

## 4.7 TRANSPORTATION

The following transportation analysis is based in part on an investigation of traffic prepared for the *EIR/EIS for the Guadalupe River Flood Control Project* (Parsons Engineering Science 1997). For that investigation, Barton-Aschman Associates, Inc. conducted traffic counts at one key intersection and on 11 key street segments potentially impacted by construction of the project. In addition, traffic volume information was obtained from the files of three sources: the City of San Jose, the County of Santa Clara, and Barton-Aschman Associates, Inc.

### 4.7.1 Regulatory Setting

The City of San Jose has adopted a Circulation Element of the General Plan (City of San Jose 1987), which includes planning provisions for the circulation of people and goods on public roads. The Circulation Element supports the goals, objectives, policies, and proposals of the land use element; it also has direct relationships with the housing, open space, noise, and safety elements. In addition to ensuring that the transportation infrastructure is adequate to meet the circulation needs of the community, the Circulation Element provides a planning tool for the city to ensure that impacts resulting from traffic flow are consistent with existing and planned land uses along the roadways.

### 4.7.2 Existing Conditions

#### *Roadways and Bridges*

The highways, major streets, and railroads in the project study area, including all those that bridge the Guadalupe River, are shown in Figures 4.7-1 and 4.7-2. The northern part of the project corridor, which includes Reach 7 of the Guadalupe River, is shown in Figure 4.7-1. Reaches 8, 9, 10, and 11 in the central area of the project corridor are shown in Figure 4.7-2. Proposed work in the southernmost portion of the river corridor (Reach 12) would not affect any roadways, bridges, or mass transit and is not addressed in this transportation analysis.

Twelve bridges cross the Guadalupe River in Reaches 7 through 11 including two railroad bridges (Southern Pacific and Union Pacific railroads), three freeway/expressway bridges (State Route 87, Almaden Expressway, and Capitol Expressway), and seven other roadway bridges (Willow Street, West Alma Avenue, Willow Glen Way, Malone Road, Curtner Avenue, Hillsdale Avenue, and Branham Lane).

#### *Bus Service*

Existing bus service throughout the county is provided by Santa Clara Valley Transportation Authority (VTA). Numerous bus lines cross the Guadalupe River on the following streets in the project study area:

- Willow Street: Line #25
- West Alma Avenue: Line #82
- Malone Road: Line #67
- Curtner Avenue: Line #26
- Almaden Expressway: Line #64
- Hillsdale Avenue: Line #37
- Capitol Expressway: Lines #37 and #67
- Branham Lane: Line #27

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Figure 4.7-1 Project Area Road Network (Reach 7)

Figure 4.7-2 Project Area Road Network (Reaches 8 through 11)

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### *Light Rail Transit Service*

The southern portion of the Guadalupe Corridor Light Rail Transit (LRT) line, operated by Santa Clara VTA, is located in the median of State Route 87 (SR 87). SR 87 is shown in Figures 4.7-1 and 4.7-2 (above). The LRT line provides commuter transportation between the south San Jose area and the downtown and northern areas of San Jose. LRT stations in the project study area are located at Virginia Street, Alma Avenue (Tamien Station), Curtner Avenue, Capitol Expressway, and Branham Lane. Trains run every 10 minutes in each direction, northbound and southbound.

### *Caltrain Service*

Caltrain is passenger train service that connects San Jose with San Francisco to the north and with Gilroy to the south. Caltrain is operated by Amtrak and governed by a joint powers board, which includes the San Mateo County Transit District, the Santa Clara VTA, and other agencies. Caltrain uses the SPRR tracks, which cross the Guadalupe River between Virginia Street and Willow Street in Reach 7. One Caltrain station (Tamien Station) is located in the project study area at Alma Avenue. The Tamien Station area is currently within the 50-year floodplain of the Guadalupe River. The service to Tamien Station provides a convenient connection to VTA's light rail transit system, which also stops at Tamien Station (see Figure 4.7-1). Between San Jose and Gilroy, Caltrain service through the study area consists of four trains daily in each direction (northbound and southbound) seven days a week, except on weekends when the service does not operate south of Tamien Station. Future plans call for expansion of Caltrain service to Gilroy to six or eight trains daily in each direction (personal communication, J. Unites 1997).

### *Traffic Volumes*

During the week of July 1, 1996, 24-hour traffic counts were taken on the following street segments:

- Willow Street (between Minnesota Avenue and Lelong Street)
- West Alma Avenue (between Belmont Way and Lick Avenue)
- Willow Glen Way (between Creek Drive and Northern Road)
- Malone Road (between Bird Avenue and Almaden Road)
- Curtner Avenue (between Coastland Avenue and Almaden Road)
- Almaden Expressway (between Almaden Road and Koch Lane)
- Nightingale Drive (between Ironwood and Redbird drives)
- Hillsdale Avenue (between Old Almaden Road and Pearl Avenue)
- Capitol Expressway (between Old Almaden Road and Pearl Avenue)
- Almaden Expressway (between Prosper Avenue and Branham Lane)

Data from these traffic counts and traffic volumes from other sources for other key roadways are presented in Table 4.7-1.

### *Freeways and Expressways*

State Route 87 (SR 87) is a recently completed state highway that generally parallels the Guadalupe River and crosses the river in Reach 7 (see Figure 4.7-1). SR 87 has provided relief to congested parallel facilities, primarily the Almaden Expressway, which has an interchange with SR 87 in the vicinity of Reach 9 (see Figure 4.7-2).

**Table 4.7-1. Existing Traffic Volumes**

<i>Street</i>	<i>Directio</i> <i>n</i>	<i>Lanes</i>	<i>Weekday Volume</i>	<u>PEAK-HOUR VOLUME</u>	
				A.M.	P.M.
Willow Street	EB	1	4,652	199	395
	WB	1	4,166	185	304
West Alma/Minnesota Avenue	EB	2	7,511	592	475
	WB	2	7,184	307	575

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Willow Glen Way	EB	1	1,325	81	119
	WB	1	1,373	122	94
Malone Road	EB	1	3,607	157	373
	WB	1	3,548	225	280
Curtner Avenue	EB	2	8,926	602	609
	WB	2	8,372	497	613
Almaden Expressway (north of Koch)	NB	3	24,396	3,917	1,192
	SB	4	27,701	899	2,813
Almaden Expressway (north of Branham)	NB	3	21,747	3,240	1,124
	SB	3	21,801	875	1,904
Nightingale Drive	NB	1	600	49	46
	SB	1	395	17	36
Hillsdale Avenue	EB	1	3,181	143	289
	WB	1	2,968	361	222
Capitol Expressway (SR 85)	EB	3	17,738	752	1,508
	WB	3	17,835	1,383	1,152

*Source:* Parsons Engineering Science 1997.

Almaden Expressway (G8) is a Santa Clara County highway that generally parallels the Guadalupe River and crosses the river and Canoas Creek in Reach 10 near its confluence with Canoas Creek (see Figure 4.7-1). Almaden Expressway also crosses Ross Creek in Reach 11 (see Figure 4.7-2). The County plans to eventually widen Almaden Expressway to accommodate high occupancy vehicle (HOV) lanes in both directions.

Capitol Expressway (G21) is a Santa Clara County highway that crosses the Guadalupe River and defines the boundary between Reaches 10 and 11. Capitol Expressway terminates at its interchange with the Almaden Expressway on the west side of the river (see Figure 4.7-2).

In the Almaden Expressway corridor, many signalized intersections are congested during peak hours. Level of service (LOS) is a description of an intersection's operation, ranging from Level A to Level F, with LOS A representing free-flowing traffic, and LOS F heavy congestion (see Appendix I for complete definitions). For signalized intersections, the City of San Jose's method for analyzing level of service was utilized. The procedure is based upon the volume-to-capacity (V/C) ratio, which is the hourly rate of flow in the critical movements (such as left-turns against traffic) divided by the estimated hourly capacity of the intersection. For unsignalized intersections, the level of service procedure used is described in the *Highway Capacity Manual* by the Transportation Research Board (USDOT 1995). Level of service criteria for this methodology are stated in very general terms and are related to general delay (the time required to get through an intersection) ranges. Criteria are based upon the reserve of unused capacity of each lane in question. The following intersections were found to operate at an LOS considered unacceptable in urban areas (E or F) during the A.M./P.M. peak hours:

- Almaden Rd/Ironwood Drive and Almaden Expressway (A.M. LOS F and P.M. LOS E)
- Almaden Expressway and Koch Lane (A.M. LOS F and P.M. LOS E)
- Old Almaden Road and Hillsdale Avenue (A.M. and P.M. LOS F)
- Almaden Expressway and Branham Lane (A.M. and P.M. LOS E)

All of the above intersection operations have been improved substantially by the completion of SR 87. Up to 40 percent of the commuter traffic northbound in the morning and southbound in the evening uses the new freeway instead of other more heavily used north/south arteries. Reduction in north/south traffic at intersections in the study corridor has reduced delay and improved LOS on all east/west roadways.

Streets with direct access to freeway interchanges, particularly Capitol Expressway and Curtner Avenue, have experienced reduced traffic flows. However, the Hillsdale Avenue bridge is a unique case. Large numbers of drivers use the Hillsdale Avenue bridge over the Guadalupe River to avoid the congested interchange of Almaden Expressway and Hillsdale Avenue/Capitol Expressway, one block to the south (see Figure 4.7-2). The opening of SR 87 has greatly reduced, although it has not eliminated, these diverted trips.

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### **4.7.3 Environmental Effects**

#### *Impact Significance Criteria*

The threshold of significance for transportation impacts is generally the level of additional traffic that would be perceptible to the motoring public, measured in roadway and/or intersection V/C.

#### *Channel Widening Plan*

##### *Short-Term Construction Impacts*

Nearly all Channel Widening Plan transportation impacts would occur during the construction phase and would be short term. The increased construction-related traffic generally would not be significant, but temporary construction detours due to roadway realignment or bridge replacement could create short-term significant impacts on roadway and intersection V/C operations. Short-term transportation impacts would be mitigated to insignificance by adopting a Construction Traffic Management Plan (see section 4.7.4 for the plan's components). The various short-term transportation impacts are discussed generically in the following paragraphs:

**ROADWAYS.** Widening of the river channel would not directly impact any road configuration, but some local roadways would be temporarily impacted by construction activities. During revegetation efforts along Reach 10B, temporary closure of some lanes of the Almaden Expressway for equipment access may be necessary. An encroachment permit from the County must be obtained prior to the commencement of any construction-related activity within the Almaden Expressway right-of-way. Existing culverts that carry Canoas Creek beneath Almaden Expressway and Nightingale Drive would be replaced. Construction along Canoas Creek would require temporary full closure of Nightingale Drive and diversion of southbound trips along the existing one-way frontage road paralleling Almaden Expressway to Redbird Drive. Northbound trips would need to use Redbird Drive and a different segment of the frontage road to access the Almaden Road/Ironwood Drive intersection and the Almaden Expressway. These would be significant short-term impacts that would be mitigated to insignificance by adopting a Construction Traffic Management Plan including activity scheduling and phasing to reduce congestion, placement of warning signs, and provision of detours. The Construction Traffic Management Plan would include scheduling of the two Canoas Creek box culverts during separate time periods (Parsons Engineering Science 1997). No long-term adverse impacts on roadways would occur.

**BRIDGE CONSTRUCTION.** Alteration of bridges that carry the three major highways (SR 87, Almaden Expressway, and Capitol Expressway) across the Guadalupe River would not be required. The Channel Widening Plan requires three bridge replacements: the Willow Street and Alma Avenue bridges in Reach 7 and the Hillsdale Avenue bridge in Reach 10C. The traffic currently using bridges that would be temporarily closed would be redirected to neighboring bridges that would remain open. Diverted traffic would result in significant, short-term impacts on neighborhood streets. The impacts would be mitigated to insignificant by adopting a Construction Traffic Management Plan including activity scheduling and phasing to reduce congestion, warning signage, and detours.

**BUS SERVICE.** During construction, Santa Clara Valley Transportation Authority (VTA) bus lines that use any of the project bridges and local roads would need to be temporarily rerouted and rescheduled during bridge or road closures. Detouring of bus lines would cause more vehicle-miles of travel on the affected routes and possible travel time delays; and could change bus schedules sufficiently to require printing and dissemination of new time tables; and could require an increase in the number of transit vehicles and operators, which could result in temporarily increased operating costs. These would be significant short-term impacts that would be mitigated to insignificance by providing early notification to VTA to allow for bus line rerouting and to minimize the need for rescheduling, and by adopting a Construction Traffic Management Plan designed to minimize adverse transportation impacts.

**LIGHT RAIL TRANSIT SERVICE.** No alteration of the SR 87 bridge, which carries the Santa Clara Valley Transportation Authority (VTA) Light Rail Transit (LRT) line across the Guadalupe River near the north end of Reach 7, would be required. Although stream channel widening would occur beneath the bridge, no construction work in or around the LRT

operating right-of-way is anticipated. If it becomes necessary to conduct construction activities in or around the LRT right-of-way, an access permit would be obtained from VTA prior to performing such work.

**TRUCK TRAFFIC.** Construction activities would include earthwork requiring haul trucks traveling in and out of the project area. Construction of bridges, floodwalls, and other flood control features would require ready-mix concrete trucks and steel-carrying trucks. Increased truck activity in the project area during construction would disrupt traffic flow in residential neighborhoods. This would be a significant, short-term impact that would be mitigated to insignificance by adopting a Construction Traffic Management Plan including detours to minimize disruptions, maintaining a minimum of one lane open to traffic at all times, and avoiding the closure of two adjacent bridges simultaneously.

**SPRR AND UPRR OPERATIONS.** Railroad freight operations on the Southern Pacific Railroad (SPRR) and Union Pacific Railroad (UPRR) tracks (and Caltrain passenger service on the SPRR tracks) could be affected by Channel Widening Plan construction since both tracks cross the Guadalupe River. The Channel Widening Plan would beneficially affect Caltrain service by providing the Tamien Station area with protection from a 50-year flood event, but still leaving it within the 100-year floodplain.

The Channel Widening Plan includes construction of reinforced concrete box culverts under the SPRR and UPRR bridges in Reach 7. Typically, the box culverts would be constructed on site and later jacked under the railroads by pushing or pulling on either side of the crossings. If the Southern Pacific and Union Pacific Transportation Companies were to allow track closure for temporary bridge installation, then the jacking method would not be used. Installation of a temporary bridge would involve raising the track profile, driving piles, removing both existing tracks, installing shoring, and placing structural steel beams and diaphragms. Following temporary bridge construction, tracks would be reinstalled, including rails, ties, and ballast. The jacking method would have no significant rail transport impacts. The temporary bridge installation method would have a significant short-term impact on railroad scheduling. This impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan including scheduling track removal and replacement during non-peak use periods designated by the railroad.

**PEDESTRIAN AND BICYCLE USE.** Bridge and road closures during construction would likely have an impact on pedestrian and bicycle travel in the project area, particularly on children going to and from school. Some students currently cross Guadalupe River bridges on their way to school. Pedestrian and bicycle access to the Virginia and Tamien LRT stations could also be disrupted by closure of bridges and roads, such as the West Alma Avenue bridge. These would be significant short-term impacts. The impacts would be mitigated to insignificance by adopting a Construction Traffic Management Plan that would provide for temporary alternative pedestrian bridge access that would also accommodate bicycles.

### *Long-Term Operational Impacts*

Operational transportation impacts would be associated with flood control maintenance activities including erosion control and vegetation trimming. Any increases in trips associated with long-term maintenance would be insignificant when compared to existing traffic volumes at adjacent intersections and roadways. Flood-caused road and rail blockages, flood damage to roadways and rail facilities, and the resulting disruptions of traffic flow during storm cleanup would be reduced over time, which would be a beneficial impact.

### *Bypass Channel Plan*

#### *Short-Term Construction Impacts*

**CONSTRUCTION TRAFFIC IMPACTS RELATED TO BRIDGE CONSTRUCTION.** During the construction phase of the Bypass Channel Plan, some bridge construction would be required and some streets would be closed temporarily, causing traffic diversions through residential neighborhoods; this would be a significant short-term impact that would be mitigated to insignificance by adopting a Construction Traffic Management Plan as discussed for the Channel Widening Plan.

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The proposed alteration or replacement of existing bridge or culvert crossings is described in Table 4.7-2. Malone Road is not included on the table, because the Malone Road bridge was completed in 1990 and is compatible with the project as constructed. Capitol Expressway also is not included, because no new construction is proposed for the Capitol Expressway bridge.

The peak-hour volumes on every street crossing the Guadalupe River in the feasibility study area (from north to south) are shown in Table 4.7-3. Peak-hour volumes are used to evaluate impacts associated with the morning and evening commute periods.

Rather than determining the impact of all possible bridge closing combinations, a discussion of likely scenarios is presented. To judge whether a particular bridge street could accommodate traffic diverted from closed adjacent bridges, the typical capacity of each link is addressed (Table 4.7-3). These capacities were derived from the following lane flows, in vehicles per hour (vph):

- 750 vph for collector streets
- 1,600 vph for arterial streets
- 1,900 vph for expressways (no expressways would be closed at any time)

**Table 4.7-2. Bridge Construction for the Bypass Channel Plan**

<u>Bridge</u>	<u>Reach</u>	<u>Proposed Construction</u>
Willow Street	7	New bridge over new bypass channel, east of existing river bridge*
West Alma Avenue	7	New bridge over new bypass channel
Willow Glen Way	8/9	Replace existing river bridge with new bridge*
Curtner Avenue	9/10	Replace existing river bridge with new bridge*
NB Almaden Expressway	10	Install additional box culvert for Canoas Creek flow.
Hillsdale Avenue	10	Replace existing river bridge with new bridge*
Almaden Expressway	11	Enlarge box culvert for Ross Creek flow
Nightingale Drive	Canoas Creek	Install additional box culvert for Canoas Creek flow.*

Note: \* Requires street closure during construction

**Table 4.7-3. Affected Traffic Arteries**

<u>Street</u>	<u>Temporary Bridge Closures Required</u>	<u>Direction</u>	<u>Critical Peak-Hour Volume</u>	<u>Number of Lanes</u>	<u>Typical Capacity</u>	<u>Unused Capacity</u>
Willow Street	Yes	EB	400	1	750	350
		WB	300	1	750	450
West Alma Avenue	Yes	EB	600	2	1,500	900

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		WB	600	2	1,500	900
Willow Glen Way	Yes	EB	100	1	750	650
		WB	100	1	750	650
Malone Road	No	EB	400	1	750	350
		WB	300	1	750	450
Curtner Avenue	Partial <sup>1</sup>	EB	600	2	3,200	2,600
		WB	600	2	3,200	2,600
Almaden Expressway north of Koch	No	NB	4,000	3	5,700	1,700
		SB	3,000	4	7,600	4,600
Almaden Expressway north of Branham	No	NB	3,250	3	5,700	2,450
		SB	1,900	3	5,700	3,800
Nightingale Drive	Yes	NB	600	1	750	150
		SB	400	1	750	350
Hillsdale Avenue	Yes	EB	300	1	750	450
		WB	350	1	750	400
Capitol Expressway (SR 87)	No	EB	1,500	3	5,700	4,200
		WB	1,400	3	5,700	4,330

*Note:* 1. Bridge replacement in stages with two lanes open at all times.  
*Source:* Parsons Engineering Science 1997.

Although these capacity values are general and would in actuality depend upon the peak-hour operation of the adjacent signalized intersections, they are adequate for planning purposes.

The short-term impact of construction road closings can be estimated from Table 4.7-3. The traffic volumes using bridges that would be closed would be redirected to neighboring bridges remaining open. The volumes assume that bridge closing would be phased, and that no two adjacent bridges would be closed simultaneously.

West Alma Avenue could theoretically accept all 650 peak-hour vehicles from Willow Street to the north. Impacts would be reduced to less than significant if two lanes were kept open at all times on the four-lane West Alma Avenue. Constricting the present West Alma Avenue traffic to one lane westbound and one lane eastbound would have some impact, but it would be much less than if the entire street were closed. A significant impact would occur if the roadway were completely closed, resulting in a traffic diversion through the residential neighborhoods that line the Guadalupe River. This impact would be reduced to less than significant by adopting a Construction Traffic Management Plan including detours to minimize disruptions, maintaining a minimum of one lane open to traffic at all times, and avoiding the closure of two adjacent bridges simultaneously.

The temporary closure of Willow Glen Way could be absorbed by Malone Road to the south and West Alma Avenue to the north with minimal impact. Impacts would be less than significant assuming two lanes on West Alma Avenue remain open.

The Curtner Avenue roadway and bridge carry the highest volume of traffic of any street proposed for temporary closure. Complete closure during bridge replacement would result in a significant, short-term impact. The impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan including staging the bridge replacement so that two lanes (one in each direction) could be kept open during daytime and early evening hours. Nighttime bridge closure for detour changeovers could be accommodated.

Because of the sensitive nature of the neighborhood to the north and the Koch Lane residential area to the south of the new Malone Road bridge, partial capacity would be maintained on Curtner Avenue. However, Malone Road, which would not be closed, could accept only a limited amount of traffic diverted from other bridges before the negative impact upon this residential street would be felt.

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**ALMADEN EXPRESSWAY.** Existing culverts that carry Canoas Creek beneath Almaden Expressway would be replaced. During culvert replacement and other improvements along Reach 10B, temporary closure of some lanes of the Almaden Expressway for construction equipment access is probable. An encroachment permit from the County must be obtained prior to the commencement of any construction activity within the Almaden Expressway right-of-way. As shown in Table 4.7-3, peak-hour north-bound Almaden Expressway volumes already exceed capacity. No acceptable alternate routes exist for diverted traffic, except SR 87. However, SR 87 is expected to carry large volumes of traffic generated by future development, and would attract only 400 to 500 peak-hour vehicles from Almaden Expressway (in the peak direction). Therefore, all expressway lanes would be required. If fewer than three lanes in each direction are maintained, extreme congestion would result, with up to 1,000 cars flooding local streets in peak hours, attempting to bypass the construction bottleneck. This would be a significant short-term impact that could be mitigated to insignificance by adopting a Construction Traffic Management Plan providing for three operating lanes during the peak hour and maintaining walkway access at all times.

**BUS SERVICE.** During construction, Santa Clara VTA bus lines that use any of the project bridges and local roads would be significantly impacted in the short-term in a manner similar to that described for the Channel Widening Plan. The impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan as discussed for the Channel Widening Plan.

**LIGHT RAIL TRANSIT SERVICE.** No alteration of the SR 87 bridge, which carries the Santa Clara VTA Light Rail Transit (LRT) line across the Guadalupe River near the north end of Reach 7, would be required. Although construction of a gabion-lined bypass channel on the east side of the river bottom would occur beneath the bridge, no construction work in or around the LRT operating right-of-way is anticipated. If it becomes necessary to conduct construction activities in or around the LRT right-of-way, an access permit would be obtained from VTA prior to performing such work.

**TRUCK TRAFFIC.** Construction of bridges, floodwalls, and other flood control features would require ready-mix concrete trucks and steel-carrying trucks. The increased truck activity in the project area during construction could cause short-term disruptions of traffic flow in residential neighborhoods similar to that described for the Channel Widening Plan, including that on Canoas Creek. The impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan as discussed for the Channel Widening Plan.

**SPRR AND UPRR OPERATIONS.** Railroad freight operations on the Southern Pacific Railroad (SPRR) and Union Pacific Railroad (UPRR) tracks (and Caltrain passenger service on the SPRR tracks) could be affected by Bypass Channel Plan construction since both tracks cross the Guadalupe River. The Bypass Channel Plan would beneficially affect Caltrain service by providing the Tamien Station area with protection from a 100-year flood event.

The Bypass Channel Plan includes construction of reinforced concrete box culverts under the SPRR and UPRR bridges in Reach 7. Typically, the box culverts would be constructed on site and later jacked under the railroads by pushing or pulling on either side of the crossings. If the Southern Pacific and Union Pacific Transportation Companies were to allow track closure for temporary bridge installation, then the jacking method would not be used. Installation of a temporary bridge would involve raising the track profile, driving piles, removing both existing tracks, installing shoring, and placing structural steel beams and diaphragms. Following temporary bridge construction, tracks would be reinstalled, including rails, ties, and ballast. The jacking method would have no significant rail transport impacts. The temporary bridge installation method would have a significant short-term impact on railroad scheduling. The impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan as discussed for the Channel Widening Plan.

**PEDESTRIAN AND BICYCLE USE.** Bridge and road closures during construction would have a significant short-term impact on pedestrian and bicycle travel similar to that described for the Channel Widening Plan. The impact would be mitigated to insignificance by adopting a Construction Traffic Management Plan as discussed for the Channel Widening Plan.

### *Long-Term Operational Impacts*

Operational transportation impacts would be associated with flood control maintenance activities including erosion control and vegetation trimming. Any increases in trips associated with long-term maintenance would be insignificant when compared to existing traffic volumes at adjacent intersections and roadways. Flood-caused road and rail blockages, flood damage to roadways and rail facilities, and the resulting disruptions of traffic flow during storm cleanup would be reduced over time, which would be a beneficial impact.

### *No-Action Alternative*

The No-Action Alternative would have no impacts on traffic flow or roadways. The existing conditions would continue.

#### **4.7.4 Mitigation Measures**

##### *Channel Widening Plan*

The following mitigation measures constitute the framework of a Construction Traffic Management Plan designed to minimize transportation impacts that could result from implementation of the Channel Widening Plan:

1. During development of the construction plans, a detailed Construction Traffic Management Plan shall be prepared and implemented. The Santa Clara VTA and other interested parties will be invited to participate in development of the plan. Traffic detours, including bus routes, shall be established to minimize the disruption of traffic caused by construction. To the extent feasible, construction shall be phased to maintain a minimum of one lane open to traffic at all times in each direction. No two adjacent bridges shall be closed at the same time.
2. The following measures shall be considered to minimize impacts on the Almaden Expressway:
  - a. Schedule construction work during summer months when traffic is lighter.
  - b. Schedule installation of multiple box culverts during separate time periods (e.g., on Canoas Creek).
  - c. Install culverts by boring and jacking.
  - d. Use pre-cast box sections for culvert construction.
3. Traffic management techniques such as the use of barricades and warning signs shall be applied as are described in the *Manual of Traffic Controls for Construction and Maintenance Work Zones* (Caltrans 1996) and the *Manual on Uniform Traffic Control Devices for Streets and Highways* (USDOT 1993). Impacted areas shall be notified regarding alternate traffic and pedestrian routes.
4. The Santa Clara VTA shall be notified in advance of any planned bridge closures. Notification shall occur so that bus lines can be rerouted and disruption to bus schedules can be minimized. Compensation for costs incurred by VTA during construction, such as costs associated with notifying the public of bus route/schedule changes or costs associated with operation of additional vehicles, will be a matter of negotiation between SCVWD and VTA. The VTA Bus Stop Coordinator will be contacted at least 72 hours prior to the start of any construction work affecting bus stops or transit operations.
5. Temporary alternative pedestrian bridge access shall be provided during bridge closures to avoid blocking access to schools and LRT stations. Any pedestrian bridge shall be designed to accommodate bicycles.
6. Construction haul routes and other measures shall restrict truck traffic on residential streets to only those streets where project activities occur. The Corps shall monitor the movements of construction vehicles to ensure that trucks use only the designated routes. Work on or near residential streets shall be limited by time of day to between 7:00 A.M. and 6:00 P.M. to prevent night-time disruption to nearby residents.
7. The Corps shall comply with all railroad company regulations and instructions governing railroad operations and property including the following: the use of signals and flags for all railroad property,

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including directing train traffic, as a protection against accidents; conducting operations adjacent to the railroad facilities and within the railroad right-of-way in such a manner as to maintain structures and other facilities in good and safe conditions; and the protection of tracks and the traffic moving on such tracks, wires, and signals at or in the vicinity of the construction area. Any construction activities that require track removal and replacement shall be scheduled on weekends or at other times as designated by the railroad.

8. Construction work at the Canoas Creek and Ross Creek crossings of the Almaden Expressway shall be planned to provide three lanes open in the peak traffic direction during peak hours.

### ***Bypass Channel Plan***

In addition to measures defined above for the Channel Widening Plan, the following mitigation measure would be required for the Bypass Channel Plan:

9. Work on Almaden Expressway shall minimize interference with either the northbound A.M. peak-hour or the southbound P.M. peak-hour weekday commute traffic. Three lanes shall be maintained in each direction. The existing walkway along the Almaden Expressway frontage road between Ironwood and Redbird drives shall be maintained at all times.

### **4.7.5 Unavoidable Significant Adverse Impacts**

With implementation of the above measures, short-term construction impacts on transportation would be mitigated to a level of insignificance, and no unavoidable significant adverse transportation impacts would result.

