

in the ordinance. Traffic studies are required to include traffic analysis for three conditions: Existing Conditions, Existing Conditions + projects that have been approved (Existing + Approved Projects Conditions) and a 20- to 25-year projection. Transportation improvements required to mitigate impacts are based on results of this analysis. Right-of way dedication is required for roadway improvements identified in the current General Plan to accommodate traffic conditions associated with buildout of all allowable land uses. Conditions of approval for development projects involving transportation improvements are based on short term impacts (Existing + Approved Projects) and the 20-year projections.

### ***B. Existing Conditions***

The Brighton Landing project area is a 235-acre site located in southeast Vacaville, as shown in Figure 4.14-1. The main access to the site would be provided on Elmira Road, which serves as the northern boundary of the site, and Leisure Town Road, which serves as the western boundary of the site. Elmira Road and Leisure Town Road would be connected to the site through a number of proposed roadways. For ease of reference, this analysis has assigned arbitrary letters to the new project roadways. As shown on the inset on Figure 4.14-2, they include S Street, J Street, and Z Street, which are north-south collector roads with connection to Elmira Road; and North Street and South Street, which are two local streets with direct linkage to Leisure Town Road. This section describes the existing transportation environment of the project area, including roadway network, traffic levels and operations of selected intersections, roadway segments and freeway segments, transit services, and pedestrian and bicycle facilities.

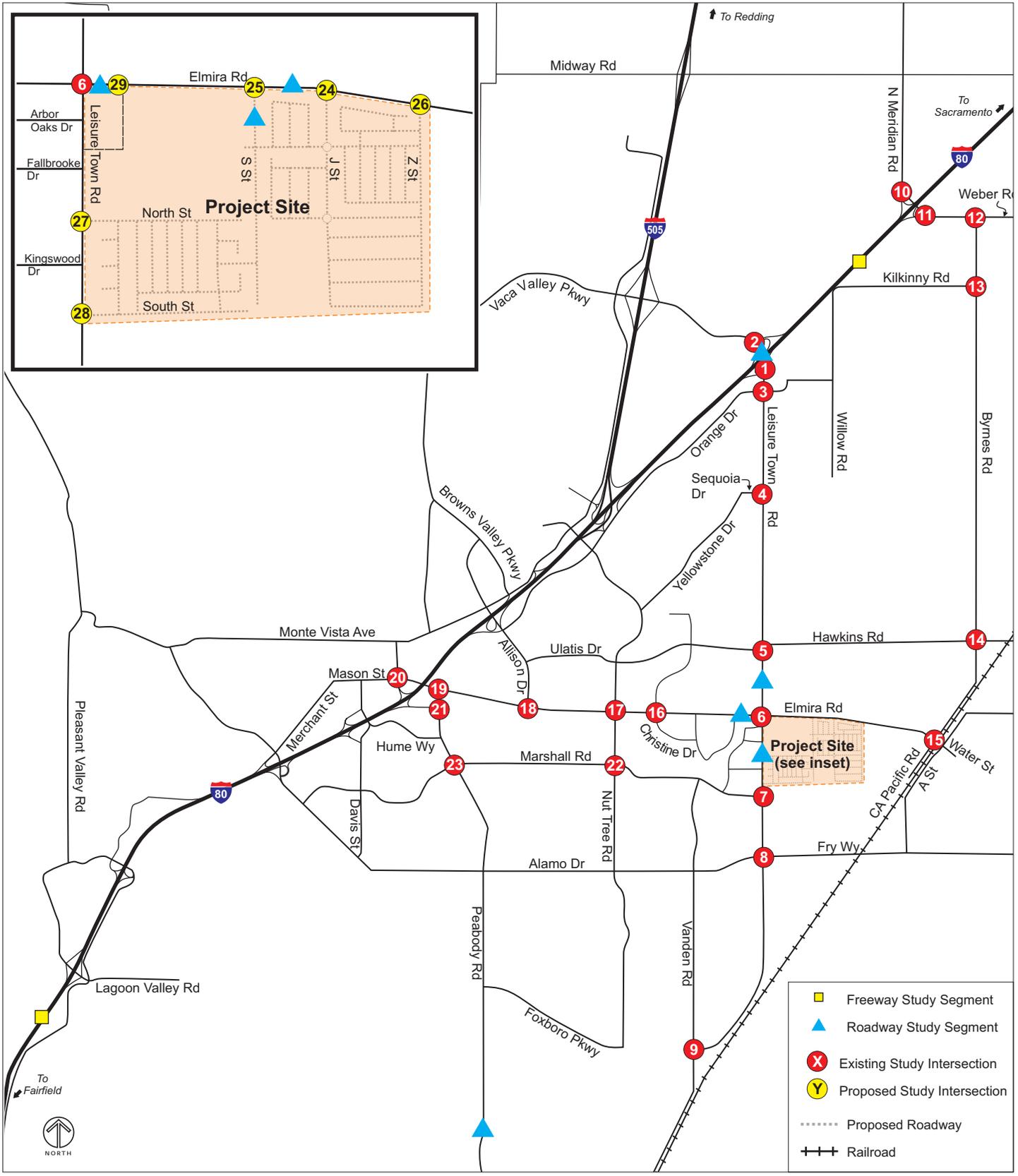
#### **1. Roadway System**

Regional vehicular access to the project area is provided primarily by the freeway system that serves northern Solano County. Interstate 80, which primarily has four travel lanes in each direction in the study area, extends



Source: Kittelson & Associates, Inc./Dowling

FIGURE 4.14-1  
 REGIONAL STREET SYSTEM



Source: Kittelson & Associates, Inc./Dowling

southwest through Fairfield and Vallejo, crosses the Carquinez Bridge and the Oakland Bay Bridge to terminate at Highway 101 in San Francisco.

It also extends northeast through Dixon and Davis, over the Sacramento River to Sacramento and beyond. Interstate 680 provides north-south connections from Interstate 80 near Cordelia to San Jose. Interstate 505 has two travel lanes in each direction and links Interstate 80 to Interstate 5, a major north-south freeway serving the west coast of the United States. The CMP system consists of major roadway and freeway corridors that serve regional traffic as identified in the Solano County Congestion Management Plan (CMP). Both Interstate 80 and Interstate 505 are part of the CMP system according to the 2009 CMP. In the study area in and around the Specific Plan area, the CMP system also includes the following local roadway segments:

- “ Elmira Road between Leisure Town Road and east City Limits;
- “ Vanden Road between Leisure Town Road and Peabody Road (which is not included in this analysis); and
- “ Peabody Road between California Drive and Fairfield City Limit.

These roadways and other key arterials, collectors and local streets in the project area are described below:

- “ Elmira Road is an east-west roadway that spans between “A” Street in the Town of Elmira and Interstate 80, where it continues westward as Mason Street. Elmira Road is designated as a minor arterial with one travel lane in each direction east of Leisure Town Road. West of Leisure Town Road, it is a major arterial with two travel lanes in each direction. Elmira Road is a designated truck route. It would provide access to the project site via three proposed collector roads and two driveways.
- “ Leisure Town Road is a north-south arterial that extends between Interstate 80 and Vanden Road. In the project vicinity, it has one travel lane in each direction. Leisure Town Road would provide project access via its existing intersection with Elmira Road and three proposed limited access minor roadways/driveways. Leisure Town Road is part of the proposed Jepson Parkway Project, a planned four-lane divided arterial.

- “ Marshall Road is a two-lane collector road that extends between Leisure Town Road and just west of California Drive.
- “ Nut Tree Road is a north-south arterial that connects Foxboro Parkway, across Interstate 80 and East Monte Vista Avenue, to the Nut Tree development area. Where development exists along Nut Tree Road, it has four travel lanes. As development occurs along the southern portion of Nut Tree Road, it would be widened from its current two lanes to four lanes.
- “ Peabody Road is a north-south road extending between Elmira Road in Vacaville and Air Base Parkway in Fairfield. Within Vacaville, Peabody Road is designated as a four-lane arterial. South of Vacaville within Solano County, Peabody Road operates as a two-lane rural road with paved shoulders.
- “ Byrnes Road is a north-south two-lane collector road that extends south from Weber Road to the Town of Elmira where it continues as California Pacific Road to just south of Water Street.
- “ Vanden Road is a two-lane collector road. It spans from Peabody Road in Fairfield, through unincorporated Solano County, and terminates at Marshall Road in Vacaville. West of Peabody Road, it continues as Cement Hill Road. Vanden Road from south City limits to Leisure Town Road is part of Jepson Parkway Project, a planned four-lane divided arterial.

## **2. Existing Traffic Levels**

In consultation with City staff, a list of 29 intersections, eight roadway segments, and two freeway mainline segments that would most likely be impacted by the proposed project were selected for analysis. These locations, in both Vacaville and Solano County, are listed below and presented in Figure 4.14-2.

### **a. Intersections**

1. Leisure Town Road / Interstate 80 Eastbound Off-Ramp
2. Leisure Town Road / Interstate 80 Westbound Off-Ramp

3. Leisure Town Road / Orange Drive
  4. Leisure Town Road / Sequoia Drive
  5. Leisure Town Road / Ulatis Drive
  6. Leisure Town Road / Elmira Road
  7. Leisure Town Road / Marshall Road
  8. Leisure Town Road / Alamo Drive-Fry Road
  9. Leisure Town Road / Vanden Road
  10. N. Meridian Road / Interstate 80 Westbound Ramps
  11. N. Meridian Road /Weber Road / Interstate 80 Eastbound Ramps
  12. Byrnes Road / Weber Road
  13. Byrnes Road/ Kilkinney Road
  14. Byrnes Road / Hawkins Road
  15. California Pacific Road / Water Street
  16. Christine Drive / Elmira Road
  17. Nut Tree Road / Elmira Road
  18. Allison Drive / Elmira Road
  19. Peabody Road / Elmira Road
  20. Depot Street / Mason Street
  21. Peabody Road / Cliffside Drive
  22. Marshall Road / Nut Tree Road
  23. Marshall Road / Peabody Road
  24. J Street / Elmira Road – proposed
  25. S Street / Elmira Road - proposed
  26. Z Street / Elmira Road proposed
  27. Leisure Town Road / North Street - proposed
  28. Leisure Town Road / South Street - proposed
  29. Commercial Driveway / Elmira Road – proposed
- b. Roadway Segments
30. Leisure Town Road
    - a. At Interstate 80 Overcrossing
    - b. North of Elmira Road
    - c. North of Marshall Road

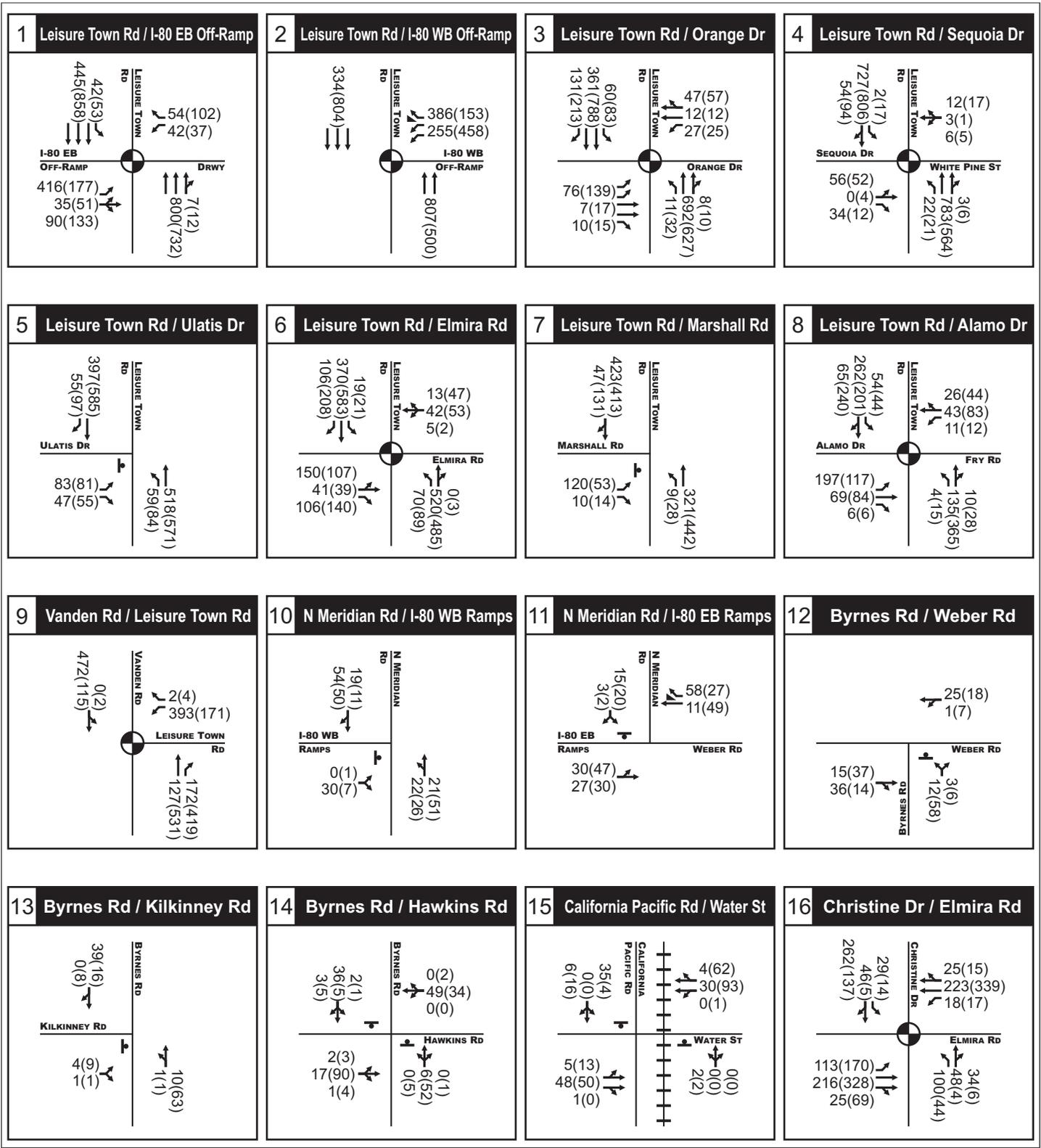
31. Elmira Road
  - a. West of Leisure Town Road
  - b. East of Leisure Town Road
  - c. East of Proposed S Street
32. Peabody Road
  - a. South of Vacaville City Limits
33. S Street
  - a. South of Elmira Road - proposed
- c. Freeway Mainline Segments
34. Interstate 80 West of Lagoon Valley Road
35. Interstate 80 East of Leisure Town Road

Peak hour intersection turning movement counts were provided by the City for all but two of the existing intersections. These counts were collected between April 2009 and January 2012. Turning movement volumes for the remaining two intersections, denoted by “\*” above, were collected on January 12, 2012. In order to capture data most likely to represent the weekday a.m. and p.m. peak hours, the morning counts were conducted between 7:00 a.m. and 9:00 a.m., and the evening counts were conducted between 4:00 p.m. and 6:00 p.m. The AM and PM peak hour intersection volumes for existing conditions are shown in Figure 4.14-3 and Figure 4.14-4.

Peak hour roadway segment volumes were derived from the turning movement volumes at nearby intersections. Freeway mainline volumes were compiled from data obtained from Caltrans. The existing AM and PM peak hour volumes for both roadway and freeway segments are presented in Table 4.14-2.

### **3. Existing Traffic Operations**

This section provides information on the existing operating conditions for selected roadways and intersections in the project area in terms of level of service. Level of service describes the operating conditions experienced by persons on a transportation system. For motorized vehicles, level of service is



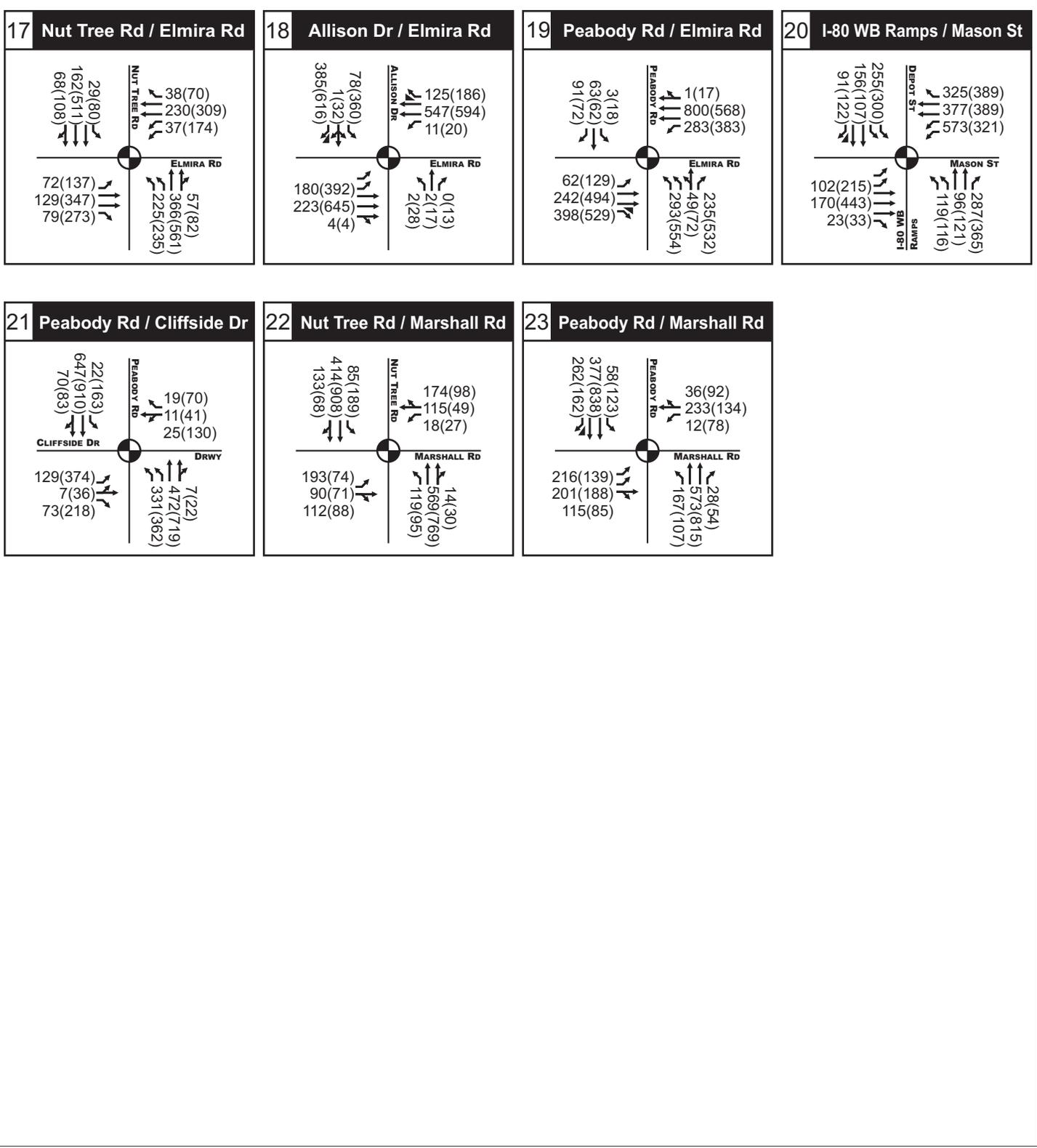
Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes

Traffic Signal

Stop Sign



Source: Kittelson & Associates, Inc./Dowling



NORTH

34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign

TABLE 4.14-2 ROADWAY & FREEWAY SEGMENT TRAFFIC VOLUMES - EXISTING CONDITIONS

			Peak Hour	SB/ WB <sup>a</sup>	NB/ EB <sup>b</sup>
<b>Arterial/Collector</b>					
Leisure Town Road	I-80 Overcrossing	4-Lane Divided Arterial	AM	589	1270
			PM	1,262	1,011
	North of Elmira Road	2-Lane Arterial	AM	495	683
			PM	812	639
	North of Marshall Road	2-Lane Arterial	AM	470	441
			PM	544	495
Elmira Road	West of Leisure Town Road	4-Lane Arterial	AM	218	297
			PM	350	286
	East of Leisure Town Road	2-Lane Collector	AM	60	60
			PM	63	102
	East of Proposed S Street	2-Lane Collector	AM	60	60
			PM	63	102
Peabody Road <sup>c</sup>	South of Vacaville City Limits	2-Lane Arterial	PM	1,091	843
<b>Freeway</b>					
Interstate 80	West of Lagoon Valley Road	Freeway	AM	5,802	4,281
			PM	6,085	7,083
	East of Leisure Town Road	Freeway	AM	3,962	2,347
			PM	3,856	4,478

<sup>a</sup> Southbound or Westbound.

<sup>b</sup> Northbound or Eastbound.

<sup>c</sup> AM peak hour data for the Peabody Road south of Vacaville City Limits location is not available.

Source: City of Vacaville and Caltrans, 2012

a qualitative measure of the effects of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. Levels of service are designated LOS A through F, from best to worst, which cover the entire range of traffic operations that might occur. LOS A through E generally represent traffic volumes at less than roadway capacity, while LOS F represents conditions where traffic demands exceed capacity and the flow of traffic breaks down, resulting in stop-and-go conditions and long queues of vehicles.

As explained in Section A.4.a, the existing Vacaville General Plan has established a citywide goal of LOS C at all intersections, interchanges, and road links, but allows for LOS D, LOS E, and LOS F under specified circumstances. The policy calls for the design of improvements to provide for LOS C in the horizon year of the General Plan (Policy 6.1 – G 1).

a. Level of Service Methodology

Different methodologies are used to evaluate level of service for different facility types, including signalized intersections, unsignalized intersections, arterial, collector and local roadways, and freeways.

The City's current methodology for calculating level of service at signalized intersections for planning studies is based on the Planning Method from the Transportation Research Board's Circular 212.<sup>4</sup> This methodology compares traffic demands on critical conflicting movements to the available capacity at a street intersection to determine the volume-to-capacity ratio (V/C). It then assigns a level of service based on the V/C, as presented in Table 4.14-3.

For unsignalized intersections, the methodology outlined in the Transportation Research Board's *Highway Capacity Manual 2000* was applied for this analysis. For all-way stop intersections, the level of service is determined by the weighted average delay for all vehicles entering the intersection and the

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<sup>4</sup> Transportation Research Board, 1980, *Interim Materials on Highway Capacity*, Transportation Research Circular 212, Washington, D.C.

TABLE 4.14-3 **SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

LOS	Volume to Capacity Ratio
A	0.00 to 0.60
B	> 0.60 to 0.70
C	> 0.70 to 0.80
D	> 0.80 to 0.90
E	> 0.90 to 1.00
F	> 1.00

Source: City of Vacaville Land Use and Development Code, Chapter 14.13.180 – Traffic Impact Mitigation Ordinance.

calculated average total delay per vehicle for the intersection as a whole. For intersections with side-street stop-control (on minor street approaches), the methodology calculates an average total delay per vehicle for each minor street movement and for the major street left-turn movements based on the availability of adequate gaps in through traffic on the main street. It is not unusual for some of the minor street movements to have LOS D, E or F condition while the major street movements have LOS A, B or C condition. In such a case, the minor street traffic experiences delays that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Usually in such cases, the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization.

The potential need for traffic signals at unsignalized intersections where the minor street movements experience substantial delay is evaluated in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). The analysis for the Brighton Landing project did not evaluate all of the possible warrants for traffic signals, but instead focused on the peak hour warrant (Warrant 3). The peak hour warrant is being used as an “indicator” of the

likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed the peak hour warrant are considered for the purposes of this analysis to be likely to meet one or more of the other signal warrants (such as the 4-hour or 8-hour warrants). This peak hour analysis is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. The City establishes priorities for traffic signal installations citywide and conducts detailed warrant analysis. The need for traffic signals may also be established as a part of a proposed project.

The average delay and level of service for both the intersection as a whole and the worst individual movement are presented throughout this chapter. Because the City's level of service standards are based on average intersection level of service and do not address individual movements, the level of service results for the intersection as a whole are used as determinants for significant impacts. The definitions and ranges of level of service for unsignalized intersections are shown in Table 4.14-4.

For roadway segments, the Transportation Element of the existing General Plan establishes maximum thresholds for LOS C for two-way hourly flow and maximum thresholds for LOS C and LOS D for one-way directional hourly flow, as shown in Table 4.14-5. The City generally has distinct directional traffic patterns during peak hours. The level of service thresholds take into account the peak directional flow and factor the two-way capacity as appropriate to establish the directional capacity for each segment level of service. For planning level analysis, existing and projected directional volumes have been compared to the segment capacities established by the General Plan.

While the General Plan has established maximum capacity thresholds for freeway segments, freeway facilities are under Caltrans' jurisdiction. Caltrans' *Guide for the Preparation of Traffic Impact Studies* has required the use of the analysis methodology outlined in the Highway Capacity Manual. The level of service criteria are presented in Table 4.14-6.

TABLE 4.14-4 **UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

<b>LOS</b>	<b>Expected Delay</b>	<b>Average Vehicle Delay (secs/veh)</b>
A	Little or no delay	< 10
B	Short traffic delays	> 10 and < 15
C	Average traffic delays	> 15 and < 25
D	Long traffic delays	> 25 and < 35
E	Very long traffic delays	> 35 and < 50
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50

Source: Transportation Research Board, *Highway Capacity Manual*, Washington D.C., 2000.

TABLE 4.14-5 **GENERAL PLAN SEGMENT PEAK HOUR CAPACITIES BY CLASSIFICATION**

<b>Segment Classification</b>	<b>LOS C Total Two-Way Capacity</b>	<b>Calculated Directional LOS C Capacity</b>	<b>Calculated Directional LOS D Capacity</b>	<b>Calculated Directional Capacity</b>
6-Lane Divided Arterial	4,500	2,700	3,038	3,375
4-Lane Divided Arterial	3,500	2,100	2,363	2,625
4-Lane Arterial	2,500	1,500	1,688	1,875
2-Lane Arterial	1,500	900	1,013	1,125
Collector	1,000	600	675	750

Notes: Calculated LOS C directional capacity is based on an assumed split of 60%/40% on local streets and 55%/45% on freeways. Calculated directional capacity assumed LOS C to be 80% of available capacity and LOS D to be 90% of capacity.

Source: City of Vacaville, *General Plan Transportation Element*, December 2007, Figure 6-1.

TABLE 4.14-6 **FREEWAY MAINLINE SEGMENT LEVEL OF SERVICE CRITERIA**

LOS	Maximum Density (passenger vehicles per mile per lane)
A	< = 11
B	18
C	26
D	35
E	45
F	> 45

Source: Transportation Research Board, Highway Capacity Manual, Washington D.C. 2010, page 11-5.

**b. Existing Intersection Operations**

The existing AM and PM peak hour intersection level of service results are detailed in Table 4.14-7. All study intersections operate at LOS C or better during both peak hours with the exception of the Peabody Road/Cliffside Drive intersection (#21), which operates at LOS D during the PM peak hour. While the average delays for all vehicles at the Leisure Town Road/Ulatis Drive intersection (#5) are consistent with LOS A, motorists on the east-bound stop-controlled approach experience considerable delay during both the AM and PM peak hours with LOS D and LOS E, respectively. However, the peak hour traffic signal warrant is not met under existing conditions. The City continues to monitor this intersection and will establish the appropriate priority for signalization. Future improvements planned as part of the Jepson Parkway project include the installation of a traffic signal at this location.

**c. Existing Roadway Segment Operations**

Based on the volumes presented in Table 4.14-2, the existing AM and PM peak hour roadway segment level of service are presented in Table 4.14-8. With the exception of the Peabody Road segment, all study segments operate

CITY OF VACAVILLE  
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TABLE 4.14-7 INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

Intersection	Control	Peak	LOS <sup>a</sup>	V/C <sup>b</sup> or
		Hour		Avg Delay
				(sec) <sup>c</sup>
1 Leisure Town Rd/I-80 EB off-ramp	Signal	AM	A	0.52
		PM	A	0.45
2 Leisure Town Rd/I-80 WB off-ramp	Signal	AM	A	0.44
		PM	A	0.43
3 Leisure Town Rd/Orange Dr	Signal	AM	A	0.38
		PM	A	0.42
4 Leisure Town Rd/Sequoia Dr	Signal	AM	B	0.69
		PM	C	0.76
5 Leisure Town Rd/Ulatis Dr	Stop <sup>d</sup>	AM	A(E)	3.5(36.2)
		PM	A(F)	4.8(67.9)
6 Leisure Town Rd/Elmira Rd	Signal	AM	B	0.63
		PM	A	0.48
7 Leisure Town Rd/Marshall Rd	Stop <sup>d</sup>	AM	A(C)	3.2(22.5)
		PM	A(C)	1.7(23.4)
8 Leisure Town Rd/Alamo Dr	Signal	AM	A	0.50
		PM	A	0.57
9 Leisure Town Rd/Vanden Rd	Signal	AM	B	0.68
		PM	A	0.54
10 N. Meridian Rd/I-80 WB ramps	Stop <sup>d</sup>	AM	A(A)	2.9(8.8)
		PM	A(A)	1.8(8.8)
11 N Meridian Rd/I-80 EB ramps	Stop <sup>d</sup>	AM	A(A)	2.7(9.3)
		PM	A(A)	3.3(4.6)
12 Byrnes Rd/Weber Rd	Stop <sup>d</sup>	AM	A(A)	1.5(8.9)
		PM	A(A)	4.6(9.3)
13 Byrnes Rd/Kilkinney Rd	Stop <sup>d</sup>	AM	A(A)	0.9(8.8)
		PM	A(A)	1(9.1)

TABLE 4.14-7 INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS  
 (CONTINUED)

Intersection	Control	Peak Hour	LOS <sup>a</sup>	V/C <sup>b</sup> or
				Avg Delay (sec) <sup>c</sup>
14 Brynes Rd/Hawkins Rd	Stop <sup>d</sup>	AM	A(A)	4.1(9.7)
		PM	A(B)	3.6(10.4)
15 California Pacific Rd/Water St	Stop <sup>d</sup>	AM	A(A)	3.3(9.2)
		PM	A(A)	1.3(9.7)
16 Christine Dr/Elmira Rd	Signal	AM	A	0.53
		PM	A	0.45
17 Nut Tree Rd/Elmira Rd	Signal	AM	A	0.37
		PM	A	0.54
18 Allison Dr/Elmira Rd	Signal	AM	A	0.36
		PM	A	0.59
19 Peabody Rd/Elmira Rd	Signal	AM	A	0.53
		PM	C	0.77
20 I-80 WB ramps/Mason St	Signal	AM	A	0.47
		PM	A	0.57
21 Peabody Rd/Cliffside Dr	Signal	AM	A	0.52
		PM	D	<b>0.82</b>
22 Nut Tree Rd/Marshall Rd	Signal	AM	A	0.55
		PM	A	0.56
23 Peabody Rd/Marshall Rd	Signal	AM	A	0.58
		PM	B	0.66

<sup>a</sup> LOS denotes level of service.

<sup>b</sup> V/C denotes volume-to-capacity ratio, which is used for signalized intersections to determine level of service.

<sup>c</sup> Average Delay denotes average vehicle delay, which is used for unsignalized intersections to determine level of service.

<sup>d</sup> The results for unsignalized intersections are shown for both the average of all movements at the intersection and for the single movement with the longest delay, generally a left turn from a stop sign, e.g. A(B) 2.4(14.3)

Source: Kittelson/Dowling Associates, 2012.

TABLE 4.14-8 ROADWAY LEVEL OF SERVICE – EXISTING CONDITIONS

		<b>LOS C (LOS D) Exceeded?</b>			
		<b>AM Peak</b>		<b>PM Peak</b>	
		<b>SB/WB</b>	<b>NB/EB</b>	<b>SB/WB</b>	<b>NB/EB</b>
Leisure Town Road	I-80 Overcrossing	No (No)	No (No)	No (No)	No (No)
	North of Elmira Road	No (No)	No (No)	No (No)	No (No)
	North of Marshall Rd	No (No)	No (No)	No (No)	No (No)
Elmira Road	West of Leisure Town Road	No (No)	No (No)	No (No)	No (No)
	East of Leisure Town Road	No (No)	No (No)	No (No)	No (No)
	East of Proposed S Street	No (No)	No (No)	No (No)	No (No)
Peabody Road	South of Vacaville City Limits	No (No)	No (No)	Yes (Yes)	No (No)

Source: Kittelson/Dowling Associates, 2012.

within acceptable standard at better than LOS C levels during both peak hours. The Peabody Road segment south of Vacaville city limits exceeds the City’s LOS C threshold and operates at LOS E in the southbound direction during the PM peak hour. However, this segment is located in Solano County and is a part of the CMP roadway system with a standard of LOS E.

d. Existing Freeway Mainline Segment Operations

The results for freeway mainline segments are presented in Table 4.14-9. The study mainline segments operate at LOS D or better during both AM and PM peak hours.

e. Public Transportation Services

Bus service in Vacaville is provided by Vacaville City Coach, Fairfield and Suisun Transit (FAST), and YOLOBUS. Vacaville City Coach offers six local fixed-route services to or from the Vacaville Transportation Center located on Allison Drive at Travis Way. The Transportation Center also serves as a transfer point for intercity routes operated by Fairfield and Suisun Transit.

TABLE 4.14-9 FREEWAY MAINLINE SEGMENT LEVEL OF SERVICE – EXISTING CONDITIONS

Location	AM Peak Hour		PM Peak Hour	
	Density <sup>a</sup>	LOS <sup>b</sup>	Density <sup>a</sup>	LOS <sup>b</sup>
<b>Interstate 80 West of Lagoon Valley Road</b>				
Eastbound	17.1	B	31.5	D
Westbound	23.9	C	25.4	C
<b>Interstate 80 East of Leisure Town Road</b>				
Eastbound	12.5	B	24.8	C
Westbound	21.2	C	20.8	C

<sup>a</sup> Density = passenger cars per mile per lane.

<sup>b</sup> LOS = Level of service.

Source: Kittelson/Dowling Associates, 2012.

The Vacaville Regional Transportation Center, located at the corner of Davis Street and Hickory Lane, is another key intercity transit hub, with two nearby park and ride lots along Davis Street on either side of Interstate 80. In addition to the fixed-route service, City Coach Special Services provides ADA paratransit service to eligible residents within Vacaville. Trips beyond the city limits of Vacaville may be specially arranged with City Coach.

Fairfield and Suisun Transit (FAST) offers three intercity routes through Vacaville, primarily to serve weekday commuters. YOLOBUS offers one fixed bus route between Vacaville and Davis via Interstate 505 and Winters that provides three daily trips in each direction from Monday to Saturday.

The Brighton Landing project site is currently not served by any public transit service. The nearest bus stop for City Coach's Route 8 is located on Vanden Road south of Marshall Road, which is about two-thirds of a mile from the proposed project access on Leisure Town Road at South Street.

Route 8 operates between the Transportation Center and the Transit Plaza via Elmira Road, Peabody Road, Youngsdale Drive, Vanden Road, and Davis Street. Its operating hours are between 6:00 a.m. and 7:00 p.m. on weekdays and 8:00 a.m. and 6:00 p.m. on Saturday.

A new commuter rail station is planned to be constructed at the southeast corner of Peabody Road and Vanden Road in northeast Fairfield along Amtrak's Capitol Corridor. The Vacaville/Fairfield Multi-Modal Rail Station would further enhance regional transit connections.

#### **4. Bicycle Facilities**

The City currently classifies bikeways into three categories: bike path, bike lane and bike route. Bike paths meet the state requirements for Class I shared-use paths. These paths are dedicated off-street public paths designed and constructed for both bicycle and pedestrian traffic. In the project vicinity, Alamo Creek Bikeway is a bike path along Alamo Creek between Marshall Road and Leisure Town Road. Bike lanes meet the State requirements for striped on-street Class II bike lanes. These lanes are marked exclusively for bike travel on roadways. Bike lanes are provided between Leisure Town Road and just east of Nut Tree Road in the project vicinity. Bike routes meet the State requirements for Class III on-street bike routes. On bike routes, which must be signed or marked, bicycle riders must share the roadway with vehicles. There is no existing bike route in the project vicinity.

The following bicycle facilities are planned in the study area:

- “ **Elmira Road Bike Path.** A Class I bike path would be built along the old Southern Pacific Railroad right-of-way on the north side of Elmira Road between Leisure Town Road and Edwin Drive.
- “ **Ulati Creek Bike Path.** A Class II bike lane and Class I bike path along Ulati Creek between Ulati Drive and Leisure Town Road would be completed by the summer of 2012.

- “ **Jepson Parkway Bike Path.** A Class I bike path would be provided as a part of the Jepson Parkway improvements from Interstate 80 along Leisure Town Road and Vanden Road to Fairfield.

### 5. Pedestrian Facilities

In Vacaville, sidewalks with raised curb and gutter are typically provided along arterials and collectors, as well as in newer residential developments. Existing pedestrian facilities in the Brighton Landing project vicinity are limited because this area is currently at the urban fringe. Sidewalks are provided only on the west side of Leisure Town Road and on the south side of Elmira Road west of Leisure Town Road. There is no sidewalk or paved shoulder on Elmira Road east of Leisure Town Road. At the signalized intersection of Elmira Road and Leisure Town Road, pedestrian signal heads are provided as well as marked crosswalks on the north and west legs of the intersection.

### *C. Standards of Significance*

The proposed project would have a significant impact with regard to traffic and transportation if it would:

- “ Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The project impact is considered significant if project-generated traffic would:
  - Cause an intersection or roadway to operate below LOS C or conflict with City policy to design intersections to provide for LOS C in the horizon year development forecast;
  - Cause the volume-to-capacity ratio to increase by 0.02 or more at an intersection or roadway operating at an unacceptable service level without the project; or

- Cause the average delay to increase by 5 seconds or more at an un-signalized intersection operating at an unacceptable service level without the project.<sup>5</sup>
- “ Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways. According to Section III of the Solano County Congestion Management Program, the project impact is considered significant if the project-generated traffic would:
  - Cause Interstate 80 between Post Mile 23.03 and 24.08 ( segment between Pena Adobe Road and Alamo Drive) to degrade below LOS E;
  - Cause Interstate 80 between Post Mile 28.359 and 32.691 (Segment between interstate 505 interchange and Leisure Town Road) to degrade below LOS F; or
  - Cause Peabody Road from Vacaville city limits to Fairfield city limits to degrade below LOS E.
- “ Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- “ Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- “ Result in inadequate emergency access.
- “ Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

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<sup>5</sup> Due to normal fluctuation in daily traffic counts and motorists perceptions of traffic conditions, a change in v/c of less than 0.02 and in average delay by less than 5 seconds was considered to be imperceptible.

#### ***D. Impact Methodology***

The project traffic was evaluated through a process that involved vehicle trip generation, trip distribution, and assignment of the trips to the roadway network using the City's traffic model.

##### **1. Scenarios Modeled**

A total of seven scenarios were modeled for this EIR:

1. Existing Conditions
2. Existing + Brighton Landing Specific Plan Project
3. Existing + Approved Projects
4. Existing + Approved Projects + Brighton Landing Specific Plan Project
5. Cumulative in 2035 – Year 2035 Horizon of 1990 General Plan
6. Cumulative in 2035 – Year 2035 Horizon of 1990 General Plan + Brighton Landing Specific Plan Project
7. Cumulative in 2035 with Draft General Plan Update (which includes Brighton Landing Specific Plan Project)

Section 15125 of the CEQA Guidelines states that:

*An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation ["NOP"] is published... from both a local and regional perspective. These environmental settings will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.”<sup>6</sup>*

Scenarios 2, 4, 6, and 7 assume full buildout of the Brighton Landing Specific Plan in order to model the maximum impacts from the proposed project. Project-level impacts represent the difference between Scenario 1, Existing

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<sup>6</sup> 14 Cal. Code Reg. 15125 (a).

Conditions, and Scenario 2, Existing Conditions + Brighton Landing Specific Plan Project.<sup>7</sup>

The Citywide model was used to produce traffic volume forecasts for the Existing + Project scenario. The model base year forecasts with and without the project were extracted from the model and used to estimate the traffic growth increment resulting from the project. This growth was applied to the existing traffic counts to derive the volumes for Existing + Project scenario.

The cumulative impact analysis analyzes three different conditions:

- A. Scenarios 3 and 4: With other approved projects in place, in the near term, but at an unspecified time in the future. Note that none of the approved projects were in place at the time the Brighton Landing NOP was issued, nor would any be completed by the time of Brighton Landing Project Approval.
- B. Scenarios 5 and 6: With development reasonably anticipated to occur by year 2035 based on the 1990 General Plan.
- C. Scenario 7: With development reasonably anticipated to occur by year 2035 based on the Preferred Land Use Alternative of the General Plan Update.

Tables of projects and land uses used in these scenarios are included in Appendix K.

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<sup>7</sup> Pursuant to the recent case of *Sunnyvale West Neighborhood Assn. v. City of Sunnyvale City Council*, this represents the only scenario for project-level impacts. An account of that case can be found at *The Proper Baseline for Analyzing Traffic and Related Impacts under CEQA: Guidance in Response to the Sunnyvale case*: Riker et al., 2011, ICF International. Available online at <http://www.icfi.com/insights/white-papers/2011/proper-baseline-analyzing-traffic-related-impacts-under-ceqa>. Accessed February 3, 2012.

## **2. Trip Generation**

The projected trip generation for the proposed project is presented in Table 4.14-10. With the exception of the private high school, the peak hour trip generation rates were obtained from the current version of the Vacaville Citywide Traffic Model, which was calibrated based on 2008 conditions. Because the City's rates do not include a private school category, the trip generation rates for the private high school were compiled from the Institute of Transportation Engineer's (ITE) *Trip Generation*, 8<sup>th</sup> edition, using the Private School land use category (536). The proposed project would generate 1,997 AM peak hour trips and 1,169 PM peak hour trips.

## **3. Trip Distribution and Assignment**

The project trips were distributed and assigned to the roadway network by the citywide traffic model. The model's distribution patterns for the project trips are summarized in Table 4.14-11.

### ***E. Project Impacts***

This section summarizes the findings of the impact analysis related to traffic and transportation and discusses the potential impacts of the proposed project. The proposed project would consist of 769 single-family residential units, a 1,200-student private high school, a city park, a public school, and neighborhood commercial uses. In addition to the installation of new roadways and access points within the project area, the analysis assumed that Elmira Road would be widened to two travel lanes in the eastbound direction along the project frontage as a part of the project. The City would require that the Elmira Road improvements along the full frontage of the Specific Plan area be completed during the initial phase of project construction in order to facilitate movements of project trips to and from Leisure Town Road.

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TABLE 4.14-10 TRIP GENERATION

<b>Land Use</b>	<b>#</b>	<b>Unit</b>	<b>AM Peak Hour Rate</b>	<b>PM Peak Hour Rate</b>	<b>AM Peak Hour Trips</b>	<b>PM Peak Hour Trips</b>
Single-Family Residential	769	units	0.75	0.88	577	677
Retail Commercial	4.8	acres	31.38	37.3	151	179
Park	6	acres	0.54	0.63	3	4
Public Elem/Jr High School	700 <sup>a</sup>	students	0.42	0.15	294	105
Private High School	1,200	students	0.81	0.17	972	204
<b>Net New Project Trips</b>					<b>1,997</b>	<b>1,169</b>

<sup>a</sup> Assumed 63.46 students per acre

Source: Kittelson/Dowling Associates, 2012.

TABLE 4.14-11 TRIP DISTRIBUTION

	<b>Private School<sup>a</sup></b>		<b>Other Land Uses</b>	
	<b>AM Peak Hour</b>	<b>PM Peak Hour</b>	<b>AM Peak Hour</b>	<b>PM Peak Hour</b>
I-80 West of Fairfield	2%	2%	10%	9%
I-80 East and I-505	9%	8%	7%	7%
Fairfield	36%	33%	3%	4%
Vacaville West of I-80	16%	17%	23%	23%
Vacaville East of I-80	36%	41%	57%	57%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>a</sup> Private School trip distribution was adjusted within the traffic model based on Vacaville VCS High School enrollment data.

Source: Kittelson/Dowling Associates, 2012.

## 1. Conflicts with Relevant Plans, Policies, or Ordinances

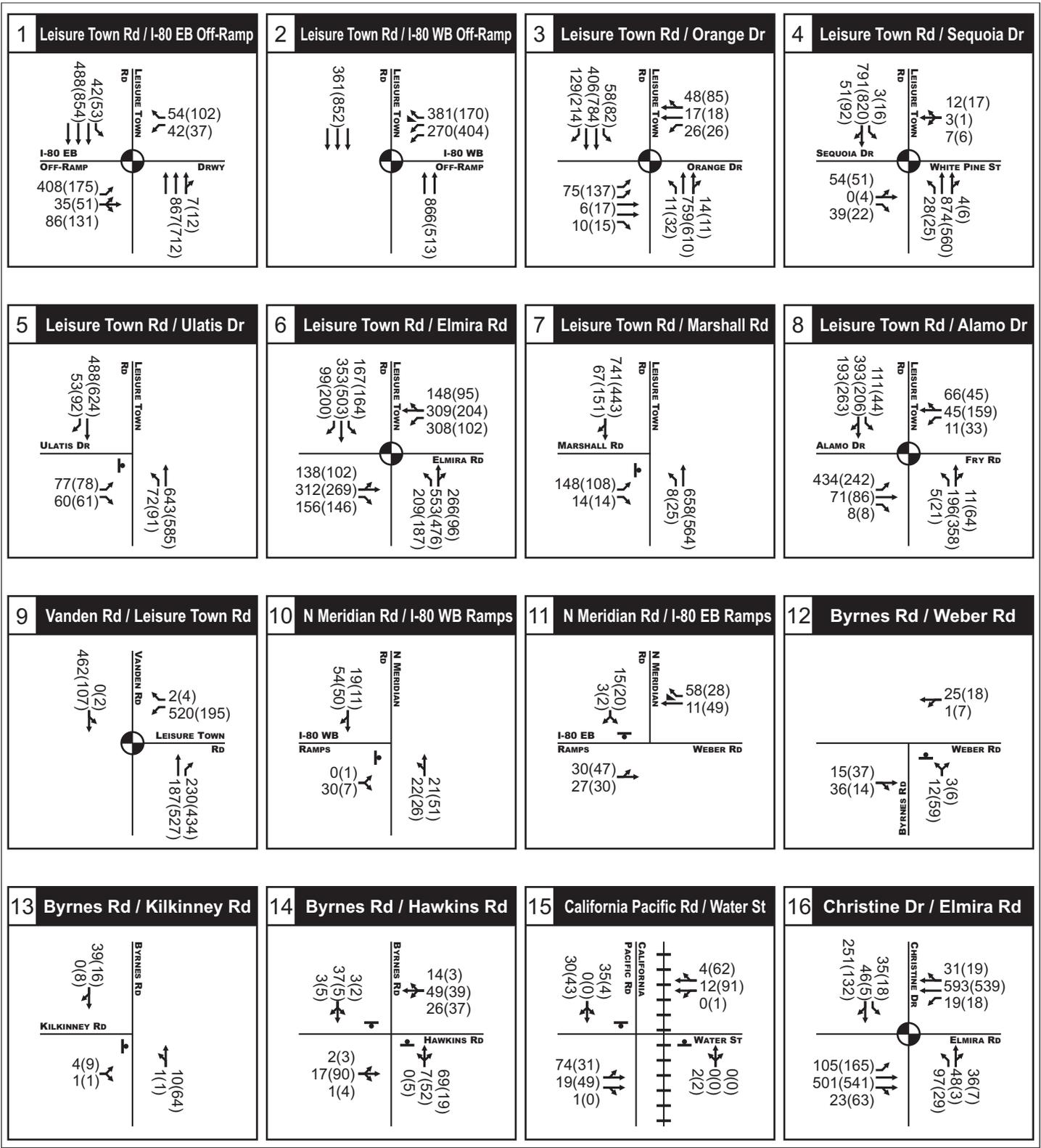
Intersection and roadway operations were assessed for a 1) Existing Conditions and 2) Existing Conditions + Brighton Landing Specific Plan to isolate the potential effects of the project and to determine any potential conflicts with relevant plans, policies, or ordinances.

### a. Intersection Operations

Peak hour intersection volumes for the Existing Conditions are presented in Figure 4.14-3 and Figure 4.14-4; volumes for Existing + Project Conditions are presented in Figure 4.14-5 and Figure 4.14-6; the intersection level of service is shown in Table 4.14-12. All study intersections would operate at LOS C or better with the addition of project-generated trips with the exception of the Peabody Road/Cliffside Drive (#21), the Leisure Town Road/Elmira Road intersection (#6), and the Leisure Town Road/Alamo Drive (#8) intersection).

- “ The Peabody Road/Cliffside Drive intersection (#21) would maintain LOS D at 82 percent of capacity in the AM and PM peak hours with or without the project traffic. Therefore this is considered a *less than significant impact*.
- “ The Leisure Town/Elmira Road intersection (#6) which provides access to the project area would degrade from LOS B to LOS F in the AM peak hour and from LOS A to LOS E in the PM peak hour. This is considered a *significant impact*.
- “ The Leisure Town/Alamo Road intersection (#8) would deteriorate from LOS A to LOS D in the AM peak hour due to a sizable increase in east-bound left-turn traffic as a result of the proposed private high school within the project site. This is considered a *significant impact*.

**Impact TRAF-1:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F in the AM peak hour and LOS E in the PM peak hour with the addition of project traffic under the Existing + Project scenario.



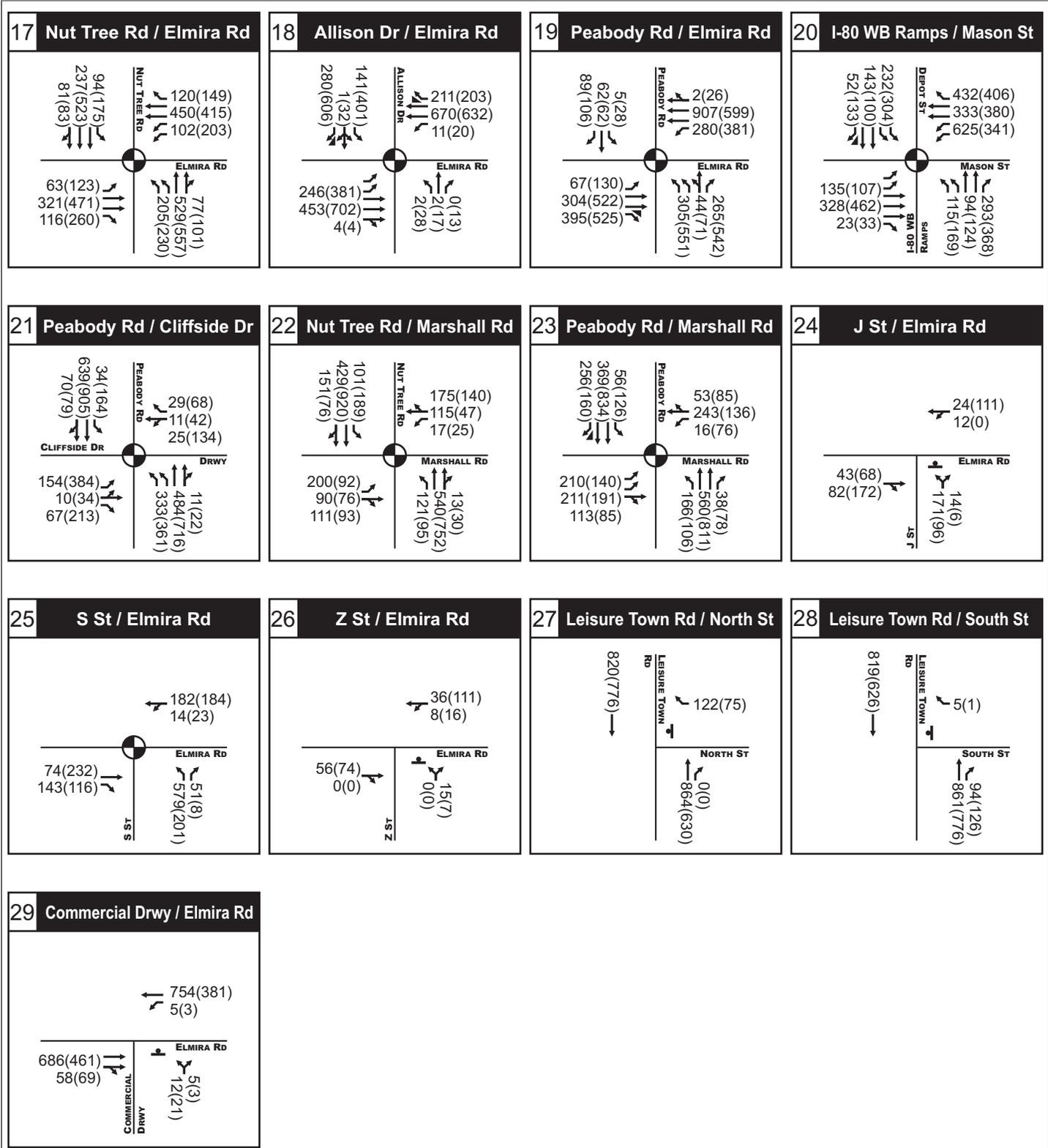
Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes

Traffic Signal

Stop Sign



Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign

TABLE 4.14-12 INTERSECTION LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS

No	Intersection	Control	Peak Hour	Existing		Existing + Project	
				LOS <sup>a</sup>	V/C or Delay (sec) <sup>b</sup>	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>c</sup>
1	Leisure Town Rd/ I-80 EB off-ramp	Signal	AM	A	0.52	A	0.53
			PM	A	0.45	A	0.44
2	Leisure Town Rd/ I-80 WB off-ramp	Signal	AM	A	0.44	A	0.46
			PM	A	0.43	A	0.42
3	Leisure Town Rd/ Orange Dr	Signal	AM	A	0.38	A	0.40
			PM	A	0.42	A	0.42
4	Leisure Town Rd/ Sequoia Dr	Signal	AM	B	0.69	C	0.73
			PM	C	0.76	C	0.77
5	Leisure Town Rd/ Ulatis Dr	Stop <sup>d</sup>	AM	A(E)	3.5(36.2)	A(F)	4.7(66.6)
			PM	A(F)	4.8(67.9)	A(F)	5.3(81.4)
6	Leisure Town Rd/ Elmira Rd	Signal	AM	B	0.63	<b>F</b>	<b>1.26</b>
			PM	A	0.48	<b>E</b>	<b>0.94</b>
7	Leisure Town Rd/ Marshall Rd	Stop <sup>d</sup>	AM	A(C)	3.2(22.5)	B(F)	27.1(273.3)
			PM	A(C)	1.7(23.4)	A(F)	5.3(54.3)
8	Leisure Town Rd/ Alamo Dr	Signal	AM	A	0.50	<b>D</b>	<b>0.85</b>
			PM	A	0.57	C	0.72
9	Leisure Town Rd/ Vanden Rd	Signal	AM	B	0.68	C	0.75
			PM	A	0.54	A	0.55
10	N. Meridian Rd/I-80 WB ramps	Stop <sup>d</sup>	AM	A(A)	2.9(8.8)	A(A)	2.9(8.8)
			PM	A(A)	1.8(8.8)	A(A)	1.8(8.8)
11	N Meridian Rd/I-80 EB ramps	Stop <sup>d</sup>	AM	A(A)	2.7(9.3)	A(A)	2.7(9.3)
			PM	A(A)	3.3(4.6)	A(A)	3.3(9.9)
12	Byrnes Rd/ Weber Rd	Stop <sup>d</sup>	AM	A(A)	1.5(8.9)	A(A)	1.5(8.8)
			PM	A(A)	4.6(9.3)	A(A)	4.6(9.2)

TABLE 4.14-12 INTERSECTION LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS  
 (CONTINUED)

No	Intersection	Control	Peak Hour	Existing		Existing + Project	
				LOS <sup>a</sup>	V/C or Delay (sec) <sup>b</sup>	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>c</sup>
13	Byrnes Rd/ Kilkinney Rd	Stop <sup>d</sup>	AM	A(A)	0.9(8.8)	A(A)	0.9(8.7)
			PM	A(A)	1(9.1)	A(A)	1(9)
14	Brynes Rd/ Hawkins Rd	Stop <sup>d</sup>	AM	A(A)	4.1(9.7)	B(B)	5.8(10.2)
			PM	A(B)	3.6(10.4)	A(B)	4.7(10.8)
15	California Pacific Rd/Water St	Stop <sup>d</sup>	AM	A(A)	3.3(9.2)	A(B)	6.7(10.4)
			PM	A(A)	1.3(9.7)	A(B)	2.5(10.4)
16	Christine Dr/ Elmira Rd	Signal	AM	A	0.53	B	0.63
			PM	A	0.45	A	0.50
17	Nut Tree Rd/ Elmira Rd	Signal	AM	A	0.37	A	0.53
			PM	A	0.54	B	0.64
18	Allison Dr/Elmira Rd	Signal	AM	A	0.36	A	0.45
			PM	A	0.59	B	0.61
19	Peabody Rd/Elmira Rd	Signal	AM	A	0.53	A	0.55
			PM	C	0.77	C	0.78
20	I-80 WB ramps/ Mason St	Signal	AM	A	0.47	A	0.51
			PM	A	0.57	A	0.56
21	Peabody Rd/ Cliffside Dr	Signal	AM	A	0.52	A	0.53
			PM	<b>D</b>	<b>0.82</b>	<b>D</b>	<b>0.82</b>
22	Nut Tree Rd/ Marshall Rd	Signal	AM	A	0.55	A	0.57
			PM	A	0.56	A	0.57
23	Peabody Rd/ Marshall Rd	Signal	AM	A	0.58	A	0.60
			PM	B	0.66	B	0.66
24	Proposed J St/ Elmira Rd	Stop <sup>d</sup>	AM	Future Intersection		A(B)	5.9(10.5)
			PM			A(B)	2.5(11)
25	Proposed S St/ Elmira Rd	Signal	AM	Future Intersection		B	0.62
			PM			A	0.39

TABLE 4.14-12 INTERSECTION LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS  
 (CONTINUED)

No	Intersection	Control	Peak Hour	Existing		Existing + Project	
				LOS <sup>a</sup>	V/C or Delay (sec) <sup>b</sup>	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>c</sup>
26	Proposed Z St/ Elmira Rd	Stop <sup>d</sup>	AM	Future Intersection	A(A)	1.7(8.6)	
			PM		A(A)	0.9(8.7)	
27	Leisure Town Rd/ Proposed North St	Stop <sup>d</sup>	AM	Future Intersection	A(C)	1.6(24)	
			PM		A(B)	0.7(14.8)	
28	Leisure Town Rd/ Proposed South St	Stop <sup>d</sup>	AM	Future Intersection	A(C)	0(17.2)	
			PM		A(C)	0(15.9)	
29	Proposed Commercial Drwy/ Elmira Rd	Stop <sup>d</sup>	AM	Future Intersection	A(E)	0.5(38.4)	
			PM		A(C)	0.5(18.4)	

Note: **Bold** denotes substandard locations; Highlight denotes locations with significant impacts.

<sup>a</sup> LOS denotes level of service.

<sup>b</sup> V/C denotes volume-to-capacity ratio, which is used for signalized intersections to determine level of service.

<sup>c</sup> Delay denotes average vehicle delay, which is used for unsignalized intersections to determine level of service.

<sup>d</sup> The results for unsignalized intersections are shown for both the average of all movements at the intersection and for the single movement with the longest delay, e.g. A(B) 2.4(14.3)

Source: Dowling Associates, 2012.

Mitigation Measure TRAF-1: At the Leisure Town Road/Elmira Road intersection (#6), the project shall install the following improvements and/or shall provide right-of-way along the frontage of the project site and pay in-lieu fee to the City for the acquisition of necessary right-of-way and installation of the improvements: widen the south leg to provide one left-turn lane, two through lanes and one right-turn lane on the northbound approach; widen the west leg to provide one shared left-through lane, one through lane and one right-turn lane on the eastbound approach; and widen the east leg to provide one left-turn lane, one through lane and one shared through-right lane on the westbound approach.

The City shall implement these improvements or shall apply the in-lieu fee towards installation of the Jepson Parkway improvement project, which is currently being designed by the City in this area. At this intersection, the Jepson Parkway improvement project would provide two left-turn lanes, two through lanes, a third future through lane and one right-turn lane on the northbound approach; two left-turn lanes, two through lanes and one future right-turn lane on the eastbound approach; two left-turn lanes, one through lane and one right-turn lane on the westbound approach; and two left turn lanes, two through lanes and one right-turn lane on the southbound approach.

Upon implementation of the above improvements, the intersection would operate at LOS C or better in both peak hours. However, because the ability for the project and/or the City to acquire the necessary right-of-way to install the improvement is uncertain, the project impact would remain significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-1 would improve the intersection to LOS C or better in both peak hours. However, because of right-of-way constraints, the project impact would be *significant and unavoidable*.

**Impact TRAF-2:** The Leisure Town Road/Alamo Drive intersection (#8) would degrade to LOS D in the AM peak hour with the addition of project traffic under the Existing + Project scenario.

Mitigation Measure TRAF-2: At the Leisure Town Road/Alamo Drive intersection (#8), the Project shall pay in-lieu fees to the City for the installation of the following improvements: convert the eastbound through lane to a left-turn lane and the exclusive right-turn lane to a shared through-right lane to provide two left-turn lanes and one shared through-right lane on the eastbound approach; and widen the north leg of the intersection to provide two corresponding receiving lanes on Leisure Town Road.

The City shall implement these improvements or shall apply the in-lieu fee towards installation of the Jepson Parkway improvement project, which is currently being designed by the City at this location. At this intersection, the Jepson Parkway improvement project would provide one left-turn lane and two through lanes on the northbound approach; two left-turn lanes and two through lanes on the eastbound approach; two left-turn lanes and two through lanes on the westbound approach; and one left turn lane, two through lanes and one right-turn lane on the southbound approach.

Upon implementation of the above improvements, the intersection would operate at LOS C or better during both peak hours.

Significance after Mitigation: Implementing Mitigation Measure TRAF-2 would improve the intersection to LOS C or better in both peak hours and reduce the project impact to *less than significant*.

b. Roadway Segment Operations

Peak hour volumes and levels of service for the study roadway segments for Existing Conditions and for Existing + Project Conditions are presented in Table 4.14-13. All study roadway segments would operate within adopted

TABLE 4.14-13 ROADWAY SEGMENT LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS

Facility Type	LOS C(D) Directional Capacity	Existing				Existing + Project				
		Volume		LOS C (D) Exceeded?		Volume		LOS C (D) Exceeded?		
<b>AM Peak Hour</b>										
<b>Leisure Town Road</b>										
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	SB	NB	SB	NB	SB	NB	SB	NB
			589	1270	NO (NO)	NO (NO)	630	1331	NO (NO)	NO (NO)
N of Elmira Road	2 Lane Arterial	900 (1,013)	495	683	NO (NO)	NO (NO)	620	840	NO (NO)	NO (NO)
N of Marshall Road	2 Lane Arterial	900 (1,013)	470	441	NO (NO)	NO (NO)	808	806	NO (NO)	NO (NO)
<b>Elmira Road</b>										
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	WB	EB	WB	EB	WB	EB	WB	EB
			218	297	NO (NO)	NO (NO)	617	606	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1,013)/ 1,500 (1,688)		60		NO (NO)		744		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	2 Lane Arterial	900 (1,013)	60		NO (NO)		766		NO (NO)	
E of S Street <sup>b</sup>	2 Lane Arterial	900 (1,013)	60	60	NO (NO)	NO (NO)	195	124	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>										
S of Elmira Road	2 Lane Collector	600 (675)					157	630	NO (NO)	YES (NO)
<b>Peabody Road</b>										
S of Vacaville City Limit <sup>b</sup>	2 Lane Arterial	900 (1,013)	SB	NB	SB	NB	SB	NB	SB	NB
			714	500	NO (NO)	NO (NO)	771	611	NO (NO)	NO (NO)
<b>PM Peak Hour</b>										
<b>Leisure Town Road</b>										
I-80 Overcrossing	4 Lane Div. Arterial	2100 (2,363)	SB	NB	SB	NB	SB	NB	SB	NB
			1,262	1,011	NO (NO)	NO (NO)	1,256	1,025	NO (NO)	NO (NO)
N of Elmira Road	2 Lane Arterial	900 (1,013)	812	639	NO (NO)	NO (NO)	867	673	NO (NO)	NO (NO)

TABLE 4.14-13 ROADWAY SEGMENT LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS (CONTINUED)

	Facility Type	LOS C(D) Directional Capacity	Existing				Existing + Project			
			Volume		LOS C (D) Exceeded?		Volume		LOS C (D) Exceeded?	
N of Marshall Road	2 Lane Arterial	900 (1,013)	544	495	NO (NO)	NO (NO)	593	672	NO (NO)	NO (NO)
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1500 (1,688)	350	286	NO (NO)	NO (NO)	567	517	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1,013)/ 1,500(1,688)		63		NO (NO)		529		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	2 Lane Arterial	900 (1,013)	102		NO (NO)		402		NO (NO)	
E of S Street <sup>2</sup>	2 Lane Arterial	900 (1,013)	102	63	NO (NO)	NO (NO)	207	240	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)					139	209	NO (NO)	NO (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>b</sup>	2 Lane Arterial	900 (1,013)	1,091	843	YES (YES)	NO (NO)	1,096	867	YES (YES)	NO (NO)

Note: Shading implies that this category is not applicable.

<sup>a</sup> Roadway would be widened to two travel lanes in the eastbound direction with the project.

<sup>b</sup> Part of the Solano County CMP roadway system, which has different standards. The standard for the Peabody Road segment is LOS E.

Source: Kittelson/Dowling Associates, 2012.

level of service standards with the addition of project-generated trips with the exception of one location.

The proposed private high school in the northwest section of the Specific Plan will add a large amount of traffic to area streets when developed. The school has been assumed to accommodate 1,200 students and the site is shown to have a main driveway onto the north-south major collector street (proposed S Street). School traffic volumes on the proposed S Street within the project site south of Elmira Road would exceed roadway capacity and/or school traffic storage needs between Elmira Road and the proposed private school driveway in the northbound direction. Left turn traffic out of the private high school driveway on S Street would cause the roadway to exceed the LOS C capacity for this street segment and would likely back-up from the intersection at Elmira Road, blocking other northbound traffic on the Major Collector Street. Because this congestion around the school would significantly impact traffic flow along the Major Collector Street, this is considered a *significant* impact.

The segment of Peabody Road south of the Vacaville City Limits in Solano County would operate below LOS D levels with and without the addition of project traffic in the southbound direction during the PM peak hour. The amount of projected traffic would exceed the LOS D capacity threshold but would be within the established capacity of a two-lane arterial in the General Plan. It is projected that the roadway would operate at LOS E levels for both with and without project scenarios. However, because the standard for this CMP roadway segment is LOS E, the segment would operate within adopted standards and this is not considered to be an impact. Widening of this segment of Peabody Road to provide four travel lanes is included in the City of Fairfield Capital Improvement Program and in the Northeast Area Traffic Fee.

**Impact TRAF-3:** The proposed S Street or Major Collector Street segment south of Elmira Road would exceed LOS C conditions in the northbound direction during the AM peak hour.

Mitigation Measure TRAF-3: The project shall provide an additional northbound lane on S Street between Elmira Road and the private high school driveway, which would increase capacity and improve the segment to LOS C or better. Because the utilization of the northbound lanes would likely be uneven since most of the traffic would turn left at the Elmira Road intersection and would therefore use the leftmost lane, the project shall convert the proposed northbound right-turn lane at the S Street/Elmira Road intersection to a shared left-right lane to provide one exclusively left-turn lane and one shared left-right lane; and provide two corresponding receiving lanes on Elmira Road by widening the segment between Leisure Town Road and S Street to two travel lanes in the westbound direction when the high school is installed.

Upon implementation of the above improvements, the northbound segment would operate at LOS C or better during the AM peak hour. However, because the ability for the project and/or the City to acquire the necessary right-of-way on Elmira Road to install the two receiving lanes is uncertain, the project impact would remain significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-3 would improve the intersection to LOS C or better. However, because of right-of-way constraints, the project impact would be *significant and unavoidable*.

## **2. Conflicts with Applicable Congestion Management Programs**

Selected freeway and roadway segments in the CMP system were assessed to determine compliance with CMP standards. The results for roadway segments are presented in Table 4.14-13 under the previous section. The analysis results for the freeway segments are presented in Table 4.14-14. Freeway mainline segment level of service criteria are shown in Table 4.14-8.

All study roadway and freeway segments on the CMP system would operate within acceptable standards under the Existing + Project scenario. The

TABLE 4.14-14 **FREEWAY SEGMENT LEVEL OF SERVICE – EXISTING + PROJECT CONDITIONS**

	AM Peak Hour			PM Peak Hour		
	Volume	Density <sup>a</sup>	LOS <sup>b</sup>	Volume	Density <sup>a</sup>	LOS <sup>b</sup>
<b>Interstate 80 West of Lagoon Valley Road</b>						
<i>Eastbound</i>						
Existing No Project	4,281	17.1	B	7,083	31.5	D
Existing + Project	4,329	17.3	B	7,140	31.9	D
<i>Westbound</i>						
Existing No Project	5,802	23.9	C	6,085	25.4	C
Existing + Project	5,881	24.3	C	6,116	25.6	C
<b>Interstate 80 East of Leisure Town Road</b>						
<i>Eastbound</i>						
Existing No Project	2,347	12.5	B	4,478	24.8	C
Existing + Project	2,359	12.6	B	4,486	24.8	C
<i>Westbound</i>						
Existing No Project	3,962	21.4	C	3,856	20.8	C
Existing + Project	3,997	21.6	C	3,868	20.8	C

Notes: Density = passenger cars per mile per lane.

LOS = level of service.

Source: Kittelson/Dowling Associates, 2012.

project would not cause any changes to the levels of service. Therefore, the project would have a *less-than-significant* impact on the CMP system.

### **3. Result in a Change in Air Traffic Patterns**

The closest airport to the project site is Nut Tree Airport, located near the junction of Interstate 505 and Interstate 80, about 3 miles northwest of the project area. Due to the residential/school nature and scope of the proposed project, development of the project would not have the potential to result in a change in air traffic patterns. Therefore, the project would have a *less-than-significant* impact on air traffic patterns.

### **4. Substantially Increase Hazards**

The proposed project includes installation of new internal roadways, provision of new access points and improvements to existing streets. The design of the internal street system and the strategic placement of traffic circles and other traffic-slowing features would serve to discourage cut-through traffic and promote traffic calming. If S Street, the proposed major collector road, is installed prior to development of the parcels to the south of the project site, the southern terminus would be designed to provide proper turn-around for vehicles temporarily until the roadway is extended to the south. When specific development is proposed in the project site, the project-level site plan would be reviewed by the City as a part of the entitlement process. The City would require project improvement plans to include safety elements such as school advanced warning signs and school crosswalk markings, per standard City practices. All designs would conform to the City's Design Standards and Standard Drawings unless exceptions are approved by the City. On the basis of that review and conformance process, the project would not substantially increase hazards due to design features. Therefore, the project would have a *less-than-significant* impact.

### **5. Result in inadequate emergency access.**

The analysis of emergency access considers both the adequacy of emergency access to and from the project site at ultimate buildout, and the adequacy of

emergency access during construction, while some project components are already occupied but before all project roadways have been constructed.

As shown in Figure 3-19, the initial phases of construction would introduce development in the eastern portion of the Specific Plan area prior to construction of the proposed S Street. This area would only be accessible from Elmira Road. The Vacaville Fire Department has determined that this limited accessibility would adversely affect emergency and fire access even if the south side of Elmira Road is widened in the first phase of construction. Specifically, if Elmira Road is blocked, access to or evacuation of the eastern portion of the Specific Plan area would be significantly impaired. Furthermore, Section 503.1.2 of the California Fire Code requires a second point of access when a fire apparatus access road exceeds 1,000 feet. Since emergency access to the site during the first phases of development would require City emergency response provider to travel at least 2,000 feet along Elmira Road as the only path of access to the development, a substantial hazard to emergency response would exist if that single access path became blocked. This deficiency in emergency access or evacuation ability prior to full buildout of the Plan area would violate the Fire Code standard.<sup>8</sup>

The project site layout at ultimate buildout is in keeping with State Fire Marshall Regulations, Title 19 California Code of Regulations, which require access road right-of-way to be no less than 20 feet from building to the public street. Even with the proposed raised median islands on the proposed S Street and the two-lane segment of Elmira Road, sufficient width would be provided to meet this requirement. However, traffic circles on the proposed J Street and traffic calming devices on the proposed Z Street could potentially delay response time for emergency vehicles. In addition, other site-specific design features that are not currently defined could potentially impede emergency access. Therefore, impacts to emergency access would be *potentially significant*.

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<sup>8</sup> Buder, Fred, Planning Director, City of Vacaville. Personal communication with Joanna Jansen, The Planning Center | DC&E, January 31, 2012.

**Impact TRAF-4:** The first phases of the project to be constructed would only have one route for emergency access, along Elmira Road, which the Vacaville Fire Department considers to be inadequate emergency access. Traffic circles and other traffic calming devices, as well as other site-specific design might delay emergency response time or impede movement of emergency vehicles.

Mitigation Measure TRAF-4a: The Specific Plan shall incorporate an emergency access and evacuation plan for ensuring adequate access to all phases of the project from Elmira Road and Leisure Town Road. For each phase of the project development, the project-level site plan shall be reviewed and approved by the City, including the Vacaville Fire Department, to ensure adequate accommodation of emergency access. The emergency access and evacuation plan shall provide secondary access, such as public streets, trails or temporary roadways, designed to accommodate emergency vehicles.

Mitigation Measure TRAF-4b: Traffic circles shall be designed to accommodate fire trucks and other large vehicles to travel through the intersection at an appropriate speed for emergency response purposes. On-street parking shall be prohibited near the circle to ensure clear passage. All traffic calming devices shall be designed in accordance to the City's standards and be approved by the City.

Significant After Mitigation: If the street system is designed to accommodate emergency vehicle passage, the impact is *less than significant*.

**6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

The Specific Plan is generally consistent with the adopted transportation-related plans, ordinance, programs, or policies described in the Regulatory Setting section of this chapter. The proposed circulation within the project area would be enhanced by new collectors and local streets that would connect with existing roadways and provide linkage between the project area and

adjacent neighborhoods that would be developed in the future, thereby creating an efficient network for motorists, bicyclists, and pedestrians.

Sidewalks, proposed along all roadways, would provide safe and convenient pedestrian travel. Pedestrian and bicycle pathways would be provided to connect selected cul-de-sacs, including through sound walls along S Street, to collectors and key local roads that would afford added convenience to pedestrians and bicycles as well as potential transit access on Leisure Town Road and S Street. Class II bike lanes would be provided along the proposed S Street, the major collector road, that would not only increase connectivity for bicyclists but would also serve as additional buffers for pedestrians and create a narrowing effect on the street to discourage speeding. Right-of-way for Class II bike lanes would also be allocated on Elmira Road along the project frontage, which would allow the extension of the Elmira Road bike lanes to areas to the east of Leisure Town Road. At full buildout, the project would not conflict with adopted plans, policies, and programs related to multi-modal facilities and would not decrease the performance and safety of such facilities.

Because the project would be constructed in phases over a period of time, the project may potentially conflict with adopted plans, policies and programs related to multi-modal facilities prior to full buildout of the project. For instance, the provision of pedestrian and bicycle facilities and connections to Elmira Road and Leisure Town Road might not be adequate when the initial phases, which are slated to occur on the eastern portion of the plan area, are constructed. Therefore, the project would have potentially significant impacts related to multi-modal facilities.

**Impact TRAF-5:** Interim phases of the project may conflict with adopted plans, policies, and programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities during the initial phases of implementation. As the site plan is not clearly defined, the project impact is potentially significant.

Mitigation Measure TRAF-5: For each phase of the project development, the project-level site plan shall be submitted for review and approval by the City to ensure safe and direct facilities for pedestrians, bicyclists and transit riders are provided to Elmira Road and Leisure Town Road and the design does not conflict with adopted plans, policies and programs related to such facilities.

Significant After Mitigation: With appropriate City review of plans, the impact would be *less than significant*.

#### ***F. Cumulative Impacts***

The Cumulative Impacts section describes the potential transportation impacts of the project relative to two background conditions, Existing + Approved Projects and projected 2035 development under the 1990 General Plan.

The City of Vacaville is currently preparing an update to the Development Impact Fee Program. The Update will include a list of additional improvement projects that would be needed over the next twenty years in order to maintain acceptable traffic operations throughout the city. In addition to other needed improvements, it is anticipated that the list will reflect the City's participation in the Jepson Parkway Improvement Project and would include improvements along Leisure Town Road. However, because the Development Impact Fee Program Update is not projected to be adopted prior to the certification of this EIR, the improvement projects are not assumed to be implemented prior to evaluation of the proposed mitigation measures for cumulative impacts.

While the widening of Leisure Town Road associated with the Jepson Parkway Improvement Project is assumed for the traffic forecasts for the Cumulative in 2035 – Development of the 1990 General Plan Conditions (Section F.2), the specific improvements at intersections that are being designed by the City are not assumed in this analysis because designs are not yet finalized.

### 1. Existing + Approved Project Conditions

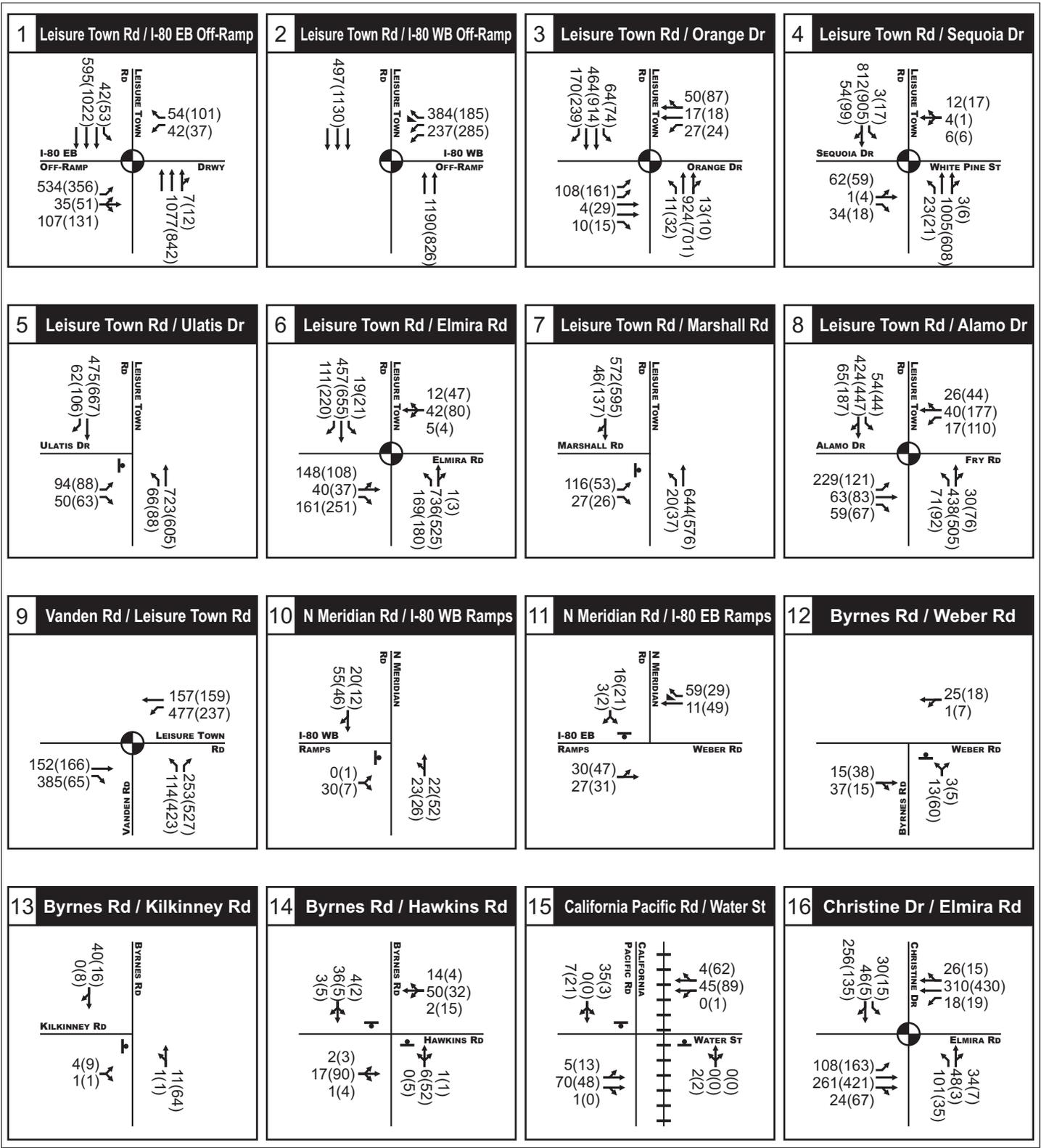
Analyses were performed for Existing + Approved Projects conditions to determine the effect of the proposed project on the transportation network in combination with the already approved projects in the surrounding community using the methodology described above. The discussion below addresses cumulative project impacts with regard to intersection, roadway, and freeway operations. The project would not have any cumulative impacts to air traffic patterns, design hazards, emergency access, or multi-modal policies, plans and programs. The future analysis scenarios are summarized below and further detailed in the following section:

- “ **Existing + Approved Projects Conditions** – Future conditions in which traffic generated by all developments that have been approved by the City but have not yet been built is added to the existing conditions.
- “ **Existing + Approved Projects Conditions with Project** – Existing + Approved Projects conditions with the addition of traffic generated by the proposed project. This scenario is used to identify cumulative impacts.

The Citywide traffic model was used to develop traffic volumes for the Existing + Approved Projects conditions. Similar to the process in developing volumes for the Existing + Project scenario, the projected traffic growth was derived from the differences between the model forecasts for the base year and analysis scenarios. The growth increments were then applied to the existing traffic counts to arrive at the projected traffic volumes. For the Existing + Approved Projects conditions, it is assumed that the Foxboro Parkway Extension, which includes the realignment of Vanden Road, would be completed. No other roadway improvement was assumed. Jepson Parkway was not included in the Existing + Approved condition because only portions within the Southtown project and proposed Vanden Meadows project, south of Alamo Drive, are associated with Approved Projects.

#### a. Intersection Operations

Peak hour intersection volumes for Existing + Approved Projects scenarios are presented in Figure 4.14-7 and Figure 4.14-8. Peak hour intersection



Source: Kittelson & Associates, Inc./Dowling



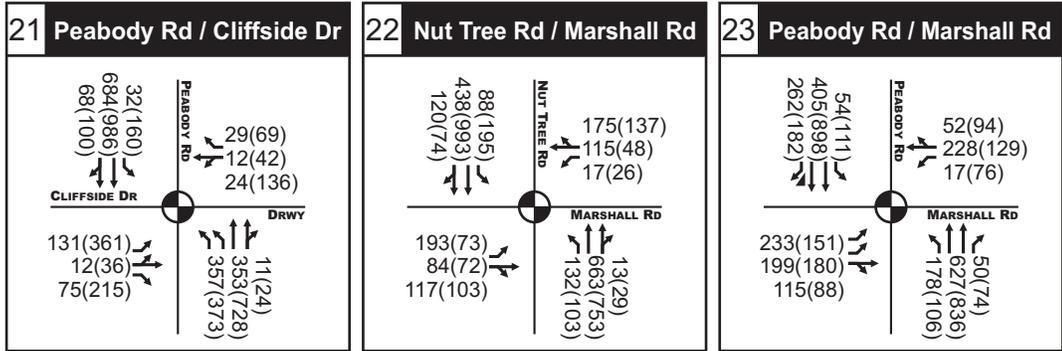
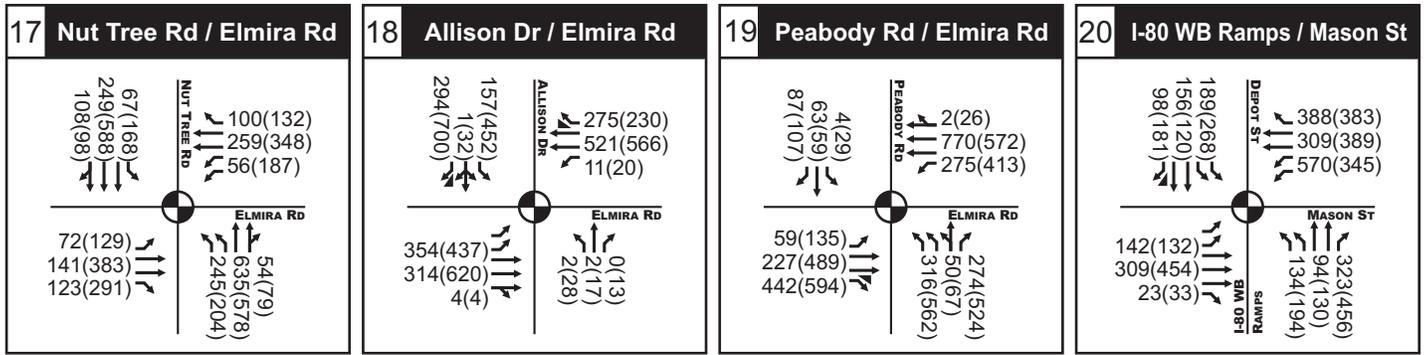
34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign



Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes



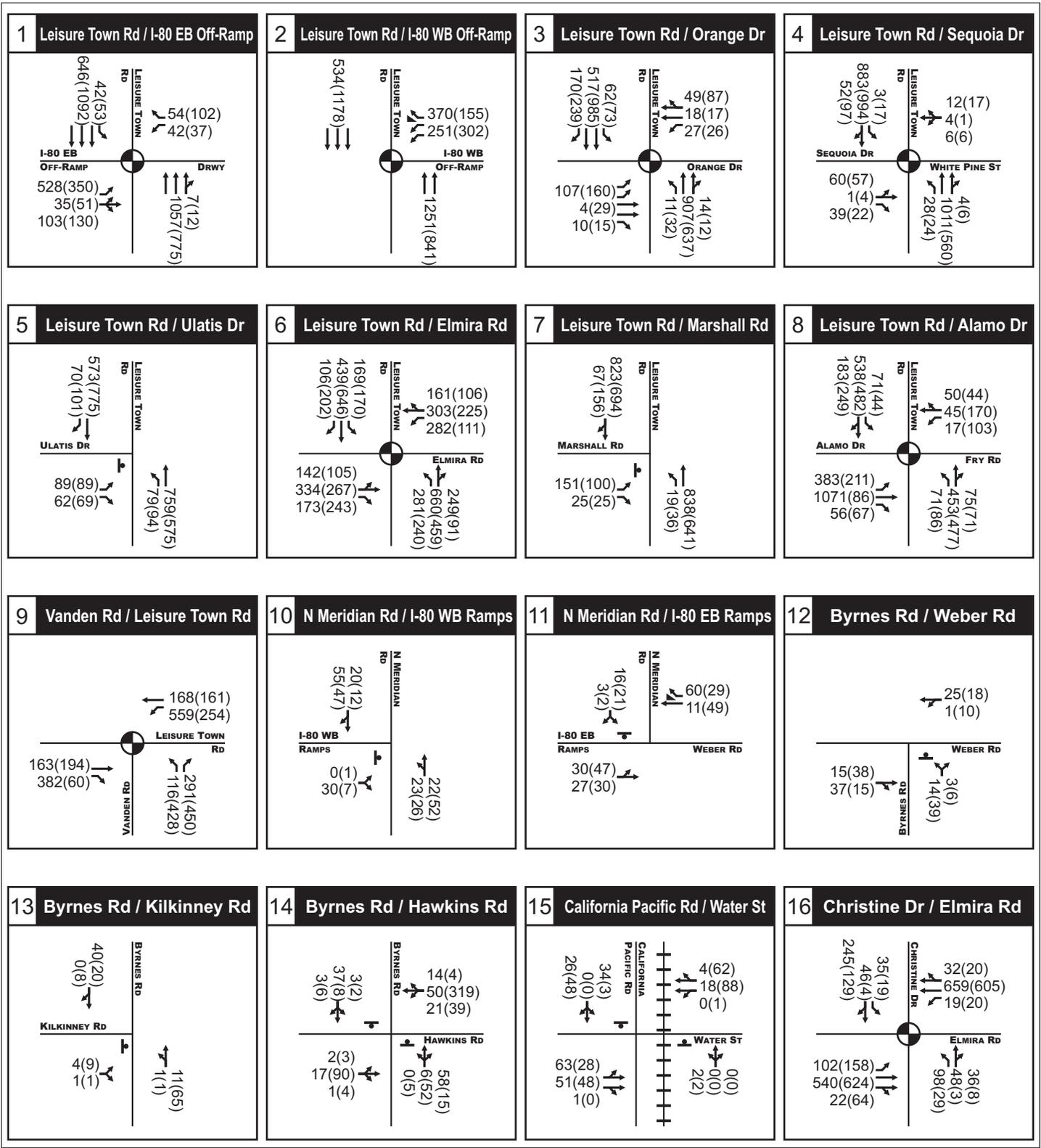
Traffic Signal



Stop Sign

volumes for Existing + Approved Projects with Brighton Landing scenarios are presented in Figure 4.14-9 and Figure 4.14-10. The intersection levels of service are shown in Table 4.14-15. Most intersections would maintain LOS C or better conditions with the exception of the following five intersections under Existing + Approved Projects with Project conditions:

- “ At the Leisure Town Road/Sequoia Drive intersection (#4), the project would contribute to the already substandard operations of LOS D and would cause the v/c to increase by more than 0.02, from 0.84 to 0.87 during the PM peak hour. This conflicts with the goal of maintaining LOS C at all intersections and is considered to be a *significant* impact.
- “ At the Leisure Town Road/Elmira Road intersection (#6), the project would cause the intersection to deteriorate from LOS C to LOS F during both peak hours. This is considered to be a *significant* impact.
- “ At the side-street stop-controlled intersection of Leisure Town Road/Marshall Road (#7), the addition of project trips would cause the average intersection delay to increase considerably from a level consistent with LOS A to LOS F in the AM peak hour. Motorists wishing to turn left from the stop-controlled eastbound approach would experience significant delays at the intersection. The peak hour traffic signal warrant would also be met under the Existing + Approved Projects with Project scenario. This is considered to be a *significant* impact.
- “ At the Leisure Town Road/Alamo Drive intersection (#8), the intersection would degrade from LOS B to LOS D in the AM peak hour. The project would also contribute traffic to the already substandard operations in the PM peak hour and increase the v/c ratio by 0.07 from 0.81 to 0.88. This is considered to be a *significant* impact.
- “ At the Peabody Road/Cliffside Drive intersection (#21), the Project would cause the v/c to increase by less than 0.02 compared to the Existing plus Approved Projects (No Project) scenario. However, a change in v/c of this magnitude is considered to be imperceptible compared to



Source: Kittelson & Associates, Inc./Dowling



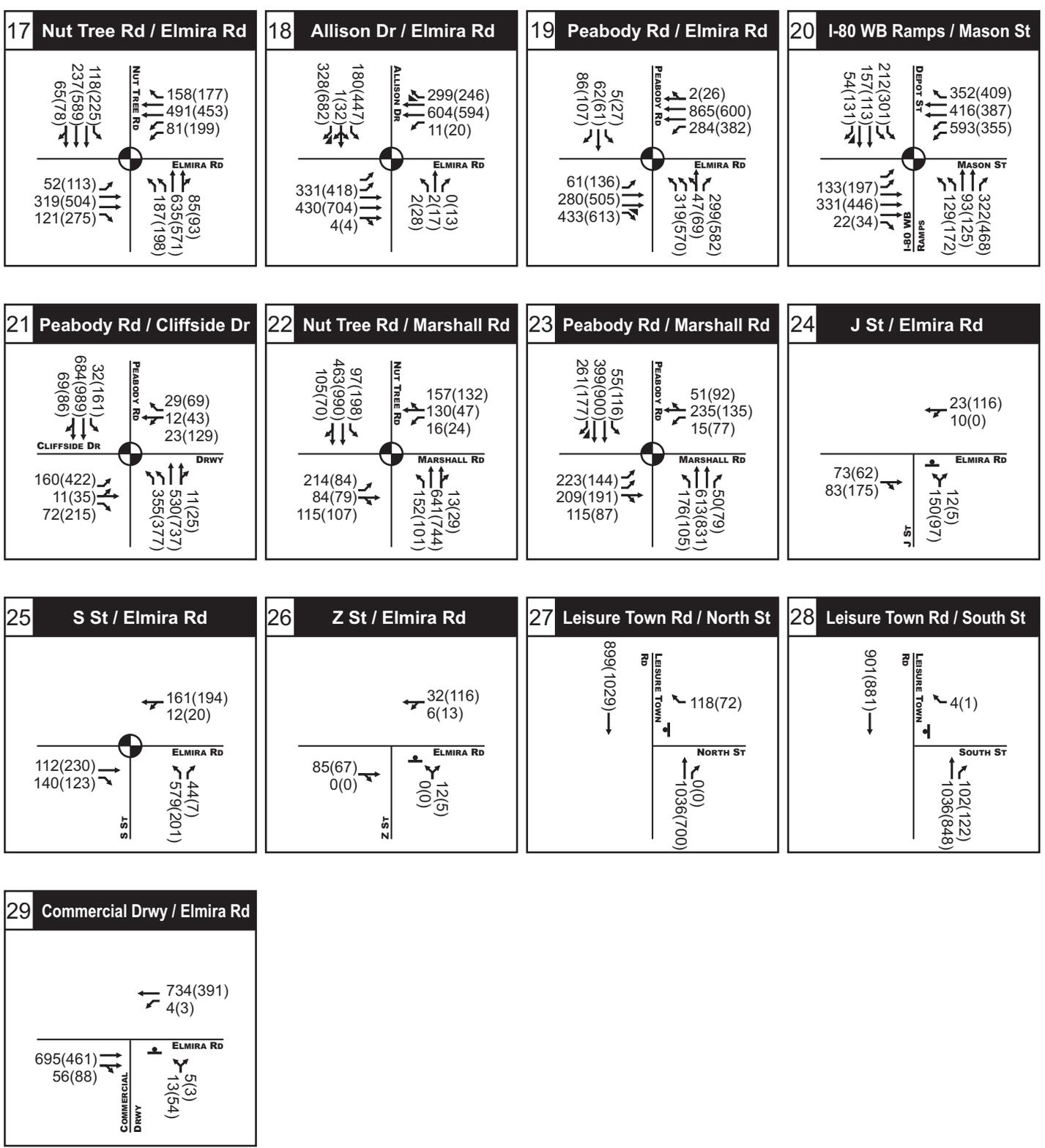
34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign



Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign

CITY OF VACAVILLE  
 BRIGHTON LANDING SPECIFIC PLAN DRAFT EIR  
 TRAFFIC AND TRANSPORTATION

TABLE 4.14-15 INTERSECTION LEVEL OF SERVICE – EXISTING + APPROVED PROJECTS WITH PROJECT CONDITIONS

No	Intersection	Control	Peak Hr	Existing + Approved <sup>a</sup>		Existing + Approved w/Project	
				LOS <sup>b</sup>	V/C <sup>c</sup> or Delay (sec) <sup>d</sup>	LOS <sup>b</sup>	V/C <sup>c</sup> or Delay (sec) <sup>d</sup>
1	Leisure Town Rd/ I-80 EB off-ramp	Signal	AM	B	0.63	B	0.62
			PM	A	0.54	A	0.54
2	Leisure Town Rd/ I-80 WB off-ramp	Signal	AM	A	0.55	A	0.57
			PM	A	0.46	A	0.47
3	Leisure Town Rd/Orange Dr	Signal	AM	A	0.47	A	0.46
			PM	A	0.46	A	0.48
4	Leisure Town Rd/Sequoia Dr	Signal	AM	C	0.75	C	0.80
			PM	<b>D</b>	<b>0.84</b>	<b>D</b>	<b>0.87</b>
5	Leisure Town Rd/Ulatis Dr	Stop <sup>ad</sup>	AM	A (F)	7.4 (102.6)	A (F)	10.8 (179.4)
			PM	A (F)	7.5 (116.4)	B (F)	10.2 (170.5)
6	Leisure Town Rd/Elmira Rd	Signal	AM	C	0.77	<b>F</b>	<b>1.35</b>
			PM	C	0.80	<b>F</b>	<b>1.02</b>
7	Leisure Town Rd/Marshall Rd	Stop <sup>ad</sup>	AM	A (E)	7.9 (77.4)	<b>F (F)</b>	<b>62.3</b> <b>(679.1)</b>
			PM	A (E)	2.5 (40.6)	B (F)	13.1 (170.6)
8	Leisure Town Rd/Alamo Dr	Signal	AM	B	0.67	<b>D</b>	<b>0.89</b>
			PM	<b>D</b>	<b>0.81</b>	<b>D</b>	<b>0.88</b>
9	Leisure Town Rd/Vanden Rd	Signal	AM	B	0.66	C	0.71
			PM	B	0.64	B	0.67
10	N. Meridian Rd/ I-80 WB ramps	Stop <sup>ad</sup>	AM	A (A)	2.9 (8.8)	A (A)	2.9 (8.8)
			PM	A (A)	1.9 (8.8)	A (A)	1.9 (8.8)

CITY OF VACAVILLE  
BRIGHTON LANDING SPECIFIC PLAN DRAFT EIR  
TRAFFIC AND TRANSPORTATION

TABLE 4.14-15 INTERSECTION LEVEL OF SERVICE – EXISTING PLUS APPROVED PROJECTS CONDITIONS (CONTINUED)

No	Intersection	Control	Peak Hr	Existing + Approved <sup>a</sup>		Existing + Approved w/Project	
				LOS <sup>b</sup>	V/C <sup>c</sup> or Delay (sec) <sup>d</sup>	LOS <sup>b</sup>	V/C <sup>c</sup> or Delay (sec) <sup>d</sup>
11	N Meridian Rd/ I-80 EB ramps	Stop <sup>ad</sup>	AM	A (A)	2.7 (9.3)	A (A)	2.7 (9.3)
			PM	A (A)	3.3 (10)	A (A)	3.3 (10)
12	Byrnes Rd/Weber Rd	Stop <sup>ad</sup>	AM	A (A)	1.6 (8.9)	A (A)	1.6 (8.8)
			PM	A (A)	4.6 (9.4)	A (A)	4.7 (9.3)
13	Byrnes Rd/ Kilkinney Rd	Stop <sup>ad</sup>	AM	A (A)	0.9 (8.9)	A (A)	0.9 (8.8)
			PM	A (A)	1.0 (9.1)	A (A)	0.9 (9)
14	Brynes Rd/ Hawkins Rd	Stop <sup>ad</sup>	AM	A (B)	3.8 (9.8)	A (B)	5.5 (10.1)
			PM	A (B)	4.0 (10.8)	A (B)	4.9 (10.8)
15	California Pacific Rd/ Water St	Stop <sup>ad</sup>	AM	A (A)	2.7 (9.4)	A (B)	5.4 (10.4)
			PM	A (A)	1.4 (9.7)	A (B)	2.5 (10.4)
16	Christine Dr/ Elmira Rd	Signal	AM	A	0.55	B	0.65
			PM	A	0.47	A	0.51
17	Nut Tree Rd/ Elmira Rd	Signal	AM	A	0.49	A	0.59
			PM	B	0.61	B	0.69
18	Allison Dr/ Elmira Rd	Signal	AM	A	0.45	A	0.47
			PM	B	0.63	B	0.63
19	Peabody Rd/ Elmira Rd	Signal	AM	A	0.53	A	0.55
			PM	C	0.79	C	0.78
20	I-80 WB ramps/ Mason St	Signal	AM	A	0.50	A	0.52
			PM	B	0.61	B	0.64
21	Peabody Rd/ Cliffside Dr	Signal	AM	A	0.55	A	0.56
			PM	<b>D</b>	<b>0.84</b>	<b>D</b>	<b>0.85</b>

TABLE 4.14-15 INTERSECTION LEVEL OF SERVICE – EXISTING PLUS APPROVED PROJECTS CONDITIONS (CONTINUED)

No	Intersection	Control	Peak Hr	LOS <sup>b</sup>	Existing + Approved <sup>a</sup>		Existing + Approved w/Project	
					V/C <sup>c</sup> or Delay (sec) <sup>d</sup>	LOS <sup>b</sup>	V/C <sup>c</sup> or Delay (sec) <sup>d</sup>	LOS <sup>b</sup>
22	Nut Tree Rd/ Marshall Rd	Signal	AM	A	0.57	A	0.60	
			PM	A	0.59	A	0.59	
23	Peabody Rd/ Marshall Rd	Signal	AM	B	0.61	B	0.61	
			PM	B	0.67	B	0.68	
24	Proposed J St/ Elmira Rd	Stop <sup>ad</sup>	AM	Future Intersection		A (B)	5.1 (10.6)	
			PM			A (B)	2.5 (11)	
25	Proposed S St/ Elmira Rd	Signal	AM	Future Intersection		A	0.60	
			PM			A	0.39	
26	Proposed Z St/ Elmira Rd	Stop <sup>ad</sup>	AM	Future Intersection		A (A)	1.1 (8.8)	
			PM			A (A)	0.7 (8.7)	
27	Leisure Town Rd/ Proposed North St	Stop <sup>ad</sup>	AM	Future Intersection		A (D)	1.9 (33.8)	
			PM			A (C)	0.6 (16)	
28	Leisure Town Rd/ Proposed South St	Stop <sup>ad</sup>	AM	Future Intersection		A (C)	0 (20.9)	
			PM			A (C)	0 (17.1)	
29	Proposed Commercial Drwy/ Elmira Rd	Stop <sup>ad</sup>	AM	Future Intersection		A (E)	0.5 (38.5)	
			PM			A (C)	1.3 (21.6)	

Note: **Bold** denotes locations that operate below acceptable standards (LOS D, E, or F).

Shading denotes locations with significant impacts.

<sup>a</sup> The results for unsignalized intersections are shown for both the average of all movements at the intersection and for the single movement with the longest delay, e.g. A(B) 2.4(14.3).

<sup>b</sup> LOS denotes level of service.

<sup>c</sup> V/C denotes volume-to-capacity ratio, which is used for signalized intersections to determine level of service.

<sup>d</sup> Delay denotes average vehicle delay, which is used for unsignalized intersections to determine level of service.

Source: Dowling Associates, 2012.

normal fluctuations in traffic and motorists' perception of traffic conditions; therefore, the impact at this intersection is considered to be *less-than-significant*.

**Impact TRAF-CUM-1:** At the Leisure Town Road/Sequoia Drive intersection (#4), the project would contribute traffic to the already substandard operation and would cause the v/c to increase by more than 0.02 while maintaining LOS D.

Mitigation Measure TRAF-CUM-1: At the Leisure Town Road/Sequoia Drive intersection (#4), implementation of the following improvements would improve the intersection to LOS C or better in both peak hours: add an exclusive southbound through lane on Leisure Town Road to provide one left-turn lane, one through lane and one shared through-right lane on the southbound approach; and widen the south leg to provide a corresponding receiving lane. While the improvements are part of the planned Jepson Parkway Improvement Project, the timing of their implementation is not established at this time.

The City may include funding for these improvements in the next update of the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service if necessary prior to the installation of the Jepson Parkway Improvement Project. However, the improvements' inclusion in the Development Impact Fee Program Update and the implementation of the Jepson Parkway Improvement Project could not be ascertained at this time. Therefore, the cumulative impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-1 would improve the intersection to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the project impact is *significant and unavoidable*.

**Impact TRAF-CUM-2:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F during both peak hours with the addition of project traffic under Existing + Approved Projects with Project scenario.

Mitigation Measure TRAF-CUM-2: At the Leisure Town Road/Elmira Road intersection (#6), implementing Mitigation Measure TRAF-1 as well as converting the southbound right-turn lane to a shared through-right lane and providing the corresponding receiving lane on the south leg would improve the intersection to LOS C or better in both peak hours.

As discussed in Mitigation Measure TRAF-1, this intersection is being designed by the City of Vacaville as a part of the planned Jepson Parkway Improvement Project to provide two left-turn lanes, two through lanes, a third future through lane and one right-turn lane on the northbound approach; two left-turn lanes, two through lanes and one future right-turn lane on the eastbound approach; two left-turn lanes, one through lane and one right-turn lane on the westbound approach; and two left turn lanes, two through lanes and one right-turn lane on the southbound approach. Implementation of the Jepson Parkway Improvement Project would also improve the intersection to LOS C or better in both peak hours.

The City may include funding for these improvements in the next update of the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service if necessary prior to the installation of the Jepson Parkway Improvement Project. However, the improvements' inclusion in the Development Impact Fee Program Update and the implementation of the Jepson Parkway Improvement Project could not be ascertained at this time. Therefore, the project impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-2 would improve the intersection to LOS C or better in

both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the project impact is *significant and unavoidable*.

**Impact TRAF-CUM-3:** The unsignalized Leisure Town Road/Marshall Road intersection (#7) would degrade to LOS F during the AM peak hour with the addition of project traffic under Existing + Approved Projects with Project scenario.

Mitigation Measure TRAF-CUM-3: At the Leisure Town Road/Marshall Road intersection (#7), implementation of either of the following improvements would improve the intersection to LOS C or better: install a traffic signal, or construct a median to prohibit east-bound left turns from Marshall Road. Signalization is currently allowed by the Jepson Parkway Concept Plan; however, there are concerns that installing a traffic signal at this intersection would significantly increase traffic volume along Marshall Road. Prohibition of left-turn movements from Marshall Road would divert traffic onto Elmira Road and could potentially affect its intersection with Leisure Town Road. Analysis has shown that implementation of the mitigation measures identified under Mitigation Measure TRAF-CUM-2 would be sufficient to accommodate the diverted traffic from Marshall Road.

The City may include funding for these improvements in the next update of the Development Impact Fee Program and implement one of these improvements at an appropriate time in order to maintain acceptable level of service. However, the improvements' inclusion in the Development Impact Fee Program Update could not be ascertained at this time. Therefore, the project impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-3 would improve the intersection to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, be-

cause its implementation could not be assured, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-4:** The Leisure Town Road/Alamo Drive intersection (#8) would degrade to LOS D during the AM peak hour with the addition of project traffic under Existing + Approved Projects with Project scenario., continue to operate at LOS D in PM Peak Hour and change  $V/C > 0.02$ .

Mitigation Measure TRAF-CUM-4: At the Leisure Town Road/Alamo Drive intersection (#8), implementation of the following improvements would improve the intersection to LOS B in the AM peak hour and LOS C in the PM peak hour: convert the eastbound through lane to a left-turn lane and the exclusive right-turn lane to a shared through-right lane to provide two left-turn lanes and one shared through-right lane on the eastbound approach; add a southbound through lane to provide one left-turn lane, one through lane and one through-right lane on the southbound approach; and widen the north leg and south leg on Leisure Town Road to provide two corresponding receiving lanes on each leg. Widening of Leisure Town Road to provide two travel lanes in each direction is a part of the Jepson Parkway Improvement Project. Further, this segment of Jepson Parkway is currently in design by the City of Vacaville so that these improvements may be included in the design. Nonetheless, the timing for completion of the Jepson Parkway implementation is not established at this time.

The City may include funding for these improvements in the next update of the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service if necessary prior to the installation of the Jepson Parkway Improvement Project. However, the improvements' inclusion in the Development Impact Fee Program Update and the implementation of the Jepson Parkway Improvement Project could not be ascertained. Therefore, the cumulative impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-4 would improve the intersection to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the cumulative impact is *significant and unavoidable*.

b. Roadway Segment Operations

Peak hour volumes and level of service at the study roadway segments under Existing + Approved Projects conditions are presented in Table 4.14-16. Most segments would operate at LOS C or better with the addition of project-generated traffic with the exception of the Leisure Town Road segments north of Elmira Road and north of Marshall Road, a segment of the Major Collector Street (S Street) within the project area, and Peabody Road south of the City Limits.

- “ The Leisure Town Road segment north of Elmira Road would degrade to LOS D in the northbound direction during the AM peak hour and to below LOS D in the southbound direction during the PM peak hour with the addition of project traffic to trips generated by other approved developments in Vacaville. This is considered to be a *significant* impact.
- “ The Leisure Town Road segment north of Marshall Road would also degrade to LOS D in the northbound direction in the AM peak hour. This is considered to be a *significant* impact.
- “ In the AM peak hour, the demand on the proposed S Street south of Elmira Road would exceed the LOS C capacity threshold in the northbound direction and would result in LOS D conditions. The impact is considered to be *significant*.
- “ The segment of Peabody Road south of the Vacaville City Limits would operate at LOS E with and without the addition of project traffic in the southbound direction during the PM peak hour. Because this segment is located in Solano County and the established standard for this CMP route is LOS E, the project impact on this segment is considered to be *less than significant*. Widening this segment to a four lane arterial is included

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TABLE 4.14-16 ROADWAY SEGMENT LEVEL OF SERVICE – EXISTING + APPROVED PROJECTS WITH PROJECT CONDITIONS

Facility Type	LOS C (D) Directional Capacity	Existing+ Approved				Existing+ Approved with Project				
		Volume		LOS C (D) Exceeded?		Volume		LOS C (D) Exceeded?		
<b>AM Peak Hour</b>										
<b>Leisure Town Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	734	1646	NO (NO)	NO (NO)	786	1707	NO (NO)	NO (NO)
N of Elmira Road	2 Lane Arterial	900 (1,013)	587	898	NO (NO)	NO (NO)	713	964	NO (NO)	YES (NO)
N of Marshall Road	2 Lane Arterial	900 (1,013)	618	761	NO (NO)	NO (NO)	890	989	NO (NO)	YES (NO)
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	321	349	NO (NO)	NO (NO)	690	649	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1013)/ 1,500 (1,688)		58		NO (NO)		751		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	2 Lane Arterial	900 (1,013)	60		NO (NO)		747		NO (NO)	
E of S Street <sup>b</sup>	2 Lane Arterial	900 (1,013)	60	59	NO (NO)	NO (NO)	173	156	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)					152	623	NO (NO)	YES (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>b</sup>	2 Lane Arterial	900 (1,013)	707	514	NO (NO)	NO (NO)	757	612	NO (NO)	NO (NO)
<b>PM Peak Hour</b>										
<b>Leisure Town Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	1,415	1,333	NO (NO)	NO (NO)	1,480	1,347	NO (NO)	NO (NO)

TABLE 4.14-16 ROADWAY SEGMENT LEVEL OF SERVICE – EXISTING PLUS APPROVED PROJECTS CONDITIONS (CONTINUED)

	Facility Type	LOS C (D) Directional Capacity	Existing+ Approved				Existing+ Approved with Project			
			Volume		LOS C (D) Exceeded?		Volume		LOS C (D) Exceeded?	
N of Elmira Road	2 Lane Arterial	900 (1,013)	896	680	NO (NO)	NO (NO)	1,018	669	<b>YES (YES)</b>	NO (NO)
N of Marshall Road	2 Lane Arterial	900 (1,013)	731	629	NO (NO)	NO (NO)	848	740	NO (NO)	NO (NO)
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	453	395	NO (NO)	NO (NO)	643	614	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1,013)/ 1,500 (1,688)		60		NO (NO)		508		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	2 Lane Arterial	900 (1,013)	104		NO (NO)		445		NO (NO)	
E of S Street <sup>b</sup>	2 Lane Arterial	900 (1,013)	103	61	NO (NO)	NO (NO)	213	237	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)	-	-	-	-	143	208	NO (NO)	NO (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>b</sup>	2 Lane Arterial	900 (1,013)	1,114	828	YES (YES)	NO (NO)	1,119	851	YES (YES)	NO (NO)

Note: **Bold** denotes exceedance of applicable standard and highlight denotes significant impact.

Shading implies that this category is not applicable.

<sup>a</sup> Roadway would be widened to two travel lanes in the eastbound direction with the project.

<sup>b</sup> Part of the Solano County CMP roadway system, which has different standards. The standard for the Peabody Road segment is LOS E

Source: Kittelson/Dowling Associates, 2012.

in the City of Fairfield Capital Improvement Program and in the North-east Area Traffic Fee.

**Impact TRAF-CUM-5:** The Leisure Town Road segment north of Elmira Road would degrade to LOS D on the northbound direction during the AM peak hour and to LOS E on the southbound direction during the PM peak hour under Existing + Approved Projects with Project scenario.

Mitigation Measure TRAF-CUM-5: Widening Leisure Town Road to provide two travel lanes on each direction would improve the segment operations to LOS C or better. While this improvement is a part of the planned Jepson Parkway Improvements Project, the timing of its implementation is not established at this time.

The City may include funding for this improvement in the next update of the Development Impact Fee Program and implement the improvement at an appropriate time in order to maintain acceptable level of service if necessary prior to the installation of the Jepson Parkway Improvement Project. However, the improvement's inclusion in the Development Impact Fee Program Update and the implementation of the Jepson Parkway Improvement Project could not be ascertained at this time. Therefore, the project impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-5 would improve the segment to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-6:** The Leisure Town Road segment north of Marshall Road would degrade to LOS D on the northbound direction during the AM peak hour under Existing + Approved Projects with Project scenario.

Mitigation Measure TRAF-CUM-6: Widening Leisure Town Road to provide two travel lanes per direction would improve the operation to LOS C or better. While this improvement is a part of the planned Jepson Parkway Improvements Project, the timing of its implementation is not established at this time.

The City may include funding for this improvement in the next update of the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service if necessary prior to the installation of the Jepson Parkway Improvement Project. However, the improvement's inclusion in the Development Impact Fee Program Update and the implementation of the Jepson Parkway Improvement Project could not be ascertained at this time. Therefore, the project impact remains significant.

Significance after Mitigation: Implementing Mitigation Measure TRAF-CUM-6 would improve the segment to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured at this time, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-7**: The proposed S Street segment south of Elmira Road would operate at LOS D on the northbound direction during the AM peak hour under Existing + Approved Projects with Project scenario.

Mitigation Measure TRAF-CUM-7: Implementing Mitigation Measure TRAF-3 would improve the operations to acceptable levels. However, as discussed, the implementation of the improvement is not assured due to potential right-of-way constraint along Elmira Road. Therefore, the cumulative impact remains significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-3 would improve the intersection to LOS C or better. However,

because of right-of-way constraints, the cumulative impact would be *significant and unavoidable*.

c. Freeway Operations

Table 4.14-17 presents the freeway operations under Existing + Approved Projects conditions. All the study freeway mainline segments would operate at LOS D or better in both travel directions and within acceptable standards. Therefore, the project impact is considered to be *less than significant*.

**2. Cumulative in 2035 – Development of the 1990 General Plan**

This section evaluates the effect of the proposed project on traffic congestion in combination with the projected growth in the surrounding community by the year 2035 using the methodology described above. The discussion below addresses cumulative project impacts with regard to intersection, roadway and freeway operations. The project would not cause additional cumulative impacts to the CMP system, air traffic patterns, design hazards, emergency access, or multi-modal policies, plans, and programs.

The Citywide model was used to develop 20-year traffic forecast volumes for the 2035 Cumulative conditions using the same process described for the Existing + Approved Projects conditions. The following roadway improvements are assumed for cumulative 2035 conditions:

- “ Vaca Valley Road/Interstate 505 interchange and overcrossing.
- “ California Drive overcrossing.
- “ Jepson Parkway project, which would improve Leisure Town Road to a four-lane divided arterial between Orange Drive and the south city limits.
- “ Signalization and realignment of the Leisure Town Road/Ulatis Drive and Leisure Town Road/Hawkins Road intersections.
- “ Signalization of the Leisure Town Road/Marshall Road intersection.
- “ Widening of Fry Road to a four-lane arterial east of Leisure Town Road.

TABLE 4.14-17 **FREEWAY SEGMENT LEVEL OF SERVICE – EXISTING + APPROVED PROJECTS CONDITIONS**

	AM Peak Hour			PM Peak Hour		
	Volume	Density <sup>a</sup>	LOS <sup>b</sup>	Volume	Density <sup>a</sup>	LOS <sup>b</sup>
<b>Interstate 80 West of Lagoon Valley Road</b>						
<i>Eastbound</i>						
Ex+ Approved	4,345	17.4	B	7,083	31.5	D
Ex+ App with Project	4,393	17.6	B	7,140	31.9	D
<i>Westbound</i>						
Ex+ Approved	5,802	23.9	C	6,157	25.8	C
Ex+ App with Project	5,881	24.3	C	6,188	26.0	C
<b>Interstate 80 East of Leisure Town Road</b>						
<i>Eastbound</i>						
Ex+ Approved	2,347	12.5	B	4,478	24.8	C
Ex+ App with Project	2,359	12.6	B	4,486	24.8	C
<i>Westbound</i>						
Ex+ Approved	3,962	21.4	C	3,856	20.8	C
Ex+ App with Project	3,997	21.6	C	3,868	20.8	C

Notes: Density = passenger cars per mile per lane.

LOS = level of service.

Source: Kittelson/Dowling Associates, 2012.

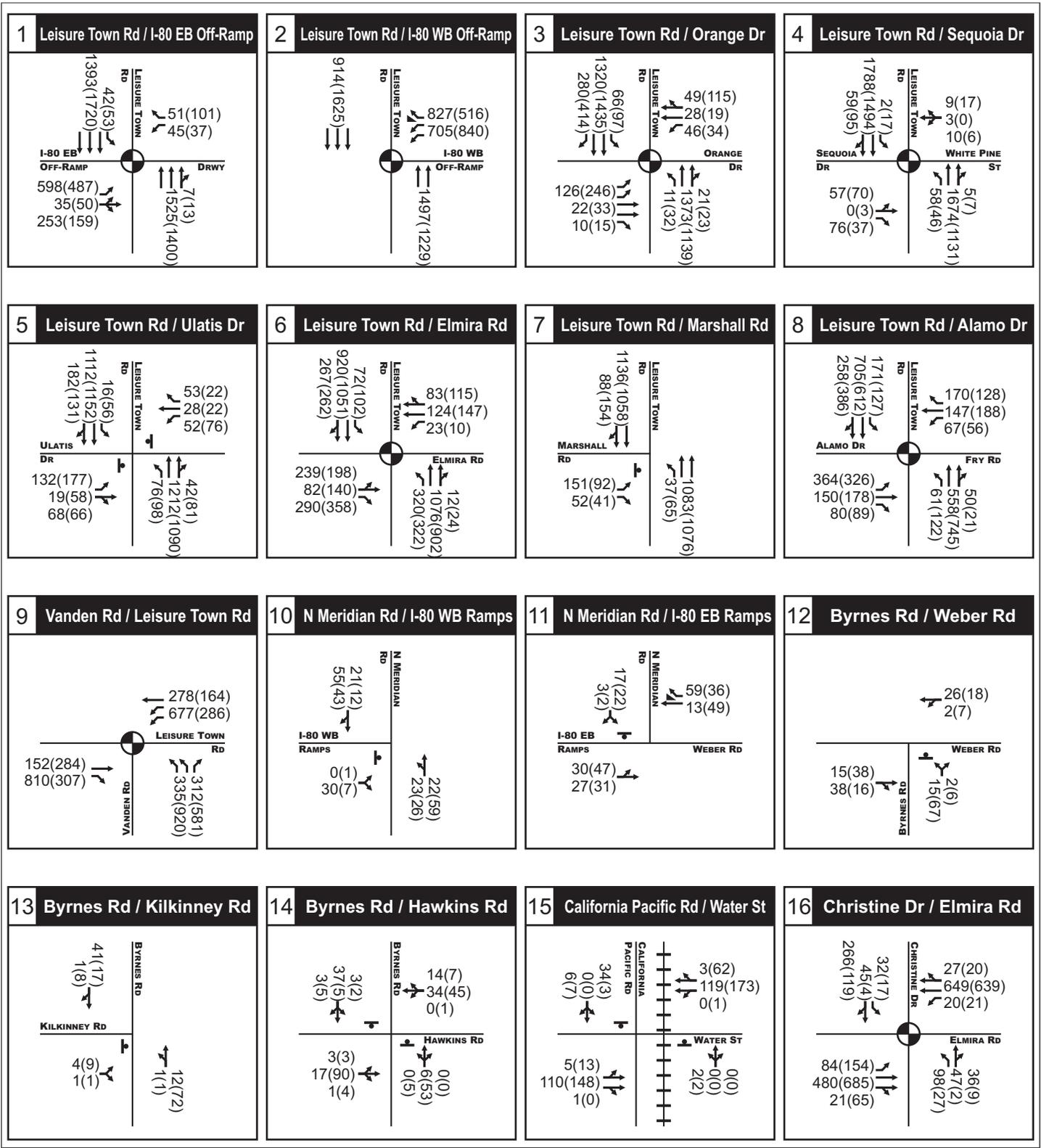
- “ Widening of Peabody Road to a four-lane arterial between the Vacaville City Limits and Markley Lane.

a. Intersection Operations

Peak hour intersection volumes for Year 2035 Cumulative Conditions under the 1990 General Plan are presented in Figure 4.14-11 and Figure 4.14-12. Peak hour intersection volumes for Year 2035 Cumulative Conditions under the 1990 General Plan plus Brighton Landing are presented in Figure 4.14-13 and Figure 4.14-14. The intersection levels of service are shown in Table 4.14-18. Most intersections would operate within acceptable standards with the exception of the following five intersections:

- “ At the Leisure Town Road/Interstate 80 Westbound off-ramp intersection (#2), the project would contribute to the substandard LOS D operations and would cause the v/c to increase by 0.02 from 0.81 to 0.83 during the AM peak hour. This is a *significant impact*. At the Leisure Town Road/Elmira Road intersection (#6), the project would contribute to the substandard operations and increase the v/c by over 0.02 in both the AM and PM peak hours. This is considered to be a *significant impact*.
- “ At the Leisure Town Road/Alamo Drive intersection (#8), the operation would degrade from LOS C to LOS E in the AM peak hour. The project would also contribute to the substandard operations in the PM peak hour and increase the v/c by 0.03 from 0.83 to 0.86 while maintaining LOS D. This is considered to be a *significant impact*.
- “ At the Leisure Town Road/Vanden Road intersection (#9), the v/c would increase by 0.02 while maintaining substandard LOS D during the AM peak hour with the addition of project traffic. This is considered to be a *significant impact*

At the Peabody Road/Cliffside Drive intersection (#21), the intersection would operate at LOS E but the v/c would remain unchanged at 0.91 during the PM peak hour with the addition of project traffic. This is considered to be a *less-than-significant impact*.



Source: Kittelson & Associates, Inc./Dowling



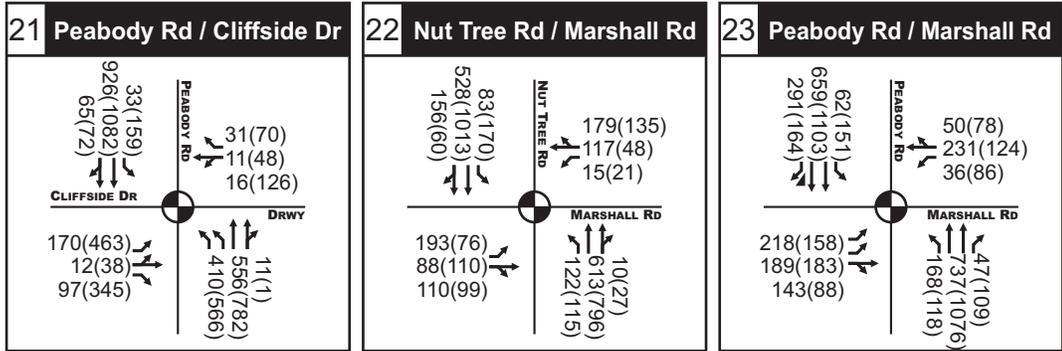
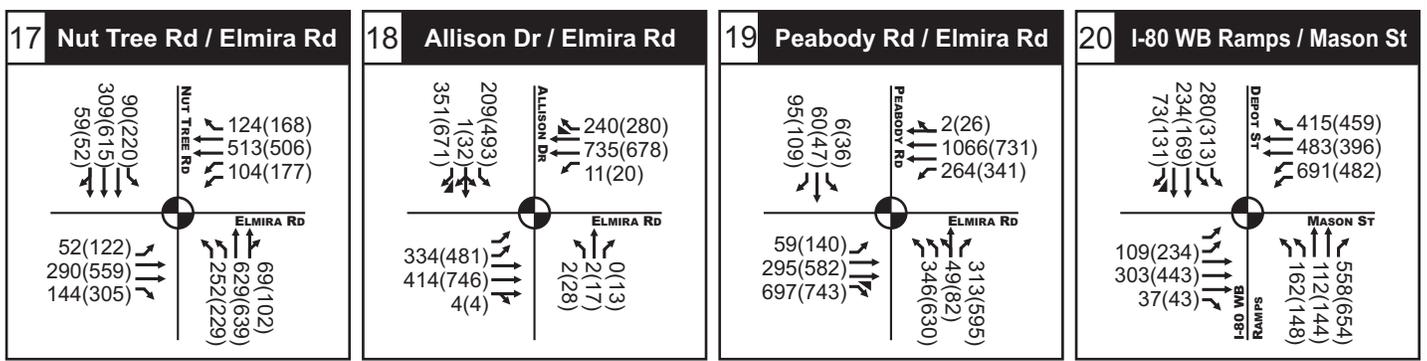
34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign



Source: Kittelson & Associates, Inc./Dowling



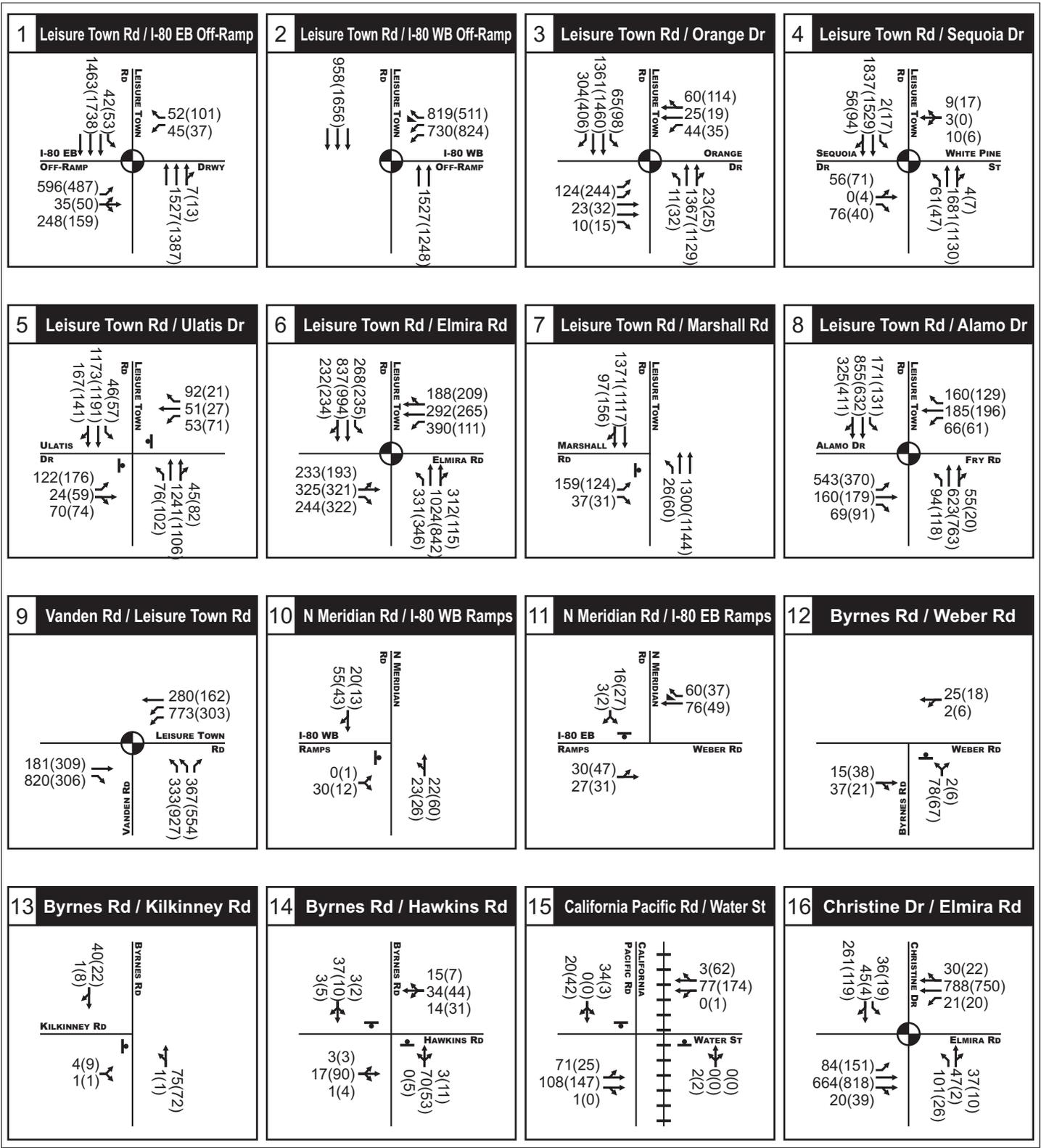
34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign



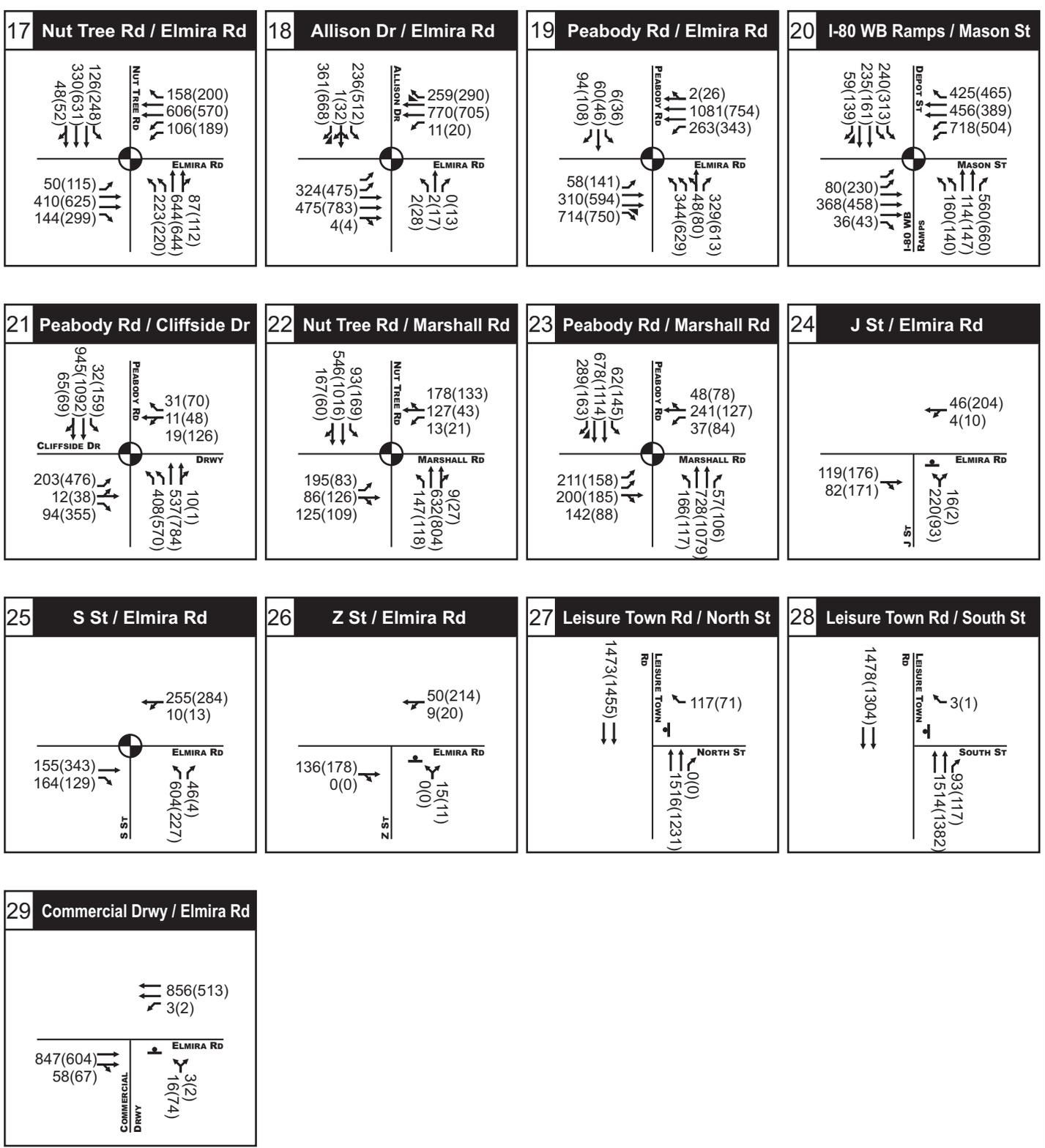
Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes

Traffic Signal

Stop Sign



Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign

TABLE 4.14-18 INTERSECTION LEVEL OF SERVICE – YEAR 2035  
 CUMULATIVE CONDITIONS WITH EXISTING GENERAL PLAN

No	Intersection	Control	Peak Hour	Cumulative		Cumulative with Project	
				LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
1	Leisure Town Rd/ I-80 EB off-ramp	Signal	AM	D	0.81	C	0.80
			PM	C	0.73	C	0.73
2	Leisure Town Rd/ I-80 WB off-ramp	Signal	AM	D	0.81	D	0.83
			PM	C	0.78	C	0.78
3	Leisure Town Rd/Orange Dr	Signal	AM	B	0.62	B	0.61
			PM	B	0.65	B	0.66
4	Leisure Town Rd/Sequoia Dr	Signal	AM	C	0.78	C	0.79
			PM	B	0.70	C	0.71
5	Leisure Town Rd/Ulatis Dr	Signal	AM	B	0.67	B	0.69
			PM	C	0.71	C	0.73
6	Leisure Town Rd/Elmira Rd	Signal	AM	D	0.90	F	1.23
			PM	E	0.94	F	1.11
7	Leisure Town Rd/Marshall Rd	Signal	AM	B	0.61	B	0.69
			PM	A	0.59	B	0.63
8	Leisure Town Rd/Alamo Dr	Signal	AM	C	0.78	E	0.92
			PM	D	0.83	D	0.86
9	Leisure Town Rd/Vanden Rd	Signal	AM	D	0.87	D	0.89
			PM	C	0.72	C	0.74
10	N. Meridian Rd/ I-80 WB ramps	Stop <sup>cd</sup>	AM	A(A)	2.9 (8.8)	A (A)	2.9 (8.8)
			PM	A(A)	1.8 (8.7)	A (A)	2.0 (8.7)
11	N Meridian Rd/ I-80 EB ramps	Stop <sup>cd</sup>	AM	A(A)	2.7 (9.3)	A (A)	1.9 (9.7)
			PM	A(A)	3.2 (9.8)	A (A)	3.3 (9.9)
12	Byrnes Rd/ Weber Rd	Stop <sup>cd</sup>	AM	A (A)	1.7 (9)	A (A)	4.8 (9.4)
			PM	A (A)	4.9 (9.5)	A (A)	4.7 (9.5)

TABLE 4.14-18 INTERSECTION LEVEL OF SERVICE – YEAR 2035  
 CUMULATIVE CONDITIONS WITH EXISTING GENERAL PLAN  
 (CONTINUED)

No	Intersection	Control	Peak Hour	Cumulative		Cumulative with Project	
				LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
13	Byrnes Rd/ Kilkinney Rd	Stop <sup>cd</sup>	AM	A (A)	0.9 (8.9)	A (A)	0.4 (9.3)
			PM	A (A)	0.9 (9.2)	A (A)	0.9 (9.2)
14	Brynes Rd/ Hawkins Rd	Stop <sup>cd</sup>	AM	A (A)	4.2 (9.7)	A (A)	6.6 (10.4)
			PM	A (B)	3.5 (10.7)	A (B)	4.6 (11.3)
15	California Pacific Rd/Water St	Stop <sup>cd</sup>	AM	A (B)	1.7 (10.2)	A (B)	3.7 (11.9)
			PM	A (A)	0.6 (11.1)	A (B)	1.5 (12.2)
16	Christine Dr/ Elmira Rd	Signal	AM	B	0.64	B	0.69
			PM	A	0.51	A	0.55
17	Nut Tree Rd/ Elmira Rd	Signal	AM	A	0.57	B	0.63
			PM	C	0.72	C	0.76
18	Allison Dr/ Elmira Rd	Signal	AM	A	0.53	A	0.54
			PM	B	0.70	C	0.71
19	Peabody Rd/ Elmira Rd	Signal	AM	A	0.55	A	0.55
			PM	C	0.80	C	0.80
20	I-80 WB ramps/ Mason St	Signal	AM	C	0.71	C	0.72
			PM	C	0.79	C	0.79
21	Peabody Rd/ Cliffside Dr	Signal	AM	B	0.65	B	0.67
			PM	<b>E</b>	<b>0.91</b>	<b>E</b>	<b>0.91</b>
22	Nut Tree Rd/ Marshall Rd	Signal	AM	A	0.60	B	0.63
			PM	A	0.60	B	0.61
23	Peabody Rd/ Marshall Rd	Signal	AM	B	0.68	B	0.69
			PM	C	0.76	C	0.76
24	Proposed J St/ Elmira Rd	Stop <sup>cd</sup>	AM	Future Intersection		A (B)	5.9 (12.1)
			PM			A (B)	2.2 (13.8)
25	Proposed S St/	Signal	AM	Future		B	0.68

TABLE 4.14-18 INTERSECTION LEVEL OF SERVICE – YEAR 2035  
 CUMULATIVE CONDITIONS WITH EXISTING GENERAL PLAN  
 (CONTINUED)

No	Intersection	Control	Peak Hour	Cumulative	
				Cumulative LOS <sup>a</sup>	Cumulative with Project V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
	Elmira Rd		PM	Intersection	A 0.47
26	Proposed Z St/ Elmira Rd	Stop <sup>cd</sup>	AM	Future	A (A) 1 (9.1)
			PM	Intersection	A (A) 0.7 (9.3)
27	Leisure Town Rd/ Proposed North St	Stop <sup>cd</sup>	AM	Future	A (C) 0.9 (23.8)
			PM	Intersection	A (C) 0.4 (16.1)
28	Leisure Town Rd/ Proposed South St	Stop <sup>cd</sup>	AM	Future	A (A) 0 (9.8)
			PM	Intersection	A (B) 0 (10)
29	Proposed Commercial Drwy/ Elmira Rd	Stop <sup>cd</sup>	AM	Future	A (D) 0.4 (34.3)
			PM	Intersection	A (D) 1.6 (26.1)

Note: **Bold** denotes substandard locations.

Shading denotes locations with significant impacts.

<sup>a</sup> LOS denotes level of service.

<sup>b</sup> V/C denotes volume-to-capacity ratio, which is used for signalized intersections to determine level of service.

<sup>c</sup> Delay denotes average vehicle delay, which is used for unsignalized intersections to determine level of service.

<sup>d</sup> The results for unsignalized intersections are shown for both the average of all movements at the intersection and for the single movement with the longest delay, e.g. A(B) 2.4(14.3)

Source: Dowling Associates, 2012.

**Impact TRAF-CUM-8:** At the Leisure Town Road/Interstate 80 westbound off-ramp intersection (#2), the project would contribute to the substandard operations and cause the v/c to increase by more than 0.02 while maintaining LOS D during the AM peak hour under Cumulative Conditions.

Mitigation Measure TRAF-CUM-8: At the Leisure Town Road/ I-80 westbound off-ramp intersection (#2), implementation of the following improvements would improve the operation to LOS B in the AM peak hour and LOS C in the PM peak hour: Improving the intersection to

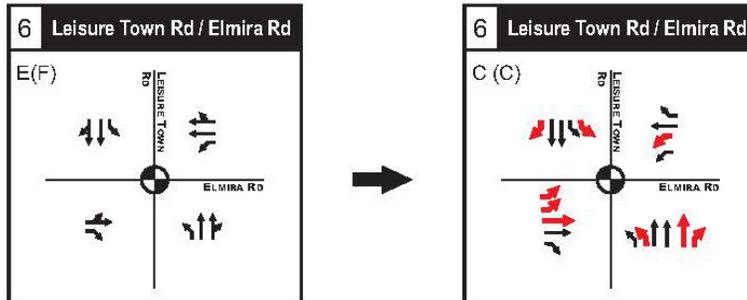
provide an additional northbound through lane to provide three northbound through lanes at the intersection.

The City may include funding for the improvements in the next update to the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service. However, the improvements' inclusion in the Development Impact Fee Program Update could not be ascertained at this time. Therefore, the project impact remains significant

Significance After Mitigation: Implementing Mitigation Measure TRAF-8 would improve the operation to LOS C or better in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-9:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F during both peak hours with the addition of project traffic under Cumulative + Project conditions.

Mitigation Measure TRAF-CUM-9: As mentioned in Mitigation Measure TRAF-1 and TRAF-CUM-2, the Leisure Town Road/Elmira Road intersection (#6) is being designed by the City of Vacaville to provide two left-turn lanes, two through lanes, a third future through lane and one right-turn lane on the northbound approach; two left-turn lanes, two through lanes and one future right-turn lane on the eastbound approach; two left-turn lanes, one through lane and one right-turn lane on the westbound approach; and two left turn lanes, two through lanes and one right-turn lane on the southbound approach. The resulting lane geometry is shown below. Implementing these improvements, including the future lanes, would improve the intersection to LOS C with v/c of 0.75 and 0.79 during the AM and PM peak hours, respectively.



The City may include funding for these improvements in the next update of the Development Impact Fee Program and implement the improvements at an appropriate time in order to maintain acceptable level of service. The project shall be required to provide right-of-way along the project frontage to accommodate this improvement. However, the improvements' inclusion in the Development Impact Fee Program Update and the final design of the Jepson Parkway Improvement Project at this intersection could not be ascertained at this time. Therefore, the project impact remains significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-CUM-9 would improve the intersection to LOS C in both peak hours and fully mitigate the cumulative impact. However, because its implementation could not be assured, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-10:** The Leisure Town Road/Alamo Drive intersection (#8) would degrade to LOS E during the AM peak hour and would contribute to a substandard level of service in the PM peak hour by increasing the v/c by more than 0.02 under Cumulative + Project conditions.

Mitigation Measure TRAF-CUM-10: At the Leisure Town Road/Alamo Drive intersection (#8), implementation of the following improvements would improve the intersection to LOS C or better in both peak hours: convert one of the eastbound through lane to a left-turn lane and convert

the right-turn lane into a shared through-right lane to provide two left-turn lanes and one shared through-right lane on the eastbound approach; and add an exclusive southbound right-turn lane to provide one left-turn lane, two through lanes and one right-turn lane on the southbound approach.

This intersection is being designed by the City of Vacaville as a part of the Jepson Parkway project to provide one left-turn lane and two through lanes on the northbound approach; two left-turn lanes and two through lanes on the eastbound approach two left-turn lanes and two through lanes on the westbound approach; and one left turn lane, two through lanes and one right-turn lane on the southbound approach. Implementing this measure would also improve the intersection to LOS C or better in both peak hours.

The City is planning to begin construction of this portion of the Jepson Parkway improvements in 2014, with all of the improvements completed in 2016. This portion of the Jepson Parkway improvements is in design and is fully funded through an STA grant. However, the acquisition of the necessary right-of-way for construction has not been completed; hence its implementation cannot be assured. Therefore, the project impact remains significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-CUM-10 would improve the level of service to C and fully mitigate the cumulative impact. However, because implementation of these improvements cannot be assured, the cumulative impact is *significant and unavoidable*.

**Impact TRAF-CUM-11:** The project would contribute to substandard operations and increase the v/c by 0.02 while maintaining at LOS D during the AM peak hour at the Leisure Town Road/Vanden Road intersection (#9) under Cumulative conditions.

Mitigation Measure TRAF-CUM-11: At the Leisure Town Road/Vanden Road intersection (#9), widening the west leg of the intersection to provide an additional eastbound right-turn lane would improve the level of service to LOS C in both peak hours.

This intersection is being designed by the City of Vacaville as a part of the Jepson Parkway Improvement Project. The design would incorporate elements that would fully mitigate the Brighton Landing project's cumulative impact. Construction of this portion of the Jepson Parkway improvements, including improvements at this intersection, would begin in 2014 with all of the improvements completed in 2016. The Jepson Parkway improvements are fully funded through an STA grant. However, the acquisition of the necessary right-of-way for construction has not been completed; hence its implementation cannot be assured. Therefore, the project impact remains significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-11 would improve the intersection to LOS C in the AM peak hour and fully mitigate the cumulative impact. However, because implementation of these improvements cannot be assured, the cumulative impact is *significant and unavoidable*.

b. Roadway Operations

Peak hour volumes and levels of service at the study roadway segments under Cumulative conditions are presented in Table 4.14-19. Most segments would function at LOS C or better with the addition of project-generated traffic with the exception of the following segments:

- Leisure Town Road segment at Interstate 80 overcrossing
- S Street (proposed) segment south of Elmira Road
- Peabody Road segment south of Vacaville City Limits

The Leisure Town Road segment at the Interstate 80 overcrossing would function below LOS D in the southbound direction during the PM peak hour with and without the addition of project traffic, but the traffic volume would

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TABLE 4.14-19 ROADWAY SEGMENT LEVEL OF SERVICE – YEAR 2035 CUMULATIVE CONDITIONS WITH EXISTING GENERAL PLAN

Facility Type	LOS C (D) Directional Capacity	Cumulative				Cumulative + Project				
		Volume	LOS C (D) Exceeded?	Volume	LOS C (D) Exceeded?	Volume	LOS C (D) Exceeded?			
<b>AM Peak Hour</b>										
<b>Leisure Town Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	1619	1912	NO (NO)	NO (NO)	1688	1971	NO (NO)	NO (NO)
N of Elmira Road	4 Lane Arterial	1,500 (1,688)	1259	1398	NO (NO)	NO (NO)	1337	1446	NO (NO)	NO (NO)
N of Marshall Road	4 Lane Arterial	1,500 (1,688)	1224	1234	NO (NO)	NO (NO)	1467	1459	NO (NO)	NO (NO)
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	711	610	NO (NO)	NO (NO)	856	802	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1,013)/ 1,500 1,688		209		NO (NO)		904		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	4 Lane Arterial	1,500 (1,688)	187		NO (NO)		871		NO (NO)	
E of S Street <sup>b</sup>	2 Lane Arterial	900 (1013)	159	125	NO (NO)	NO (NO)	265	201	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)					174	649	NO (NO)	YES (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>b</sup>	4 Lane Arterial	1,500 (1,688)	1595	874	YES (YES)	NO (NO)	1704	1036	YES (YES)	NO (NO)

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TABLE 4.14-19 ROADWAY SEGMENT LEVEL OF SERVICE – CUMULATIVE + PROJECT CONDITIONS (CONTINUED)

Facility Type	LOS C (D) Directional Capacity	Cumulative				Cumulative + Project				
		Volume		LOS C (D) Exceeded?		Volume		LOS C (D) Exceeded?		
<b>PM Peak Hour</b>										
<b>Leisure Town Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	2464	1744	YES (YES)	NO (NO)	2480	1763	YES (YES)	NO (NO)
N of Elmira Road	4 Lane Arterial	1,500 (1,688)	1415	1215	NO (NO)	NO (NO)	1463	1244	NO (NO)	NO (NO)
N of Marshall Road	4 Lane Arterial	1,500 (1,688)	1211	1168	NO (NO)	NO (NO)	1271	1268	NO (NO)	NO (NO)
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	705	696	NO (NO)	NO (NO)	820	835	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a,b</sup>	2/4 Lane Arterial	900 (1,013)/ 1,500(1,688)		266		NO (NO)		671		NO (NO)
E of Leisure Town Road – WB <sup>b</sup>	4 Lane Arterial	1,500 (1,688)	247		NO (NO)		587		NO (NO)	
E of S Street <sup>b</sup>	2 Lane Arterial	900 (1,013)	198	182	NO (NO)	NO (NO)	297	347	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)					142	232	NO (NO)	NO (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>b</sup>	4 Lane Arterial	1,500 (1,688)	1809	1905	YES (YES)	YES (YES)	1827	1934	YES (YES)	YES (YES)

Note: **Bold** denotes exceedance of applicable standard.

Shading denotes not applicable.

<sup>a</sup> Roadway would remain as single lane arterial road in the eastbound direction under No Project conditions.

<sup>b</sup> Part of the Solano County CMP roadway system, which has different standards. The standard for Peabody Road is LOS E.

Source: Kittelson/Dowling Associates, 2012.

be below established directional capacity for a four-lane divided arterial.<sup>9</sup> The project would add 16 trips to this segment, which represents less than two-third of a percent of the segment volume. At this level, the effect of the project would be well within the normal fluctuation of traffic volumes and would not be perceptible by motorists and other roadway users. Therefore, the project impact on this segment is not considered to be cumulatively significant. The cumulative impact would be *less than significant*.

The proposed S Street segment south of Elmira Road would operate at LOS D in the AM peak hour. This is considered a significant impact.

The Peabody Road segment south of Vacaville City Limits would function at LOS E with and without the addition of project traffic in the southbound direction during both peak hours. The projected northbound volumes in the PM peak hour would exceed the capacity for a four-lane arterial and would operate at LOS F with and without the project; which is below the LOS E standard for this CMP roadway. The project would add 29 trips in the northbound direction, which represent 1.5 percent of the total segment volumes. Although the project would make only a very small contribution to segment volumes, it would contribute additional traffic to a CMP segment that would exceed adopted standards. This is considered a significant impact.

**Impact TRAF-CUM-12:** The proposed S Street, the Major Collector Street, segment south of Elmira Road would exceed LOS C conditions on the northbound direction during the AM peak hour under Cumulative + Project conditions.

Mitigation Measure TRAF-CUM-12: Implementing Mitigation Measure TRAF-3 would improve the LOS to acceptable levels. However, as discussed, the implementation of the improvement is not assured due to po-

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<sup>9</sup> The roadway has an established capacity, beyond that the traffic breaks down and results in LOS F. The City has thresholds for LOS C and derived thresholds for LOS D. The load between LOS D and LOS F is assumed to be LOS E.

tential right-of-way constraint along Elmira Road. Therefore, the cumulative impact remains significant.

Significance After Mitigation: Implementing Mitigation Measure TRAF-3 would improve the intersection to LOS C or better. However, because of right-of-way constraints, the cumulative impact would be *significant and unavoidable*.

**Impact TRAF-CUM-13:** The Peabody Road segment south of Vacaville City Limits would operate at LOS F on the northbound direction during the PM peak hour under Cumulative + Project conditions.

Mitigation Measure TRAF-CUM-13: Provision of a divided four-lane arterial by adding a center median along Peabody Road would improve the operation to LOS C or better on this segment in Solano County. While the project's cumulative contribution is small, the City shall work with Solano County and other jurisdictions to develop strategies and improvements to ensure efficient operations along this key corridor. However, implementation of such strategies and improvements are not under the City's control, the project's cumulative impact would remain significant.

Significance After Mitigation: Implementation of Mitigation Measure TRAF-CUM-13 would improve to segment to acceptable level of service. However, because this segment is outside the City's jurisdiction, the cumulative impact is *significant and unavoidable*.

c. Freeway Operations

Table 4.14-20 presents the freeway operations under Cumulative conditions. With the exception of eastbound Interstate 80 west of Lagoon Valley Road, all the study freeway mainline segments would operate within acceptable standards. The segment of Interstate 80 west of Lagoon Valley Road would operate at LOS F in the PM peak hour with and without the addition of project traffic. The project would add 57 trips to the freeway segment in the PM

TABLE 4.14-20 **FREEWAY SEGMENT LEVEL OF SERVICE – YEAR 2035  
 CUMULATIVE + PROJECT CONDITIONS WITH EXISTING  
 GENERAL PLAN**

	AM Peak Hour			PM Peak Hour		
	Volume	Density <sup>a</sup>	LOS <sup>b</sup>	Volume	Density <sup>a</sup>	LOS <sup>b</sup>
<b>Interstate 80 West of Lagoon Valley Road</b>						
<i>Eastbound</i>						
Cumulative	5,351	21.7	C	9,380	56.5	F
Cumulative w/Project	5,399	21.9	C	9,437	57.5	F
<i>Westbound</i>						
Cumulative	7,777	36.9	E	7,504	34.7	D
Cumulative w/Project	7,835	37.4	E	7,535	34.9	D
<b>Interstate 80 East of Leisure Town Road</b>						
<i>Eastbound</i>						
Cumulative	2,918	15.6	B	6,202	41.7	E
Cumulative w/Project	2,930	15.6	B	6,210	41.7	E
<i>Westbound</i>						
Cumulative	5,512	33.5	D	4,974	28.6	D
Cumulative w/Project	5,547	33.8	D	4,986	28.7	D

Notes: Density = passenger cars per mile per lane.

LOS = level of service.

Source: Kittelson/Dowling Associates, 2012.

peak hour, which represents 0.6 percent of the total volume. This increase was considered to be imperceptible to motorists. Therefore, the impact is not considered to be cumulatively significant and is *less than significant*.

### **3. Cumulative 2035 – Development of the Proposed General Plan Update<sup>10</sup>**

The Cumulative Conditions with Preferred Land Use Alternative (PLUA) includes projected population and employment growth by year 2035 as well as planned transportation system improvements proposed for the draft Preferred Land Use Alternative for the General Plan Update as of January 2012. The Brighton Landing Specific Plan is included in the proposed General Plan update.

The Citywide model was used to develop traffic volumes for the Cumulative conditions with the Preferred Land Use Alternative using the same process described in the Existing + Approved Projects conditions. The following roadway improvements are assumed under 2035 Cumulative with PLUA conditions in addition to those listed under 2035 Cumulative (existing General Plan) conditions:

- “ A new north-south major collector street between Hawkins Road and Leisure Town Road (south of Sparrowhawk Drive). The proposed S Street in the Brighton Landing Specific Plan would be a part of this collector.
- “ Marshall Road would be extended eastward from Leisure Town Road to a new north-south minor collector (J Street).
- “ A new north-south minor collector road between Elmira Road and the Marshall Road extension. The proposed J Street would be a part of this collector. Two travel lanes per direction on Elmira Road between Leisure Town Road and the north-south collector.
- “ Two travel lanes per direction on Hawkins Road between Leisure Town Road and the north-south collector.

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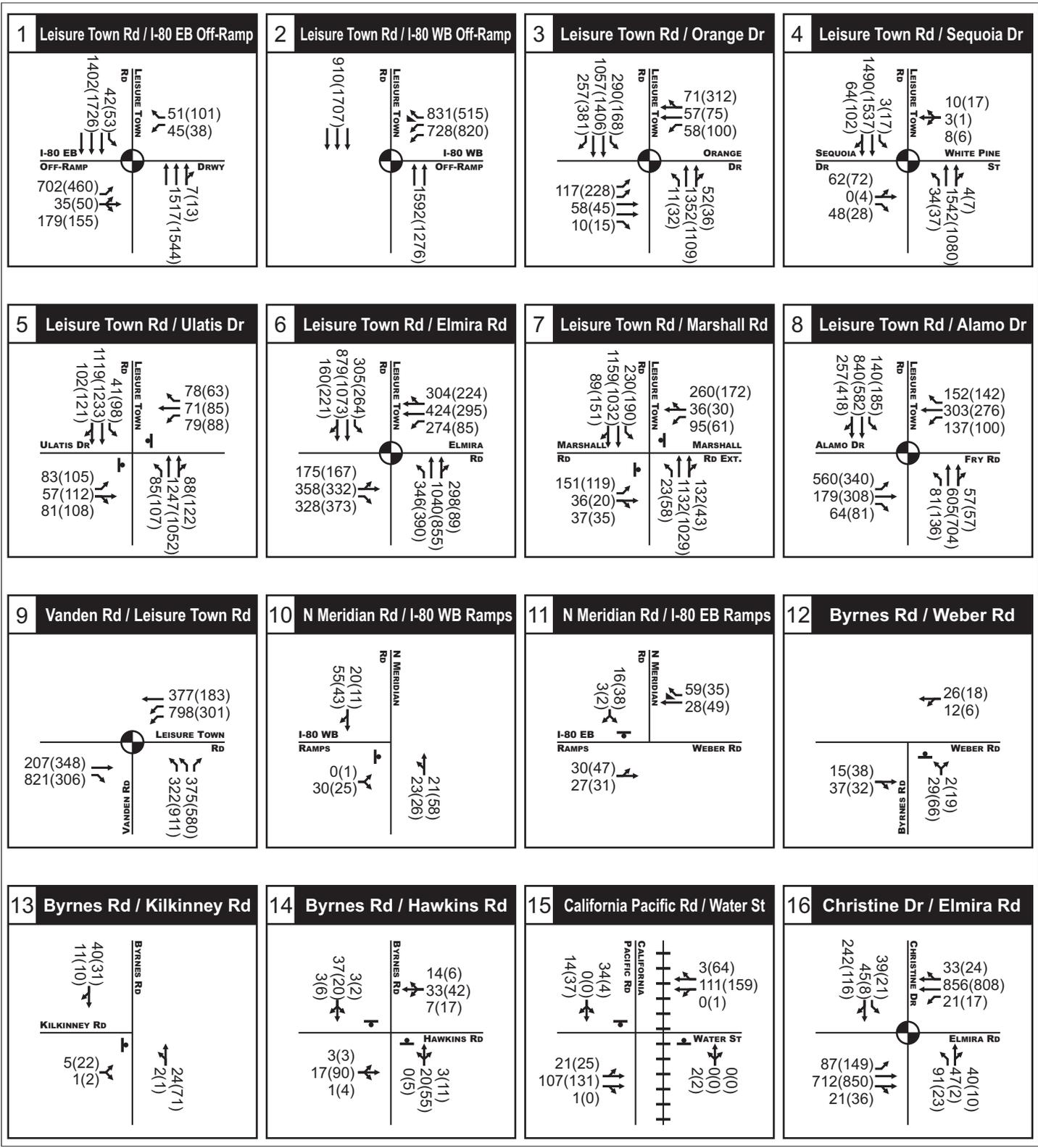
<sup>10</sup> Land uses are shown on the Preferred Land Use Alternative accepted by the City Council on December 13, 2011. Although the update is in progress, and the General Plan in draft form, policies are subject to change and have not therefore been taken into account in this analysis, and this scenario does not serve as the basis for impact conclusions or identification of mitigation measures.

- “ Two travel lanes per direction on Fry Road between Leisure Town Road and the north-south collector.

a. Intersection Operations

Peak hour intersection volumes for the Year 2035 Cumulative with PLUA scenario are presented in Figure 4.14-15 and Figure 4.14-16. The intersection level of service results are shown in Table 4.14-21. Most intersections would operate at LOS C or better with the exception of the following intersections under the Cumulative with PLUA scenario:

- “ The Leisure Town Road/Interstate 80 Westbound off-ramp intersection (#2) would operate at LOS D with a v/c of 0.84 during the AM peak hour. This is an increase of 0.01 as compared to the 2035 Cumulative + Project scenario.
- “ The Leisure Town Road/Ulatis Drive intersection (#5) would operate at LOS D with a v/c of 0.81 in the PM peak hour. This is an increase of 0.08 and a change from LOS C as compared to the 2035 Cumulative + Project scenario.
- “ The Leisure Town Road/Elmira Road intersection (#6) would operate at LOS F in the AM peak hour and LOS F in the PM peak hour with v/c ratios of 1.21 and 1.17, respectively. The v/c would decrease by 0.02 in the AM peak hour and increase by 0.06 in the PM peak hour as compared to the 2035 Cumulative + Project scenario.
- “ The Leisure Town Road/Marshall Road intersection (#7) would operate at LOS D with a v/c of 0.89 in the AM peak hour. This is an increase of 0.20 and a change from LOS B as compared to the 2035 Cumulative + Project scenario. The Leisure Town Road/Alamo Drive intersection (#8) would operate at LOS E in the AM peak hour with a v/c of 0.96. The v/c would increase by 0.04 in the AM peak hour as compared to the 2035 Cumulative + Project scenario.
- “ The Leisure Town Road/Vanden Road intersection (#9) would operate at LOS D with a v/c of 0.89 in the AM peak hour. The v/c would be the same as the 2035 Cumulative + Project scenario.



Source: Kittelson & Associates, Inc./Dowling



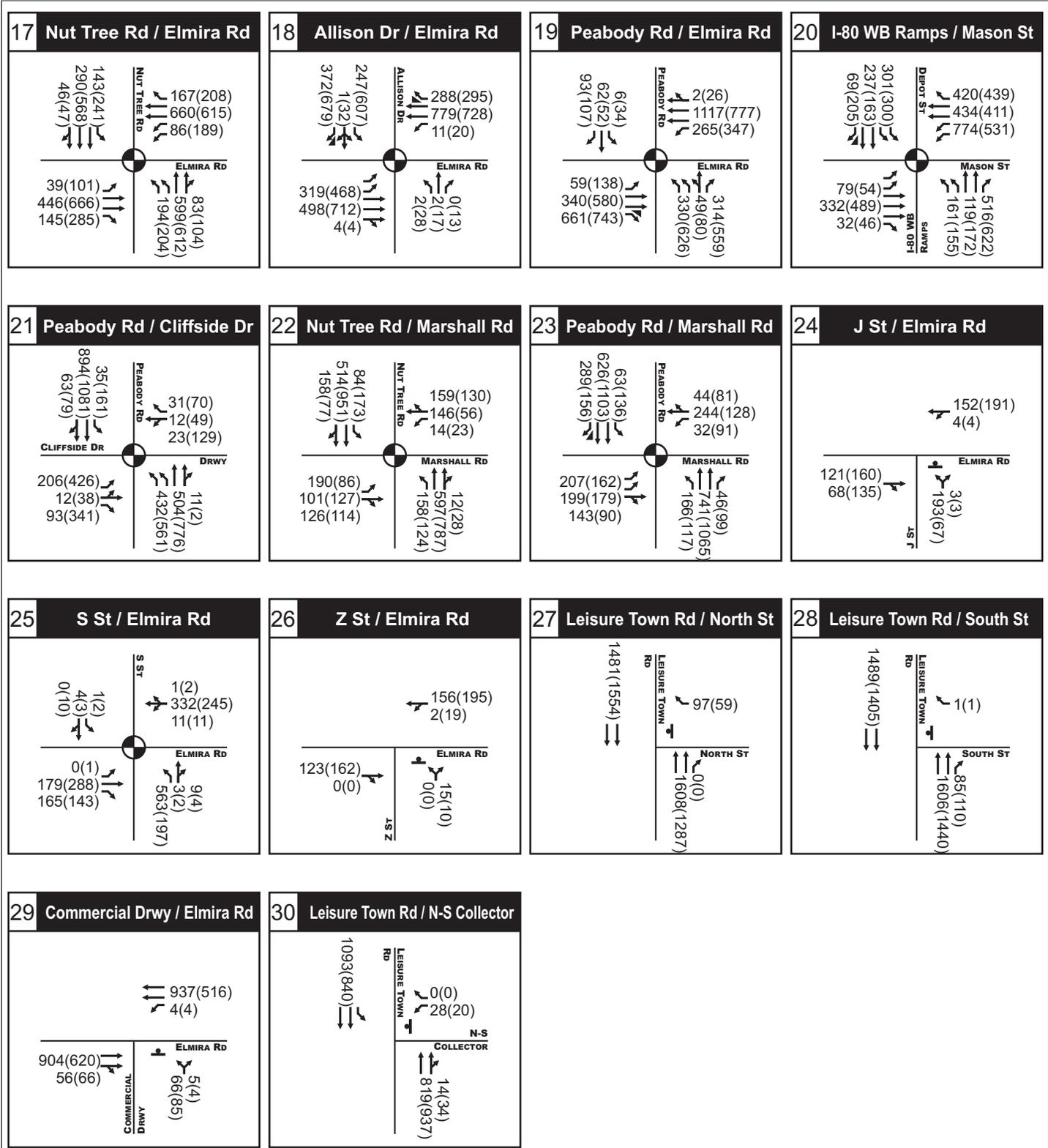
34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign



Source: Kittelson & Associates, Inc./Dowling



34(12) AM(PM) Peak Hour Volumes



Traffic Signal



Stop Sign

TABLE 4.14-21 INTERSECTION LEVEL OF SERVICE – CUMULATIVE  
 CONDITIONS WITH PLUA

No	Intersection	Control	Peak Hr	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
1	Leisure Town Rd/ I-80 EB off-ramp	Signal	AM	D	0.81
			PM	C	0.73
2	Leisure Town Rd/ I-80 WB off-ramp	Signal	AM	D	0.84
			PM	C	0.79
3	Leisure Town Rd/Orange Dr	Signal	AM	C	0.76
			PM	C	0.73
4	Leisure Town Rd/Sequoia Dr	Signal	AM	B	0.67
			PM	C	0.71
5	Leisure Town Rd/Ulatis Dr	Signal	AM	B	0.70
			PM	D	0.81
6	Leisure Town Rd/Elmira Rd	Signal	AM	<b>F</b>	<b>1.21</b>
			PM	<b>F</b>	<b>1.17</b>
7	Leisure Town Rd/Marshall Rd	Signal	AM	D	0.89
			PM	C	0.78
8	Leisure Town Rd/Alamo Dr	Signal	AM	<b>E</b>	<b>0.96</b>
			PM	D	0.87
9	Leisure Town Rd/Vanden Rd	Signal	AM	D	0.89
			PM	C	0.76
10	N. Meridian Rd/ I-80 WB ramps	Stop <sup>cd</sup>	AM	A (A)	2.9 (8.8)
			PM	A (A)	2.6 (8.7)
11	N Meridian Rd/ I-80 EB ramps	Stop <sup>cd</sup>	AM	A (A)	2.5 (9.4)
			PM	A (A)	3.7 (10)
12	Byrnes Rd/Weber Rd	Stop <sup>cd</sup>	AM	A (A)	3.1 (9.2)
			PM	A (A)	4.8 (9.5)
13	Byrnes Rd/ Kilkinney Rd	Stop <sup>cd</sup>	AM	A (A)	0.8 (9)
			PM	A (A)	1.7 (9.4)

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TABLE 4.14-21 INTERSECTION LEVEL OF SERVICE – CUMULATIVE  
 CONDITIONS WITH PLUA (CONTINUED)

No	Intersection	Control	Peak Hr	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
14	Byrnes Rd/ Hawkins Rd	Stop <sup>cd</sup>	AM	A (A)	5.1 (9.8)
			PM	A (B)	4.7 (11)
15	California Pacific Rd/Water St	Stop <sup>cd</sup>	AM	A (B)	2.3 (10.6)
			PM	A (B)	1.5 (11.7)
16	Christine Dr/ Elmira Rd	Signal	AM	B	0.69
			PM	A	0.56
17	Nut Tree Rd/ Elmira Rd	Signal	AM	B	0.64
			PM	C	0.76
18	Allison Dr/Elmira Rd	Signal	AM	A	0.55
			PM	C	0.75
19	Peabody Rd/Elmira Rd	Signal	AM	A	0.56
			PM	C	0.80
20	I-80 WB ramps/ Mason St	Signal	AM	C	0.71
			PM	C	0.77
21	Peabody Rd/ Cliffside Dr	Signal	AM	B	0.67
			PM	<b>E</b>	<b>0.92</b>
22	Nut Tree Rd/ Marshall Rd	Signal	AM	B	0.63
			PM	A	0.60
23	Peabody Rd/Marshall Rd	Signal	AM	B	0.67
			PM	C	0.75
24	Proposed J St/ Elmira Rd	Stop <sup>cd</sup>	AM	A (B)	4.8 (13.1)
			PM	A (B)	1.6 (12.4)
25	Proposed S St/ Elmira Rd	Signal	AM	C	0.71
			PM	A	0.42
26	Proposed Z St/ Elmira Rd	Stop <sup>cd</sup>	AM	A (A)	0.5 (9)
			PM	A (A)	0.7 (9.2)
27	Leisure Town Rd/ Proposed North St	Stop <sup>cd</sup>	AM	A (C)	0.7 (24)
			PM	A (C)	0.3 (16.3)

TABLE 4.14-21 INTERSECTION LEVEL OF SERVICE – CUMULATIVE  
 CONDITIONS WITH PLUA (CONTINUED)

No	Intersection	Control	Peak Hr	LOS <sup>a</sup>	V/C <sup>b</sup> or Delay (sec) <sup>cd</sup>
28	Leisure Town Rd/ Proposed South St	Stop <sup>cd</sup>	AM	A (B)	0 (11.1)
			PM	A (B)	0 (9.8)
29	Proposed Commercial Drwy/Elmira Rd	Stop <sup>cd</sup>	AM	A (F)	3.2 (87.3)
			PM	A (D)	2 (28.9)
30	Leisure Town Rd/ North-South Collector (south)	Stop <sup>cd</sup>	AM	A (E)	0.7 (47.6)
			PM	A (E)	0.5 (43.9)

Note: **Bold** denotes substandard locations.

<sup>a</sup> LOS denotes level of service.

<sup>b</sup> V/C denotes volume-to-capacity ratio, which is used for signalized intersections to determine level of service.

<sup>c</sup> Delay denotes average vehicle delay, which is used for unsignalized intersections to determine level of service.

<sup>d</sup> The results for unsignalized intersections are shown for both the average of all movements at the intersection and for the single movement with the longest delay, e.g. A(B) 2.4(14.3)

Source: Kittelson/Dowling Associates, 2012.

- “ The Peabody Road/Cliffside Drive intersection (#21) would operate at LOS E with a v/c of 0.92 in the PM peak hour. The v/c would increase by 0.01 as compared to the 2035 Cumulative + Project scenario.

b. Roadway Segment Operations

Peak hour volumes and levels of service at the study roadway segments under 2035 Cumulative with PLUA conditions are presented in Table 4.14-22. Most segments would operate at LOS C or better with the exception of the following segments:

- “ The Leisure Town Road segment at the Interstate 80 overcrossing would operate below LOS D in the southbound direction during the PM peak hour. This is similar to the 2035 Cumulative + Project scenario.

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TABLE 4.14-22 ROADWAY SEGMENT LEVEL OF SERVICE – CUMULATIVE CONDITIONS WITH PLUA

Facility Type	LOS C(D) Directional Capacity	Volume		LOS C (D) Exceeded?		
		SB	NB	SB	NB	
<b>AM Peak Hour</b>						
<b>Leisure Town Road</b>		<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	1,638	2,016	NO (NO)	NO (NO)
N of Elmira Road	4 Lane Arterial	1,500 (1,688)	1,344	1,521	NO (NO)	YES (NO)
N of Marshall Road	4 Lane Arterial	1,500 (1,688)	1,478	1,542	NO (NO)	YES (NO)
<b>Elmira Road</b>		<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	929	861	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a</sup>	4 Lane Arterial	1,500 (1,688)		960		NO (NO)
E of Leisure Town Road – WB <sup>a</sup>	4 Lane Arterial	1,500 (1,688)	1,003		NO (NO)	
E of S Street <sup>a</sup>	2 Lane Arterial	900 (1,013)	345	189	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>		<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	
S of Elmira Road	2 Lane Collector	600 (675)	180	575	NO (NO)	NO (NO)
<b>Peabody Road</b>		<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	
S of Vacaville City Limit <sup>a</sup>	4 Lane Arterial	1,500 (1,688)	1,735	1,014	YES (YES)	NO (NO)
<b>PM Peak Hour</b>						
<b>Leisure Town Road</b>		<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>	
I-80 Overcrossing	4 Lane Div. Arterial	2,100 (2,363)	2,527	1,850	YES (YES)	NO (NO)
N of Elmira Road	4 Lane Arterial	1,500 (1,688)	1,558	1,246	YES (NO)	NO (NO)
N of Marshall Road	4 Lane Arterial	1500 (1688)	1,372	1,319	NO (NO)	NO (NO)

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TABLE 4.14-22 ROADWAY SEGMENT LEVEL OF SERVICE – CUMULATIVE CONDITIONS WITH PLUA (CONTINUED)

	Facility Type	LOS C(D) Directional Capacity	Volume		LOS C (D) Exceeded?	
			WB	EB	WB	EB
<b>Elmira Road</b>			<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>
W of Leisure Town Road	4 Lane Arterial	1,500 (1,688)	882	872	NO (NO)	NO (NO)
E of Leisure Town Road – EB <sup>a</sup>	4 Lane Arterial	1,500(1,688)		686		NO (NO)
E of Leisure Town Road – WB <sup>a</sup>	4 Lane Arterial	1,500 (1,688)	601		NO (NO)	
E of S Street <sup>a</sup>	2 Lane Arterial	900 (1,013)	258	295	NO (NO)	NO (NO)
<b>S Street (Proposed)</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Elmira Road	2 Lane Collector	600 (675)	157	204	NO (NO)	NO (NO)
<b>Peabody Road</b>			<b>SB</b>	<b>NB</b>	<b>SB</b>	<b>NB</b>
S of Vacaville City Limit <sup>a</sup>	4 Lane Arterial	1,500 (1,688)	1,818	1,959	YES (YES)	YES (YES)

Note: Shading implies that this category is not applicable.

<sup>a</sup> Part of the Solano County CMP roadway system. The standard for Peabody Road is LOS E.  
 Source: Kittelson/Dowling Associates, 2012.

- “ The Leisure Town Road segment north of Elmira Road would operate at LOS D in the northbound direction in the AM peak hour and in the southbound direction in the PM peak hour. Under the 2035 Cumulative + Project scenario, the segment would operate at LOS C or better.
- “ The Leisure Town Road segment north of Marshall Road would operate at LOS D in the northbound direction in the AM peak hour. Under the 2035 Cumulative + Project scenario, the segment would operate at LOS C or better.
- “ The proposed S Street segment south of Elmira Road would operate at LOS D in the northbound direction in the AM peak hour. This is similar to the 2035 Cumulative + Project scenario.
- “ The Peabody Road segment south of Vacaville City Limits would operate below LOS D levels in the southbound direction in the AM peak hour and in both directions in the PM peak hour. This is similar to the 2035 Cumulative + Project scenario.

c. Freeway Operations

Table 4.14-23 presents the freeway operations under 2035 Cumulative conditions with the PLUA. With the exception of eastbound Interstate 80 west of Lagoon Valley Road, all the study freeway mainline segments would operate within acceptable standards. Similar to the 2035 Cumulative + Project scenario, eastbound Interstate 80 west of Lagoon Valley Road would operate at LOS F in the PM peak hour.

TABLE 4.14-23 **FREEWAY SEGMENT LEVEL OF SERVICE – CUMULATIVE  
 CONDITIONS WITH PLUA**

	AM Peak Hour			PM Peak Hour		
	Volume	Density <sup>a</sup>	LOS <sup>b</sup>	Volume	Density <sup>a</sup>	LOS <sup>b</sup>
<b>Interstate 80 West of Lagoon Valley Road</b>						
<i>Eastbound</i>						
Cumulative w/ PLUA	5,262	21.3	C	9,475	58.2	F
<i>Westbound</i>						
Cumulative w/ PLUA	7,850	37.6	E	7,459	34.3	D
<b>Interstate 80 East of Leisure Town Road</b>						
<i>Eastbound</i>						
Cumulative w/PLUA	2,928	15.6	E	6,133	40.7	E
<i>Westbound</i>						
Cumulative w/PLUA	5,478	33.1	D	4,957	28.4	D

Notes: Density = passenger cars per mile per lane.  
 LOS = level of service.

Source: Kittelson/Dowling Associates, 2012.

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## 4.15 UTILITIES AND SERVICE SYSTEMS

This chapter describes the existing water supply, wastewater, stormwater, and solid waste services in the Specific Plan area and evaluates the potential impacts of the Specific Plan on these utilities and service systems. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of impacts.

### *A. Water Supply*

#### **1. Regulatory Framework**

A number of federal and State agencies manage and regulate water resources for the City with the intention of safeguarding these resources for domestic and agricultural use, environmental conservation, and power generation. In general, these regulations assess and plan for a long-term water supply.

##### **a. Federal Safe Drinking Water Act**

The Safe Drinking Water Act (SDWA), adopted in 1974, is the initial federal legislation passed to ensure a minimum quality of drinking water. Under the SDWA, the U.S. Environmental Protection Agency sets standards for drinking water quality and oversees the water suppliers who implement those standards. Regulatory standards established by the SDWA include maximum allowable levels of chemicals and other substances in drinking water, protocols for monitoring drinking water quality and methods for treating drinking water.

The quality of drinking water supplied by the City is regularly monitored to comply with SDWA.

##### **b. State and Regional Agencies, Regulations, and Plans**

This section summarizes State and regional agencies, regulations, and plans pertaining to the water supply in the Brighton Landing Specific Plan study area.

*i. California State Water Resources Control Board*

The California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have the authority in California to protect and enhance water quality. The RWQCB Region 5 office in Sacramento regulates water quality for waters that flow into the Sacramento River. Because wastewater discharged by Vacaville flows into the Sacramento River through a series of creeks and canals, Vacaville is under the jurisdiction of RWQCB Region 5. The RWQCB establishes water quality objectives, administers the National Pollutant Discharge Elimination System (NPDES) permit program for stormwater and construction site runoff, and regulates infill of jurisdictional wetlands or waters of the United States under Section 404 of the Clean Water Act.

*ii. California Safe Drinking Water Act*

In 1976, California enacted its own Safe Drinking Water Act, requiring the California Department of Public Health (CDPH), previously called Department of Health Services, to regulate drinking water by:

- Setting and enforcing federal and State drinking water standards.
- Administering water quality testing programs.
- Administering permits for public water systems operations.

The standards established by CDPH are found in the California Code of Regulations, Title 22.

The City performs all testing required and supplies potable water of quality consistent with Title 22. Vacaville's potable water system is permitted through CDPH.

*iii. Urban Water Management Planning Act*

Through the Urban Water Management Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. The Act is intended to support conservation and efficient use of urban water supplies at the local level. The Act requires the following:

- “ Total projected water use within each water authority jurisdiction must be compared to available water supply sources over the next 20 years in five-year increments.
- “ Planning must occur for single and multiple dry water years.
- “ Plans must include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within an agency’s service area along with current and potential recycled water users.

The City is in compliance with the Urban Water Management Planning Act. The 2005 UWMP Update was submitted to, and has been reviewed by, the State Department of Water Resources, and the City completed the 2010 UWMP Update prior to the July 2011 due date.

*iv. Senate Bill 610 and Senate Bill 221*

Statutes of 1995, Chapters 330 and 854, require local water agencies to assess the reliability of their water supplies. Statutes of 1995, Chapter 881, requires consultation with local water agencies to determine if adequate water supply is available to accommodate pending land use planning decisions. Senate Bill (SB) 610 and SB 221 amended State law to better coordinate local water supply and land use decisions and ensure adequate water supply for new development. Both statutes require that detailed information regarding water availability is provided to City and County decision-makers prior to approval of large development projects. Large development projects are defined as those that include 500 residential units or more, or that would increase the number of existing service connections to the public water system by 10 percent.

The City has complied with SB 610 and SB 221. The SB 610 water supply assessment was prepared for Brighton Landing and accepted by City Council on April 24, 2012. If required by the City, an SB 221 report will be prepared for Brighton Landing at the tentative map stage.

*v. Area of Origin Protections*

Area of origin protections were added to the California Water Code to protect local northern California supplies from being depleted by water projects. County of origin statutes reserve water supplies for counties from which the water originates when, in the judgment of the SWRCB, transporting water out of a county would deprive that county of water necessary for its present and future development.

As described below under Existing Conditions the City is allocated 9,320 AFY through DWR based on an area of origin water rights application.

*vi. Groundwater Management Act*

The Groundwater Management Act of California Water Code (AB 3030) provides guidance for applicable local agencies to develop a voluntary Groundwater Management Plan (GMP) in State-designated groundwater basins. GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality.

The City has updated the GMP in 2011 to be consistent with more recent legislation and conditions of the City groundwater system and master planning.

*vii. Assembly Bill 1881*

Assembly Bill (AB) 1881 required that DWR distribute a model water efficient landscape ordinance to counties and cities by January 1, 2009. By January 1, 2010, every county and city, including charter cities, was required to adopt either DWR's model ordinance or a water efficient landscape ordinance that is at least as effective as the DWR model ordinance. If a county or city failed to adopt an ordinance, AB 1881 requires that local officials enforce DWR's model ordinance as if it had been adopted by the county or city.

The City compared its existing Water Efficient Landscape Regulation (Regulation) with the State's Model Water Efficient Landscape Ordinance (MWE-

LO) and found the Regulation was consistent with MWELo. The City is therefore in compliance with AB 1881.

*viii. Senate Bill x7-7*

SB x7-7 sets a statewide goal of reducing per capita urban water use by 20 percent by December 31, 2020. The State shall make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. An urban retail water supplier shall include the following information in its urban water management plan, which was submitted in July 2011:

- “ Baseline daily per capita water use.
- “ 2020 water use target.
- “ Interim water use target.

Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by SB x7-7 will not be eligible for State water grants or loans.

Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by SB x7-7 will not be eligible for State water grants or loans.

The analysis required by SB x7-7 was included in the 2010 UWMP Update.

*ix. Regulations for Water Use Efficiency*

The California Constitution prohibits the waste, unreasonable use, unreasonable method of use and unreasonable method of diversion of water. It also declares that the conservation and use of water “shall be exercised with a view to the reasonable and beneficial use thereof in the public interest and for the public welfare.” Water Code Section 275 directs DWR and SWRCB to “take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste or unreasonable use of water.”

Through compliance with SB x7-7 and AB 1881, as well as the City's general operating practices, the City is conservative in its water use.

*x. Statewide Bond Measures*

In recent years, a number of statewide bond measures have been approved by California voters, establishing funding for a wide range of water-related programs and improvements aimed at protecting the State's critical water resources.

Among these are the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act, passed in 2000. This bond authorized \$1.97 billion for water-related projects throughout the State.

Passed in March 2002, Proposition 40, the California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protections Act, authorizes over \$1 billion for a broad range of water conservation programs, including land acquisition. Later in 2002, an additional \$3 billion in bonds was authorized by the voters as part of the Water Quality, Supply, and Safe Drinking Water Projects bond measure.

In November 2006, voters approved an initiative allowing the State to sell \$5.4 billion in bonds for projects related to safe drinking water, water quality and supply, flood control, natural resource protection, and park improvements.

At this time, the City of Vacaville has not received any of this bond money.

*c. Local Plans and Regulations*

This section summarizes the local plans and regulations pertaining to water supply in the Specific Plan study area.

*i. 1990 Vacaville General Plan*

Water supply and service is addressed in the Land Use Element and the Public Facilities, Institutions, and Utilities Element of the 1990 General Plan. The policies related to water supply and service are listed in Table 4.15-1.

*ii. Water Efficient Landscape Requirements*

The City of Vacaville adopted water efficient landscape requirements in 1991 and most recently revised the requirements in 1998. To ensure compliance with AB 1881, which is discussed in Section E.2.i, the City compared the water efficient landscape requirements with the State's model water efficient landscape ordinance, and found them to be consistent.

*iii. Solano Irrigation District Master Water Agreement*

The City of Vacaville entered into a Master Water Agreement with the Solano Irrigation District (SID) in 1995, which was most recently amended in 2010. This agreement determines the amount of water that the City of Vacaville will receive from SID through the year 2050. In addition, it establishes a long-term urban service area boundary and restricts water delivery for non-agricultural purposes outside of that boundary. The western portion of the project site falls within the urban service area boundary, while the eastern portion is within the agricultural service area. SID also provides the City with non-potable water supply see the Recycled Water subsection below for additional information.

*iv. Recycled Water*

A preliminary planning study performed in 2003 evaluated the potential for recycled water delivery and use citywide. Potential customers were identified that may accept tertiary treated recycled water generated at the Easterly Wastewater Treatment Plant (EWWTP) in the future. A recycled water distribution system does not currently exist and the planning and coordination to construct a system covering the entire City would be expensive and challenging. Furthermore, SID has a non-potable water conveyance system established throughout the City and has the supply and potential to deliver to portions of the City at a lesser cost than the City could provide recycled water.

TABLE 4.15-1 1990 GENERAL PLAN POLICIES RELATED TO WATER SUPPLY AND SERVICE

Policy Number	Policy
<b>Land Use Element</b>	
Policy 2.2-G 3	<p>Ensure that scarce natural resources, such as water, are allocated and utilized to maximize community benefits, and manage growth so that the quantity and quality of public services and utilities within the city provided to existing businesses and residents will not drop below an acceptable level of service because of new development. New development is not responsible for resolving all existing service or facility deficits. Existing development bears some responsibility to fund improvements that will resolve such deficits, and development is likewise responsible for funding the costs of maintenance and depreciation of facilities.</p> <p><i>This policy may require that annual adjustments on the amount of residential or non-residential development may need to be imposed from time to time.</i></p>
Policy 2.2-I 1	<p>In accordance with the May 1995 City of Vacaville/Solano Irrigation District Master Water Agreement, urban services will be extended only to development within the Urban Service Area. Any consideration by the City to expand the Urban Service Area will be in accordance with the provisions of the agreement, which addresses future extension of the urban service area.</p> <p>In conjunction with the consideration of a Specific Plan for the property located east of Leisure Town Road and south of the Locke Paddon subdivision (within the existing Urban Service Area), a determination shall be made regarding the potential expansion of the Urban Service Area to the east in order to establish a permanent agricultural buffer on the eastern edge of the city. The City will allow no development east of Leisure Town Road until this determination is made. This will also ensure that any development and extension of urban services and infrastructure east of Leisure Town Road is not planned in a piecemeal manner.</p> <p><i>An amendment to the General Plan may be considered for the area east of the Urban Service Area (south of the Locke Paddon subdivision, north of the Southern Pacific Railroad tracks and west of the PG&amp;E transmission line right of way) only if the City and SID mutually agree in writing in the form of an amendment to the May 1995 Master Water Agreement. Any consideration shall include the potential expansion of the width of the agricultural buffer (as defined by the Greenbelt Buffer land use designation</i></p>

TABLE 4.15-1 **1990 GENERAL PLAN POLICIES RELATED TO WATER SUPPLY AND SERVICE (CONTINUED)**

<b>Policy Number</b>	<b>Policy</b>
	<p><i>in Land Use Element Section 2.4, Land Use Classifications) located between the residential and agricultural uses, as per the Agreement.</i></p> <p><i>After 2005, in accordance with the Master Water Agreement, the City could consider expanding the Urban Service Area to include the area west of the existing Urban Service Area that lies between Foothill Drive and Mix Canyon Road.</i></p> <p><i>Any future expansion to the Urban Service Area and consideration of urban uses within those expanded areas will require a substantial revision to the Vacaville General Plan.</i></p> <p><i>See Figure 2-3. Also see policies 2.3-I 21, 2.3-I 22 and 2.5-I 8. Also refer to the Master Water Agreement, dated May 25, 1995, entered into by the City of Vacaville and Solano Irrigation District.</i></p>
Policy 2.2-I 4	Maintain and implement agreements with the Solano Irrigation District, nearby cities, and the County and negotiate agreements with other local government entities to help direct the provision of urban services while maintaining as much viable agriculture on prime agricultural soils as is practical and supportive of regional agricultural production consistent with the policies of this General Plan.
Policy 2.2-I 6	Do not permit development of such intensity or density that, if built without commensurate transportation or other infrastructure improvements, the resulting water and sewer service requirements and traffic generated will create substantial problems or unacceptable levels of service, unless an acceptable mitigation program to provide these services is implemented.
Policy 2.2-I 8	Maintain and refine the Planned Growth Ordinance and allow urban development only in accord with this plan for full urban services (police, fire, parks, water, sewer, streets, and storm drainage). Areas lacking full services are deemed outside the urban-service area, are unsuited for urban development regardless of Plan designation until services are assured and shall not be identified in a phasing plan.
Policy 2.2-I 10	<p>Require new development to pay capital improvement fees for public facilities as necessary to maintain adequate resources and service levels.</p> <p>Adequate public facilities should be provided for new urban development, and new developments should bear their "fair share" cost of providing such facilities. In order to make reasonable provision for these new public facilities, the City of Vacaville has established public facilities fees which are applied to all new development. The fees are intended to provide for facilities that are required in addition to the normal onsite and offsite development improvements. Such fees are</p>

TABLE 4.15-1 1990 GENERAL PLAN POLICIES RELATED TO WATER  
 SUPPLY AND SERVICE (CONTINUED)

Policy Number	Policy
	established to implement the policy of the General Plan and may include charges for connection to the water system, connection to the sanitary sewer system, parkland and improvements, school facilities, drainage improvements, and other capital improvements such as streets, bridges, traffic signals, and public buildings. The City Council may enact other public facilities fees if it finds that such fees are required to implement the policy of the General Plan.
Policy 2.2-I 11	Continue to monitor new development where infrastructure limits are being reached or exceeded so linkages with necessary improvements can be established and funded.
Policy 2.3-I 21	In conjunction with the consideration of a Specific Plan for the property located east of Leisure Town Road and south of the Locke Paddon subdivision (within the existing Urban Service Area), a determination shall be made regarding the potential expansion of the Urban Service Area to the east in order to establish a permanent agricultural buffer on the eastern edge of the City. The City will allow no development east of Leisure Town Road until this determination is made. This will also ensure that any development and extension of urban services and infrastructure east of Leisure Town Road is not planned in a piecemeal manner.
Policy 2.5-G 7	Ensure that new residential development shares the cost of providing services and amenities for Vacaville residents.
Policy 2.5-I 10	Require impact fees from developers, as appropriate and necessary, for provision of community facilities and services. Maintain the existing policy that development "must pay its own way."
<b>Public Facilities, Institutions, and Utilities Element</b>	
Policy 5.1-G 1	Assess the adequacy of utilities in existing developed areas, and program any needed improvements to coordinate with providing facilities to serve developing portions of the Planning Area.
Policy 5.1-G 3	Require buffer landscaping and multiple use, where feasible, of utility sites and rights-of-way to harmonize with adjoining uses.
Policy 5.1-I 1	Continue to update the five-year Capital Improvement Plan to provide for the facilities determined to be needed in relation to the City's financial resources and develop a long-range strategic capital development plan consistent with the General Plan.

TABLE 4.15-1 1990 GENERAL PLAN POLICIES RELATED TO WATER  
 SUPPLY AND SERVICE (CONTINUED)

Policy Number	Policy
Policy 5.1-I 2	Revise and update the 1990 Water System Master Plan. The Water Master Plan provides the City a guide to plan for adequate water supplies, storage facilities, pipeline improvements and pump stations to meet existing and projected water demands. The Water Master Plan shall set standards for storage and supply capacity to meet the General Plan buildout condition.
Policy 5.1-I 3	Replace existing water mains with larger mains, as necessary, to serve intensified land use in developed areas.
Policy 5.1-I 12	Do not approve any development that will not, even with identified mitigation measures, maintain standards for water, sewer, police, and fire service unless there are overriding findings of special circumstances or economic or social benefits and the service standards will be achieved at the time of project occupancy.
Policy 5.1-I 13	Evaluate the feasibility of using wastewater for irrigation. Whenever possible, use non-treated water for irrigation in large landscaped areas.
Policy 5.1-I 16	Implement the Master Water Agreement with the Solano Irrigation District, and pursue other potential sources, to obtain an additional water supply for the buildout of the General Plan.

Source: Vacaville General Plan, 1990.

Finally, the Master Water Agreement between the City and SID includes a non-compete clause prohibiting the City from selling non-potable water within the SID service area.

In summary, non-potable water is currently provided by SID to a variety of non-residential users in the City for landscape irrigation. The City's long term goal is to provide recycled water for landscape irrigation of non-residential land uses in developing areas, including Brighton Landing. However, future non-potable water for non-residential landscape irrigation in the Brighton Landing Project can be provided in the interim by SID, as the City has not established a recycled water program to-date, and SID has sufficient water supply to serve the non-potable water needs of the project. The City and SID are currently exploring options where SID may provide non-potable water to Brighton Landing on an interim basis, while the City

continues to evaluate the feasibility and requirements of implementing a recycled water program.

## **2. Existing Conditions**

### **a. Existing Water Supply**

Potable water is supplied within the Vacaville General Plan study area by several sources, including Solano Project from the Lake Berryessa reservoir, State Water Project water, and Settlement Water from the North Bay Aqueduct, and groundwater from local City wells.

Potable water is provided by the City to users within the city limits via a network of existing water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatments plants. Non-potable water is currently used in the City of Vacaville, primarily for non-residential landscape irrigation and is provided by SID via an existing SID conveyance system.<sup>1</sup> Water supply for the for the potable water needs of the City comes from two sources: surface water and groundwater. Assuming the project is completed by 2015, Table 4.15-2 provides a summary of the 2015 annual allocation (entitlements) from the various sources, which equates to 34,173 acre-feet per year (AFY). Each of the sources is described below in further detail.

The Solano Project was constructed by the Bureau of Reclamation in 1958. The main feature of the Solano Project is Monticello Dam, which provides storage for approximately 1.6 million acre-feet (AF) of water in Lake Berryessa. Water from Lake Berryessa is diverted through the Putah Diversion Dam to the 32-mile Putah South Canal, which transports water to the Solano County Water Agency (SCWA).

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<sup>1</sup> Nolte Associates, SB610 Water Supply Assessment Report for Brighton Landing, April 2012, pages 14 to 15.

TABLE 4.15-2 CITY OF VACAVILLE SUMMARY OF WATER SUPPLY

<b>Source</b>	<b>2015 Annual Allocation (AFY)</b>
<b>Solano Project</b>	
Vacaville Entitlement	5,750
SID Agreement	3,125
<b>State Water Project</b>	
Vacaville Table A	6,100
KCWA Agreement	2,878
Settlement Water	9,320
Groundwater	7,000
<b>Total</b>	<b>34,173</b>

Source: City of Vacaville SB610 Water Supply Assessment Report for Brighton Landing, 2012.

SCWA is a water wholesaler with water supply agreements with cities, districts, and State agencies to provide water from the Solano Project. The Solano Project contracting agencies are: Fairfield, Suisun City, Vacaville, Vallejo, SID, Maine Prairie Water District, University of California at Davis, and California State Prison – Solano. Vacaville is allocated 5,750 AFY water from the Solano Project.

In addition to its entitlement from SCWA, Vacaville entered into a 1995 Master Water Agreement with SID, which was most recently amended in 2010. SID is a supplier of irrigation and domestic water in Solano County. Pursuant to the agreement, Vacaville will receive an entitlement from SID increasing from 2,500 AFY in 2010 to 10,050 AFY in 2040. The Master Water Agreement includes a schedule specifying the entitlement increase. For years 2011 through 2015, the City shall purchase an additional 125 AF each year, for years 2016 through 2020, the City shall purchase an additional 200 AF each year, for years 2021 through 2039, the City shall purchase an additional

300 AF each year, and in year 2040, the City shall purchase an additional 225 AF, totaling 10,050 AF. The Master Water Agreement provides a consistent entitlement of 10,050 AFY through 2050.

*i. State Water Project (North Bay Aqueduct)*

Vacaville receives water allocations from the State Water Project through SCWA and water from a Year 2000 purchase agreement from Kern County Water Agency (KCWA). Surface water received pursuant to these agreements is delivered through the North Bay Aqueduct (NBA), a State Water Project facility owned and operated by the California Department of Water Resources (DWR). The City supply from the State Water Project is 8,978 AFY, including the 2,878 AFY KCWA Agreement.

The water supply for the NBA is less reliable than the Solano Project. Supply from the NBA comes from the State Water Project which provides water to a total of 29 contractors. Because the NBA is part of the entire State Water Project, any shortages occurring in the State Water Project impacts the water availability from the NBA.

*ii. Settlement Water (DWR Agreement)*

DWR, which is responsible for the management and regulation of water use in the State of California, provides “Settlement Water” to Vacaville. Settlement Water is diverted under water rights held by DWR, but is not considered State Water Project water. Settlement Water consists of surface water from the Sacramento River and Sacramento-San Joaquin Delta Estuary. The amount of water provided in the Settlement Agreement was based on critical dry year deliveries. Vacaville is allocated 9,320 AFY as part of the Settlement Agreement.

*iii. Groundwater*

The City owns and operates twelve municipal groundwater wells with very high quality groundwater. Eleven of the wells withdraw water from the deep aquifer in the basal zone of the Tehama Formation. Most City wells are located in the Elmira well field. However, new wells are being sited further

north, near Interstate 80. In 2008, approximately 5,900 AFY were supplied to the City. The total capacity of the well field is currently 6,500 AFY. Vacaville continues to explore well field expansion as a means of maintaining adequate water supply. A regional program is being implemented to monitor groundwater data as a means of ensuring against overdraft and/or contamination. Existing well locations are included in Figure 4.15-1.

Generally, areas outside the city limits are agricultural land use and/or rural residential land use with private groundwater wells and/or potable water service from SID.

b. Existing Water Supply Piping Systems

As the area is under agricultural production, there is no potable water piping. Irrigation water is supplied from the SID. However, a new system of pipes would be required to irrigate land uses of the proposed Specific Plan.

**3. Standards of Significance**

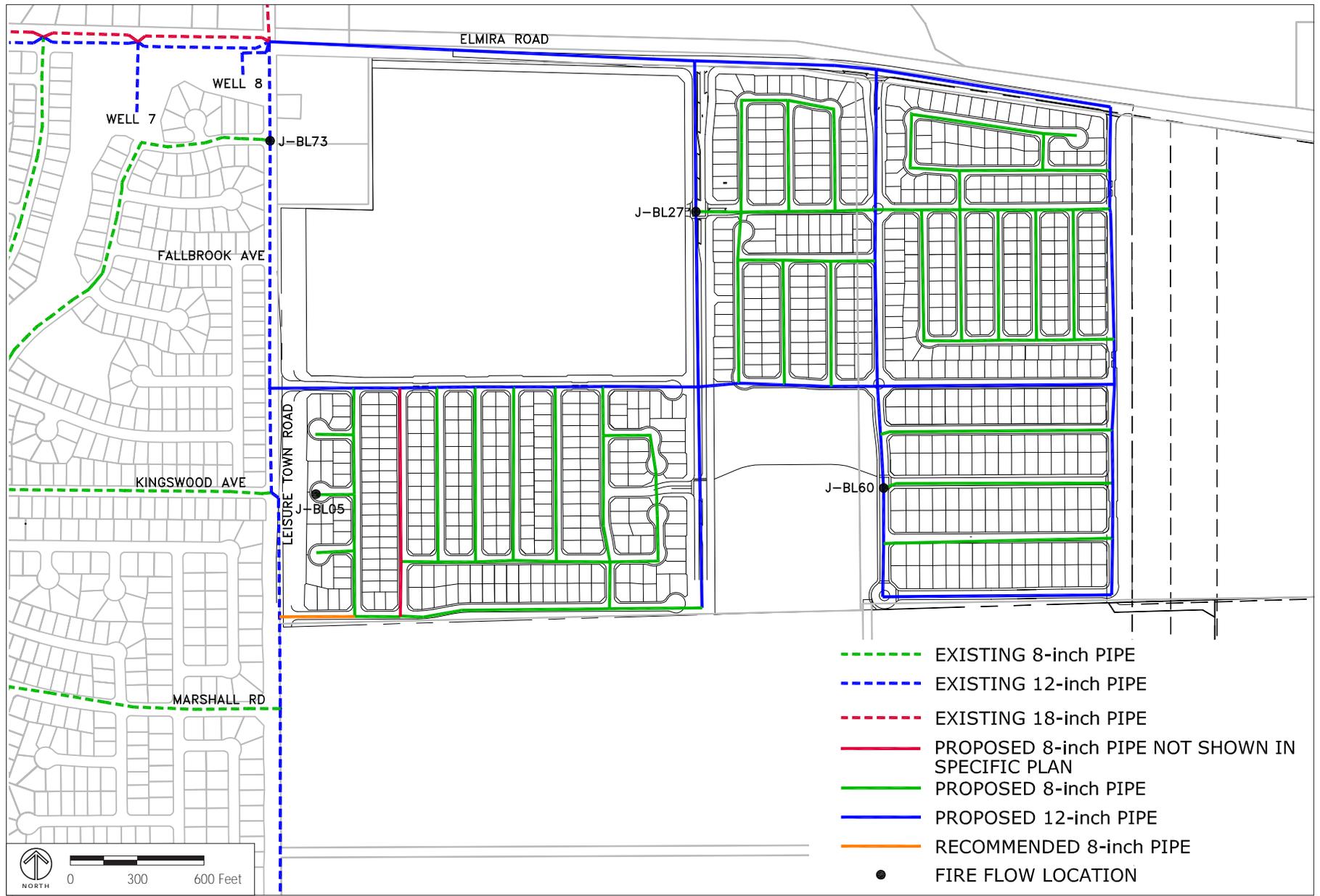
The Specific Plan would have a significant impact to the water supply if it would:

- a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- b. Have insufficient water supplies available to serve the project from existing entitlements and resources.

**4. Impact Discussion**

- a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The water demand of the Brighton Landing development was compared with current and future water supplies available to the City in the *SB610 Water Supply Assessment Report for Brighton Landing*. The City has sufficient water supply to provide the potable and non-potable water to the Brighton Landing



Source: Notle.

FIGURE 4.15-1  
 WATER SYSTEM IMPROVEMENTS

development without requiring additional supply or treatment capacity, therefore, there would be a *less-than-significant* impact.

- b. Have insufficient water supplies available to serve the project from existing entitlements and resources.

Potable and non-potable water demand was calculated by Nolte Associates based on land use quantities from the Specific Plan.<sup>2</sup> The proposed project water demand is summarized in Table 4.15-3. The potable water demand, is 428,580 gallons per day (gpd), the non-potable (irrigation) demand is 157,161 gpd.

Nolte Associates also evaluated the potable water distribution system shown in Figure 3-14 of the Project Description to ensure the proposed system meets the City's Level of Service requirements for minimum fire flow, minimum pressure, minimum pipe size and storage requirements. The analysis was performed for Specific Plan buildout conditions. As demonstrated in Table 4.15-4, the City has sufficient water to meet its customers' needs through 2035, including the proposed Brighton Landing development project forecasted under single and multiple dry years demand, therefore, there would be a *less-than-significant* impact.<sup>3</sup>

*i. Water Modeling Results for Fire Service*

Simulations based on the Specific Plan and the City's water distribution system model analyzed peak hour demand, maximum day demand, and maximum day demand with a specified fire flow of 3,000 or 4,500 gpd at four locations in the Specific Plan area. The fire flow is dependent on land use. All simulations, with the exception of the maximum day demand with fire flow in Subarea B (see Project Description, Figure 3-6), meet City level of service requirements.

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<sup>2</sup> Nolte Associates, 2012. *Brighton Landing EIR Water Modeling Study – Draft Technical Memo.*

<sup>3</sup> Nolte Associates, SB610 Water Supply Assessment Report for Brighton Landing, April 2012, pages 29 to 30.

TABLE 4.15-3 PROPOSED PROJECT WATER DEMAND

<b>Project Component</b>	<b>Quantity</b>	<b>Factor</b>	<b>Total (gpd)</b>
Residential Low Medium <sup>a</sup> Density	689 DU	420 gpd /unit	289,380
Residential Low Density <sup>a</sup>	80 DU	520 gpd /unit	41,600
Private School – Potable	1,200 students	40 gpd /student	48,000
Private School – Non-Potable	50 acres	1,500 gpd /acre	75,210
Public School – Potable	1,100 students	35 gpd/student	38,500
Public School – Non-Potable	11 acres	1,500 gpd/acre	16,550
Neighborhood Commercial – Potable	4.75 acres	1,650 gpd/acre	7,900
Neighborhood Commercial – Non-Potable	4.75 acres	450 gpd/acre	2,151
Park, Trails, Landscaping, Ag Buffer – Potable	15 acres	170 gpd/acre	2,600
Park, Trails, Landscaping, Ag Buffer – Non-Potable	15 acres	2,500 gpd/acre	37,850
Linear Park/Agricultural Buffer – Potable	3.61 acres	170 gpd/acre	600
Linear Park/Agricultural Buffer – Non-Potable	3.61 acres	2,500 gpd/acre	9,025
<b>Total Potable</b>			<b>428,580</b>
<b>Total Non-Potable</b>			<b>157,161</b>
<b>Total Potable and Non-Potable</b>			<b>585,741</b>

Note: DU = dwelling units.

<sup>a</sup> Domestic irrigation demand (for residential land uses) will be met with potable water, and therefore is included in potable demand factor.

Source: Nolte Associates, *SB610 Water Supply Assessment Report for Brighton Landing*, April 2012.

TABLE 4.15-4 COMPARISON OF PROJECTED WATER DEMAND AND SUPPLY

Year	Normal Year		Single Dry Year		Multiple Dry Year	
	Projected Demand <sup>a</sup>	Available Supply <sup>b</sup>	Projected Demand	Available Supply	Projected Demand	Available Supply
2015	18,547	30,853	16,692	31,974	14,838	28,424
2020	19,408	32,723	17,467	33,834	15,527	30,194
2025	20,269	34,508	18,242	35,704	16,215	31,929
2030	21,004	36,393	18,904	36,148	16,803	33,642
2035	21,320	38,278	19,188	38,118	17,056	35,477

<sup>a</sup> Projected demand includes Brighton Landing, proposed developments (i.e. Lower Lagoon Valley, Southtown, Rice McMurry, and Vanden Meadows), and future development (i.e. North Village, as well as future development water demands from the 2010 UWMP).

<sup>b</sup> Available supply includes the following sources: Solano Project (Vacaville Entitlement and SID Agreement), State Water Project (Vacaville Table A, KCWA Agreement, and Settlement Water), Groundwater, and Recycled Water.

Source: Nolte Associates, *SB610 Water Supply Assessment Report for Brighton Landing*, April 2012.

Subarea B includes three cul-de-sacs to be served by 8-inch water mains. The velocity in the 8-inch water mains located in the cul-de-sacs is approximately 19 feet per second (ft/sec) during a maximum day demand plus fire flow (3,000 gpm) condition. The City’s policy is a maximum velocity during fire flow conditions of 10 ft/sec. The observed flow velocities indicate the water distribution system described in the Specific Plan is under-sized, and may affect the City’s ability to deliver adequate fire flow at certain locations in the Specific Plan area, which is a *significant* impact.

**Impact UTIL-1:** The water distribution system plan provided by the applicant would not provide adequate fire service at all locations within the Specific Plan area. Therefore, there would be a *significant* impact to the water distribution system.

Mitigation Measure UTIL-1: The City allows a reduction in minimum fire flow from 3,000 gpm to 1,500 gpm in residential land use areas where a minimum eave to eave separation of 6 feet is specified. The Specific Plan and subsequent development approvals shall incorporate the *Nolte Associates Water Modeling Study Technical Memorandum* recommendation as follows:

- “ Confirming the minimum eave to eave separation is 6 feet for the proposed Specific Plan area, or
- “ Upsizing the 8-inch water mains in the cul-de-sacs to 12-inch.
- “ The Technical Memorandum also recommends additional water mains not originally included in the Specific Plan. These recommendations shall be followed.
- “ Additional modeling shall be required if changes are made to water main sizes or alignment other than those analyzed for this EIR, and/or to accommodate any proposed project phasing.

Significance After Mitigation: If recommendations in the Nolte Associates Technical Memo are followed, the effects on fire service of an inadequate water distribution system would be reduced to *less than significant*.

*ii. Water Storage for Fire Service and Emergency Use*

The water storage requirements for the Specific Plan area include three components: operational, emergency, and fire storage.

- “ Operation storage is equal to 25 percent of the maximum day demand.
- “ Fire storage is equal to the most critical combination of flow rate and duration in the pressure zone.
- “ Emergency storage is equal to 12 hours of maximum day demand, equivalent to 50 percent of maximum day demand.

Nolte Associates calculated the total City-wide main zone storage requirement as 22.9 million gallons per day (mgd).<sup>4</sup> The City currently has five main zone reservoirs with a combined storage capacity of 18.1 million gallons (mg). The current deficit in total storage for the City's main zone is approximately 4.8 mg. The Specific Plan has an average day demand of 0.52 mgd and a maximum day demand of 1.04 mgd. The additional operational and emergency storage required by the Specific Plan is approximately 0.78 mg. The Project increases the current main zone storage deficit to 5.6 mg.

The City addresses these deficits through its regular program of infrastructure planning and is currently investigating sites for additional main zone reservoirs. Because storage requirements for the Specific Plan would be provided by the additional reservoirs, a reservoir is not being built as part of the Specific Plan. Since the Specific Plan requires additional water storage for emergency uses, this would be a *significant* impact.

**Impact UTIL-2:** The Specific Plan requires additional storage of 0.78 million gallons for operational and emergency requirements, therefore there would be a significant impact to the water distribution system.

Mitigation Measure UTIL-2: Fees paid by the applicant to the City shall cover the fair share of the cost of construction of the additional reservoir storage required by the City.

Significance After Mitigation: With an appropriate financial contribution by the applicant towards the City's costs of reservoir construction, and construction of these reservoirs by the City, the effects on emergency water supply would be reduced to *less than significant*.

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<sup>4</sup> Because of elevation differences in the City, the City has several upper pressure zones to ensure that adequate water pressures are provided to all customers in the City. The main zone is the main pressure zone, which encompasses most of the City. The upper pressure zones are small areas in the hills to the north and east. The Project is in the main pressure zone

## 5. Cumulative Impacts

As demonstrated in Table 4.15-4, projections examining water demand, drawn from the most current available land use information and population projections, show a cumulative water demand that is consistently below the water supply in normal, dry, and multiple dry years. Thus, the Specific Plan and other potential cumulative projects in the vicinity of the Specific Plan area, including growth resulting from approved projects, development of the 1990 General Plan, or development of the Proposed General Plan Update<sup>5</sup> would not result in an increase in water demand greater than water supply. Therefore, cumulative impacts resulting from the proposed Specific Plan and other future growth are *less than significant*.

### *B. Wastewater*

This section is based on the *Brighton Landing EIR Wastewater Collection and Treatment Technical Memorandum* prepared by West Yost in January 2012.

#### 1. Regulatory Framework

The purpose of this section is to discuss the key regulatory requirements applicable to the City of Vacaville wastewater collection and treatment facilities.

##### a. State and Regional Agencies, Plans, and Regulations

This section summarizes the State and regional agencies, plans, and regulations pertaining to wastewater in the Specific Plan area.

##### *i. California Regional Water Quality Control Board*

In California, all wastewater treatment and disposal systems fall under the overall regulatory authority of the SWRCB and the nine RWQCBs. Each are charged with the responsibility of protecting beneficial uses of State waters

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<sup>5</sup> Land uses are shown on the Preferred Land Use Alternative accepted by the City Council on December 13, 2011. Although the update is in progress, and the General Plan in draft form, policies are subject to change and have not therefore been taken into account in this analysis.

(ground and surface) from a variety of waste discharges, including wastewater from individual and municipal systems.

The RWQCBs regulatory role involves the formation and implementation of basic policies for water protection. These are reflected in the RWQCBs Basin Plan in the form of guidelines, criteria, and/or prohibitions related to the siting, design, construction, and maintenance of on-site sewage disposal systems. The SWRCB has historically provided overall policy direction, organizational and technical assistance, and a communications link to the State legislature.

Information on the role of the RWQCBs and permits for wastewater discharge is contained in Section 4.9, Hydrology and Water Quality.

*ii. Water Quality Control Plan for the Sacramento and San Joaquin River Basins*

The Basin Plan was originally adopted in 1975; since then, it has undergone many revisions. The fourth edition, adopted in August 2006, was the basis for the current Waste Discharge Requirements. The Basin Plan designates beneficial uses, establishes both numeric and narrative water quality objectives, and consists of implementation programs to achieve these objectives for the basin. The Basin Plan also addresses groundwater criteria needed to protect the beneficial uses of this water source. Most requirements of the Basin Plan have been incorporated into the City's existing NPDES permit. The SWRCB adopted amendments to the Basin Plan on November 3, 2011 establishing site specific objectives for New Alamo Creek and Ulatis Creek, which are downstream of the City's point of discharge. The action will allow the City's current effluent quality to be in compliance with water quality objectives related to disinfection byproducts without construction of an alternative means of disinfection. The new Basin Plan requirements will be incorporated into the City's NPDES permit at the time the permit is next revised.

*iii. California Toxics Rule and State Implementation Plan*

In the mid-1990s, the U.S. Environmental Protection Agency (EPA) adopted the National Toxics Rule (NTR), which promulgated water quality standards for a number of trace toxic compounds. About 40 criteria in the NTR were applicable in California. On May 18, 2000, EPA adopted the California Toxics Rule (CTR), which included new toxics criteria in addition to the previously adopted criteria from the NTR. The State Implementation Plan (SIP), adopted in 2000, provides implementation provisions for CTR criteria. According to the SIP, full compliance with these criteria was required by May 18, 2010. The requirements of the CTR and the SIP have been incorporated into the City's existing NPDES permit.

*iv. State Title 22 Requirements*

Water recycling criteria, administered by the California Department of Public Health (CDPH), are contained in the California Administrative Code, Title 22, Division 4, Chapter 3, Sections 60301 through 60355. These criteria are known as the Title 22 requirements or standards. Title 22 contains provisions for the uses of recycled water based on the method of treatment, the use area requirements for recycled water projects, and general requirements for design, operations, and reliability. Water used for recreational uses or agricultural irrigation must meet Title 22 standards for unrestricted reuse. Title 22 requirements have been incorporated into the City's existing NPDES permit.

*v. Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*

The Bay-Delta Plan was adopted on December 13, 2006, superseding both the May 1995 and the 1991 Bay-Delta Plans. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection. The Bay-Delta Plan attempts to create a management plan that is acceptable to the stakeholders, while at the same time is protective of beneficial uses of the San Joaquin River and Sacramento River in the Bay Delta Estuary. The requirements of the Bay-Delta Plan have been incorporated into the City's existing NPDES permit.

b. Local Plans and Policies

This section summarizes the local plans and policies pertaining to wastewater in the Specific Plan area.

*i. Existing General Plan*

Wastewater is addressed in the Public Facilities, Institutions, and Utilities Element of the existing General Plan. The policies related to wastewater are listed in Table 4.15-5.

*ii. Municipal Code*

The Vacaville Municipal Code has a number of provisions relating to wastewater, including Chapter 13.08 Sewers, which contains regulations to prevent pollution and control and improve the quality and quantity of waste discharge. Another relevant section is Chapter 11.01, Development Impact Fees, which describes the Sewer System Impact Fee.

*iii. Easterly Wastewater Treatment Plant Tertiary Project Facilities Plan*

The Easterly Wastewater Treatment Plant Tertiary Project Facilities Plan (Tertiary Facilities Plan) was completed in April 2010. The purpose of the Tertiary Facilities Plan was to identify the Easterly WWTP upgrades needed to comply with the NPDES permit issued on April 25, 2008.

*iv. Sewer System Management Plan*

The City of Vacaville Sewer System Management Plan was developed in response to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, and was completed in June 2009. The SSMP provides a general framework for collection system operation, maintenance, and overflow prevention. It includes the following elements, commensurate with the statewide Waste Discharge Requirements:

- Development plan and schedule
- Goals
- Organization
- Legal authority
- Operation and maintenance program

TABLE 4.15-5 1990 GENERAL PLAN POLICIES RELATED TO WASTEWATER

<b>Policy Number</b>	<b>Policy</b>
Policy 2.2-I 6	Do not permit development of such intensity or density that, if built without commensurate transportation or other infrastructure improvements, the resulting water and sewer service requirements and traffic generated will create substantial problems or unacceptable levels of service, unless an acceptable mitigation program to provide these services is implemented.
Policy 2.2-I 8	Maintain and refine the Planned Growth Ordinance and allow urban development only in accord with this plan for full urban services (police, fire, parks, water, sewer, streets, and storm drainage). Areas lacking full services are deemed outside the urban-service area, are unsuited for urban development regardless of Plan designation until services are assured and shall not be identified in a phasing plan.
Policy 2.2-I 10	Require new development to pay capital improvement fees for public facilities as necessary to maintain adequate resources and service levels. Adequate public facilities should be provided for new urban development, and new developments should bear their "fair share" cost of providing such facilities. In order to make reasonable provision for these new public facilities, the City of Vacaville has established public facilities fees which are applied to all new development. The fees are intended to provide for facilities that are required in addition to the normal onsite and offsite development improvements. Such fees are established to implement the policy of the General Plan and may include charges for connection to the water system, connection to the sanitary sewer system, parkland and improvements, school facilities, drainage improvements, and other capital improvements such as streets, bridges, traffic signals, and public buildings. The City Council may enact other public facilities fees if it finds that such fees are required to implement the policy of the General Plan.
Policy 5.1-I 12	Do not approve any development that will not, even with identified mitigation measures, maintain standards for water, sewer, police, and fire service unless there are overriding findings of special circumstances or economic or social benefits and the service standards will be achieved at the time of project occupancy.
Policy 5.1-I 13	Evaluate the feasibility of using wastewater for irrigation. Whenever possible, use non-treated water for irrigation in large landscaped areas.

Source: City of Vacaville, 1990. *Vacaville General Plan*.

- “ Design and performance provisions
- “ Overflow emergency response program
- “ Fats, oils, and grease (FOG) control program
- “ System evaluation and capacity assurance plan
- “ Monitoring, measurement, and program modifications
- “ SSMP audits
- “ Communication program

## 2. Existing Conditions

Figure 4.15-2 shows the existing sewer system and Figure 4.15-3 shows the additional pipes and connections proposed for Specific Plan buildout. Vacaville provides sewer service to most developed areas within the city boundaries. Sewer service includes operation and maintenance of gravity sewers, lift stations, force mains (i.e. pressure sewers), and the EWWTP.

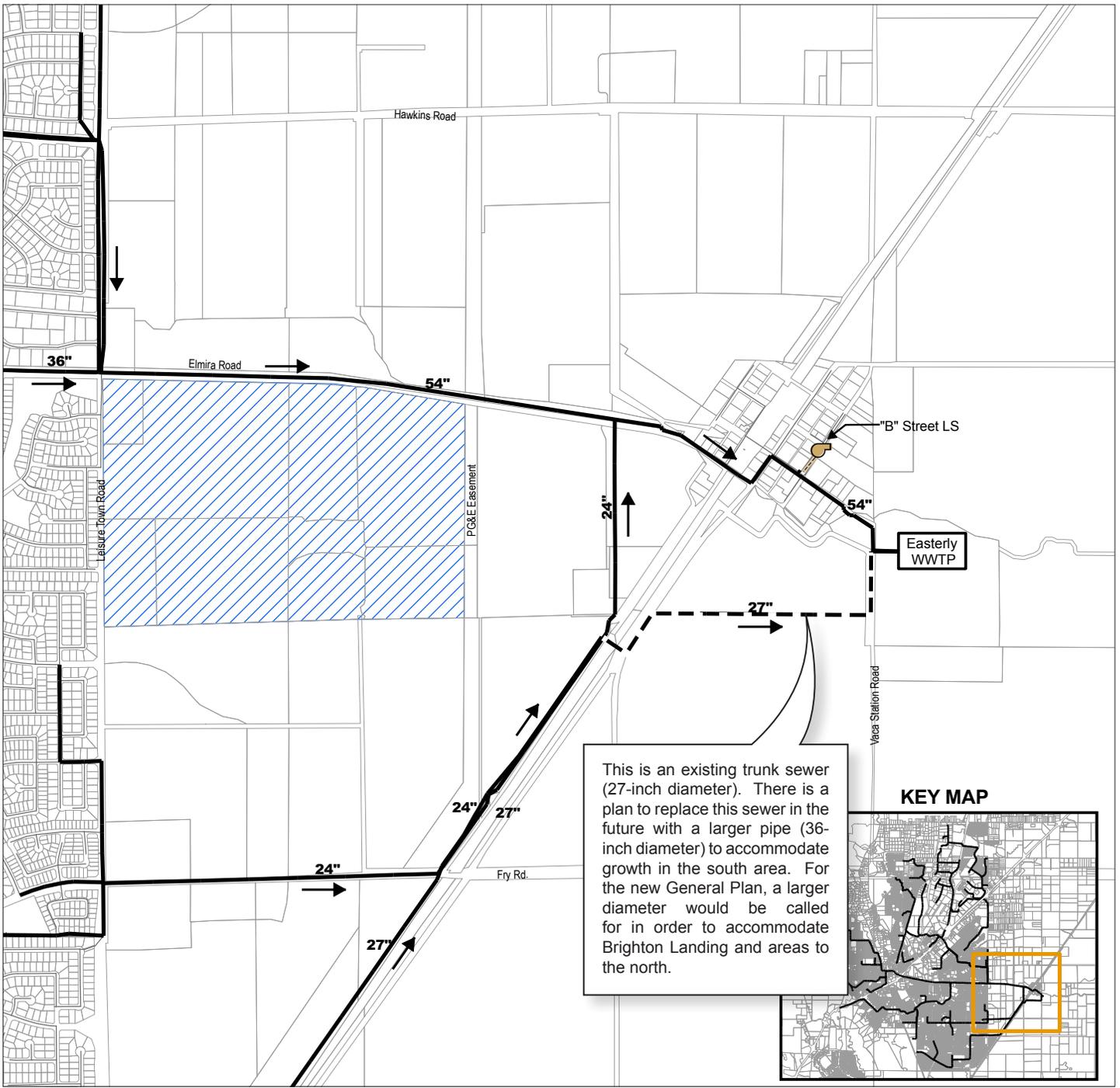
The EWWTP, located east of the Specific Plan area near the town of Elmira, has a sanitary base flow (SBF) flow capacity of 15 mgd, which is predicted to be adequate capacity through the year 2028<sup>6</sup>. Dry weather flows vary significantly from year to year, so the City periodically calculates a theoretical SBF that could occur based on actual historical flows. The most recent calculation was completed in June 2011 and determined that the theoretical SBF in 2010 was 8.36 mgd.<sup>7</sup>

The Specific Plan area is currently under crop cultivation and as such does not have sewer lines within its boundaries. However, there is a 54-inch trunk sewer running under Elmira Road and carrying wastewater east to the EWWTP.

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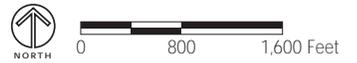
<sup>6</sup> West Yost Associates, 2012. *Wastewater Collection and Treatment Updated Technical Memorandum.*

<sup>7</sup> West Yost Associates, 2012. *Wastewater Collection and Treatment Updated Technical Memorandum.*



- — Planned Trunk Sewer
- Existing Trunk Sewer
- Small Diameter Sewers
- 📍 Lift Station
- Force Main
- ▨ Project Area
- ➔ Flow Direction

Notes:  
 1. WWTP = Wastewater Treatment Plant  
 2. Trunk sewers consist primarily of sewers 12-inches in diameter and greater.



**KEY MAP**

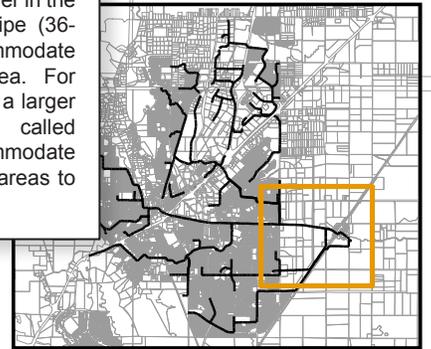
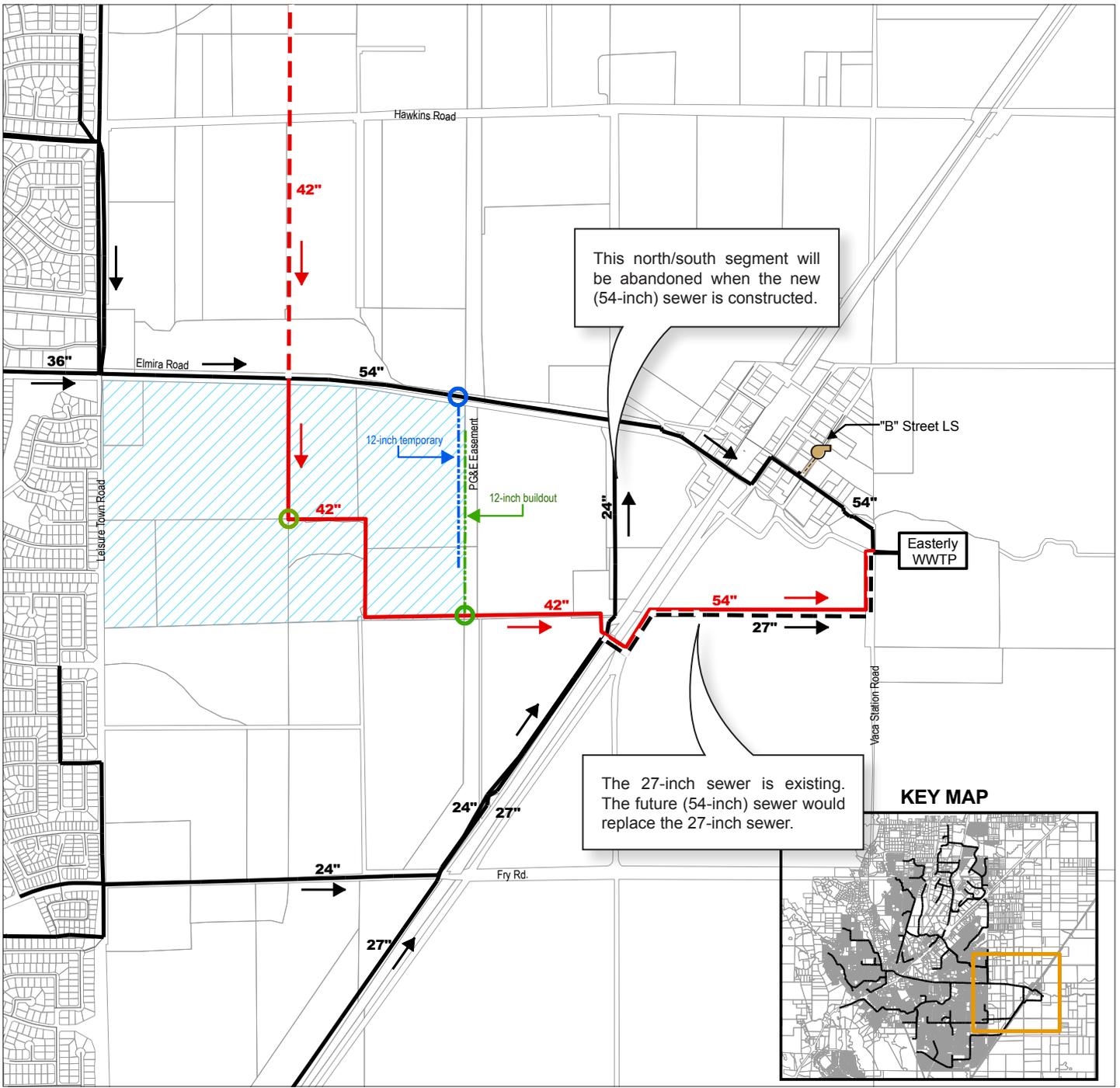
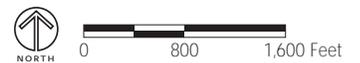


FIGURE 4.15-2

EXISTING AND PLANNED SANITARY SEWER SYSTEM



- Regional sewer installed as part of other future development
  - Existing Trunk Sewer
  - Small Diameter Sewers
  - 📍 Lift Station
  - Force Main
  - ▨ Project Area
  - Regional sewer installed as part of Brighton Landing Project
- Connection Options**
- 🟢 Build-out Connection
  - 🟡 Temporary Connection
  - Build-out Sewer
  - Temporary Sewer
  - ➔ Flow Direction



1. WWTP = Wastewater Treatment Plant
2. Trunk sewers consist primarily of sewers 12-inches in diameter and greater.
3. Diameters for the regional sewer are preliminary, Sizing subject to further analysis as part of the sewer master plan.

FIGURE 4.15-3

The Elmira Road trunk sewer has an allowable flow capacity of 35.8 mgd.<sup>8</sup> Capacity is currently available in the existing sewer, but most of this capacity is already committed to future development. The City has already committed to providing capacity in wastewater collection and treatment facilities for approved development and for individual dischargers or land parcels. Table 4.15-6 lists existing commitments, representing flows above existing flows in the Elmira Road trunk sewer and at the EWWTP.

Therefore, a description of pipe capacity cannot only consider existing flows, but must also take into account predicted future average dry weather flows with already-committed capacity, and predicted peak flow. Peak flow is analyzed under two conditions,  $Q_d$  and  $Q_p$ .  $Q_d$  is compared to 90 percent of full-pipe flow in a large diameter sewer.  $Q_p$  is a more extreme condition used to assess the risk of overflows. Flows predicted for buildout of the 1990 General Plan, which only includes 1,000 feet strip extending along the western boundary of the project site, fully utilize available capacity in the Elmira Road trunk sewer. However, since it is uncertain when or if other development allowed under the 1990 General Plan would occur, it is possible that the trunk sewer could be used temporarily to convey flow from the Specific Plan area for a limited time period, if approved by the Directors of the Public Works and Utilities Departments.

### **3. Standards of Significance**

The Specific Plan would have a significant impact with regard to wastewater if it would:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

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<sup>8</sup> West Yost Associates, 2012. *Flows in the Elmira Road Trunk Sewer Technical Memorandum.*

TABLE 4.15-6 EXISTING COMMITMENTS BEYOND EXISTING FLOWS

	Average Dry Weather Flow (mgd)		Peak Flow (Q <sub>d</sub> ) <sup>a</sup> (mgd)	
	Elmira Trunk	Elmira EWWTP	Elmira Trunk	Elmira EWWTP
Permitted Industrial Dischargers	1.89	2.29	3.07	3.71
Other Special Case Modeled Flows	0.70	0.70	1.12	1.12
Projects Under Construction	0.51	0.52	1.42	1.50
Development Agreements	0.68	0.93	2.18	2.68
Extended Tentative Maps	0.10	0.11	0.29	0.32
<b>Total</b>	<b>3.88</b>	<b>4.55</b>	<b>8.08</b>	<b>9.33</b>

<sup>a</sup>Peak flow assumes a peaking factor of 1.6 and an infiltration and inflow rate of 1,000 gpd/acre applied to estimated growth acreage.

Source: West Yost Associates – Calculations using input from City staff identifying approved development, data from the land use database developed for the General Plan update, and standard flow factors.<sup>9</sup>

- c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments.

#### 4. Impact Discussion

Wastewater flow projections used for this discussion relied on information from the Specific Plan, the *City of Vacaville Brighton Landing Sanitary Sewer Modeling Study* prepared by Phillippi Engineering, and the City’s flow generation factors. The hydraulic model is the same as has been used for previous

<sup>9</sup> Fred Buderer and Cal Teraura, City of Vacaville. Personal communication with West Yost Associates, March 12, 2012.

City master planning efforts. It was run to evaluate the sewer capacity available for the Brighton Landing Specific Plan buildout and potential impact of the Specific Plan on the City's existing sewers.

Based on the data produced from the modeling, the Specific Plan area would have an estimated average dry weather flow of 0.25 mgd and hourly peak wet weather flow of 0.82 mgd (Q<sub>d</sub>).<sup>10</sup>

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

With construction of new pipes, the sanitary sewer system of the Specific Plan area would be upgraded so that it could convey additional wastewater to the EWWTP, as described in Section B.4.b. below. The EWWTP discharges treated water to Alamo Creek. The EWWTP effluent routinely complies with all applicable treatment and effluent quality requirements<sup>11</sup> including temporary requirements currently in effect<sup>12</sup> for disinfection byproducts and nitrate. Treatment plant improvements are under construction to provide full compliance with long-term limitations on nitrate established by the permit,<sup>13</sup> and the recent Basin Plan amendment will allow the Regional Board to adjust disinfection byproduct limitations such that the existing plant will fully comply. Adding flow from the project area will marginally increase loads on the treatment plant, but this is well within the existing plant capacity. Therefore, the project will have a *less-than-significant* impact on the ability of the EWWTP to meet wastewater treatment requirements.

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<sup>10</sup> West Yost Associates, 2012. *Flows in the Elmira Road Trunk Sewer Technical Memorandum*.

<sup>11</sup> Tony Pirondini, City of Vacaville Water Quality Permitting Administrator. Personal communication with Melissa McDonough, The Planning Center | DC&E, May 15, 2012.

<sup>12</sup> California Regional Water Quality Control Board (RWQCB), 2010. Central Valley Region, *Time Schedule Order No. R5-2008-0056-01*.

<sup>13</sup> California Regional Water Quality Control Board (RWQCB), 2010. Central Valley Region, *Order No. R5-2008-0055-01*.

- b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The EWWTP is considered to have sufficient capacity to serve anticipated growth in the community for 16 years without the need for expansion. There are efforts currently underway to upgrade the facility to comply with the NPDES permit.<sup>14</sup> As noted in B. Existing Conditions, only half the capacity of the EWWTP was needed for actual flows in 2011 and current dry weather flows in a worst case year are expected to be below 8.5 mgd, less than 60 percent of the design capacity of 15.0 mgd. At buildout, the Specific Plan would introduce an additional average dry weather flow of 0.25 mgd of wastewater to the plant, bringing the SBF to 8.75 mgd at most, still well below the capacity of 15.0 mgd. The increased flows to EWWTP would not trigger an expansion or a need for new facilities so there would be a *less-than-significant* impact.

- c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

A significant impact could be found if either the wastewater treatment provider or wastewater collection system operator had inadequate capacity to serve the project. These issues are discussed separately below.

*i. Wastewater Treatment Capacity*

As described above, modeling of flows from the Specific Plan area estimates an average dry weather flow of 0.25 mgd and hourly peak wet weather flow of 0.82 mgd. Existing flows are no more than 8.5 mgd and existing commitments would add 4.55 mgd of average flow (see above), for a total of 13.3 mgd at the EWWTP with the Specific Plan flows. This is within the 15.0 capacity

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<sup>14</sup> Vacaville City Council, 2009. *Wastewater Rate Adjustment for EWWTP Tertiary Project.*

at the treatment plant.<sup>15</sup> There would therefore be a *less-than-significant* impact from the project when considered in conjunction with existing commitments.

*ii. Wastewater Collection System Capacity*

Implementation of the Specific Plan would require the construction of a wastewater collection system that connects to the City's existing collection system. Development impact fees (DIFs) could ultimately cover the cost of the regional improvements, although cash flow adequate to fund all necessary DIF funded improvements is not assured.

The Specific Plan proposes two connection phases which are called "options" as shown in Figure 4.15-3. Option 2 would be needed for full development of the Specific Plan area. Option 1 provides an interim wastewater connection for a portion of the area. For the purposes of this EIR, the term "options," which implies a choice between the two scenarios, is replaced with "phase," which more accurately describes the fact that Option (Phase) 1 is an initial, interim scenario to be followed by Option (Phase) 2.

*a) Phase 1: Temporary Connection*

Phase 1 would connect the first 385 dwelling units directly to the existing trunk sewer along Elmira Road via a 12-inch on-site trunk sewer flowing northward. As described in Section B.2, above, this phase would only serve a portion of the Specific Plan area, would be temporary, and would be superseded by the eventual building of a proposed large diameter regional trunk sewer through the Specific Plan area (Phase 2). In the absence of other growth allowed under the 1990 General Plan, but taking into account existing commitments, peak flow capacity in the Elmira Road trunk sewer is adequate to accommodate the proposed 385 dwelling units and Phase 1 therefore has a *less-than-significant* impact. Pipeline construction within the Specific Plan

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<sup>15</sup> West Yost Associates, 2012. *Wastewater Collection and Treatment Updated Technical Memorandum*.

area would occur at the same time as the excavation for the other Specific Plan buildings and roads and would not cause additional impacts.

*b) Phase 2: New Regional Sewer*

Phase 2 would construct a 12-inch trunk sewer flowing south, which along with other smaller sewer connections would convey flow from the entire Specific Plan area directly to a new regional sewer. The proposed regional sewer would flow east and south to intercept and replace existing 24-inch and 27-inch trunk sewers south of the Specific Plan area. The regional sewer would supersede a portion of a previously planned trunk sewer improvement, (sewer DIF project 54A) from the point of intercepting the 27-inch sewer to the EWWTP. This would be part of a Sewer Master Plan including hydraulic modeling using the same model as for the Brighton Landing Specific Plan. The regional sewer would be designed to accommodate other future growth east of Leisure Town Road but part of its capacity would be needed for the Brighton Landing Specific Plan alone.

At the proposed site of connection to the Specific Plan area, the existing Elmira Road sewer is 15 feet deep, which is adequate for Phase 1. However, the depth of the proposed regional sewer in Phase 2 would need to be analyzed for adequacy at several locations, such as:

- North of Elmira Road and crossing under Alamo Creek (assuming the Preferred Land Use Alternative is adopted);
- At Elmira Road, to provide clearance crossing under the Elmira Road trunk sewer.
- At a connection point to the existing 24-inch trunk sewer south of the Specific Plan area; and
- At a connection point to the existing 27-inch trunk sewer south of the Specific Plan area.

These analyses will occur as part of the overall design of the regional sewer system, which has not yet been completed.

Initially, Phase 1 would require trenching only in the Specific Plan area, to establish a new temporary connection for a northwards flow to the existing Elmira Road trunk sewer. Implementation of Phase 2 would involve additional trenching in the Specific Plan area, for a new permanent southerly flow to construct and connect to the new regional trunk sewer, as well as trenching outside the Specific Plan area to connect from the Specific Plan area east to the EWWTP. Construction of the regional trunk sewer would have the potential to create *significant* impacts from ground disturbance, including construction-period air quality impacts, and potential impacts to biological resources, cultural resources, and water quality, depending on the ultimate alignment of the sewer pipeline. However, because the components of the future regional sewer system outside of the Specific Plan area have not yet been designed, its exact alignment is as yet undetermined. Therefore it is not possible to identify specific impacts at this time. The construction and installation of the regional sewer line outside the boundaries of the Brighton Landing Specific Plan area will require additional environmental analysis.

**Impact UTIL-3:** The Brighton Landing Specific Plan includes installation of a new regional trunk sewer, which could cause significant environmental effects.

Mitigation Measure UTIL-3a: The City shall employ or retain a licensed design engineer, funded by the developer, to complete an engineering report detailing elevation data at locations along the proposed regional trunk sewer where flow may be diverted from the City's existing trunk sewers into the proposed regional sewer.

Mitigation Measure UTIL-3b: Prior to any temporary connection being allowed to connect to the Elmira Road trunk sewer, the applicant shall provide a financial guarantee that adequate funding will be available to construct the proposed regional sewer at such time as the City deems necessary to accommodate flow from the upstream Elmira Road trunk sewer service area.

Mitigation Measure UTIL-3c: The City shall prepare a Sewer Master Plan, after completion of the General Plan Update that provides detailed specifications for the conceptual design and alignment of the installation of a new regional trunk sewer, and expansion of the EWWTP. The Sewer Master Plan shall be subject to CEQA review to identify and mitigate environmental impacts resulting from improvements to the sewer system.

Significance After Mitigation: Because the ultimate design of the regional trunk sewer and the future sewer upgrades are unknown at this time, this impact cannot be fully analyzed and therefore cannot be mitigated, thus is it *significant and unavoidable*.

## 5. Cumulative Impacts

### a. Under Existing 1990 General Plan

#### i. Wastewater Treatment Capacity

Buildout of the current 1990 General Plan would result in Average Dry Weather flows of 22.2 mgd. Average Dry Weather Flows from the Brighton Landing Specific Plan would add 0.25 mgd, for a combined total Average Dry Weather Flow of 22.45 mgd. This would exceed the current 15 mgd Average Dry Weather Flow capacity of the EWWTP. The existing plant is designed to be readily expanded to meet future capacity requirements up to 22 mgd of Average Dry Weather Flow, and space is available for expanding beyond 22 mgd. However, the expansion of the EWWTP could have the potential to create *significant* impacts.

#### ii. Wastewater Collection System Capacity

Other reasonably foreseeable projects and plans in Vacaville, together with the Specific Plan, would increase demands on the wastewater collection system and facilities such that there would be significant cumulative impacts in the absence of system upgrades. Specifically, the Elmira Trunk Sewer will experience minor surcharging and does not have the capacity to accommodate wastewater flows east of Leisure Town Road.

Based on the 1990 General Plan, without the Brighton Landing Specific Plan, the buildout flow in the Elmira Road trunk sewer using  $Q_d$  will be 37.1 mgd. With the wastewater flows added by development within the Brighton Landing Specific Plan area, the  $Q_d$  flow would be 37.4 mgd. Therefore, with or without the development of the Brighton Landing Specific Plan, future flows in the Elmira Road trunk sewer would exceed the allowable flow of 35.8 mgd.<sup>16</sup>

The Specific Plan recognizes that the Elmira Road trunk sewer does not have adequate capacity to serve the project. For this reason, as described above, the Specific Plan includes installation of a new regional sewer line that would run north-south into the Specific Plan area, and exit to the east along the southern Plan boundary to reach the EWWTP. The applicant would pay a development impact fee to fund its fair share of the necessary improvements. However, in the event that the regional sewer is not constructed, and the Brighton Landing Specific Plan area remains connected to the Elmira Road trunk sewer, a *significant* cumulative impact would result.

**Impact UTIL-CUM-1:** Future growth in Vacaville of the Specific Plan area in conjunction with growth anticipated under the 1990 General Plan would require an increase in the capacity of the regional trunk sewer above what is needed for the proposed project, as well as expansion of the existing wastewater treatment facility.

Mitigation Measure UTIL-CUM-1a: See Mitigation Measure UTIL-3a.

Mitigation Measure UTIL-CUM-1b: See Mitigation Measure UTIL-3b.

Mitigation Measure UTIL-CUM-1c: See Mitigation Measure UTIL-3c.

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<sup>16</sup> West Yost Associates, 2012. *Flows in the Elmira Road Trunk Sewer Technical Memorandum.*

Significance After Mitigation: If regional sewer design conforms to these requirements and the future sewer and EWWTP upgrades are reviewed under CEQA, the impact would be *less than significant*.

b. With Proposed General Plan Update<sup>17</sup>

Future growth projections, as envisioned by the Preferred Land Use Alternative, would result in an average dry weather flow of 24.7 mgd, which exceeds existing EWWTP and wastewater collection system capacity.<sup>18</sup> Although the projected flow at the EWWTP is about 10 percent higher with the new land uses adopted under the Proposed General Plan Update, the environmental consequences would be the same as those described above.

*C. Stormwater*

**1. Regulatory Framework**

The purpose of this section is to discuss the key regulatory requirements applicable to stormwater in the Specific Plan area.

a. Federal Agencies and Regulations

This section summarizes federal agencies and regulations pertaining to stormwater.

*i. Stormwater Discharge Permitting Regulations*

The Clean Water Act (CWA) prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The SWRCB is responsible for issuing NPDES permits to cities and counties through the RWQCB. Phase 2

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<sup>17</sup> Land uses are shown on the Preferred Land Use Alternative accepted by the City Council on December 13, 2011. Although the update is in progress, and the General Plan in draft form, policies are subject to change and have not therefore been taken into account in this analysis.

<sup>18</sup> West Yost Associates, 2012. *Brighton Landing EIR Wastewater Collection and Treatment Technical Memorandum*, page 5.

implementation of NPDES permitting, effective March 10, 2003, extended urban runoff discharge permitting to include cities of 50,000 to 100,000 people, and to construction sites that disturb between 1 and 5 acres. Under Phase 2, federal regulations allow two permitting options for stormwater discharges: individual permits and general permits. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for Small Municipal Separate Storm Sewer System (MS4) operators to efficiently regulate stormwater discharges under a single permit. Permittees must develop and implement a Stormwater Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. The City of Vacaville is considered a permittee under the statewide general permit.

*ii. Floodplain Regulations*

The National Flood Insurance Act of 1968 made flood insurance available to property owners within communities that participate in the National Flood Insurance Program (NFIP). In order to be included in the NFIP, communities must adopt minimum floodplain management regulations established by the Federal Emergency Management Agency (FEMA), which are set forth in 44 Code of Federal Regulations Part 60.

b. State Laws and Regulations

The City of Vacaville is located in Solano County, which lies within the boundary of the Central Valley. The State of California passed several bills to address flood protection and liability and allocate bond funds in the Central Valley. Senate Bill (SB) 5 and Assembly Bill (AB) 70 are relevant to the Specific Plan area. In addition, AB 162 requires consideration of flood risk in local land use planning throughout California. A summary of each bill relevant to the city is provided below.

c. Local Plans and Regulations

This section summarizes the City plans and regulations pertaining to stormwater in the Specific Plan area.

*i. Existing General Plan*

Stormwater is addressed in the Safety Element of the General Plan. The policies related to stormwater are listed in Table 4.15-5.

*ii. Floodplain Management Ordinance*

The City has adopted a Floodplain Management Ordinance (Section 14.18 of the Municipal Code) that describes methods for reducing flood losses. The Floodplain Management Ordinance contains a number of provisions for flood hazard reduction, including:

- “ Residential construction, either new or a substantial improvement, must have the lowest floor, including the basement, elevated to, or above, the base flood elevation, the computed elevation to which floodwater is anticipated to rise during a 100-year storm event. A 100-year storm is defined as storm that has a 1 percent chance of occurring in any given year. Upon the completion of the structure, the elevation of the lowest floor must be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated.
- “ Nonresidential construction, either new or a substantial improvement, must either be elevated to conform to the requirements described above for residential construction, or be flood-proofed below the base flood elevation. If the structure is flood-proofed, it must be watertight with the wall substantially impermeable to the passage of water, have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy, and be certified by a registered engineer or architect.
- “ All preliminary subdivision proposals must identify the special flood hazard area and the elevation of the base flood.
- “ All subdivision plans must provide the elevation of the proposed structure(s) and pad(s). If the site is filled above the base flood elevation, the lowest floor and pad elevations must be certified by a registered professional engineer or surveyor.
- “ All subdivision proposals must be consistent with the need to minimize flood damage.

TABLE 4.15-5 CITY OF VACAVILLE 1990 GENERAL PLAN POLICIES  
 RELEVANT TO STORMWATER

Policy Number	Policy
Policy 2.2-I 8	Maintain and refine the Planned Growth Ordinance and allow urban development only in accord with this plan for full urban services (police, fire, parks, water, sewer, streets, and storm drainage). Areas lacking full services are deemed outside the urban-service area, are unsuited for urban development regardless of Plan designation until services are assured and shall not be identified in a phasing plan.
Policy 2.2-I 10	Require new development to pay capital improvement fees for public facilities as necessary to maintain adequate resources and service levels. Adequate public facilities should be provided for new urban development, and new developments should bear their "fair share" cost of providing such facilities. In order to make reasonable provision for these new public facilities, the City of Vacaville has established public facilities fees which are applied to all new development. The fees are intended to provide for facilities that are required in addition to the normal onsite and offsite development improvements. Such fees are established to implement the policy of the General Plan and may include charges for connection to the water system, connection to the sanitary sewer system, parkland and improvements, school facilities, drainage improvements, and other capital improvements such as streets, bridges, traffic signals, and public buildings. The City Council may enact other public facilities fees if it finds that such fees are required to implement the policy of the General Plan.
Policy 2.3-I 21	<p>In conjunction with the consideration of a Specific Plan for the property located east of Leisure Town Road and south of the Locke Paddon subdivision (within the existing Urban Service Area), a determination shall be made regarding the potential expansion of the Urban Service Area to the east in order to establish a permanent agricultural buffer on the eastern edge of the City. The City will allow no development east of Leisure Town Road until this determination is made. This will also ensure that any development and extension of urban services and infrastructure east of Leisure Town Road is not planned in a piecemeal manner.</p> <p><i>An amendment to the General Plan may be considered for the area east of the Urban Service Area (south of the Locke Paddon subdivision, north of the Southern Pacific Railroad tracks and west of the PG&amp;E transmission line right of way) only if the City and SID mutually agree in writing in the form of an amendment to the May 1995 Master Water Agreement. Any consideration shall include the potential expansion of</i></p>

TABLE 4.15-5 CITY OF VACAVILLE 1990 GENERAL PLAN POLICIES  
 RELEVANT TO STORMWATER (CONTINUED)

Policy Number	Policy
	<p><i>the width of the agricultural buffer (as defined by the Agricultural Buffer land use designation in Land Use Element Section 2.4, Land Use Classifications) located between the residential and agricultural uses, as per the Agreement.</i></p> <p>Require impact fees from developers, as appropriate and necessary, for provision of community facilities and services. Maintain the existing policy that development "must pay its own way."  <i>Examples of contributions may include payments or land dedication and maintenance for:</i></p> <ul style="list-style-type: none"> <li>" Recreation facilities and programs;</li> <li>" Educational facilities and programs;</li> <li>" Cultural facilities and programs;</li> <li>" Traffic and transportation facilities and services;</li> <li>" Other government facilities and services;</li> <li>" Flood control facilities;</li> <li>" Public safety facilities (police, fire, emergency medical services); and</li> <li>" Open space acquisition in City separators.</li> </ul>
Policy 3.5-G 1	Maintain open areas needed to retain stormwater and prevent flooding of urban or agricultural land.
Policy 3.5-I 5	<p>Where possible, minimize cut-and-fill activities and disturbance of natural habitats and vegetation. At the minimum, revegetation of cut-and-fill on slopes should be required.</p> <p><i>This policy requires revegetation as a condition of approval of new development. See also policy 2.1-15. Slopes subject to grading in this area can create landslide hazards, adversely affect stormwater run-off, and detract from the natural environmental quality of the area.</i></p>
Policy 8.1-I 5	Protect existing stream channels by requiring buffering or landscaped setbacks and storm runoff interception.
Policy 9.2-G 1	Locate development outside mapped flood-prone areas unless mitigation of flood risk is assured.
Policy 9.2-G 2	Continue to develop a comprehensive system of drainage improvements to minimize flood hazard.
Policy 9.2-G 3	The additional runoff caused by development shall be mitigated.
Policy 9.2-I 1	Develop a financing plan and construct upstream detention flood basins.

TABLE 4.15-5 CITY OF VACAVILLE 1990 GENERAL PLAN POLICIES  
 RELEVANT TO STORMWATER (CONTINUED)

Policy Number	Policy
Policy 9.2-I 2	Evaluate storm-drainage needs for each project in the context of demand and capacity when the drainage area is fully developed. Continue to require Development Impact Fees for new development to construct planned regional drainage detention basins to accommodate increased flow. In the Alamo Creek watershed upstream of Peabody Road, which includes Alamo, Laguna, and Encinosa creeks, require post-development 10-year and 100-year peak flows to be reduced to 90 percent of predevelopment levels. For the remainder of the study area, for development involving new connections to the creeks, peak flows shall not exceed predevelopment levels for a 10- and 100-year peak flow. <i>This is required to reduce downstream flood hazard.</i>
Policy 9.2-I 3	Continue to cooperate with the Solano County Water Agency on developing a comprehensive stormwater management program to accommodate additional development outside the existing urban area.
Policy 9.2-I 4	Assure through a Master Drainage Plan and development ordinances that proposed new development adequately provides for development of on-site and downstream off-site mitigation of potential flood hazards and drainage problems and require development fees to fund the required improvements.
Policy 9.2-I 5	Encourage the formation of flood control assessment districts or consider fees for those areas in which flooding and drainage problems exist, to mitigate flooding through physical improvements.

Source: City of Vacaville, 1990. *Vacaville General Plan*.

- “ All subdivision proposals must have public utilities and facilities located and constructed to minimize flood damage.
- “ All subdivisions must provide adequate drainage to reduce exposure to flood hazards.
- “ Encroachments within designated floodways are prohibited, including fill, new construction, substantial improvement, and other new development, unless certification by a registered professional engineer is provided demonstrating that encroachments do not result in any increase in the base flood elevation during the occurrence of the base flood discharge.

*iii. Storm Drainage Master Plan*

The City completed a draft Storm Drainage Master Plan (SDMP) in 1996, and updated it in 2001. The SDMP evaluates the existing storm drain systems to identify existing deficiencies and required improvements. The focus of the SDMP is to identify improvements necessary to provide 100-year level flood protection to areas in Vacaville proposed for new development while maintaining, as a minimum, the existing level of protection in developed areas within the city that periodically flood. To this end, the SDMP outlined a staged capital improvements program to resolve existing storm drain deficiencies, and developed appropriate development impact fees for storm drainage facilities to ensure future development does not impact storm drainage for existing development within the city. The SDMP also provided a detailed inventory of existing storm drainage facilities.

*iv. Vacaville Standard Specifications and Standard Drawings*

City of Vacaville *Standard Specifications and Standard Drawings* require that detention basins constructed with the Specific Plan be designed to the following criteria:<sup>19</sup>

- “ New development shall mitigate the increase of the 10- and 100-year peak runoff from a project site over the predevelopment conditions (due to higher peak flows from the site, filling or building in overflow area, or altered flow paths).
- “ Detention facilities must be designed for the 100-year, 24-hour storm event.

## **2. Existing Conditions**

Stormwater in the Specific Plan area, which is currently an agricultural field, drains west to east into a small, on-site agricultural ditch. From there, stormwater flows to the eastern edge of the Specific Plan area and west of the Union Pacific Railroad (UPRR) into the Solano Irrigation District Frost Canal (Frost Canal). During major storm events, the Frost Canal overflows and

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<sup>19</sup> City of Vacaville, 2006. *City of Vacaville Standard Specifications and Standard Drawings*.

floods adjacent land, running eastward over an unpaved farm road into a ditch alongside the UPRR. From the UPRR ditch, runoff travels north toward a culvert near the south side of Elmira Road, where it is conveyed past the railroad and northward into a ditch, ultimately draining into Old Alamo Creek. Typically, the Frost Canal carries stormwater runoff directly to Old Alamo Creek, near Elmira Road.

### **3. Standards of Significance**

The Specific Plan would have a significant impact to stormwater if it would:

- a. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

### **4. Impact Discussion**

This section is based on the revised Brighton Landing Hydrology and Water Quality Evaluation Technical Memorandum prepared by West Yost Associates in February 2012 and on the revised the Storm Drain Modeling Study by Phillippi Engineering, Inc. (PEI) prepared for the Brighton Landing project in March 2011, revised on the basis of the peer review by West Yost in March 2012. As more fully described in Section 4.9, Hydrology, stormwater runoff rates within the boundaries of the Specific Plan area would significantly increase with development of the Specific Plan. Infrastructure upgrades, such as an on-site stormwater system with an underground pipe network, are included in the Specific Plan to ensure that the Specific Plan area, as it develops from agriculture into a residential neighborhood, would have an adequate storm drainage system. Additionally, the Specific Plan proposes constructing a detention basin that will detain storm flows and pump them out. Thus, the Specific Plan will result in the construction of new storm water drainage facilities (e.g. a detention basin). Therefore, there would be a *significant* impact.

**Impact UTIL-4:** The required construction of new infrastructure and new detention basin could cause significant environmental effects.

Mitigation Measure UTIL-4: The applicant shall ensure all construction follows the Floodplain Management Ordinance guidelines for construction to ensure a reduction in flood hazards. Additionally, the applicant shall construct the detention basin to adhere to Vacaville's *Standard Specifications and Standard Drawings*. Further, development under the Specific Plan would be required to comply with the NPDES General Permit for Discharges of Storm Water Discharge Associated with Construction Activities issued by the State Water Resources Control Board. This permit requires implementation of measures to prevent impacts to water quality during construction. Also, development under the Specific Plan would need to comply with the City's NPDES stormwater permit and their Stormwater Management Plan which prevent impacts to water quality after construction of a project. Maintenance of the detention basin and pump facility shall be incorporated into the Specific Plan Lighting and Landscaping District.

Significance After Mitigation: Provided that all construction (e.g. buildings, roads, detention basin, etc.) follows existing City policies and regulations, the impact would be *less than significant*.

## **5. Cumulative Impacts**

The Specific Plan and other potential cumulative projects in the vicinity of the Specific Plan area, including growth resulting from approved projects, development of the 1990 General Plan, or development of the Proposed General Plan Update would result in an increase in impervious surfaces in the watershed, which would increase runoff and require the construction of new stormwater facilities. Therefore, cumulative impacts resulting from the proposed Specific Plan and other future growth are *significant*.

The Specific Plan will be required to comply with the City's NPDES stormwater permits (State-wide MS4 and Construction permits) from the CVRWQCB and the City's Stormwater Management Plan which are designed prevent or minimize impacts to water quality during and after construction of the project. The Specific Plan will also be required to mitigate

for other potential impacts related to stormwater runoff rates and flooding. The implementation of mitigation measures for the Specific Plan will reduce the contribution of the Specific Plan toward potential cumulative impacts to a *less-than-significant* level.

#### ***D. Solid Waste***

##### **1. Regulatory Framework**

State and local regulations, plans, and policies provide the regulatory framework for solid waste and recycling services in the Specific Plan area.

##### **a. State Regulations**

This section describes the State regulations that pertain to solid waste and recycling services in the Specific Plan area.

##### ***i. California Integrated Waste Management Act***

California's Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939 and amended by SB 1016) set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000 through source reduction, recycling, and composting. To help achieve this, the Act requires that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity. As part of CIWMB's Zero Waste Campaign, regulations affect what common household items can be placed in the trash. As of February 2006, household materials including fluorescent lamps and tubes, batteries, electronic devices, and thermostats that contain mercury are no longer permitted in the trash.<sup>20</sup>

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two

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<sup>20</sup> California Integrated Waste Management Board's Zero Waste Campaign's website, <http://www.zerowaste.ca.gov>, accessed on June 17, 2010.

factors: a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. CIWMB sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CIWMB with an update of its progress in implementing diversion programs and its current per capita disposal rate.<sup>21</sup> In 2010, the statewide per capita disposal rate was 4.5 pounds per resident per day.<sup>22</sup>

*ii. California Solid Waste Reuse and Recycling Access Act of 1991*

The California Solid Waste Reuse and Recycling Access Act requires areas to be set aside for collecting and loading recyclable materials in development projects. The Act required CIWMB to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects. Additionally, Vacaville's Land Use and Development Code (Division 14.09 of the Municipal Code) complies with the Act and requires areas for the collection of recyclable material and solid waste.

**b. Local Policies and Regulations**

This section describes the local policies and regulations that pertain to solid waste and recycling services in the Specific Plan area.

*i. Vacaville 1990 General Plan*

Solid waste is addressed in the Public Facilities, Institutions, and Utilities Element of the 1990 General Plan (existing General Plan). The policies related to solid waste are listed in Table 4.15-6. Although 1990 General Plan Policy 2.3-I 21 prohibits development east of Leisure Town Road, this would be

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<sup>21</sup> California Integrated Waste Management Board, <http://www.calrecycle.ca.gov/LGCentral/Basics/PerCapitaDsp.htm#Jurisdiction>, accessed on July 30, 2010.

<sup>22</sup> California Integrated Waste Management Board, <http://www.calrecycle.ca.gov/LGCentral/GoalMeasure/DisposalRate/MostRecent/default.htm>, accessed on January 17, 2012.

TABLE 4.15-6 **1990 GENERAL PLAN POLICIES RELATED TO SOLID WASTE**

<b>Policy Number</b>	<b>Policy</b>
Policy 5.1-G 6	Improve upon and expand waste disposal programs and methods in order to divert a minimum 50 percent of the waste stream from the landfill by the year 2000.
Policy 5.1-G 7	Strive for a minimum 90 percent of City residents to participate in waste diversion programs.

Source: City of Vacaville, *Vacaville General Plan*, 1990.

addressed as part of the Specific Plan approval process by a General Plan Amendment as mentioned in Chapter 3, Project Description.

*ii. Vacaville Municipal Code*

Division 8.08 (Solid Waste, Yard Waste, and Household Hazardous Waste) of the Vacaville Municipal Code implements the approved Source Reduction and Recycling Element required by AB 939 and regulates the collection and disposal of solid waste, yard waste, and household hazardous materials. All Vacaville residents must pay to have their solid and yard waste collected. Solid and yard waste may not be burned or buried within the city limit. Household hazardous waste must be disposed at licensed and permitted collection facilities. In addition, the Land Use and Development Code (Division 14.09 of the Municipal Code) requires that residential, commercial, business, industrial, and public districts provide areas for the collection of recyclable material and solid waste.

**2. Existing Conditions**

This section describes the existing conditions pertaining to solid waste and recycling in Vacaville and the Specific Plan area. It should be noted that the Urban Service Area for Vacaville does not cover the entirety of the Specific Plan area. In order for services, such as solid waste and recyclable collection, to be extended over the whole Specific Plan area, there will need to be a General Plan amendment.

a. Solid Waste and Recycling

The City of Vacaville contracts with Recology Vacaville Solano to provide weekly solid and yard waste and recyclable material collection to Vacaville residents. In 2010, Vacaville's per capita disposal rate was 4.9 pounds per resident per day, well below the city's CIWB target disposal rate of 6.5, but slightly above the statewide average of 4.5.<sup>23</sup>

Recyclable material can also be taken to several drop-off recycling centers throughout town, including the Recology Vacaville Recycling Center at 855½ Davis Street. Recyclable material collected by Recology Vacaville Solano is sent to the Recology Vallejo facility located at 2021 Broadway in Vallejo.

Although Vacaville does not have an official Construction and Demolition waste ordinance or program, Recology Vacaville Solano does offer collection of clean dirt and clean concrete at the same rate as trash and clean lumber at a reduced rate.<sup>24</sup>

b. Landfills

Solid waste collected from Vacaville is deposited at the Hay Road Landfill, located at 6426 Hay Road in unincorporated Solano County. Recology Hay Road is the landfill operator. The landfill has a permitted daily capacity of 2,400 tons and receives 226,777 cubic yards and 136,066 tons of solid waste per year, of which 81,268 tons (nearly 60 percent) is from Vacaville.<sup>25</sup> The total capacity of the landfill is 37 million cubic yards. As of 2010, the landfill had a remaining capacity of approximately 30.4 million cubic yards—that is, it is approximately 18 percent full. Projected landfill capacity is based on the

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<sup>23</sup> California Department of Resources, Recycling and Recovery, <http://www.calrecycle.ca.gov/lgcentral/goalmeasure/DisposalRate/MostRecent/default.htm>, accessed on January 31, 2012.

<sup>24</sup> Pardini, Scott, General Manager, Recology Vacaville Solano. Personal email communication with Carey Stone, DC&E, April 22, 2010.

<sup>25</sup> Solano County, July 2011, *Countywide Integrated Waste Management Plan Countywide Siting Element First Amendment*, pages 32, 33, and 44.

maximum permitted tons per day, regardless of the origin of the waste. It is projected that the landfill will reach capacity in 2069.

### **3. Standards of Significance**

The Specific Plan would have a significant impact to solid waste if it would:

- a. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- b. Comply with federal, State, and local statutes and regulations related to solid waste.

### **4. Impact Discussion**

- a. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

Solid waste from the Specific Plan area would be transferred to the Hay Road Landfill in Vacaville for ultimate disposal. As described above, the Hay Road Landfill receives approximately 136,066 tons of waste per year. Remaining capacity is over 80 percent at 30.8 million cubic yards.

Buildout of the Specific Plan would bring as many as 2,107 new residents to the city who would be expected to generate a cumulative total of 10,324 pounds (5 tons) waste disposal per day, or 3,768,260 pounds (1,884 tons) per year.<sup>26</sup> Specific Plan buildout would also include two new schools, resulting

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<sup>26</sup> This number was determined by multiplying the proposed number of housing units at buildout (769) by an assumed 2.74 persons per household to estimate a projected population. The projected population (2,107.1) was then multiplied by Vacaville's average solid waste rate (4.9 resident/pounds/day). The result, 10,234.6 pounds, was then divided by 2,000 to convert the number to 5.16 tons. The Specific Plan also proposes construction of two schools. The California Department of Resources, Recycling and Recovery website contains an estimate that a school generates 0.8 employees/tons/day, which, when doubled, would equal 1.6 tons/day for two schools. Finally, the school waste number of 1.6 tons was added to the residential waste number of 5.16 tons for a total of 6.8 tons for the entire Specific Plan area. Please note that this is a conservative estimate, because school is not in session every day.

in an additional 584 tons of waste disposal annually or 1.6 tons per day.<sup>27</sup> Combined residential and school-related solid waste disposal from the Specific Plan area would therefore be approximately 2,468 tons per year, or 6.76 tons per day, which is 0.28 percent of the 2,400 tons<sup>28</sup> permitted daily capacity of the Hay Road Landfill. Therefore, the Hay Road Landfill has sufficient capacity to accommodate the Specific Plan's solid waste disposal needs. The impact would therefore be *less than significant*.

- b. Comply with federal, State, and local statutes and regulations related to solid waste.

As described earlier, a portion of the Specific Plan area would be serviced by Recology Vacaville Solano and solid waste would ultimately be transferred to the Hay Road Landfill. In order to comply with 1990 General Plan policy 2.3-I 21, during the approval process, the Specific Plan would need to acquire a General Plan amendment extending the Urban Service Area boundary to include the entire Specific Plan area.

The City of Vacaville's Municipal Code implements the requirements of AB 939, the California Integrated Waste Management Act of 1989 and the California Solid Waste Reuse and Recycling Access Act of 1991 and has enabled the City to meet or exceed the State-mandated waste diversion goals every year for the past decade.<sup>29</sup> These programs are sufficient to ensure that future development in the Specific Plan area would not compromise the ability to meet or perform better than the State-mandated target. Therefore, the Specif-

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<sup>27</sup> California Department of Resources, Recycling and Recovery, <http://www.calrecycle.ca.gov/wastechar/DispRate.htm>, accessed on January 17, 2012.

<sup>28</sup> California Department of Resources, Recycling and Recovery, 2012, <http://www.calrecycle.ca.gov/SWFacilities/Directory/48-AA-0002/Detail/>, accessed on June 25, 2012.

<sup>29</sup> California Department of Resources, Recycling and Recovery, <http://www.calrecycle.ca.gov/profiles/Juris/JurProfile2.asp?RG=Incorporated%20City&JURID=553&JUR=Vacaville>, accessed on January 17, 2012; California Department of Resources, Recycling and Recovery, <http://www.calrecycle.ca.gov/lgcentral/tools/mars/DrmcMain.asp?VW=Disposal>, accessed on January 17, 2012.

ic Plan would comply with applicable statutes and regulations and the impact would be *less than significant*.

## 5. Cumulative Impacts

### a. With Approved Projects

This section analyzes potential impacts to solid waste services that could occur from a combination of the Specific Plan with other reasonably foreseeable projects or plans in the near vicinity. As mentioned earlier, the Specific Plan would generate approximately 6.76 tons of waste per day, or 2,467 tons per year, at buildout. Although this is more waste than would be generated under baseline conditions, the Hay Road Landfill has a permitted capacity of 2,400 tons per day which would amount to 876,000 tons per year. Yet as of 2009, the landfill only received approximately 136,066 tons per year, nearly 60% of which was from Vacaville.<sup>30</sup> The facility has the unutilized permitted capacity to accommodate the projected waste generated by the Specific Plan as well as additional waste generated by other foreseeable projects; therefore, there would be a *less-than-significant* cumulative impact.

### b. Under Existing 1990 General Plan

Even with full buildout of the 1990 General Plan, the Hay Road Landfill would have sufficient capacity to continue accepting the projected amount of solid waste until its slated closure in 2069. Therefore, there would be a *less-than-significant* cumulative impact.

### c. With Proposed General Plan Update<sup>31</sup>

Vacaville's Preferred Land Use Alternative indicates different land uses on what is now agricultural land, thus likely allowing for more population growth and accompanying increases in waste disposal. This would further

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<sup>30</sup> Pardini, Scott, General Manager, Recology Vacaville Solano. Personal email communication with Carey Stone, DC&E, April 22, 2010.

<sup>31</sup> Land uses are shown on the Preferred Land Use Alternative accepted by the City Council on December 13, 2011. Although the update is in progress, and the General Plan in draft form, policies are subject to change and have not therefore been taken into account in this analysis.

increase cumulative waste disposal, potentially triggering the need for expanded facilities.

CITY OF VACAVILLE  
BRIGHTON LANDING SPECIFIC PLAN DRAFT EIR  
UTILITIES AND SERVICE SYSTEMS

## 5 ALTERNATIVES

The following discussion is intended to inform the public and decision makers of feasible alternatives to the proposed Plan. Section 15126.6 of the CEQA Guidelines states that:

*An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would 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. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*

This chapter explains how the alternatives analyzed were developed, explains each of the alternatives, and compares the potential alternatives to the proposed Brighton Landing Specific Plan.

### ***A. Relationship to General Plan Update Alternatives***

The Brighton Landing Specific Plan area is included within a larger area called the East of Leisure Town Road Growth Area. Changes in General Plan land use designations are currently under consideration as part of the City of Vacaville's General Plan Update, which is being prepared but has not yet been published as of the time of publication of this Draft EIR. In order to determine appropriate land use designations in the East of Leisure Town Growth Area, the General Plan Update included a process to create and evaluate alternatives for the area, including the Brighton Landing Specific Plan area. The alternatives analysis in this Draft EIR is based in part on the alternatives developed and analyzed in the General Plan Update process. The General Plan alternative, and the results of the alternatives evaluation, are described in detail in an Alternatives Evaluation Workbook, available on the General Plan Update website at [www.vacavillegeneralplanupdate.org](http://www.vacavillegeneralplanupdate.org).

***B. Alternatives Considered But Rejected***

The following alternatives were considered for analysis but rejected because they were infeasible and/or would not successfully reduce or avoid any of the impacts of the proposed project.

- “ **Off-Site Alternative.** Under this alternative, the same development program included in the Brighton Landing Specific Plan would be proposed on a different site in Vacaville. There are other undeveloped sites in the East of Leisure Town Road area that could potentially accommodate the project, but these sites would be substantially similar to the proposed project site and therefore an analysis of an alternative on a different site east of Leisure Town Road would not provide a useful evaluation of the comparative merits of the project.

Outside of the East of Leisure Town Road Growth Area, the only site large enough to accommodate this amount of development for which a different project is not already planned or approved is the vacant area within the City limits west of Meridian Road and north of Interstate 80. This site is within a different General Plan Update Growth Area, called the Northeast Growth Area. However, development in this area would have many similar impacts to agriculture, biological resources, cultural resources, hydrology, land use, and public services resulting from development of undeveloped land that would occur on the Brighton Landing site. Moreover, it would likely have more severe traffic, air quality, GHG, noise, and utilities impacts because it is farther from existing urban development and infrastructure and being closer to the freeway.

- “ **Scattered Development Alternative.** Under this alternative, the same development program included in the Brighton Landing Specific Plan would be spread out among smaller vacant infill parcels within the City. This approach would avoid impacts to agricultural resources or extension of infrastructure into undeveloped areas. However, it would not allow the coherent development of a master planned community, and would therefore not enable the project to meet objectives such as providing public benefits such as schools, a neighborhood park, dedicated open space

and recreational areas, and pedestrian and bike connections, nor would it provide a site and development standards for a regional private high school. In addition, the higher costs and difficulty of financing scattered development would likely make this alternative infeasible.

- “ **General Plan Update Alternative A.** Alternative A for the East of Leisure Town Road Growth Area, created and analyzed in the General Plan Update Alternatives Evaluation Workbook, considered a slightly different site plan for the Brighton Landing Specific Plan area from that proposed by the project. General Plan Update Alternative A included a similar private high school site at the corner of Elmira Road and Leisure Town Road, a Neighborhood Park along the southern edge of the project area, and similar Low Medium Density Residential development throughout most of the project area, with Low Density Residential development along the eastern edge of the site. The most significant differences between Alternative A and the proposed Brighton Landing Specific Plan are that Alternative A would allow slightly less residential development; Alternative A does not include a second public school site; and Alternative A includes an agricultural buffer entirely within the Urban Growth Boundary. The agricultural buffer also extends along the southern side of the project area. Although these differences are important, this alternative would be similar enough to the proposed project that it would not be expected to eliminate or substantially lessen the project’s impacts. Therefore, it was rejected for analysis.

### *C. Range of Alternatives Analyzed in this Draft EIR*

A No Project Alternative is required as one of the “reasonable range of alternatives” that could feasibly attain most or all of the project’s objectives. Each alternative is analyzed against the significance thresholds considered in Chapter 4. The alternatives to the Plan are:

1. **No Project Alternative.** Under this alternative, the Specific Plan would not be adopted, and future development in the Plan Area would be subject to existing policies, regulations, and land use designations as

per the existing General Plan. There would be no schools, and 145 units, the fewest number of units of the three alternatives. The Jepson Parkway Project would still proceed as planned.

2. **Reduced Footprint Alternative.** Under this scenario, the 500-foot agricultural buffer and detention basin would be inside the Specific Plan area. A private high school and low density housing would be built on the rest of the land. There would be 371 units, fewer than the 769 units proposed in the Specific Plan.
3. **High Density Mixed Use Alternative.** This alternative would be similar to Alternative B from the General Plan Update process in that there would be some High Density Residential, and a component of Mixed Use (Commercial/Office).<sup>1</sup> The Mixed Use Alternative would differ from the General Plan Alternative B in that there would be two schools. The developed footprint would be slightly smaller than the proposed Specific Plan, in that the agricultural buffer would be 700 feet wide and evenly distributed around the Urban Growth Boundary. In this alternative, there would be a total of 1,373 residential units: 46 units Low-Density Residential, 814 units Medium-Density Residential, 302 units High-Density Residential, and 211 units in Mixed-Use areas.<sup>2</sup>

A comparison of potential impacts of each alternative to those of the Specific Plan is provided in Table 5-1. Figures 5-1 to 5-3 show the land uses for the No Project Alternative, Reduced Footprint Alternative, and Mixed Use Alternative, respectively.

Under each alternative there is a discussion of how each measures up to the Specific Plan objectives presented in Chapter 3, Project Description. Table 5-2 summarizes how each alternative meets, or fails to meet, each project objective.

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<sup>1</sup> Land Use alternatives were presented to the City Council on December 13, 2011 at which meeting the Preferred Land Use Alternative was chosen.

<sup>2</sup> Assuming a 50/50 split between Commercial/Office and Residential space in the Mixed Use.

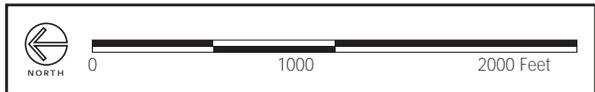
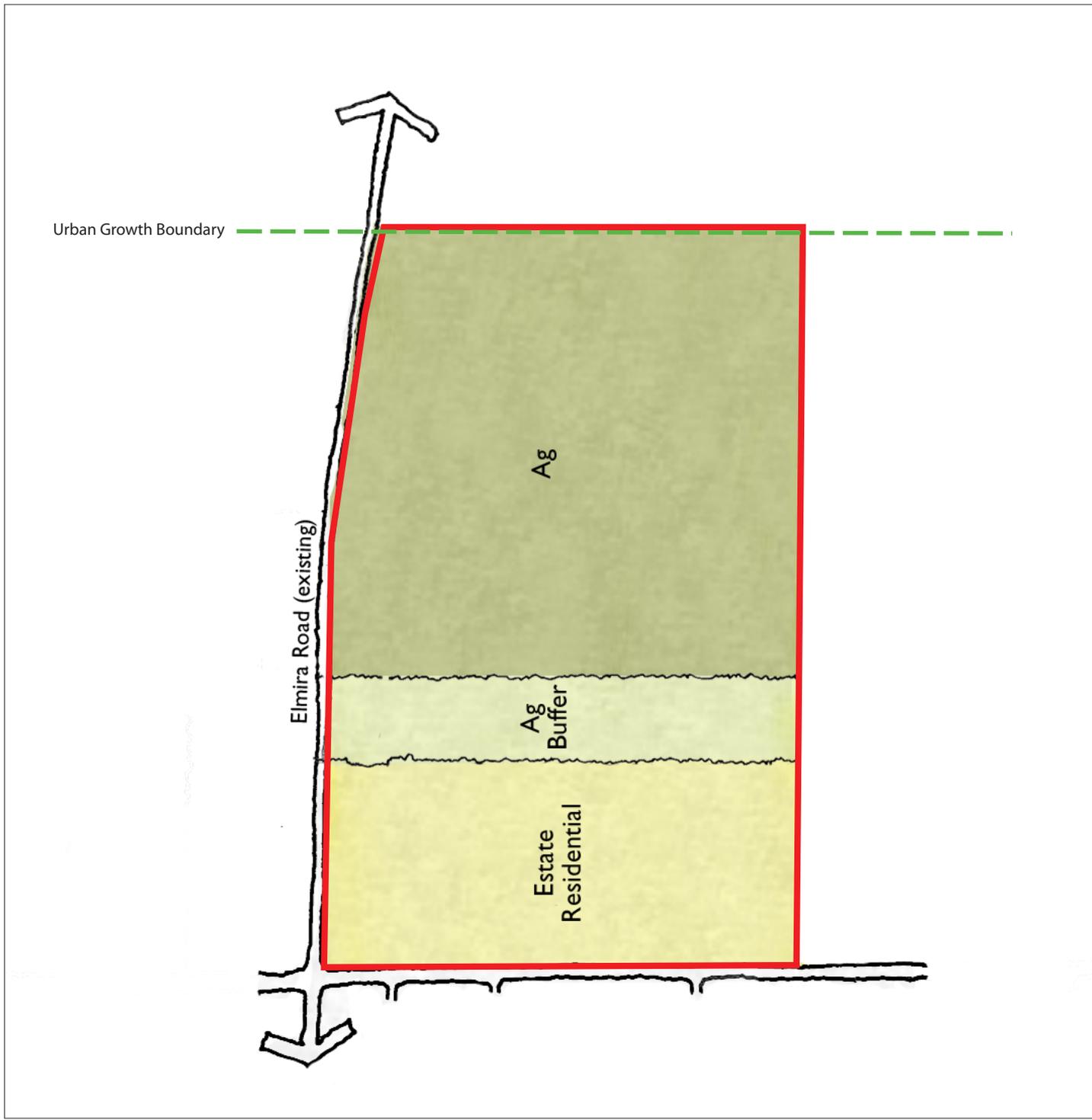


FIGURE 5-1  
NO PROJECT ALTERNATIVE

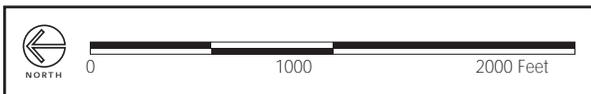


FIGURE 5-2  
REDUCED FOOTPRINT ALTERNATIVE



FIGURE 5-3  
MIXED-USE ALTERNATIVE

TABLE 5-1 COMPARISON OF IMPACTS FROM PROJECT ALTERNATIVES

<b>Topic</b>	<b>No Project Alternative</b>	<b>Reduced Footprint Alternative</b>	<b>Mixed Use Alternative</b>
Aesthetics	++	=	=
Agriculture and Forestry Resources	++	++	+
Air Quality	++	+	--
Biological Resources	++	=	=
Cultural Resources	+	+	=
Geology, Soils, and Mineral Resources	+	+	-
Greenhouse Gas Emissions	++	+	--
Hazards and Hazardous Materials	=	=	=
Hydrology and Water Quality	++	+	=
Land Use and Planning	++	=	+
Noise	++	+	-
Population and Housing	++	++	--
Public Services and Recreation	++	+	--
Transportation/ Traffic	++	++	--
Utilities and Service Systems	++	++	--
++	Less impact compared to the proposed project		
+	Slightly less impact compared to the proposed project		
=	Similar to the proposed project		
—	Greater impact compared to the proposed project		
-	Slightly greater impact compared to the proposed project		

TABLE 5-2 COMPARISON OF PROJECT ALTERNATIVES TO OBJECTIVES

#	Objective	No Project Alt.	Reduced Footprint Alt.	Mixed-Use Alt.	Specific Plan
1	Create development standards and a land use plan for the Specific Plan area that would satisfy City goals while providing a design theme for future projects in the area.	No	Yes	Yes	Yes
2	Support the City's Proposed General Plan Update policies, including the encouragement of moderate-density housing and a variety of housing designs.	No	No, only low density provided	Yes	Yes
3	Support improvements to Leisure Town Road (Jepson Parkway), including planning and funding for development of the Brighton Landing area frontage roadway and adjacent landscaping.	No	Yes	Yes	Yes
4	Provide public benefits such as schools, a neighborhood park, 21 acres of dedicated open space and recreational areas, and pedestrian and bike connections.	No	Somewhat, only one private school	Yes	Yes
5	Provide a quality product by use of high design standards.	No	Yes	Yes	Yes
6	Provide site/development standards for a regional private high school.	No	Yes	Yes	Yes

Source: The Planning Center | DC&E, 2012.

#### *D. No Project Alternative*

##### **1. Principal Characteristics**

Under the No Project Alternative, development would continue as under the existing, 1990 General Plan, with the addition of the Jepson Parkway Project. The 1990 General Plan designations show the Specific Plan area as primarily Agricultural-designated land extending eastwards as far as the Urban Growth Boundary. Running parallel to Leisure Town Road, there is an approximately 1,000-foot wide strip of land designated Estate Residential, which permits residential construction at a density of 0.5 to 3 units per acre.<sup>3</sup> To the east of this is an agricultural buffer, 500 feet wide. The Jepson Parkway Project, that would redevelop approximately 60 feet of the Estate land use for a widened and relocated Leisure Town Road, would still proceed. However, there would be no north-south major collector street, and only a limited number of local, internal streets serving the small developed area. Under the No Project Alternative, there would be no schools on the site, and 145 units, the fewest number of units of the three alternatives.

##### **2. Project Impacts**

###### **a. Aesthetics**

Under the No Project Alternative there would only be limited residential development all within 1,000 feet of Leisure Town Road. The Specific Plan area would largely maintain its rural and agricultural character with broad sweeping vistas over flat agricultural fields to the south and of the hills to the west. With reduced development, there would be less nighttime light. All of these effects would *reduce* the impacts to Aesthetics and the No Project Alternative would result in *less impact* to aesthetics when compared to the Specific Plan.

###### **b. Agriculture and Forestry Resources**

The No Project Alternative would mostly preserve the Specific Plan area for agricultural uses, with the exception of an area approximately 1,000 feet wide

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<sup>3</sup> The number of units is calculated for the area including the agricultural buffer although they could only be built on the Estate Residential land.

next to the road, on which a very low density of development, such as construction of farm dwellings, might be allowed. This would largely prevent the Significant and Unavoidable impacts found from the Specific Plan from conversion of Prime and Unique Farmland to non-farm uses, and from the close juxtaposition of the residential uses with farmland to the north and south. The No Project Alternative would therefore have *less impact* to agriculture and forestry resources compared to the Specific Plan.

c. Air Quality

The No Project Alternative would only allow limited residential development, with 145 residential units and no schools constructed at buildout. With the No Project Alternative's reduced development there would be less construction activity and a lower number of vehicle trips—the two primary sources of air quality impacts under the Specific Plan. Thus, the No Project Alternative would result in *less* of an impact to Air Quality in comparison to the Specific Plan.

d. Biological Resources

With the No Project Alternative, most of the area would be maintained as agricultural land, thus preserving some biological resources, including seasonal wetlands and critical habitat. However, the limited area where development would be allowed overlaps with and would have adverse impacts on Old Alamo Creek and the adjacent riparian habitat. As with the Specific Plan, these impacts could be mitigated to less than significant. However, the No Project Alternative in comparison to the Specific Plan would result in *less* impact to Biological Resources.

e. Cultural Resources

Significant impacts found from the Specific Plan to Cultural Resources are primarily connected to construction-related ground disturbances. Impacts also include possibly changing the designation of the northwest corner of the Specific Plan area, which could facilitate redevelopment of the existing houses, and the introduction of a large number of residential units onto formerly open agriculture fields. All of these impacts were found to be less-than-

significant after mitigation. Under the No Project Alternative, any construction-related ground disturbances would be limited to a smaller area, the strip of Estate Residential land along Leisure Town Road. Additionally, there would be no redesignation of the existing residential area facilitating redevelopment and no introduction of new more dense residential units. The likelihood of impacts to cultural resources from construction activities and new residential units would be greatly lessened, while the potential impact from demolition would be eliminated. The No Project Alternative therefore results in *slightly less* of an impact to Cultural Resources compared to the Specific Plan.

f. Geology and Soils

No significant impacts were found for the Specific Plan to or from Geology and Soils. All impacts would be less than significant due to adherence to the 2010 California Building Code and existing General Plan policies that require appropriate engineering studies and a soils report. However, the No Project Alternative would bring far fewer new people into a seismically active region than would occur with the proposed Specific Plan. The No Project Alternative therefore results in *slightly less* of an impact to Geology and Soils in comparison to the Specific Plan.

g. Greenhouse Gas Emissions

Under the No Project Alternative, the land would continue to be used for growing crops, with a small area where low density residential development would be allowed. This would greatly reduce the Significant and Unavoidable impacts found from the Specific Plan due to construction, new residences, and the generation of new and additional vehicle trips. Thus, the No Project Alternative would result in *less* impact to Greenhouse Gas Emissions in comparison to the Specific Plan.

h. Hazards and Hazardous Materials

The proposed Specific Plan brings about construction of residential areas and schools. Although the construction would use a small amount of hazardous materials, none of the proposed operational uses would involve significant

quantities of hazardous materials. In this aspect, there is little difference between the No Project Alternative and the proposed Specific Plan. There is a small quantity of remnant pesticide in the soil in the Specific Plan area, such that the area would have to be tested further and any contamination remediated prior to construction. Although any remediation would disturb the soil and could potentially liberate dust-containing pesticides into the air, after remediation there would be an improvement to the environment and reduction in risk to humans from pesticide exposure. However, the amounts of pesticide found in the soil are extremely low and overall there would be little difference between the No Project Alternative and the proposed Specific Plan with respect to hazards and hazardous materials; thus the No Project Alternative would have *equivalent* impacts to the Specific Plan.

i. Hydrology and Water Quality

Under the No Project Alternative, the Specific Plan area would mostly remain agricultural land, with the exception of very low density development allowed along Leisure Town Road. The No Project Alternative's low density and limited development would result in a greatly reduced number of residents, less construction activity, and a reduced impervious area. Therefore, the No Project Alternative would result in *less* impact to Hydrology and Water Quality compared to the Specific Plan.

j. Land Use and Planning

Specific Plan impacts to Land Use and Planning are primarily related to conflicts with existing plans and policies and a requirement to rezone the area. The No Project Alternative would adhere to all existing plans and policies and thus would have *less* impact to Land Use and Planning in comparison to the Specific Plan.

k. Noise

With the No Project Alternative's very minimal development of the area there would be considerably less noise from construction activities, traffic, and residential outdoor active use and no noise associated with schools.

Therefore, the No Project Alternative would have *less* impact to Noise compared to the Specific Plan.

l. Population and Housing

The No Project Alternative would only allow minimal development along a small strip of land, with less than one-quarter the number of units called for under the Specific Plan. A reduced number of units constructed would mean less growth in population and housing in comparison to the Specific Plan. The provision of new housing units is seen as a source of growth inducement, which may encourage more people to move to the area than projections predict. This unprepared-for population growth may, in turn, have adverse effects on the environment. Therefore, the No Project Alternative would result in *less* impact to Population and Housing in comparison to the Specific Plan.

m. Public Services and Recreation

Impacts to Public Services and Recreation found for the Specific Plan were related to the number of new residents and new students the Specific Plan would generate at buildout. The No Project Alternative would build no schools and generate only half the population of the Specific Plan. Thus, the No Project Alternative would result in *less* impact to Public Services and Recreation compared to the Specific Plan.

n. Transportation and Traffic

Increases in development, with related increases in population and vehicle trips (e.g. to and from the on-site school), are associated with Specific Plan impacts to Transportation/Traffic. With the No Project Alternative, only a minimal amount of development would occur. Therefore, the No Project Alternative would result in *less* impact to Transportation/Traffic in comparison to the Specific Plan.

o. Utilities and Service Systems

Under the No Project Alternative, there would only be limited residential development. Specific Plan impacts to Utilities and Service Systems would be

primarily related to increased demand stemming from new development and additional residents. Since the No Project Alternative would have minimal development it would likely result in *less* of an impact to Utilities and Service Systems compared to the Specific Plan.

### **3. Comparison to Project Objectives**

The No Project Alternative would meet none of the Project Objectives.

#### ***E. Reduced Footprint Alternative***

##### **1. Principal Characteristics**

Under this scenario, the 500-foot agricultural buffer and detention basin would be inside the Specific Plan area. A private high school and low density housing would be built on the rest of the land. There would be 371 units, fewer than the 769 units proposed in the Specific Plan.

##### **2. Impact Discussion**

###### **a. Aesthetics**

Although the developed footprint would be slightly less than for the Specific Plan, this alternative would be very similar in visual character. The visual character of the surrounding area and views along Elmira Road would still be significantly altered. Effects from nighttime light would be similar as under the Specific Plan. The Reduced Footprint Alternative would have *similar* impacts to the Specific Plan and would be *equivalent*.

###### **b. Agriculture and Forestry Resources**

The Reduced Footprint Alternative would maintain the detention basin and an additional 150 feet of land as agricultural buffer in the Specific Plan area. This would result in less conversion of farmland to a non-farmland use, and *less* impact to Agriculture and Forestry Resources in comparison to the Specific Plan.

c. Air Quality

Encompassing a smaller swath of land, the Reduced Footprint Alternative would be less developed than the Specific Plan, with a total of 371 residential units and one school compared to the Specific Plan's 769 residential units and two schools. Less development also means reduced construction activities and vehicle trips. This would somewhat *reduce* the impacts to Air Quality and would represent a *minor improvement* over the Specific Plan.

d. Biological Resources

The primary potential impacts to Biological Resources under the Specific Plan are likely to be due to other programmed improvements around Old Alamo Creek under the Jepson Parkway Project, which would occur irrespective of the alternative chosen. Therefore, the Reduced Footprint Alternative would have *equivalent* impacts to Biological Resources compared to the Specific Plan.

e. Cultural Resources

Under the Reduced Footprint Alternative, there would be smaller area of land developed, with about half as many residential units and only one school constructed. This would slightly lessen the amount of construction-related ground disturbance and limit it to a smaller area. Therefore, the Reduced Footprint Alternative would result in *slightly less* of an impact to Cultural Resources compared to the Specific Plan.

f. Geology and Soils

No significant impacts were found for the Specific Plan to or from Geology and Soils. All impacts would be less than significant due to adherence to the 2010 California Building Code and existing General Plan policies that require appropriate engineering studies and a soils report. Development under the Reduced Footprint Alternative would bring a smaller number of people into a seismically active region than would occur under the proposed Specific Plan. The Reduced Footprint Alternative therefore would result in *slightly less* impact to Geology and Soils in comparison to the Specific Plan.

g. Greenhouse Gas Emissions

With less developed area, fewer buildings constructed, and one, instead of two schools, the Reduced Footprint Alternative would somewhat reduce the Significant and Unavoidable impacts found from the Specific Plan due to construction, new residences, and the generation of new and additional vehicle trips. Overall, the Reduced Footprint Alternative would result in *slightly less* impact to Greenhouse Gas Emissions compared to the Specific Plan.

h. Hazards & Hazardous Materials

The Reduced Footprint Alternative would involve development of slightly less land and, if remediation is required, less soil would be affected. As the same uses would take place in the Specific Plan area, there would be little difference between the Reduced Footprint Alternative and the proposed Specific Plan with respect to hazards and hazardous materials; thus the Reduced Footprint Alternative would have *equivalent* impacts to the Specific Plan.

i. Hydrology and Water Quality

With the Reduced Footprint Alternative, a smaller area would be developed with a lower number of residential units and one school. This would somewhat lower the number of residents, the amount of construction activities, and the area of impervious surface — all of which are associated with impacts to Hydrology and Water Quality. Thus, the Reduced Footprint Alternative would result in *slightly less* impact to Hydrology and Water Quality compared to the Specific Plan.

j. Land Use and Planning

Although the Reduced Footprint Alternative would differ from the Specific Plan in size and scale, it would have similar conflicts with existing policies and regulations, as it calls for rezoning land and it does not include a diverse housing mix as called for in the 1990 General Plan. As with the Specific Plan, these impacts could be mitigated to less than significant. Therefore, the Reduced Footprint Alternative would have impacts *equivalent* to the Specific Plan.

k. Noise

Under the Reduced Footprint Alternative, there would be slightly less noise associated with schools, since only one school, albeit the larger of the two proposed schools, would be built. The number of dwelling units constructed with the Reduced Footprint Alternative is about half that of the Specific Plan. Noise impacts arising from this construction, including residential outside active use and related increases in traffic, would be generally similar to the Specific Plan but somewhat lessened. Thus, the Reduced Footprint Alternative would result in *slightly less* impact to Noise in comparison to the Specific Plan.

l. Population and Housing

The Reduced Footprint Alternative would have less than half the number of units of the Specific Plan. This would be associated with lower levels of growth in population and housing in comparison to the Specific Plan. Additional housing units can be a source of growth inducement by encouraging new residents. As mentioned previously, new residents not anticipated in previous growth projections, are associated with additional (i.e. previously unforeseen and thus unprepared for) impacts to the environment. Therefore, the Reduced Footprint Alternative would result in *less* impact to Population and Housing in comparison to the Specific Plan.

m. Public Services and Recreation

Specific Plan impacts to Public Services and Recreation are primarily related to the generation of new residents and students. The Reduced Footprint Alternative would build one less school than the Specific Plan and would house a smaller number of residents. Under the Reduced Footprint Alternative, there would be *slightly less* of an impact to Public Services and Recreation compared to the Specific Plan.

n. Transportation and Traffic

Specific Plan impacts to Transportation and Traffic are associated with increases in development and the accompanying related increases in population and vehicle trips. With the Reduced Footprint Alternative, there would be

one school constructed, rather than two, and less than half as much development overall. Thus, the Reduced Footprint Alternative would result in *less* impact to Transportation and Traffic in comparison to the Specific Plan.

o. Utilities and Service Systems

With the Reduced Footprint Alternative, the number of residential units would be less than half that of the Specific Plan, and only one school would be constructed. This would significantly reduce the impacts to Utilities and Service Systems. Therefore, the Reduced Footprint Alternative would result in *less* impact to Utilities and Service Systems compared to the Specific Plan.

**3. Comparison to Project Objectives**

The Reduced Footprint Alternative would meet 5 of the 6 of the Project Objectives, and would meet Objective #5 less well. The housing provided by this alternative would all be low density rather than moderate density and it would therefore fail Objective #2. However, if this alternative was selected as an alternative to the proposed project, it could be modified to incorporate Moderate Density single family housing. There would be fewer public benefits as it would provide only one private school and would not include a second public school site.

*F. Higher Density Mixed Use Alternative*

**1. Principal Characteristics**

This would be similar to Alternative B from the General Plan Update process in that there would be some High Density Residential, and a component of Mixed Use (Commercial/Office).<sup>4</sup> Similar to the proposed Specific Plan, there would be at least 769 units, but in contrast to the Specific Plan there would also be employees from the Commercial/Office Uses. The Mixed Use Alternative would differ from the General Plan Alternative B in that there would be two schools. The developed footprint would be slightly smaller

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<sup>4</sup> Land Use alternatives were presented to the City Council on December 13, 2011 at which meeting the Preferred Land Use Alternative was chosen.

than the proposed Specific Plan, in that the agricultural buffer would be 700 feet wide and evenly distributed across the Urban Growth Boundary.

In this alternative, there would be a total of 1,373 residential units: 46 units Low-Density Residential, 814 units Medium-Density Residential, 302 units High-Density Residential, and 211 units in Mixed-Use areas.<sup>5</sup> Calculations of buildout for this alternative assumed that the Mixed Use Commercial/Office would have a Floor Area Ratio (FAR) up to 1.0, and that 10 percent of the area would be Commercial and 40 percent Office. This would result in 292,000 square feet of office space and 73,000 square feet of new retail space.

## **2. Impact Discussion**

### **a. Aesthetics**

This alternative would be very similar in visual character to the Specific Plan although there would be some Commercial and Office uses. The Commercial and Office areas and High Density Residential could be have greater maximum heights than the residential areas, but are likely to be comparable to the school. The visual character of the surrounding area and views along Elmira Road would still be significantly altered. Effects from nighttime light would be similar as under the Specific Plan. The Mixed Use Alternative would have similar impacts to the Specific Plan and would be *equivalent*.

### **b. Agriculture and Forestry Resources**

The Mixed Use Alternative would preserve a 700-foot agricultural buffer on the eastern side of the Specific Plan area, with 350 feet inside of the Urban Growth Boundary and Specific Plan boundary. In contrast, the Specific Plan has an area of 115 feet of agricultural buffer inside its boundaries. However, this alternative would remove the same amount of Prime and Unique Farmland from production. There would be the same encroachment on agricultural land to the north and south with no intervening buffer. Nevertheless, because of the wider buffer, the Mixed Use Alternative would have *slightly less*

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<sup>5</sup> Assuming a 50/50 split between Commercial/Office and Residential space in the Mixed Use.

of an impact on Agriculture and Forestry Resources compared to the Specific Plan.

c. Air Quality

Under the Mixed Use Alternative, there would be a higher density development with 1,373 residential units, more than double the number in the Specific Plan. Additionally, the Mixed Use alternative would incorporate Commercial and Office space. The increased number of units, together with the addition of Commercial and Office uses, would substantially increase vehicle trips. Thus, the Mixed Use Alternative would have *greater* impact to Air Quality in comparison to the Specific Plan.

d. Biological Resources

As with the Specific Plan, the Mixed Use Alternative would develop next to Old Alamo Creek and the adjacent riparian habitat. This would be a significant, but mitigable impact. The Mixed Use Alternative, when compared to the Specific Plan, would have an *equivalent* impact to Biological Resources.

e. Cultural Resources

While a slightly smaller footprint of land would be developed with the Mixed Use Alternative, there would be construction of many more residential units compared to the Specific Plan. Construction-related ground disturbances would occur in a slightly smaller area, but it is likely to be more intense and therefore similar to what would occur under the Specific Plan. Thus, the Mixed Use Alternative would have *equivalent* impacts to the Specific Plan.

f. Geology and Soils

No significant impacts were found for the Specific Plan to or from Geology and Soils. All impacts would be less than significant due to adherence to the 2010 California Building Code and existing General Plan policies that require appropriate engineering studies and a soils report. Development under the Mixed Use Alternative would bring a greater number of residents and students, and more employees, into a seismically active region than would occur under the proposed Specific Plan. The Mixed Use Alternative therefore

would result in *slightly greater* impact to Geology and Soils compared to the Specific Plan.

g. Greenhouse Gas Emissions

Unlike the Specific Plan, the Mixed Use Alternative would include both high density residential development and some Commercial or Office Space. The higher number of vehicle trips associated with this alternative would result in *greater* impact to Greenhouse Gas Emissions in comparison to the Specific Plan.

h. Hazards and Hazardous Materials

The Mixed Use Alternative would involve development of approximately the same area of land. Commercial and Office development can involve minor chemical use, although if all applicable regulations are followed, there is unlikely to be any greater impact. Overall, there would be little difference between the Mixed Use Alternative and the proposed Specific Plan with respect to hazards and hazardous materials; thus the Mixed Use Alternative would have *equivalent* impacts to the Specific Plan.

i. Hydrology and Water Quality

With the Mixed Use Alternative, a slightly smaller area of land would be developed with a much higher density and intensity. This would increase the number of residents, but would likely result in a similar amount of construction activities and the amount of impervious surfaces to the Specific Plan. However, the potential impacts after mitigation would be similar to those under the Specific Plan. Therefore, the Mixed Use Alternative would have *equivalent* impacts to the Specific Plan.

j. Land Use and Planning

Similar to the Specific Plan, the Mixed Use Alternative would conflict with existing policies and regulations because it calls for rezoning land. However, in contrast to the Specific Plan, the Mixed Use Alternative conforms to existing policies by providing for a diverse mix of housing. Therefore, the Mixed

Use Alternative would slightly *reduce* impacts to Land Use and Planning and would thus be a *minor improvement* over the Specific Plan.

k. Noise

The Mixed Use Alternative would, like the Specific Plan, construct two schools, but it would also add somewhat less than twice as many new residential units. This increase in residential units over that indicated in the Specific Plan would be accompanied by related increases in noise resulting from increased traffic and increased residential outside active use. Thus, the Mixed Use Alternative would result in *slightly greater* impact to Noise compared to the Specific Plan.

l. Population and Housing

Under the Mixed Use Alternative, nearly double the number of dwelling units would be constructed in comparison to the Specific Plan. The related levels of growth in population and housing would also be doubled. This induced growth would contribute to additional environmental impacts on the region. Therefore, the Mixed Use Alternative would result in *greater* impact to Population and Housing in comparison to the Specific Plan.

m. Public Services and Recreation

The resident population would be greatly increased with the Mixed Use Alternative. The number of new residents directly relates to the adequate provision of public services and recreation. The Mixed Use Alternative would result in a *greater* impact to Public Services and Recreation compared to Specific Plan.

n. Transportation and Traffic

Under the Mixed Use Alternative, development is of a higher density and intensity in comparison to the Specific Plan. The Mixed Use Alternative, like the Specific Plan, would construct two schools, but it would also build nearly double the number of dwelling units and include some space for Commercial or Office use. With the Mixed Use Alternative, there would be more vehicle

trips. Therefore, the Mixed Use Alternative would result in *greater* impact to Transportation and Traffic compared to the Specific Plan.

o. Utilities and Service Systems

Similar to the Specific Plan, the Mixed Use Alternative would construct two schools. However, the Mixed Use Alternative includes housing for twice the number of residents and provides commercial or office space. The higher number of residents would create a higher demand on utilities and service systems. Thus, the Mixed Use Alternative would result in *greater* impact to Utilities and Service Systems compared to the Specific Plan.

**3. Comparison to Project Objectives**

The Mixed-Use Alternative would meet all six of the Project Objectives, as would the Specific Plan Project.

***G. Environmentally Superior Alternative***

The No Project Alternative would represent an improvement over the Specific Plan in 14 out of 15 subject areas, it is therefore the most environmentally superior. When the No Project Alternative is the environmentally superior alternative, CEQA requires selection of the next most environmentally superior. The Reduced Footprint Alternative would produce improvements for 10 out of 15 issues, although none would be substantial improvements, and deterioration in only one.

## 6 CEQA-REQUIRED ASSESSMENT CONCLUSIONS

This chapter provides an overview of the impacts of the proposed project based on the technical analyses presented in Chapters 4 and 5. The topics covered in this chapter include growth inducement, unavoidable significant impacts and significant irreversible changes. A more detailed analysis of the effects the Specific Plan would have on the environment and proposed mitigation measures to minimize significant impacts is provided in Chapter 4.

### *A. Growth Inducement*

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the 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. Typical growth inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the proposed project's potential to create such growth inducements. Not all aspects of growth inducement are negative; rather, negative impacts associated with growth inducement occur only where the project growth would cause adverse environmental impacts.

As described in the Project Description, the Specific Plan would involve direct growth inducement through the construction of a new road, new regional sewer pipeline, and a detention basin. A major north-south collector street would be constructed, intended to serve not only the Specific Plan community at buildout but future development in the area. Additionally, the Specific Plan proposes to install a sewer pipeline and to build a detention basin sized to serve not just the Specific Plan area, but future development in the immediate vicinity.

Some indirect growth inducement may occur under the Specific Plan, as it would develop and provide infrastructure to a previously undeveloped area.

***B. Unavoidable Significant 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. This section lists the impacts for the proposed project that were found to be significant and unavoidable. More information on these impacts is found in Chapter 4 of this Draft EIR.

**Impact AES-1:** The visual character of the site would be substantially altered.

**Impact AES-2:** The visual character of the surrounding area would be substantially altered.

**Impact AES-3:** Development under the Specific Plan would have a substantial adverse effect on a scenic vista.

**Impact AES-CUM-1:** Views of hills, looking south and southwest over the Specific Plan area would be obstructed by the Brighton Landing Project together with the Southtown Commons (an approved project).

**Impact AES-CUM-2:** Views of hills, looking south and southwest over the Specific Plan area would be obstructed by the Brighton Landing Project together with other land to the south and southwest that would be developed under the existing 1990 General Plan.

**Impact AGRI-1:** Development under the Specific Plan would convert Prime and Unique Farmlands to non-agricultural use.

**Impact AGRI-2:** The Specific Plan would allow development which would change the existing environment from farmland to non-agricultural use.

**Impact AGRI-CUM-1:** The Specific Plan, together with approved projects, would allow development which would change the existing environment from farmland to non-agricultural uses.

**Impact AGRI-CUM-2:** The Specific Plan, together with development under the 1990 General Plan, would allow development which would change the existing environment from farmland to non-agricultural uses.

**Impact AQ-2:** Proposed project emissions from operation shown in Table 4.3-7 would exceed the threshold for NO<sub>x</sub>, ROG, and PM<sub>10</sub>, therefore, the proposed project would have a significant effect on regional air quality. It should also be noted that individual projects that have a significant effect on regional air quality also have a significant cumulative effect on regional air quality.

**Impact AQ-3:** The Specific Plan would result in considerable increases to non-attainment pollutants individually, which indicates that it would also result in cumulative increases.

**Impact AQ-CUM-1:** See Impact AQ-2.

**Impact GHG-1:** Greenhouse gases emitted from project operation would be above the threshold of 4.6 MT CO<sub>2</sub>e/yr/Service Population.

**Impact PH-1:** Extension of roads, sewer, and other infrastructure into undeveloped areas would occur under the Specific Plan, indirectly inducing unplanned growth to the north and south, resulting in a *significant* impact.

**Impact PH-CUM-1:** Extension of roads, sewer, and other infrastructure into undeveloped areas would occur under the Specific Plan, which, together with approved projects, would indirectly induce unplanned growth, resulting in a *significant* impact.

**TRAF-1:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F in the AM peak hour and LOS E in the PM peak hour with the addition of project traffic under the Existing + Project scenario.

**TRAF-3:** The proposed S Street or Major Collector Street segment south of Elmira Road would exceed LOS C conditions in the northbound direction during the AM peak hour.

**TRAF-CUM-2:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F during both peak hours with the addition of project traffic under Existing + Approved Projects with Project scenario.

**TRAF-CUM-3:** The unsignalized Leisure Town Road/Marshall Road intersection (#7) would degrade to LOS F during the AM peak hour with the addition of project traffic under Existing + Approved Projects with Project scenario.

**TRAF-CUM-4:** The Leisure Town Road/Alamo Drive intersection (#8) would degrade to LOS D during the AM peak hour with the addition of project traffic under Existing + Approved Projects with Project scenario., continue to operate at LOS D in PM Peak Hour and change  $V/C > 0.02$ .

**TRAF-CUM-5:** The Leisure Town Road segment north of Elmira Road would degrade to LOS D on the northbound direction during the AM peak hour and to LOS E on the southbound direction during the PM peak hour under Existing + Approved Projects with Project scenario.

**TRAF-CUM-6:** The Leisure Town Road segment north of Marshall Road would degrade to LOS D on the northbound direction during the AM peak hour under Existing + Approved Projects with Project scenario.

**TRAF-CUM-7:** The proposed S Street segment south of Elmira Road would operate at LOS D on the northbound direction during the AM peak hour under Existing + Approved Projects with Project scenario.

**TRAF-CUM-8:** At the Leisure Town Road/Interstate 80 westbound off-ramp intersection (#2), the Project would contribute to the substandard operations

and cause the v/c to increase by more than 0.02 while maintaining LOS D during the AM peak hour under Cumulative Conditions.

**TRAF-CUM-9:** The Leisure Town Road/Elmira Road intersection (#6) would degrade to LOS F during both peak hours with the addition of project traffic under Cumulative + Project conditions.

**TRAF-CUM-10:** The Leisure Town Road/Alamo Drive intersection (#8) would degrade to LOS E during the AM peak hour and would contribute to a substandard level of service in the PM peak hour by increasing the v/c by more than 0.02 under Cumulative + Project conditions.

**TRAF-CUM-11:** The project would contribute to substandard operations and increase the v/c by 0.02 while maintaining at LOS D during the AM peak hour at the Leisure Town Road/Vanden Road intersection (#9) under Cumulative conditions.

**TRAF-CUM-12:** The proposed S Street, the Major Collector Street, segment south of Elmira Road would exceed LOS C conditions on the northbound direction during the AM peak hour under Cumulative + Project conditions.

**TRAF-CUM-13:** The Peabody Road segment south of Vacaville City Limits would operate at LOS F on the northbound direction during the PM peak hour under Cumulative + Project conditions.

**UTIL-3:** The Brighton Landing Specific Plan includes installation of a new regional trunk sewer, which could cause significant environmental effects.

### *C. Significant Irreversible Changes*

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project would commit nonrenewable resources to uses that future generations would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

**1. Changes in Land Use that Commit Future Generations**

The Specific Plan would result in the conversion of high quality agricultural land currently used for growing crops to developed area for residential uses and schools. The change is irreversible as the mature soils found in the Specific Plan take many hundreds or even thousands of years to develop. Building materials, such as wood, steel, and concrete would be used in the construction of houses and schools. Although some of this could later be recycled, there is some irreversible use of materials.

**2. Irreversible Damage from Environmental Accidents**

The Specific Plan area is currently agricultural land. Apart from minor quantities of pesticide residues, it is not contaminated, and its development would not spread any remnant contamination. Construction would involve use of heavy equipment, and although accidents are conceivable, there is nothing unusual about the flat-lying Specific Plan area to make them particularly likely.

**3. Large Commitment of Nonrenewable Resources**

As mentioned above, the Specific Plan area is agricultural land of high quality. Its proposed future non-agricultural use represents a commitment of non-renewable resources.

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