

## 4.2 TRAFFIC AND TRANSPORTATION

The information below is based on the Traffic Operations Impact Report, January 2006 (amended August 2007), prepared by Korve Engineering/DMJM Harris, which is available for public review at the Solano Transportation Authority (STA), One Harbor Center, Suite 130, Suisun City, CA 94585 during regular business hours.

### Methodology

#### Level of Service (LOS)

To measure roadway operational status, transportation engineers and planners commonly use a grading system called level of service (LOS). LOS is a metric used to describe the level of delay and congestion drivers will experience at a particular intersection. This metric generally uses categories ranging from LOS A (indicating free flow traffic conditions with little to no delay) to LOS F (indicating high levels of congestion with extreme traffic delays). LOS E is typically considered to represent roadway conditions at full capacity. For the purposes of this analysis, the LOS criteria used is obtained from the Transportation Research Board's Special Report 209, Highway Capacity Manual, 2000. Table 4.2-1 describes Intersection LOS definitions.

**Table 4.2-1. Intersection LOS Definitions**

LOS	Description	Average Total Delay (seconds/vehicle)	
		Unsignalized Intersections	Signalized Intersections
A	Little or no delay	≤ 10.0	< 10.0
B	Short traffic delay	> 10.0 and ≤ 15.0	> 10.0 and < 20.0
C	Average traffic delay	> 15.0 and ≤ 25.0	>20.0 and < 35.0
D	Long traffic delay	> 25.0 and ≤ 35.0	> 35.0 and < 55.0
E	Very long traffic delay	> 35.0 and ≤ 50.0	> 55.0 and < 80.0
F	Extreme traffic delay	> 50.0	> 80.0

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

#### Study Area Road Network

The study area consists of a corridor parallel to Interstate-80 (I-80) between Abernathy Road and Red Top Road from SR12 East to SR12 West. The following describes the roadway network:

##### I-80

I-80 serves as a major link between Sacramento and the Bay Area. It is also a primary commute route linking residents of Solano County and employment centers in Oakland, Richmond, San Francisco, and central Contra Costa County.

##### SR12

SR12 is an east/west route connecting Solano County to Sonoma and Napa Counties to the west and Sacramento, San Joaquin, and Calaveras Counties to the east. It is a two-lane facility west of I-80 and a four-lane expressway/freeway east of I-80 for a few miles and then returns to a two-lane conventional highway. SR12 shares I-80 for a stretch of about three miles or five km.

SR12 is the only east/west route connecting Sonoma, Napa, Solano, Sacramento, San Joaquin and Calaveras Counties. State Route 12 is concurrent with I-80 for about 3 miles or 5 km within the study area. Because of this configuration, SR12 mainline traffic must currently pass through the congested I-80/680/SR12 Interchange to complete a trip from Napa County to Suisun City. SR12 through trips account for roughly 4 percent of the mainline I-80 AM peak traffic and 5 percent of the mainline I-80<sup>1</sup> PM peak traffic within the study area. Approximately 16 percent of the westbound AM peak traffic from SR12 East and 21 percent of the eastbound PM peak traffic from SR12 West continue through to the segment of SR12 on the far side of the study area.

### **Red Top Road**

This local road is a two- to four-lane facility that runs from SR12 West to Lopes Road approximately half way between I-80 and Gold Hill Road. Red Top Road intersects I-80 with a diamond interchange and underpass. Red Top Road connects to SR12 West at an unsignalized, controlled T-intersection.

### **Green Valley Road**

Green Valley road is a north/south arterial roadway with a partial interchange at I-80 immediately west of the I-680 ramps. There is no direct westbound off-ramp from I-80 to Green Valley Road. Nietzel Road and Business Center Drive provide a connection that allows westbound I-80 traffic exiting at Suisun Valley Road to reach Green Valley Road. South of I-80, Green Valley Road becomes Lopes Road.

### **Suisun Valley Road**

Suisun Valley Road is a north/south arterial roadway with a partial interchange at I-80 immediately east of the I-680 ramps. There is no direct westbound on-ramp to I-80 from Suisun Valley Road. Nietzel Road and Business Center Drive provide a connection from Suisun Valley Road to Green Valley Road allowing westbound traffic to enter I-80.

### **Abernathy Road/Chadbourne Road**

Abernathy Road is a north/south collector road in the unincorporated study area and has a full diamond interchange with I-80. South of I-80, Abernathy Road becomes Chadbourne Road which crosses SR12 East and includes a full diamond interchange connection.

### **Rockville Road**

Rockville Road begins at the West Texas Street interchange with I-80 and runs west crossing Abernathy Road, Suisun Valley Road, and Green Valley Road. The West End intersects Green Valley Road about five miles North of I-80. It is currently the only continuous east/west road in the study area between Green Valley and the West Texas Street/westbound I-80 ramps. It currently carries some traffic that is trying to escape the congestion on I-80. However, it is only a two-lane country road and not designed or intended to be a major arterial for regional traffic.

### **Business Center Drive**

Business Center Drive is one of the newer roads in the study area and runs through a primarily commercial area. It starts west of Green Valley Road and extends east past a three-way intersection with Nietzel Road before crossing Mangels Road and becoming West America Drive, which becomes Kaiser Drive when it crosses Suisun Valley Road.

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<sup>1</sup> Fehr and Peers Associates. Origin Destination Survey conducted November 2002.

Business Center Drive is now one of the primary connections between Green Valley Road and Suisun Valley Road in the study area.

In addition, there are a number of roadway network issues and problem areas that contribute to transportation deficiencies within the study area.

### **Incomplete Local Roadway Network**

The existing local road structure within the Project study area does not allow for easy travel throughout the area. Currently, there is no local road in the study area that provides complete or convenient east/west travel. For example, some of the local roadways such as Mangels Boulevard, and Business Center Drive do not provide complete east/west access through the study area parallel to I-80. In addition, roads such as Rockville Road and Cordelia Road were originally agricultural roads designed for much lighter traffic volumes and risk accelerated pavement deterioration as a result of being overloaded with traffic. As a result, local traffic relies heavily on I-80 which adds to the congestions of this I-80 segment. Additionally, other gaps in the local circulation network, such as the lack of local road connections to Red Top Road at the West End of the Project study area, necessitate that local traffic use I-80.

### **Bicycle and Pedestrian Network**

Although access is available throughout the North Connector Project (Project) area, the bicycle and pedestrian network is incomplete. The Linear Park is a Class I multi-use path that provides east-west access through much of the East End of the Project area. On the West End, bicycle paths on area roadways vary, with some roads, such as Red Top Road, providing demarcated Class II bicycle lanes. Other area roadways provide Class III bicycle access.

### **Study Intersections**

Figure 4.2-1 depicts the study area and the intersections evaluated as part of the Project.

The study intersections are as follows:

1. SR12 & Red Top Road
2. I-80 WB and Red Top Road
3. I-80 EB and Red Top Road
4. McGary Road and Red Top Road
5. Rockville Road and Green Valley Road
6. Mangels Boulevard and Green Valley Road
7. Business Center Drive and Green Valley Road
8. I-80 WB and Green Valley Road
9. I-80 EB and Green Valley Road (Lopes Road)
10. Business Center Drive and Neitzel Road
11. Mangels Boulevard and Business Center Drive
12. Rockville Road and Suisun Valley Road
13. Mangels Boulevard and Suisun Valley Road
14. Neitzel Road and Suisun Valley Road
15. I-80 EB and Suisun Valley Road
16. Central Way and Suisun Valley Road
17. Mankas Corner Road and Abernathy Road
18. Rockville Road and Abernathy Road

19. I-80 WB and Abernathy Road
20. I-80 EB and Abernathy Road
21. Auto Mall Parkway and Abernathy Road
22. SR12 WB and Chadbourne Road
23. SR12 EB and Chadbourne Road
24. Busch Drive and Chadbourne Road
25. Courage Drive and Chadbourne Road
26. Rockville Road and Oliver Road
27. I-80 WB and Oliver Road
28. I-80 EB and West Texas Street

### **2020 Future Travel Forecasts**

The Napa Solano County travel forecasting model was used for estimating future baseline year (2020) traffic volumes and determining impacts on parallel and adjacent facilities. Traffic volumes on regional roadways and turning movements at the key intersections are analyzed for the AM and PM peak hours, based on data from the travel forecasting model.

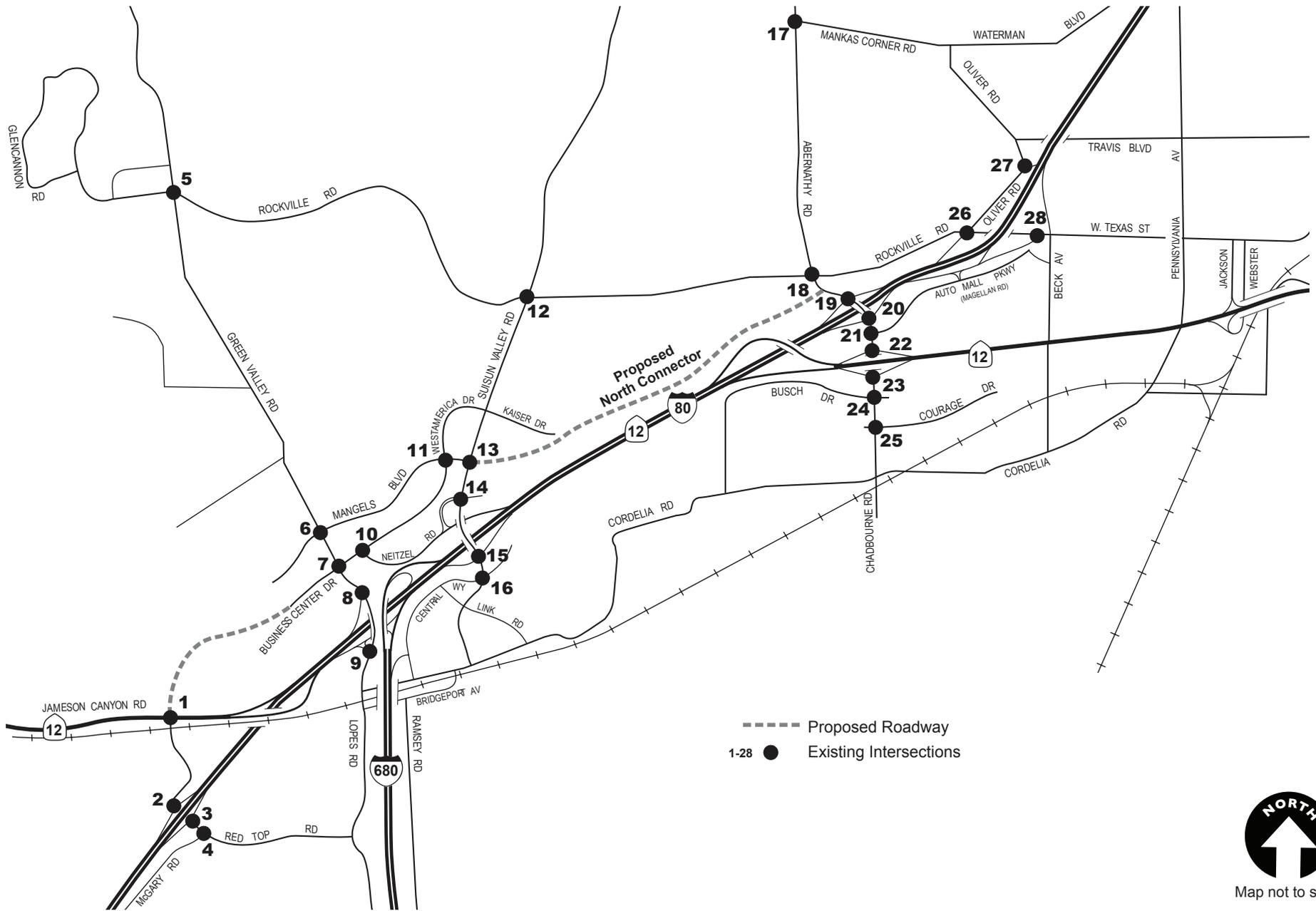
The year 2020 was selected as the future baseline year for evaluating traffic impacts arising from the Project as it represents a conservative “opening day” date for the completed Project. Two scenarios were evaluated; 2020 No Project and 2020 with Project. The comparison of these two alternatives provides information on the potential traffic impacts and benefits arising from the Project. These scenarios are discussed in further detail under the Traffic/Transportation Impacts Analysis section below.

### **EXISTING CONDITIONS**

#### **Existing Conditions– Intersection Peak Hour LOS**

Local traffic represents 2007 conditions at study area intersections. Table 4.2-2 presents the results of the LOS analysis at the study intersections for both AM and PM peak hour conditions. Figure 4.2-2 and Figure 4.2-3 depict traffic volumes in the form of intersection turning movement counts for the 28 study intersections.

The Solano County General Plan Transportation Element requires LOS D or better for all locations within the County. Similarly, the City of Fairfield General Plan Circulation Element calls for LOS D or better on arterial streets during the PM peak hour. Under existing conditions, all signalized intersections operate at LOS D or better. The unsignalized intersection at SR12 and Red Top Road operates at LOS F during both peak hours, and meets peak hour traffic volume signal warrants.



**Figure 4.2-1. Study Area Intersections**

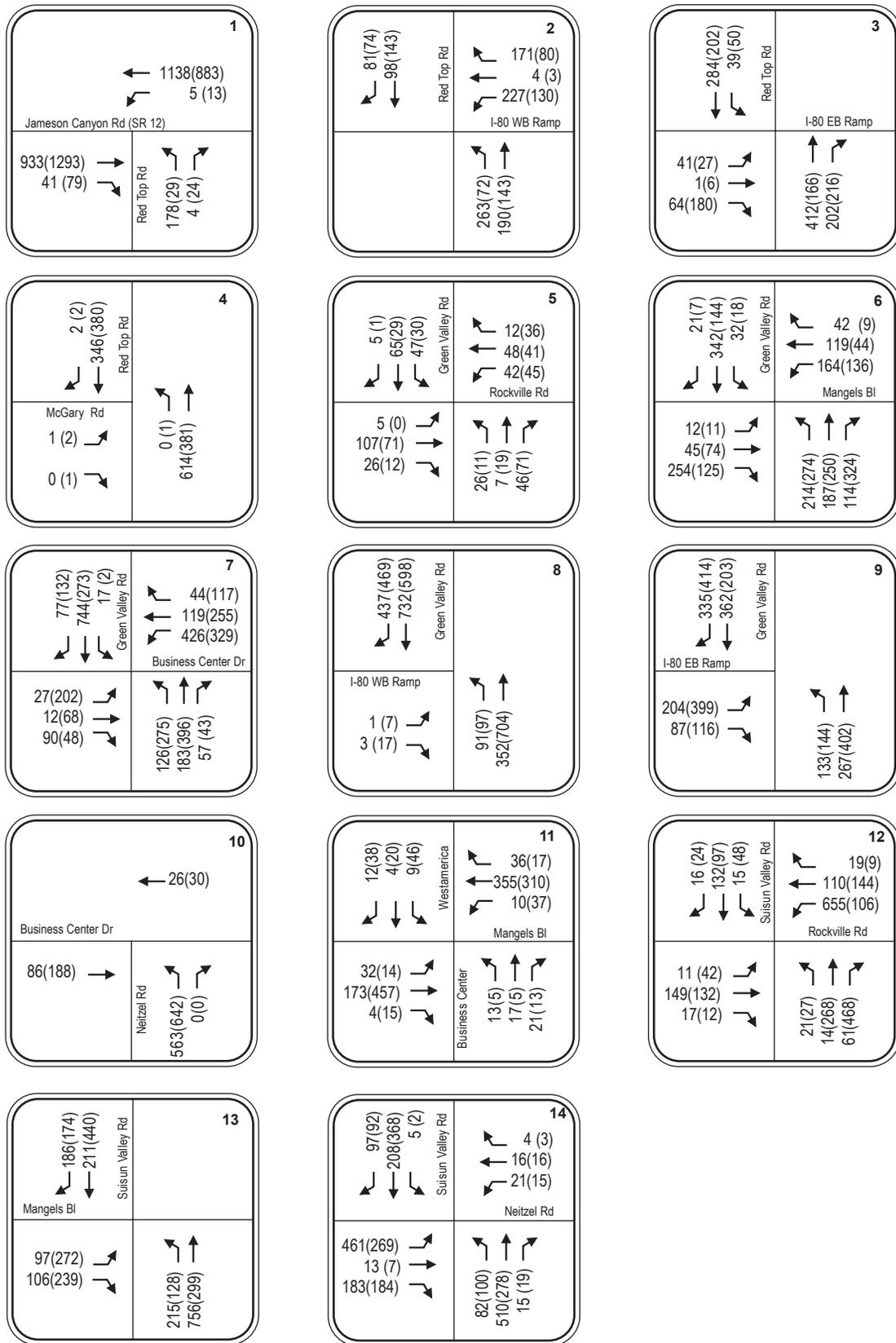
**Table 4.2-2. Existing Conditions (2007) LOS at Study Intersections**

#	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)
1	SR12 & Red Top Road	1-way Stop	F	***	F	105.2
2	I-80 WB and Red Top Road	3-way Stop	C	16.2	A	9.4
3	I-80 EB and Red Top Road	3-way Stop	C	15.7	B	10.5
4	McGary Road and Red Top Road	1-way Stop	C	17.6	B	13.3
5	Rockville Road and Green Valley Road	4-way Stop	A	8.1	A	7.8
6	Mangels Boulevard and Green Valley Road	Signal	C	31.2	C	25.9
7	Business Center Drive and Green Valley Road	Signal	C	26.6	C	33.2
8	I-80 WB and Green Valley Road	1-way Stop	C	16.9	C	19.5
9	I-80 EB and Green Valley Road (Lopes Road)	Signal	B	13.3	C	21.0
10	Business Center Drive and Neitzel Road	3-way Stop	B	11.9	B	13.7
11	Mangels Boulevard and Business Center Drive	1-way Stop	B	13.6	B	15.2
12	Rockville Road and Suisun Valley Road	Signal	C	21.9	B	18.6
13	Mangels Boulevard and Suisun Valley Road	Signal	B	15.5	C	21.5
14	Nietzel Road and Suisun Valley Road	3-way Stop	C	15.9	B	12.5
15	I-80 EB and Suisun Valley Road	Signal	C	22.9	C	22.8
16	Central Way and Suisun Valley Road	Signal	C	29.1	C	33.8
17	Mankas Corner Road and Abernathy Road	4-way Stop	C	21.7	C	15.6
18	Rockville Road and Abernathy Road	Roundabout	A	5.7	A	7.2
19	I-80 WB and Abernathy Road	3-way Stop	C	20.6	B	11.7
20	I-80 EB and Abernathy Road	3-way Stop	B	12.5	D	30.5
21	Auto Mall Drive and Abernathy Road	Signal	B	12.3	B	11.9
22	SR12 WB and Chadbourne Road	Signal	B	19.2	B	19.0
23	SR12 EB and Chadbourne Road	1-way Stop	C	15.6	C	16.6
24	Busch Road and Chadbourne Road	Signal	B	16.6	C	27.8
25	Courage Drive and Chadbourne Road	Signal	B	17.1	C	25.7
26	Rockville Road and Oliver Road	Signal	C	23.5	C	30.6
27	I-80 WB and Oliver Road	Signal	B	19.4	B	19.2
28	I-80 EB and West Texas Street	Signal	B	15.8	B	16.3

Source: DMJM Harris, 2007.

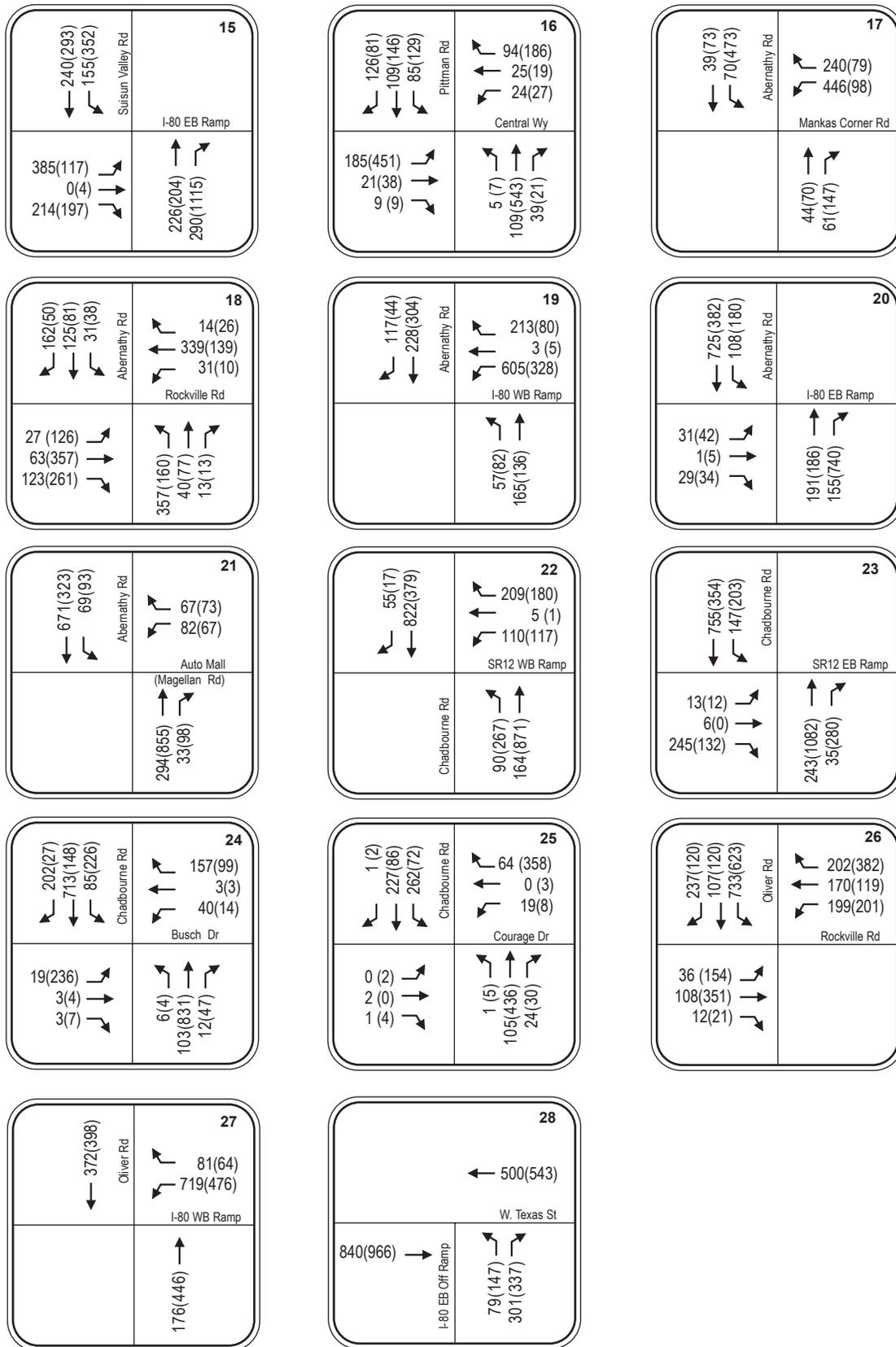
Notes:

\*\* Delay exceeds meaningful range of the model.



**Figure 4.2-2. Existing Conditions (2007)  
 Traffic Volumes AM (PM) Peak Hour**





**Figure 4.2-3. Existing Conditions (2007)  
Traffic Volumes AM (PM) Peak Hour**

## **REGULATORY SETTING**

### **City of Fairfield General Plan – Circulation Policies**

Fairfield's General Plan Circulation Element includes the following transportation objectives, policies, and programs that pertain to the Project:

#### *Circulation Element*

Goal – Create and maintain an efficient, safe, and coordinated multi-modal circulation system, serving the needs of a variety of users.

Objective CI 3 – Provide timely and effective means of programming street and highway improvements to maintain a P.M. peak hour Level of Service of “D” or better for arterial streets, Level of Service “C” or better for collector streets, and LOS “B” or better for local streets, unless other public health, safety, or welfare factors determine otherwise.

- Policy CI 3.1 – Prioritize transportation projects based on reducing traffic congestions and improving traffic circulation.

Objective CI 9 – Promote maximum opportunities for biking by continuing to develop and maintain a safe, convenient bikeway system which facilitates bicycle travel for commuting, recreation or other purposes.

- Policy CI 9.1 – Expand the City's north-south and east-west bikeway network through the use of Class I, II, and III bikeways in accordance with the factors outlined in Table CI-1 of the General Plan.

### **Solano County General Plan – Circulation Policies**

Solano County's General Plan Circulation Element includes the following transportation objectives, policies, and programs that pertain to the Project:

#### *Circulation Element*

Goal – Develop a comprehensive transportation and circulation system which is efficient, safe, and environmentally sound, aesthetically please, and compatible with the goals and plans of the state, regional and other local agencies.

## **TRAFFIC AND TRANSPORTATION IMPACTS ANALYSIS**

### Significance Criteria

#### **California Environmental Quality Act (CEQA)**

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether the Project could have a significant effect on the environment. STA has applied these standards of significance for evaluating impacts of the Project.

The Project would have a significant impact if it would:

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

### **TRAFFIC/TRANSPORTATION IMPACTS ANALYSIS**

As roadway conditions are continually changing and the proposed Project is anticipated to be completed in phases over a ten year period, a future traffic baseline was created for the purpose of evaluating Project impacts. The following sections evaluate traffic impacts under 2020 No Project and 2020 with Project conditions.

## Year 2020 Analysis Assumptions

### 2020 No Project Roadway Network

The 2020 No Project scenario represents the existing roadway network plus roadway improvements that are currently funded within the study area. For the purposes of the study, it is assumed that the Jameson Canyon project would be completed by 2020, and that a portion of the I-80/I-680 interchange will also be complete by 2020. These two elements, together with the following network enhancements comprise the 2020 No Project scenario:

- The Caltrans “Aux Lane” project, which widens I-80 to five lanes in each direction between I-680 and SR12 East (note that I-80 WB is already five lanes between SR12 East and the truck scales).
- The Caltrans SR12 West truck climbing lane project. This project adds a second lane to westbound SR12 from just past the SR12/I-80 off-ramp to approximately 700 meters west of Red Top Road.
- A high occupancy vehicle (HOV) lane on I-80 in both directions between SR12 West and Air Base Parkway.
- Construction of the Collector/Distributor (C/D) roadway system for eastbound traffic on I-80 from SR12 West to Suisun Valley Road and braiding of off-/on-ramps.
- The Jameson Canyon project, which would widen SR12 to 2-lanes in each direction for I-80 to SR37 in Napa County
- The I-80/I-680 Interchange Project, which would improve the I-80/I-680/SR12 interchange complex to accommodate existing and future traffic demand.
- Traffic control improvements to the following intersections:
  - I-80 WB and Red Top Road
  - I-80 EB and Red Top Road
  - I-80 WB and Green Valley Road
  - I-80 EB and Green Valley Road (Lopes Road)
  - Business Center Drive and Nietzel Road
  - Mangels Boulevard and Business Center Drive
  - Nietzel Road and Suisun Valley Road
  - Central Way and Suisun Valley Road
  - Rockville Road and Abernathy Road
  - I-80 EB and Abernathy Road
  - Auto Mall Drive and Abernathy Road
  - SR12 WB and Chadbourne Road
  - SR12 EB and Chadbourne Road
  - Busch Road and Chadbourne Road
  - Courage Drive and Chadbourne Road
  - I-80 WB and Oliver Road

Outside of Solano County, the network is representative of the Metropolitan Transportation Commission’s (MTC) plans for the year 2020. MTC’s plan includes a westbound HOV lane on I-80 from the Carquinez Bridge to SR 4 in Hercules, and HOV lanes in each direction on I-680 from the Sacramento River to SR 4 in Concord. It also includes the two Sacramento bridge widening projects that are currently under way.

### 2020 No Project Intersection Peak Hour LOS

Table 4.2-3 presents the results of the LOS analysis at study intersections under 2020 No Project conditions. Figures 4.2-4 and 4.2-5 depict traffic volumes in the form of intersection turning movement counts for the 28 study intersections. Under 2020 No Project conditions, a number of intersections are expected to reach unacceptable levels of service. During the AM peak hour, the intersections at SR12 and Red Top Road and I-80 Westbound and Abernathy Road operate at LOS F. During the PM peak hour, the intersections at SR12 and Red Top Road and I-80 Eastbound and Suisun Valley Road operate at LOS F. The intersection at McGary Road and Red Top Road operates at LOS E during the PM peak hour. The remaining study intersections operate at LOS D or better during both the AM and PM peak hours.

**Table 4.2-3. Intersection LOS Analysis - 2020 No Project**

#	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)
1	SR12 & Red Top Road	1-way Stop	F	***	F	***
2	I-80 WB and Red Top Road	Signal	C	25.1	B	10.2
3	I-80 EB and Red Top Road	Signal	A	9.5	D	53.1
4	McGary Road and Red Top Road	1-way Stop	D	34.2	E	37.3
5	Rockville Road and Green Valley Road	4-way Stop	A	7.9	A	7.5
6	Mangels Boulevard and Green Valley Road	Signal	D	36.4	D	37.3
7	Business Center Drive and Green Valley Road	Signal	C	34.7	D	54.8
8	I-80 WB and Green Valley Road	Signal	B	11.4	A	3.2
9	I-80 EB and Green Valley Road (Lopes Road)	Signal	C	25.0	D	48.3
10	Business Center Drive and Neitzel Road	Signal	C	21.0	B	18.9
11	Mangels Boulevard and Business Center Drive <sup>1</sup>	Signal	C	24.5	C	28.4
12	Rockville Road and Suisun Valley Road	Signal	C	25.7	B	15.5
13	Mangels Boulevard and Suisun Valley Road <sup>2</sup>	Signal	C	28.7	C	26.8
14	Nietzel Road and Suisun Valley Road	Signal	C	30.1	D	39.7
15	I-80 EB and Suisun Valley Road	Signal	D	34.2	F	83.6
16	Central Way and Suisun Valley Road	Signal	B	15.9	C	21.9
17	Mankas Corner Road and Abernathy Road	4-way Stop	B	10.0	B	11.0
18	Rockville Road and Abernathy Road	Roundabout	A	4.7	A	5.9
19	I-80 WB and Abernathy Road	3-way Stop	F	107.7	B	12.5
20	I-80 EB and Abernathy Road	3-way Stop	C	22.1	C	18.6
21	Auto Mall Drive and Abernathy Road	Signal	B	12.6	B	13.2
22	SR12 WB and Chadbourne Road	Signal	C	23.7	B	16.3
23	SR12 EB and Chadbourne Road	Signal	C	25.3	D	42.6

#	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)
24	Busch Road and Chadbourne Road	Signal	B	18.1	D	39.7
25	Courage Drive and Chadbourne Road	Signal	B	19.9	C	24.4
26	Rockville Road and Oliver Road	Signal	C	21.1	C	25.8
27	I-80 WB and Oliver Road	Signal	B	14.6	B	16.5
28	I-80 EB and West Texas Street	Signal	B	12.1	B	19.6

Source: DMJM Harris, 2007.

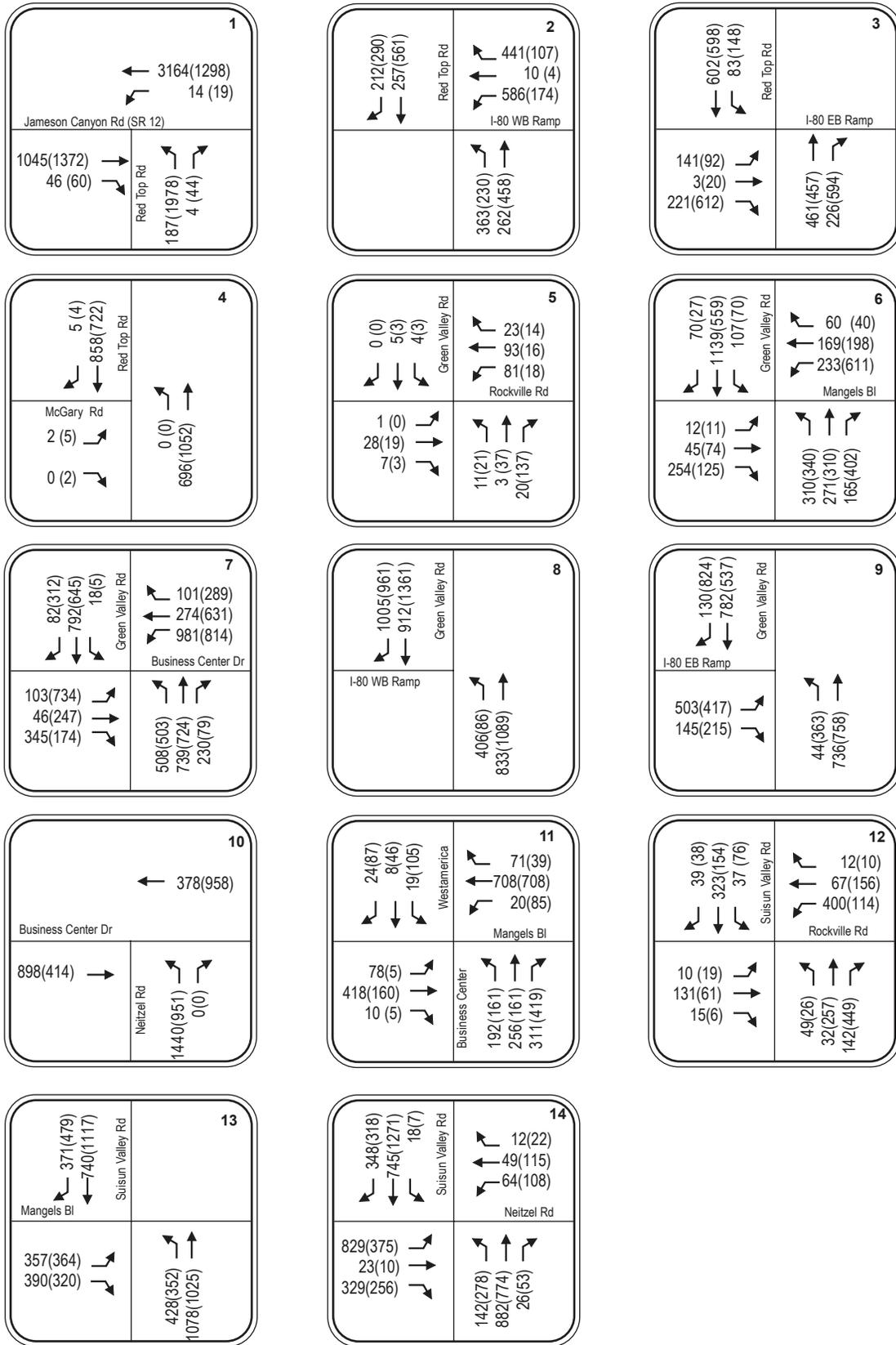
Notes:

\*\* Delay exceeds meaningful range of the model.

<sup>1</sup>/Mangels Boulevard and Business Center Drive will be realigned to become Mangels Boulevard and West America Drive

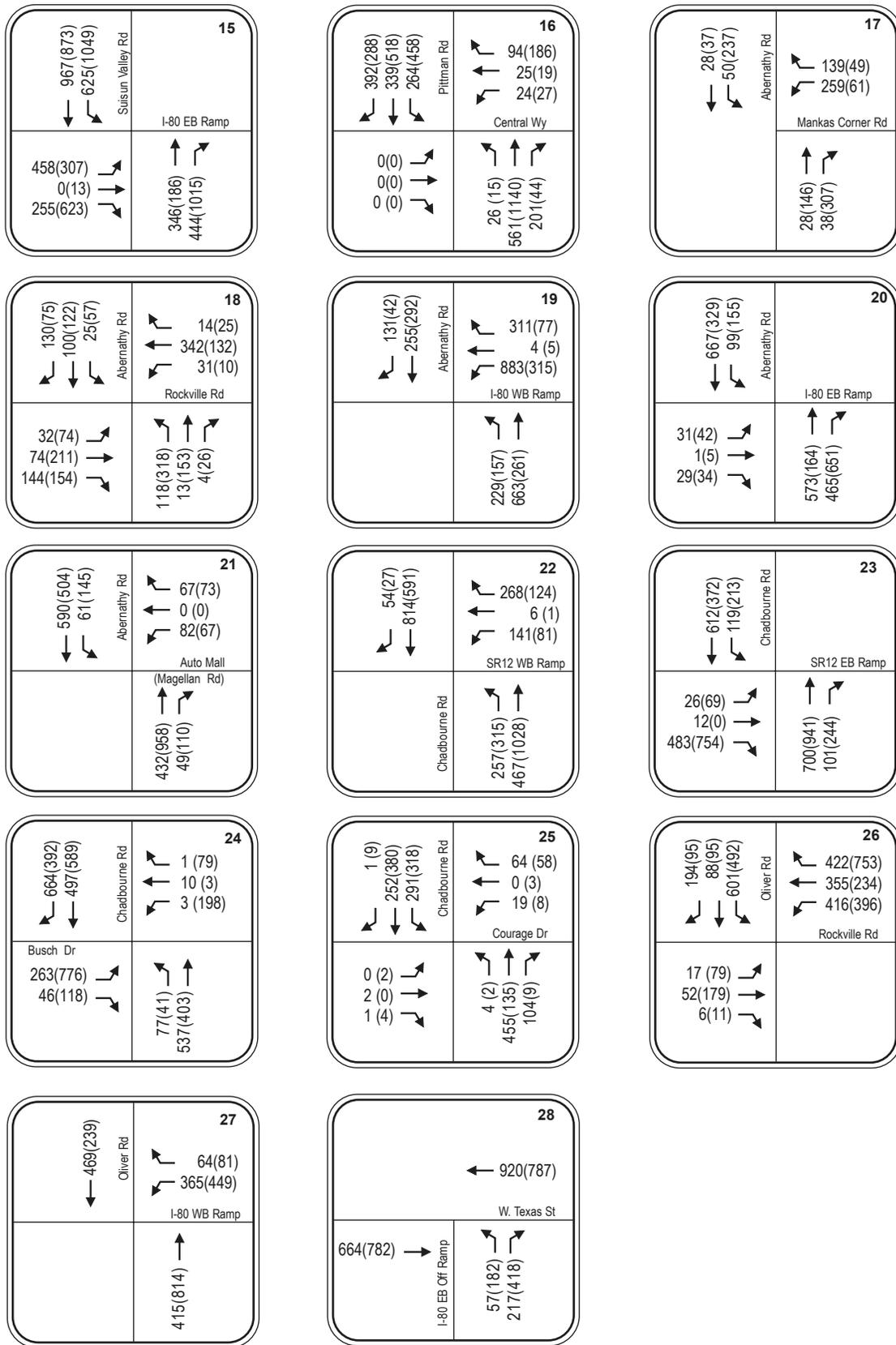
<sup>2</sup>/ Mangles Boulevard and Suisun Valley Road will be realigned to become Mangles Boulevard and Business Center Drive

LOS and Average Delay highlighted in **bold** indicate intersections operating at unacceptable conditions.



**Figure 4.2-4. 2020 No Build Traffic Volumes AM (PM) Peak Hour**





**Figure 4.2-5. 2020 No Build Traffic Volumes AM (PM) Peak Hour**

### **2020 with Project Conditions**

2020 with Project conditions are evaluated by adding the Project to the 2020 No Project conditions roadway network described in the Year 2020 Analysis Assumptions section above. Under 2020 No Project conditions, the SR12 and Red Top Road intersection is modeled as a one-way stop sign controlled intersection. Under 2020 with Project conditions, the traffic control at this intersection is signalized. For the purpose of designing the intersection of the North Connector and SR12/Red Top Road, two eastbound left-turn lanes and one through lane in each direction are added to SR12 approaching Red Top Road to replace through capacity used by the signal for cross traffic.

The North Connector has been modeled as a two-lane arterial roadway located between Red Top Road and the current western terminus of Business Center Drive. The eastern portion of the North Connector has been modeled as a four lane road with limited access, connecting to Abernathy Road.

### **2020 with Project Intersection Peak Hour LOS**

Table 4.2-4 presents the results of the LOS analysis for the study intersections under the 2020 with Project conditions and, for purposes of comparison, 2020 No Project conditions. Figure 4.2-6 and Figure 4.2-7 depict traffic volumes under 2020 with Project conditions in the form of intersection turning movement counts for the 28 study intersections and a new intersection at the North Connector and Abernathy Road. Figures 4.2-8 through 4.2-12 show intersection traffic controls for existing conditions, 2020 No Project, and 2020 with Project conditions.

During the AM peak hour, traffic improves under 2020 with Project conditions compared to 2020 No Project conditions. Under 2020 No Project conditions, the intersection at SR12 and Red Top Road experiences LOS F with average delay exceeding the measurement capacity of the traffic model. Under 2020 with Project conditions, the intersection experiences LOS D with an average delay of 45.9 seconds. Similarly, under 2020 No Project conditions, the intersection at I-80 Westbound and Abernathy Road experiences LOS F with an average delay of 107.7 seconds. In comparison, under 2020 with Project conditions, the intersection experiences improved LOS C with an average delay of 23.9 seconds. This represents a decrease in average delay of approximately 84 seconds under 2020 with Project conditions.

Under 2020 No Project conditions, the intersection at SR12 and Red Top Road experiences LOS F during the PM peak hour with average delay in excess of the measurement capacity of the traffic model. In comparison, under 2020 with Project conditions, the intersection experiences an improved LOS B with an average delay of 19.3 seconds during the PM peak hour. Similarly, the unsignalized intersection at McGary Road and Red Top Road experiences LOS E under 2020 No Project conditions with an average delay of 37.3 seconds during the PM peak hour. Under 2020 with Project conditions, this intersection experiences LOS B with an average delay of 14.1 seconds. This represents a decrease of approximately 23 seconds. Similarly, under 2020 No Project conditions the intersection at I-80 Eastbound and Suisun Valley Road experiences LOS F with an average delay of 83.6 seconds during the PM peak hour. Under 2020 with Project conditions, this intersection improves to LOS E, with an average delay of 57.4 seconds. This represents a decrease in delay of 26.2 seconds.

It should be noted that with the buildout of the North Connector and the implementation of other intersection improvements, intersections connecting the Suisun Valley and Green Valley areas to central Fairfield would operate acceptably. The Rockville Road and Abernathy Road intersection would operate at LOS A under the 2020 with Project conditions. The Rockville Road and Oliver Road intersection would operate at LOS C under the 2020 with Project conditions. The West Texas Street and I-80 EB Off-Ramp intersection would operate at LOS B under the 2020 with Project conditions. Thus, vehicles traveling between the Suisun Valley and Green Valley areas to central Fairfield would not experience unacceptable levels of delay.

### **2020 with Project Intersection Peak Hour Volume Comparison**

According to output from the Napa Solano County Travel Demand Model, by the year 2020, I-80 is projected to carry approximately 19,000 vehicles during the AM peak hour in both directions, and 18,000 vehicles during the PM peak hour in both directions in the vicinity of the North Connector Project. With the implementation of the North Connector Project, these volumes would be reduced by approximately 5.4 percent (1,028 vehicles) during the AM peak hour, and by 7.2 percent (1,306 vehicles) during the PM peak hour. These re-routed trips, along with other local trips which would have otherwise used the freeway to reach central Fairfield (or vice-versa) would now use the North Connector.

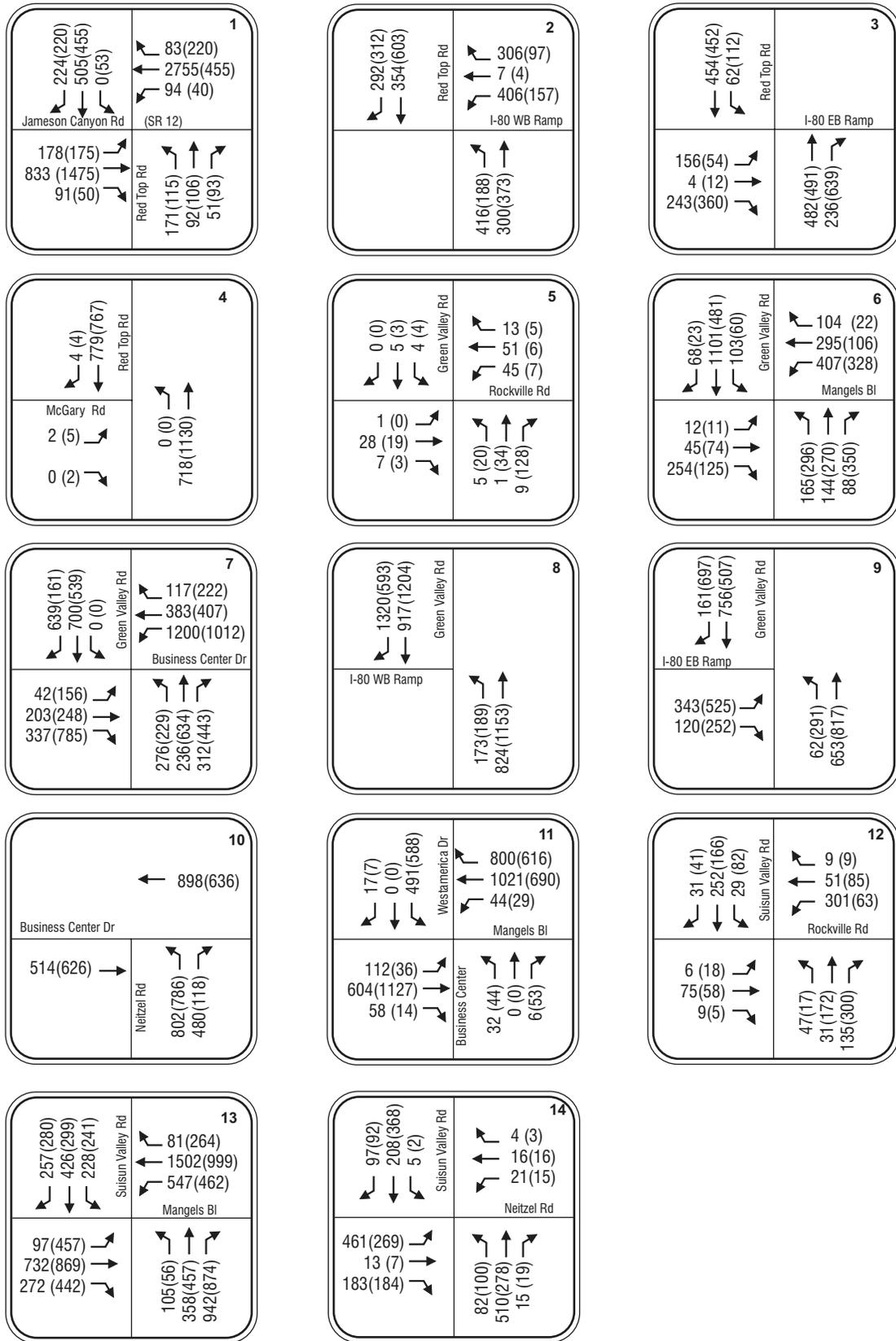
Though this re-routing of trips causes a decrease in traffic levels on I-80, it also causes an increase in traffic levels in the Green Valley area of Fairfield. However, the increase in traffic volumes would be less than four percent from the 2020 No Project conditions to the 2020 with Project Conditions for this area. Also, through the Project and its proposed improvements, Green Valley intersections would experience acceptable levels of service during either peak hour, satisfying the City's LOS policy.

Overall, it should be restated that the goal of the North Connector Project is to reduce congestion on I-80 and to provide a connection between the Green Valley area of Fairfield and central Fairfield. Even with the project causing over 1,000 vehicles to shift from I-80 to the North Connector during either peak hour, all study intersections would operate at acceptable levels of service; the one exception being the I-80 Eastbound Ramps / Suisun Valley Road intersection, which would actually experience a decrease in delay with the buildout of the North Connector.

### **Issues Not Discussed Further**

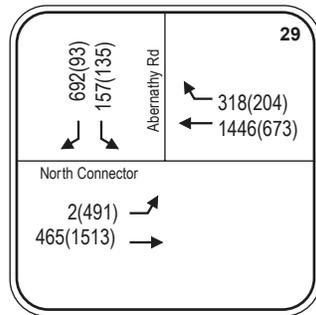
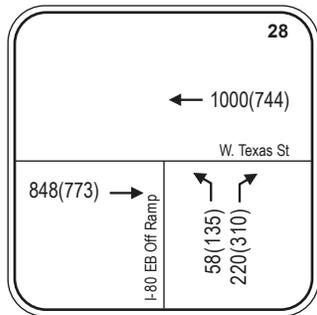
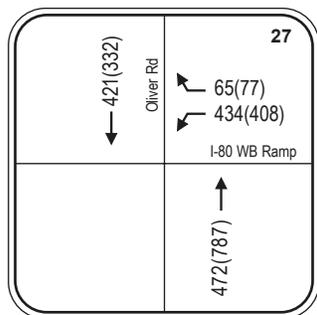
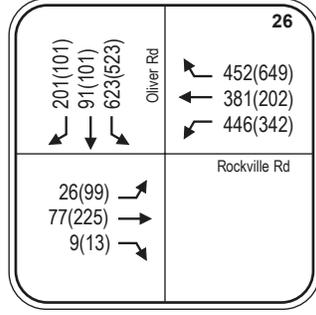
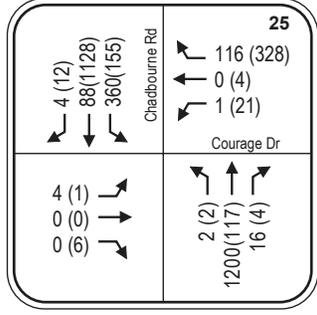
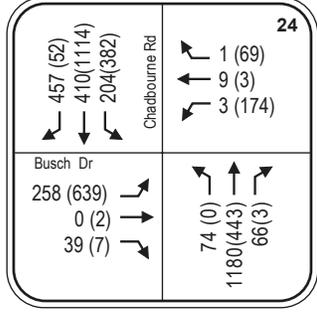
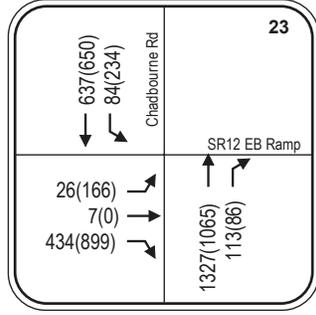
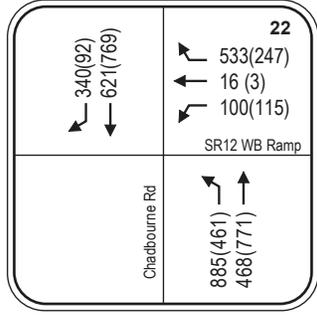
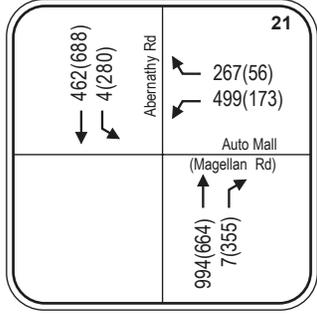
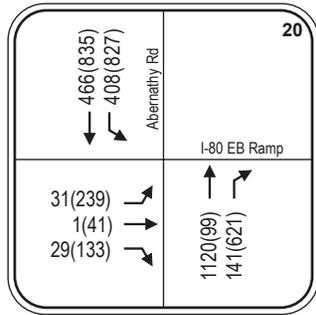
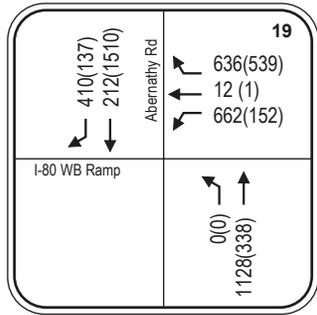
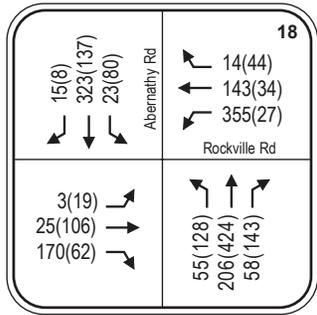
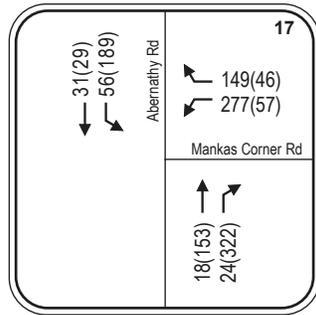
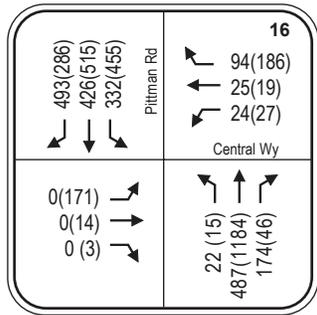
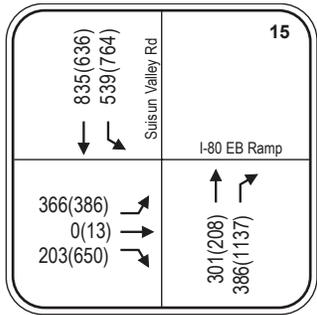
#### **Change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.**

The Project would not change air traffic patterns nor would it result in increased air traffic levels that could result in substantial safety risks. The Project is a roadway improvement project, and upon completion would enhance traffic conditions in the SR12, I-80 vicinity and therefore there is no impact.



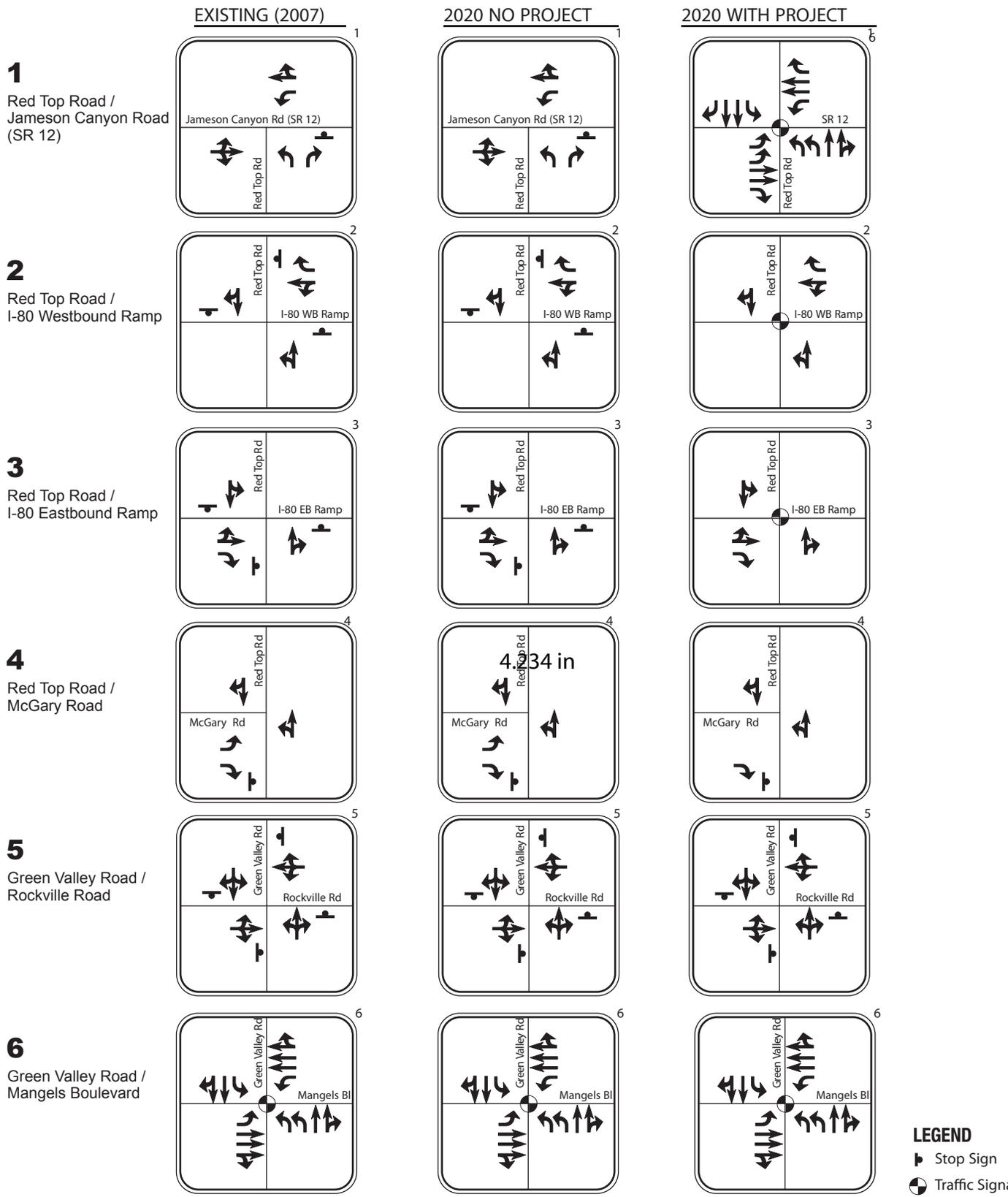
**Figure 4.2-6. 2020 With Project Traffic Volumes AM (PM) Peak Hour**





**Figure 4.2-7. 2020 With Project Traffic Volumes AM (PM) Peak Hour**



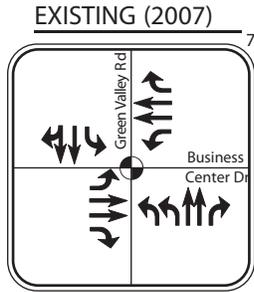


**LEGEND**  
 ▸ Stop Sign  
 ● Traffic Signal

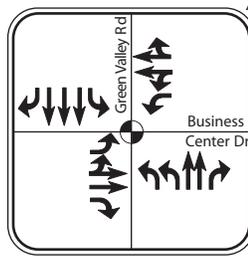
Figure 4.2-8 Intersection Geometry

7

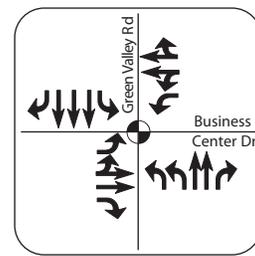
Green Valley Road / Business Center Drive



2020 NO PROJECT

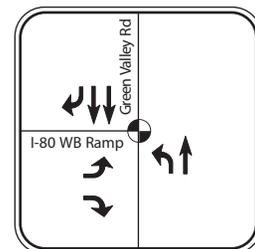
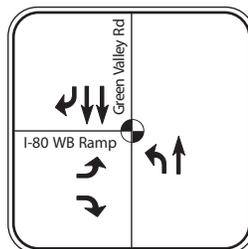
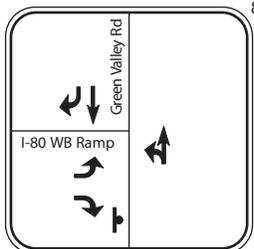


2020 WITH PROJECT



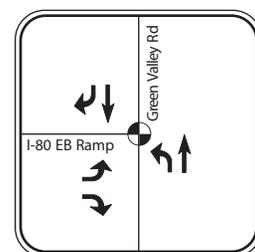
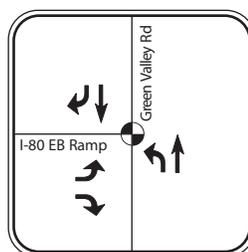
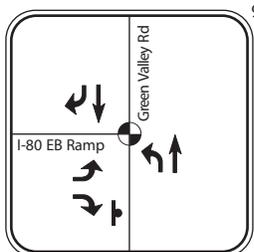
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Green Valley Road / I-80 Westbound Ramp



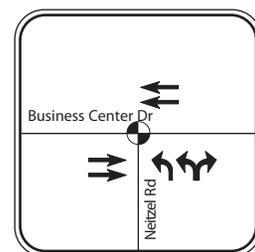
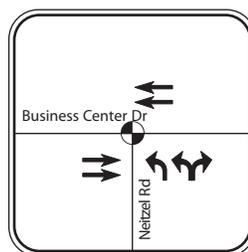
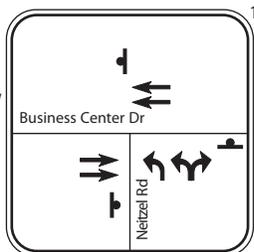
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Green Valley Road / I-80 Eastbound Ramp



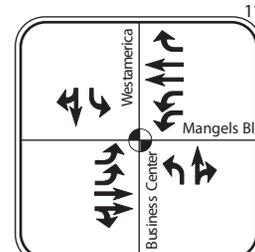
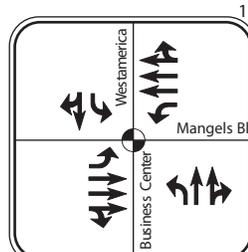
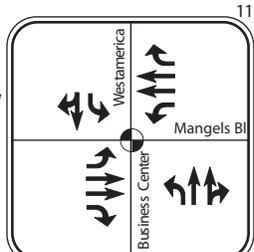
10

Business Center Drive / Neitzel Road



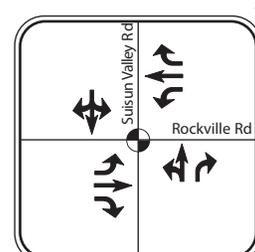
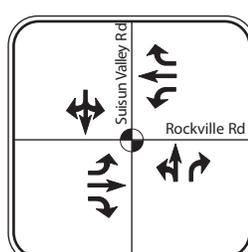
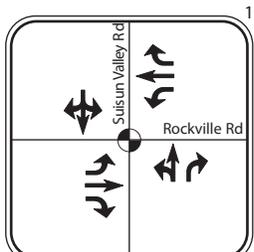
11

Business Center Drive / Westamerica Drive / Mangels Boulevard



12

Suisun Valley Road / Rockville Road



**LEGEND**  
 ▸ Stop Sign  
 ● Traffic Signal

Figure 4.2-9 Intersection Geometry

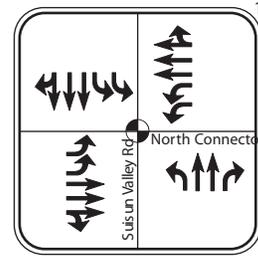
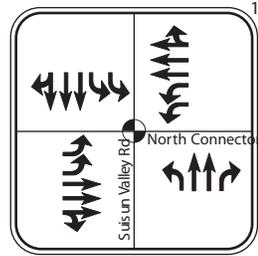
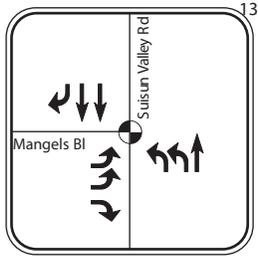
EXISTING (2007)

2020 NO PROJECT

2020 WITH PROJECT

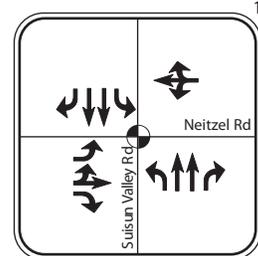
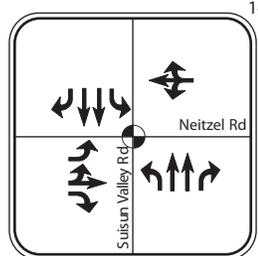
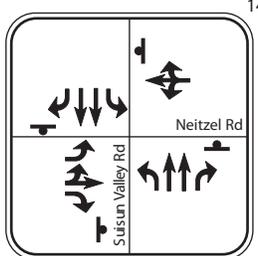
**13**

Suisun Valley Road / Mangels Boulevard



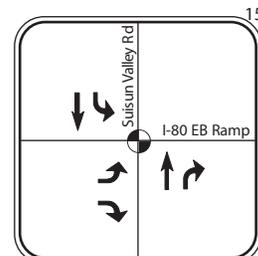
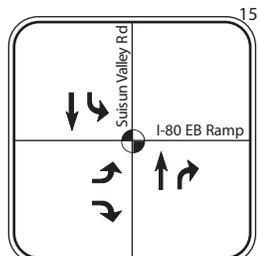
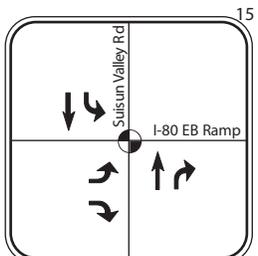
**14**

Suisun Valley Road / Neitzel Road



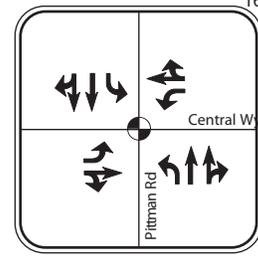
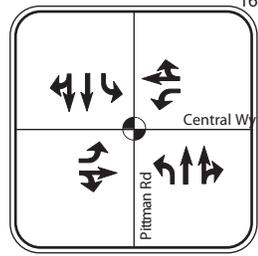
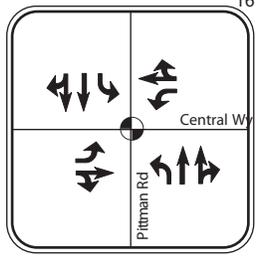
**15**

Suisun Valley Road / I-80 Eastbound Ramp



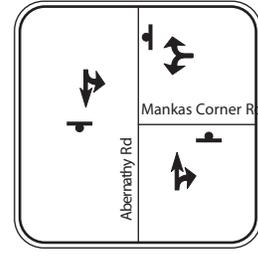
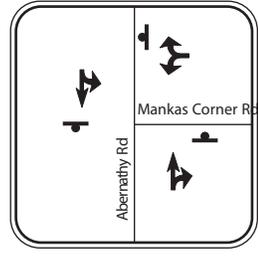
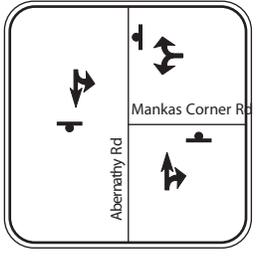
**16**

Pittman Road / Central Way



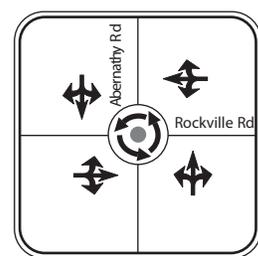
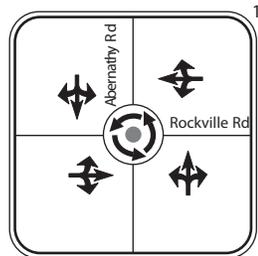
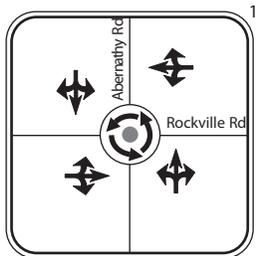
**17**

Abernathy Road / Mankas Corner Road



**18**

Abernathy Road / Rockville Road



**LEGEND**  
 Stop Sign  
 Traffic Signal

Figure 4.2-10 Intersection Geometry

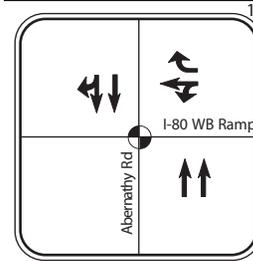
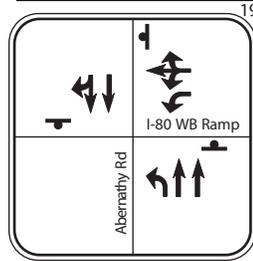
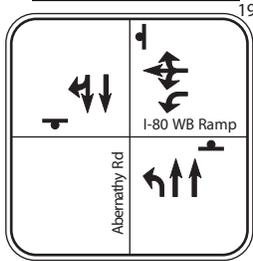
EXISTING (2007)

2020 NO PROJECT

2020 WITH PROJECT

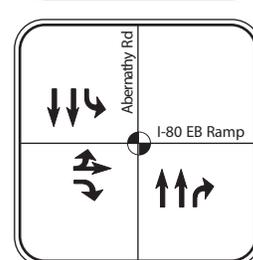
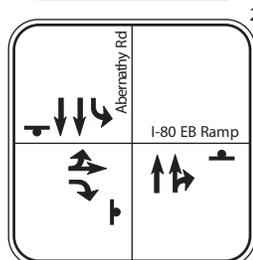
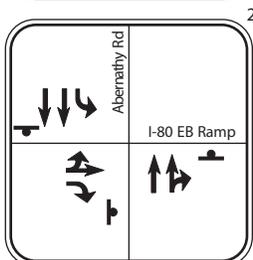
**19**

Abernathy Road /  
I-80 Westbound Ramp



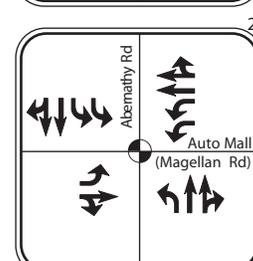
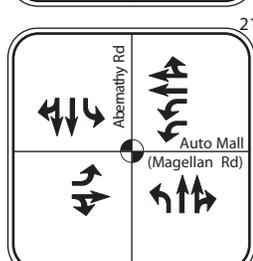
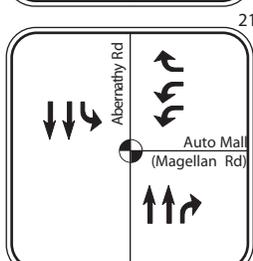
**20**

Abernathy Road /  
I-80 Eastbound Ramp



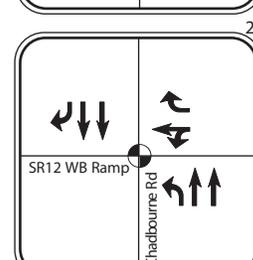
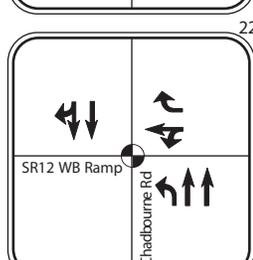
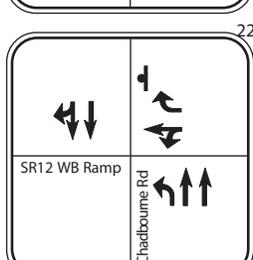
**21**

Abernathy Road /  
Auto Mall Parkway  
(Magellan Road)



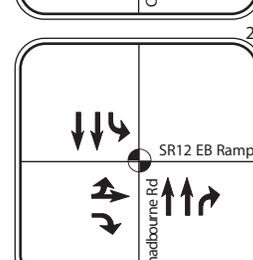
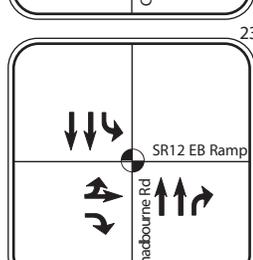
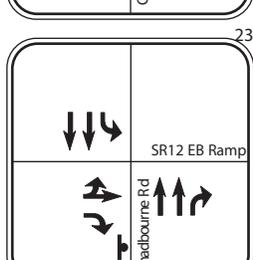
**22**

Chadbourne Road /  
SR 12 Westbound  
Ramp



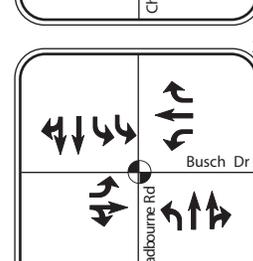
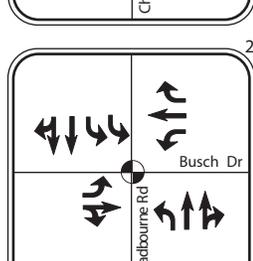
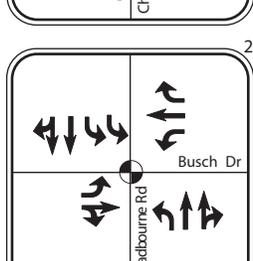
**23**

Chadbourne Road /  
SR 12 Eastbound  
Ramp



**24**

Busch Drive /  
Chadbourne Road

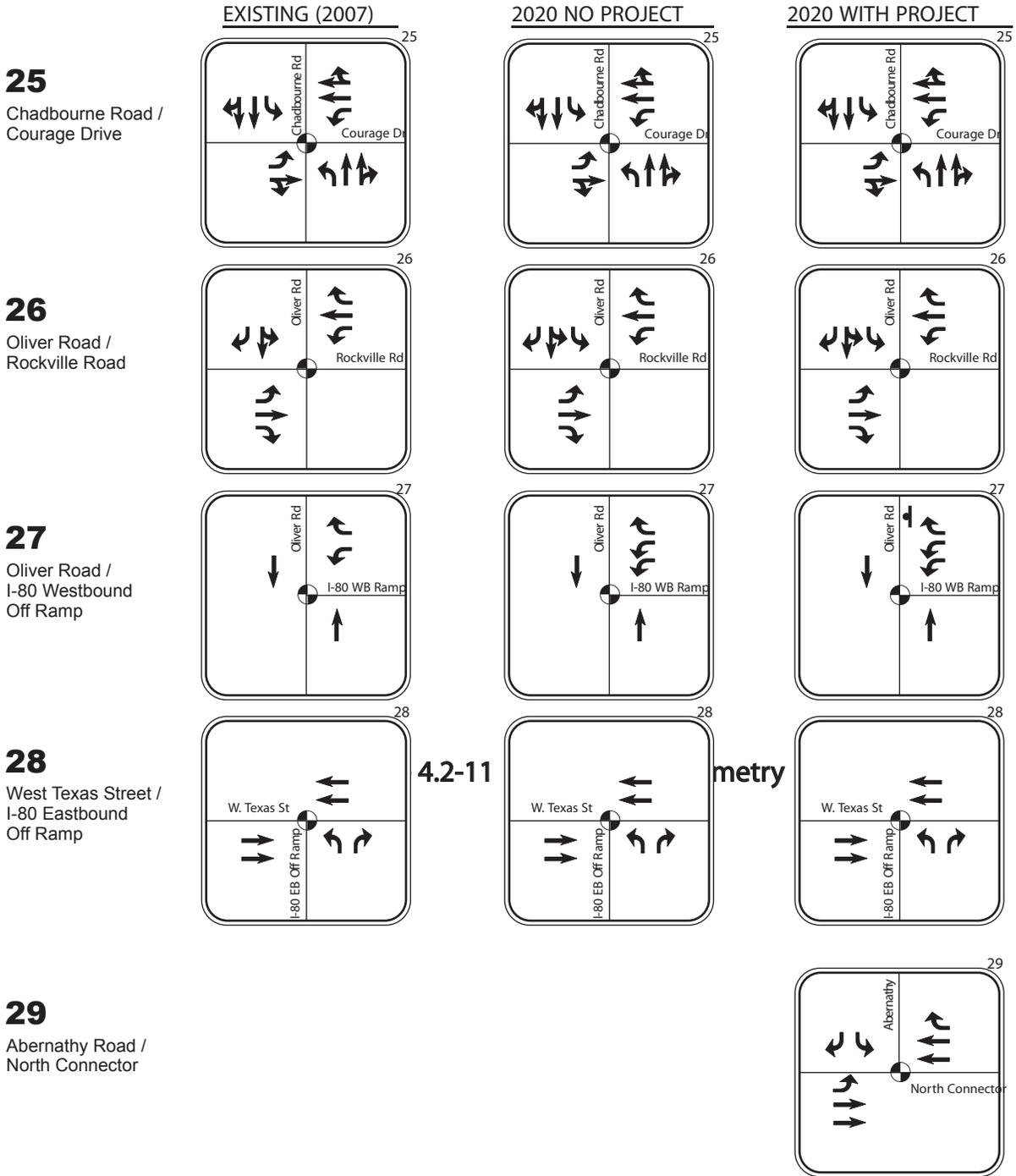


LEGEND

▬ Stop Sign

● Traffic Signal

Figure 4.2-11 Intersection Geometry



4.2-11 metry

**LEGEND**  
 Stop Sign  
 Traffic Signal

Figure 4.2-12 Intersection Geometry

**Table 4.2-4. LOS Analysis - 2020 No Project and 2020 with Project**

#	Intersection	2020 no Project				2020 with Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)
1	SR12 & Red Top Road	F	***	F	***	D	45.9	B	19.3
2	I-80 WB and Red Top Road	C	25.1	B	10.2	C	29.5	A	8.4
3	I-80 EB and Red Top Road	A	9.5	D	53.1	B	10.0	C	27.1
4	McGary Road and Red Top Road	D	34.2	E	<b>37.3</b>	B	14.1	B	14.1
5	Rockville Road and Green Valley Road	A	7.9	A	7.5	A	7.4	A	7.4
6	Mangels Boulevard and Green Valley Road	D	36.4	D	37.3	D	40.0	C	31.6
7	Business Center Drive and Green Valley Road	C	34.7	D	54.8	D	35.3	D	48.5
8	I-80 WB and Green Valley Road	B	11.4	A	3.2	A	6.3	A	5.9
9	I-80 EB and Green Valley Road (Lopes Road)	C	25.0	D	48.3	B	19.5	D	41.5
10	Business Center Drive and Neitzel Road	C	21.0	B	18.9	C	23.4	B	19.7
11	Mangels Boulevard and Business Center Drive <sup>1</sup>	C	24.5	C	28.4	C	32.5	C	31.3
12	Rockville Road and Suisun Valley Road	C	25.7	B	15.5	C	22.6	B	14.0
13	Mangels Boulevard and Suisun Valley Road <sup>2</sup>	C	28.7	C	26.8	D	36.6	C	32.5
14	Nietzel Road and Suisun Valley Road	C	30.1	D	39.7	C	24.2	C	24.7
15	I-80 EB and Suisun Valley Road	D	34.2	F	<b>83.6</b>	C	26.6	E	<b>57.4</b>
16	Central Way and Suisun Valley Road	B	15.9	C	21.9	B	15.6	C	33.5
17	Mankas Corner Road and Abernathy Road	B	10.0	B	11.0	B	10.4	B	10.8
18	Rockville Road and Abernathy Road	A	4.7	A	5.9	A	5.9	A	6.9
19	I-80 WB and Abernathy Road	F	107.7	B	12.5	C	23.9	C	24.2
20	I-80 EB and Abernathy Road	C	22.1	C	18.6	C	16.3	B	16.6
21	Auto Mall Drive and Abernathy Road	B	12.6	B	13.2	B	18.4	B	15.3
22	SR12 WB and Chadbourne Road	C	23.7	B	16.3	C	29.4	C	24.0
23	SR12 EB and Chadbourne Road	C	25.3	D	42.6	A	5.5	C	29.6
24	Busch Road and Chadbourne Road	B	18.1	D	39.7	C	21.0	C	33.7
25	Courage Drive and Chadbourne Road	B	19.9	C	24.4	C	25.9	C	21.1

#	Intersection	2020 no Project				2020 with Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)	LOS	Average Delay (Seconds)
26	Rockville Road and Oliver Road	C	21.1	C	25.8	C	22.3	C	26.9
27	I-80 WB and Oliver Road	B	14.6	B	16.5	B	15.6	B	15.1
28	I-80 EB and West Texas Street	B	12.1	B	19.6	B	11.7	B	16.8
29	Abernathy Road and North Connector	n/a	n/a	n/a	n/a	C	29.0	B	15.1

Source: DMJM Harris, 2007.

Notes:

\*\* Delay exceeds meaningful range of the model.

<sup>1/</sup> Mangles Boulevard and Business Center Drive will be realigned to become Mangles Boulevard and West America Drive

<sup>2/</sup> Mangles Boulevard and Suisun Valley Road will be realigned to become Mangles Boulevard and Business Center Drive

LOS and Average Delay highlighted in **bold** indicate intersections operating at unacceptable conditions.

Traffic hazards related to a roadway design feature.

The Project has been designed to meet all Solano County, City of Fairfield, STA, and Caltrans design standards, where applicable. In the East End, the Project is designed for a 10-year flood event. Issues related to flood hazards and hydrology are further discussed in Section 4.9, Hydrology and Water Quality.

Inadequate parking capacity.

The Project does not include any parking nor would it affect existing parking within the vicinity. Therefore there is no impact to parking or parking capacity.

## **ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

### **Less than Significant Impacts**

The Project would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

As discussed in the “2020 with Project Intersection Peak Hour Volume Comparison” section, with the implementation of the North Connector Project, redirected volumes from I-80 along with other local trips generating from the Green Valley and surrounding areas which would have otherwise used the freeway to reach central Fairfield (or vice-versa) would now use the North Connector. This causes a decrease in traffic levels on I-80, and an increase in traffic levels on the North Connector and intersecting roads in the Green Valley area of Fairfield. However, the traffic forecasts suggest less than a four percent increase in volumes from the 2020 No Project to the 2020 with Project conditions for this area. In addition, through the Project and its proposed improvements, Green Valley intersections #6, 7, 8, 9, 10, 11 and 12 would experience acceptable levels of service during either peak hour, satisfying the City’s LOS policy, meaning that impacts arising from increase in traffic in relation to existing traffic load and roadway capacity would be less than significant. Thus, the Project would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

Overall, the Project would improve delay at nine intersections (#1, 3, 4, 7, 9, 14, 15, 19, and 23), maintain similar levels of delay at 15 intersections (#2, 5, 6, 8, 10, 12, 17, 18, 20, 21, 24, 25, 26, 27, and 28), and cause delay to increase at four intersections (#11, 13, 16, and 22). Even though these four intersections would experience a slight increase in delay, the LOS at each intersection would remain in the acceptable range (LOS D or better) and therefore would not result in a significant impact. The I-80 Eastbound Ramps / Suisun Valley Road intersection (#15) would operate at LOS E in the PM peak hour; however, the intersection would experience a decrease in delay of 26 seconds as compared to the 2020 No Build Conditions.

The Project would not conflict with adopted policies, plans, or programs supporting alternative transportation.

In the East End of the Project area, the Project includes relocation of the multi-use path between Abernathy Road and Suisun Creek. This relocated path would tie into the existing Fairfield Linear Park at both ends. As a result, the portion of the existing Fairfield Linear Park between Abernathy Road and Suisun Creek would be removed because it would no longer be needed. See section 4.13, Public Services and Recreation, for additional discussion of the park.

In the West End of the Project area, the proposed signalized intersection at SR12/Red Top Road/North Connector would provide improved access and safety for pedestrians and bicyclists traveling the regional bike route that follows Red Top Road to McGary Road south of I-80. The signalized intersection would also include crosswalks, provided on the north side of SR12 and the east side of Red Top Road, improving access for pedestrians and bicyclists to access both McGary Road and the existing pedestrian/bicycle path along the north side of SR12 west of I-80 between Red Top Road and Green Valley Road. In addition, the Project is designed to ensure that the existing bike path that parallels the north side of SR12 east of Red Top Road is realigned as part of the Red Top Road/North Connector/SR12 West intersection improvements to provide a 12-foot wide path and safe access to the new signalized intersection.

By providing a signalized intersection and crosswalks on the West End and a multi-use path on the East End the Project would improve conditions for bicyclists and pedestrians, resulting in a beneficial effect for pedestrian and bicycle access and safety. Coordination with Solano County and Caltrans shall take place to provide proper signage and a controlled turning movement for right turns for bicyclists at the North Connector/Red Top Road intersection. These design elements would ensure that any impacts to alternative transportation within the Project area would be less than significant.

### **Significant and Potentially Significant Impacts and Mitigation Measures**

**4.2-1: During construction, the Project could result in inadequate emergency access. This is considered a potentially significant adverse impact.**

The Project is a roadway improvement project and therefore would provide improved emergency access to areas north of I-80 in the Suisun Valley and Green Valley areas. However, emergency access could be adversely impacted during the construction phase which would include work on existing roadways in the area such as Abernathy Road and SR12 West. Implementation of the following mitigation measure would reduce impacts to emergency access during construction to a less-than-significant level:

**Mitigation Measure 4.2-1:** STA shall prepare a Transportation Management Plan (TMP) prior to beginning construction. The TMP shall be incorporated into the detailed design and implemented during construction. The TMP could include, but not be limited to, Motorists Information, Incident Management, Construction Strategies and Public Awareness Strategies. Detailed traffic handling plans shall also be developed that include restriping and staging elements to ensure safe free flow of traffic is maintained in the project area.

**Significance after Mitigation:** Less than significant.

**4.2-2: The Project would exceed, either individually or cumulatively, a level of service standard established by Solano County or the City of Fairfield for designated roads or highways.**

The Solano County General Plan Transportation Element requires LOS D or better for all locations within the County. Similarly, the City of Fairfield General Plan Circulation

Element calls for LOS D or better on arterial streets. Under 2020 No Project conditions, four intersections would operate at LOS E or worse during either the AM or PM peak hour periods. The intersection at SR12 and Red Top Road would operate at LOS F under both AM and PM peak hour periods, the intersection at I-80 Westbound and Abernathy Road would operate at LOS F during the AM peak hour period, the intersection at McGary Road and Red Top Road would operate at LOS E during the PM peak hour and the intersection at I-80 Eastbound and Suisun Valley Road would operate at LOS F during the PM peak hour period. Under 2020 with Project conditions, excluding the intersection at I-80 Eastbound and Suisun Valley Road, all these intersections experience improved LOS D or better. The intersection at I-80 Eastbound and Suisun Valley Road operates at LOS E with an average delay of 57.4 seconds during the PM peak hour under 2020 with Project conditions.

This is an improvement over 2020 No Project conditions, wherein the intersection operates at LOS F with an average delay of 83.6 seconds. This represents a decrease in average delay of approximately 26 seconds.

**Mitigation Measure 4.2-2:** Prior to completion of the East End of the North Connector, STA shall construct a double left turn lane from Suisun Valley Road onto I-80 Eastbound. The double left turn lane shall meet Caltrans design requirements and would reduce the LOS from E to D at this intersection.

**Significance after Mitigation:** Less than significant.

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