional Community Services District (SRCSD) during the NOP review period. Comments from the SRCSD requested that the project's wet and dry weather average and peak flows be quantified to determine potential cumulative capacity impacts on the City Interceptor, which ultimately conveys combined sewer and stormwater flows to the SRWTP. In addition, the SRCSD provided direction on determining wastewater flow rates from the project. The second SRCSD letter (May 17, 2010) stated that development of the proposed project would require payment of sewer impact fees and issuance of a sewer permit from SRCSD. The SRCSD would issue a sewer permit if it was determined that there is sufficient capacity to accept the combined flows from the proposed project and the project applicant has met all other service requirements. These comments are addressed in Impacts 5.11-7 and 5.11-8.

Information reviewed to prepare this section included various technical documents, information from the City staff, information from the project applicant's stormwater and utility infrastructure engineers, and regulatory agency information from various websites which are cited in the footnotes. The primary sources of information referenced for this section include the Nolte Engineers' Project Drainage Technical Memorandum for the Northwest Land Park Project, June 30, 2010; the Nolte Engineers' Project Sanitary Sewer Technical Memorandum for the Northwest Land Park Project, June 30, 2010; preliminary design plans for the proposed project; Section 6.11, Public Utilities, of the General Plan Master EIR; the California Regional Water Quality Control Board, Central Valley Region, The Water Quality Control Plan (Basin Plan), Fourth Edition – 1998, revised 2004; and information from staff at the City's Department of Utilities.

### ENVIRONMENTAL SETTING

#### Combined Sewer System

The older Central City area is served by a system in which sanitary sewage and storm drainage are collected and conveyed in the same system of pipelines, referred to as the Combined Sewer System (CSS). The area served by the CSS extends from the Sacramento River on the west, to the vicinity of Sutterville Road and 14th Avenue on the south, to about 65th Street on the east, and to North B Street and the American River on the north and constitutes approximately 7,510 acres or 12 percent of the total area within the current city boundaries. There are some local areas within this larger area that have separate sewer and storm drainage systems, but the bulk of the area is served by the combined system.

The City's CSS consists of pipelines and other facilities. Facilities include pumping stations, an off-line storage facility known as Pioneer Reservoir that also functions as a primary treatment plant and the CWTP, another primary treatment plant with a capacity of 130 mgd. In addition, there are other off-line and in-line storage facilities that have been constructed at locations in the system that are vulnerable to flooding of combined sewage. The collection system is divided into networks consisting of trunks, interceptors, reliefs, force mains, laterals, and other pipelines.

Currently all flows into the CSS are conveyed westerly to two pumping stations (Sump 2/2A and 1/1A) located on the Sacramento River. For secondary treatment and disinfection of the flow, the City has entered into an agreement with the SRCSD to convey up to 60 mgd to the SRWTP. This treatment capacity is currently sufficient for dry weather flows. During heavy storms where the flows exceed this amount, the CWTP at South Land Park Drive and 35th Avenue is used to provide primary treatment of an additional 130 mgd. Excess flows beyond 190 mgd are diverted to the Pioneer Reservoir storage and treatment facility that has a capacity of 350 mgd. When all three treatment facilities (SRWTP, CWTP, and Pioneer) have reached capacity, excess flows are directly discharged into the Sacramento River from Sump 2 without treatment. These are called combined sewer overflows (CSOs).

The CSO discharges of untreated combined wastewater to the river consist primarily of stormwater runoff (90 percent or more), with the remainder as sanitary sewage. The water quality of these discharges varies significantly depending upon the point of discharge and extent of treatment at Pioneer Reservoir (removal of floatables and grit). In the Central City, when the pipeline system capacities are surpassed, the excess flows flood local streets through maintenance holes and catchbasins. Three CSOs occurred between October 2007 and September 2008.<sup>32</sup> The last CSO occurred in 2008 during a storm event with 1.5 inches of rain falling in a 24-hour period.

In addition, the City is required to comply with the SWRCB Order No. 2006-0003, Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems. The purpose of the Order is to require agencies to prepare a plan and schedule for measures to be implemented to reduce CSOs, as well as measures to effectively clean-up and report CSOs.

### **On-site Storm Drainage Facilities and Runoff Flows**

The project site's existing stormwater facilities include a network of CSS pipes that drain both stormwater and sewer flows generally from the northwest to the southeast within the project site. As shown in Figure 2-8 in Chapter 2, Project Description, the existing site storm drainage system includes a series of 8- to 24-inch CSS pipes onsite and within Broadway, 3<sup>rd</sup> Street, and 1<sup>st</sup> Avenue that transport stormwater flows to the 60-inch main CSS pipeline underlying 5<sup>th</sup> Street. The 5<sup>th</sup> Street main pipeline transports collected flows through the Land Park area. There are no known

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32 Central Valley Regional Water Quality Control Board (CVRWQCB). 2010. Waste Discharge Requirements for the City of Sacramento Combined Wastewater Collection and Treatment System, Sacramento County, Order No. R5-2010-0004. Adopted January 28, 2010. <[http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/#sacramento](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#sacramento)>, accessed July 9, 2010.

existing flooding issues within the project site.<sup>33</sup> There are no onsite stormwater quality treatment features because the City does not require onsite treatment for storm flows that enter the CSS.

The existing impervious surface area of the 31.7-acre project site is approximately 68 percent. During a 100-year 24-hour storm event that has a total rainfall quantity of 4.29 inches, the total storm volume over the entire project site would be approximately 3.7 mg or approximately 2.5 mg from the impervious surfaces.<sup>34</sup>

## **Existing Wastewater System**

### **Wastewater Treatment**

The SRWTP, which is located just south of the city limits, is owned and operated by SRCSD and provides wastewater treatment for the entire City of Sacramento. Wastewater is routed to the wastewater treatment plant by collection systems owned by SRCSD and the cities of Sacramento and Folsom. The SRWTP is a high-purity oxygen-activated sludge facility, and is permitted to treat an average dry weather flow (ADWF) of 181 mgd and a daily peak wet weather flow of 392 mgd. After secondary treatment and disinfection, a portion of the effluent from the plant is further treated in SRCSD's Water Reclamation Facility and then used for landscape irrigation within the city of Elk Grove. The majority of the treated wastewater is dechlorinated and discharged into the Sacramento River.

The facility's ADWF in 2009 was approximately 146 mgd during the months of July through September.<sup>35</sup> SRCSD's long-term planning effort, the SRWTP 2020 Master Plan, projected population-based flows for 2005 of 174 mgd and 196 mgd for 2010. For year 2020, ADWF is projected to be 218 mgd. Current flows in the SRCSD service area (which includes the City's contribution) are, therefore, under the projections for both 2005 and 2010. An EIR was prepared for the SRWTP 2020 Master Plan (SCH # 2002052004) and was certified by the SRCSD Board of Directors in June 2004.

Additional discussions of the CWTP and Pioneer Reservoir are provided in the Hydrology and Water Quality section discussed earlier in this section.

### **Project Site Wastewater Facilities and Flows**

Wastewater flows within the project site are collected and conveyed by the existing CSS facilities, as described above for the project site's existing storm drainage facilities and as shown on Figure 2-9. The site's existing uses include warehouse and manufacturing buildings with supporting office and retail space. The site is comprised of a total of 24 buildings with a variety of uses. For the purposes of estimating the existing wastewater (i.e., sanitary sewer) flows generated within the project site, the

33 Nolte Engineers. 2010. Project Drainage Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

34 *Ibid.*

35 Robert Seyfried, Senior Civil Engineer, Sacramento Regional County Sanitation District & Sacramento Area Sewer District, personal communication with Megan Giglini at PBS&J, July 1, 2010.

uses were broken down into three main categories: Warehouse (281,200 sf), Office (23,300 sf), and Market (110,100 sf). Average and peak day dry weather wastewater flows were calculated using the City's Design and Improvement Standards, Section 9-Sanitary Sewer Design Standards and are included in Table 5.11-7.<sup>36</sup> Wet weather flows from the project site under existing conditions were estimated by combining the peak dry weather flows (0.0858 mgd) from the site with the site's impervious surface runoff (2.51 mgd), during a 100-year 24-hour storm event, for a total of approximately 2.60 mgd.

Land Use	Gross Floor Area (sf)	Conversion Factors to Equivalent Single Family Dwelling Units (ESD per 1000 sf of gross floor area)	Equivalent Single Family Dwelling Units (ESDs)	Gallons per day (where 1 ESD = 400 gallons per day)
<b>Existing Conditions at Entire Project Site</b>				
Warehouse	290,200	0.1	29.02	11,608
Office	23,300	0.2	4.66	1,864
Market	110,100	0.2	22.02	8,808
<b>Total Average Dry Weather Flow</b>				<b>22,280</b>
Peaking Factor <sup>1</sup>				3.85
<b>Total Peak Dry Weather Flow</b>				<b>~85,800</b>
<b>Existing Conditions at Phase 1 area of Project Site</b>				
Warehouse	28,800	0.1	2.88	1,152
<b>Average Dry Weather Flow</b>				<b>1,152</b>
Peaking Factor				4.0 <sup>3</sup>
<b>Peak Dry Weather Flow</b>				<b>4,608</b>
Notes: All calculations are based on the City of Sacramento's Design and Improvement Standards, Section 9 – Sanitary Sewer Design Standards. 1. The peaking factor is obtained from Plate 9-2 of the Design and Procedures Manual. Source: Nolte Engineers, 2010. Sanitary Sewer Technical Memorandum.				

## REGULATORY SETTING

### Federal

#### Environmental Protection Agency's National CSO Control Policy

In April 1994, the U.S. EPA issued its Combined Sewer Overflow Policy for controlling discharges to the nation's waters from combined sewer systems (40 CFR Part 122). One of the cornerstones of the CSO Policy is the requirement for Nine Minimum Controls (NMCs), which apply to every CSS in the nation. The NMCs are defined as the minimum technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality without extensive engineering studies or major construction. This policy stipulates that at least 85 percent of the average annual CSS storm flow would be captured and would receive primary treatment with disinfection prior to discharge. Based on Attachment F of the City's Combined Wastewater Collection and Treatment System

36 Nolte Engineers. 2010. Project Sanitary Sewer Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

NPDES permit (2010),<sup>37</sup> the City captures and provides treatment for up to 100 percent of the combined sewer flows, rather than the minimum 85 percent, the majority of the time. Based on a 1995 water quality assessment by the City, water quality impacts and beneficial use impairments to the Sacramento River were negligible due to CSOs. The City produced a Long Term Control Plan (LTCP) that includes system improvements to reduce CSOs to the Sacramento River and CSS outflows to city streets. However, the 2010 NPDES permit requires continued implementation of the LTCP to document whether implemented LTCP projects are ensuring continued compliance with water quality standards or are adequately protecting designated uses.

## **State**

### **NPDES Permit for the City's Combined Wastewater Collection and Treatment System**

The NPDES Permit regulates waste discharge requirements from the CSS (NPDES No. CA0079111 and Order No. R5-2010-0004, adopted on January 29, 2010), as well as operation of the CSS, and grants the discharge of up to 380 mgd of treated wastewater from the CSS. All piping, drains, basins and pumps connected to the CSS are maintained and operated by the City's Utilities Department.

## **Local**

### **Combined System Development Fee**

The City has developed a sewer ordinance to replace the Mitigation Agreement previously required for developers. The ordinance was adopted March 15, 2005. The ordinance requires payment of a development fee for projects within the CSS service boundary. Key aspects of the CSS development fee include:

- A fee of \$2,826.56 per each equivalent single-family dwelling unit (ESD) exceeding 25 that will be subject to periodic adjustments.
- The first 25 ESDs of a development will be charged \$113.27 per ESD.
- CSS development fees may be fully or partially offset by constructing or cost sharing in the construction of a mitigation project approved by the City Department of Utilities.
- The fees are used to recover an appropriate share of the capital costs of the City's existing and/or new CSS facilities.
- Fees will be collected and deposited in a fund for the City to construct larger projects to mitigate multiple developments.

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37 Central Valley Regional Water Quality Control Board (CVRWQCB). 2010. Waste Discharge Requirements for the City of Sacramento Combined Wastewater Collection and Treatment System, Sacramento County, Order No. R5-2010-0004. Adopted January 28, 2010. <[http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/#sacramento](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#sacramento)>, accessed: July 9, 2010.

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## Wastewater Discharges and CSS Conditions of Use

Any discharges into the City's wastewater system, combined or separated, must meet the conditions listed within Chapter 15.04 of the Sacramento County Code, and Chapter 13.08 of the Sacramento City Code. Section 13.080.020 of the Sacramento City Code prohibits the discharge of any substances, materials, waters, or waste if the discharge would violate any sewer use ordinance enacted by the SRCSD. Section 13.08.030 of the Sacramento City Code identifies specific waters, wastes, and substances that may not be discharged to the sewer. In addition, Section 13.08.040 requires the implementation of certain pretreatment BMPs prior to the discharge of wastewater or waste to the sewer.

Any discharge into the CSS must have a Sewer Use Questionnaire on file with the SRCSD, which would apply to the proposed project. The SRCSD has adopted a Sewer Use Ordinance that regulates the use of public sewers connected to the SRWTP. The wastewater discharged from the SRWTP to Sacramento River is regulated under a NPDES permit issued by the RWQCB. Discharge limitations are specified in the permit to limit water quality impacts in the Sacramento River. Categorical Pretreatment Standards have also been established for the pretreatment of certain classes of industrial wastes discharged to publicly owned treatment works, such as the SRWTP. The purpose of these standards is to protect the SRWTP and the environment by regulating potentially harmful discharges to the sewer from industrial and commercial businesses.

## Sacramento Regional County Sanitation District (SRCSD)

The SRCSD is a separate political subdivision of the State of California formed under the State of California Health and Safety Code. As such, the SRCSD's policies must conform to the statutes of the State Health and Safety Code. Additionally, the SRCSD is a separately funded entity that does not depend upon Sacramento County for funding capital improvements, maintenance, or operations. User fees provide for the systems' operation and maintenance, while hookup fees provide most of the funding for new trunks and interceptors. The SRCSD requires a regional connection fee be paid to the SRCSD for any users connecting to or expanding sewer collection systems (SRCSD Ordinance No. SRCSD-0043).

## City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to wastewater and storm drainage resources within the project area.

### ENVIRONMENTAL RESOURCES (ER)

**Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.**

Policies

- ER 1.1.5 **No Net Increase.** The City shall require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.
- ER 1.1.6 **Post-Development Runoff.** The City shall impose requirements to control the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.

**UTILITIES (U)**

**Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high-quality public infrastructure facilities and services throughout the city.**

Policies

- U 1.1.1 **Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide these City services.
- U 1.1.3 **Sustainable Facilities and Services.** The City shall continue to provide sustainable utility services and infrastructure in a cost-efficient manner.
- U 1.1.5 **Timing of Urban Expansion.** The City shall assure that new public facilities and services are phased in conjunction with the approved urban development it is intended to service.
- U 1.1.6 **Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.
- U 1.1.7 **Infrastructure Finance.** The City shall develop and implement a financing strategy and assess fees to construct needed water, wastewater, stormwater drainage, and solid waste facilities to maintain established service levels and to mitigate development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development). The City shall also assist developers in identifying funding mechanisms to cover the cost of providing utility services in infill areas.
- U 1.1.8 **Infill Areas.** The City shall identify and prioritize infill areas for infrastructure improvements.
- U 1.1.9 **Joint Use Facilities.** The City shall support the development of joint use water, drainage, and other utility facilities as appropriate in conjunction with schools, parks, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities.
- U 1.1.11 **Underground Utilities.** The City shall require undergrounding of all new publicly owned utility lines, encourage undergrounding of all privately owned utility lines in new developments, and work with electricity and telecommunications providers to underground existing overhead lines.

**Goal U 3.1 Adequate and Reliable Sewer and Wastewater Facilities. Provide adequate and reliable sewer and wastewater facilities that collect, treat, and safely dispose of wastewater.**

Policies

U 3.1.1 **Sufficient Service.** The City shall provide sufficient wastewater conveyance, storage, and pumping capacity for peak sanitary sewer flows and infiltration.

U 3.1.2 **New Developing Areas.** The City shall ensure that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs to avoid the need for future upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future. Infrastructure and facility planning should discourage over-sizing of infrastructure which could contribute to growth beyond what was anticipated in the 2030 General Plan.

U 3.1.3 **Stormwater Infiltration Reduction.** The City shall develop design standards that reduce infiltration into new City-maintained sewer pipes.

U 3.1.4 **Combined Sewer System Rehabilitation.** The City shall continue to rehabilitate the Combined Sewer System (CSS) to provide adequate wastewater collection, treatment, and disposal in areas served by this system.

**Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.**

Policies

U 4.1.1 **Adequate Drainage Facilities.** The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

U 4.1.2 **Master Planning.** The City shall implement master planning programs to:

- Identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding,
- Ensure that public facilities and infrastructure are designed pursuant to approved basin master plans, and
- Ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations).

U 4.1.4 **Watershed Drainage Plans.** The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City's National Pollutant Discharge Elimination System (NPDES) permit.

U 4.1.5 **New Development.** The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures to prevent on- or off-site flooding.

## Applicable Mitigation Measures from the City of Sacramento 2030 General Plan

No applicable mitigation measures.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

Stormwater runoff volumes and flows were calculated by Nolte Engineering using the City's Design and Procedures Manual for estimation of stormwater runoff from development of the entire project site and to size the on-site stormwater conveyance system. Stormwater runoff volumes were analyzed by Nolte Engineers using the Rational Method, per the Section 11-Storm Drainage Design Standards of the manual. The project's drainage system is designed based on the manual's standards for infill development. To determine potential impacts of the project's development, estimated stormwater runoff flows and the percentage of impervious surfaces following implementation of the proposed project were compared to the existing impervious surface area and runoff flows in the project site. Because the project site discharges both stormwater and wastewater flows to the City's CSS, potential impacts on existing conveyance and treatment facilities were evaluated by considering the combined effect of the stormwater and wastewater flows generated by the proposed project compared to existing conditions.

In addition, the proposed project would result in a variety of land uses and increases in population that would generate new sources of wastewater flows. This analysis used the square footage for the proposed land uses and the following generation rates for wastewater flows:<sup>38</sup>

- Retail/Commercial/Mixed-Use = 0.2 ESD/1,000 sf (gross floor area)
- Residential = 1 ESD
- Condominiums & Duplex units = 0.75 ESD/unit

Using these generation rates, an estimate of total wastewater flows were determined for the proposed project, and compared to the existing capacity of transmission pipes and treatment plants serving the project. Table 5.11-8 shows the volume of wastewater generated by the proposed project, along with peak flow rates.

The cumulative impact discussion analyzes the proposed project's impacts in the context of the General Plan Master EIR's analysis of the wastewater flow increases that are expected to occur as a result of buildout of the 2030 General Plan, including from infill projects similar to the proposed project. Specifically, the cumulative analysis considers the potential environmental effects of meeting the wastewater and stormwater conveyance and treatment demands of the proposed project in addition to the other anticipated demand from development served by the City and the SRCSD through year 2030.

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38 Nolte Engineers. 2010. Project Sanitary Sewer Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

<b>TABLE 5.11-8</b>				
<b>AVERAGE AND PEAK DAY DRY WEATHER WASTEWATER FLOWS GENERATED FROM THE PROPOSED PROJECT</b>				
Land Use	Gross Floor Area or Number of Residential Units (sf)	Conversion Factors to Equivalent Single Family Dwelling Units (ESD per 1000 sf of gross floor area or per residential units)	Equivalent Single Family Dwelling Units (ESDs)	Gallons per day (where 1 ESD = 310 gallons per day) <sup>1</sup>
<b>Proposed Project (Phases 1 through 4)</b>				
Retail/Commercial/Mixed Use	15,000	0.2	3	930
Residential	968	0.75	726	225,060
<b>Total Average Dry Weather Flow</b>				<b>225,990</b>
Peaking Factor <sup>2</sup>				2.9
<b>Total Peak Dry Weather Flow</b>				<b>~655,400</b>
<b>Phase 1 of the Proposed Project</b>				
Residential	208	0.75	156	48,360
<b>Average Dry Weather Flow</b>				<b>48,360</b>
Peaking Factor <sup>2</sup>				3.65
<b>Peak Dry Weather Flow</b>				<b>176,500</b>
Notes: All calculations are based on the City of Sacramento's Design and Improvement Standards, Section 9 – Sanitary Sewer Design Standards.				
1. A reduced generation rate for new infill planning areas of 310 gallons per day per ESD is being considered by the City of Sacramento in response to the newer County of Sacramento standards and reduced water usage in new development.				
2. The peaking factor is obtained from Plate 9-2 of the Design and Procedures Manual.				
Source: Nolte Engineers, 2010. Sanitary Sewer Technical Memorandum.				

## **Standards of Significance**

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments; and
- require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

## **Project Components**

Stormwater and wastewater facilities included in the proposed project are described in Chapter 2, Project Description. In addition, the temporary detention basin that would be constructed during Phase 1 of the proposed project is detailed in Impact 5.11-4 of the Hydrology and Water Quality discussion in this section. Stormwater and wastewater flows generated as part of the proposed project would connect to the City's CSS and either be conveyed to the SRWTP for treatment and discharge, or through the City's alternative facilities during high flow events when flows exceed the capacity of the system or the thresholds mandated by the City's agreement with the SRCSD. No increases over pre-existing runoff are permitted in the CSS without mitigation approved in advance of development.

## **Project-Specific Impacts and Mitigation Measures**

### **5.11-7 Implementation of the proposed project could generate additional wastewater and stormwater that could require the expansion of existing conveyance and treatment facilities.**

The General Plan Master EIR states that the 2030 General Plan would increase wastewater flows that would require conveyance to and treatment at the SRWTP (see Impact 6.11-3 in Section 6.11, Public Utilities). The SRWTP and its conveyance systems have been master planned through 2020 and buildout. The SRWTP has a planned capacity of 218 mgd ADWF for 2020 and a capacity of 350 mgd ADWF at buildout. To fund expansions to the both the conveyance and treatment systems, the SRCSD requires a regional connection fee be paid to the District for any users connecting to or expanding sewer collection systems (SRCSD Ordinance No. SRCSD 0043). Development under the City's 2030 General Plan would also increase the demand for conveyance capacity in the local City-maintained sewer lines that connect to major trunk lines and interceptors in the separate sewer system. For the areas in the city that are served by the CSS, there would not be a substantial increase in sewage flows to the system because it is already limited in capacity, and flows must currently be mitigated in accordance with the Combined System Development Fee. Potential increases in stormwater flows would be accommodated through implementation of regional stormwater facilities, design of drainage facilities, and ensuring public facilities and infrastructure are designed in accordance with basin master plans.

General Plan Policies U 1.1.1 through U 1.1.3, U 1.1.5 through U 1.1.8, U 3.1.2, U 3.1.3, and U 3.1.4 were included in the 2030 General Plan to ensure that there is sufficient capacity to accommodate increased wastewater and stormwater flows through buildout of the General Plan. These policies would ensure that the City provides and maintains adequate wastewater and stormwater drainage services, establishes and maintains level of service standards for these services, provides sustainable facilities and services, ensures new facilities are phased in conjunction with development, and prioritize infill areas for infrastructure improvements. In addition, Policy U 1.1.6 requires that new development provides adequate facilities or pays its fair share of the cost for facilities to provide services without adversely impacting current service levels. The General Plan policies mentioned above would also require that the City provide sufficient wastewater conveyance facilities for peak sanitary sewer flows, ensure public facilities and infrastructure are sized to meet the growth projected in the 2030 General Plan, reduce stormwater infiltration into new City-maintained sewer pipes, and continue to rehabilitate the CSS. Implementation of these policies in addition to the master planning of the SRCSD's conveyance and treatment facilities would provide sufficient capacity to accommodate increases in wastewater. Thus, the Master EIR found that buildout of the 2030 General Plan would not require the expansion of existing wastewater and stormwater facilities and infrastructure and would result in a less-than-significant impact.

The proposed project would result in the creation of impermeable surfaces and the development of residential and commercial/retail/mixed-use buildings that would generate additional wastewater. As discussed in Impact 5.11-4, implementation of the proposed project would decrease the impervious surfaces within the project site from approximately 68 percent to approximately 53 percent through

the combination of public and private open space and the use of pervious pavement in private driveways. Use of a temporary detention basin during Phase 1 would ensure that the difference in stormwater runoff in Phase 1 (due to an increase in impervious surfaces from approximately 29 to 53 percent following the development of Phase 1) between the existing and proposed project's runoff volumes during a 100-year 24 hour storm would be stored. Thus, the proposed project would result in a net reduction of stormwater runoff from the project site through the overall decrease in impervious surfaces. During a 100-year 24 hour storm with a total rainfall of 4.29 inches, this impervious surface reduction would equate to a total runoff reduction volume of approximately 554,000 gallons over existing conditions.

As shown in Table 5.11-9, average and peak dry weather wastewater flows generated by the proposed project would increase from existing conditions. The net increase in the peak dry weather flows for the overall project as well as only Phase 1 of the project would be approximately 569,600 and 171,892 gallons per day, respectively. Wastewater and stormwater runoff flows from the proposed project would be combined prior to being discharged into the City's CSS. Impervious surface stormwater flows from the project site following during a 100-year 24-hour storm event would be approximately 1.96 mgd, which is less than the existing flows of approximately 2.51 mgd. Therefore, during a 100-year 24-hour storm, the proposed project would contribute an additional estimated 15,600 gallons per day (or approximately 0.16 mgd of wet weather flows) more to the CSS than under existing conditions (after calculating the difference between the site's peak dry weather flow and the net reduction in stormwater flows).

<b>TABLE 5.11-9</b>	
<b>AVERAGE AND PEAK DAY DRY WEATHER WASTEWATER FLOWS GENERATED FROM THE PROPOSED PROJECT COMPARED TO EXISTING FLOWS</b>	
<b>Flow Conditions</b>	<b>Gallons per day</b>
<b>Comparison of Overall Proposed Project (Phases 1 through 4) to Existing Conditions</b>	
Total Proposed Project's ADWF	225,990
Total Existing ADWF	22,280
<b>Net ADWF Difference (Proposed – Existing)</b>	<b>203,710</b>
Total Proposed Project's Peak Dry Weather Flow	655,400
Total Existing Peak Dry Weather Flow	85,800
<b>Net PDWF Difference (Proposed – Existing)</b>	<b>569,600</b>
<b>Comparison of Phase 1 of the Proposed Project to Existing Conditions with the Phase 1 area</b>	
Proposed Project's ADWF	48,360
Existing ADWF	1,152
<b>Net ADWF Difference (Proposed – Existing)</b>	<b>47,208</b>
Proposed Project's Peak Dry Weather Flow	176,500
Existing Peak Dry Weather Flow	4,608
<b>Net PDWF Difference (Proposed – Existing)</b>	<b>171,892</b>
Note: All calculations are based on the City of Sacramento's Design and Improvement Standards, Section 9 – Sanitary Sewer Design Standards.	
Source: Nolte Engineers, 2010. Sanitary Sewer Technical Memorandum.	

The additional wastewater resulting from the proposed project would require treatment at the SRWTP. Currently, the SRWTP treats approximately 146 mgd ADWF.<sup>39</sup> The dry weather capacity is 181 mgd; during dry weather, the SRWTP receives 25 mgd from the CSS. During wet weather, the SRWTP can treat up to 380 mgd, of which 60 mgd is dedicated to receiving flows from the City's CSS. As shown in Table 5.11-9, the proposed project's four phases would contribute an additional 0.57 mgd of wastewater during peak flow periods, which would increase dry weather CSS flows from the City to the SRWTP by approximately 2.2 percent, and overall wastewater flows to the SRWTP by less than 0.4 percent. This increase would not exceed the dry weather treatment capacity at the SRWTP.

During wet weather, the City may not deliver more than 60 mgd to the SRWTP, which includes a combination of wastewater and stormwater runoff. As calculated above, the proposed project's combined wet weather wastewater and stormwater runoff flows would be approximately 0.16 mgd, during a 100 year-24 hour storm, and greater during larger storm events. An increased contribution of 0.16 mgd would increase wet weather CSS flows from the City to the SRWTP by approximately 0.27 percent, and overall wastewater flows to the SRWTP by less than 0.05 percent. This volume would not exceed the treatment capacity of the SRWTP or the treatment capacity of the CSS.

General Plan Policy U 1.1.6 would be applicable to the proposed project and would require that the project provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels. The proposed project would include onsite conveyance facilities for stormwater and wastewater flows, as shown in Figures 2-8 and 2-9, described in Chapter 2, Project Description, which would transport flows to the City's existing CSS main on 5<sup>th</sup> Street. Therefore, the proposed project would provide adequate onsite facilities, but may be required to pay for its share of offsite facilities, as described below.

The proposed project's contribution to the existing flows conveyed through the CSS facilities and treated at the SRWTP would generally be minimal. However, the proposed project would contribute approximately 2.2 percent of peak dry weather flows to the City's existing dry weather CSS contributions to the SRWTP. Although the proposed project's reduction in existing stormwater flows from the project site may mitigate the increase in wet weather wastewater flows, additional mitigation may be required to comply with the City's ordinance that requires new and infill development to mitigate for significant contributions to the CSS (City Ordinance 2005-020).<sup>40</sup> To comply with this ordinance, prior to development of any phase of the proposed project, the project applicant would provide the City's Department of Utilities with storm drainage and sanitary sewer studies specific to the proposed project for the City's review and approval. In addition, the project applicant would be responsible for paying any Combined Sewer Development fees mandated by the City Ordinance. Compliance with the City's ordinance would ensure that the proposed project's dry and wet weather

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39 Robert Seyfried, Senior Civil Engineer, Sacramento Regional County Sanitation District & Sacramento Area Sewer District, personal communication to Megan Gigliani at PBS&J, July 1, 2010.

40 Nolte Engineers. 2010. Project Sanitary Sewer Technical Memorandum for the Northwest Land Park Project. June 30, 2010.

flows to the SRWTP and to the CSS conveyance system do not result in an expansion of existing conveyance and treatment facilities.

Therefore, impacts related to the generation of additional wastewater and stormwater that could require the expansion of existing conveyance and treatment facilities would be less than significant. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

#### **5.11-8 Implementation of the proposed project could require the need for expansion of wastewater treatment facilities, which could cause significant environmental effects.**

The General Plan Master EIR states that the SRCSD anticipates an expansion of the SRWTP from 181 mgd ADWF to 218 mgd ADWF to accommodate projected service area demand through the 2020 Master Plan timeframe (see Impact 6.11-4 in Section 6.11, Public Utilities). This expansion would be needed to provide additional capacity for projected wastewater flows from the city along with other areas within the SRCSD service area. The certified EIR for the SRWTP 2020 Master Plan evaluated the environmental effects of expanding plant capacity to 218 mgd ADWF.

As described in Impact 5.11-7, the proposed project would increase dry weather CSS flows from the City to the SRWTP by approximately 2.2 percent, and increase overall wastewater flows to the SRWTP by less than 0.4 percent. Implementation of the proposed project would result in a decrease in impervious surfaces relative to existing conditions thereby reducing the quantity of wet weather flows from the project site compared to existing conditions and to dry weather conditions. As such, the proposed project would result in an increase in wet weather CSS flows from the City to the SRWTP of approximately 0.27 percent, and the overall wastewater flows to the SRWTP of less than 0.05 percent. Therefore, the proposed project's dry and wet weather flows (combined wastewater and stormwater flows) would not exceed the SRWTP's existing treatment capacity or require an expansion of the SRWTP. In addition, the project applicant would be responsible for payment of the SRCSD-required regional connection fee (SRCSD Ordinance No. SRCSD-0043) prior to development of the project. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

### Cumulative Impacts

The cumulative context for the analysis of impacts related to wastewater and storm drainage is buildout of the Sacramento 2030 General Plan and the SRWTP 2020 Master Plan within the City's CSS area. The General Plan Master EIR states that the 2030 General Plan would increase

wastewater flows that would require conveyance to and treatment at the SRWTP (see Impact 6.11-3 in Section 6.11, Public Utilities). Conveyance to the SRWTP from the CSS service area would be provided via both City-owned (i.e., the CSS) and SRCSD-owned infrastructure (i.e., the City Interceptor). The Master EIR determined that the SRCSD anticipates an expansion of the SRWTP from 181 mgd ADWF to 218 mgd ADWF to accommodate projected service area demand through the 2020 Master Plan timeframe.

The proposed project is located within the Sacramento 2030 General Plan Policy Area and was considered in the General Plan Master EIR. Therefore, the proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

## SOLID WASTE

### INTRODUCTION

This section describes existing and future landfill capacity and the increase in solid waste generated by the project.

Comments received in response to the NOP (see Appendix A) included comments from the Sacramento Community Development Department indicating that the City's Solid Waste Division would service all single-family homes, duplexes, triplexes, fourplexes, and condominiums (no matter how many units) while apartment complexes with more than five units could be serviced by another hauler. The City's Utilities Department commented that the project developer would need to address street sweeping and landscape maintenance, and consider the location of garbage facilities in the cluster home area. The project is proposing to maintain landscaping in the common areas and private courtyard areas, but would dedicate the proposed park to the City for planning, programming, development and maintenance.<sup>41</sup> Street sweeping has not yet been addressed by the project, but will be addressed during further project review. Service facilities, including trash receptacles in the residential district are designed to be located away from adjacent streets and to be screened from public view.

Information for this section is based on the City's 2030 General Plan Environmental Impact Report (Certified March 3, 2009), data from the California Integrated Waste Management Board (CIWMB); data from the Nevada Division of Environmental Protection; personal communication with the City of Sacramento Department of Utilities Solid Waste Division staff, and other service providers.

### ENVIRONMENTAL SETTING

In 2006, the City of Sacramento disposed of a total of 426,635 tons of solid waste. Of this total, 134,642 tons were diverted for recycling (including green waste) and 291,993 tons collected by the City's trucks were sent to landfills.<sup>42</sup> Approximately 129,000 tons of refuse were collected from residential sources, and 22,600 tons were collected from commercial sources. The remainder of the waste was diverted to alternative uses. The City also collected approximately 37,000 tons of residential curbside recycling, 2,300 tons of commercial recycling and 80,000 tons of garden refuse. Other sources of solid waste included scheduled pickups, neighborhood cleanup, and street sweeping. The total amount of solid waste collected including all waste and recyclables collected by private haulers, recyclers, and the City is over 1 million tons per year. Of this total approximately half a million tons is sent to the landfill.<sup>43</sup>

41 Cardno WRG, *Northwest Land Park PUD Guidelines*, September 3, 2010, p. 33.

42 Julie Freidman, Solid Waste Division, City of Sacramento Department of Utilities, written communication August 9, 2007.

43 Marty Strauss, City of Sacramento Department of Utilities, Solid Waste Division, written communication, March 6, 2008.

Solid waste in the city of Sacramento is collected by City and permitted private haulers. The City offers both commercial and residential solid waste collection services. Construction and demolition waste is collected by the City and private companies. Commercial solid waste collected by the City is transported to one of two transfer stations for processing: the Sacramento Recycling and Transfer Station owned by BLT Enterprises, which is permitted for a maximum daily disposal of 2,500 tons;<sup>44</sup> and the North Area Transfer Station, owned by the County of Sacramento Public Works Department, which accepts a maximum of 2,400 tons per day of construction/demolition, industrial, and green materials, tires, wood waste, and mixed municipal waste.<sup>45</sup> City waste transported from the City's transfer stations is then transported to the Lockwood Regional Landfill located in Sparks, Nevada. The Lockwood Landfill is a Class I landfill that currently accepts an average of 2,200 tons of solid waste per day,<sup>46</sup> 800 tons of which come from the city of Sacramento. The Lockwood Landfill does not have maximum daily disposal limits, and it has a remaining capacity of 32.5 million tons. The landfill currently operates on a 350-acre site.<sup>47</sup> Waste removed by private haulers can be disposed of at one of several landfills in the region depending upon which company hauls it and where it is processed.<sup>48</sup>

If residential and municipal solid waste is taken to the North Area Recovery Station (NARS)/County Facility for processing the waste is then transported to the Sacramento County (Kiefer) Landfill, operated by the County's Solid Waste Management and Recycling Department (the primary solid waste disposal facility in Sacramento County). Kiefer Landfill, categorized as a Class III facility, also accepts waste from the general public, businesses, and private waste haulers. More specifically, waste accepted include: construction/demolition, mixed municipal, and sludge (biosolids). The facility is on a 1,084-acre site near the intersection of Kiefer Boulevard and Grantline Road. The permitted capacity for the landfill is 117,400,000 cubic yards (10,815 tons/day) and, as of 2000, the landfill had a remaining capacity of 112,900,000 cubic yards (96 percent).<sup>49</sup> The landfill has an estimated closure date of 2064.<sup>50</sup>

Construction and demolition waste and commercial waste that is collected by both the City's fleet as well as private companies is disposed at a variety of facilities, including Kiefer Landfill, the Yolo County Landfill, Forward Landfill, and L and D Landfill. Private haulers can deliver waste to the landfill of their choice and base the decision on market conditions and capacity.

44 California Integrated Waste Management Board, *Transfer Station Profile*, <[www.ciwmb.ca.gov](http://www.ciwmb.ca.gov)>, accessed July 18, 2010.

45 *Ibid.*

46 State of Nevada, Nevada Division of Environmental Protection, Bureau of Waste Management, Lockwood Regional Landfill, <[http://ndep.nv.gov/BWM/landfill\\_lockwood.htm](http://ndep.nv.gov/BWM/landfill_lockwood.htm)>, accessed July 18, 2010.

47 State of Nevada, Nevada Division of Environmental Protection, Bureau of Waste Management, Lockwood Regional Landfill Permit, Permit #SW2214R01, <[http://ndep.nv.gov/BWM/landfill\\_lockwood.htm](http://ndep.nv.gov/BWM/landfill_lockwood.htm)>, accessed July 18, 2010.

48 Marty Strauss, City of Sacramento Department of Utilities, Solid Waste Division, written communication, March 6, 2008.

49 California Integrated Waste Management Board, Active Landfill Profile for Sacramento County (Kiefer) Landfill, <[www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=34&FACID=34-AA-0001](http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=34&FACID=34-AA-0001)>, accessed July 18, 2010.

50 *Ibid.*

## **Waste Stream Diversion**

The Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires each city and county in California to reduce landfill waste by 50 percent. As of 2004, the most recent data available that has been approved by the CIWMB, the City of Sacramento maintained a 34 percent diversion rate.<sup>51</sup> The City has six recycling programs, six programs specializing in source reduction and four public education programs designed to encourage and promote recycling throughout the city.

## **Waste Reduction/Recycling Programs**

### **Recycling Programs**

The City provides residential curbside recycling pick-up. Following collection, recyclables are transferred to the Sacramento Transfer Station for processing. The City also offers a commercial recycling program in which businesses are provided containers for co-mingled recyclable materials.

### **Beverage Container Recycling**

The California Department of Conservation, Division of Recycling administers the California Beverage Container Recycling and Litter Reduction Act enacted in 1986. It provides a number of services to achieve those goals, including enforcement, auditing, grant finding, technical assistance and education. There are ten facilities within the city of Sacramento that operate CRV redemption centers.

### **Household Hazardous Waste, E-waste and Used Oil programs**

Residents can safely dispose of materials such as paint, wood preservatives, antifreeze, batteries, household chemicals, and other hazardous substances at NARS and the Sacramento Transfer Station listed above. Any electronic waste (E-waste) devices with a cathode ray tube (CRT) are banned by state Law from being landfilled since they contain lead. The Sacramento Recycling Transfer Station, as well as local privately-owned electronics recycling facilities, accepts E-waste for a fee.

There are 44 certified used oil collection facilities within the city. In addition, residents are given the option to call a recycling hotline to schedule a curbside pick-up of used oil and oil filters. The hazardous waste facilities will also accept used oil and oil filters for recycling.

## **Sacramento Regional Solid Waste Authority (SWA) Business Recycling Ordinance**

A Joint Powers Authority was created consisting of the City of Sacramento, the City of Citrus Heights, and unincorporated Sacramento County to regulate commercial solid waste collection through its franchised haulers. On April 8, 2007 the SWA Board adopted a business recycling

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51 California Integrated Waste Management Board, Jurisdictional Profile for the City of Sacramento, <[www.calrecycle.ca.gov/profiles/Juris/JurProfile1.asp?RG=C&JURID=418&JUR=Sacramento](http://www.calrecycle.ca.gov/profiles/Juris/JurProfile1.asp?RG=C&JURID=418&JUR=Sacramento)>, accessed July 18, 2010.

ordinance. The goal of the ordinance is to require all businesses subscribing to four cubic yards or greater of weekly garbage collection service to have a recycling program. The County's Environmental Management Department is responsible for overseeing the business recycling program.

## **REGULATORY SETTING**

### **Federal**

#### **Resource Conservation and Recovery Act**

Volume 40 of the CFR, Part 258 (Resource Conservation and Recovery Act [RCRA, Subtitle D]) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

### **State**

#### **Integrated Waste Management Act (Assembly Bill 939)**

Regulation affecting solid waste disposal in California is embodied in Public Resources Code Title 14, known as the Integrated Waste Management Act originally adopted in 1989. AB 939 was designed to increase landfill life by diverting solid waste from landfills within the state and conserving other resources through increasing recycling programs and incentives. AB 939 requires that counties prepare Integrated Waste Management Plans to implement landfill diversion goals, and requires that cities and counties prepare and adopt Source Reduction and Recycling Elements (SRRE). The SRRE must set forth a program for management of solid waste generated with the jurisdiction of the respective city or county.

The SRRE programs are designed to achieve landfill diversion goals by encouraging recycling in the manufacture, purchase and use of recycled products. AB 939 also requires that California cities implement plans designed to divert the total solid waste generated within each jurisdiction by 50 percent based on a base year of 2000. The diversion rate is adjusted annually for population and economic growth when calculating the percentage achieved in a particular jurisdiction.

#### **Assembly Bill 1220**

The CIWMB and the SWRCB completed a parallel rulemaking as a result of AB 1220 (Chapter 656, Statutes of 1993). AB 1220 required clarification of the roles and responsibilities of the two boards, the Regional Water Quality Control Boards and the CIWMB's local enforcement agencies in regulating solid waste disposal sites. The approved Title 27 regulations combine prior disposal site/landfill regulations of the CIWMB and SWRCB that were maintained in Title 14 CCR and Chapter 15 of Title 23 CCR (which contains requirements for disposal of hazardous waste). The regulations were adopted at a joint meeting of the CIWMB and SWRCB on January 23, 1997.

## Local

### **Sacramento Regional Solid Waste Authority (SWA)**

The Sacramento Regional Solid Waste Authority (SWA) is a joint powers authority consisting of a board of supervisors representing Sacramento County and the cities of Sacramento and Citrus Heights. The SWA enforces its ordinances to regulate commercial solid waste collection, permit franchised haulers, and promote recycling programs.

### **Sacramento Regional Solid Waste Authority Ordinance No. 8**

Ordinance 8 was established to regulate the transport, transfer, disposal, and recycling of commercial solid waste kept or accumulated within the SWA region. The ordinance was put into place for the purposes of ensuring the orderly operation of solid waste transport and disposal, and also to minimize adverse effects on human health and the local environment. Sections 24 and 25 of Ordinance 8 specify that commercial franchisees must divert 30 percent of their commercial solid waste for recycling, and establishes a recycling incentive fee for tonnage shortfall of waste diversion. Section 35 provides restrictions for solid waste disposal, including prohibiting the dumping of solid waste on any property, road, or highway not designated by the ordinance for solid waste disposal or dumping.

### **Sacramento Municipal Code**

Chapter 17.72 of the City of Sacramento Municipal Code outlines the recycling and solid waste disposal regulations. These regulations are necessary in order to lengthen the lifespan of landfills, encourage recycling, and meet state mandated goals for waste reduction and recycling, specifically AB 939. These policies provide guidelines regarding the location, size and design features of recycling and trash enclosures in a manner by which adequate, convenient space for the collection, storage, and loading of recyclable and solid waste material is provided.

### **City of Sacramento 2030 General Plan**

The following goals and policies from the 2030 General Plan are relevant to solid waste within the project area.

#### **UTILITIES (U)**

**Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high-quality public infrastructure facilities and services throughout the city.**

#### Policies

- U 1.1.6 **Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.
- U 1.1.7 **Infrastructure Finance.** The City shall develop and implement a financing strategy and assess fees to construct needed water, wastewater, stormwater drainage, and solid waste facilities to maintain established service levels and to mitigate

development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development). The City shall also assist developers in identifying funding mechanisms to cover the cost of providing utility services in infill areas.

- Goal U 5.1 Solid Waste Facilities. Provide adequate solid waste facilities, meet or exceed State law requirements, and utilize innovative strategies for economic and efficient collection, transfer, recycling, storage, and disposal of refuse.**
- U 5.1.1 **Zero Waste.** The City shall achieve zero waste to landfills by 2040 through reusing, reducing, and recycling solid waste; and using conversion technology if appropriate.
- U 5.1.2 **Landfill Capacity.** The City shall continue to coordinate with Sacramento County in providing long-term landfill disposal capacity.
- U 5.1.3 **Transfer Stations.** The City shall provide for adequate transfer station facilities to meet the city's demand.
- U 5.1.5 **Residential and Commercial Waste Disposal.** The City shall continue to provide curbside trash and recycling collection service to single-family residential dwellings and offer collection service to commercial and multi-family residential development.
- U 5.1.6 **Yard Waste and Street Sweeping.** The City shall continue to provide garden refuse yard waste collection service to single-family residential dwellings and provide street sweeping service to commercial and residential development.
- U 5.1.7 **Voluntary Containerized Yard Waste Program.** The City shall continue to expand its voluntary containerized yard waste collection program.
- U 5.1.8 **Neighborhood Clean-Up Program.** The City shall continue sponsoring the Neighborhood Clean-Up Program.
- U 5.1.9 **Diversion of Waste.** The City shall encourage recycling, composting, and waste separation to reduce the volume and toxicity of solid wastes sent to landfill facilities.
- U 5.1.10 **Electronic Waste Recycling.** The City shall continue to coordinate with businesses that recycle electronic waste to provide convenient collection/drop off locations for city residents.
- U 5.1.11 **Composting and Grasscycling Programs.** The City shall sponsor solid waste educational programs on backyard waste composting and grasscycling (i.e., mulching grass clippings back into the lawn).
- U 5.1.12 **City Recycling.** The City shall serve as a role model to businesses and institutions regarding purchasing decisions that minimize the generation of solid waste in addition to encouraging all City staff to recycle at City facilities.
- U 5.1.15 **Recycled Materials in New Construction.** The City shall encourage the use of recycled materials in new construction.
- U 5.1.16 **Recycling and Reuse of Construction Wastes.** The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting 85 percent to a certified recycling processor.
- U 5.1.20 **Waste Composting and Recycling for Landscapes.** The City shall sponsor educational programs regarding the use of waste composting and yard waste recycling for landscapes in lieu of fertilizer.

- U 5.1.21 **Educational Programs.** The City shall sponsor public educational programs regarding the benefits of solid waste diversion and recycling and encourage residents and businesses to redistribute reusable materials (e.g., at garage sales or materials exchanges).

### **Applicable Mitigation Measures from the City of Sacramento 2030 General Plan**

No applicable mitigation measures.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

To determine the amount of solid waste that could be generated by the proposed project, information was provided by the City of Sacramento and the CIWMB. The residential rate was provided by the City of Sacramento<sup>52</sup> while the business rate was taken from data provided by CIWMB and is a conservative estimate of all employment (retail, commercial) to be developed within the project.<sup>53</sup> This would be a conservative estimate of solid waste generation. The following solid waste generation rates are used for the analysis:

- Residential = 1.1 tons/unit/year
- Employment (retail, commercial) = 10.8 lbs/employee/day

### **Standards of Significance**

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- require or result in either the construction of new solid waste facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

### **Project-Specific Impacts and Mitigation Measures**

#### **5.11-9 Implementation of the proposed project could result in the construction of new solid waste facilities or expansion of existing facilities.**

The City of Sacramento 2030 General Plan land use designations for the project site are Urban Neighborhood Medium Density and Urban Corridor Low. No changes to these General Plan land use designations or their configurations are proposed as part of the project, and therefore the proposed project is consistent with the land use assumptions of the 2030 General Plan and Master EIR.

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52 Marty Strauss, City of Sacramento Department of Utilities, Solid Waste Division, personal communication October 8, 2007.

53 California Integrated Waste Management Board, Jurisdiction Profile for Sacramento, <[www.calrecycle.ca.gov/profiles/Juris/JurProfile1.asp?RG=C&JURID=418&JUR=Sacramento](http://www.calrecycle.ca.gov/profiles/Juris/JurProfile1.asp?RG=C&JURID=418&JUR=Sacramento)>, conservative rate based on data as of 2004.

The General Plan Master EIR (see Impact 6.11-8 in Section 6.11, Public Utilities) states that the city of Sacramento uses a number of landfills in the Sacramento region as well as landfills outside the region. Lockwood Landfill, the primary destination for waste collected by the City, has enough capacity to continue operation for at least the next 100 years. Kiefer Landfill is not expected to reach capacity for another 60 years. As growth continues in the region, in accordance with the County General Plan and city general plans, population would increase and the solid waste stream would continue to grow. Implementation of the SWA and Sacramento recycling requirements; however, would continue to significantly reduce potential cumulative impacts on landfill capacity.

General Plan Policies U 5.1.1 through U 5.1.4 as well as the recently adopted SWA Business Recycling Ordinance would ensure that solid waste and recycling facilities such as transfer stations are adequately provided throughout the city to help reduce the amount of waste sent to landfills. The programs provided through policies U 5.1.5 to U 5.1.13 are designed to ensure the City continues to provide recycling and clean-up services for its residents and businesses. Many of these programs are already in place, and continue to promote waste diversion, which would help reduce waste flow to landfills.

Project construction contributes solid waste that requires disposal. The project is proposing to re-use at least 50 percent of the salvageable materials in the existing buildings that would be demolished to accommodate the project. The project seeks to meet a zero non-recycle waste by recycling and reusing existing building material. Recycling and reusing existing materials would reduce the amount of material needing disposal. According to the Northwest Land Park PUD Guidelines, the project shall reduce waste and recycle non-reusable materials during demolition, site development, and unit construction using the following approaches:

- Recondition and re-use on site. For example; crushing old concrete, asphalt and paving to be reused as base rock within the project grading activities.
- Seek dealers and other re-use distributors to harvest intact components and materials for re-sale. As an example; large pole barn supports sold intact to telephone pole providers.
- Separate bulk recyclable items, such as wood and metal pieces, for reprocessing at standard recycling facilities.

Project implementation or operation would contribute to an increase in solid waste generation. Using the estimated number of dwelling units in conjunction with the given rate of 1.1 tons of solid waste/unit/year and 10.8 lbs/day/employee, it can be assumed that Phase 1 of the proposed project would generate approximately 228.8 tons of solid waste per year (see Table 5.11-10). Phases 2 through 4 would generate approximately 910.9 tons of solid waste per year. Thus, the proposed project would produce an additional 1,139.7 tons of solid waste per year. This does not take into account mandatory reduction and diversion programs, which include diversion of at least 50 percent of waste, thus reducing the total to a conservative estimate of 569.8 tons per year.

TABLE 5.11-10				
SOLID WASTE GENERATION				
Land Use	Dwelling Units/ Employees		Factor	Tons of Solid Waste Generated per Year
<b>Phase 1</b>				
Medium-Density Multi-Family Residential	208	du	1.1 tons/unit/year	228.8
<b>Phase 1 Total</b>		---	---	<b>228.8</b>
<b>Phases 2 through 4</b>				
Medium-Density Multi-Family Residential	690	du	1.1 tons/unit/year	759.0
High-Density Multi-Family Residential	70	du	1.1 tons/unit/year	77.0
Commercial-Retail	38	emp <sup>1</sup>	10.8 lbs/employee/day	74.9
<b>Phases 2 through 4 Total</b>		---	---	<b>910.9</b>
<b>Project Total</b>		---	---	<b>1,139.7</b>
Notes:				
1. Assumes 1 employee per 400 square feet (15,000 sf / 400 sf/employee = 38 employees).				
Source: PBS&J, 2010.				

With the remaining capacity and expected lifespan at the Lockwood and Kiefer Landfills, combined with the continued use of the existing transfer stations and development of at least one new transfer station in the north area, the increase in solid waste generated by development under the proposed project would not exceed capacity of the landfills. In addition, AB 939 mandates the reduction of solid waste disposal in landfills and the City is currently achieving a 34 percent diversion rate (based on 2008 data) which is anticipated only to increase with continued awareness of the importance of recycling.<sup>54</sup> Consequently, this analysis assumes a worst-case scenario and does not factor in the approximately 50 percent diversion rate. Sufficient capacity is anticipated to serve the increased development associated with the proposed project. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

### Cumulative Impacts

The cumulative setting for solid waste includes all development in the SWA service area. This includes the city of Sacramento and unincorporated areas of the County. As stated in the General Plan Master EIR, a number of landfills operate in the Sacramento region, and landfills outside the region also serve Sacramento's solid waste needs. The Master EIR determined that as growth continues in the region, in accordance with the County General Plan and city general plans, population would increase and the solid waste stream would continue to grow. Implementation of the SWA and Sacramento recycling requirements; however, would continue to significantly reduce potential cumulative impacts on landfill capacity.

54 Marty Strauss, City of Sacramento Department of Utilities, Solid Waste Division, written communication, March 6, 2008.

The General Plan includes Policies U.5.1.15 to U.5.1.21 which provide long-term objectives for minimizing the city's contribution to solid waste by providing additional encouragement and education regarding recycling and development of new techniques for solid waste disposal. Furthermore, the existence of significant capacity at the City's primary landfills, the exporting of solid waste, and aggressive recycling would ensure that the City's contribution of solid waste could be accommodated at buildout of the 2030 General Plan.

The proposed project is located within the General Plan Policy Area and is consistent with the land use assumptions of the 2030 General Plan and Master EIR. The proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

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## ELECTRICITY AND NATURAL GAS

### INTRODUCTION

This section describes the existing electrical and natural gas facilities on the project site, and evaluates the effects of increased demand on those utilities.

Comments received in response to the NOP (see Appendix A) included comments from the California Energy Commission (CEC) regarding energy conservation. Energy conservation is addressed in this section.

Information for this section is based on the City's 2030 General Plan Environmental Impact Report (certified March 3, 2009), personal communication with the City of Sacramento Department of Utilities staff, the Pacific Gas and Electric (PG&E) website, and the Sacramento Municipal Utilities Department (SMUD) website.

### ENVIRONMENTAL SETTING

#### Regional Energy Overview

Senate Bill 1389 requires the CEC to conduct "assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." The CEC reports the results of these assessments and forecasts every two years to the Governor, the Legislature, and the California public in the *Integrated Energy Policy Report*. In the alternate years, the CEC prepares the *Integrated Energy Policy Report Update* to discuss the status of energy issues identified in the previous *Integrated Energy Policy Report* and to identify energy issues that may have emerged since that report was completed.

In the 2007 Energy Policy Report,<sup>55</sup> the CEC indicated that as the State's demand for electricity increases, particularly peak demand, California could face severe shortages in the next few years. Of particular concern are the potential impacts of higher-than-average summer temperatures, which can drastically increase the State's electricity demand, as well as shortages resulting from decreased hydroelectric generation in lower-than-average precipitation years. Either of these situations could cause dangerously low reserve margins and potential supply disruptions, particularly in southern California. Reserve margins could also be affected by the retirement of aging natural gas-fired power plants, which remain critical components of California's generation fleet, despite strong policy directives to diversify the State's electricity supplies.

The 2007 Energy Report assessment of electricity supply and demand concludes that maintaining adequate electricity reserves will be difficult over the next few years. The state has made some progress toward resource adequacy for investor-owned utilities by requiring them to maintain year-round 15 to 17 percent reserve margins. Jurisdictional authority over other load-serving entities is

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55 California Energy Commission, *2007 Integrated Energy Policy Report*, Publication # CEC-100-2007-008-CMF, adopted December 5, 2007.

less clear. Until recently, there was no formal mechanism to ensure resource adequacy for publicly owned utilities, which provide up to 30 percent of the State's electricity. In September 2005, the Legislature passed and the Governor signed AB 380 (Nunez), Chapter 367, Statutes of 2005, which extends jurisdiction over independent load serving entities and requires publicly owned utilities to report their respective supply circumstances to the CEC so that their resource adequacy progress can be accurately assessed.

### **City Supplies**

All electrical service provided to the city is provided by SMUD. SMUD generates approximately 1,196.8 Megawatts (Mw) of electricity and delivers it to an approximately 900 square mile area within the Sacramento County (including the city). SMUD obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, and biomass/landfill gas power) and power purchased on the wholesale market.<sup>56</sup> The majority of SMUD's generated power is produced by the Upper American River Project (UARP), a hydroelectric facility on the western slope of the Sierra Nevada. This project, consisting of eleven reservoirs and eight powerhouses, generates enough electricity to meet about 20 percent of SMUD's customer demand. In a normal water year, the UARP provides roughly 1.8 billion kilowatt-hours of electricity, which is enough to power 180,000 homes.<sup>57</sup> The UARP is able to provide operational flexibility, system reliability, and economical power. Existing SMUD facilities in the city include 230 kilovolt (Kv) transmission lines that run north of the American River, 115 Kv lines that run south of the river through the central city area. Various 69 Kv, 21 Kv and 12 Kv lines branch out from these to distribute electricity to individual residential, commercial and industrial customers. In addition, various substations and metering stations are scattered throughout the city to allow monitoring and distribution of electricity.<sup>58</sup>

In 2006, SMUD completed Phase I of the Cosumnes Power Plant, which, upon completion of Phase II, is expected to support growth in the Sacramento area for decades to come. The 500-megawatt plant is located on the site of the now decommissioned Rancho Seco nuclear power plant. Construction of Phase II of the power plant, which would add an additional 500-megawatt output, is planned for development should the need arise. In addition, SMUD operates the Solano Wind Project, two photovoltaic generating facilities and two geothermal units. These power sources account for a small but important portion of the electricity generated by SMUD, since it is part of an effort to expand SMUD's renewable energy supplies.

The CEC and SMUD are also working together on research, development, and demonstration projects for renewable power generation under the Public Interest Energy Research (PIER) program. The program consists of a number of projects, most of which are developing new technologies that use the sun, wind, and biomass to generate electricity. Each project is helping to: (1) reduce California's dependency on non-renewable energy sources; (2) develop technologies and products

56 Sacramento Municipal Utilities District, <[www.smud.org/about/power-supplies.html](http://www.smud.org/about/power-supplies.html)>, accessed July 18, 2010.

57 *Ibid.*

58 Dave Brown, Principal Distribution System Engineer, SMUD, personal communication October 18, 2007.

that will create broad new renewable energy sources for California and the West; (3) develop resources that will allow SMUD and other electric utilities to increase their use of renewable generation; (4) provide technologies to help SMUD reduce its peak demand for electricity; and (5) make Sacramento a center for the development, testing, and implementation of new renewable generating technologies.

Natural gas service is provided to the city of Sacramento by PG&E. PG&E provides electrical and natural gas services through state regulated public utility contracts. The utility company is bound by contract to update its systems to meet any additional demand. The existing facilities in the area consist of 4.5-inch to 16-inch pipelines delivering service to all customers that are not served by private propane tanks. As with cable and telephone services, natural gas lines are typically co-located with other utilities in trenches to reduce construction costs and environmental impacts.

PG&E provides electricity and natural gas distribution, electricity generation, transportation and transmission, natural gas procurement, transportation, and storage. Services are provided within 48 counties in California with a total service area of approximately 70,000 square miles in northern and central California.<sup>59</sup> The company's service area stretches from Eureka in the north to Bakersfield in the south, to the Pacific Ocean in the west and the Sierra Nevada to the east. PG&E serves approximately 5.1 million electric distribution customers. The utility has 141,215 circuit miles of electric distribution lines and 18,616 circuit miles of interconnected transmission lines.<sup>60</sup> The utility provides services with 42,141 miles of natural gas distribution pipelines and 6,438 miles of transportation pipelines.<sup>61</sup>

PG&E serves approximately 4.3 million natural gas distribution customers. During the winter, approximately 70 percent of natural gas supplied is imported from Canada, and the balance is supported by California production wells. During the summer, this ratio is reversed. Also during summer, gas prices are lower so gas is stored in underground holders for use during winter peak use periods. California has not experienced a widespread natural gas shortage in many years, as most of its statewide natural gas supply (87 percent) is imported. Current supplies are adequate to meet demands, although natural gas storage could be expanded to improve reliability.

## **REGULATORY SETTING**

### **Federal**

The Federal Energy Regulatory Commission regulates the transmission and sale of electricity in interstate commerce, licensing of hydroelectric projects, and oversight of related environmental matters.

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59 Pacific Gas & Electric, Company Profile <[www.pge.com/about/company/profile/](http://www.pge.com/about/company/profile/)>, accessed July 18, 2010.

60 *Ibid.*

61 *Ibid.*

## **State**

The California Public Utilities Commission (CPUC) sets forth specific rules that relate to the design, installation, and management of California's public utilities, including electric, natural gas, water and transportation, and telecommunications. CPUC Decision #77187 and #78500 state that utilities must be underground if the developable lots are less than three acres in size. CPUC Decision #81620 states that lots over three acres (large lot subdivision) are not required to underground utilities. A formal waiver from the CPUC is required for an exemption from complying with these decisions. CPUC Decision 95-08-038 governs the planning and construction of new transmission facilities, distribution facilities, and substations. The Decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 Kvs or the substation would require the acquisition of land or an increase in voltage rating above 50 Kvs. Distribution lines and substations with voltages less than 50 Kvs do not need to comply with this Decision; however, the utility must obtain any applicable local permits required for the construction and operation of these projects.

## **Title 20 and Title 24, California Code of Regulations (CCR)**

New buildings constructed in California must comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards, of the CCR. Title 24 (AB 970) also contains energy efficiency standards for residential and nonresidential buildings based on a State mandate to reduce California's energy demand.

## **Warren-Alquist Energy Resources Conservation and Development Act**

The State Energy Commission regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption (Warren-Alquist Energy Resources Conservation and Development Act Government Code section 25000 *et seq.*).

## **Local**

### **Residential Energy Conservation Ordinance**

The City of Sacramento has a Residential Energy Conservation Ordinance (RECO) per City Code 15.76. Houses sold in the city are supposed to undergo an energy efficiency survey and upgrade within cost-effectiveness limits.

### **City of Sacramento 2030 General Plan**

The following goals and policies from the 2030 General Plan are relevant to electricity and natural gas resources within the project area.

**UTILITIES (U)**Policies

- U 1.1.11 **Underground Utilities.** The City shall require undergrounding of all new publicly owned utility lines, encourage undergrounding of all privately owned utility lines in new developments, and work with electricity and telecommunications providers to underground existing overhead lines.
- U 6.1.1 **Electricity and Natural Gas Services.** The City shall continue to work closely with local utility providers to ensure that adequate electricity and natural gas services are available for existing and newly developing areas.
- U 6.1.5 **Energy Consumption per Capita.** The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.
- U 6.1.7 **Solar Access.** The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize solar access.
- U 6.1.8 **Other Energy Generation Systems.** The City shall promote the use of locally shared solar, wind, and other energy generation systems as part of new planned developments.
- U 6.1.10 **Energy Rebate Programs.** The City shall promote energy rebate programs offered by local energy providers to increase energy efficiency in older neighborhoods and developments.
- U 6.1.11 **Energy Efficiency Improvements.** The City shall develop and implement energy efficiency standards for existing buildings, and provide incentives to property owners to make improvements necessary to meet minimum energy efficiency standards upon sale of a property or change of lease of rental properties.
- U 6.1.12 **Energy Efficiency Audits.** The City shall continue to work with the Sacramento Metropolitan Utility District to conduct energy efficiency audits of existing buildings.
- U 6.1.13 **Energy Efficient Incentives.** The City shall develop incentives to encourage the use of energy efficient vehicles, equipment, and lighting.
- U 6.1.14 **Sustainable Development and Resource Conservation Education.** The City shall work with appropriate agencies to develop educational materials and activities for residents and developers regarding the objectives and techniques of sustainable development and resource conservation.

**Applicable Mitigation Measures from the City of Sacramento 2030 General Plan**

No applicable mitigation measures.

**IMPACTS AND MITIGATION MEASURES****Methods of Analysis**

The evaluation of potential impacts to electrical and natural gas services resulting from the proposed project is qualitative and is based on consultation with service providers, review of CEC policies, and compliance with state standards.

## **Standards of Significance**

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

## **Project-Specific Impacts and Mitigation Measures**

### **5.11-10 Implementation of the proposed project would not require or result in the construction of new energy production or transmission facilities.**

The City of Sacramento 2030 General Plan land use designations for the project site are Urban Neighborhood Medium Density and Urban Corridor Low. No changes to these General Plan land use designations or their configurations are proposed as part of the project, and therefore the proposed project is consistent with the land use assumptions of the 2030 General Plan and Master EIR.

The General Plan Master EIR states that the state of California is currently experiencing constraints related to energy supply and delivery (see Impact 6.11-9 in section 6.11, Public Utilities). These constraints are generally limited to peak demand days during the summer months, such that for the majority of the days during the year adequate energy supplies are reliably provided to consumers. In 2008, the CEC updated the 2005 State of California Energy Action Plan in an effort to alleviate these constraints.<sup>62</sup> If energy constraints remain, they are a reflection of the broad energy supply issues experienced by California as a whole, and not unique to the demands of the development of the city. In order to minimize these constraints, SMUD obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, biomass/landfill gas power), and power purchased on the wholesale market.<sup>63</sup> SMUD also invests heavily in Smart Grid technology, a modernized grid that delivers electricity from suppliers to consumers by incorporating digital technology that gives end-use customers the opportunity to participate directly in how they consume energy and obtains 20 percent of its energy from renewable resources.<sup>64</sup>

In addition to SMUD's efforts, General Plan Policy U 6.1.4 would encourage new and existing residential and commercial developers to use renewable and recyclable energy and consume 25 percent less energy compared to the baseline year of 2005. Policies U 6.1.6 through U 6.1.10 encourage the use of alternate energy sources including solar and wind. Implementation of the proposed project would create an increase in population and employment within the city, which would increase the demand for electricity, especially the demand to light, heat and air-condition for

62 California Energy Commission, <[www.energy.ca.gov/energy\\_action\\_plan/index.html](http://www.energy.ca.gov/energy_action_plan/index.html)>, accessed July 18, 2010.

63 Sacramento Municipal Utility District, <[www.smud.org/about/power-supplies.html](http://www.smud.org/about/power-supplies.html)>, accessed July 18, 2010.

64 Sacramento Municipal Utility District, *2009 Annual Report*, <[www.smud.org/en/about/Documents/2009-annual-report.pdf](http://www.smud.org/en/about/Documents/2009-annual-report.pdf)>, pp. 9 and 10.

new residential and commercial uses. To serve this anticipated new citywide development through 2030, SMUD has proposed several projects, including the construction of two new substations in conjunction with the proposed Railyards Specific Plan, construction of the second phase of the Cosumnes Power Plant, and installation of new 69 Kv, 21 Kv, and 12 Kv power lines as the need arises.

With regard to natural gas, the proposed project would also result in permanent and continued use of this resource. As indicated, PG&E provides natural gas service to the city of Sacramento, including the project site. The existing facilities in the city consist of 4.5-inch to 16-inch pipelines delivering service to all customers that are not served by private propane tanks. Because PG&E's demand projections are continuously updated, and PG&E's system has ample capacity to ensure continued levels of service to all customers within the region, PG&E has stated that it can supply natural gas upon buildout of the General Plan without jeopardizing other existing or projected service commitments.

To reduce energy consumption, the project is proposing buildings be designed with a high-efficiency thermal shell to maximize insulation, incorporate energy-efficient ductless heating and cooling systems, use low voltage hardwired LED lights, Energy Star rated appliances, high efficiency natural gas tank-less water heaters, photovoltaic panels, or rooftop collector systems would be options for homeowners offered, and, most importantly, each unit would be designed with compact efficient floor plans with units averaging approximately 1,000 square feet of living space. In addition the vast majority of units would share wall space, and thus thermal mass, with at least one other unit.<sup>65</sup>

The General Plan Master EIR determined that implementation of Titles 20 and 24 of the CCR would reduce impacts associated with an increased demand for electricity by implementing energy efficient standards for residential and non-residential buildings, which would be applicable to the proposed project. In addition, implementation of the Warren-Alquist Energy Resources Conservation and Development Act would also coordinate research and development into energy supply and demand problems to reduce the rate of growth of energy consumption. Furthermore, Policies U 6.1.10 through U 6.1.13 in the General Plan encourage the spread of energy-efficient technology by offering rebates and other incentives to commercial and residential developers and recruiting businesses that research and promote energy conservation and efficiency, thus helping to minimize the impact of new development on energy resources. These policies shall be implemented in such a way as to conserve energy to the maximum extent feasible. Further, since there is adequate electrical supply, and new (unplanned) electrical production facilities would be constructed as needed, impacts to energy resources. The project would have no additional significant environmental effect not addressed as a significant effect in the Master EIR.

### Mitigation Measure

*None required.*

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65 Cardno WRG, *Northwest Land Park PUD Guidelines*, September 3, 2010, p. 57.

## **Cumulative Impacts**

The geographic context for the analysis of electricity and natural gas impacts is the SMUD and PG&E service areas. As stated in the General Plan Master EIR, future development in the Policy Area as well as areas in the region serviced by SMUD and PG&E would increase residential, commercial, and office needs for electricity and natural gas. Development in previously undeveloped areas would require the extension of existing lines and new transmission facilities and substations would be needed. The environmental impacts associated with the installation of new facilities would be analyzed by each development under separate environmental review as the utilities are extended.

SMUD's "Greenergy" program in which customers are given the choice to purchase a percentage of their electricity from renewable resources such as solar, wind, geothermal, and hydroelectric sources is an example of these programs. SMUD and PG&E also actively research new forms of renewable energy such as solar, wind, and biomass. Continuing these endeavors on the part of SMUD and PG&E would help to minimize the cumulative energy impacts within the Policy Area as well as the entire area serviced by SMUD and PG&E, including the proposed project site. The increase in demand for natural gas and electrical services could result in a potentially significant cumulative impact. Although it is unknown at this time what specific resources SMUD and PG&E would tap into in order to accommodate the energy demands of the proposed project, both utility providers would install new distribution facilities, as needed to serve buildout of the general plan as well as other development within their respective service areas, according to CPUC rules. As part of the development review process, PG&E and SMUD receive sufficient opportunity to provide input on proposed projects to ensure their capability of providing an adequate level of service to the project site.

The Master EIR also states that existing development within the Policy Area as well as within SMUD's and PG&E's service areas have resulted in a cumulative increase in energy demand. The cumulative effect of this past development has resulted in a higher demand for electricity and natural gas services. The Master EIR states that policies U 6.1.10 through U 6.1.13 would have a lasting positive effect on the cumulative impacts in the Policy Area. Policies U 6.1.6 through U 6.1.8 focus on promoting the use of renewable resources, which would help reduce the cumulative impacts associated with non-renewable energy sources. The City specifically considers long-term impacts through General Plan Policies U 6.1.5 and U 6.1.12, which would allow the City to work closely with utility providers and industries during future development to promote and advance new energy conservation technologies. The proposed project is located within the General Plan Policy Area and is consistent with the land use assumptions of the 2030 General Plan and Master EIR. The proposed project would not contribute to cumulative impacts beyond those already addressed in the City of Sacramento General Plan Master EIR.

## **6. OTHER CEQA CONSIDERATIONS**

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## 6.0 OTHER CEQA CONSIDERATIONS

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### INTRODUCTION

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify the following: (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, and (4) growth-inducing impacts of the proposed project. Although growth inducement itself is not considered an environmental effect, it could potentially lead to foreseeable physical environmental effects, which are discussed under Growth Inducing Impacts below.

### **Significant Environmental Effects**

Chapter 3 of this DEIR, Summary of Environmental Effects, and Sections 5.1 through 5.11 of this EIR provide a comprehensive identification of the proposed project's environmental effects, including the level of significance both before and after mitigation. The Master EIR prepared for the 2030 general plan evaluated the cumulative effects, growth-inducing impacts, and irreversible significant effects on the environment that could occur with anticipated buildout under the new general plan. The project-specific environmental effects of constructing and operating the project are identified in these chapters.

### **Significant and Unavoidable Impacts**

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 5 of this DEIR. As discussed in the technical sections of this DEIR, the proposed project would not result in any project-specific effects that could not be reduced to a less-than-significant level. The proposed project would also not contribute to cumulative effects beyond those addressed in Sacramento's 2030 General Plan Master EIR.

### **Significant Irreversible Environmental Effects**

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Section 15126.2(c) states:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with

the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- the primary and secondary impacts would generally commit future generations to similar uses;
- the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- the project would involve a large commitment of nonrenewable resources; or
- the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Development of the proposed project would result in the continued commitment of the project site to urban development, thereby precluding any other uses within the project site for the lifespan of the project. Restoration of the site to a less developed condition would not be feasible, or practical, given the degree of disturbance, the urbanization of the area, location, and the level of capital investment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the project. While the project would result in the use, transport, storage, and disposal of some hazardous wastes, as described in Section 5.5, Hazards and Hazardous Materials, all future activities would be required to comply with applicable state and federal laws related to the use, storage, and disposal of hazardous materials, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage. Because the project site would be committed to residential and commercial uses, hazardous materials used would be generally confined to household hazardous materials such as cleaners, solvents, and pesticides.

The most notable significant irreversible impacts are increased generation of pollutants and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as water resources during both construction activities and project operation. These unavoidable consequences of urban growth are described in the appropriate sections in Chapter 5 of this DEIR.

Resources that would be permanently and continually consumed once the project is completed include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient, or wasteful use of resources. Compliance with applicable building codes, mitigation measures identified for the project, planning policies contained in the 2030 General Plan, and standard conservation features would ensure that natural resources are used efficiently. It is also possible that new technologies or systems will emerge in the future, or will become more cost-effective or user-friendly, to further reduce the reliance upon nonrenewable natural resources. Nonetheless, construction activities and project operation would result in the irretrievable commitment of nonrenewable energy resources, primarily

in the form of fossil fuels (including fuel oil), natural gas (heating), and gasoline/diesel for automobiles and construction equipment.

### **Growth Inducing Impacts**

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Although growth inducement itself is not considered an environmental effect, it could potentially lead to adverse environmental effects.

In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, or a change in zoning or general plan amendment approval); or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion, etc). These circumstances are further described below:

- **Elimination of Obstacles to Growth:** This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects:** This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include effects such as the “multiplier effect.” A “multiplier” is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

### **Elimination of Obstacles to Growth**

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include nonexistent or inadequate access to an area or the lack of essential public services (e.g., water service), while planning impediments may include restrictive zoning and/or general plan designations.

The project would be developed in an area that contains established land uses and supporting infrastructure (roads, water distribution, wastewater and drainage collection, and energy distribution). The City’s recently adopted 2030 General Plan includes redevelopment of this area of the City, which could intensify the uses relative to those now existing on the site. The existing infrastructure

capacity could be an obstacle to this growth. Construction of the proposed project would tie into existing infrastructure, and would not require substantial modification and/or replacement of existing infrastructure in the project vicinity that would provide additional capacity to increase growth beyond that anticipated.

An established transportation network exists in the project area that offers local and regional access to the project site. The existing roadways adjoining the site - Broadway, 5th Street, and McClatchy Way - all provide access to the project site. On-site circulation would be facilitated by construction of internal streets. No improvements to streets adjacent to the project site would be required in order to serve the increased population generated by the proposed project.

Water service to the project site would be provided by existing 8-inch mains in 3<sup>rd</sup> Street and existing water lines in 5th Street. A new 12-inch water line would be constructed with the project replacing an existing 8-inch main. This new 12-inch main would not increase the total capacity in the area, but would provide connections for the project in place of tapping the existing 42-inch main line.

Sanitary sewer from the project site would be conveyed to the existing 60-inch combined system lines in 5th Street. No new water or sewer mains other than those required to serve the project site would be constructed. Development of on-site water and sewer infrastructure to serve the project would not be sized to support any other development in the area.

Electricity and natural gas transmission infrastructure presently exists on and in the vicinity of the project site. Development of the project would necessitate the construction of an on-site distribution system to convey this energy to uses on the site.

## **Economic Effects**

In addition to the small amount of employment generated by the proposed project, additional local employment can be generated through the “multiplier effect,” which refers to the economic activity that is generated as a result of other new economic activity. Two different types of additional employment are tracked through the multiplier effect. “Indirect employment” includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the project. “Induced employment” follows the economic effect of employment beyond the expenditures of the employees within the proposed project area to include jobs created by the stream of goods and services necessary to support businesses within the proposed project.

Increased future employment generated by resident and employee spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that will determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the Sacramento metropolitan region and beyond. The indirect and induced employment from residences and commercial space within the proposed project would not be substantial in the context of the local economy.

## Impacts of Induced Growth

Based on current estimates, the proposed project would increase the population within the city by approximately 1,900 residents. While growth in the Upper Land Park area of the city is an intended consequence of the proposed project, growth induced directly and indirectly by the proposed project could affect the greater Sacramento area. Potential impacts associated with induced growth in the area could include traffic congestion; air quality deterioration; loss of habitat and wildlife; impacts on utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing.

Specifically, an increase in population-growth-induced housing demand in the greater Sacramento region could cause significant environmental effects, as new residential development would require governmental services, such as schools, libraries, and parks. Indirect and induced employment and population growth would further contribute to the loss of open space because it would encourage conversion to urban uses for housing and infrastructure.

While the proposed project would contribute to direct, indirect, and induced growth in the area, the physical effects of that growth would likely be negligible.

## Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, Section 15130(a)). Each section of Chapter 5, Environmental Analysis, concludes with a cumulative impact analysis for the issue area addressed. The cumulative analysis is tiered from the City's recently certified Master EIR that was prepared to analyze environmental impacts associated with development of the General Plan.

An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. This means that the incremental effects of an individual project would be considerable when viewed in combination with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines, Section 15065(c)).

CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This section states further that "individual effects may be changes resulting from a single project or a number of separate projects." "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future

projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.”

Section 15130(a)(3) states also that an EIR may determine that a project’s contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable.

For the purpose of this EIR analysis, the cumulative impacts analysis relies on the cumulative analysis provided in the Master EIR because the project is consistent with the land use assumptions included in the general plan land use diagram. Please see Chapter 1, Introduction, for a discussion of the analysis of “Subsequent Projects Within the Scope of the Master EIR.” Since the proposed project is consistent with the land use assumptions analyzed in the Master EIR, the Master EIR has already considered the impacts of the project as part of the cumulative analysis. For instance, where the project would increase demand for public services that are served by entities whose service area is the City, the cumulative discussion in the Master EIR takes into account all development that would occur within the City. Accordingly, the cumulative analyses contained in each of the technical sections of this DEIR describe the cumulative impacts analyzed in the Master EIR and discuss whether there are any characteristics of the proposed project that would result in a different cumulative impact from that disclosed in the Master EIR.

## **7.0 ALTERNATIVES**

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### INTRODUCTION

The purpose of this chapter is to identify and describe alternatives to the proposed project. Project alternatives are developed to reduce or eliminate the significant or potentially significant adverse environmental effects identified as a result of the proposed project, while still meeting most if not all of the basic project objectives. Relying on the Master EIR for the 2030 General Plan as addressing cumulative effects, growth-inducing effects, and irreversible effects on the environment, this DEIR has identified no additional significant effects that were not addressed as significant in the Master EIR. Mitigation measures have been identified for any project-specific effects that were identified as significant, reducing such effects to a less-than-significant level. Notwithstanding the absence of significant and unavoidable effects, this DEIR identifies and discusses a reasonable range of alternatives to assist the public and decision-makers in their evaluation of the proposed project.

### **California Environmental Quality Act Requirements**

An EIR must evaluate a reasonable range of alternatives to the proposed project, or to the location of the proposed project that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines, Section 15126.6). However, as discussed throughout this DEIR, the proposed project would not result in any significant effects that could not be reduced to a less-than-significant level with mitigation imposed upon the project. For informational purposes, however, this DEIR includes an analysis of alternatives to the project that could be developed based on the existing 2030 General Plan designations, as well as an alternative that considers no new development of the site. The selection of alternatives also takes into account the applicant's project objectives provided in Chapter 2 (Project Description). The project objectives are listed below.

- To develop a new, medium-density urban residential and mixed-use neighborhood reasonably close to the existing Downtown/Central City urban center consistent with the vision of the City for new residential development, as laid out in the 2030 General Plan's land use designations.
- To make efficient use of an opportunity for redevelopment of a developed site within the existing Land Park neighborhood and the Downtown/Central City Sacramento urban center.
- To design a development whose physical layout and land use mix promote walking to services, biking, and transit use
- To incorporate public parks and open space into the project design in a manner that provides recreational opportunities for neighborhood residents and is aesthetically pleasing.
- To develop a residential community in proximity to the major employment centers of downtown Sacramento in order to help reduce the need for commuter travel.

- To recycle as much material as possible during the demolition and construction phases of the project.
- To develop a residential neighborhood that will complement the existing established Land Park neighborhood.

## ALTERNATIVES CONSIDERED AND DISMISSED FROM FURTHER CONSIDERATION

As noted above, the project as proposed would not result in impacts that could not be reduced to less than significant, so the alternatives discussed in this DEIR were developed to provide a comparative analysis of the manner in which the project site could be developed consistent with the 2030 General Plan designations for the site. The City considered a number of alternatives to the proposed project, but certain alternatives were rejected from further consideration. The following alternatives were considered but rejected from further analysis for the reasons discussed below.

- **Off-Site Alternative.** The off-site alternative was rejected from further consideration because the project applicant does not control any off-site properties that could accommodate the project, and due to the infill nature of the project, the potential locations are developed with urban uses. Because the existing land uses on the project site do not conform to the current land use designations, it is likely that the project site would be developed in the future. Consequently, the on-site impacts avoided by an off-site alternative would likely occur in the future and would be in addition to those of construction and operation of the project at an off-site location.
- **Reduced Footprint Alternative.** Reducing the footprint of the project would reduce the ground disturbance effects of the project. A reduced footprint alternative would result in the elimination of some, or perhaps all of the existing uses on the site to accommodate the project. Because the project site is currently committed to uses that differ from the underlying 2030 General Plan land use designations, it is likely that the portion of the site not developed now would be developed at some point in the future. Therefore, a reduced footprint alternative would likely lead to eventual full development of the site, eliminating any potential environmental benefit of the alternative.
- **Reduced Intensity Alternative.** The 2030 General Plan land use designations on the project site allow a minimum of 33 dwelling units per acre (DU/acre) and a maximum of 110 DU/acre. The project anticipates development of the site at an overall density of approximately 40 DU/acre, which is already at the lower end of the allowable density under the 2030 General Plan. Development at 33 DU/acre would not result in a substantial reduction in effects compared to the proposed project. A reduction in density below the 33 DU/acre minimum density, though it could result in a reduction of impacts compared to the proposed project, would not be consistent with vision of the site expressed in the 2030 General Plan and would be inconsistent with the City's efforts to encourage infill development.
- **Maximum Allowable Density Alternative.** The maximum allowable density on the project site is 110 DU/acre. While such a development would be consistent with the 2030 General Plan, it would result in impacts that substantially exceed those of the proposed project and could result in impacts that are significant and unavoidable.

## ALTERNATIVES CONSIDERED IN THIS EIR

Although any number of alternatives could be designed that could be consistent with the 2030 General Plan and the project objectives for the proposed project, this DEIR evaluates the No Project Alternative and two other scenarios that are consistent with the 2030 General Plan designations. These alternatives are briefly described below.

- **No Project/No Development Alternative.** Section 15126.6 (e)(1) of the State CEQA Guidelines requires that a “no project alternative” be evaluated in comparison to the proposed project. The No Project/No Development Alternative is defined in this section as the continuation of the existing condition of the project site. This alternative assumes that the proposed project would not be built and there would be no new development of the site. This alternative assumes the existing buildings and uses on the site would remain.
- **Adaptive Re-Use Alternative.** This alternative would be similar to the proposed project, but would modify Phase 2 of the proposed project to reuse portions of the existing brick Farmers Market building for market, restaurant, office, and neighborhood center uses. The market, restaurant, and office uses would be located on a portion of the project site designated for residential uses under the proposed project. The neighborhood center would be located in roughly the same location as the optional neighborhood center under the proposed project. This alternative would set the maximum number of dwelling units at 825, a reduction of 143 units as compared to the proposed project.
- **Increased Intensity Alternative.** This alternative assumes a density halfway between the minimum and maximum allowable under the General Plan: 71.5 DU/acre for a total of 2,267 residential units. While development under this alternative is denser than the proposed project and would result in more environmental effects than the proposed project, this alternative is consistent with the 2030 General Plan and provides an example of what could be developed on the site.

Each of the alternatives is described in more detail, below, followed by an assessment of the alternative’s impacts relative to the proposed project. Estimates for water demand and the generation of wastewater and solid waste were calculated by applying the standard generation rates used in the utilities analysis of the proposed project to the land uses proposed under the alternative. Transportation impacts were qualitatively assessed using assumptions of trip generation based on land uses. The alternatives’ potential for noise impacts were qualitatively assessed by their relative inclusion of noise-sensitive land uses, the length of their construction schedules, and their potential for generating motor vehicle trips in comparison with the proposed project.

The focus of this analysis is the difference between the alternative and the proposed project. For each issue area, the analysis indicates which mitigation measures would be required of the alternative and whether significant and unavoidable impacts would occur. If necessary, the analysis indicates additional mitigation measures that would be required for the alternative being discussed, and what impacts would be more (or less) severe. Unless otherwise indicated, the level of significance and required mitigation would be the same for the alternative as for the proposed project

and no further statement of the level of significance is made. Table 7-1 provides a summary comparison of the severity of impacts for each alternative by topic.

Issue Area	Proposed Project	No Project/ No Development	Adaptive Re-Use	Increased Intensity
Air Quality	LS	NI	Reduced	Greater
Biological Resources	LS	NI	Equal	Greater
Cultural Resources	LS	NI	Equal	Greater
Global Climate Change	LS	NI	Reduced	Greater
Hazards	LS	NI	Equal	Greater
Noise and Vibration	LS	NI	Reduced	Greater
Parks and Recreation	LS	NI	Equal	Greater
Public Services	LS	NI	Reduced	Greater
Transportation	LS	NI	Reduced	Greater
Visual Resources	LS	NI	Equal	Greater
Utilities	LS	NI	Reduced	Greater

Notes:  
 SU = Significant and Unavoidable – if any impact was identified as significant and unavoidable in the technical analysis.  
 S = Significant before mitigation – if any impact was identified as significant in the technical analysis.  
 LS = Less than Significant – if all impacts were identified as less than significant in the technical analysis.  
 NI = No impact would occur when compared to the proposed project.  
 Equal = Level of significance is equal to the proposed project.  
 Greater = Level of significance is greater compared to the proposed project.  
 Reduced = Level of significance is reduced compared to the proposed project, but not necessarily to a less-than-significant level.  
 Source: EIP Associates, a division of PBS&J, 2007.

### **No Project/No Development Alternative**

Under the No Project/No Development Alternative the existing structures on the site would remain and the site would not be redeveloped.

### **Comparative Environmental Effects**

Because the existing buildings would remain, there would be no change in the visual character of the area. There would be no impacts on biological resources as a result of construction and operation associated with redevelopment of the site. No buildings on the site would be demolished and, therefore, there would be no impacts on historical resources. There would be no potential impacts on archaeological resources resulting from construction-related earth disturbance. Project impacts related to air quality, noise, and vibration, geology and soils, hydrology, and hazardous materials would not occur under this alternative. There would be no change to operational air emissions or noise, because there would be no new development or traffic. Demand for public services and utilities would not change from uses that currently exist on the project site. There would be no transportation-related impacts under the No Project Alternative because there would be no new trips. Therefore, there would be no significant and unavoidable impacts under this alternative.

## **Mitigation That Would No Longer Be Required**

None of the mitigation measures identified in this DEIR would be required under the No Project/ No Development Alternative.

## **Significant and Unavoidable Impacts That Would No Longer Occur**

No significant and unavoidable impacts would occur under the No Project/No Development Alternative.

## **Relationship of the No Project/No Development Alternative to the Project Objectives**

The No Project/No Development Alternative would not achieve any of the project objectives. Moreover, the alternative is not consistent with the General Plan.

## **Adaptive Re-Use Alternative**

This Alternative would modify Phase 2 of the proposed project to reuse portions of the existing brick Farmers Market building (see Figure 7-1). A major portion of the existing brick building would be retained and rehabilitated for contemporary use with interior space totaling approximately 22,350 square feet. The interior space would include 6,300 square feet for office space, which could include conference/meeting rooms for uses such as homeowner's association meetings; 2,200 square feet for restaurant uses; and 13,850 square feet as a market. The portion of the building proposed for the office, restaurant, and market uses begins at the existing Market Club and extends east to 5th Street.

The 13,850-square-foot portion of the existing brick building would be renovated to house a year-round market with occasional street festival intended to serve as a focal point for Northwest Land Park. This portion of the building could be adapted to provide interior semi-permanent retail booths for produce, specialty foods, crafts, and regional and ethnic meals. The existing large exterior covered docks that extend along the existing brick Farmers Market building could house seasonal booths and provide all-weather outdoor spaces for gathering and picnicking. The proposed Festival Way (a private street) could be blocked off and programmed for short-term street fairs, art festivals, and other community gatherings with booths and venues spanning the entire block from 5th Street to the park. While the existing brick Farmers Market building is not considered an historical resource pursuant to CEQA, adaptive re-use of the building could provide contextual character, represent sustainable re-use practices, and create community oriented gathering spaces. Rehabilitation of the building would follow all applicable City standards, as modified by the adopted Northwest Land Park PUD Guidelines, and be fully permitted both for rehabilitation and for the ultimate uses.

The approximately 11,000-square-foot bow-truss warehouse structure would be renovated to serve as a neighborhood center (see Figure 7-1). The warehouse building is located within the area designated in the proposed project as the centrally-located park and is proximate to the area considered for the optional neighborhood center under the proposed project (see the subsection

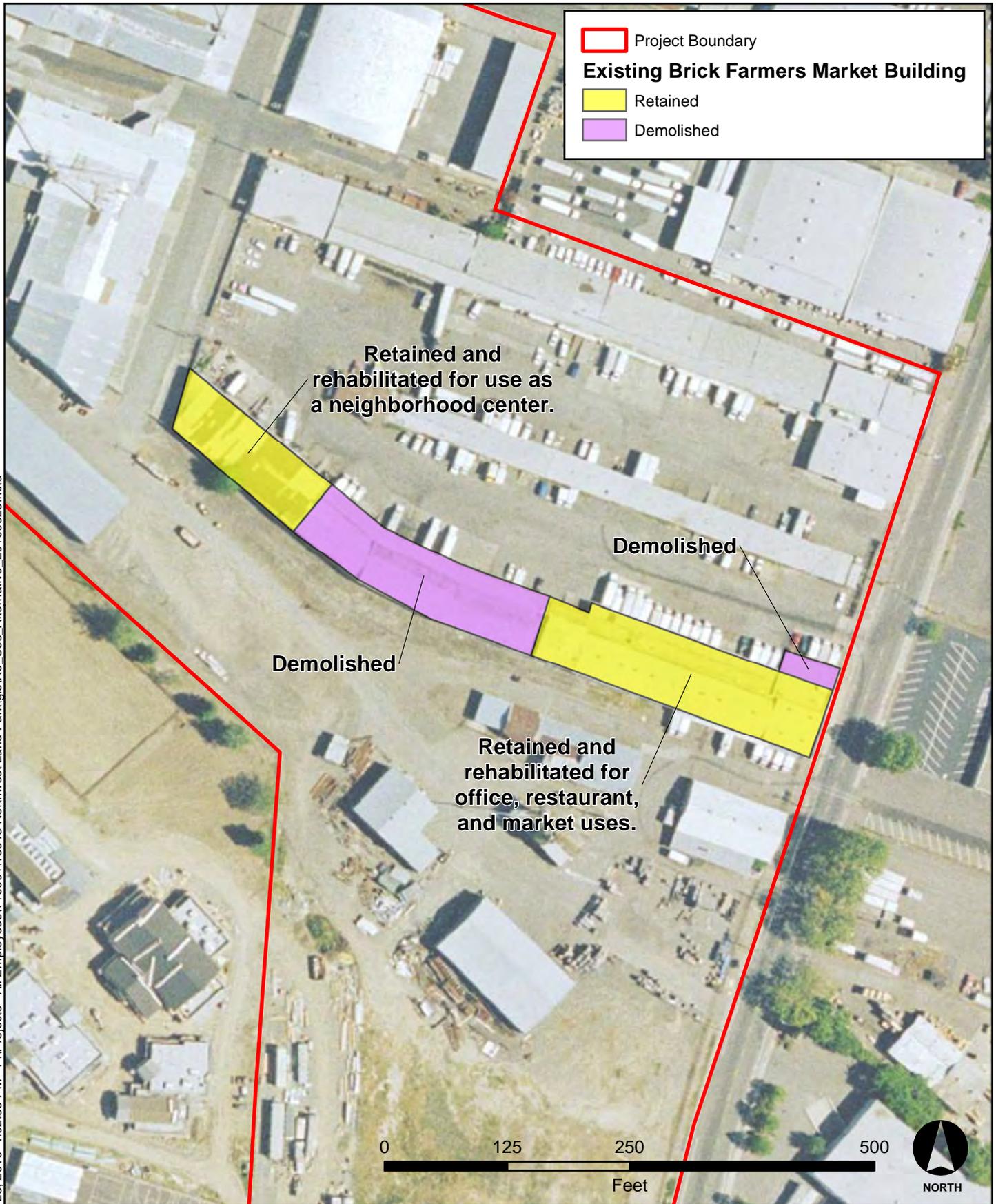


FIGURE 7-1  
**Adaptive Re-Use Alternative**



“Optional Elements” in Chapter 2, Project Description). Under this Alternative, the building would include the uses described in the EIR for the optional neighborhood center.

Under this Alternative, the residential area (planned for 24 units) south of Festival Way in Phase 2 of the proposed project would no longer be used for residential purposes. The 13,850 square feet of market, 2,200 square feet of restaurant, and 6,300 square feet of office uses proposed under this Alternative are of a higher intensity than the 24 residential units proposed as part of the project. In order to maintain the balance and feel of the neighborhood, the maximum number of dwelling units under this alternative would be set at 825, a reduction of 143 units compared to the proposed project. In addition, because the area south of Festival Way in Phase 2 would consist of a private street festival/market and would house predominantly semi-permanent and transient produce, prepared food, specialty food, and arts and crafts booths, the amount of square footage dedicated to farmers market and/ or booth retail within the “produce stand” definition of the Zoning Code would increase from none under the proposed project to approximately 13,850 square feet under this alternative. Park uses would be the same as the proposed project under this alternative. Under this alternative, there would be a slight reduction in the amount of open space to provide community connectivity, because Setzer Run would be narrowed to an eight-foot-wide multi-use trail incorporated as the northern walk of the enhanced Festival Way through to 5<sup>th</sup> Street.

Suggested hours of operation for restaurant and market uses under this alternative would be 10:00 a.m. to 8:00 p.m. weekdays, 8:00 a.m. to 8:00 p.m. Saturdays, and 9:00 a.m. to 6:00 p.m. Sundays. CC&Rs would be adopted to include hours of operation and other measures to reduce potential effects from crowds and noise. Parking for uses under this alternative would be provided consistent with City regulations, as modified by the adopted Northwest Land Park PUD Guidelines.

## Comparative Environmental Effects

The Adaptive Re-Use Alternative would result in a reduction in residential units compared to the proposed project and re-use of some onsite buildings, which could shorten construction time and thereby reduce the overall construction-related air pollutant emissions compared to the proposed project. However, it is anticipated that the intensity of daily construction activities would be similar to the proposed project and, with compliance with applicable Sacramento Metropolitan Air Quality Management District (SMAQMD) guidelines, this alternative would not exceed thresholds. As shown in Table 7-2, operational air pollutant emissions for this alternative would be less than the proposed project's and would be below the SMAQMD's oxides of nitrogen (NO<sub>x</sub>) and reactive organic gases (ROG) thresholds without the implementation of the air quality management plan (AQMP). With the implementation of the AQMP, NO<sub>x</sub> and ROG emissions would be further reduced. This alternative would reduce traffic compared to the proposed project (see below) and, therefore, would reduce carbon monoxide (CO) emissions further below the regulatory threshold. Because the Adaptive Re-Use Alternative would place residential receptors within 500 feet of the adjacent freeway, this alternative, as with the proposed project, would need to implement Mitigation Measure 5.1-2. Implementation of all of the project features and mitigation measures required for the proposed project would result in less than significant impacts for criteria pollutants and toxic air contaminants (TAC) for the Adaptive Re-Use Alternative.

	NO <sub>x</sub>			ROG		
	Without Project Design Features <sup>1</sup>	With Project Design Features <sup>1</sup>	With incorporation of the AQMP <sup>2</sup>	Without Project Design Features <sup>1</sup>	With Project Design Features <sup>1</sup>	With incorporation of the AQMP <sup>2</sup>
Proposed Project	53.37	46.85	42.70	75.12	70.96	60.10
Adaptive Reuse Alternative	49.79	41.40	42.32	67.42	62.09	57.31
<b>Change</b>	<b>(3.58)</b>	<b>(5.45)</b>	<b>(0.38)</b>	<b>(7.70)</b>	<b>(8.87)</b>	<b>(2.79)</b>
Notes:						
1. Modeled with and without emission reduction strategies included in the proposed project.						
2. Cardno WRG, 2010, Air Quality Mitigation Plan for the Northwest Land Park Project. Prepared for Northwest Land Park, LLC. Included as Appendix D						
Source: PBS&J 2010; Operational motor vehicle and area-source air pollutant emissions associated with this alternative were calculated using the URBEMIS2007 model.						

Because the Adaptive Re-Use Alternative would develop the same area as the proposed project, and would also be required to comply with the City Ordinances that protect trees, this alternative would result in the same less-than-significant impact on protected trees. Similarly, because the ground disturbance under this alternative would be the same as the proposed project, the potential for discovery of previously undiscovered significant archaeological resources and human remains would be the same as the proposed project. Mitigation Measure 5.3-2 would also be required for this alternative to reduce potential effects due to the potential discovery of previously undocumented archaeological resources and human remains.

The Adaptive Re-Use Alternative, like the proposed project, would result in a net increase of greenhouse gas (GHG) emissions on the project site due to the replacement of existing uses. However, as shown in Table 7-3, the Adaptive Re-Use Alternative would result in less GHG emissions than the proposed project. Further, with the incorporation of the project design features, the Adaptive Reuse Alternative would reduce emissions by more than 34 percent (nearly 5 percent greater reduction than the proposed project) and would be in compliance with the AB 32 reduction requirements. Therefore, as with the proposed project, the incremental contribution of GHG emissions by the proposed project would have a less-than-significant impact.

	Unmitigated <sup>1</sup>	Mitigated
Proposed Project	9,551	6,690
Adaptive Re-Use Alternative	8,976	5,907
<b>Change</b>	<b>(575)</b>	<b>(783)</b>
Note:		
1. Unmitigated emissions are the NET BAU emissions or the BAU emissions minus the emissions from the existing industrial land uses. BAU stands for business as usual which is an indication of emissions without the incorporation of proposed federal, state, local reduction measures, and project specific features that would reduce emissions in comparison to typical construction and design.		
Source: PBS&J 2010.		

As discussed in Section 5.5, Hazards and Hazardous Materials, historical uses on the site have resulted in areas of contaminated soil and groundwater, which are currently the subject of remediation with oversight from agencies such as the Sacramento County Environmental Management Department and Department of Toxic Substance Control. It is assumed that the remediation efforts on the site would continue regardless of the project to be developed, consequently, effects related to hazardous materials would be the same for this alternative as the proposed project.

Because Adaptive Re-Use Alternative would result in fewer residential units than the proposed project, this alternative would generate a reduced demand for parks compared to the proposed project and its impact on parks would be less than that of the proposed project. As discussed in Section 5.7, Parks and Recreation, Sacramento City Code requires that new residential projects dedicate land, pay in-lieu fees, or otherwise contribute a fair share to the acquisition and development of parks or recreation facilities to meet the service level goals. Therefore, like the proposed project, this alternative would require the acquisition of additional parkland, but would also be required to comply with the City Code to ensure that adequate parkland is provided.

The Adaptive Re-Use Alternative would generate the demand for fewer fire fighters and police officers than the proposed project, because there would be fewer residential units under this alternative. Like the proposed project, payment of development fees would ensure adequate service would be provided. Because this alternative would result in fewer residential units, it would also generate fewer students who would attend local schools. Similar to the project, however, payment of required school impact fees would ensure impacts related to the generation of additional students under this alternative would be less than significant.

The Adaptive Re-Use Alternative would generate approximately 471 fewer total trips than the proposed project; this alternative would also result in fewer AM and PM peak hour trips (28 and 30 fewer peak-hour trips, respectively) than the proposed project (Appendix U). Therefore, traffic impacts of this alternative would be less than the proposed project. The Adaptive Re-Use Alternative would include an open air market (neighborhood-oriented produce stand), including the redevelopment of the Farmers Market and Market Club building. The market is intended to complement the Northwest Land Park community as a civic gathering place that attracts many of its patrons from the immediately surrounding area. Approximately 50-60 parking stalls should be accommodated on the festival street to serve the adjacent open air market; however when street closures occur for periodic events, no on-site parking would be available. For the purposes of the open air market, parking along surrounding streets may be used to satisfy the parking demand. The market would be exempt from any on-site parking requirements by and through a parking waiver which would be obtained upon project approval.

Because this alternative would generate less traffic than the proposed project, the traffic-generated noise would be less than the proposed project. Noise from Interstate 5 (I-5) would result in a similar impact on this alternative and Mitigation Measures 5.6-1 and 5.6-2 would also be required under this alternative to reduce noise impacts from I-5. This alternative would result in a similar amount of

development as the proposed project, so construction noise under this alternative would be similar to that of the proposed project and would not exceed established noise standards. Construction-related vibration would also be similar to the proposed project and would also be less than significant.

As discussed above, much of the development under this alternative would be the same as the proposed project, with the difference being development of non-residential uses along the proposed Festival Way. Potential effects related to glare, therefore, would be similar to those of the proposed project. To ensure that glare from reflective surfaces on building materials would not negatively affect the surrounding area, Mitigation Measure 5.10-1 would also be required under this alternative. Impacts related to glare would be the same as the proposed project. As with the proposed project, the Adaptive Re-Use Alternative would alter the character of the development on the site. However, because any development on the site would be required to comply with the General Plan policies that guide development patterns and streetscape improvements within the City, the new development would be consistent with the urban character as envisioned in the General Plan. Thus, development of the site under the Adaptive Re-Use Alternative would not be considered an adverse change.

As discussed in Section 5.11, Utilities, the proposed project would generate water demand of approximately 166.1 acre-feet per year (AFY). The Adaptive Re-Use Alternative would result in development with 143 fewer residential units and 24,850 square feet of non-residential uses. Using the demand factors used for the proposed project and assuming a commercial demand rate for all the additional non-residential uses under this alternative, the Adaptive Re-Use Alternative would generate demand for 154.4 AFY. The impact on water supplies would, therefore, be less than that of the proposed project and it would also be less than significant.

Wastewater generation under the Adaptive Re-Use Alternative would also be less than the proposed project. Using the wastewater generation factors from Section 5.10, Utilities, and assuming a commercial generation rate for all the additional non-residential uses under this alternative, the total average dry weather flow from the Adaptive Re-Use Alternative would be approximately 31,700 gallons per day less than the proposed project. Therefore, the impact due to wastewater generation of the Adaptive Re-Use Alternative would be less than the proposed project and would also be less than significant.

### **Significant and Unavoidable Impacts That Would No Longer Occur**

No significant and unavoidable impacts would occur under the Adaptive Re-Use Alternative.

### **Relationship of the Adaptive Re-Use Alternative to the Project Objectives**

The Adaptive Re-Use Alternative would be consistent with the project objectives. This alternative would develop a medium-density urban residential and mixed-use neighborhood within the existing Land Park neighborhood and the Downtown/Central City Sacramento urban center. Like the proposed project the Adaptive Re-Use Alternative's design would promote walking to services,

biking, and transit use and include public parks and open space to provide recreational opportunities for neighborhood residents. The site is in proximity to the major employment centers of downtown Sacramento, which would help reduce overall commuter traffic volumes. It is assumed that this alternative would also incorporate plans to recycle as much material as possible during the demolition and construction phases of the project. The residential and non-residential uses in this alternative would complement the existing established Land Park neighborhood.

### **Increased Intensity Alternative**

The Increased Intensity Alternative assumes that the residential density on the project site would be in the middle of the range allowed by the Urban Neighborhood Medium Density General Plan Designation on the site. The Urban Neighborhood Medium Density designation allows between 33 and 110 residential units per acre, so the middle range density would be 71.5 units per acre. At this density, the Increased Intensity Alternative would include 1,372 residential units (71.5 units on 19.2 acres). Therefore, this alternative would include 404 more residential units than the proposed project. It is assumed that the non-residential component of this alternative would be the same as the proposed project.

### **Comparative Environmental Effects**

The Increased Intensity Alternative would result in an increase in dwelling units compared to the proposed project, which could lengthen the construction time and thereby increase the overall construction-related air pollutant emissions compared to the proposed project. It is anticipated, however, that the intensity of daily construction activities would be similar to the proposed project and, with compliance with applicable SMAQMD guidelines, construction under this alternative would not exceed thresholds. Because this alternative would include more residential units and, therefore, generate more traffic, operational air pollutant emissions for this alternative would be more than the proposed project and could exceed SMAQMD's NO<sub>x</sub> and ROG thresholds even with implementation of the AQMP. This alternative would increase traffic compared to the proposed project and, therefore, would increase CO emissions compared to the proposed project. However, this alternative would not result in intersection volume of more than 31,600 vehicles per hour; contribute traffic to locations where horizontal or vertical mixing of air would be substantially limited; or change the mix of vehicle types at the affected intersection to that substantially different from the County average. Therefore, this alternative would not exceed the regulatory threshold for CO. Because the Increased Intensity Alternative would place residential receptors within 500 feet of the adjacent freeway, this alternative, as with the proposed project, would need to implement Mitigation Measure 5.1-2. Implementation of all of the project features and mitigation measures required for the proposed project would result in less than significant impacts for criteria pollutants and TAC for the Increased Intensity Alternative.

Because the Increased Intensity Alternative would develop the same area as the proposed project, and would also be required to comply with the City Ordinances that protect trees, this alternative would result in the same less-than-significant impact on protected trees. Similarly, because the ground disturbance under this alternative would be the same as the proposed project, the potential

for discovery of previously undiscovered significant archaeological resources and human remains would be the same as the proposed project. Mitigation Measure 5.3-2 would also be required for this alternative to reduce potential effects due to the potential discovery of previously undocumented archaeological resources and human remains.

The Increased Intensity Alternative, like the proposed project, would result in a net increase of greenhouse gas (GHG) emissions on the project site due to the replacement of existing uses. However, the Increased Intensity Alternative would result in more GHG emissions than the proposed project. With the incorporation of the project design features, the Increased Intensity Alternative would substantially reduce emissions and would be in compliance with the AB 32 reduction requirements. Therefore, as with the proposed project, the incremental contribution of GHG emissions by the proposed project would have a less-than-significant impact.

As discussed in Section 5.5, Hazards and Hazardous Materials, historical uses on the site have resulted in areas of contaminated soil and groundwater, which are currently the subject of remediation with oversight from agencies such as the Sacramento County Environmental Management Department and Department of Toxic Substance Control. It is assumed that the remediation efforts on the site would continue regardless of the project to be developed, consequently, effects related to hazardous materials would be the same for this alternative as the proposed project.

Because Increased Intensity Alternative would result in more residential units than the proposed project, this alternative would generate greater demand for parks than the proposed project and its impact on parks would be increased compared to the proposed project. As discussed in Section 5.7, Parks and Recreation, Sacramento City Code requires that new residential projects dedicate land, pay in-lieu fees, or otherwise contribute a fair share to the acquisition and development of parks or recreation facilities to meet the service level goals. Therefore, like the proposed project, this alternative would require the acquisition of additional parkland, but would also be required to comply with the City Code to ensure that adequate parkland is provided.

The Increased Intensity Alternative would generate the demand for more fire fighters and police officers than the proposed project, because there would be more residential units under this alternative. Like the proposed project, payment of development fees would ensure adequate service would be provided. Because this alternative would result in more residential units, it would generate more students who would attend local schools. Similar to the project, however, payment of required school impact fees would ensure impacts related to the generation of additional students under this alternative would be less than significant.

Because the Increased Intensity Alternative includes approximately 40 percent more residential units than the proposed project, it would generate more traffic than the proposed project. Therefore, traffic impacts of this alternative would be greater than the proposed project. A detailed traffic analysis would be required to define impacts and develop mitigation measures to reduce impacts if this alternative were adopted.

Because the Increased Intensity Alternative would generate more traffic than the proposed project, the traffic-generated noise would be greater than the proposed project. Noise from I-5 would result in a similar impact on residential uses under this alternative and Mitigation Measures 5.6-1 and 5.6-2 would also be required under this alternative to reduce noise impacts from I-5. This alternative would result more development than the proposed project, which may increase the duration of construction, but construction noise would be similar to that of the proposed project and would not exceed established noise standards. Construction-related vibration would also be similar to the proposed project and would also be less than significant.

The Increased Intensity Alternative would include residential uses, which is the same type of use as the proposed project. Therefore, potential effects related to glare would be similar to those of the proposed project. To ensure that glare from reflective surfaces on building materials would not negatively affect the surrounding area, Mitigation Measure 5.10-1 would also be required under this alternative. With implementation of the mitigation, impacts related to glare would be the same as the proposed project. As with the proposed project, the Increased Intensity Alternative would alter the character of the development on the site. However, because any development on the site would be required to comply with the General Plan policies that guide development patterns and streetscape improvements within the City, the new development would be consistent with the urban character as envisioned in the General Plan. Thus, development of the site under the Increased Intensity Alternative would not be considered an adverse change.

As discussed in Section 5.11, Utilities, the proposed project would generate water demand of approximately 166.1 acre-feet per year (AFY). The Increased Intensity Alternative would result in development with 404 more residential units. Using the demand factors used for the proposed project under this alternative, the Increased Intensity Alternative would generate demand for 226.8 AFY or approximately 60 AFY more than the proposed project. However, the demand generated by this alternative would not exceed the diversion amount specified for the City; therefore, the impact on water supplies would be less than significant, although it would be greater than the proposed project.

Wastewater generation under the Increased Intensity Alternative would also be greater than the proposed project. Based on the wastewater generation factors from Section 5.10, Utilities, the total average dry weather flow from the Increased Intensity Alternative would be approximately 94,000 gallons per day more than the proposed project. Therefore, the impact due to wastewater generation of the Increased Intensity Alternative would be greater than the proposed project. Nonetheless, wastewater generated under this alternative would not exceed the capacity of the wastewater treatment plant and the impact would also be less than significant.

### **Significant and Unavoidable Impacts That Would No Longer Occur**

The Increased Intensity Alternative would not reduce impacts relative to the proposed project and could result in air emissions that exceed SMAQMD's thresholds for NO<sub>x</sub> and ROG.

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## **Relationship of the Increased Intensity Alternative to the Project Objectives**

The Increased Intensity Alternative would be consistent with the project objectives. This alternative would develop a medium-density urban residential and mixed-use neighborhood within the existing Land Park neighborhood and the Downtown/Central City Sacramento urban center. Like the proposed project the Increased Intensity Alternative's design would promote walking to services, biking, and transit use and include public parks and open space to provide recreational opportunities for neighborhood residents. The site is in proximity to the major employment centers of downtown Sacramento, which would help reduce overall commuter traffic volumes. It is assumed that this alternative would also incorporate plans to recycle as much material as possible during the demolition and construction phases of the project. The uses in this alternative would complement the existing established Land Park neighborhood.

### **Environmentally Superior Alternative**

The environmentally superior alternative would be the No Project/No Development Alternative because it would not result in new impacts on the project site. However, the No Project/No Development Alternative does not achieve any of the project's objectives. CEQA Guidelines Section 15126.6(e)(2) states that when the No Project/No Development Alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives. The Increased Intensity Alternative would result in effects that are greater than those of the proposed project, so it would not be considered environmentally superior.

From the alternatives evaluated in this DEIR, other than the No Project/No Development Alternative, the environmentally superior alternative would be the Adaptive Re-Use Alternative. As described above, the Adaptive Re-Use Alternative would reduce the project area population compared to the proposed project, so it would reduce population-related impacts. The Adaptive Re-Use Alternative would reduce the severity of impacts on air quality, global climate change, public services, noise and vibration, transportation, and utilities.

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## 8.0 REFERENCES

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## **9.0 MITIGATION MONITORING AND REPORTING PROGRAM**

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## 9.0 MITIGATION MONITORING AND REPORTING PROGRAM

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### INTRODUCTION

The California Environmental Quality Act (CEQA) requires review of any project that could have significant adverse effects on the environment. In 1988, CEQA was amended to require reporting on and monitoring of mitigation measures adopted as part of the environmental review process. This Mitigation Monitoring Plan (MMP) is designed to aid the City of Sacramento in its implementation and monitoring of measures adopted from the Northwest Land Park Environmental Impact Report (EIR).

### MITIGATION MEASURES

The mitigation measures are taken from the Northwest Land Park EIR and are assigned the same number they had in the Draft EIR. The MMP describes the actions that must take place to implement each mitigation measure, the timing of those actions, and the entities responsible for implementing and monitoring the actions.

### MMP COMPONENTS

The components of each monitoring form are addressed briefly, below.

**Impact:** This column summarizes the impact stated in the Draft EIR.

**Mitigation Measure:** All mitigation measures that were identified in the Northwest Land Park EIR are presented, and numbered accordingly.

**Action:** For every mitigation measure, one or more actions are described. These are the center of the MMP, as they delineate the means by which EIR measures will be implemented, and, in some instances, the criteria for determining whether a measure has been successfully implemented. Where mitigation measures are particularly detailed, the action may refer back to the measure.

**Implementing Party:** This item identifies the entity that will undertake the required action.

**Timing:** Each action must take place prior to the time at which a threshold could be exceeded. Implementation of the action must occur prior to or during some part of approval, project design or construction or on an ongoing basis. The timing for each measure is identified.

**Monitoring Party:** The City of Sacramento is responsible for ensuring that mitigation measures are successfully implemented. Within the city, a number of departments and divisions would have responsibility for monitoring some aspect of the overall project.



TABLE 1

NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
<b>5.3 Cultural Resources</b>					
<p><b>5.3-2 Implementation of the proposed project could cause a substantial change in the significance of an archaeological resource as defined in CEQA Guidelines section 15064.5.</b></p>	<p>5.3-2 a) In the event that any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil (“midden”), that could conceal cultural deposits, are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted and the City of Sacramento Community Development Department shall be notified. The City shall consult with a qualified archeologist retained at the applicant’s expense to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), representatives of the City and the qualified archaeologist shall meet to determine the appropriate course of action, with the City making the final decision. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards.</p> <p>If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code §5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Public Resources Code §5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code §5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts on it, including any or a combination of the following:</p>	<p>Comply with mitigation requirements regarding consultation and subsequent actions if prehistoric or historic-era subsurface archaeological features are encountered</p>	<p>Construction contractor</p>	<p>During construction</p>	<p>Community Development Department</p>

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<ul style="list-style-type: none"> <li>• Avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization. If such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements;</li> <li>• An agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or</li> <li>• Other measures, short of full or partial avoidance or preservation, intended to minimize impacts on the Native American Cultural Place consistent with land use assumptions and the proposed design and footprint of the development project for which the requested grading permit has been approved.</li> <li>• After receiving such recommendations, the City shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development project. The City shall, in reaching conclusions with respect to these recommendations, consult with both the project applicant and the most appropriate and interested tribal organization.</li> </ul> <p>b) If human remains are discovered at any project construction sites during any phase of construction, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the City of Sacramento Community Development Department and the County coroner shall be notified immediately. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission</p>	<p>If human remains are discovered, stop work and notify City; comply with mitigation requirements</p>	<p>Construction contractor</p>	<p>During construction</p>	<p>Community Development Department</p>

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<p>(NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines section 15064.5(e) and Public Resources Code section 5097.98. The project applicant shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.</p>				
<p><b>5.3-3 Implementation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</b></p>	<p>5.3-3 Should paleontological resources be identified at any project construction sites during any phase of construction, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Sacramento Community Development Department. The project applicant shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the Community Development Department shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.</p>	<p>Comply with mitigation requirements regarding consultation and subsequent actions if paleontological resources are encountered</p>	<p>Construction contractor</p>	<p>During construction</p>	<p>Community Development Department</p>

TABLE 1

NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
<b>5.4 Global Climate Change</b>					
<p><b>5.4-1 Construction and operation of the proposed project would generate greenhouse gas emissions that may have a significant impact on the environment.</b></p>	<p>5.4-1 The following PUD Guidelines shall be incorporated into project design, as verified by City staff during design review:</p> <ul style="list-style-type: none"> <li>• Choice of Mobility – The applicant shall allow for multiple modes of transportation including private automobiles, bicycles, and pedestrian mobility.</li> <li>• Street Connectivity – The streets shall be designed on a modified grid with multiple connections to the surrounding roadway network.</li> <li>• Pedestrian and Bicycle Connectivity – The applicant shall provide sidewalks on both sides along all streets, and a defined multi-use trail network. The applicant shall develop private pathways that provide pedestrian linkages within individual blocks and between community uses.</li> <li>• Safe Environment – Streets shall be designed to be safe in terms of traffic mobility, diversity in users, and crime prevention. Climate Appropriate Plants – Trees, shrubs, and grasses shall be conducive to the Northern California environment in terms of water use, drought tolerance, maintenance, and durability. Synthetic Turf should be used for active play areas and small gathering lawns.</li> <li>• Low Maintenance &amp; Cost Effectiveness – Landscape material including trees, plants, turf, and hardscape should require minimal maintenance as compared to other varieties and material choices. Synthetic turf shall be used to the extent possible in lieu of natural turf and grasses. Materials should be cost effective to lessen the initial expenditure, periodic replacement, and long-term maintenance. Turf may be synthetic to lessen irrigation demands and long term maintenance.</li> </ul>	<p>Incorporate into project design greenhouse gas-reducing measures from PUD Guidelines</p>	<p>Project applicant</p>	<p>Prior to Final Map approval</p>	<p>Community Development Department</p>

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<ul style="list-style-type: none"> <li>• Standard Streetscape – The plantings along streets and the community trails shall consist mainly of species that at maturity will act as large canopy shade trees and colorful understory plantings. Nothing in this section shall be construed to require an initial planting larger than a 24” box tree.</li> <li>• Alternative Local Streetscape - Landscaping along internal local streets shall be more lush and generous in plant coverage including primarily canopy shade trees to create a dynamic streetscape.</li> <li>• Stormwater Management – The project will redevelop with smaller residential buildings interlaced within green courtyards, large central park and meandering greenbelt, and utilizing decorative permeable materials for private driveways and courts. The pervious to impervious ratio for Phase 1 (40% permeable to 60% Impermeable) will be used as a minimum guideline for the build-out of the entire site through Phase 4.</li> <li>• Water Efficiency – All project landscaping shall be climate appropriate for the area and irrigated with moisture sensor driven systems to provide drought tolerance and maximum efficiency of water use in irrigation. Synthetic turf shall be used, to the greatest extent possible, for private grassed areas within the development.</li> <li>• Vegetation &amp; Forestation – Vegetation and tree planting plans shall be designed to provide shading for streets, hardscape surfaces, buildings, and recreation areas during summer months. In contrast, said plans shall include landscape varieties that lose their leaves during winter months to promote passive sunlight within the community, thus reducing energy use relating to heating and lighting.</li> </ul>				

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<ul style="list-style-type: none"> <li>• Air Quality – The project proposes that all buildings, units, and facilities, indoors and out, are free of devices designated to facilitate the combustion of wood or wood products to eliminate emissions generally associated with traditional fireplaces.</li> <li>• Reuse and Recycling - The project shall re-use at least 50% of the salvageable materials in the existing improvements on-site, as measured by weight. This can take the form of re-use of entire structures, re-use or repurposing of significant elements, such as beams or trusses, and recycling materials within the new project such as grinding paving and asphalt for use as base material at the site. These activities will increase the sustainability of the site through reduced waste materials from demolition, reduced need for new materials on-site, and reduction of the ancillary transportation impacts from off-haul and delivery of materials to the site. Additionally, the project will evaluate brick, wood, metal, and masonry materials from the demolition to be re-manufactured into a “heritage” line of finishes to be offered as upgrades to the units. As an example, wood timbers would be converted into flooring material to provide the character and cache of “distressed” lumber underfoot. These efforts will increase the amount of on-site materials reused sustainably within the project.</li> <li>• Efficient Floor Plans - The Northwest Land Park community will be developed with compact efficient floor plans. In addition the majority of units will share wall/floor space, and thus thermal mass, with at least one other unit.</li> <li>• Insulation – Building shall be designed with a high-efficiency thermal shell for the units with exterior walls at or above R25 for walls and R40 for ceilings.</li> </ul>				

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<ul style="list-style-type: none"> <li>• Climatization – Residential buildings shall use small high efficiency heating and cooling units.</li> <li>• Lighting - Buildings shall use a LED or fluorescent lighting system throughout the units, allowing for energy efficient lighting.</li> <li>• Exterior Lighting – Exterior HOA maintained lighting, including pathway lights, accent/landscaping lights, motor-court lights, and private street lights shall use LED lighting technologies.</li> <li>• Water Heaters - The project shall provide high efficiency tank-less hot water heaters to provide for the most energy efficient delivery of hot water. Nothing in this provision shall preclude installation of high efficiency alternative energy source hot water heating and storage units.</li> <li>• Electrical vehicle accommodations – The project shall incorporate 110v electrical outlets in the garage units such that they are readily accessible for use with electric vehicles.</li> <li>• Renewable Energy Commitment - The project shall incorporate a 400 KW renewable energy system to reduce the amount of energy purchased by the Project. The renewable energy will be incorporated over the life of the project such that a minimum of 100 KW will be incorporated into phase 1 with an aggregate total of 100 KWs per phase through the buildout of phase 4. The 400 KW system will result in an annual reduction of 730,000 kWh of purchased electricity at full project buildout, This is equivalent to the emissions from electrical consumption of approximately 188 dwelling units. The renewable energy system may include solar, wind, fuel cells, or other new technology that becomes available over</li> </ul>				

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<p>the implementation of the project. The following are the commitments already made by the project to foster this renewable commitment:</p> <ul style="list-style-type: none"> <li>○ Photovoltaic Design - The project shall be planned to orient at least 40% of the roof area of a minimum of 50% of the buildings to the west, south or southwest so that photovoltaic panels and collector systems can provide maximum benefit when installed. The project shall work with the local utility and, through an aggressive sales program, encourage and provide solar systems and/or alternative energy systems as an option.</li> <li>○ Solar Orientation – The majority of the project's buildings shall be designed to orient the roof tops with strong solar capture opportunities for photovoltaic panels throughout the community. The orientation of at least 40% of the roof area of at least 50% of the buildings shall be west, southwest, or south.</li> <li>○ Solar Energy – As indicated in the AQMP (measure M28), the NWLP Project has committed to the implementation of a solar energy system that will offset a minimum of 2.5% of the residential needs of the project.</li> </ul>				
<b>5.5 Hazards and Hazardous Materials</b>					
<p><b>5.5-1 Implementation of the proposed project could result in the exposure of people to hazards and hazardous materials during construction activities.</b></p>	<p>5.5-1 a) No grading may occur on the parcels within Phases 2, 3 or 4 until SCEMD issues a no further action letter for Phases 2, 3 and 4, respectively. In the event a no further action letter is issued for only certain parcels within a Phase, grading may only occur on the parcels for which a no further action letter was issued. The applicant shall be responsible for providing written confirmation of SCEMD action prior to the issuance of a grading permit for any affected project phase.</p>	<p>Provide SCEMD “no further action letter” to City from SCEMD prior to obtaining grading permit for Phases 2, 3 or 4</p>	<p>Construction contractor</p>	<p>Prior to obtaining grading permit</p>	<p>Building Department</p>

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<p>b) Prior to issuance of a grading permit that would include installation of underground utility trenches, the City shall ensure a groundwater management plan has been prepared by a qualified environmental professional registered in California. The plan shall be submitted to the City for review and approval.</p> <p>The groundwater management plan shall identify the locations and depths of underground utility trenches relative to known contaminated groundwater. If it is determined trenches could intercept contaminated groundwater during construction, the plan shall identify measures to be implemented to properly remove and dispose of contaminated groundwater in accordance with best management practices and City requirements. Such measures could include, but not be limited to, the use of a pump to extract the contaminated groundwater out of the trench and then store the water onsite in a sump or storage tank until properly discharged into the City sewer system per City regulations described below.</p> <p>All dewatering activities shall be subject to the requirements of the City's Department of Utilities Engineering Services Policy No. 0001 (adopted as Resolution No. 92-439 by the Sacramento City Council), which protects water quality by monitoring dewatering activities and ensuring that all groundwater discharges are free of contamination.</p> <p>The groundwater management plan shall also identify specific measures (e.g., design features, construction methods) to ensure underground utilities do not create a horizontal conduit for contaminant migration. The plan shall include provisions for monitoring the effectiveness of the construction methods in minimizing horizontal contaminated groundwater migration along utility trenches.</p>	<p>Submit groundwater management plan to City</p>	<p>Construction contractor</p>	<p>Prior to issuance of a grading permit</p>	<p>Building Department</p>

**TABLE 1**

**NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM**

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
	<p>c) Prior to site preparation (i.e., grading, clearing), the project applicant shall consult with SCEMD to determine whether there are any construction activities that could damage or otherwise interfere with use of on-site monitoring wells, specifically MW-3 for ongoing groundwater monitoring. If SCEMD determines the wells would not be affected by project activities, the project applicant shall obtain written documentation from SCEMD to that effect. If it is determined that well relocation or protective measures are necessary, the project applicant shall coordinate with SCEMD in advance of any site preparation activities during construction to identify the appropriate measures and to obtain regulatory approval of such measures. Site preparation activities that could affect the monitoring wells shall not be implemented until SCEMD has inspected any modifications and provided written notification to the City that it has reviewed and approved the protective measures.</p> <p>The City shall not issue a grading permit to the project applicant until written documentation from SCEMD is provided to the City that determines the groundwater monitoring wells would not be affected by site preparation project activities, or, if it is determined that well relocation or protective measures are necessary, SCEMD has inspected any modifications and provided written notification to the City that it has reviewed and approved the protective measures.</p>	<p>Obtain written documentation from SCEMD that construction activities would not damage on-site monitoring wells</p>	<p>Construction contractor</p>	<p>Prior to issuance of a grading permit</p>	<p>Building Department</p>

<b>TABLE 1</b>					
<b>NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM</b>					
<b>Impact</b>	<b>Mitigation Measure(s)</b>	<b>Action(s)</b>	<b>Implementing Party</b>	<b>Timing</b>	<b>Monitoring and Enforcement</b>
<b>5.6 Noise and Vibration</b>					
<b>5.6-1 Implementation of the proposed project could result in exterior noise levels at sensitive receptors in the project area (including those on the project site) that are above the upper value of the normally acceptable category for various land uses.</b>	5.6-1 a) Residential structures in the project shall be designed to avoid any exterior communal/recreational areas, excluding balconies, on the third and fourth floors with direct line-of-sight to I-5.  b) Residential structures in the project shall be designed to avoid any exterior communal/recreational areas within 200 feet (direct line-of-sight) of the existing commercial operations located immediately northeast of the project site, unless subsequent design features, which may include, but are not limited to, a masonry wall, can be incorporated into the project design to reduce noise associated with truck operations to less than 65 dBA $L_{eq}$ over a 1-hour period. The applicant shall provide written confirmation from a qualified noise consultant that any such design features are effective to achieve the required reduction in noise exposure.	Avoid building design with exterior communal/recreational areas with direct line-of-sight to I-5	Project applicant	Prior to issuance of building permits	Community Development Department
		Avoid building design with exterior communal/recreational areas with direct line-of-sight to existing commercial operations	Project applicant	Prior to issuance of building permits	Community Development Department
<b>5.6-2 Implementation of the proposed project could result in residential interior noise levels of <math>L_{dn}</math> 45 dB or greater at sensitive receptors in the project area (including those on the project site).</b>	5.6-2 a) The project applicant shall design residential structures in Phases 3 and 4 of the project to provide up to a 30 dBA reduction from exterior to interior noise levels on any third and fourth floors of proposed residential structures in accordance with City standards and the requirements of CCR Title 24 Section 1207.11.2. The project applicant shall demonstrate to the City in the form of a site-specific, design-specific acoustical analysis that no residences shall be subject to interior noise levels in excess of City standards. Measures that may be incorporated into the design of residential structures within Phases 3 and 4 may include, but are not limited to: <ul style="list-style-type: none"> <li>• The use of triple-paned or no windows along any western facing walls;</li> <li>• Limiting buildings to two stories in height;</li> <li>• Increasing the setback distance between residential structures and I-5;</li> </ul>	Design structures to limit noise impacts per Mitigation Measure 5.6-2	Project applicant	Prior to issuance of building permits	Community Development Department



<b>TABLE 1</b>					
<b>NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM</b>					
<b>Impact</b>	<b>Mitigation Measure(s)</b>	<b>Action(s)</b>	<b>Implementing Party</b>	<b>Timing</b>	<b>Monitoring and Enforcement</b>
<b>5.9 Transportation and Circulation</b>					
<b>5.9-7 Phase 1 of the proposed project could cause potentially significant impacts due to construction-related activities.</b>	5.9-7 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: <ul style="list-style-type: none"> <li>• Description of trucks including: number and size of trucks per day, expected arrival/departure times, truck circulation patterns.</li> <li>• Description of staging area including: location, maximum number of trucks simultaneously permitted in staging area, use of traffic control personnel, specific signage.</li> <li>• Description of street closures including: duration, advance warning and posted signage, safe and efficient access routes for emergency vehicles, and use of manual traffic control.</li> <li>• 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.</li> </ul>	Submit construction traffic and parking management plan to City Traffic Engineer	Construction contractor	Prior to issuance of grading permits	City Traffic Engineer
<b>5.9-15 The proposed project would contribute to unacceptable peak hour operations at the W Street/9th Street intersection.</b>	5.9-15 The project applicant shall contribute its fair share toward restriping the southbound approach to the W Street/ 9 <sup>th</sup> Street intersection to add an exclusive right-turn lane while maintaining the two existing through lanes and one existing shared through/right lane.	Pay fair share of W Street/9th Street restriping	Project applicant	Prior to issuance of building permits	Department of Transportation

TABLE 1

## NORTHWEST LAND PARK MITIGATION MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure(s)	Action(s)	Implementing Party	Timing	Monitoring and Enforcement
<b>5.9-16</b> The proposed project would contribute to unacceptable peak hour operations at the I-5 NB Off-Ramp/Broadway intersection and vehicular queuing that extends onto the freeway mainline.	5.9-16 The project applicant shall contribute its fair share toward the installation of a traffic signal at the I-5 NB Off-Ramp/ Broadway intersection.	Pay fair share of traffic signal at the I-5 NB Off-Ramp/ Broadway intersection	Project applicant	Prior to issuance of building permits	Department of Transportation
<b>5.10 Urban Design and Visual Resources</b>					
<b>5.10-1</b> Implementation of the proposed project could cast glare in such a way as to cause a public hazard or annoyance for a sustained period of time.	5.10-1 The proposed project shall prohibit new development within the project site from: <ul style="list-style-type: none"> <li>1) using reflective glass that exceeds 50 percent of any building surface and on the ground three floors;</li> <li>2) using mirrored glass;</li> <li>3) using black glass that exceeds 25 percent of any surface of a building; and</li> <li>4) using metal building materials that exceed 50 percent of any street-facing surface of a primarily residential building.</li> </ul>	Comply with Mitigation Measure 5.10-1 regarding use of glass and reflective building materials	Project applicant	Prior to issuance of building permits	Community Development Department

## **10.0 REPORT PREPARATION**

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## 10.0 REPORT PREPARATION

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