

- North 5th Street and Richards Boulevard
- North 7th Street and Richards Boulevard
- North 7th Street and Bannon Street
- North 7th Street and North B Street
- North 7th Street and North Park Street
- 7th Street and South Park Street
- 7th Street and Railyards Boulevard
- 7th Street and F Street
- 7th Street and G Street
- 7th Street and H Street
- 7th Street and I Street
- 7th Street and J Street
- 7th Street and L Street
- 7th Street and Capitol Mall
- 7th Street and N Street
- 8th Street and G Street
- 8th Street and H Street
- 8th Street and I Street
- 8th Street and J Street
- 8th Street and L Street
- 8th Street and Capitol Mall
- 8th Street and N Street
- 10th Street and Richard Boulevard
- Dos Rios and Richards Boulevard

5.2.1.7 Existing Intersection Geometry and Traffic Volumes

Peak period intersection turning movement counts were conducted at the study area intersections for the a.m. weekday peak period (7:00 to 9:00 a.m.) and the p.m. weekday peak period (4:00 to 6:00 p.m.). Weekday peak period counts were conducted in 2007 and 2008. Traffic count data and existing intersection geometry (number of approach lanes and traffic control) are contained on the project website, <http://sacrt.com/dna/news/default.html>.

5.2.2 Regulatory Setting

Roadway operations are regulated by agencies with jurisdiction of the particular roadway. Study area roadways are under the jurisdiction of the City of Sacramento.

5.2.3 Methodology

Field reconnaissance was undertaken to ascertain the traffic control characteristics of each of the study area intersections and roadway segments. Determination of roadway operating conditions is based upon comparison of known or projected traffic volumes during peak hours to roadway capacity. In an urban setting, roadway capacity is generally governed by intersection characteristics, and intersection delay is used to determine “levels of service.” Levels of service describe roadway operating conditions. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, delay, and operating costs. Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Levels of Service (LOS) "A"

5.2.5.5 Parking

A significant impact to parking would occur if the proposed project parking supply were less than the estimated parking demand.

5.2.6 2010 Conditions

Analysis of 2010 conditions includes the No-Action Alternative and the Light Rail Alternative. Evaluation of the Light Rail Alternative was conducted under three different parking options. The *2010 Plus Light Rail Alternative – No Parking Option* assumed no on-street parking or additional off-street parking within about a half-mile walking distance of the station on Richards Boulevard at the Township 9 Development. The *2010 Plus Light Rail Alternative – On-Street Parking Option* assumed the City of Sacramento would allow on-street parking within about half a mile walking distance of the Township 9 station, but no additional off-street parking. The *2010 Plus Light Rail Alternative – Off-Street Parking Option* assumed additional off-street parking would be provided on an undeveloped area of the Township 9 Development, and no on-street parking would be allowed by the City of Sacramento within about a half-mile walking distance of the station on Richards Boulevard at the Township 9 Development.

Traffic volumes and intersection geometries associated with 2010 conditions are located on the project website, <http://sacrt.com/dna/news/default.html>.

Table 5.2-4 summarizes a.m. and p.m. weekday peak hour intersection operations for the 2010 No project Alternative scenario.

Table 5.2-5 summarizes a.m. and p.m. weekday peak hour intersection operations for the 2010 Plus Light Rail Alternative – No Parking Option scenario.

Intersection ^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
I-5 South Ramp & Richards Boulevard	C	23.7	C	25.7
I-5 North Ramp & Richards Boulevard	C	23.9	C	25.8
Bercut Dr & Richards Boulevard	B	15.8	C	25.0
N 5th St & Richards Boulevard	A	6.0	A	4.1
N 7th St & Richards Boulevard	B	18.5	B	15.9
N 7th St & Bannon St	-	-	-	-
7th St & N B St	B	14.0	C	15.5
N 7th St & North Park St	-	-	-	-
7th St & South Park St	-	-	-	-
7th St & Railyards Boulevard	-	-	-	-
N 7th St & F St	C [20.8]	4.3	C [18.2]	5.5
7th St & G St	B	10.6	B	10.9
7th St & H St	B	13.1	B	12.8
7th St & I St	B	10.1	C	20.4
7th St & J St	B	11.5	A	8.5
7th St & L St	A	8.3	A	8.4
7th St & Capitol Mall	A	8.5	A	9.3
7th St & N St	A	8.5	A	9.4
8th St & G St	A	9.4	A	8.9

Intersection ^b	AM Peak Hour	PM Peak Hour		
	LOS	Delay (sec)	LOS	Delay (sec)
10th St & Richard Boulevard	B	11.1	B	11.2
Dos Rios & Richards Boulevard	A	9.5	A	8.6
Dos Rios & Richards Boulevard	A	8.5	A	8.4

5.2.7 Impacts and Mitigation Measures - Year 2010 Scenarios

5.2.7.1 Impact TC-1 – Intersections

Changes in distribution with the project may increase traffic volumes at some study area intersections and decrease volumes at others. At stop-sign controlled intersections, side street delay will increase. However, the changes in intersection operating conditions do not exceed the standards of significance for impacts to intersections. The impacts of the project would be *less-than-significant*.

Mitigation Measures

None required.

5.2.7.2 Impact TC-2 – Pedestrian and Bicycle Circulation Impacts

The Light Rail Alternatives would result in the addition of employees, residents, patrons, and visitors to the study area, some of whom would travel by bicycle. The Light Rail Alternatives include a single-track within the right-of-way of 7th Street where 7th Street passes under the Union Pacific Rail Road, and assumes relocation of existing pedestrian and existing designated bikeways from 7th Street to a new underpass west of 7th Street by others. The Light Rail Alternative is not anticipated to result in unsafe conditions for pedestrians, including unsafe bicycle/ pedestrian or pedestrian/motor vehicle conflicts. Localized pedestrian and bicycle improvements associated with construction of stations would be provided under the Light Rail Alternative. During preliminary engineering for MOS-1, details of station layouts, including walkways and bicycle access, would be developed.

Intersection ^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
I-5 South Ramp & Richards Boulevard	C	22.7	C	26.0
I-5 North Ramp & Richards Boulevard	C	24.1	C	26.6
Bercut Dr & Richards Boulevard	B	17.7	C	28.2
N 5th St & Richards Boulevard	A	5.6	A	3.9
N 7th St & Richards Boulevard	C	24.0	C	23.3
N 7th St & Bannon St	-	-	-	-
7 th St & N B St	C	31.8	C	29.3
N 7th St & North Park St	-	-	-	-
7 th St & South Park St	-	-	-	-
7 th St & Railyards Boulevard	-	-	-	-
N 7th St & F St	C [22.5]	4.5	C [21.9]	6.5
7 th St & G St	B	10.9	B	10.1

**Table 5.2-5: Intersection Levels of Service
2010 Plus Light Rail Alternative – No Parking Option**

Intersection ^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
7 th St & H St	B	14.3	B	13.6
7 th St & I St	B	11.0	C	20.1
7 th St & J St	B	12.1	A	9.0
7 th St & L St	A	8.6	A	8.9
7 th St & Capitol Mall	A	8.9	A	9.7
7 th St & N St	A	8.9	A	9.8
8 th St & G St	B	10.1	A	9.7
8 th St & H St	B	11.8	B	11.3
8 th St & I St	A	9.6	B	19.5
8 th St & J St	A	9.8	A	8.6
8 th St & L St	A	8.9	A	8.6
8 th St & Capitol Mall	A	9.4	A	9.5
8 th St & N St	A	9.1	A	9.2
10th St & Richard Boulevard	B	10.8	B	11.0
Dos Rios & Richards Boulevard	A	9.2	A	8.5

Due to uncertainties regarding the timing for construction of a new Ped/Bike Path underpass by others, pedestrian and bikeway impacts are considered as a *significant impact*.

Mitigation Measures

Given the status of the improvement project by others that would construct a new underpass west of 7th Street for a Ped/Bike path, and the information available at this time, there is currently insufficient information and certainty on which to conclude it would be constructed before the Light Rail Alternative opening day.

TC -2 - Provisions would need to be made for bicycles and pedestrians within the existing underpass during construction. The existing sidewalk would be widened as much as possible while providing a southbound traffic lane. This temporary facility will be designed and constructed in accordance with applicable state and City standards. This mitigation measure would reduce the impact of the project to a *less-than-significant* level.

**Table 5.2-6: Intersection Levels of Service
2010 Plus Light Rail Alternative – On-Street Parking Option**

Intersection ^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
I-5 South Ramp & Richards Boulevard	C	23.1	C	26.0
I-5 North Ramp & Richards Boulevard	C	23.9	C	26.6
Bercut Dr & Richards Boulevard	B	17.1	C	28.2
N 5th St & Richards Boulevard	A	7.9	A	9.3
N 7th St & Richards Boulevard	C	24.0	C	24.3
N 7th St & Bannon St	-	-	-	-
7 th St & N B St	C	31.8	C	29.3
N 7th St & North Park St	-	-	-	-

Table 5.2-6: Intersection Levels of Service 2010 Plus Light Rail Alternative – On-Street Parking Option				
Intersection^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
7 th St & South Park St	-	-	-	-

**Table 5.2-7: Intersection Levels of Service
2010 Plus Light Rail Alternative – Off- Street Parking Option**

Intersection ^b	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
7th St & Railyards Boulevard	-	-	-	-
N 7th St & F St	C [22.5]	4.5	C [21.9]	6.5
7th St & G St	B	10.9	B	10.1
7th St & H St	B	14.3	B	13.6
7th St & I St	B	11.0	C	20.1
7th St & J St	B	12.1	A	9.0
7th St & L St	A	8.6	A	8.9
7th St & Capitol Mall	A	8.9	A	9.7
7th St & N St	A	8.9	A	9.8
8th St & G St	B	10.1	A	9.7
8th St & H St	B	11.8	B	11.3
8th St & I St	A	9.6	B	19.5
8th St & J St	A	9.8	A	8.6
8th St & L St	A	8.9	A	8.6
8th St & Capitol Mall	A	9.4	A	9.5
8th St & N St	A	9.1	A	9.2
10th St & Richard Boulevard	B	11.1	B	11.1

5.2.7.4 Impact TC-4 – Parking

7th Street - F Street to H Street

Funding constraints could prevent construction of new track on 8th Street between G and H and on G between 7th and 8th. If funding is insufficient, NB trains would travel west on H Street then north on 7th instead of traveling north on 8th then west on G. Without the 8th to G Street connection, 7th Street track between G and H Streets would operate in both north and south directions. Two-way operations would require the displacement of additional on-street parking: All on-street spaces on both sides of 7th from F to G, 3 additional spaces on the west side between G and F, and all the spaces on the east side between G and F would be displaced.

DKS conducted on-street parking surveys for the City of Sacramento on 7th Street between F and H Streets. Based on April 2008 parking surveys conducted for the City of Sacramento, the existing supply is 27 spaces and the existing midday (10 a.m. to 2 p.m.) occupancy is 20 vehicles. Some parking is designated for police only, and would likely need to be relocated. Within approximately three blocks, the surveys indicated the midday availability of 109 on-street spaces. Therefore, the 20 potentially displaced vehicles could be accommodated nearby. There are also ample opportunities for off-street parking in the vicinity, including, in the short term, the lot located along the west side of 7th Street - this lot is property owned by Railyards and is planned for development during initial phases of their development.

8th Street – H Street to I Street

The proposed Light Rail Alternative includes a station platform for northbound trains on 8th Street between H and I Streets and would require elimination of additional spaces. The subject block has 11 parking / loading spaces along the west curb, and 7 spaces along the east curb. All of them were

occupied during midday (10 a.m. to 2 p.m.) parking surveys conducted in April 2008 for the City of Sacramento.

Within three blocks of the subject block, there are about 1,058 other on-street spaces. 946 of these other spaces were occupied during the midday surveys, or about 89 percent. While there are available on-street spaces to accommodate parking space elimination in the subject block, the overall occupancy in the area is very high (about 90 percent).

Richards Boulevard Area

The proposed Light Rail Alternative would go into the existing 2-lane section on 7th Street between Richards Boulevard and North B Street and would not eliminate parking. Future striping changes by others to make this section 4-lanes would likely eliminate on-street parking if the existing right-of way were maintained. The widening to 4-lanes is not part of the proposed Light Rail Alternative.

On-street parking could be restricted in the future in the area around the Township 9 light rail station. However, the extent of where parking would be restricted or removed is not known.

Most business and industry have available off-street parking lots that are not full - on-street parking appears to be occurring for convenience, and could be accommodated off-street.

No parking is required as part of the Light Rail Alternative. Parking impacts are considered *less-than-significant*.

Mitigation Measures

TC-4 - The Department of General Services recommended mitigation measures for parking and traffic delays during construction, which are as follows:

Prior to beginning of construction, a construction traffic and parking management plan would be prepared by the Contractor to the satisfaction of the City traffic engineer and subject to review by all affected agencies. The plan would ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. The plan would include:

- The number of truck trips, time, and day of street closures.
- Time of day of arrival and departure of trucks.
- Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting.
- Provision of a truck circulation pattern.
- Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas).
- Maintain safe and efficient access routes for emergency vehicles.
- Manual traffic control when necessary.
- Proper advance warning and Construction posted signage concerning street closures.
- Provisions for pedestrian safety.

A copy of the construction traffic management plan would be submitted to local emergency response agencies and these agencies should be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.

5.2.8 Cumulative Conditions

Figure 5.2-5 illustrates existing and proposed roadways in the study area under Cumulative Conditions. Analysis of cumulative Conditions includes the No-Action Alternative and the Light Rail

Alternative. Evaluation of the Light Rail Alternative was conducted for the following three future roadway network options:

- *Cumulative Plus Light Rail Alternative - Railyards EIR Option* traffic conditions are based on traffic volumes and roadway geometrics contained in the City of Sacramento Railyards EIR.
- *Cumulative Plus Light Rail Alternative - Network 1 Option* traffic conditions are based upon the SACMET model adopted by SACOG in 2007, with modifications to land use based upon documentation contained in the Railyards EIR.
- The *Cumulative No project Alternative - Network 2 Option* and the *Cumulative Plus Light Rail Alternative – Network 2 Option* forecasts are based on SACOG’s 2035 SACMET MTP model with a few local revisions to the land use inputs for the Richards/Railyards area and some minor street edits to better reflect local traffic circulation.

Additionally, some of the traffic analysis zones (TAZs) in the Richards & Railyards area were split into smaller zones such that the model’s trip loading would better match actual trip loading. Table 5.2-8 shows the land use assumptions in the SACMET model and the revisions for the 2035 DNA forecasts. The land use revisions were arrived at through a collaborative effort involving RT, City of Sacramento, and developer inputs.

Table 5.2-8: DNA 2035 Land Use Assumptions for Richards and Railyards Areas						
SubArea	SACOG MTP Model		Current Planning Documents		DNA MOS-1 Model	
	Households	Employment	Households	Employment	Households	Employment
Richards Area						
Existing	350	13,630	270	11,670	270	11,670
Cumulative (2035)	4,200	14,930	2,570	15,640	2,570	15,640
Growth	3,850	1,300	2,300	3,970	2,300	3,970
Railyards Area						
Existing	0	1,490			0	1,490
Cumulative (2035)	6,600	14,250	12,220	12,510	12,220	12,510
Growth	6,600	12,760			12,220	11,020
Richards & Railyards						
Existing	350	15,120			270	13,160
Cumulative (2035)	10,800	29,180	14,790	28,150	14,790	28,150
Growth	10,450	14,060			14,520	14,990

Cumulative intersection geometries from the City of Sacramento's Railyards EIR were utilized for Railyards EIR scenarios. Intersection geometrics for Alternative 1 assumed a 5-lane section on 7th Street, including 2-northbound through lanes, 1- center lane for left turns at intersections and 2-southbound through lanes. Intersection geometrics for Alternative 2 assumed a 4-lane section on 7th Street, including 1-northbound through lane, 1- lane for left turns at intersections, and 2-southbound through lanes.

Traffic volumes and intersection geometries associated with Cumulative Conditions are located on the project website, <http://sacrt.com/dna/news/default.html>.

Table 5.2-8 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative No project Alternative - Railyards EIR Option.

Table 5.2-9 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative No project Alternative - Network 1 Option.

Table 5.2-10 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative No project Alternative - Network 2 Option.

Table 5.2-11 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative Plus Light Rail Alternative - Railyards EIR Option.

Table 5.2-12 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative Plus Light Rail Alternative - Network 1 Option.

Table 5.2-13 summarizes a.m. and p.m. weekday peak hour intersection operations for the Cumulative Plus Light Rail Alternative - Network 2 Option.

Additional analyses were conducted for a design option, called the 7th Street design option, where new track would not be constructed on 8th Street north of H nor on G Street between 7th Street and 8th Street. Under this design option, northbound 8th Street light rail trains would turn left at H Street, travel westbound on H Street, and turn right and proceed northbound on 7th Street. Additional analyses were conducted at the 7th / H Street intersection where this design option could potentially result in significant impacts.

5.2.8.1 Cumulative Impacts and Mitigation Measures (Cumulative with Light Rail Alternative)

Analysis of cumulative Light Rail Alternative impacts focuses on intersections. Impacts on bikeways, pedestrian facilities, transit services, and parking are the same as the 2010 Plus Light Rail Alternative Options.

5.2.8.2 Impact TC-5 – Intersections

The project would increase traffic volumes in the study area. Peak hour intersection volumes and geometry are located on the project website, <http://sacrt.com/dna/news/default.html>. Tables 5.2-9 – 5.2-14 summarize the resultant conditions. The changes in intersection operating conditions with the addition of the project exceed the standards of significance (described in Section 5.2.5.1) for impacts to intersections at the following three locations: The impacts at the three locations were triggered by an increase in delay of more than five seconds where the LOS was below C without the project.

- 8th Street / G Street – In the a.m. peak hour, the intersection level of service remains at LOS “D” with an increase in delay from 42.3 to 51.1, an increase of 8.8 seconds under the Cumulative Plus Light Rail Alternative - Railyards EIR Option.
- 7th Street / H Street – In the p.m. peak hour, the intersection level of service remains at LOS “F” with an increase in delay from 114.3 to 132.0, an increase of 17.7 seconds under the Cumulative Plus Light Rail Alternative - Railyards EIR Option.

7th Street design option: 7th Street / H Street – In the p.m. peak hour, the intersection level of service remains at LOS “F” with an increase in delay from 114.3 to 162.4, an increase of 48.1 seconds under the Cumulative Plus Light Rail Alternative - Railyards EIR Option (with the 7th Street design option.) There is a relatively large increase under the 7th Street option at this location because if funding is insufficient for NB trains to travel north on 8th Street to G Street to 7th Street, all NB trains would travel west on H Street to 7th Street, through the 7th Street and H Street intersection. Under the 7th Street option, all NB and SB MOS-1 trains, as well as all existing EB and WB Gold Line trains would preempt this signal.

- 7th Street / G Street – In the p.m. peak hour, the intersection level of service remains at LOS “F” with an increase in delay from 204.4 to 211.2, an increase of 6.8 seconds under the Cumulative Plus Light Rail Alternative - Network 1 Option.

Changes in intersection operating conditions under either the *Cumulative Plus Light Rail Alternative - Railyards EIR Option (with or without the 7th Street design option)* or under the *Cumulative Plus Light Rail Alternative - Network 1 Option* are considered **significant**.

Mitigation Measures

- 1 *Intersection of 8th Street and G Street – Modify the traffic signal cycle length during the a.m. peak hour by increasing the signal cycle length from 50 seconds to 100 seconds. This mitigation measure would improve traffic operations to LOS “D” with 40.5 seconds of delay, less than the Cumulative No project Alternative - Railyards EIR Option. The Cumulative Plus Light Rail Alternative - Railyards EIR Option would be reduced to **less-than-significant**.*