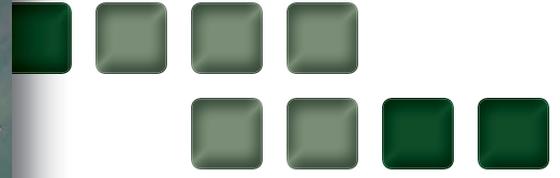




Draft Transportation Impact Analysis Report
VALERO BENICIA REFINERY
CRUDE BY RAIL PROJECT



Prepared for:

Valero Energy Corporation
ERM

May 2013

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WC13-3005

FEHR  PEERS

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1.0 INTRODUCTION

1.1 BACKGROUND

The Valero Refinery is located on 880 acres north of the Carquinez Strait in the City of Benicia, California. The refinery was built in 1968 and has undergone significant modifications and upgrades to become one of the most complex refineries in the United States. The refinery processes domestic crude from the San Joaquin Valley in California and the Alaskan North Slope, along with foreign crudes. The refinery has a feedstock throughput capacity of 170,000 barrels per day and employs approximately 480 people. Crude oil deliveries currently arrive by pipeline and marine vessels. A regional vicinity map of the refinery is provided on **Figure 1-1**.

1.2 PROJECT DESCRIPTION

The proposed Valero Benicia Refinery Crude by Rail Project would ship crude oil from North American sources by rail into the refinery. The Project would expand the proportion of crude oil delivered to the refinery by railcar, to up to 70,000 barrels per day, but would not increase the total volume of crude oil delivered to the refinery because train deliveries would replace ship deliveries. Railcar deliveries are expected to use an existing Union Pacific Railroad (UPRR) track to access the refinery, crossing the existing at-grade railroad crossing at Park Road, just east of the intersection of Park Road/Bayshore Road. The deliveries would arrive at the refinery each day and in trains up to 50 railcars in length per delivery. Up to two railcar deliveries are expected per day, totaling approximately 100 railcars. The Project is not expected to increase the number of employees at the refinery.

1.3 STUDY PURPOSE

The purpose of this study is to evaluate potential impacts to local roadways and intersections with implementation of the Project. The study of anticipated impacts to the transportation system was undertaken to maintain compliance with California Environmental Quality Act (CEQA) requirements and to assist in identifying additional traffic controls or mitigation that may be needed to reduce potential impacts from Project activities to levels of insignificance. This study focuses on the potential transportation impacts of the increased rail crossings on the local transportation network under existing and cumulative conditions.





Figure 1-1.

Regional Vicinity

WC13-3005_1-1_RegVic



1.4 STUDY AREA

The five intersections listed below and shown on **Figure 1-2** are the most likely to be affected by increased vehicle queues that could form at intersections during train crossings, and were thus selected for analysis.

1. Park Road / Bayshore Road
2. Interstate 680 (I-680) Southbound On-Ramp / Bayshore Road
3. I-680 Northbound Off-Ramp / Bayshore Road
4. Park Road / Bay Vista Court
5. Park Road / Valero Refinery Entrance

The I-680 ramp-terminal intersections listed above fall under the jurisdiction of Caltrans; all other intersections fall under the jurisdiction of the City of Benicia.

Freeway operations along segments of I-680 and I-780 within the study area were not analyzed as part of this study. Generally, a freeway analysis is undertaken if a project is expected to increase peak hour trips in the peak direction by more than three percent. The Project is not expected to generate new vehicle trips, and therefore would not increase peak hour trips on freeways in the study area.

1.5 ANALYSIS SCENARIOS

Study intersection operations were evaluated for the following scenarios:

Scenario 1: Existing Conditions – Evaluates intersection operations based on traffic counts collected in January 2013 and observed intersection lane configurations and traffic control devices. Existing rail operations were also documented for a 7-day period in April.

Scenario 2: Existing Plus Project Conditions – Evaluates intersection operations based on traffic counts collected in January 2013 and assuming rail deliveries of up to 50 railcars in length utilizing the Park Road at-grade railroad crossing.

Scenario 3: Cumulative No Project Conditions – Cumulative No Project traffic forecasts were developed to reflect year 2035 conditions. The analysis assumes the same intersection lane configurations and traffic control devices as Existing conditions.



Scenario 4: Cumulative Plus Project Conditions – Evaluates intersection operations based on year 2035 forecast estimates developed under *Scenario 3* and assuming rail deliveries of up to 50 railcars in length utilizing the Park Road at-grade railroad crossing.

1.6 ANALYSIS METHODS

The operations of roadway facilities are described with the term “level of service” (LOS). LOS is a qualitative description of traffic flow from a vehicle driver’s perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (best operating conditions) to LOS F (worst operating conditions). LOS E corresponds to operations “at capacity.” When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

1.6.1 UNSIGNALIZED INTERSECTIONS

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the Transportation Research Board’s 2000 *Highway Capacity Manual (HCM)* method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 1-1** summarizes the relationship between delay and LOS for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left-turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.





Figure 1-2.

Study Area

WC13-3005_1-2_StudyArea

**TABLE 1-1
 UNSIGNALIZED INTERSECTION LOS CRITERIA**

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: 2000 Highway Capacity Manual.

1.6.2 TRAFFIC OPERATIONS ANALYSIS SOFTWARE

The traffic operations analysis for the project utilized the VISSIM software platform. VISSIM is a micro-simulation software that analyzes the traffic operations of cars, trucks, transit vehicles, trains, pedestrians, and bicycles. The software can analyze both arterial and freeway corridors, signalized and unsignalized intersections, roundabouts, ramp meters, and at-grade railroad crossings. The development of a VISSIM model requires many components. These components include lane geometries, traffic controls, traffic volumes, and vehicle behavior characteristics. Micro-simulation provides the capability of analyzing the study area as a system and accounts for queuing interactions between intersections. Micro-simulation also provides an accurate assessment of average vehicle delay and queue lengths at each study intersection. VISSIM has the capability to simulate roadway blockages due to at-grade train crossings and evaluate the congestion that builds as the roadway is blocked.

1.7 SIGNIFICANCE CRITERIA

Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation. The *City of Benicia General Plan* provides a LOS standard of D for intersection operations but does not provide standards for at-grade railroad crossing operations. Impacts to intersection operations are considered significant if the Project causes intersection operations to fall below LOS D. This criteria is typically used to assess impacts of development projects that would potentially increase vehicle trips at intersections within the study area. However, the Project is not expected to increase vehicle trips within the study area and level of service is not the only metric that can



be used to evaluate impacts of increased rail activity on the surrounding transportation network. LOS is solely based on average delay incurred on vehicles at an intersection. Generally, people that drive through industrial areas served by at-grade railroad crossings have a higher tolerance of delay associated with intermittent at-grade rail activity compared to delay at intersections that are not in the vicinity of an at-grade railroad crossing. Therefore, LOS delay thresholds that apply to intersections are not readily applicable to at-grade railroad crossings.

Vehicle queues that result from at-grade rail activity have a major influence on roadway and intersection traffic operations within the vicinity of the at-grade crossing. Vehicle queues and delay are directly related, the longer the vehicle queues are, the higher the average delay becomes. This is certainly the case during times of the day when traffic volumes are high. However, during times of the day when traffic volumes are low, it is possible for an at-grade train crossing to result in average delays in the LOS F range with resulting vehicle queues accommodated within the storage capacity provided at the intersection. Even though average delay might be high during a long train crossing, if resulting queues are accommodated within the provided storage then it is less likely that the at-grade train crossing would adversely affect the surrounding transportation network.

Although the City of Benicia does not have adopted significance criteria for at-grade railroad crossing operations, the Project team recommends the following criteria to evaluate impacts associated with increased rail activity on at-grade crossings:

- A Project impact would be considered significant if rail crossing activity causes vehicle queues that impede other traffic, such as queue spillback to the freeway mainline or to an adjacent intersection and traffic not destined over the crossing is unable to continue along the travel way.

Additional significance criteria considered as part of this study include:

- Would the Project conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways?
- Would the Project result in a change in traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?
- Would the Project substantially increase traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment), or due to the proposed increased frequency and length of train crossings?
- Would the project result in inadequate emergency access?



- Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

1.8 REPORT ORGANIZATION

This report is divided into four chapters as described below:

Chapter 1 – Introduction discusses the study purpose, analysis scenarios and methods, significance criteria, and organization of the report.

Chapter 2 – Existing Conditions describes the transportation facilities and existing traffic operations in the project vicinity, including the surrounding roadway network, typical peak-hour vehicular traffic volumes, and intersection operations. Existing rail crossing operations are also discussed in addition to a review of reported incidents at the rail crossing and collisions at study intersections.

Chapter 3 – Existing Plus Project Conditions presents relevant Project information, and evaluates existing conditions assuming proposed Project railcar deliveries at the at-grade Park Road railroad crossing.

Chapter 4 – Cumulative Conditions addresses year 2035 conditions without and with the Project and discusses cumulative impacts.



2.0 EXISTING CONDITIONS

This chapter describes the transportation system in the Project study area and the existing operations of the study intersections.

2.1 PROJECT LOCATION

The Valero Benicia Refinery is located in an industrial area of Benicia, California, northeast of the main residential and commercial center of the city, as shown previously on Figure 1-1. The site is generally bounded by I-680 and Suisun Bay to the south, East Channel Road to the east, and East 2nd Street to the west and to the north.

2.2 STUDY AREA ROADWAYS

Regional access to the Project site is provided primarily from I-680, while local access is provided via Industrial Way, Bayshore Road and Park Road. The roadways in the study area are described below and their locations in relation to the Project site are shown in **Figure 1-2**.

Interstate 680 (I-680) is a north-south freeway connecting Santa Clara County in the south to Solano County to the north, traversing eastern Alameda County and central Contra Costa county. The freeway terminates in the City of Fairfield, where it merges into I-80. I-680 is oriented along a northeast/southwest axis along the southern edge of the Valero Refinery, and provides two lanes in each direction. Interchanges at Bayshore Road and Industrial Way provide access to the southern portions of the refinery.

Park Road is a 2-lane arterial that connects the industrial port area along the southeastern edge of the City of Benicia to the industrial areas to the northeast. Its path largely parallels that of I-680. It intersects the existing Union Pacific Railroad (UPRR) track at an at-grade railroad crossing located just east of Bayshore Road. The posted speed limit varies from 30 to 35 mph.

Bayshore Road is a 2-lane arterial that connects the Valero Benicia Refinery to the industrial port area along the southeastern edge of the City of Benicia, following the Suisun Bay shoreline. A partial interchange with I-680 provides access to and from the south. The posted speed limit is 35 mph.

Industrial Way is a 2-lane arterial that loops through the industrial area where the Valero Refinery is situated, providing access to numerous industrial parcels either directly or via connections with local



streets. A partial interchange with I-680 provides access to and from the north. The posted speed limit is 40 mph.

Bay Vista Court is a local street providing direct access to two industrial parcels, from Park Road.

2.3 EXISTING PEDESTRIAN AND BICYCLE FACILITIES

This section describes the existing pedestrian and bicycle facilities in the study area.

2.3.1 PEDESTRIAN FACILITIES

Typical pedestrian facilities include sidewalks, crosswalks, and pedestrian signals at signalized intersections. The study area lacks substantial pedestrian facilities, which is typical of industrial areas. Sidewalks are not provided along any of the roads in the study area, and none of the study intersections—all unsignalized—feature crosswalks.

2.3.2 BICYCLE FACILITIES

Bicycle facilities include the following:

- Bike paths (Class I) – Paved trails that are separated from roadways.
- Bike lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs.
- Bike routes (Class III) – Designated roadways for bicycle use by signs only; may or may not include additional pavement width for cyclists.

No designated bicycle facilities are provided within the study area. According to the *City of Benicia General Plan*, a future Class III bike route is planned along Park Road southwest of Industrial Way.

2.4 EXISTING TRANSIT SERVICE

Fairfield and Suisun Transit (FAST) operates an express intercity route—Route 40—that connects the City of Vacaville to the BART station in the City of Walnut Creek. Route 40 has one stop at Park Road and Industrial Way, roughly a quarter of a mile east of the at-grade Union Pacific railroad crossing on Park Road. From here, the northbound route continues via I-680 to the City of Fairfield, and the southbound route continues via I-680 to the Pleasant Hill BART Station; both utilize the I-680 interchanges at Industrial Way and Bayshore Road. Headways and fares are summarized in **Table 2-1**.



**TABLE 2-1
 FAIRFIELD AND SUISUN TRANSIT (FAST) TRANSIT SERVICE SUMMARY**

Agency	FAST	
Route	40	
Hours of Operation	<i>Weekdays</i>	5:30 – 9:00 AM 3:30 – 8:00 PM
	<i>Weekends</i>	No Service
Headways	20-60 minutes	
Standard One-Way Fare	Varies from \$1.50 to \$6.75, based on distance traveled	
Nearest Stop to Project Site	Park Road and Industrial Way (0.25 mile east of at-grade railroad crossing)	

Source: FAST Transit Website (Accessed February 2013)

2.5 EXISTING FREIGHT RAIL

The study area is served by the Union Pacific Railroad (UPRR), which operates a fleet of over 8,000 locomotives across a network that spans 23 states and 32,000 miles of track. The City of Benicia serves as the terminus for what is commonly referred to as the Overland Route, which connects Chicago to the San Francisco Bay Area. A railroad drawbridge built in 1930 alongside the Benicia-Martinez Bridge connects the Benicia terminus via the Port of Oakland to San Jose, where service continues as the UPRR Coast Line to Los Angeles Union Station.

The Valero Benicia Refinery is served by a spur off the Overland Route mainline that runs between the industrial port area along the southeastern edge of the City of Benicia and the refinery itself, terminating north of Park Road. This spur features an at-grade crossing at Park Road, east of Bayshore Road. The spur also serves the industrial areas northeast of the refinery. Switching activity between tracks typically occurs just south of the Park Road at-grade railroad crossing. The Park Road crossing is controlled by two gates and mast-mounted flashing lights. The freight rail network through the study area is shown in **Figure 1-2**.

Train crossing counts were collected at the Park Road at-grade intersection in addition to the at-grade crossing at the Iron Workers Union Driveway just 700 feet southeast of Park Road. Video cameras were placed adjacent to the at-grade crossings for the week of Monday, April 15 through Sunday, April 21, 2013. The video data was reviewed to determine the number of train crossings per day, number of railcars per crossing, time of day for each crossing, and the blockage time at each at-grade intersection. A summary of the video data is provided in **Table 2-2** and in **Appendix A**.



**TABLE 2-2
 EXISTING AT-GRADE RAIL OPERATIONS**

Measure	Park Road At-Grade Crossing	Iron Workers Union Driveway At-Grade Crossing
Range of Crossings Per Day	4 - 18	4 - 6
Average Crossings Per Day – Weekdays	10	5
Average Crossing Duration – Weekdays	02:50	03:15
Average Number of Railcars Per Day – Weekdays	95	69
Average Number of Railcars Per Crossing - Weekdays	10	15
Range of Number of Railcars Per Crossing - Weekdays	2 - 35	2 - 43
Maximum Observed Crossing Duration – Weekdays	16:17	24:50
% of Crossings With Duration Under 5 Minutes – Weekdays	86%	87%
Average Crossings Per Day – Weekend	7	5
Average Crossing Duration – Weekend	01:42	00:18
Average Number of Railcars Per Day – Weekend	45	40
Average Number of Railcars Per Crossing - Weekend	7	8
Range of Number of Railcars Per Crossing - Weekend	2 - 18	2 - 18
Maximum Observed Crossing Duration – Weekend	05:56	03:21
% of Crossings With Duration Under 5 Minutes – Weekend	92%	100%

Source: Fehr & Peers, 2013.

As shown in **Table 2-2**, the number of train crossings is higher at the Park Road at-grade intersection compared to the Iron Workers Union Driveway intersection. The reason for the higher number of crossings at Park Road is because the majority of switching activity between tracks serving the Valero refinery and tracks serving other industrial areas northeast of the refinery occur on the segment just south of Park Road and north of the Iron Workers Union Driveway. It is common for UPRR trains to access the Valero refinery, then exit the refinery, cross Park Road, perform the track switching, and cross Park Road again to access the other industrial areas northeast of the refinery, and vice versa.

The majority of train crossings at both at-grade intersections occurred between the 9:00 AM and 7:30 PM on weekdays and between 12:00 PM and 6:30 PM on weekends. An average of 10 train crossings totaling 95 railcars during the weekdays were observed on Park Road, with the average crossing duration



estimated at 2 minutes and 50 seconds. About 86 percent of all crossings on Park Road had a duration less than 5 minutes. The majority of train crossings on Park Road had a duration typically under 2 minutes, however a maximum crossing duration was observed at 16 minutes and 17 seconds on Wednesday, April 17, 2013 around 2:00 PM.

Similarly, the majority of train crossings on the Iron Workers Union Driveway had a duration under 2 minutes, however a maximum crossing duration was observed at 24 minutes and 50 seconds on Wednesday, April 17, 2013 around 2:00 PM. Some trains were observed to perform back and forth movements to disengage railcars from the locomotive and at times trains would come to a complete stop, which blocks the Iron Workers Union Driveway for a substantial period of time and explains why the observed maximum crossing duration is greater at the Iron Workers Union Driveway compared to the Park Road crossing. The average number of train crossings and duration of each crossing is generally lower on weekends compared to weekdays.

In addition to the video count data, UPPR also provided an estimate of their delivery schedule at Park Road for the time period between January 4th and January 14th, 2013; the UPPR data is provided in **Appendix A**. The UPPR data provides the delivery schedule but does not provide the number of train crossings across Park Road. It is common for a single train delivery to cross Park Road multiple times due to switching or train cutting activity. Therefore, the video count data was the primary source of train crossing information to perform the transportation impact assessment for the Project.

2.6 EXISTING TRUCK ROUTES

The Surface Transportation Assistance Act (STAA) designates two types of truck routes: national network routes and terminal access routes. The entire length of I-680 is a designated national network route, and the interchanges at Bayshore Road and Industrial Way provide local access to the refinery site. The ramp-terminal intersections of the interchanges within the study area have been designed to appropriately accommodate large truck turning movements.

Truck freight movement through Benicia is heaviest along the northern I-680 corridor, where the Valero Benicia Refinery is located, and in the industrial port area adjacent to the Benicia-Martinez Bridge. Freeway signs direct traffic destined for these industrial areas to use I-680 exits.



2.7 EXISTING EMERGENCY VEHICLE RESPONSE TIMES

The City of Benicia Fire Department recently provided an emergency response time analysis for year 2012. According to the National Fire Protection Association (NFPA) standard 1710, fire departments should arrive to structure fires within 5 minutes of initial dispatch. The City of Benicia Fire Department also has a contract with the Solano County Emergency Medical Service Authority to provide an advance life support staffed engine to all emergency medical calls within 7 minutes from the time the station is alerted. The fire department strives to reach the standard of a seven minute response time to all emergency incident types for 90 percent of the total incidents. In 2012, the fire department responded to 2,099 incidents with an average response time of 5 minutes and 13 seconds throughout the entire City of Benicia. For the industrial areas along Park Road and Bayshore Road the fire department responded to a total of 27 incidents in 2012 with an average response time of 6 minutes and 35 seconds. Thus in 2012, the average emergency response time for the project study area was higher than the average response for the entire City of Benicia. The City of Benicia Fire Department year 2012 emergency vehicle response time data is provided in **Appendix A**.

2.8 COLLISION HISTORY

The Federal Railroad Administration (FRA) provided collision history data for the Park Road at-grade crossing. According to the FRA, no train-vehicle collisions were reported at the Park Road crossing within the last three years. The last reported collision at the Park Road at-grade crossing was in April 1995, in which a train collided with a truck. The FRA collision history data for the study area is provided in **Appendix A**.

Collision history data from January 2009 through January 2012 was also obtained from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). The SWITRS collision data for the study area is summarized in **Table 2-3**, the data is also provided in **Appendix A**. As shown in **Table 2-3**, a total of nine collisions were reported within the study area between 2009 and 2012, six of which occurred within the vicinity of the intersection of Park Road/Bayshore Road. Three collisions were reported in the vicinity of the I-680 on-ramp intersection with Bayshore Road. Neither of the collisions between January 2009 and January 2012 resulted in an injury or fatality within the study area.



**TABLE 2-3
 STUDY AREA COLLISION HISTORY SUMMARY – JANUARY 2009 THRU JANUARY 2012**

Location	Total Collisions	Collisions Involving Pedestrians	Collisions Involving Bicyclists	Collisions Resulting in Injury	Collisions Resulting in Fatality
1. Park Road / Bayshore Road	6	0	0	0	0
2. I-680 SB On-Ramp / Bayshore Road	3	0	0	0	0
3. I-680 NB Off-Ramp / Bayshore Road	0	0	0	0	0
4. Park Road / Bay Vista Court	0	0	0	0	0
5. Park Road / Valero Refinery Driveway	0	0	0	0	0

Source: California Highway Patrol Statewide Integrated Traffic Records System, 2013.

2.9 EXISTING LANE CONFIGURATIONS AND TRAFFIC VOLUMES

Intersection turning movement and vehicle classification counts were collected on January 23, 2013 between 6:00 and 9:00 AM, when traffic volumes through the study area generally peak on a typical weekday. This peak period was identified based on an analysis of seven days of roadway segment volumes collected at Park Road just west of the refinery entrance; these counts were collected between Monday, January 7, 2013 and Sunday, January 13, 2013. Typical weekday traffic volumes by time of day are shown on **Figure 2-1**. As shown on **Figure 2-1**, the peak hour for typical weekday conditions generally occurs between 7:15 and 8:15 AM, which was also confirmed by the intersection counts.

When this study was initiated the time of day in which the project train crossings would occur had not yet been identified. To provide flexibility with the traffic operations analysis, AM peak period counts were collected to determine project impacts when traffic volumes in the area are the highest to present a worst-case scenario of potential Project impacts. This study also assess operational impacts for off-peak hours of a typical weekday, including the 9:00 to 10:00 AM hour to be representative of 9:00 AM to 3:00 PM and 6:00 to 7:00 PM conditions, and the 9:00 to 10:00 PM hour, which is representative of conditions from approximately 7:00 PM to 6:00 AM. Furthermore, operations along westbound Park Road during the AM peak hour are considered representative of operations during the PM peak period (3:00 to 6:00 PM); operations along eastbound Park Road during the 9:00 to 10:00 AM hour are considered representative of operations during the PM peak period. Although weekday counts were not collected for the non-peak hours, the volumes were estimated based on the average daily traffic counts collected on Park Road. The Park Road average daily traffic counts indicate the following about the non-peak hours:



- Hourly volumes between 9:00 and 10:00 AM are about 41 percent lower than the AM Peak hour
- Hourly volumes between 9:00 and 10:00 PM are about 91 percent lower than the AM peak hour

Thus, the reduction factors derived from the Park Road daily counts were applied to the AM peak hour intersection counts to estimate the non-peak hour intersection volumes.

Field reconnaissance was performed in which lane configurations, turn pocket lengths, and speed limits were documented. These were used to corroborate satellite image observations publicly available online. Existing intersection lane configurations, traffic control, and peak hour intersection traffic volumes are shown on **Figure 2-2**. Collected count data is provided in **Appendix A**.



Average Weekday Traffic Volumes – Park Road

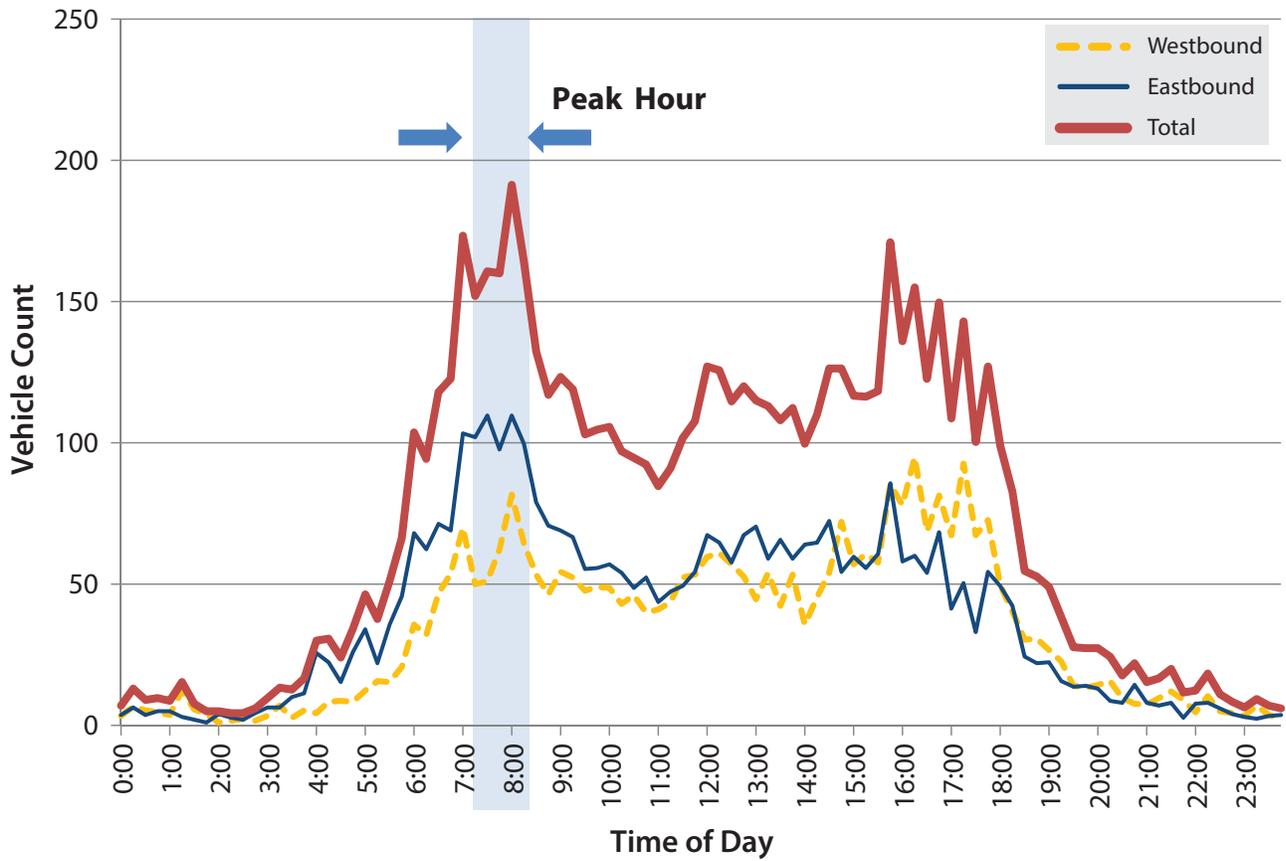
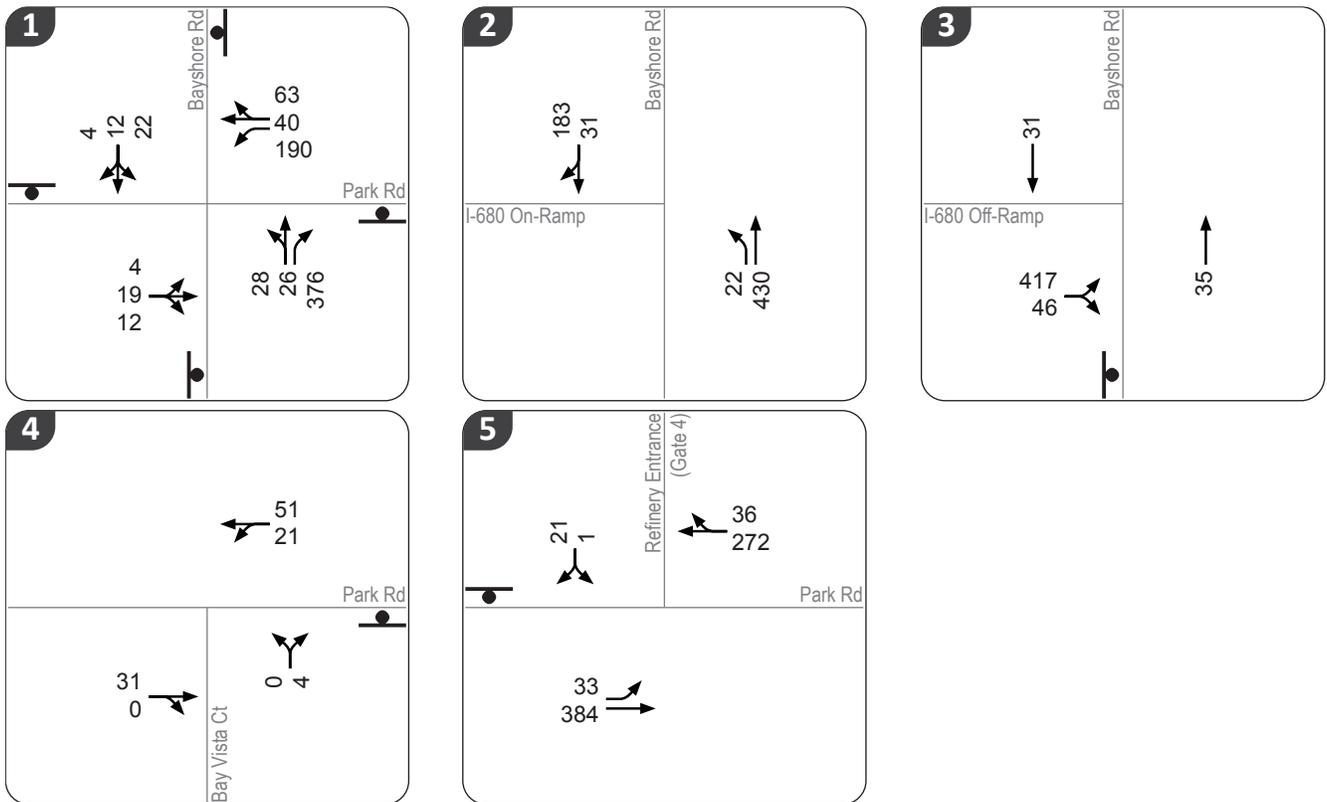


Figure 2-1.



VOLUMES KEY

- XX AM Peak Hour Traffic Volumes
- Stop Sign

MAP KEY

- ① Study Intersection
- UPRR At-Grade Crossing
- ▬ Roadway Count Location
- UPRR Overland Route (Spur)
- ▬ UPRR Overland Route (Mainline)



Figure 2-2.

**Existing Conditions
Intersection Peak Hour Traffic Volumes and Lane Configurations**

WC13-3005_2-2_ExVol

2.10 EXISTING INTERSECTION OPERATIONS

The highest volumes throughout the day generally occur during the AM peak hour (7:15 to 8:15 AM), which is the hour that was selected for analysis. Existing AM Peak Hour operations at the five study intersections were evaluated based on the HCM 2000 method described in Chapter 1. Below is a description of the traffic operations model development and calibration process, in addition to the AM peak hour LOS and queuing results.

2.10.1 MODEL APPROACH

The traffic operations analysis for the project utilized the VISSIM software platform. VISSIM is a micro-simulation software that analyzes the traffic operations of cars, trucks, transit vehicles, trains, pedestrians, and bicycles. The software can analyze both arterial and freeway corridors, signalized and unsignalized intersections, roundabouts, ramp meters, and at-grade railroad crossings. The development of a VISSIM model requires many components. These components include lane geometries, traffic controls, traffic volumes, and vehicle behavior characteristics.

2.10.2 MODEL VALIDATION

During the validation process, the VISSIM model output is compared against field data to determine if the model output is within acceptable levels and therefore presenting a reasonable approximation of existing operations. The Federal Highway Administration (FHWA) suggests the following validation criteria (*Volume III – Guidelines for Applying Traffic Microsimulation Modeling Software*, Federal Highway Administration, 2003).

- Link volumes for more than 85 percent of cases meet the following criteria:
 - For volumes less than 700 vehicles per hour (vph), within 100 vph
 - For volumes between 700 and 2,700 vph, within 15 percent
 - For volumes greater than 2,700, within 400 vph
- Link volumes for more than 85 percent of cases have a GEH statistic (measuring model volumes versus count volumes) less than 5
- Queuing at bottlenecks match field observations

Based on our previous experience, Fehr & Peers has developed the following additional validation criterion, which has a narrower tolerance for intersection and interchange volumes (which are aggregated link volumes) than the criteria suggested by FHWA.



- Peak-hour volumes at intersections within 5 percent of traffic counts

Table 2-4 shows the validation results for the existing conditions VISSIM models for the AM peak hour. The model meets the validation criteria thresholds.

**TABLE 2-4
 VALIDATION CRITERIA THRESHOLDS COMPARISON**

Category	Criteria	Threshold	% Met Target	AM Peak Period	
				% Met	Pass/Fail
Link Volumes	< 700 vph	100 vph	> 85%	100%	Pass
	GEH Statistic	5	> 85%	100%	Pass
Aggregated Volumes	Intersections	5%	100%	100%	Pass
Visual Inspection	Queuing	Match observations		--	Pass

Source: Fehr & Peers, 2013

2.10.3 INTERSECTION OPERATIONS RESULTS

Existing AM Peak Hour operations at the five study intersections were evaluated based on the methods previously described and the lane configurations and traffic controls shown on **Figure 2-2**. The LOS results are summarized in **Table 2-5** and the queuing results are summarized in **Table 2-6**. Intersection analysis worksheets are provided in **Appendix B**.

As shown, all study intersections currently operate at acceptable service levels during the AM peak hour except for the Northbound I-680 ramp-terminal intersection at Bayshore Road which operates at LOS E due to turning movements from the ramp. Field observations confirmed the calculated levels of service.

The Existing AM peak hour analysis does not assume a train crossings during the hour. Video counts collected at the Park Road at-grade intersection crossing confirmed that no trains crossed during the morning peak period between 7:00 to 9:00 AM. Generally, train crossings occurred between the 9:00 AM and 7:30 PM on weekdays and between 12:00 PM and 6:30 PM on weekends. An average of 10 train crossings during the weekdays were observed on Park Road, with the average crossing duration of approximately 2 minutes and 50 seconds. Of the observed crossings on Park Road, 86 percent of crossings were less than 5 minutes in duration, however crossing durations of up to 16 minutes and 17 seconds were observed during the data collection period. Generally, train crossings at the Park Road at-grade intersection that take longer than 5 minutes to cross result in LOS E or F operations at the adjacent



intersection of Park Road/Bayshore Road, regardless of the time of day in which the train crossing occurs. Therefore, LOS E or F operations at the Park Road/Bayshore Road intersection when rail activity occurs are part of the baseline condition. The longer the train crossing duration, the higher the probability is for vehicle queues to build up and extend to adjacent study intersections, thus affecting their operations as well.

**TABLE 2-5
 EXISTING INTERSECTION AM PEAK HOUR LEVELS OF SERVICE WITHOUT RAIL CROSSING
 ACTIVITY**

Intersection	Control ¹	Delay ^{2,3}	LOS
1. Park Road / Bayshore Road	AWSC	7	A
2. I-680 SB On-Ramp / Bayshore Road	FREE	2	A
3. I-680 NB Off-Ramp / Bayshore Road	SSSC	32 (36)	D (E)
4. Park Road / Bay Vista Court	SSSC	1 (4)	A (A)
5. Park Road / Valero Refinery Driveway	SSSC	1 (7)	A (A)

Notes: **Bold** denotes locations where level of service threshold is exceeded.

1. AWSC = all way stop controlled intersection, SSSC = side street stop controlled intersection, Free = uncontrolled intersection.
2. Intersection level of service based on average intersection control delay (in seconds) according to the *Highway Capacity Manual* (Transportation Research Board, 2000). For side-street stop-controlled intersections, delay is reported as intersection average (worst case approach).
3. The analysis presented in this table does not assume a train crossing during the AM peak hour. Existing average intersection delay would be greater than presented in this table when existing rail crossing activity occurs.

Source: Fehr & Peers, 2013.



**TABLE 2-6
 EXISTING INTERSECTION AM PEAK HOUR QUEUING WITHOUT RAIL CROSSING ACTIVITY**

Intersection	Movement ¹	Available Storage (ft)	Average Queue Length (ft) ²	Maximum Queue Length (ft) ²
1. Park Road / Bayshore Road	NB-LT	140	0	60
	NB-R	275	10	90
	SB-LTR	220	0	70
	EB-LTR	250	0	20
	WB-L	200	10	190
	WB-TR	500	0	80
2. I-680 SB On-Ramp / Bayshore Road	NB-L	115	0	0
3. I-680 NB Off-Ramp / Bayshore Road	NB-T	200	0	0
	EB-LR	1,300	130	550
4. Park Road / Bay Vista Court	NB-LR	275	0	0
5. Park Road / Valero Refinery Driveway	SB-LR	200	0	40
	EB-L	150	0	0
	WB-TR	950	0	0

Notes: **Bold** denotes locations where storage length is exceeded.

- NB – northbound, SB – southbound, EB – eastbound, WB – westbound, L – left turn movement, T – through movement, R – right turn movement.
- The analysis presented in this table does not assume a train crossing during the AM peak hour. Existing queue lengths would be longer than presented in this table when existing rail crossing activity occurs.

Source: Fehr & Peers, 2013.



3.0 EXISTING PLUS PROJECT CONDITIONS

The proposed Project would expand the proportion of crude oil delivered to the refinery by railcar, to up to 70,000 barrels per day, replacing quantities currently received by ship, but would not increase the amount of crude oil processed at the refinery. Currently the refinery receives crude oil via pipeline or marine vessels. Railcar deliveries are expected to use the existing UPRR track to access the refinery, crossing the existing at-grade railroad crossing at Park Road, just east of the intersection of Park Road/Bayshore Road. The deliveries would arrive at the refinery each day and utilize trains up to 50 railcars in length per delivery, and up to 100 railcar deliveries are expected per day. This chapter discusses the assumptions and analysis results for traffic conditions under Existing Plus Project conditions.

3.1 PROJECT ASSUMPTIONS

The VISSIM model developed for Existing conditions was used to model a single train crossing during the weekday AM peak hour. The AM peak hour was chosen as it represents the worst-case traffic operations throughout a typical weekday day, thus the Project would likely have the greatest impact to traffic operations during this time period. It is not certain what time periods trains will cross Park Road; therefore assuming AM peak hour conditions provides a worst-case scenario analysis. Below is a summary of the Project assumptions for Existing Plus Project conditions:

- Up to 100 railcars will be delivered daily, however, single train deliveries of up to 50 railcars in length are expected
- A minimum headway of one hour between Project train deliveries is assumed
- Typical railcar length is 60 feet
- Up to 200 feet of locomotive is expected per train delivery
- Average travel speed across the Park Road at-grade railroad crossing is 5 mph
- All switching activity between tracks will occur within the Valero refinery site north of Park Road

For the purposes of this study, a single train crossing of 50 railcars in length was assumed to cross Park Road during AM peak hour conditions to determine potential impacts to the surrounding transportation network. A train with 200 feet of locomotive and 50 railcars in length would take approximately 7.3 minutes to cross Park Road at a speed of 5 mph. The at-grade crossing traffic controls provide a 30-second buffer time before and after each train crossing on Park Road. Therefore, each 50-railcar train delivery would block traffic on Park Road for approximately 8 minutes and 18 seconds. The estimated blockage time on Park Road due to the proposed project is lower than other existing observed train



crossings. The April 2013 maximum observed train crossing duration was 16 minutes and 17 seconds, which is nearly double the blockage time of the train crossings due to the project.

In addition, a project impact analysis was performed for the off-peak hours of a typical weekday, which included the 9:00 to 10:00 AM hour and the 9:00 to 10:00 PM hour. Based on the daily traffic volumes on Park Road, this study assumes the 9:00 to 10:00 AM hour to be representative of 9:00 AM to 3:00 PM and 6:00 to 7:00 PM conditions, and the 9:00 to 10:00 PM hour to be representative of conditions from approximately 7:00 PM to 6:00 AM. Furthermore, operations along westbound Park Road during the AM peak hour are considered representative of operations during the PM peak period (3:00 to 6:00 PM); operations along eastbound Park Road during the 9:00 to 10:00 AM hour are considered representative of operations during the PM peak period.

3.2 INTERSECTION OPERATIONS RESULTS

3.2.1 AM PEAK HOUR OPERATIONS RESULTS

Existing AM peak hour and off-peak hour operations at the five study intersections were evaluated assuming a 50-railcar train crossing at Park Road. The peak hour LOS results are summarized in **Table 3-1** and the queuing results are summarized in **Table 3-3**. As shown in **Table 3-1**, a 50-railcar train crossing during the AM peak hour is expected to increase the delay and result in LOS E or F conditions at four out of the five study intersections. The intersection of Park Road/Bay Vista Court is not expected to be affected by the train crossings associated with the Project. However, queuing from the Project's train crossings is expected to affect the operations along Park Road east of Bayshore Road, along Bayshore Road south of Park Road, and along the northbound I-680 off-ramp to Bayshore Road.

As shown in **Table 3-3**, queuing along westbound Park Road is not expected to spill back to the intersection at Industrial Way. However, the 8.3 minute train crossing would result in queues extending to the northbound I-680 mainline from the off-ramp at Bayshore Road. The northbound I-680 off-ramp to Bayshore Road provides about 1,300 feet of storage length and the average queue along off-ramp would extend about 1,600 feet under worst-case Project conditions. The existing AM peak hour traffic count was observed to be about 460 vehicles at the northbound off-ramp, thus it is expected that an 8.3 minute train crossing at Park Road would result in queue spillback to the I-680 mainline during the peak hour as over 60 vehicles occupying approximately 1,600 feet would arrive at the intersection during the crossing operation. **Figure 3-1** shows the extent of the maximum queues expected with the Project train crossing at Park Road assuming Existing AM peak hour conditions.



It is important to note that train crossings proposed by the Project are not expected to cross Park Road during the AM peak period. The AM peak hour analysis is provided for informational purposes to present a worst-case scenario in the event that trains cross during the morning peak hour. In addition, volumes along westbound Park Road during the AM peak hour are similar to westbound volumes during the PM peak period (3:00 – 6:00 PM). Therefore, the AM peak hour analysis is representative of the expected PM peak period operations specifically along westbound Park Road.

3.2.2 OFF-PEAK HOUR OPERATIONS RESULTS

The Existing off-peak hours of 9:00 – 10:00 AM and 9:00 – 10:00 PM were also evaluated assuming a 50-railcar train crossing at Park Road, LOS results are presented in **Table 3-2** and queuing results in **Table 3-4**. Three out of the five study intersections are expected to operate at LOS E or F during the 9:00 – 10:00 AM hour. Vehicle queues associated with the 50-railcar crossing are expected to extend back onto the northbound I-680 off-ramp but not onto the I-680 mainline. Queues are also expected to extend back to the Park Road/Valero Refinery Driveway but will not reach Industrial Way. These results for the AM off-peak hour are similar to what drivers under Existing no Project conditions already experience. Train crossings of durations greater than 8 minutes already occur about once a day between the 9:00 AM – 7:30 PM periods, the time of train crossing varies however. **Figure 3-1** provides a graphical comparison of the extent of the maximum queues expected with the Project train crossing at Park Road assuming Existing AM peak hour conditions compared to Existing AM off-peak hour conditions.

Traffic volumes in the evenings and late nights are much lower within the study area compared to the morning peak period. As shown in **Table 3-2**, during the 9:00 – 10:00 PM hour all intersections are expected to operate at LOS A except for Park Road/Bayshore Road, which would operate at LOS F due to its close proximity to the at-grade railroad crossing. Although the intersection operates at LOS F, the resulting queues would be no longer than 4 vehicles on either approach of the intersection. Although the proposed 50-railcar train crossing would block Park Road for over 8 minutes, the resulting queues would be contained within the provided intersection storage capacity at Park Road/Basyhore Road during the 9:00 – 10:00 PM hour.

Generally, train crossings at the Park Road at-grade intersection that take longer than 5 minutes to cross result in LOS E or F operations at the adjacent intersection of Park Road/Bayshore Road, regardless of the time of day in which the train crossing occurs. Therefore, LOS E or F operations at the Park Road/Bayshore Road intersection when rail activity occurs are part of the baseline condition. The longer the train crossing duration, the higher the probability is for vehicle queues to build up and extend to adjacent study intersections, thus affecting their operations as well.



**TABLE 3-1
 EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Location	Control ¹	No Project ³		With Project ⁴	
		Delay ²	LOS	Delay ²	LOS
1. Park Road / Bayshore Road	AWSC	7	A	102	F
2. I-680 SB On-Ramp / Bayshore Road	FREE	2	A	39	E
3. I-680 NB Off-Ramp / Bayshore Road	SSSC	32 (36)	D (E)	267 (302)	F (F)
4. Park Road / Bay Vista Court	SSSC	1 (4)	A (A)	1 (4)	A (A)
5. Park Road / Valero Refinery Driveway	SSSC	1 (7)	A (A)	47 (84)	E (F)

Notes: **Bold** denotes locations where level of service threshold is exceeded.

1. AWSC = all way stop controlled intersection, SSSC = side street stop controlled intersection, Free = uncontrolled intersection.
2. Intersection level of service based on average intersection control delay (in seconds) according to the *Highway Capacity Manual* (Transportation Research Board, 2000). For side-street stop-controlled intersections, delay is reported as intersection average (worst case approach).
3. The No Project analysis scenario does not assume a train crossing during the AM peak hour.
4. Time period representative of the 3:00 to 6:00 PM peak period along westbound Park Road.

Source: Fehr & Peers, 2013.

**TABLE 3-2
 EXISTING PLUS PROJECT OFF-PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Location	Control ¹	Existing Plus Project 9:00 – 10:00 AM ³		Existing Plus Project 9:00 – 10:00 PM ⁴	
		Delay ²	LOS	Delay ²	LOS
1. Park Road / Bayshore Road	AWSC	103	F	113	F
2. I-680 SB On-Ramp / Bayshore Road	FREE	36	E	1	A
3. I-680 NB Off-Ramp / Bayshore Road	SSSC	67 (74)	F (F)	5 (5)	A (A)
4. Park Road / Bay Vista Court	SSSC	1 (4)	A (A)	1 (1)	A (A)
5. Park Road / Valero Refinery Driveway	SSSC	14 (21)	B (C)	1 (5)	A (A)

Notes: **Bold** denotes locations where level of service threshold is exceeded.

1. AWSC = all way stop controlled intersection, SSSC = side street stop controlled intersection, Free = uncontrolled intersection.
2. Intersection level of service based on average intersection control delay (in seconds) according to the *Highway Capacity Manual* (Transportation Research Board, 2000). For side-street stop-controlled intersections, delay is reported as intersection average (worst case approach).
3. Time period representative of the 9:00 AM to 7:00 PM period along eastbound Park Road. The time period is also representative of the 9:00 AM to 3:00 PM and 6:00 to 7:00 PM periods along westbound Park Road.
4. Time period representative of the 7:00 PM to 6:00 AM time period along westbound and eastbound Park Road.

Source: Fehr & Peers, 2013.



**TABLE 3-3
 EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION QUEUING**

Intersection	Movement ¹	Available Storage (ft)	No Project ²		Plus Project ³	
			Average Queue Length (ft)	Maximum Queue Length (ft)	Average Queue Length (ft)	Maximum Queue Length (ft)
1. Park Road / Bayshore Road	NB-LT	140	0	60	0	60
	NB-R	275	10	90	300	590
	SB-LTR	220	0	70	20	90
	EB-LTR	250	0	20	20	90
	WB-L	200	10	190	310	580
	WB-TR	500	0	80	220	580
2. I-680 SB On-Ramp / Bayshore Road	NB-L	115	0	0	0	0
3. I-680 NB Off-Ramp / Bayshore Road	NB-T	200	0	0	0	30
	EB-LR	1,300	130	550	1,640	2,230
4. Park Road / Bay Vista Court	NB-LR	275	0	0	0	0
5. Park Road / Valero Refinery Driveway	SB-LR	200	0	40	0	40
	EB-L	150	0	0	0	0
	WB-TR	950	0	0	200	890

Notes: **Bold** denotes locations where storage length is exceeded.

1. NB – northbound, SB – southbound, EB – eastbound, WB – westbound, L – left turn movement, T – through movement, R – right turn movement.
2. The No Project analysis scenario does not assume a train crossing during the AM peak hour.
3. Time period representative of the 3:00 to 6:00 PM peak period along westbound Park Road.

Source: Fehr & Peers, 2013.



**TABLE 3-4
 EXISTING PLUS PROJECT OFF-PEAK HOUR INTERSECTION QUEUING**

Intersection	Movement ¹	Available Storage (ft)	Existing Plus Project 9:00 – 10:00 AM ²		Existing Plus Project 9:00 – 10:00 PM ³	
			Average Queue Length (ft)	Maximum Queue Length (ft)	Average Queue Length (ft)	Maximum Queue Length (ft)
1. Park Road / Bayshore Road	NB-LT	140	0	70	0	30
	NB-R	275	240	560	10	50
	SB-LTR	220	10	80	0	30
	EB-LTR	250	10	40	0	30
	WB-L	200	240	530	20	70
	WB-TR	500	200	530	10	30
2. I-680 SB On-Ramp / Bayshore Road	NB-L	115	0	0	0	0
3. I-680 NB Off-Ramp / Bayshore Road	NB-T	200	0	0	0	0
	EB-LR	1,300	140	570	10	40
4. Park Road / Bay Vista Court	NB-LR	275	0	0	0	0
5. Park Road / Valero Refinery Driveway	SB-LR	200	0	30	0	30
	EB-L	150	0	0	0	0
	WB-TR	950	20	180	0	0

Notes: **Bold** denotes locations where storage length is exceeded.

1. NB – northbound, SB – southbound, EB – eastbound, WB – westbound, L – left turn movement, T – through movement, R – right turn movement.
2. Time period representative of the 9:00 AM to 7:00 PM period along eastbound Park Road. The time period is also representative of the 9:00 AM to 3:00 PM and 6:00 to 7:00 PM periods along westbound Park Road.
3. Time period representative of the 7:00 PM to 6:00 AM time period along westbound and eastbound Park Road.

Source: Fehr & Peers, 2013.





Figure 3-1.

Existing Plus Project Queuing Analysis

WC13-3005_3-1_ExQueue



3.3 EXISTING PROJECT IMPACTS AND MITIGATION MEASURES

The following criteria were applied to evaluate potential impacts associated with increased rail activity on at-grade crossings:

- A Project impact would be considered significant if rail crossing activity causes vehicle queues that impede other traffic, such as queue spillback to the freeway mainline or to an adjacent intersection and traffic not destined over the crossing is unable to continue along the travel way.

Impact 1 – AM Peak Hour Queues Extend onto Northbound I-680: The proposed increase of daily crude oil deliveries by rail across Park Road would result in vehicle queues that would spillback along the northbound I-680 off-ramp to Bayshore Road and eventually onto the northbound I-680 mainline if deliveries by rail occur during the AM peak hour, resulting in a **significant** impact.

Mitigation Measure 1: The Project applicant shall implement measures to minimize queuing impacts associated with the increase in daily train crossings across Park Road. Prohibiting train crossings during the morning peak period (6:00 – 9:00 AM) when traffic volumes are the highest would result in vehicle queues shorter in length and duration that would not extend back onto the northbound I-680 mainline. The Project impact would be **less-than-significant** if trains do not cross during the AM peak period. In addition, the following measures are recommended to eliminate or minimize potential queuing impacts:

- Avoid to the extent possible Project train crossings during the lunch hour (12:00 – 1:00 PM) and the PM commute peak period (3:00 – 6:00 PM)
- Install advanced warning changeable message signs on I-680 and/or appropriate local streets to alert drivers of the train crossing on Park Road and encourage them to use alternate routes
- Schedule Project train crossings on Park Road with a minimum one hour headway between crossings

From a queuing perspective, the Project would impede other traffic during the morning AM peak hour because vehicle queues that result from the train crossing would likely extend onto the northbound I-680 off-ramp from Bayshore Road and eventually onto the northbound I-680 mainline. If the proposed train crossings occur outside the 6:00 – 9:00 AM peak period, resulting vehicle queues are not expected to extend back onto the I-680 mainline.



If the Project train crossings occur during the 9:00 AM – 7:00 PM period, resulting queues on the west side of the tracks would extend back onto Bayshore Road and affect the operations of the I-680 ramp-terminal intersections. Queues on the east side of the tracks would generally be contained within the Park Road segment between the tracks and Industrial Way, affecting access to and from Valero refinery driveways. The segment of Park Road between the at-grade railroad crossing and Industrial Way provides a two-way left-turn lane which will likely be utilized as a queue storage lane by some drivers stuck on westbound Park Road waiting for the 8.3 minute train crossing to clear.

If the proposed train crossings occur during the 7:00 PM – 6:00 AM period, resulting queues on the west side and east side of the tracks would not exceed the provided storage capacity. Only the intersection of Park Road/Bayshore Road would operate at LOS F conditions during the hour of the crossing, but resulting queues would not extend back and affect the operations of other study intersections.

Existing video data collected at the Park Road at-grade railroad crossing indicates that on average there is one train a day that crosses Park Road with a duration over eight minutes within the 9:00 AM to 7:00 PM period. The longest observed existing train crossing on Park Road was measured at about 16 minutes and 17 seconds, nearly double the duration of a single 50-railcar crossing proposed by the Project. The Proposed project would increase the frequency of 8-minute crossings that occur in the area, but the increased crossing frequency is within the current range of crossing variability. Although the Project would increase the train frequency on Park Road by four train crossings (two trips into the refinery and two trips out of the refinery) a day, the proposed crossing duration of each Project train trip is lower than train crossing durations that already exist today without the Project.

3.3.1 TRANSIT IMPACTS

FAST operates one weekday transit route (Route 40) along both directions of Park Road within the study area; the nearest bus stop is located at the intersection of Park Road/Industrial Way. Route 40 provides four buses in each direction during the AM commute period between 5:30 and 9:00 AM, and five buses in each direction during the PM commute period between 3:30 and 8:00 PM. Project train crossings are not planned to occur during the AM peak period, thus the Project is not expected to affect transit service during the AM peak period.

It is likely that Project train crossings will occur during the 3:30 to 8:00 PM period. On average, about one bus per hour travels along Park Road in each direction during the PM period. The chances of buses attempting to cross Park Road in the event of a Project train crossing are small, but possible. Although the Project would increase the train frequency on Park Road by four train crossings a day, the proposed crossing duration of each Project train trip is lower than train crossing durations that already exist today



without the Project. In addition, Route 40 travels along congested segments of I-80 and I-680 between the Vacaville Transportation Center and the Walnut Creek BART Station during the weekday commute periods, thus delay experienced by Route 40 buses is variable throughout each day. The potential increase in transit delay incurred by the Project is within the delay variability already experienced by Route 40 during the PM peak commute period.

3.4 EMERGENCY VEHICLE ACCESS

The City of Benicia Fire Department strives to reach the standard of a seven minute response time to all emergency incident types for 90 percent of the total incidents. In 2012, the fire department responded to a total of 27 incidents along the industrial areas of Park Road and Bayshore Road with an average response time of 6 minutes and 35 seconds. The average emergency response time for the Project study area was higher than the average response for the entire City of Benicia.

The same railroad track that crosses Park Road at-grade also crosses the driveways of three industrial parcels south of Park Road. The three driveways south of Park Road are the only access points between the industrial parcels and Bayshore Road. Thus existing train movements within the study area temporarily block their only access point. Video counts collected at the Iron Workers Union Driveway observed train crossings that blocked the driveway for as long as 24 minutes and 50 seconds on a weekday during the month of April 2013, which is about three times the duration of the train crossings proposed by the Project. Thus, workers within the three industrial parcels south of Park Road already experience train crossings blocking the driveways well over 8 minutes.

Although the Project would increase the train frequency within the study area by four train crossings (two trips into the refinery and two trips out of the refinery) a day, the proposed crossing duration of each Project train trip is lower than train crossing durations that already exist today without the Project. The proposed increased crossing frequency is within the current range of crossing variability. According to the 2012 emergency response data provided by the fire department, an average of about two emergency incidents a month occurred along the industrial areas of Park Road and Bayshore Road. The probability of an emergency incident occurring at the same time as a Project train crossing is low. It is unlikely that the Project would cause the average emergency vehicle response time to increase to over 7 minutes for the Park Road and Bayshore Road industrial areas.



Impact 2: Emergency vehicle response time to some portions of the study area would increase during rail crossing events, resulting in a potentially significant impact.

Mitigation Measure 2: The Project Applicant shall work with emergency responders in the area to implement the following measures to eliminate or minimize potential Project impacts in regards to emergency vehicle access:

- Coordinate with the City of Benicia Fire Department to prepare an action plan in the event that an emergency occurs during a Project train crossing. The action plan should provide methods of adequately informing the Fire Department of the expected train crossing schedule and alternate routes to access the Park Road and Bayshore Road industrial areas during the event that a train crosses Park Road.
- The Valero refinery provides an emergency response team on site. The refinery's emergency response team should be available to assist with responding to off-site emergencies within the Park Road and Bayshore Road industrial areas if an emergency occurs during the event of a train crossing on Park Road.

Implementation of these measures would reduce the impact to a **less-than-significant** level.



4.0 CUMULATIVE CONDITIONS

A Cumulative conditions analysis was performed to identify potential impacts in year 2035. This chapter discusses the methodology used to develop Cumulative conditions volume forecasts and traffic operations models under Cumulative No Project and Cumulative Plus Project scenarios.

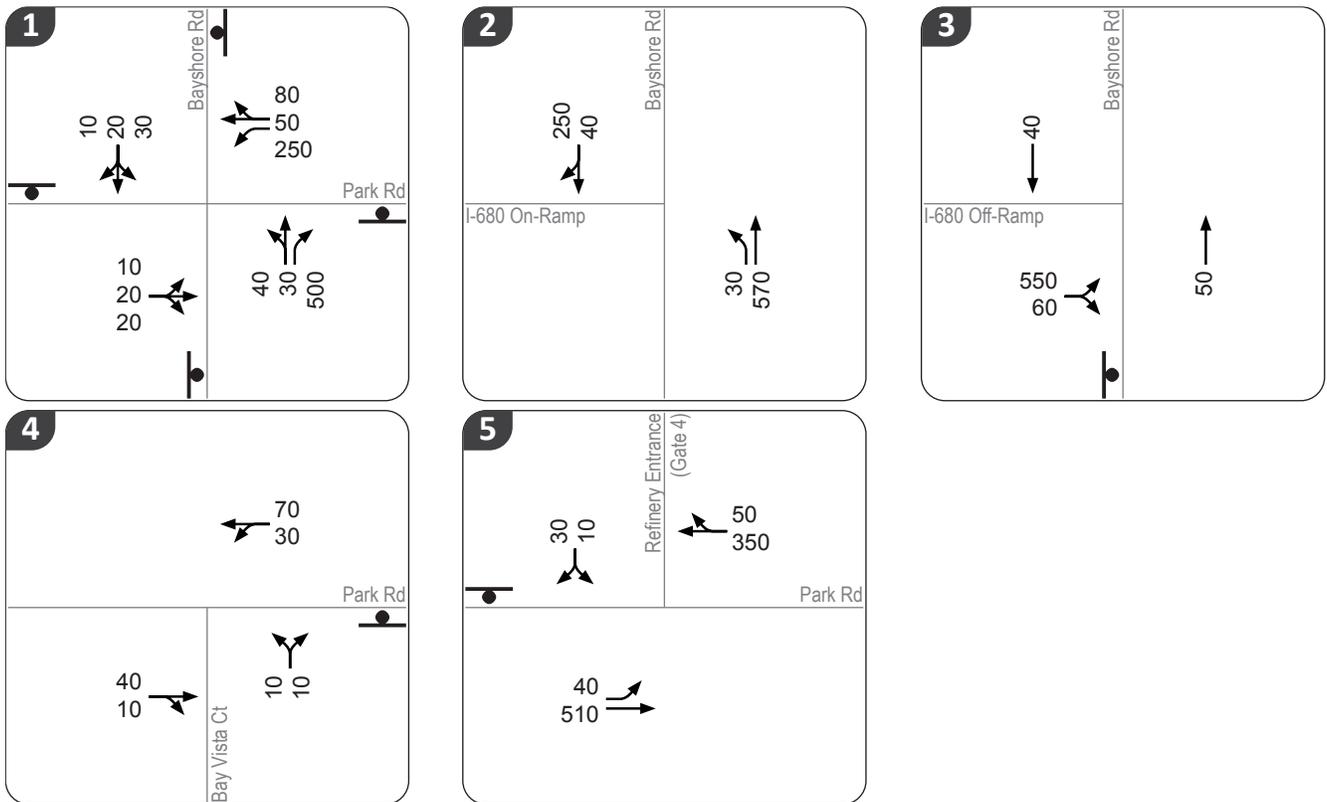
4.1 CUMULATIVE YEAR VOLUME FORECASTS

The latest version of the Solano-Napa Travel Demand Model (STA Model) was initially utilized to develop year 2035 volume forecasts for each of the study intersections. The STA Model outputs were used to develop annual growth rates for the study area. Two scenario years of the model, 2010 and 2030, were run and annual average growth rates derived. According to the STA model, the annual growth rate for the study area was about 6.6 percent for the AM peak hour. Fehr & Peers obtained peak hour traffic counts collected in January 2006 at the intersection of Park Road/Bayshore Road as part of the *Benicia Business Park EIR*. Comparing the 2013 counts to the 2006 counts indicates that the total intersection volumes have not increased during the seven year period, indicating that an annual growth rate of 6.6 percent may overstate future traffic volumes. Several unfunded roadway improvements are included in the 2030 STA model network, such as widening Park Road to four lanes. A review of the 2030 STA model output also indicates a significant amount of cut-through traffic from I-680 and East 2nd Street on Park Road within the AM peak hour that may overstate future traffic volumes in the area.

Instead of applying model-based growth rates to the existing AM peak hour intersection turning movement, a 1.5 percent per year growth rate was applied. This rate is similar to the annual rate of 1.6 percent used in the *Benicia Business Park EIR* for the period between 2006 and 2030. However, according to 2006 and 2013 count data collected at the intersection of Park Road/Bayshore Road, traffic volumes have not increased during the seven year period, potentially due to the recent economic downturn. Therefore, to account for the recent economic downturn, an annual growth rate of 1.5% is reasonable to assume for the study area. **Figure 4-1** presents the weekday AM peak hour intersection forecasts for Cumulative conditions.

In addition, Cumulative intersection forecasts for the off-peak hours of 9:00 – 10:00 AM and 9:00 – 10:00 PM were estimated by applying the reduction factors derived from the existing Park Road daily counts to the Cumulative AM peak hour intersection forecasts. A reduction factor of 59 percent was applied to estimate the 9:00 – 10:00 AM intersection forecasts and a 9 percent factor was applied to estimate the 9:00 – 10:00 PM forecasts.





VOLUMES KEY

- XX AM Peak Hour Traffic Volumes
- Stop Sign

MAP KEY

- ① Study Intersection
- UPRR At-Grade Crossing
- ▬ Roadway Count Location
- UPRR Overland Route (Spur)
- ▬ UPRR Overland Route (Mainline)



Figure 4-1.

**Cumulative Conditions
Intersection Peak Hour Traffic Volumes and Lane Configurations**

WC13-3005_4-1_CumuVols

4.2 CUMULATIVE YEAR ROADWAY NETWORK

Standard CEQA practice is to assume future transportation improvements that are reasonably foreseeable. To meet this definition, a planned improvement must be fully funded by the Cumulative Year 2035. According to the *City of Benicia Capital Improvement Program FY 2011-16* (CIP) the following roadway improvements are planned within the study area:

- Park Road widening to four lanes between Industrial Way and Sulphur Springs Creek Bridge
- Bayshore Road extension from Park Road to Industrial Way
- Park Road/Bayshore Road intersection signalization
- I-680/Bayshore Road ramp-terminal intersection signalization
- I-680/Bayshore Road interchange improvements

Although the above improvements are listed in the CIP, City of Benicia staff have confirmed that funding for the improvements has not yet been secured and the timing of their construction is uncertain. Therefore, none of the improvements identified above were assumed as part of the Cumulative traffic operations analysis. The existing lane configurations and traffic controls were assumed to remain in place for the Cumulative condition. The Cumulative year lane configurations and traffic control assumptions are also shown on **Figure 4-1**.

4.3 INTERSECTION OPERATIONS RESULTS

4.3.1 AM PEAK HOUR OPERATIONS RESULTS

Cumulative AM Peak Hour operations at the five study intersections were evaluated assuming No Project and Plus Project conditions. The Plus Project scenario assumes a 50-railcar train crossing at Park Road, more detailed Project assumptions are provided in Chapter 3. The LOS results are summarized in **Table 4-1** and the queuing results are summarized in **Table 4-3**. As shown in **Table 4-1**, all intersections, except for the northbound I-680 off-ramp to Bayshore Road, are expected to operate at acceptable service levels during the AM peak hour under Cumulative No Project conditions. The northbound off-ramp to Bayshore Road is expected to operate at LOS F with queues extending onto the northbound I-680 mainline under No Project conditions. Assuming a 50-railcar train crossing during the AM peak hour is expected to increase the delay and result in LOS E or F conditions at four out of the five study intersections. The intersection of Park Road/Bay Vista Court is not expected to be affected by the train crossings associated with the Project. However, queuing from the Project's train crossings is expected to affect the operations



along Park Road east of Bayshore Road, along Bayshore Road south of Park Road, and along the northbound I-680 off-ramp to Bayshore Road.

As shown in **Table 4-3**, queuing along westbound Park Road is expected to spill back to the intersection at Industrial Way under Cumulative Plus Project conditions. Queues extending back to the northbound I-680 mainline from the off-ramp at Bayshore Road are expected to continue to occur assuming the 50-railcar train crossing at Park Road. **Figure 4-1** shows the extent of the maximum queues expected with the Project train crossing at Park Road assuming Existing AM peak hour conditions.

It is important to note that train crossings proposed by the Project are not expected to cross Park Road during the AM peak period. The AM peak hour analysis is provided for informational purposes to present a worst-case scenario in the event that trains cross during the morning peak hour. In addition, volumes along westbound Park Road during the AM peak hour are similar to westbound volumes during the PM peak period (3:00 – 6:00 PM). Therefore, the AM peak hour analysis is representative of the expected PM peak period operations specifically along westbound Park Road.

4.3.2 OFF-PEAK HOUR OPERATIONS RESULTS

The Cumulative off-peak hours of 9:00 – 10:00 AM and 9:00 – 10:00 PM were also evaluated assuming a 50-railcar train crossing at Park Road, LOS results are presented in **Table 4-2** and queuing results in **Table 4-4**. Four out of the five study intersections are expected to operate at LOS E or F during the 9:00 – 10:00 AM hour. Vehicle queues associated with the 50-railcar crossing are expected to extend back onto the northbound I-680 off-ramp but not onto the I-680 mainline. Queues are also expected to extend back to the Park Road/Valero Refinery Driveway but will not reach Industrial Way. **Figure 4-2** provides a graphical comparison of the extent of the maximum queues expected with the Project train crossing at Park Road assuming Cumulative AM peak hour conditions compared to Cumulative AM off-peak hour conditions.

Traffic volumes in the evenings and late nights are much lower within the study area compared to the morning peak period. As shown in **Table 4-2**, during the 9:00 – 10:00 PM hour all intersections are expected to operate at LOS A except for Park Road/Bayshore Road, which would operate at LOS F due to its close proximity to the at-grade railroad crossing. Although the intersection operates at LOS F, the resulting queues would be no longer than 5 vehicles on either approach of the intersection. Although the proposed 50-railcar train crossing would block Park Road for over 8 minutes, the resulting queues would be contained within the provided intersection storage capacity at Park Road/Basyhore Road during the 9:00 – 10:00 PM hour.



Generally, train crossings at the Park Road at-grade intersection that take longer than 5 minutes to cross result in LOS E or F operations at the adjacent intersection of Park Road/Bayshore Road, regardless of the time of day in which the train crossing occurs. Therefore, LOS E or F operations at the Park Road/Bayshore Road intersection when rail activity occurs are part of the baseline condition. The longer the train crossing duration, the higher the probability is for vehicle queues to build up and extend to adjacent study intersections, thus affecting their operations as well.



**TABLE 4-1
 CUMULATIVE PLUS PROJECT AM PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Location	Control ¹	No Project ³		With Project ⁴	
		Delay ²	LOS	Delay ²	LOS
1. Park Road / Bayshore Road	AWSC	7	A	100	F
2. I-680 SB On-Ramp / Bayshore Road	FREE	2	A	41	E
3. I-680 NB Off-Ramp / Bayshore Road	SSSC	410 (484)	F (F)	551 (645)	F (F)
4. Park Road / Bay Vista Court	SSSC	1 (5)	A (A)	1 (5)	A (A)
5. Park Road / Valero Refinery Driveway	SSSC	1 (8)	A (A)	76 (128)	F (F)

Notes: **Bold** denotes locations where level of service threshold is exceeded. **Bold italics** indicates potential significant impact.

1. AWSC = all way stop controlled intersection, SSSC = side street stop controlled intersection, Free = uncontrolled intersection.
2. Intersection level of service based on average intersection control delay (in seconds) according to the *Highway Capacity Manual* (Transportation Research Board, 2000). For side-street stop-controlled intersections, delay is reported as intersection average (worst case approach).
3. The No Project analysis scenario does not assume a train crossing during the AM peak hour.
4. Time period representative of the 3:00 to 6:00 PM peak period along westbound Park Road.

Source: Fehr & Peers, 2013.

**TABLE 4-2
 CUMULATIVE PLUS PROJECT OFF-PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Location	Control ¹	Cumulative Plus Project 9:00 – 10:00 AM ³		Cumulative Plus Project 9:00 – 10:00 PM ⁴	
		Delay ²	LOS	Delay ²	LOS
1. Park Road / Bayshore Road	AWSC	100	F	102	F
2. I-680 SB On-Ramp / Bayshore Road	FREE	40	E	1	A
3. I-680 NB Off-Ramp / Bayshore Road	SSSC	152 (170)	F (F)	5 (6)	A (A)
4. Park Road / Bay Vista Court	SSSC	1 (4)	A (A)	1 (1)	A (A)
5. Park Road / Valero Refinery Driveway	SSSC	25 (44)	C (E)	1 (4)	A (A)

Notes: **Bold** denotes locations where level of service threshold is exceeded.

1. AWSC = all way stop controlled intersection, SSSC = side street stop controlled intersection, Free = uncontrolled intersection.
2. Intersection level of service based on average intersection control delay (in seconds) according to the *Highway Capacity Manual* (Transportation Research Board, 2000). For side-street stop-controlled intersections, delay is reported as intersection average (worst case approach).
3. Time period representative of the 9:00 AM to 7:00 PM period along eastbound Park Road. The time period is also representative of the 9:00 AM to 3:00 PM and 6:00 to 7:00 PM periods along westbound Park Road.
4. Time period representative of the 7:00 PM to 6:00 AM time period along westbound and eastbound Park Road.

Source: Fehr & Peers, 2013.



**TABLE 4-3
 CUMULATIVE PLUS PROJECT AM PEAK HOUR INTERSECTION QUEUING**

Intersection	Movement ¹	Available Storage (ft)	No Project ²		Plus Project ³	
			Average Queue Length (ft)	Maximum Queue Length (ft)	Average Queue Length (ft)	Maximum Queue Length (ft)
1. Park Road / Bayshore Road	NB-LT	140	0	70	0	60
	NB-R	275	10	110	340	600
	SB-LTR	220	0	70	30	160
	EB-LTR	250	0	60	20	110
	WB-L	200	10	200	370	580
	WB-TR	500	0	130	170	580
2. I-680 SB On-Ramp / Bayshore Road	NB-L	115	0	0	0	0
3. I-680 NB Off-Ramp / Bayshore Road	NB-T	200	0	0	10	40
	EB-LR	1,300	2,910	3,060	2,930	3,060
4. Park Road / Bay Vista Court	NB-LR	275	0	30	0	30
5. Park Road / Valero Refinery Driveway	SB-LR	200	0	50	10	60
	EB-L	150	0	0	0	0
	WB-TR	950	0	20	400	1,360

Notes: **Bold** denotes locations where storage length is exceeded.

1. NB – northbound, SB – southbound, EB – eastbound, WB – westbound, L – left turn movement, T – through movement, R – right turn movement.
2. The No Project analysis scenario does not assume a train crossing during the AM peak hour.
3. Time period representative of the 3:00 to 6:00 PM peak period along westbound Park Road.

Source: Fehr & Peers, 2013.



**TABLE 4-4
 CUMULATIVE PLUS PROJECT OFF-PEAK HOUR INTERSECTION QUEUING**

Intersection	Movement ¹	Available Storage (ft)	Cumulative Plus Project 9:00 – 10:00 AM ²		Cumulative Plus Project 9:00 – 10:00 PM ³	
			Average Queue Length (ft)	Maximum Queue Length (ft)	Average Queue Length (ft)	Maximum Queue Length (ft)
1. Park Road / Bayshore Road	NB-LT	140	0	60	0	30
	NB-R	275	280	600	10	50
	SB-LTR	220	20	100	0	30
	EB-LTR	250	0	40	0	30
	WB-L	200	290	580	30	100
	WB-TR	500	200	580	10	40
2. I-680 SB On-Ramp / Bayshore Road	NB-L	115	0	0	0	0
3. I-680 NB Off-Ramp / Bayshore Road	NB-T	200	0	20	0	0
	EB-LR	1,300	450	1,080	10	50
4. Park Road / Bay Vista Court	NB-LR	275	0	20	0	0
5. Park Road / Valero Refinery Driveway	SB-LR	200	0	30	0	30
	EB-L	150	0	0	0	0
	WB-TR	950	70	430	0	0

Notes: **Bold** denotes locations where storage length is exceeded.

1. NB – northbound, SB – southbound, EB – eastbound, WB – westbound, L – left turn movement, T – through movement, R – right turn movement.
2. Time period representative of the 9:00 AM to 7:00 PM period along eastbound Park Road. The time period is also representative of the 9:00 AM to 3:00 PM and 6:00 to 7:00 PM periods along westbound Park Road.
3. Time period representative of the 7:00 PM to 6:00 AM time period along westbound and eastbound Park Road.

Source: Fehr & Peers, 2013.



4.4 CUMULATIVE PROJECT IMPACTS AND MITIGATION MEASURES

Impact 3 – AM Peak Hour Queues Extend to Northbound I-680: The proposed increase of daily crude oil deliveries by rail across Park Road would result in vehicle queues that would spillback along the northbound I-680 off-ramp to Bayshore Road and eventually onto the northbound I-680 mainline if deliveries by rail occur during the AM peak hour, resulting in a **significant** impact.

Mitigation Measure 3: Implementing **Mitigation Measure 1** would result in shorter vehicle queues that would not extend back onto the northbound I-680 mainline. The Project impact would be **less-than-significant** if trains do not cross during the AM peak period.

From a queuing perspective, the Project would impede other traffic during the morning AM peak hour because vehicle queues that result from the train crossing would likely extend onto the northbound I-680 off-ramp from Bayshore Road and eventually onto the northbound I-680 mainline. If the proposed train crossings occur outside the 6:00 – 9:00 AM peak period, resulting vehicle queues are not expected to extend back onto the I-680 mainline. Vehicle queues on the east side of the tracks would likely extend back to Industrial Way along westbound Park Road with the Project.

If the Project train crossings occur during the 9:00 AM – 7:00 PM period, resulting queues on the west side of the tracks would extend back onto Bayshore Road and affect the operations of the I-680 ramp-terminal intersections. Queues on the east side of the tracks would generally be contained within the Park Road segment between the tracks and Industrial Way during the 9:00 AM to 3:00 PM and 6:00 to 7:00 PM periods, affecting access to and from Valero refinery driveways. Operations along westbound Park Road during the AM peak hour are considered representative of operations during the PM peak period (3:00 to 6:00 PM), thus it's possible that queues along westbound Park Road will extend back to Industrial Way under Cumulative PM peak period conditions. The segment of Park Road between the railroad crossing and Industrial Way provides a two-way left-turn lane which will likely be utilized as a queue storage lane by some drivers stuck on westbound Park Road waiting for the 8.3 minute train crossing to clear.

If the proposed train crossings occur during the 7:00 PM – 6:00 AM period, resulting queues on the west side and east side of the tracks would not exceed the provided storage capacity. Only the intersection of Park Road/Bayshore Road would operate at LOS F conditions during the hour of the crossing, but resulting queues would not extend back and affect the operations of other study intersections.

The Proposed project would increase the frequency that 8-minute crossings occur in the area, but the increased crossing frequency is within the existing range of crossing variability. Although the Project



would increase the train frequency on Park Road by four train crossings (two trips into the refinery and two trips out of the refinery) a day, the proposed crossing duration of each Project train trip is lower than train crossing durations that already exist today without the Project.





Figure 4-2.

Cumulative Plus Project Queuing Analysis

WC13-3005_4-2_CumuQueue

APPENDIX A: EXISTING TRAFFIC DATA



Prepared by NDS/ATD

Volumes for: Monday, January 07, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 1).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	79			1	54				
12:15	3	49			1	60				
12:30	4	59			6	51				
12:45	1	65	14	252	0	64	8	229	22	481
1:00	5	47			2	55				
1:15	3	59			3	22				
1:30	1	81			1	47				
1:45	3	13	12	200	3	14	9	138	21	338
2:00	4	94			1	38				
2:15	0	65			1	42				
2:30	3	61			1	51				
2:45	3	54	10	274	3	76	6	207	16	481
3:00	6	61			2	62				
3:15	3	51			5	68				
3:30	11	52			3	67				
3:45	6	92	26	256	2	95	12	292	38	548
4:00	27	56			3	76				
4:15	19	54			3	85				
4:30	12	48			6	71				
4:45	28	65	86	223	5	93	17	325	103	548
5:00	35	36			24	67				
5:15	25	36			16	89				
5:30	37	33			16	63				
5:45	47	49	144	154	14	68	70	287	214	441
6:00	63	22			34	53				
6:15	65	20			33	38				
6:30	64	19			47	23				
6:45	75	24	267	85	56	27	170	141	437	226
7:00	86	16			65	20				
7:15	104	7			43	9				
7:30	106	6			63	11				
7:45	92	5	388	34	62	7	233	47	621	81
8:00	106	6			72	6				
8:15	102	8			43	12				
8:30	88	10			70	9				
8:45	75	6	371	30	51	5	236	32	607	62
9:00	88	8			56	6				
9:15	61	3			45	9				
9:30	50	5			54	7				
9:45	67	10	266	26	42	6	197	28	463	54
10:00	57	5			33	5				
10:15	61	11			48	12				
10:30	73	8			36	4				
10:45	44	2	235	26	53	2	170	23	405	49
11:00	41	2			47	1				
11:15	53	2			42	6				
11:30	41	6			16	4				
11:45	39	4	174	14	20	4	125	15	299	29
Total	1993	1574	1993	1574	1253	1764	1253	1764	3246	3338
Combined Total	3567		3567		3017		3017		6584	
AM Peak	7:15 AM				7:45 AM					
Vol.	408				247					
P.H.F.	0.962				0.858					
PM Peak	2:00 PM				3:45 PM					
Vol.	274				327					
P.H.F.	0.729				0.861					
Percentage	55.9%	44.1%			41.5%	58.5%				

Prepared by NDS/ATD

Volumes for: Tuesday, January 08, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 2).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	61			6	71				
12:15	6	73			10	62				
12:30	6	69			2	59				
12:45	3	65	21	268	6	57	24	249	45	517
1:00	3	80			3	39				
1:15	5	51			14	58				
1:30	1	61			3	36				
1:45	0	55	9	247	2	60	22	193	31	440
2:00	6	65			2	37				
2:15	5	68			0	59				
2:30	3	72			6	58				
2:45	3	62	17	267	2	71	10	225	27	492
3:00	4	54			2	59				
3:15	7	50			7	61				
3:30	11	61			2	59				
3:45	12	88	34	253	6	86	17	265	51	518
4:00	26	52			6	84				
4:15	25	72			8	84				
4:30	16	51			10	75				
4:45	24	73	91	248	9	64	33	307	124	555
5:00	31	40			14	71				
5:15	26	55			15	114				
5:30	36	39			19	62				
5:45	41	41	134	175	22	60	70	307	204	482
6:00	63	27			37	60				
6:15	54	33			32	39				
6:30	76	15			51	32				
6:45	72	22	265	97	50	27	170	158	435	255
7:00	105	22			67	24				
7:15	95	12			57	25				
7:30	108	15			47	14				
7:45	100	12	408	61	51	16	222	79	630	140
8:00	114	12			78	18				
8:15	94	10			67	17				
8:30	83	10			59	14				
8:45	66	9	357	41	42	8	246	57	603	98
9:00	71	8			51	6				
9:15	60	3			55	15				
9:30	52	9			48	14				
9:45	62	3	245	23	58	9	212	44	457	67
10:00	67	9			44	7				
10:15	56	5			37	13				
10:30	64	5			60	4				
10:45	59	6	246	25	40	3	181	27	427	52
11:00	31	1			42	0				
11:15	45	5			33	8				
11:30	51	3			56	2				
11:45	48	1	175	10	62	1	193	11	368	21
Total	2002	1715	2002	1715	1400	1922	1400	1922	3402	3637
Combined Total	3717		3717		3322		3322		7039	
AM Peak	7:15 AM				7:45 AM					
Vol.	417				255					
P.H.F.	0.914				0.817					
PM Peak	12:15 PM				3:45 PM					
Vol.	287				329					
P.H.F.	0.897				0.956					
Percentage	53.9%	46.1%			42.1%	57.9%				

Prepared by NDS/ATD

Volumes for: Wednesday, January 09, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 3).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	75			0	58				
12:15	4	63			6	59				
12:30	5	62			8	55				
12:45	7	78	19	278	4	54	18	226	37	504
1:00	9	64			5	54				
1:15	2	75			13	53				
1:30	4	60			8	46				
1:45	2	60	17	259	7	42	33	195	50	454
2:00	2	60			0	24				
2:15	2	65			2	36				
2:30	2	70			0	55				
2:45	7	54	13	249	0	75	2	190	15	439
3:00	5	59			4	59				
3:15	3	59			8	58				
3:30	9	57			2	60				
3:45	10	77	27	252	5	74	19	251	46	503
4:00	23	61			2	78				
4:15	20	56			9	94				
4:30	15	59			6	66				
4:45	30	77	88	253	7	67	24	305	112	558
5:00	36	49			10	70				
5:15	20	50			17	80				
5:30	31	27			14	71				
5:45	42	79	129	205	16	79	57	300	186	505
6:00	77	92			36	39				
6:15	64	66			32	41				
6:30	70	24			48	27				
6:45	69	20	280	202	60	29	176	136	456	338
7:00	109	21			72	22				
7:15	105	19			46	21				
7:30	113	12			47	17				
7:45	102	16	429	68	71	12	236	72	665	140
8:00	110	15			87	8				
8:15	110	6			62	16				
8:30	76	9			49	9				
8:45	83	7	379	37	59	7	257	40	636	77
9:00	57	6			53	6				
9:15	78	9			59	9				
9:30	55	4			47	9				
9:45	50	2	240	21	49	10	208	34	448	55
10:00	53	9			53	2				
10:15	54	9			50	7				
10:30	41	6			41	3				
10:45	51	3	199	27	41	5	185	17	384	44
11:00	47	5			38	5				
11:15	47	1			55	6				
11:30	51	2			49	7				
11:45	60	5	205	13	60	4	202	22	407	35
Total	2025	1864	2025	1864	1417	1788	1417	1788	3442	3652
Combined Total	3889		3889		3205		3205		7094	
AM Peak	7:30 AM				7:45 AM					
Vol.	435				269					
P.H.F.	0.962				0.773					
PM Peak	12:30 PM				3:45 PM					
Vol.	279				312					
P.H.F.	0.894				0.830					
Percentage	52.1%	47.9%			44.2%	55.8%				

Volumes for: Thursday, January 10, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 4).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	66			4	50				
12:15	9	58			4	62				
12:30	0	42			6	57				
12:45	5	59	16	225	4	47	18	216	34	441
1:00	3	67			3	41				
1:15	2	51			10	51				
1:30	1	76			6	45				
1:45	1	62	7	256	3	58	22	195	29	451
2:00	4	67			1	46				
2:15	1	61			3	41				
2:30	1	75			1	49				
2:45	3	47	9	250	3	70	8	206	17	456
3:00	10	66			4	53				
3:15	9	58			6	63				
3:30	10	64			4	54				
3:45	12	92	41	280	5	96	19	266	60	546
4:00	28	61			5	72				
4:15	22	52			8	107				
4:30	15	52			10	65				
4:45	24	55	89	220	9	113	32	357	121	577
5:00	35	35			13	61				
5:15	20	46			15	84				
5:30	40	33			13	69				
5:45	54	43	149	157	24	79	65	293	214	450
6:00	64	29			34	50				
6:15	69	28			32	41				
6:30	68	34			41	32				
6:45	66	24	267	115	51	36	158	159	425	274
7:00	96	24			71	34				
7:15	106	16			47	22				
7:30	108	14			59	11				
7:45	91	14	401	68	65	12	242	79	643	147
8:00	105	12			80	17				
8:15	95	10			64	14				
8:30	78	5			52	6				
8:45	63	27	341	54	38	8	234	45	575	99
9:00	79	10			59	10				
9:15	62	9			43	5				
9:30	59	11			48	13				
9:45	55	3	255	33	40	8	190	36	445	69
10:00	51	5			49	5				
10:15	52	10			42	11				
10:30	41	7			37	8				
10:45	47	3	191	25	39	5	167	29	358	54
11:00	53	3			43	5				
11:15	50	1			43	7				
11:30	46	5			52	2				
11:45	55	5	204	14	38	2	176	16	380	30
Total	1970	1697	1970	1697	1331	1897	1331	1897	3301	3594
Combined Total	3667		3667		3228		3228		6895	
AM Peak	7:15 AM				7:30 AM					
Vol.	410				268					
P.H.F.	0.949				0.838					
PM Peak	3:00 PM				4:00 PM					
Vol.	280				357					
P.H.F.	0.761				0.790					
Percentage	53.7%	46.3%			41.2%	58.8%				

Prepared by NDS/ATD

Volumes for: Friday, January 11, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 5).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	60			6	55				
12:15	8	55			14	51				
12:30	2	51			5	61				
12:45	5	51	22	217	5	68	30	235	52	452
1:00	1	84			7	58				
1:15	3	72			11	56				
1:30	1	79			3	60				
1:45	3	74	8	309	3	64	24	238	32	547
2:00	4	65			1	56				
2:15	1	68			0	56				
2:30	5	64			4	62				
2:45	7	49	17	246	2	87	7	261	24	507
3:00	8	53			5	59				
3:15	5	63			6	60				
3:30	11	60			7	66				
3:45	16	72	40	248	5	82	23	267	63	515
4:00	27	45			1	70				
4:15	18	43			10	97				
4:30	19	44			8	70				
4:45	27	67	91	199	10	58	29	295	120	494
5:00	38	30			15	59				
5:15	20	34			11	76				
5:30	38	30			16	65				
5:45	37	28	133	122	17	54	59	254	192	376
6:00	84	23			30	38				
6:15	53	15			33	24				
6:30	60	22			32	22				
6:45	82	14	279	74	55	18	150	102	429	176
7:00	89	18			63	27				
7:15	121	15			47	16				
7:30	96	12			54	15				
7:45	103	11	409	56	65	15	229	73	638	129
8:00	107	8			96	14				
8:15	90	13			54	6				
8:30	88	5			65	14				
8:45	71	3	356	29	42	10	257	44	613	73
9:00	69	10			39	2				
9:15	54	12			36	6				
9:30	57	5			46	7				
9:45	36	1	216	28	41	3	162	18	378	46
10:00	30	3			11	10				
10:15	73	6			31	11				
10:30	39	4			41	4				
10:45	41	3	183	16	40	2	123	27	306	43
11:00	44	6			32	5				
11:15	52	1			34	7				
11:30	46	4			45	4				
11:45	73	5	215	16	54	2	165	18	380	34
Total	1969	1560	1969	1560	1258	1832	1258	1832	3227	3392
Combined Total	3529		3529		3090		3090		6619	
AM Peak	7:15 AM				7:45 AM					
Vol.	427				280					
P.H.F.	0.882				0.729					
PM Peak	1:00 PM				3:45 PM					
Vol.	309				319					
P.H.F.	0.920				0.822					
Percentage	55.8%	44.2%			40.7%	59.3%				

Prepared by NDS/ATD

Volumes for: Saturday, January 12, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 6).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	14			1	19				
12:15	5	17			7	25				
12:30	0	15			4	16				
12:45	2	14	12	60	8	22	20	82	32	142
1:00	4	14			2	17				
1:15	5	22			9	11				
1:30	2	18			9	17				
1:45	4	14	15	68	3	19	23	64	38	132
2:00	5	18			3	14				
2:15	0	25			4	26				
2:30	3	24			2	22				
2:45	0	22	8	89	0	17	9	79	17	168
3:00	8	27			3	22				
3:15	0	12			4	27				
3:30	6	14			1	23				
3:45	8	21	22	74	4	20	12	92	34	166
4:00	12	13			6	17				
4:15	8	11			4	19				
4:30	8	6			4	18				
4:45	7	11	35	41	5	15	19	69	54	110
5:00	11	8			5	12				
5:15	9	10			9	17				
5:30	12	5			13	12				
5:45	12	5	44	28	5	7	32	48	76	76
6:00	25	8			7	10				
6:15	21	6			16	6				
6:30	18	4			14	3				
6:45	30	8	94	26	11	4	48	23	142	49
7:00	31	12			2	5				
7:15	26	1			13	12				
7:30	34	10			10	4				
7:45	19	7	110	30	12	2	37	23	147	53
8:00	18	4			18	8				
8:15	11	4			16	2				
8:30	22	3			17	3				
8:45	21	5	72	16	25	2	76	15	148	31
9:00	16	8			22	3				
9:15	12	5			18	4				
9:30	18	1			16	4				
9:45	13	2	59	16	14	0	70	11	129	27
10:00	21	8			18	2				
10:15	17	8			14	6				
10:30	11	4			20	2				
10:45	8	2	57	22	14	2	66	12	123	34
11:00	17	5			17	3				
11:15	15	1			18	3				
11:30	10	3			13	1				
11:45	15	1	57	10	27	4	75	11	132	21
Total	585	480	585	480	487	529	487	529	1072	1009
Combined Total	1065		1065		1016		1016		2081	
AM Peak	6:45 AM				11:45 AM					
Vol.	121				87					
P.H.F.	0.890				0.806					
PM Peak	2:15 PM				3:00 PM					
Vol.	98				92					
P.H.F.	0.907				0.852					
Percentage	54.9%	45.1%			47.9%	52.1%				

Prepared by NDS/ATD

Volumes for: Sunday, January 13, 2013

City: Benicia

Project #: 13-7021-001

Location: Park Road just west of Refinery Entrance (Day 7).

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	12			2	10				
12:15	3	9			8	5				
12:30	4	10			0	5				
12:45	1	11	13	42	2	23	12	43	25	85
1:00	1	7			4	5				
1:15	3	5			3	5				
1:30	0	9			1	7				
1:45	1	7	5	28	0	3	8	20	13	48
2:00	2	12			1	10				
2:15	0	13			2	9				
2:30	1	8			0	13				
2:45	1	12	4	45	1	8	4	40	8	85
3:00	1	8			1	9				
3:15	1	6			2	10				
3:30	4	11			2	11				
3:45	5	11	11	36	1	10	6	40	17	76
4:00	11	9			2	8				
4:15	7	5			5	10				
4:30	0	12			1	14				
4:45	4	11	22	37	5	7	13	39	35	76
5:00	2	7			3	10				
5:15	5	13			3	11				
5:30	5	8			5	12				
5:45	5	7	17	35	3	9	14	42	31	77
6:00	9	8			1	4				
6:15	6	9			1	3				
6:30	5	12			4	6				
6:45	8	6	28	35	3	4	9	17	37	52
7:00	7	2			5	4				
7:15	8	7			4	6				
7:30	2	6			4	4				
7:45	5	5	22	20	5	6	18	20	40	40
8:00	12	4			5	2				
8:15	13	3			10	3				
8:30	7	4			5	2				
8:45	4	4	36	15	3	12	23	19	59	34
9:00	3	3			4	4				
9:15	10	8			3	4				
9:30	5	1			5	2				
9:45	5	6	23	18	6	4	18	14	41	32
10:00	4	4			4	1				
10:15	7	2			3	7				
10:30	4	2			8	6				
10:45	4	0	19	8	6	1	21	15	40	23
11:00	6	1			4	2				
11:15	5	4			4	2				
11:30	8	2			11	1				
11:45	12	4	31	11	5	2	24	7	55	18
Total	231	330	231	330	170	316	170	316	401	646
Combined Total	561		561		486		486		1047	
AM Peak	11:45 AM				11:30 AM					
Vol.	43				31					
P.H.F.	0.896				0.705					
PM Peak		2:00 PM				12:00 PM				
Vol.		45				43				
P.H.F.		0.865				0.467				
Percentage	41.2%	58.8%			35.0%	65.0%				

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-003 Bayshore-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Unshifted

Start Time	Bayshore Road Southbound				Park Road Westbound				Bayshore Road Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	3	2	0	5	36	1	4	41	4	2	58	64	2	0	0	2	112
06:15	1	1	0	2	41	7	6	54	1	3	66	70	0	2	0	2	128
06:30	1	3	0	4	43	6	12	61	5	8	77	90	0	3	0	3	158
06:45	1	3	0	4	46	11	23	80	10	14	99	123	0	8	1	9	216
Total	6	9	0	15	166	25	45	236	20	27	300	347	2	13	1	16	614
07:00	1	2	4	7	39	5	6	50	5	5	101	111	3	2	0	5	173
07:15	4	6	1	11	32	5	15	52	7	8	104	119	2	3	2	7	189
07:30	6	1	2	9	49	9	24	82	2	5	77	84	0	3	2	5	180
07:45	5	3	1	9	62	15	18	95	11	9	104	124	2	6	2	10	238
Total	16	12	8	36	182	34	63	279	25	27	386	438	7	14	6	27	780
08:00	7	2	0	9	44	11	6	61	8	4	83	95	0	7	6	13	178
08:15	8	3	1	12	47	2	9	58	3	1	67	71	1	3	1	5	146
08:30	5	2	4	11	49	4	9	62	10	5	69	84	0	4	1	5	162
08:45	4	2	0	6	44	7	7	58	3	3	60	66	2	4	0	6	136
Total	24	9	5	38	184	24	31	239	24	13	279	316	3	18	8	29	622
Grand Total	46	30	13	89	532	83	139	754	69	67	965	1101	12	45	15	72	2016
Apprch %	51.7	33.7	14.6		70.6	11	18.4		6.3	6.1	87.6		16.7	62.5	20.8		
Total %	2.3	1.5	0.6	4.4	26.4	4.1	6.9	37.4	3.4	3.3	47.9	54.6	0.6	2.2	0.7	3.6	

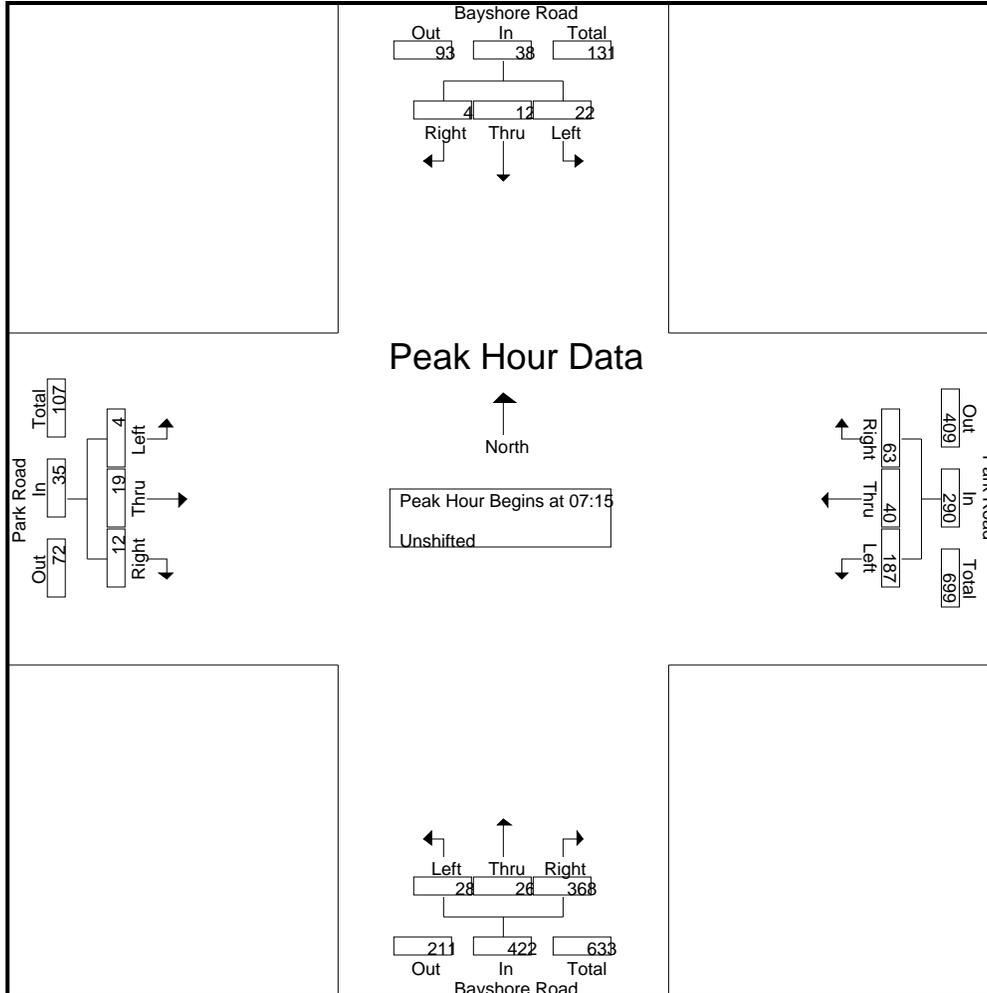
Start Time	Bayshore Road Southbound				Park Road Westbound				Bayshore Road Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	4	6	1	11	32	5	15	52	7	8	104	119	2	3	2	7	189
07:30	6	1	2	9	49	9	24	82	2	5	77	84	0	3	2	5	180
07:45	5	3	1	9	62	15	18	95	11	9	104	124	2	6	2	10	238
08:00	7	2	0	9	44	11	6	61	8	4	83	95	0	7	6	13	178
Total Volume	22	12	4	38	187	40	63	290	28	26	368	422	4	19	12	35	785
% App. Total	57.9	31.6	10.5		64.5	13.8	21.7		6.6	6.2	87.2		11.4	54.3	34.3		
PHF	.786	.500	.500	.864	.754	.667	.656	.763	.636	.722	.885	.851	.500	.679	.500	.673	.825

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-003 Bayshore-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-003 Bayshore-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Bank 1

Start Time	Bayshore Road Southbound				Park Road Westbound				Bayshore Road Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	1	0	1	13	0	1	14	0	0	7	7	0	0	0	0	22
06:15	1	0	0	1	11	0	3	14	0	0	10	10	0	0	0	0	25
06:30	0	3	0	3	11	0	2	13	0	1	8	9	0	1	0	1	26
06:45	1	1	0	2	12	0	1	13	0	1	2	3	0	1	0	1	19
Total	2	5	0	7	47	0	7	54	0	2	27	29	0	2	0	2	92
07:00	0	1	0	1	13	0	1	14	0	1	14	15	0	0	0	0	30
07:15	0	3	0	3	4	0	2	6	0	3	5	8	0	0	0	0	17
07:30	0	1	0	1	7	2	1	10	0	2	4	6	0	0	2	2	19
07:45	2	1	0	3	19	0	0	19	0	1	7	8	0	1	2	3	33
Total	2	6	0	8	43	2	4	49	0	7	30	37	0	1	4	5	99
08:00	1	2	0	3	9	0	1	10	0	2	6	8	0	2	0	2	23
08:15	3	3	0	6	13	0	1	14	1	0	3	4	0	1	0	1	25
08:30	0	2	0	2	18	0	0	18	0	2	12	14	0	0	0	0	34
08:45	0	1	0	1	20	0	1	21	0	2	6	8	0	1	0	1	31
Total	4	8	0	12	60	0	3	63	1	6	27	34	0	4	0	4	113
Grand Total	8	19	0	27	150	2	14	166	1	15	84	100	0	7	4	11	304
Apprch %	29.6	70.4	0		90.4	1.2	8.4		1	15	84		0	63.6	36.4		
Total %	2.6	6.2	0	8.9	49.3	0.7	4.6	54.6	0.3	4.9	27.6	32.9	0	2.3	1.3	3.6	

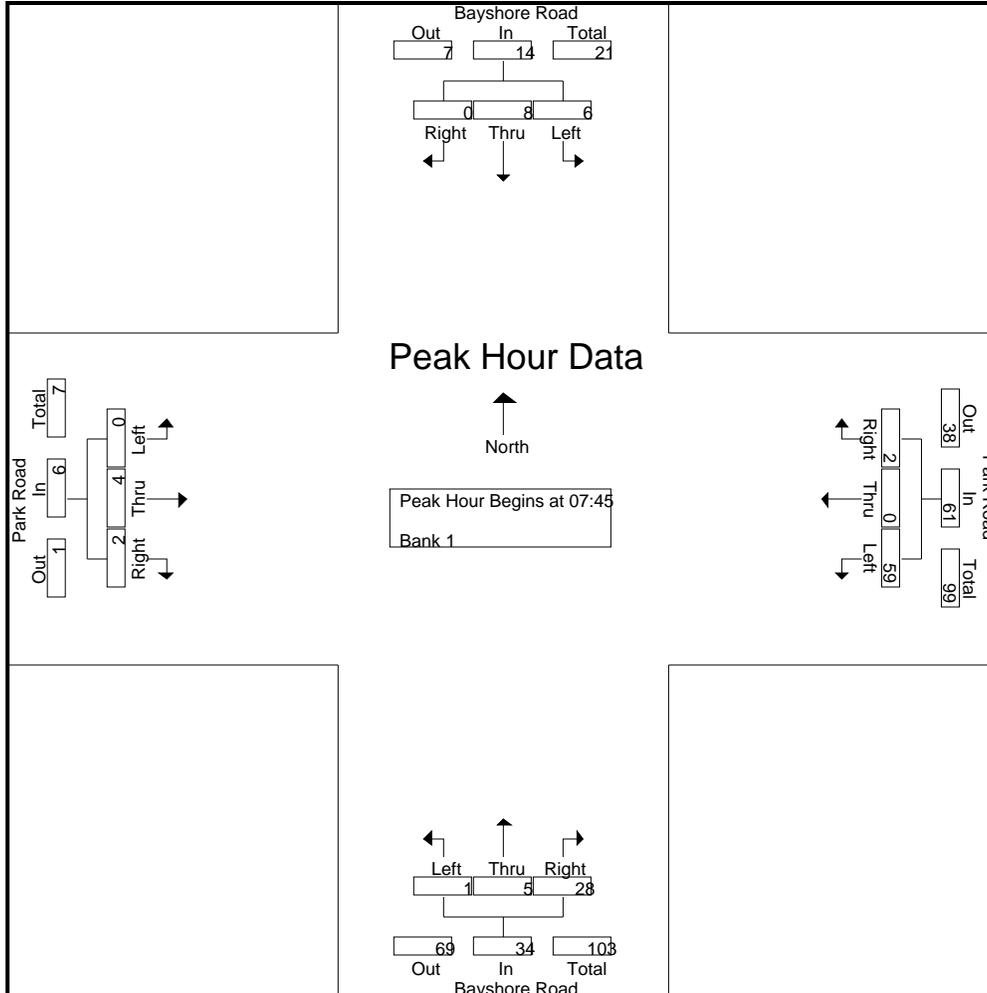
Start Time	Bayshore Road Southbound				Park Road Westbound				Bayshore Road Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	2	1	0	3	19	0	0	19	0	1	7	8	0	1	2	3	33
08:00	1	2	0	3	9	0	1	10	0	2	6	8	0	2	0	2	23
08:15	3	3	0	6	13	0	1	14	1	0	3	4	0	1	0	1	25
08:30	0	2	0	2	18	0	0	18	0	2	12	14	0	0	0	0	34
Total Volume	6	8	0	14	59	0	2	61	1	5	28	34	0	4	2	6	115
% App. Total	42.9	57.1	0		96.7	0	3.3		2.9	14.7	82.4		0	66.7	33.3		
PHF	.500	.667	.000	.583	.776	.000	.500	.803	.250	.625	.583	.607	.000	.500	.250	.500	.846

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-003 Bayshore-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-002 Bayshore-I 680 SB On Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Unshifted

Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 SB On-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	9	30	39	0	0	0	0	2	64	0	66	0	0	0	0	105
06:15	0	8	33	41	0	0	0	0	3	70	0	73	0	0	0	0	114
06:30	0	11	36	47	0	0	0	0	3	93	0	96	0	0	0	0	143
06:45	0	9	39	48	0	0	0	0	2	126	0	128	0	0	0	0	176
Total	0	37	138	175	0	0	0	0	10	353	0	363	0	0	0	0	538
07:00	0	10	33	43	0	0	0	0	5	107	0	112	0	0	0	0	155
07:15	0	5	36	41	0	0	0	0	4	122	0	126	0	0	0	0	167
07:30	0	2	50	52	0	0	0	0	3	85	0	88	0	0	0	0	140
07:45	0	19	51	70	0	0	1	1	7	125	0	132	0	0	0	0	203
Total	0	36	170	206	0	0	1	1	19	439	0	458	0	0	0	0	665
08:00	0	4	47	51	2	1	0	3	8	97	2	107	0	0	0	0	161
08:15	0	2	49	51	1	0	0	1	4	73	1	78	0	0	0	0	130
08:30	1	9	43	53	0	0	0	0	4	82	2	88	0	0	0	0	141
08:45	0	4	43	47	0	0	1	1	5	66	1	72	0	0	0	0	120
Total	1	19	182	202	3	1	1	5	21	318	6	345	0	0	0	0	552
Grand Total	1	92	490	583	3	1	2	6	50	1110	6	1166	0	0	0	0	1755
Apprch %	0.2	15.8	84		50	16.7	33.3		4.3	95.2	0.5		0	0	0		
Total %	0.1	5.2	27.9	33.2	0.2	0.1	0.1	0.3	2.8	63.2	0.3	66.4	0	0	0	0	

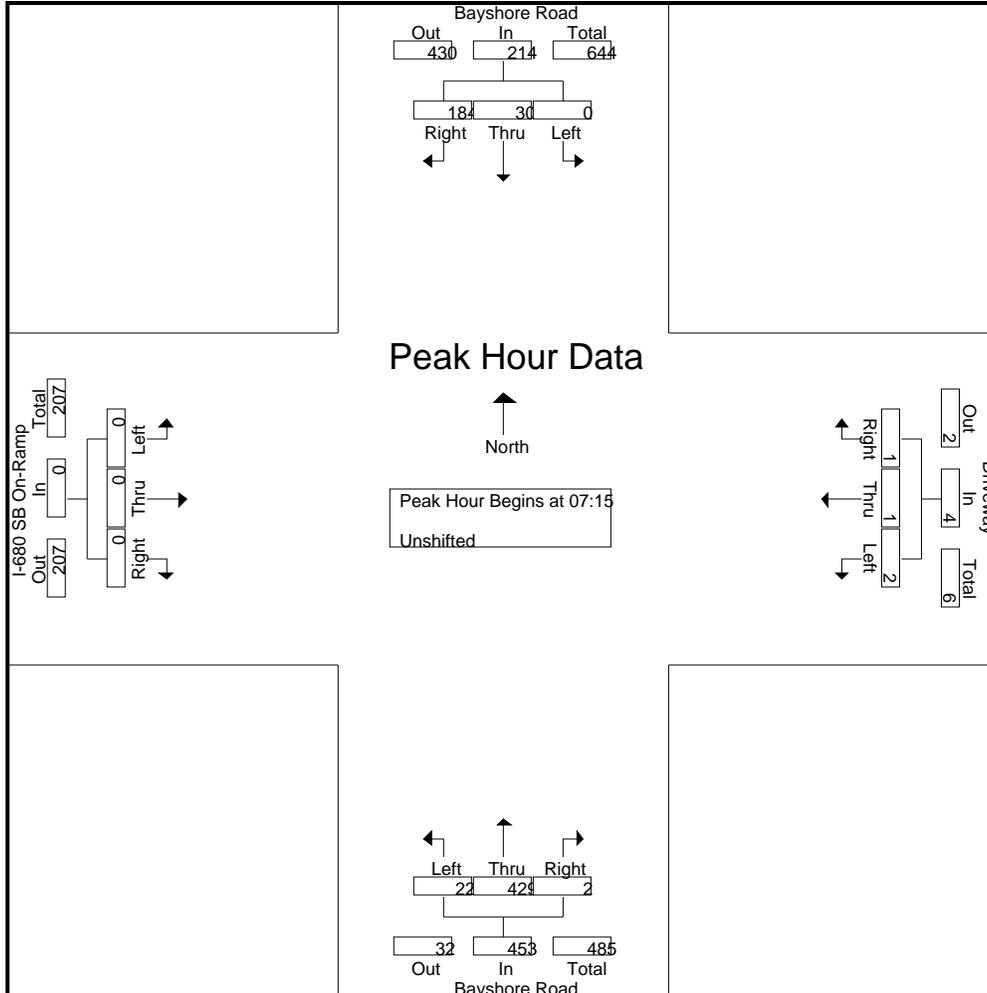
Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 SB On-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	5	36	41	0	0	0	0	4	122	0	126	0	0	0	0	167
07:30	0	2	50	52	0	0	0	0	3	85	0	88	0	0	0	0	140
07:45	0	19	51	70	0	0	1	1	7	125	0	132	0	0	0	0	203
08:00	0	4	47	51	2	1	0	3	8	97	2	107	0	0	0	0	161
Total Volume	0	30	184	214	2	1	1	4	22	429	2	453	0	0	0	0	671
% App. Total	0	14	86		50	25	25		4.9	94.7	0.4		0	0	0		
PHF	.000	.395	.902	.764	.250	.250	.250	.333	.688	.858	.250	.858	.000	.000	.000	.000	.826

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-002 Bayshore-I 680 SB On Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-002 Bayshore-I 680 SB On Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Bank 1

Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 SB On-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	1	13	14	0	0	0	0	0	8	0	8	0	0	0	0	22
06:15	0	1	11	12	0	0	0	0	0	9	0	9	0	0	0	0	21
06:30	0	0	13	13	0	0	0	0	1	9	0	10	0	0	0	0	23
06:45	0	0	14	14	0	0	0	0	1	4	0	5	0	0	0	0	19
Total	0	2	51	53	0	0	0	0	2	30	0	32	0	0	0	0	85
07:00	0	2	12	14	0	0	0	0	3	14	0	17	0	0	0	0	31
07:15	0	0	7	7	0	0	0	0	3	8	0	11	0	0	0	0	18
07:30	0	0	12	12	0	0	0	0	1	7	0	8	0	0	0	0	20
07:45	0	2	19	21	0	0	0	0	0	8	0	8	0	0	0	0	29
Total	0	4	50	54	0	0	0	0	7	37	0	44	0	0	0	0	98
08:00	0	2	10	12	0	0	0	0	1	9	0	10	0	0	0	0	22
08:15	0	0	16	16	0	0	0	0	1	4	0	5	0	0	0	0	21
08:30	0	2	17	19	0	0	0	0	0	15	0	15	0	0	0	0	34
08:45	0	0	22	22	0	0	0	0	0	7	0	7	0	0	0	0	29
Total	0	4	65	69	0	0	0	0	2	35	0	37	0	0	0	0	106
Grand Total	0	10	166	176	0	0	0	0	11	102	0	113	0	0	0	0	289
Apprch %	0	5.7	94.3		0	0	0		9.7	90.3	0		0	0	0		
Total %	0	3.5	57.4	60.9	0	0	0	0	3.8	35.3	0	39.1	0	0	0	0	

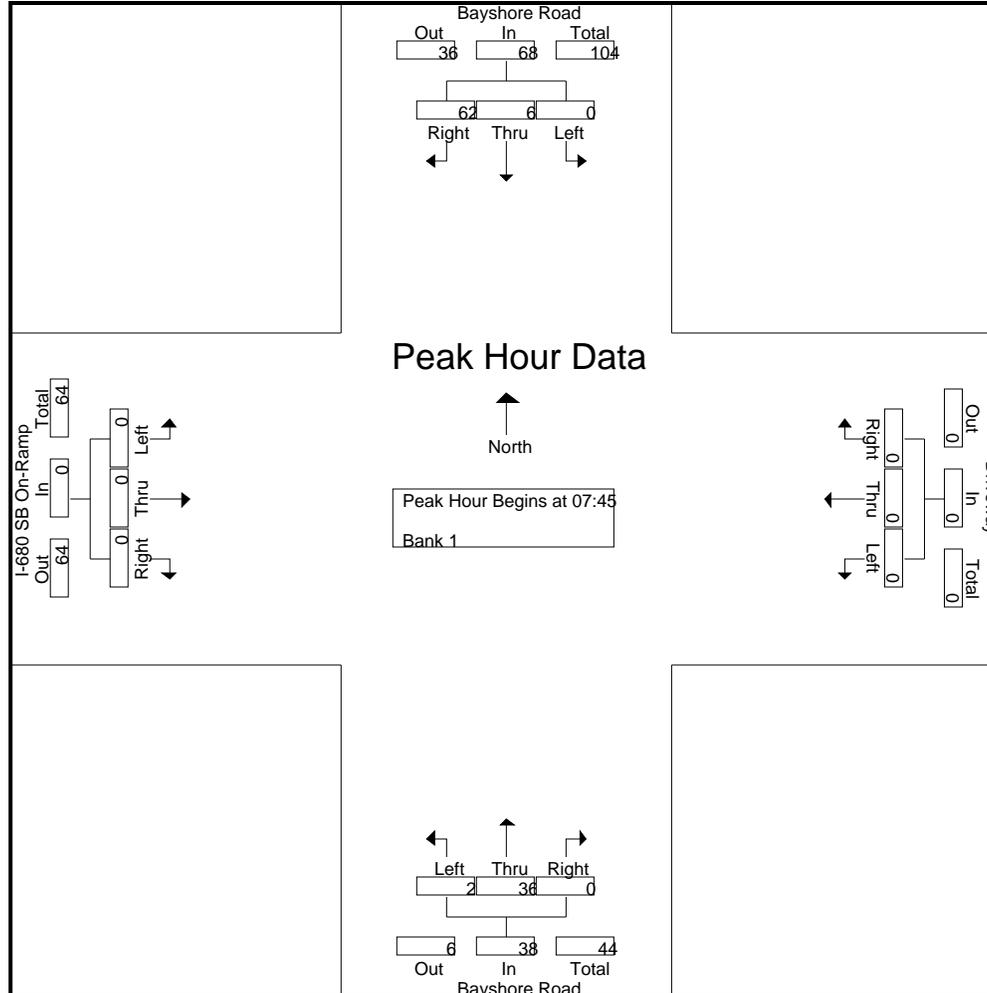
Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 SB On-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	2	19	21	0	0	0	0	0	8	0	8	0	0	0	0	29
08:00	0	2	10	12	0	0	0	0	1	9	0	10	0	0	0	0	22
08:15	0	0	16	16	0	0	0	0	1	4	0	5	0	0	0	0	21
08:30	0	2	17	19	0	0	0	0	0	15	0	15	0	0	0	0	34
Total Volume	0	6	62	68	0	0	0	0	2	36	0	38	0	0	0	0	106
% App. Total	0	8.8	91.2		0	0	0		5.3	94.7	0		0	0	0		
PHF	.000	.750	.816	.810	.000	.000	.000	.000	.500	.600	.000	.633	.000	.000	.000	.000	.779

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-002 Bayshore-I 680 SB On Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-001 Bayshore-I 680 NB Off Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Unshifted

Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 NB Off-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	9	0	9	0	0	0	0	0	3	0	3	65	0	7	72	84
06:15	0	8	0	8	0	0	0	0	0	4	0	4	70	0	9	79	91
06:30	0	10	0	10	0	0	0	0	0	3	0	3	91	0	9	100	113
06:45	0	10	0	10	0	0	0	0	0	3	0	3	128	0	22	150	163
Total	0	37	0	37	0	0	0	0	0	13	0	13	354	0	47	401	451
07:00	0	9	0	9	0	0	0	0	0	6	0	6	103	0	14	117	132
07:15	0	6	0	6	0	0	0	0	0	8	0	8	119	0	11	130	144
07:30	0	3	0	3	0	0	0	0	0	7	0	7	80	1	8	89	99
07:45	0	17	0	17	0	0	0	0	0	8	0	8	125	2	16	143	168
Total	0	35	0	35	0	0	0	0	0	29	0	29	427	3	49	479	543
08:00	1	7	0	8	0	0	0	0	0	12	0	12	94	0	11	105	125
08:15	0	3	0	3	0	0	0	0	0	9	0	9	73	0	7	80	92
08:30	1	8	0	9	0	0	0	0	0	11	0	11	73	1	8	82	102
08:45	0	4	0	4	0	0	0	0	0	8	0	8	64	0	3	67	79
Total	2	22	0	24	0	0	0	0	0	40	0	40	304	1	29	334	398
Grand Total	2	94	0	96	0	0	0	0	0	82	0	82	1085	4	125	1214	1392
Apprch %	2.1	97.9	0		0	0	0		0	100	0		89.4	0.3	10.3		
Total %	0.1	6.8	0	6.9	0	0	0	0	0	5.9	0	5.9	77.9	0.3	9	87.2	

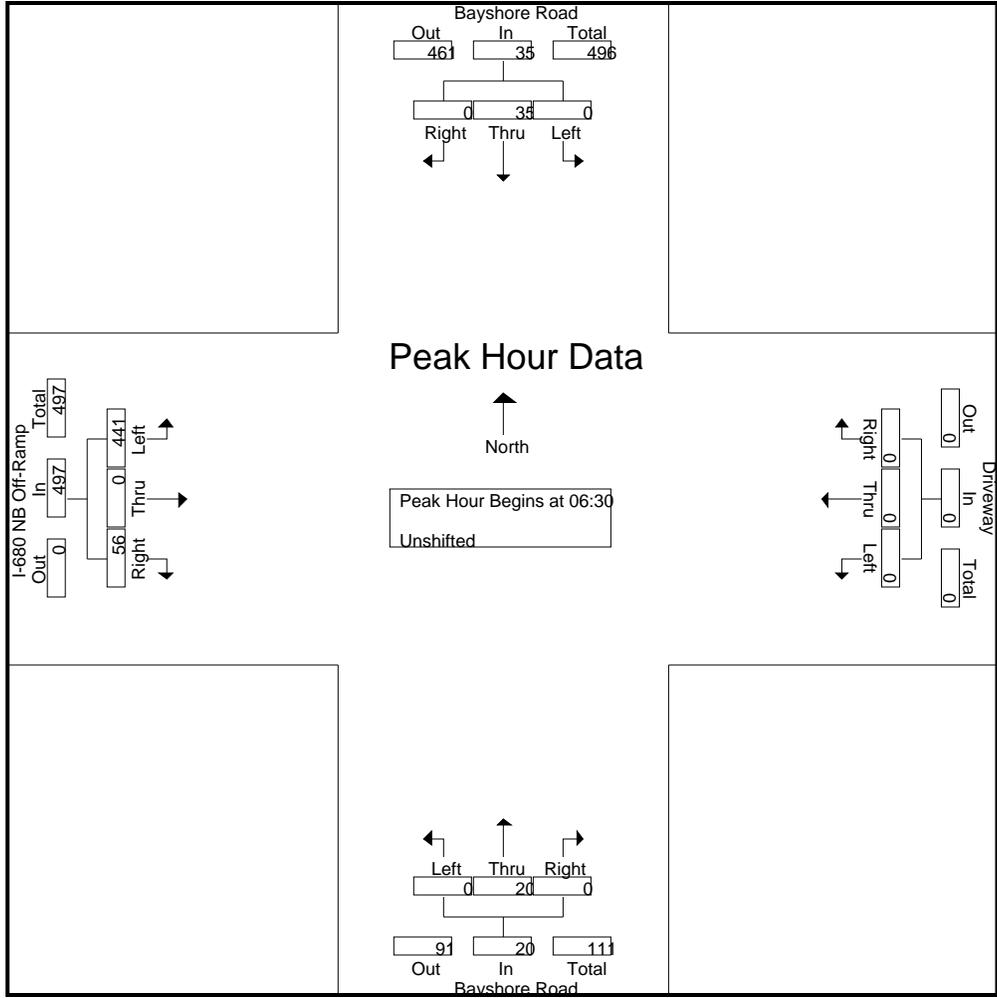
Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 NB Off-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30																	
06:30	0	10	0	10	0	0	0	0	0	3	0	3	91	0	9	100	113
06:45	0	10	0	10	0	0	0	0	0	3	0	3	128	0	22	150	163
07:00	0	9	0	9	0	0	0	0	0	6	0	6	103	0	14	117	132
07:15	0	6	0	6	0	0	0	0	0	8	0	8	119	0	11	130	144
Total Volume	0	35	0	35	0	0	0	0	0	20	0	20	441	0	56	497	552
% App. Total	0	100	0		0	0	0		0	100	0		88.7	0	11.3		
PHF	.000	.875	.000	.875	.000	.000	.000	.000	.000	.625	.000	.625	.861	.000	.636	.828	.847

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-001 Bayshore-I 680 NB Off Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-001 Bayshore-I 680 NB Off Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Bank 1

Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 NB Off-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	1	0	1	0	0	0	0	0	0	0	0	7	0	0	7	8
06:15	0	1	0	1	0	0	0	0	0	2	0	2	8	0	0	8	11
06:30	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	8
06:45	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	7
Total	0	2	0	2	0	0	0	0	0	2	0	2	30	0	0	30	34
07:00	0	2	0	2	0	0	0	0	0	2	0	2	12	0	0	12	16
07:15	0	0	0	0	0	0	0	0	0	2	0	2	9	0	0	9	11
07:30	0	0	0	0	0	0	0	0	0	1	0	1	8	0	0	8	9
07:45	0	2	0	2	0	0	0	0	0	1	0	1	6	0	0	6	9
Total	0	4	0	4	0	0	0	0	0	6	0	6	35	0	0	35	45
08:00	0	1	0	1	0	0	0	0	0	2	0	2	9	0	1	10	13
08:15	0	1	0	1	0	0	0	0	0	0	0	0	5	0	0	5	6
08:30	0	1	0	1	0	0	0	0	0	2	0	2	11	0	0	11	14
08:45	0	0	0	0	0	0	0	0	0	2	0	2	6	0	0	6	8
Total	0	3	0	3	0	0	0	0	0	6	0	6	31	0	1	32	41
Grand Total	0	9	0	9	0	0	0	0	0	14	0	14	96	0	1	97	120
Apprch %	0	100	0		0	0	0		0	100	0		99	0	1		
Total %	0	7.5	0	7.5	0	0	0	0	0	11.7	0	11.7	80	0	0.8	80.8	

Start Time	Bayshore Road Southbound				Driveway Westbound				Bayshore Road Northbound				I-680 NB Off-Ramp Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00	0	2	0	2	0	0	0	0	0	2	0	2	12	0	0	12	16
07:15	0	0	0	0	0	0	0	0	0	2	0	2	9	0	0	9	11
07:30	0	0	0	0	0	0	0	0	0	1	0	1	8	0	0	8	9
07:45	0	2	0	2	0	0	0	0	0	1	0	1	6	0	0	6	9
Total Volume	0	4	0	4	0	0	0	0	0	6	0	6	35	0	0	35	45
% App. Total	0	100	0		0	0	0		0	100	0		100	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	.729	.000	.000	.729	.703

Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1

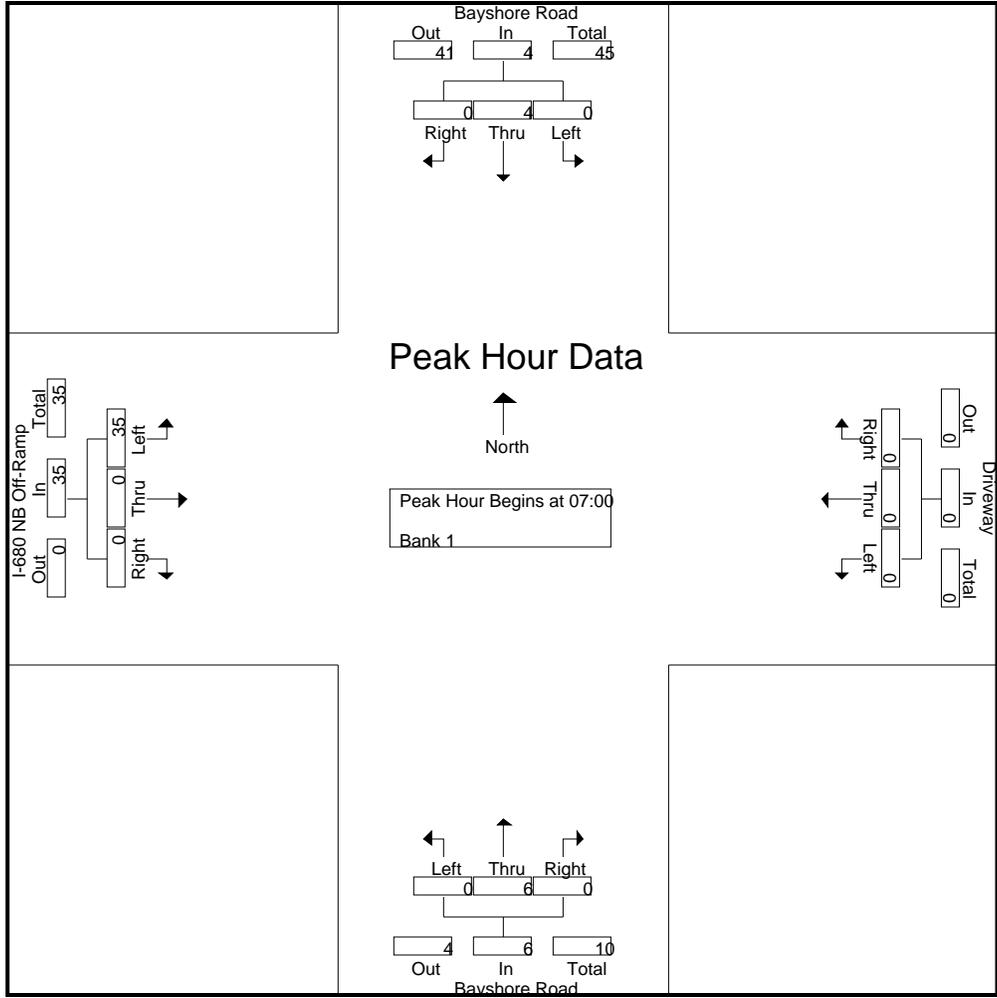
Peak Hour for Entire Intersection Begins at 07:00

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-001 Bayshore-I 680 NB Off Ramp
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-004 Bay Vista-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Unshifted

Start Time	Southbound				Park Road Westbound				Bay Vista Court Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	0	0	0	1	5	0	6	0	0	0	0	0	2	0	2	8
06:15	0	0	0	0	0	8	0	8	0	0	0	0	0	2	0	2	10
06:30	0	0	0	0	4	7	0	11	0	0	0	0	0	3	0	3	14
06:45	0	0	0	0	7	14	0	21	0	0	0	0	0	9	0	9	30
Total	0	0	0	0	12	34	0	46	0	0	0	0	0	16	0	16	62
07:00	0	0	0	0	2	11	0	13	0	0	1	1	0	4	0	4	18
07:15	0	0	0	0	2	10	0	12	0	0	0	0	0	8	0	8	20
07:30	0	0	0	0	0	11	0	11	0	0	0	0	0	4	0	4	15
07:45	0	0	0	0	9	15	0	24	0	0	0	0	0	14	0	14	38
Total	0	0	0	0	13	47	0	60	0	0	1	1	0	30	0	30	91
08:00	0	0	0	0	8	11	0	19	0	0	4	4	0	4	0	4	27
08:15	0	0	0	0	0	6	0	6	0	0	0	0	0	4	0	4	10
08:30	0	0	0	0	7	11	0	18	1	0	0	1	0	4	0	4	23
08:45	0	0	0	0	2	9	0	11	0	0	0	0	0	7	0	7	18
Total	0	0	0	0	17	37	0	54	1	0	4	5	0	19	0	19	78
Grand Total	0	0	0	0	42	118	0	160	1	0	5	6	0	65	0	65	231
Apprch %	0	0	0	0	26.2	73.8	0		16.7	0	83.3		0	100	0		
Total %	0	0	0	0	18.2	51.1	0	69.3	0.4	0	2.2	2.6	0	28.1	0	28.1	

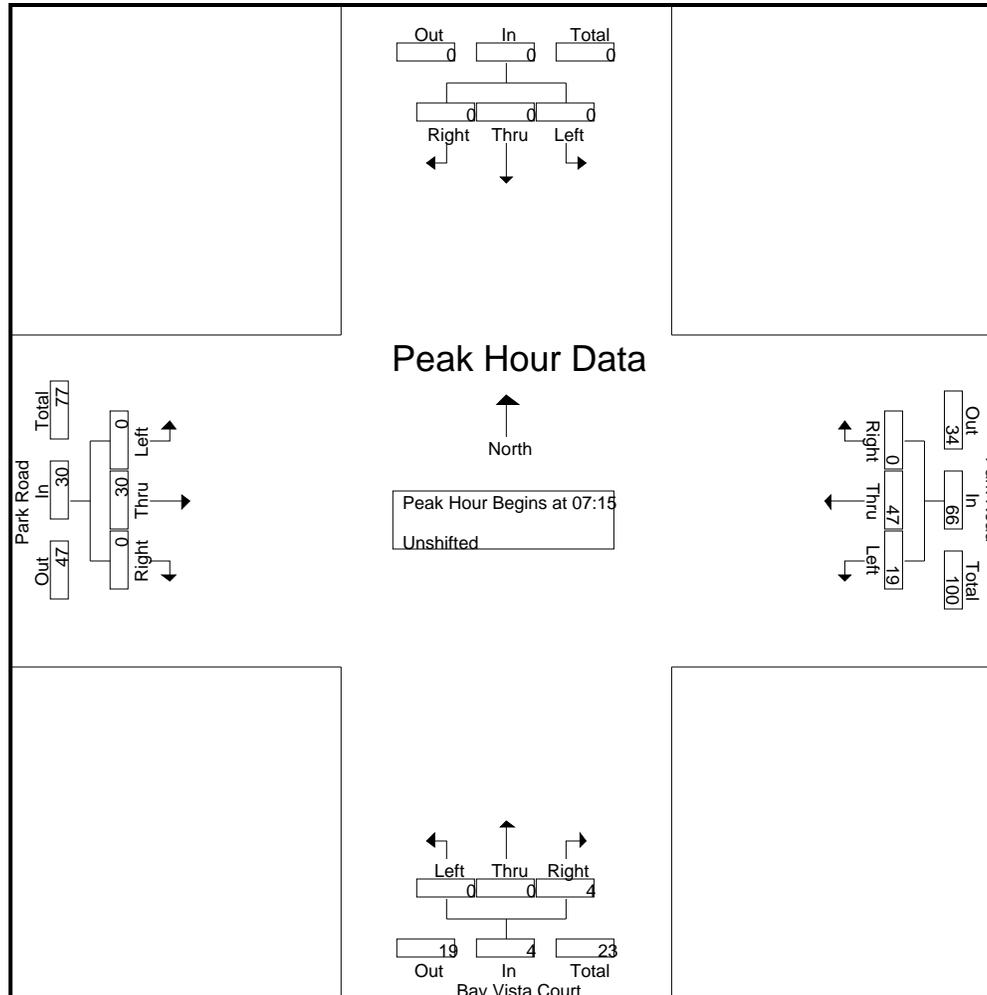
Start Time	Southbound				Park Road Westbound				Bay Vista Court Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	2	10	0	12	0	0	0	0	0	8	0	8	20
07:30	0	0	0	0	0	11	0	11	0	0	0	0	0	4	0	4	15
07:45	0	0	0	0	9	15	0	24	0	0	0	0	0	14	0	14	38
08:00	0	0	0	0	8	11	0	19	0	0	4	4	0	4	0	4	27
Total Volume	0	0	0	0	19	47	0	66	0	0	4	4	0	30	0	30	100
% App. Total	0	0	0	0	28.8	71.2	0		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.528	.783	.000	.688	.000	.000	.250	.250	.000	.536	.000	.536	.658

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-004 Bay Vista-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-004 Bay Vista-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Bank 1

Start Time	Southbound				Park Road Westbound				Bay Vista Court Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
07:30	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
Total	0	0	0	0	0	2	0	2	0	0	0	0	0	5	0	5	7
08:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:30	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	1	0	1	1	0	1	2	0	2	0	2	5
Grand Total	0	0	0	0	0	3	0	3	1	0	1	2	0	10	0	10	15
Apprch %	0	0	0	0	0	100	0	0	50	0	50	0	0	100	0	0	0
Total %	0	0	0	0	0	20	0	20	6.7	0	6.7	13.3	0	66.7	0	66.7	0

Start Time	Southbound				Park Road Westbound				Bay Vista Court Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
08:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	2	0	2	0	0	1	1	0	6	0	6	9
% App. Total	0	0	0	0	0	100	0	0	0	0	100	0	0	100	0	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.000	.500	.000	.500	.563

Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1

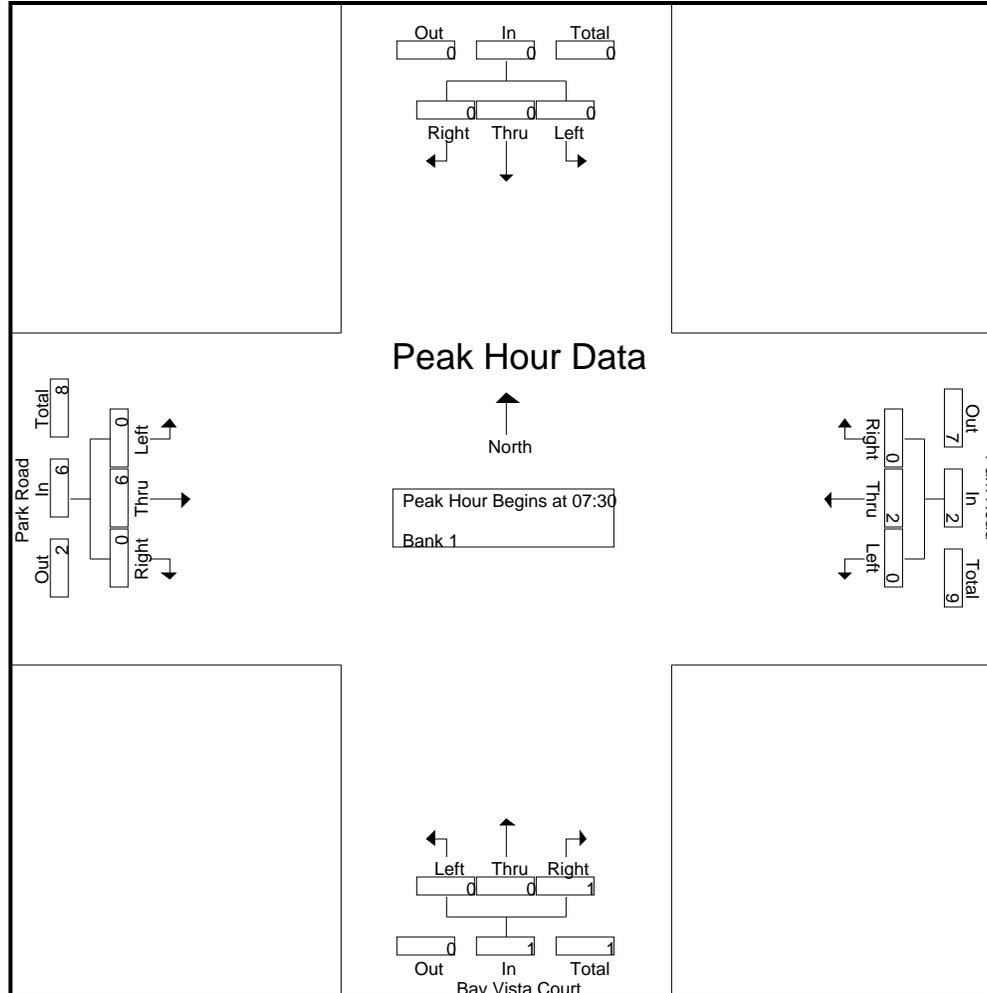
Peak Hour for Entire Intersection Begins at 07:30

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-004 Bay Vista-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-005 Valero Refinery-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Unshifted

Start Time	Valero Refinery Entrance Southbound				Park Road Westbound				Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	1	0	0	1	0	38	1	39	0	0	0	0	5	56	0	61	101
06:15	2	0	0	2	0	51	7	58	0	0	0	0	10	57	0	67	127
06:30	0	0	6	6	0	54	8	62	0	0	0	0	9	75	0	84	152
06:45	0	0	3	3	0	78	4	82	0	0	0	0	2	103	0	105	190
Total	3	0	9	12	0	221	20	241	0	0	0	0	26	291	0	317	570
07:00	0	0	2	2	0	48	8	56	0	0	0	0	12	90	0	102	160
07:15	0	0	5	5	0	45	16	61	0	0	0	0	25	89	0	114	180
07:30	1	0	9	10	0	75	17	92	0	0	0	0	8	80	0	88	190
07:45	0	0	7	7	0	88	3	91	0	0	0	0	0	114	0	114	212
Total	1	0	23	24	0	256	44	300	0	0	0	0	45	373	0	418	742
08:00	0	0	0	0	0	61	0	61	0	0	0	0	0	101	0	101	162
08:15	0	0	1	1	0	58	3	61	0	0	0	0	0	79	0	79	141
08:30	1	0	1	2	0	61	1	62	0	0	0	0	0	81	0	81	145
08:45	0	0	0	0	0	60	1	61	0	0	0	0	0	65	0	65	126
Total	1	0	2	3	0	240	5	245	0	0	0	0	0	326	0	326	574
Grand Total	5	0	34	39	0	717	69	786	0	0	0	0	71	990	0	1061	1886
Apprch %	12.8	0	87.2		0	91.2	8.8		0	0	0		6.7	93.3	0		
Total %	0.3	0	1.8	2.1	0	38	3.7	41.7	0	0	0	0	3.8	52.5	0	56.3	

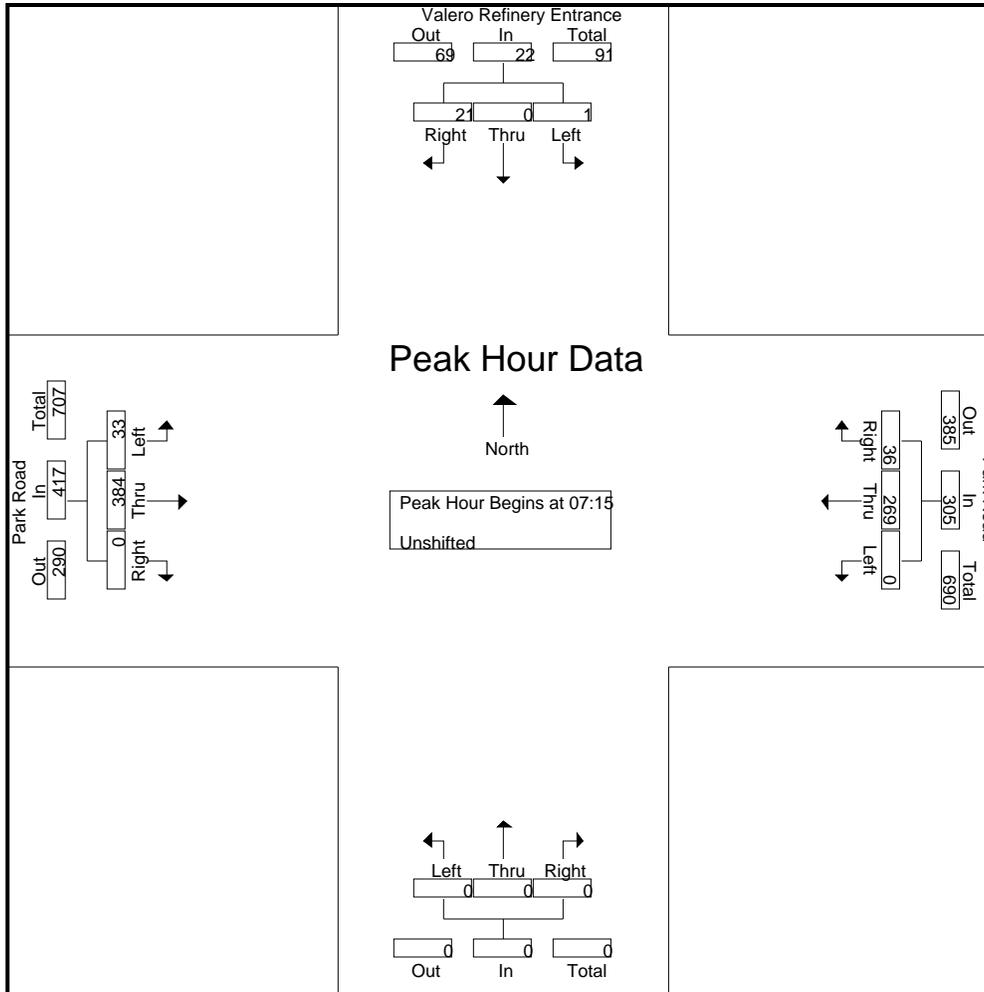
Start Time	Valero Refinery Entrance Southbound				Park Road Westbound				Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	5	5	0	45	16	61	0	0	0	0	25	89	0	114	180
07:30	1	0	9	10	0	75	17	92	0	0	0	0	8	80	0	88	190
07:45	0	0	7	7	0	88	3	91	0	0	0	0	0	114	0	114	212
08:00	0	0	0	0	0	61	0	61	0	0	0	0	0	101	0	101	162
Total Volume	1	0	21	22	0	269	36	305	0	0	0	0	33	384	0	417	744
% App. Total	4.5	0	95.5		0	88.2	11.8		0	0	0		7.9	92.1	0		
PHF	.250	.000	.583	.550	.000	.764	.529	.829	.000	.000	.000	.000	.330	.842	.000	.914	.877

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-005 Valero Refinery-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-005 Valero Refinery-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 1

Groups Printed- Bank 1

Start Time	Valero Refinery Entrance Southbound				Park Road Westbound				Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00	0	0	0	0	0	14	0	14	0	0	0	0	0	9	0	9	23
06:15	0	0	0	0	0	15	1	16	0	0	0	0	0	10	0	10	26
06:30	0	0	0	0	0	12	0	12	0	0	0	0	0	9	0	9	21
06:45	0	0	0	0	0	13	0	13	0	0	0	0	0	3	0	3	16
Total	0	0	0	0	0	54	1	55	0	0	0	0	0	31	0	31	86
07:00	0	0	0	0	0	14	0	14	0	0	0	0	0	16	0	16	30
07:15	0	0	0	0	0	6	0	6	0	0	0	0	0	5	0	5	11
07:30	0	0	0	0	0	9	0	9	0	0	0	0	0	4	0	4	13
07:45	0	0	0	0	0	18	0	18	0	0	0	0	0	8	0	8	26
Total	0	0	0	0	0	47	0	47	0	0	0	0	0	33	0	33	80
08:00	0	0	0	0	0	11	0	11	0	0	0	0	0	8	0	8	19
08:15	0	0	0	0	0	12	0	12	0	0	0	0	0	4	0	4	16
08:30	0	0	0	0	0	17	1	18	0	0	0	0	0	14	0	14	32
08:45	0	0	0	0	0	23	0	23	0	0	0	0	0	8	0	8	31
Total	0	0	0	0	0	63	1	64	0	0	0	0	0	34	0	34	98
Grand Total	0	0	0	0	0	164	2	166	0	0	0	0	0	98	0	98	264
Apprch %	0	0	0		0	98.8	1.2		0	0	0		0	100	0		
Total %	0	0	0		0	62.1	0.8	62.9	0	0	0		0	37.1	0	37.1	

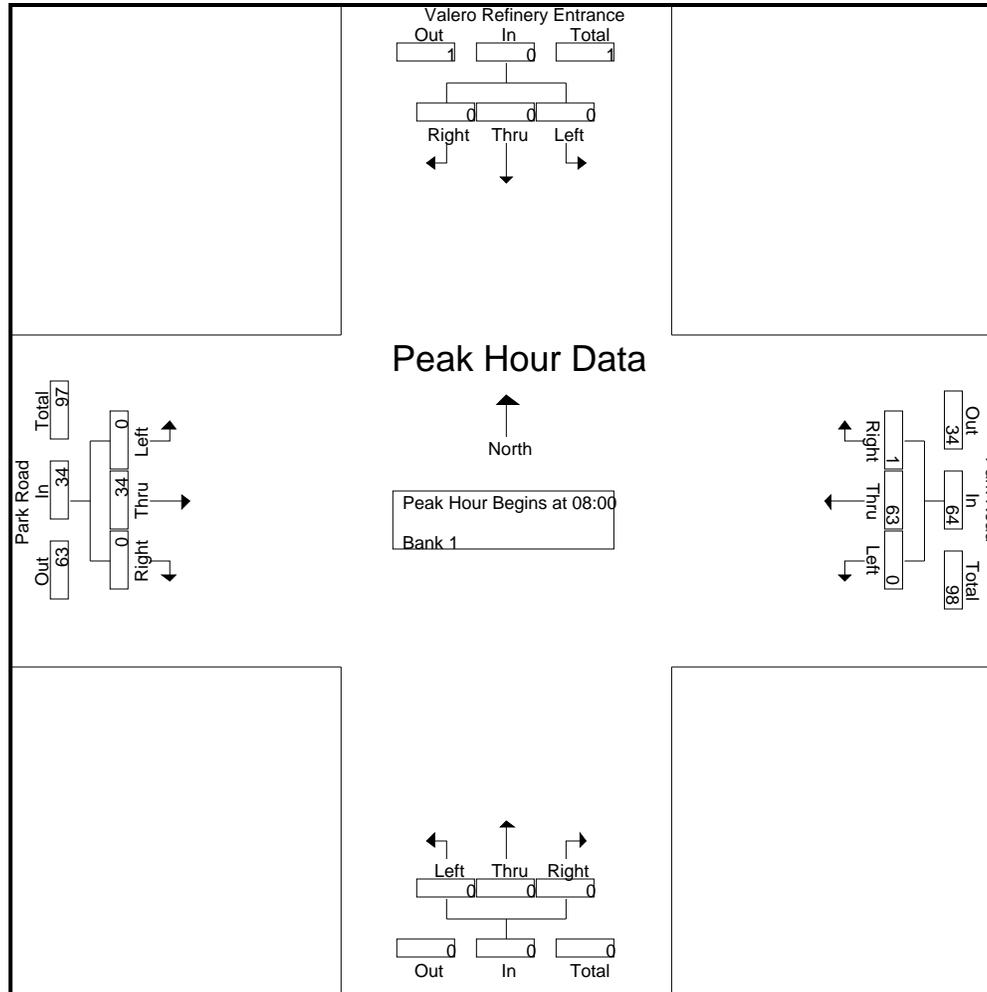
Start Time	Valero Refinery Entrance Southbound				Park Road Westbound				Northbound				Park Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	0	11	0	11	0	0	0	0	0	8	0	8	19
08:15	0	0	0	0	0	12	0	12	0	0	0	0	0	4	0	4	16
08:30	0	0	0	0	0	17	1	18	0	0	0	0	0	14	0	14	32
08:45	0	0	0	0	0	23	0	23	0	0	0	0	0	8	0	8	31
Total Volume	0	0	0	0	0	63	1	64	0	0	0	0	0	34	0	34	98
% App. Total	0	0	0		0	98.4	1.6		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.685	.250	.696	.000	.000	.000	.000	.000	.607	.000	.607	.766

All Traffic Data

(916) 771-8700

City of Benicia
 All Vehicles on Unshifted tab
 Heavy Vehicles on Bank 1 tab

File Name : 13-7020-005 Valero Refinery-Park
 Site Code : 00000000
 Start Date : 1/23/2013
 Page No : 2



13-7217 Benicia Train Crossing Study

Monday, April 15, 2013

Park Road Crossing

Iron Workers Union Driveway Crossing

Park Road Crossing								Iron Workers Union Driveway Crossing						
Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	10:43:30	10:44:20	2	NB	Right	No	0:00:50	1	10:40:54	10:41:10	2	NB	No	0:00:16
2	10:53:20	10:54:45	5	NB	Right	No	0:01:25	2	14:24:26	14:25:09	9	SB	No	0:00:43
3	10:55:46	10:57:16	5	SB	Left	No	0:01:30	3	18:49:50	18:50:35	9	NB	No	0:00:45
4	11:48:34	11:50:23	11	SB	Left	No	0:01:49	4	19:15:51	19:16:31	9	SB	No	0:00:40
5	11:54:01	11:56:02	11	NB	Right	No	0:02:01							
6	12:15:31	12:16:25	2	SB	Right	No	0:00:54							
7	12:17:51	12:18:44	2	NB	Left	No	0:00:53							
8	12:29:48	12:31:41	7	SB	Left	No	0:01:53							
9	12:32:37	12:34:05	7	NB	Right	No	0:01:28							
10	13:10:10	13:12:16	7	SB	Right	No	0:02:06							
11	13:14:00	13:16:40	7	NB	Left	No	0:02:40							
12	13:43:23	13:44:30	2	SB	Left	No	0:01:07							
13	13:46:11	13:47:05	2	NB	Right	No	0:00:54							
14	14:20:28	14:25:12	9	SB	Right	No	0:04:44							
15	18:51:44	18:53:46	9	NB	Left	No	0:02:02							
16	19:08:07	19:08:48	2	SB	Left	No	0:00:41							
17	19:09:17	19:10:10	2	NB	Right	No	0:00:53							
18	19:15:00	19:16:35	9	SB	Right	No	0:01:35							

13-7217 Benicia Train Crossing Study

Tuesday, April 16, 2013

Park Road Crossing								Iron Workers Union Driveway Crossing						
Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	13:14:15	13:26:06	16	NB	Right	No	0:11:51	1	13:05:10	13:22:48	16	NB	No	0:17:38
2	17:20:01	17:21:30	2	SB to NB	Right to Left	Yes	0:01:29	2	17:37:38	17:38:18	10	SB	No	0:00:40
3	17:37:07	17:38:20	10	SB	Left	No	0:01:13	3	18:11:30	18:12:08	10	NB	No	0:00:38
4	18:12:31	18:13:57	10	NB	Left	No	0:01:26	4	18:36:35	18:38:32	5	SB to NB	Yes	0:01:57
5	18:22:18	18:24:19	3	SB to NB	Left to Right	Yes	0:02:01	5	18:48:21	18:50:52	35	SB	No	0:02:31
6	18:32:09	18:40:05	18	SB to NB	Right	Yes	0:07:56							
7	18:47:35	18:50:59	35	SB	Right	No	0:03:24							

13-7217 Benicia Train Crossing Study

Wednesday, April 17, 2013

Park Road Crossing								Iron Workers Union Driveway Crossing						
Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	13:51:08	14:07:25	31	NB to SB	Right	Yes	0:16:17	1	13:48:48	14:13:38	43	NB	Yes	0:24:50
2	14:09:55	14:18:35	31	NB	Right	No	0:08:40	2	17:36:02	17:36:42	9	SB	No	0:00:40
3	16:51:33	16:53:17	4	SB	Right	No	0:01:44	3	18:14:19	18:14:57	9	NB	No	0:00:38
4	16:54:06	16:55:26	4	NB	Left	No	0:01:20	4	18:36:15	18:37:41	20	SB	No	0:01:26
5	17:34:04	17:35:20	9	SB	Left	No	0:01:16							
6	18:14:07	18:15:25	9	NB	Left	No	0:01:18							
7	18:25:07	18:26:06	2	SB	Left	No	0:00:59							
8	18:26:25	18:27:24	2	NB	Right	No	0:00:59							
9	18:34:10	18:36:18	20	SB	Right	No	0:02:08							

13-7217 Benicia Train Crossing Study

Thursday, April 18, 2013

Park Road Crossing

Iron Workers Union Driveway Crossing

Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	11:20:15	11:24:30	26	NB	Right	No	0:04:15	1	6:30:49	6:34:56	26	NB	Yes	0:04:07
2	13:51:10	13:59:32	16+	SB to NB	Right	Yes	0:08:22	2	11:15:35	11:22:37	26	NB	No	0:07:02
								3	13:53:54	13:55:30	3+	SB to NB	Yes	0:01:36
								4	17:18:39	17:19:20	10	SB	No	0:00:41
								5	17:57:36	17:58:11	9	NB	No	0:00:35
								6	18:22:04	18:24:14	26	SB	No	0:02:10

missing video from 1627 to 2400

13-7217 Benicia Train Crossing Study

Friday, April 19, 2013

Park Road Crossing								Iron Workers Union Driveway Crossing						
Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	9:29:07	9:30:37	2	NB	Right	No	0:01:30	1	9:27:51	9:28:06	2	NB	No	0:00:15
2	10:19:03	10:21:08	2	SB to NB	Right to Left	Yes	0:02:05	2	10:43:33	10:44:16	10	SB	No	0:00:43
3	10:43:04	10:43:44	10	SB	Left	No	0:00:40	3	12:17:56	12:20:22	24	NB	No	0:02:26
4	12:19:38	12:27:55	24	NB	Right to Left	Yes	0:08:17	4	14:15:06	14:16:57	25	SB	No	0:01:51
5	12:42:57	12:43:52	2	SB	Left	No	0:00:55							
6	12:44:25	12:45:23	2	NB	Right	No	0:00:58							
7	12:48:29	12:52:10	9+	SB to NB	Right	Yes	0:03:41							
8	14:00:14	14:01:38	3+	SB to NB	Right	Yes	0:01:24							
9	14:10:07	14:16:52	25	SB	Right	No	0:06:45							

missing video from 0000 to 0603

13-7217 Benicia Train Crossing Study

Saturday, April 20, 2013

Park Road Crossing

Iron Workers Union Driveway Crossing

Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	12:54:10	13:00:06	16	NB	Right	No	0:05:56	1	12:52:53	12:54:22	16	NB	No	0:01:29
2	17:10:32	17:11:58	10	SB	Left	No	0:01:26	2	17:11:38	17:12:17	10	SB	No	0:00:39
3	17:51:43	17:52:58	9	NB	Left	No	0:01:15	3	17:50:37	17:51:10	9	NB	No	0:00:33
4	18:03:01	18:03:59	2	SB	Left	No	0:00:58	4	18:03:51	18:04:06	2	SB	No	0:00:15

13-7217 Benicia Train Crossing Study

Sunday, April 21, 2013

Park Road Crossing								Iron Workers Union Driveway Crossing						
Train #	Start Time	End Time	# of Cars	Direction	Left or Right Track?	Moving Back and Forth?	Crossing Duration	Train #	Start Time	End Time	# of Cars	Direction	Moving Back and Forth?	Crossing Duration
1	12:17:58	12:19:52	18	NB	Right	No	0:01:54	1	12:16:05	12:19:26	18	NB	No	0:03:21
2	13:36:26	13:37:20	2	SB	Right	No	0:00:54	2	14:06:44	14:07:15	9	SB	No	0:00:31
3	13:38:02	13:38:56	2	NB	Left	No	0:00:54	3	14:54:32	14:55:05	9	NB	No	0:00:33
4	14:04:05	14:05:32	9	SB	Left	No	0:01:27	4	15:08:55	15:09:08	2	SB	No	0:00:13
5	14:54:03	14:55:45	9	NB	Right	No	0:01:42	5	17:34:40	17:34:53	2	NB	No	0:00:13
6	15:06:29	15:07:28	2	SB	Left	No	0:00:59	6	18:02:28	18:02:40	2	SB	No	0:00:12
7	17:35:25	17:37:05	2	NB	Right	No	0:01:40							
8	17:55:24	17:57:36	6+	SB to NB	Right	Yes	0:02:12							
9	18:00:02	18:00:55	2	SB	Right	No	0:00:53							

UPPR DATA - Delivery Schedule Estimate

Park Road Rail Crossing --- Estimate only based on partial load data

Outbound Loads and Empties

Date	Tankcars	Footage	Boxcar	Footage	Total Cars	Total Footage
1/4/2013	16	960	1	50	17	1010
1/5/2013	23	1380	9	450	32	1830
1/6/2013	16	960	1	50	17	1010
1/7/2013	20	1200	6	300	26	1500
1/8/2013	11	660	11	550	22	1210
1/9/2013	23	1380	5	250	28	1630
1/10/2013	20	1200	8	400	28	1600
1/11/2013	13	780	0	0	13	780
1/12/2013	38	2280	7	350	45	2630
1/13/2013	11	660		0	11	660
1/14/2013	12	720		0	12	720

Inbound Loads and Empties

Date	Tankcars	Footage	Boxcar	Footage	Total Cars	Total Footage
1/4/2013	7	420	0	0	7	420
1/5/2013	11	660	0	0	11	660
1/6/2013	16	960	1	50	17	1010
1/7/2013	34	2040	9	450	43	2490
1/8/2013	0	0	0	0	0	0
1/9/2013	20	1200	6	300	26	1500
1/10/2013	15	900	11	550	26	1450
1/11/2013	16	960	5	250	21	1210
1/12/2013	25	1500	8	400	33	1900
1/13/2013	9	540	0	0	9	540
1/14/2013	34	2040	7	350	41	2390

Assumptions:

60' tankcars

50' boxcars

Empty movements are estimates only; based on cars on spot average 2 days

7 cars per day added to Valero tank cars inbound and outbound (coke turn)

UPPR DATA - Delivery Schedule Estimate

Benicia Inbound Loads (Auto excluded)

Outbound Empties - Not actual data - estimated assuming 2 days loaded spot to empty outbound move

Waybill Date	Sys Dest Circ7	CONSIGNEE	Units	Mgrl Car Kind	Cmdy Desc	Date	Units	Car Type	Load/Empty
1/6/2013	RV385	CROWN IMPORTS	1	BOX50	BEER	1/4/2013	1	BOXPL050	Empty
1/6/2013	RV385	VALERO MARKETING SUPPLY	9	TANK	LPG	1/4/2013	9	TANK	Empty
1/7/2013	RV385	CROWN IMPORTS	9	BOX50	BEER	1/5/2013	9	BOXPL050	Empty
1/7/2013	RV385	VALERO MARKETING SUPPLY	16	TANK	LPG	1/5/2013	16	TANK	Empty
1/9/2013	RV385	CROWN IMPORTS	6	BOX50	BEER	1/7/2013	6	BOXPL050	Empty
1/9/2013	RV385	VALERO MARKETING SUPPLY	9	TANK	LPG	1/7/2013	9	TANK	Empty
1/10/2013	RV385	CROWN IMPORTS	11	BOX50	BEER	1/8/2013	11	BOXPL050	Empty
1/10/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/8/2013	4	TANK	Empty
1/11/2013	RV385	CROWN IMPORTS	5	BOX50	BEER	1/9/2013	5	BOXPL050	Empty
1/11/2013	RV385	VALERO MARKETING SUPPLY	5	TANK	LPG	1/9/2013	5	TANK	Empty
1/12/2013	RV385	CROWN IMPORTS	8	BOX50	BEER	1/10/2013	8	BOXPL050	Empty
1/12/2013	RV385	VALERO MARKETING SUPPLY	13	TANK	LPG	1/10/2013	13	TANK	Empty
1/13/2013	RV385	VALERO MARKETING SUPPLY	2	TANK	LPG	1/11/2013	2	TANK	Empty
1/14/2013	RV385	CROWN IMPORTS	7	BOX50	BEER	1/12/2013	7	BOXPL050	Empty
1/14/2013	RV385	VALERO MARKETING SUPPLY	27	TANK	LPG	1/12/2013	27	TANK	Empty

Benicia Outbound Loads (Auto excluded)

Inbound Empties - Not actual data - estimated assuming on 2 days empty spot to loaded outbound move

Waybill Date	Sys Orig Circ7	Shpr Name	Units	Mgrl Car Kind	Cmdy Desc	Date	Units	Car Type	Load/Empty
1/7/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/5/2013	4	Tank	Empty
1/9/2013	RV385	VALERO MARKETING SUPPLY	11	TANK	LPG	1/7/2013	11	Tank	Empty
1/11/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/9/2013	4	Tank	Empty
1/12/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/10/2013	4	Tank	Empty
1/13/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/11/2013	4	Tank	Empty
1/14/2013	RV385	VALERO MARKETING SUPPLY	4	TANK	LPG	1/12/2013	5	Tank	Empty
1/14/2013	RV385	VALERO MARKETING SUPPLY	1	TANK	CAUS SODA LIQ				

Add 7 loads, 7 empties pet coke tank cars daily

Primary Rd	O ST	Distance (ft)	276	Direction	W	Secondary Rd	E 5TH ST	NCIC	4801	State Hwy?	N	Route	3475	Postmile Prefix	20090425	Time	0857	SAT	Side of Hwy	
City	Benicia	County	Solano	Rpt Dist	P28	Beat	001	Type	0	CalTrans		Badge	Collision Date	20090425		Date	20091217			
Primary Collision Factor	DRVR ALCIDRG	Weather?	CLEAR	Violation	23152A	Collision Type	REAR END	Severity	NO UNUSL CN	Ped Action										
Hit and Run		Motor Vehicle Involved With	OTHER MV	Lighting	DAYLIGHT															
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	36	F	H	HBD-JI	PROC ST	E	A	0700	GMC	2001	-	3	A	23152					
2	DRVR	998	-		IMP UNK	IMP UNK	E	A	0800	NISSA	2004	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	67	F	W	HNBD	UNSTURN	W	A	0100	HONDA	2007	-	3	N						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	SP	Info	OAF1	Viol
1F	DRVR	29	F	W	HNBD	PROC ST	E	A	0100	VOLKS	2003	-	3	M						
2	PRKD	998	-			PARKED	W	A	0700	GMC	1995	-	3	N						
Party Info																				
Party Type	Age																			

Include State Highways cases

Primary Rd	ROSE DR	Distance (ft)	72	Direction	S	Secondary Rd	TYNE CT	NCIC	4801	State Hwy?	N	Route	Postmile Prefix	Postmile	Side of Hwy								
City	Benicia	County	Solano	Rpt Dist	4	P56	003	Type	0	CalTrans		Badge	2914	Collision Date	20090629	Time	1940	Day	MON				
Primary Collision Factor	DRVR ALCIDRG	Weather?	CLEAR	Violation	23152A	Collision Type	SIDESWIPE	Rdwy Cond1	NO UNUSL CND	Rdwy Cond2	NO UNUSL CND	Rdwy Cond2	Severity	INJURY	#Killed	0	#Injured	1	Tow Away?	N	Process Date	20100206	
Hit and Run	MSDMNR	Motor Vehicle Involved With	PKD MV	Lighting	DAYLIGHT	Ped Action		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info	
Party Type	Age Sex Race	Sobriety	1	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	55	M	W	HBD-JI	A	0100	NISSA	2004	-	3	N	N	DRVR	COMP	PN	55	M	1	0	0	L	G
2	PRKD	998	-	-	-	A	0100	TOYOT	2004	-	3	N	N	-	-	-	-	-	-	-	-	-	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	60	M	W	HNB	A	0100	TOYOT	1997	-	3	N	N	DRVR	OTH	VIS	16	M	1	0	0	M	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	16	M	W	HNB	A	0100	TOYOT	1997	-	3	N	N	DRVR	OTH	VIS	16	M	1	0	0	M	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	25	M	O	HNB	A	0100	TOYOT	1997	-	3	N	N	DRVR	OTH	VIS	16	M	1	0	0	M	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	19	F	W	HNB	A	0100	TOYOT	2004	-	3	N	N	PASS	PASS		19	M	3	0	0	M	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	19	F	W	HNB	A	0100	TOYOT	2004	-	3	N	N	PASS	PASS		19	M	3	0	0	M	G
Party Type	Age Sex Race	Sobriety	2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info	SP Info
1F	DRVR	41	F	A	HNB	A	0100	CHRS	2006	-	3	N	N	DRVR	OTH	VIS	16	M	1	0	0	M	G

Primary Rd		BAYSHORE AV		Distance (ft)		0		Direction		RT 680		Y Route		680		Postmile Prefix		R Postmile		.797		Side of Hwy		N					
City		Benicia		County		Solano		Sobriety1		Sobriety2		HNB		HNB		HNB		HNB		HNB		HNB		HNB		HNB			
Primary Collision Factor		STOP SGNISIG		Weather1		CLOUDY		Weather2		Weather3		Weather4		Weather5		Weather6		Weather7		Weather8		Weather9		Weather10		Weather11			
Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run		Hit and Run			
Party Type		Age Sex Race		Sobriety1		Sobriety2		Move Pre		Dir		SW Veh		CHP Veh		Make		Year		SP Info		OAF1		Viol		OAF2		Safety	
1F		DRVR		67 F W		HNBD		PROC ST		N		A		0700		FORD		2006		-		3 N		-		M G		M G	
2		DRVR		59 M H		HNBD		PROC ST		E		H		1500		FORD		1998		-		3 N		-		M G		M G	
Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info		Party Info	
ROLE		Ext Of Inj		AGE		SEX		SEAT POS		SAFETY		EQUIP		EJECTED		ROLE		Ext Of Inj		AGE		SEX		SEAT POS		SAFETY		EQUIP	
PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS		PASS	
50		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
41		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
32		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
37		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
27		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
32		M		2		0		M		2		0		M		2		0		M		2		0		M		2	
24		M		4		0		M		4		0		M		4		0		M		4		0		M		4	
37		M		4		0		M		4		0		M		4		0		M		4		0		M		4	
27		M		4		0		M		4		0		M		4		0		M		4		0		M		4	
32		M		4		0		M		4		0		M		4		0		M		4		0		M		4	
<p>Secondary Rd: ADAMS ST, Beat: 004, Type: 0, NCIC: 4801, State Hwy?: N, Route: 2092, Badge: 20100824, Collision Date: 20100824, Time: 1634, Day: TUE, Process Date: 20110829</p> <p>Severity: INJURY, #Killed: 0, #Injured: 3, Tow Away?: N, Spec Cond: 0</p> <p>Head-On: YES, Rowlow Cond1: NO UNUSL CND, Rowlow Cond2: NO UNUSL CND, Ped Action: DAYLIGHT</p> <p>Lighting: DAYLIGHT, Make: FORD, Year: 1998, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p> <p>Party Info: Party Info</p> <p>Party Type: 1F DRVR, Age: 56, Sex: M, Race: B, Sobriety1: HNB, Sobriety2: HNB, Move Pre: LFT TURN, Dir: W, SW Veh: D, CHP Veh: D, Make: FORD, Year: 1995, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p> <p>Party Type: 2 DRVR, Age: 36, Sex: F, Race: B, Sobriety1: HNB, Sobriety2: HNB, Move Pre: PROC ST, Dir: E, SW Veh: D, CHP Veh: D, Make: FORD, Year: 1998, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p>																													
<p>Secondary Rd: BAYSHORE RD, Beat: 004, Type: 0, NCIC: 4801, State Hwy?: N, Route: 2785, Badge: 20100318, Collision Date: 20100318, Time: 0157, Day: THU, Process Date: 20110131</p> <p>Severity: PDO, #Killed: 0, #Injured: 0, Tow Away?: Y, Spec Cond: 0</p> <p>Head-On: NO, Rowlow Cond1: NO UNUSL CND, Rowlow Cond2: NO UNUSL CND, Ped Action: DARK - ST</p> <p>Lighting: DARK - ST, Make: JAGUA, Year: 1998, SP Info: - 3 A, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p> <p>Party Info: Party Info</p> <p>Party Type: 1F DRVR, Age: 24, Sex: M, Race: H, Sobriety1: HBD-JI, Sobriety2: HBD-JI, Move Pre: PROC ST, Dir: E, SW Veh: A, CHP Veh: A, Make: JAGUA, Year: 1998, SP Info: - 3 A, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p>																													
<p>Secondary Rd: E CHANNEL RD, Beat: 004, Type: 0, NCIC: 4801, State Hwy?: N, Route: 2092, Badge: 20100827, Collision Date: 20100827, Time: 1323, Day: FRI, Process Date: 20110818</p> <p>Severity: PDO, #Killed: 0, #Injured: 0, Tow Away?: N, Spec Cond: 0</p> <p>Head-On: NO, Rowlow Cond1: NO UNUSL CND, Rowlow Cond2: NO UNUSL CND, Ped Action: DAYLIGHT</p> <p>Lighting: DAYLIGHT, Make: FREIG, Year: 2006, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: P G</p> <p>Party Info: Party Info</p> <p>Party Type: 1 DRVR, Age: 42, Sex: M, Race: O, Sobriety1: HNB, Sobriety2: HNB, Move Pre: OTHER, Dir: S, SW Veh: G, CHP Veh: G, Make: FREIG, Year: 2006, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: P G</p> <p>Party Type: 2 DRVR, Age: 57, Sex: M, Race: A, Sobriety1: HNB, Sobriety2: HNB, Move Pre: OTHER, Dir: S, SW Veh: A, CHP Veh: A, Make: TOYOT, Year: 1997, SP Info: - 3 N, OAF1: OAF1, Viol: OAF1, OAF2: OAF2, Safety: M G</p>																													

Primary Rd	Distance (ft)	Direction	S	Secondary Rd	TUSTIN CT	NCIC	4801	State Hwy?	N	Route	Postmile Prefix	2092	Collision Date	20101116	Time	1343	Day	TUE	
City	Benicia	County	Solano	Rpt Dist	0B3	Type	0	CalTrans	0	Badge	#Killed	0	#Injured	0	Tow Away?	N	Process Date	20120120	
Primary Collision Factor	R-O-W PED	Violation	21954B	Collision Type	AUTO/PEDESTRIAN	Severity	PDO	NO UNUSL CND	Rdwy Cond2	0	Spec Cond	0	NT PRS/FCTR	Loc Type	Ramp/Int				
Weather1	CLEAR	Weather2	DRY	Lighting	DAYLIGHT	Ped Action	NOT IN X-	Cntrl Dev											
Hit and Run	Motor Vehicle Involved With	Other																	
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	EQUIP	Ejected
1F	DRVR	63	F	W	HNBD	PROC	ST	N	A	0100	NISSA	2005	-	3	N	-	M	G	
2	PED	60	M	W	HNBD			E	N	6000									
Party Info																			
Primary Rd	PARK RD	Distance (ft)	25	Direction	N	Secondary Rd	BAYSHORE RD	NCIC	4801	State Hwy?	N	Route	3572	Collision Date	20101124	Time	1305	Day	WED
City	Benicia	County	Solano	Rpt Dist	004	Type	0	CalTrans	0	Badge	#Killed	0	#Injured	0	Tow Away?	N	Process Date	20120214	
Primary Collision Factor	STRNGIBCKNG	Violation	22106	Collision Type	HIT OBJECT	Severity	PDO	NO UNUSL CND	Rdwy Cond2	0 <td>Spec Cond</td> <td>0</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td>Ramp/Int</td> <td></td> <td></td> <td></td> <td></td>	Spec Cond	0	NT PRS/FCTR	Loc Type	Ramp/Int				
Weather1	CLEAR	Weather2	DRY	Lighting	DAYLIGHT	Ped Action													
Hit and Run	Motor Vehicle Involved With	FIXED OBJ																	
Party Info																			
1F	DRVR	62	M	W	HNBD	PROC	ST	N	-	-00	HINO	2005	-	-	N	-	-	G	
Party Info																			
Primary Rd	PARK RD	Distance (ft)	54	Direction	S	Secondary Rd	INDUSTRIAL WY	NCIC	4801	State Hwy?	N	Route	1466	Collision Date	20100713	Time	0749	Day	TUE
City	Benicia	County	Solano	Rpt Dist	004	Type	0	CalTrans	0	Badge	#Killed	0	#Injured	0	Tow Away?	N	Process Date	20110801	
Primary Collision Factor	IMPROP TURN	Violation	22107	Collision Type	SIDESWIPE	Severity	PDO	NO UNUSL CND	Rdwy Cond2	0 <td>Spec Cond</td> <td>0</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td>Ramp/Int</td> <td></td> <td></td> <td></td> <td></td>	Spec Cond	0	NT PRS/FCTR	Loc Type	Ramp/Int				
Weather1	CLEAR	Weather2	DRY	Lighting	DAYLIGHT	Ped Action													
Hit and Run	Motor Vehicle Involved With	OTHER MV																	
Party Info																			
1F	DRVR	55	M	W	HNBD	IMP	UNK	IMP	UNK	-31	2000	-	3	N	-	M	G		
2	DRVR	50	M	O	HNBD	STOPPED		N	I	2000									
Party Info																			
Primary Rd	PARK RD	Distance (ft)	33	Direction	S	Secondary Rd	INDUSTRIAL WY	NCIC	4801	State Hwy?	N	Route	1466	Collision Date	20100719	Time	0859	Day	MON
City	Benicia	County	Solano	Rpt Dist	004	Type	0	CalTrans	0	Badge	#Killed	0	#Injured	0	Tow Away?	N	Process Date	20110727	
Primary Collision Factor	UNSAFE SPEED	Violation	22350	Collision Type	BROADSIDE	Severity	PDO	NO UNUSL CND	Rdwy Cond2	0 <td>Spec Cond</td> <td>0</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td>Ramp/Int</td> <td></td> <td></td> <td></td> <td></td>	Spec Cond	0	NT PRS/FCTR	Loc Type	Ramp/Int				
Weather1	CLEAR	Weather2	DRY	Lighting	DAYLIGHT	Ped Action													
Hit and Run	Motor Vehicle Involved With																		
Party Info																			
1F	DRVR	61	M	H	HNBD	SLOWING		N	F	2600	KENW	2009	-	3	N	-	M	G	
2	DRVR	25	F	A	HNBD			N	A	0100	HONDA	2006	-	3	N	-	M	G	
Party Info																			
Primary Rd	RESERVOIR RD	Distance (ft)	2112	Direction	E	Secondary Rd	LAKE HERMAN RD	NCIC	4801	State Hwy?	N	Route	2092	Collision Date	20100725	Time	0835	Day	MON
City	Benicia	County	Solano	Rpt Dist	4801	Type	0	CalTrans	0	Badge	#Killed	0	#Injured	0	Tow Away?	N	Process Date	20101025	
Primary Collision Factor	IMPROP TURN	Violation	22107	Collision Type	HIT OBJECT	Severity	PDO	NO UNUSL CND	Rdwy Cond2	0 <td>Spec Cond</td> <td>0</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td>Ramp/Int</td> <td></td> <td></td> <td></td> <td></td>	Spec Cond	0	NT PRS/FCTR	Loc Type	Ramp/Int				
Weather1	CLOUDY	Weather2	WET	Lighting	DAYLIGHT	Ped Action													
Hit and Run	Motor Vehicle Involved With	FIXED OBJ																	
Party Info																			
1F	DRVR	26	F	A	HNBD	PROC	ST	E	A	0700	TOYOT	2007	-	3	N	-	M	G	
Party Info																			

Include State Highways cases

Primary Rd	Distance (ft)	Direction	Secondary Rd	NCIC	4801	State Hwy?	N	Route	Postmile	Postmile Prefix	3471	Collision Date	20110814	Time	2257	Day	SUN	Side of Hwy		
City	Solano	Population	4	Rpt Dist	4801	CalTrans	0	Badge	20110814	Tow Away?	N	Process Date	20130312	Spec Cond	0					
Primary Collision Factor	STRINGBACKG	Violation	22106	Collision Type	OTHER	Severity	PDO	Rdwy Cond2	REDUCED RD	Rdwy Cond	0									
Weather1	CLEAR	Weather2	Motor Vehicle Involved With	PKD MV	Lighting	DARK - ST	Ped Action	Cntrl Dev	NT PRS/FCTR	Loc Type										
Hit and Run																				
1F	DRVR 54 M H HNB	BACKING	E	SW Veh	2235 FORD 1994	-	3	N	OAF1 Viol	OAF2 Safety Equip	M	G								Ejected
2	PRKD 998 -	PARKED	W	A	0100 MAZDA 2002	-	-	N												
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
Primary Rd	ARGUELLO DR	Distance (ft)	528	Direction	E	Secondary Rd	KEARNEY ST	NCIC	4801	State Hwy?	N	Route	2092	Collision Date	20110115	Time	1211	Day	SAT	Side of Hwy
City	Benicia	Solano	Population	4	Rpt Dist	P60	Beat	003	Type	0	CalTrans	2092	Badge	20110115	Tow Away?	N	Process Date	20120324		
Primary Collision Factor	R-O-W AUTO	Violation	21804A	Collision Type	BROADSIDE	Severity	INJURY	Rdwy Cond2	NO UNUSL CND	Rdwy Cond	0									
Weather1	FOG	Weather2	Motor Vehicle Involved With	OTHER MV	Lighting	DAYLIGHT	Ped Action <td>Cntrl Dev</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td></td>	Cntrl Dev	NT PRS/FCTR	Loc Type										
Hit and Run																				
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
1F	DRVR 17 M B HNB	BACKING	S	A	0100 TOYOT 2004	-	3	N	OAF1 Viol	OAF2 Safety Equip	M	G								
2	DRVR 31 M O HNB	PROC ST	W	A	0100 NISSA 2006	-	3	N												
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
Primary Rd	BARTON WY	Distance (ft)	39	Direction	E	Secondary Rd	VIOLET CT	NCIC	4801	State Hwy?	N	Route	3210	Collision Date	20110630	Time	0144	Day	THU	Side of Hwy
City	Benicia	Solano	Population	4	Rpt Dist	23152A	Beat	003	Type	0	CalTrans	3210	Badge	20110630	Tow Away?	N	Process Date	20121116		
Primary Collision Factor	DRVR ALCIDRG	Violation	HIT OBJECT	Collision Type	PDO	Severity	NO UNUSL CND	Rdwy Cond2	NO UNUSL CND	Rdwy Cond	0									
Weather1	CLEAR	Weather2	Motor Vehicle Involved With	OTHER OBJ	Lighting	DARK - ST	Ped Action <td>Cntrl Dev</td> <td>FUNCTNG</td> <td>Loc Type</td> <td></td>	Cntrl Dev	FUNCTNG	Loc Type										
Hit and Run																				
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
1F	DRVR 18 M W HBD-JU	RAN OFF RD	W	A	0100 HONDA 2006	-	3	A	22107											
2	DRVR 18 M W HBD-JU	RAN OFF RD	W	A	0100 HONDA 2006	-	3	A	22107											
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
Primary Rd	BAYSHORE RD	Distance (ft)	320	Direction	E	Secondary Rd	PARK RD	NCIC	4801	State Hwy?	N	Route	1745	Collision Date	20111006	Time	1139	Day	THU	Side of Hwy
City	Benicia	Solano	Population	4	Rpt Dist	SOLAN	Beat	004	Type	0	CalTrans	1745	Badge	20111006	Tow Away?	Y	Process Date	20130405		
Primary Collision Factor	NOT DRIVER	Violation	SIDESWIPE	Collision Type	PDO	Severity	NO UNUSL CND	Rdwy Cond2	NO UNUSL CND	Rdwy Cond	0									
Weather1	CLEAR	Weather2	Motor Vehicle Involved With	FIXED OBJ	Lighting	DAYLIGHT	Ped Action <td>Cntrl Dev</td> <td>NT PRS/FCTR</td> <td>Loc Type</td> <td></td>	Cntrl Dev	NT PRS/FCTR	Loc Type										
Hit and Run																				
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
1	DRVR 54 M B HNB	PROC ST	W	F	2500 PETER 2009	-	3	K												
2	PRKD 998 -	PARKED	-	A	0700 CHEVR 1999	-	-	-												
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
Primary Rd	BAYSHORE RD	Distance (ft)	0	Direction	E	Secondary Rd	RT 680	NCIC	4801	State Hwy?	Y	Route	680	Collision Date	20110504	Time	0821	Day	WED	Side of Hwy
City	Benicia	Solano	Population	4	Rpt Dist	P64	Beat	004	Type	0	CalTrans	680	Badge	20110504	Tow Away?	N	Process Date	20130128		
Primary Collision Factor	R-O-W AUTO	Violation	21802A	Collision Type	BROADSIDE	Severity	PDO	Rdwy Cond2	NO UNUSL CND	Rdwy Cond	0									
Weather1	CLEAR	Weather2	Motor Vehicle Involved With	OTHER MV	Lighting	DAYLIGHT	Ped Action <td>Cntrl Dev</td> <td>FUNCTNG</td> <td>Loc Type</td> <td>R</td> <td>Ramp/Int</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Cntrl Dev	FUNCTNG	Loc Type	R	Ramp/Int	4							
Hit and Run																				
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							
1F	DRVR 38 F H HNB	ENT TRAF	N	A	0100 BMW 1995	-	3	-												
2	DRVR 29 F HNB	PROC ST	E	A	0100 HONDA 1990	-	3	-												
Party Type	Age Sex Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make Year	SP Info	OAF1 Viol	OAF2 Safety Equip	M	G							

Include State Highways cases

Primary Rd	ROSE DR	Distance (ft)	0	Direction	Secondary Rd	WINDSOR	NCIC	4801	State Hwy?	N	Route	Postmile	Postmile Prefix	3572	Collision Date	20110502	Time	1840	Day	MON
City	Benicia	Solano	4	Rpt Dist	BENIC	003	Type	0	CalTrans	0	Badge	20110502	0	#Injured	1	Tow Away?	N	Process Date	20120717	
Primary Collision Factor	STOP SGN/SIG	Weather2	22450	Violation	BROADSIDE	DAYLIGHT	Lighting	NO UNUSL CND	Rdwy Cond2	0	Severity	INJURY	NO UNUSL CND	Rdwy Cond2	0	Spec Cond	0			
Weather1	CLEAR	Motor Vehicle Involved With	BICYCLE	Rdwy Surface	DRY	DAYLIGHT	Ped Action	NO UNUSL CND	Rdwy Cond2	0	Severity	INJURY	NO UNUSL CND	Rdwy Cond2	0	Spec Cond	0			
Hit and Run		Motor Vehicle Involved With	FIXED OBJ	Rdwy Surface	WET	DAYLIGHT	Ped Action	NO UNUSL CND	Rdwy Cond2	0	Severity	INJURY	NO UNUSL CND	Rdwy Cond2	0	Spec Cond	0			
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP	Info	OAF1	Viol	OAF2	Safety
1F	DRVR	10	M	W	HNBD	ENT TRAF	N	L	A	0400	-	3	E	-	3	E	-	3	E	-
2	DRVR	73	F	W	HNBD	PROC ST	E	A	0100	MERCU	2002	-	3	E	-	M	G	-	3	-
3	OTHR	998	-	-	-	PROC ST	N	A	9900	-	-	-	-	-	-	-	-	-	-	-
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move	Pre	Dir	SW	Veh	CHP	Veh	Make	Year	SP					

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. A0755
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. A0755
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 04/24/95		6. Time of Accident/Incident 03:56 PM	
7. Nearest Railroad Station BENICIA		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK STREET		10. State Abbr. 06 Code CA	
				<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) B			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 6		
14. Vehicle Speed (est. mph at impact) 30		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 2		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 78 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 2		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 1	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 8			25. Track Type Used by Rail Code Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 0700
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 0	30. Consist Speed (Recorded if available) Code R. Recorded 5 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 4
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
Code(s) 07					
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1		36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2	
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 1			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users 0		0	47. Highway Vehicle Property Damage (est. dollar damage) \$1,000		48. Total Number of Highway-Rail Crossing Users (include driver) 1
49. Railroad Employees 0		0	50. Total Number of People on Train (include passengers and crew)		51. Is a Rail Equipment Accident / Incident Report Being Filed Code 1. Yes 2. No 2
52. Passengers on Train 0		0			
53a. Special Study Block			53b. Special Study Block		
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. A0055
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. A0055
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 01/07/95		6. Time of Accident/Incident 06:30 PM	
7. Nearest Railroad Station BAHIA		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK RD.		10. State Abbr. 06 Code CA	
<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private					
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) B			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 1		
14. Vehicle Speed (est. mph at impact) 5		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 4		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 50 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 4		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 3	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 7			25. Track Type Used by Rail Code Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry 4		26. Track Number or Name 0700
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 5	30. Consist Speed (Recorded if available) Code R. Recorded 5 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 4
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
Code(s) 07					
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1			36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users 0		0	47. Highway Vehicle Property Damage (est. dollar damage) \$1,000		48. Total Number of Highway-Rail Crossing Users (include driver) 1
49. Railroad Employees 0	0	50. Total Number of People on Train (include passengers and crew)		51. Is a Rail Equipment Accident / Incident Report Being Filed Code 1. Yes 2. No 2	
52. Passengers on Train 0	0				
53a. Special Study Block			53b. Special Study Block		
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. A2523
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. A2523
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 11/29/93		6. Time of Accident/Incident 06:10 PM	
7. Nearest Railroad Station BENICIA		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK STREET		10. State Abbr. 06 Code CA	
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) A			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 2		
14. Vehicle Speed (est. mph at impact) 10		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 3		18. Position of Car Unit in Train 15	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 2			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 2		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 65 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 4		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 2	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 7			25. Track Type Used by Rail Code 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 0700 LEWAD
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 15	30. Consist Speed (Recorded if available) Code R. Recorded 2 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 3
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1		36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2	
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users 0		0	47. Highway Vehicle Property Damage (est. dollar damage) \$3,000		48. Total Number of Highway-Rail Crossing Users (include driver) 3
49. Railroad Employees 0		0	50. Total Number of People on Train (include passengers and crew)		51. Is a Rail Equipment Accident / Incident Report Being Filed Code 1. Yes 2. No 2
52. Passengers on Train 0		0			
53a. Special Study Block			53b. Special Study Block		
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. A3672
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. A3672
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 10/23/92		6. Time of Accident/Incident 06:10 PM	
7. Nearest Railroad Station BENICIA		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK ST		10. State Abbr. 06 Code CA	
				<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) C			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 6		
14. Vehicle Speed (est. mph at impact) 3		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 1		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 70 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 4		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 1	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 8			25. Track Type Used by Rail Code Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 728 LD
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 0	30. Consist Speed (Recorded if available) Code R. Recorded 5 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 1
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1			36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users		0	0	47. Highway Vehicle Property Damage (est. dollar damage) \$500	
49. Railroad Employees		0	1	48. Total Number of Highway-Rail Crossing Users (include driver) 1	
52. Passengers on Train		0	0	50. Total Number of People on Train (include passengers and crew)	
53a. Special Study Block		53b. Special Study Block			
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. A1111
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. A1111
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 04/16/91		6. Time of Accident/Incident 09:15 AM	
7. Nearest Railroad Station ARMY POINT		8. Division		9. County SOLANO	
11. City (if in a city) BENICA		12. Highway Name or No. PARK ST		10. State Abbr. 06 Code CA	
<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private					
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) C			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 1		
14. Vehicle Speed (est. mph at impact) 7		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 4		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 75 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 2		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 1	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 7			25. Track Type Used by Rail Code Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 0712
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 5	30. Consist Speed (Recorded if available) Code R. Recorded 10 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 4
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1			36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users		0	0	47. Highway Vehicle Property Damage (est. dollar damage) \$1,000	
49. Railroad Employees		0	0	48. Total Number of Highway-Rail Crossing Users (include driver) 1	
52. Passengers on Train		0	0	50. Total Number of People on Train (include passengers and crew)	
53a. Special Study Block		53b. Special Study Block			
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. E1300
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. E1300
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 03/06/90		6. Time of Accident/Incident 12:05 PM	
7. Nearest Railroad Station ARMY POINT		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK STREET		10. State Abbr. 06 Code CA	
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) A			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 6		
14. Vehicle Speed (est. mph at impact) 7		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 4		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 70 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 2		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 1	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 8			25. Track Type Used by Rail Code 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 0710
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 0	30. Consist Speed (Recorded if available) Code R. Recorded 7 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 4
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1		36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2	
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 4	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users 0		0	47. Highway Vehicle Property Damage (est. dollar damage) \$500		48. Total Number of Highway-Rail Crossing Users (include driver) 1
49. Railroad Employees 0		0	50. Total Number of People on Train (include passengers and crew)		51. Is a Rail Equipment Accident / Incident Report Being Filed Code 1. Yes 2. No 2
52. Passengers on Train 0		0			
53a. Special Study Block			53b. Special Study Block		
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

HIGHWAY-RAIL GRADE CROSSING

ACCIDENT/INCIDENT REPORT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of				Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Southern Pacific Transportation Co. [SP]				1a. SP	1b. 50329
2. Other Railroad Involved in Train Accident/Incident				2a.	2b.
3. Railroad Responsible for Track Maintenance Southern Pacific Transportation Co. [SP]				3a. SP	3b. 50329
4. U.S. DOT-AAR Grade Crossing ID No. 751527E		5. Date of Accident/Incident 01/25/89		6. Time of Accident/Incident 12:12 PM	
7. Nearest Railroad Station ARMY POINT		8. Division		9. County SOLANO	
11. City (if in a city) BENICIA		12. Highway Name or No. PARK		10. State Abbr. 06 Code CA	
<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private					
Highway User Involved			Rail Equipment Involved		
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle Code A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify) A			17. Equipment 4. Car(s) (moving) 8. Other (specify) Code 1. Train (units pulling) 5. Car(s) (standing) A. Train pulling- RCL 2. Train (units pushing) 6. Light loco(s) (moving) B. Train pushing- RCL 3. Train (standing) 7. Light loco(s) (standing) C. Train standing- RCL 6		
14. Vehicle Speed (est. mph at impact) 5		15. Direction (geographical) Code 1. North 2. South 3. East 4. West 3		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing Code 2. Stopped on Crossing 4. Trapped 3		19. Circumstance 1. Rail equipment struck highway user Code 2. Rail equipment struck by highway user 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither 4		20b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither			
20c. State the name and quantity of the hazardous material released, if any					
21. Temperature (specify if minus) 55 °F		22. Visibility (single entry) Code 1. Dawn 2. Day 3. Dusk 4. Dark 2		23. Weather (single entry) Code 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow 1	
24. Type of Equipment A. Spec. MoW Equip Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) Code 3. Commuter train 6. Cut of cars 9. Main./inspect. car 8			25. Track Type Used by Rail Code Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry 2		26. Track Number or Name 700 LEAD
27. FRA Track Class 1	28. Number of Locomotive Units 1	29. Number of Cars 0	30. Consist Speed (Recorded if available) Code R. Recorded 5 mph E E. Estimated		31. Time Table Direction Code 1. North 2. South 3. East 4. West 3
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew Warning 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None			33. Signaled Crossing Warning		34. Whistle Ban Code 1. Yes 2. No 3. Unknown
35. Location of Warning Code 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach 1			36. Crossing Warning Interconnected with Highway Signals Code 1. Yes 2. No 3. Unknown 2		37. Crossing Illuminated by Street Lights or Special Lights Code 1. Yes 2. No 3. Unknown 2
38. Driver's Age	39. Driver's Gender Code 1. Male 2. Female	40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown 2		41. Driver Code 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop 3	
42. Driver Passed Standing Highway Vehicle Code 1. Yes 2. No 3. Unknown 2		43. View of Track Obscured by (primary obstruction) Code 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed 8			
Casualties to:		Killed	Injured	44. Driver was Code 1. Killed 2. Injured 3. Uninjured 3	
46. Highway-Rail Crossing Users 0		0	47. Highway Vehicle Property Damage (est. dollar damage) \$1,500		48. Total Number of Highway-Rail Crossing Users (include driver) 1
49. Railroad Employees 0		0	50. Total Number of People on Train (include passengers and crew)		51. Is a Rail Equipment Accident / Incident Report Being Filed Code 1. Yes 2. No 2
52. Passengers on Train 0		0			
53a. Special Study Block			53b. Special Study Block		
54. Narrative Description					
55. Typed Name and Title		56. Signature			57. Date

APPENDIX B: INTERSECTION ANALYSIS WORKSHEETS



VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing AM
AM Peak Hour

Intersection 1 Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	28	29	103.9%	2.9	0.5	A
	Through	26	29	110.0%	5.0	1.5	A
	Right Turn	376	370	98.3%	7.1	0.5	A
	Subtotal	430	427	99.3%	6.7	0.5	A
SB	Left Turn	22	19	87.3%	5.6	0.8	A
	Through	12	10	83.3%	7.6	2.0	A
	Right Turn	4	4	90.0%	2.7	2.4	A
	Subtotal	38	33	86.3%	5.9	0.6	A
EB	Left Turn	4	4	95.0%	2.8	2.5	A
	Through	19	18	95.8%	7.3	0.7	A
	Right Turn	12	10	80.8%	6.4	5.1	A
	Subtotal	35	32	90.6%	6.4	1.5	A
WB	Left Turn	190	183	96.4%	7.1	0.9	A
	Through	40	44	109.5%	6.1	1.0	A
	Right Turn	63	61	96.5%	4.5	0.7	A
	Subtotal	293	288	98.2%	6.5	0.5	A
Total		796	779	97.9%	6.6	0.4	A

Intersection 2 Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	22	22	97.7%	1.8	1.3	A
	Through	430	427	99.3%	2.0	0.2	A
	Right Turn						
	Subtotal	452	449	99.2%	2.0	0.2	A
SB	Left Turn						
	Through	31	30	95.8%	0.6	0.2	A
	Right Turn	183	173	94.5%	0.9	0.2	A
	Subtotal	214	203	94.7%	0.8	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		666	651	97.8%	1.6	0.2	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing AM
AM Peak Hour

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	35	33	94.0%	0.5	0.1	A
	Right Turn						
	Subtotal	35	33	94.0%	0.5	0.1	A
SB	Left Turn						
	Through	31	30	95.5%	0.1	0.1	A
	Right Turn						
	Subtotal	31	30	95.5%	0.1	0.1	A
EB	Left Turn	417	416	99.7%	36.8	10.7	E
	Through						
	Right Turn	46	45	98.3%	29.5	10.1	D
	Subtotal	463	461	99.5%	36.1	10.5	E
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		529	523	98.9%	31.8	9.0	D

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	4	4	102.5%	3.6	0.3	A
	Subtotal	4	4	102.5%	3.6	0.3	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	31	28	89.4%	0.2	0.1	A
	Right Turn						
	Subtotal	31	28	89.4%	0.2	0.1	A
WB	Left Turn	21	23	107.1%	0.4	0.3	A
	Through	51	54	105.5%	0.1	0.1	A
	Right Turn						
	Subtotal	72	76	106.0%	0.2	0.1	A
Total		107	108	101.0%	0.3	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing AM
AM Peak Hour

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1	1	50.0%	1.3	2.8	A
	Through						
	Right Turn	21	21	98.1%	6.8	2.2	A
	Subtotal	22	21	95.9%	6.5	2.0	A
EB	Left Turn	33	34	102.7%	1.4	1.0	A
	Through	384	373	97.1%	0.1	0.0	A
	Right Turn						
	Subtotal	417	407	97.6%	0.2	0.1	A
WB	Left Turn						
	Through	272	267	98.1%	0.5	0.1	A
	Right Turn	36	37	101.9%	0.8	0.2	A
	Subtotal	308	304	98.5%	0.5	0.2	A
Total		747	731	97.9%	0.5	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing Plus Project
AM Peak Hour

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	28	27	96.4%	4.4	2.8	A
	Through	26	26	100.4%	31.5	49.0	D
	Right Turn	376	362	96.2%	95.3	8.1	F
	Subtotal	430	415	96.5%	83.9	9.1	F
SB	Left Turn	22	18	83.2%	113.6	53.4	F
	Through	12	10	85.8%	49.3	93.3	E
	Right Turn	4	4	100.0%	23.9	70.4	C
	Subtotal	38	33	85.8%	85.4	55.3	F
EB	Left Turn	4	4	107.5%	94.2	143.8	F
	Through	19	18	96.3%	165.9	96.7	F
	Right Turn	12	10	80.0%	31.9	46.5	D
	Subtotal	35	32	92.0%	110.9	61.1	F
WB	Left Turn	190	187	98.4%	125.7	11.7	F
	Through	40	43	108.3%	81.7	54.7	F
	Right Turn	63	63	99.2%	124.8	25.8	F
	Subtotal	293	293	99.9%	119.0	9.9	F
Total		796	773	97.0%	101.8	7.4	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	22	21	97.3%	3.2	2.7	A
	Through	430	415	96.5%	70.3	10.2	F
	Right Turn						
	Subtotal	452	437	96.6%	66.7	8.9	F
SB	Left Turn						
	Through	31	30	97.7%	1.4	0.3	A
	Right Turn	183	177	96.5%	1.6	0.2	A
	Subtotal	214	207	96.7%	1.6	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		666	643	96.6%	39.1	5.0	E

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing Plus Project
AM Peak Hour

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	35	33	93.7%	0.7	0.1	A
	Right Turn						
	Subtotal	35	33	93.7%	0.7	0.1	A
SB	Left Turn						
	Through	31	30	97.7%	0.2	0.1	A
	Right Turn						
	Subtotal	31	30	97.7%	0.2	0.1	A
EB	Left Turn	417	404	96.9%	302.0	25.6	F
	Through						
	Right Turn	46	44	96.5%	302.0	31.2	F
	Subtotal	463	449	96.9%	301.7	25.8	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		529	512	96.7%	266.6	22.7	F

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	4	4	102.5%	3.9	1.0	A
	Subtotal	4	4	102.5%	3.9	1.0	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	31	28	90.6%	0.2	0.1	A
	Right Turn						
	Subtotal	31	28	90.6%	0.2	0.1	A
WB	Left Turn	21	22	102.4%	0.4	0.3	A
	Through	51	53	103.9%	0.1	0.0	A
	Right Turn						
	Subtotal	72	75	103.5%	0.2	0.1	A
Total		107	107	99.7%	0.4	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing Plus Project
AM Peak Hour

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1	0	20.0%			
	Through						
	Right Turn	21	21	98.1%	49.1	42.7	E
	Subtotal	22	21	94.5%	46.9	40.7	E
EB	Left Turn	33	33	98.5%	11.1	22.3	B
	Through	384	366	95.3%	7.4	2.6	A
	Right Turn						
	Subtotal	417	398	95.5%	7.9	0.6	A
WB	Left Turn						
	Through	272	272	100.0%	83.4	25.7	F
	Right Turn	36	33	91.1%	96.6	51.3	F
	Subtotal	308	305	99.0%	83.8	25.8	F
Total		747	724	96.9%	47.3	13.0	E

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	17	18	106.5%	28.0	37.8	D
	Through	15	15	100.0%	34.2	60.8	D
	Right Turn	223	216	97.0%	94.2	5.6	F
	Subtotal	255	249	97.8%	83.8	5.6	F
SB	Left Turn	13	12	89.2%	134.6	106.0	F
	Through	7	6	91.4%	28.7	56.7	D
	Right Turn	2	2	95.0%	1.9	2.0	A
	Subtotal	22	20	90.5%	76.9	57.2	F
EB	Left Turn	2	3	155.0%	2.7	2.4	A
	Through	11	11	99.1%	112.6	97.6	F
	Right Turn	7	6	85.7%	22.3	43.6	C
	Subtotal	20	20	100.0%	65.5	61.5	F
WB	Left Turn	114	112	98.4%	139.0	20.7	F
	Through	24	22	91.3%	153.7	85.1	F
	Right Turn	37	37	98.9%	118.1	84.6	F
	Subtotal	175	171	97.5%	138.5	12.7	F
Total		472	460	97.4%	103.2	3.7	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	13	13	101.5%	1.6	1.1	A
	Through	255	249	97.6%	55.0	7.4	F
	Right Turn						
	Subtotal	268	262	97.8%	52.9	7.5	F
SB	Left Turn						
	Through	19	18	92.6%	1.0	0.6	A
	Right Turn	109	107	98.4%	1.4	0.2	A
	Subtotal	128	125	97.6%	1.3	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		396	387	97.8%	36.3	5.0	E

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	21	20	96.2%	29.7	33.5	D
	Right Turn						
	Subtotal	21	20	96.2%	29.7	33.5	D
SB	Left Turn						
	Through	19	18	92.6%	0.0	0.1	A
	Right Turn						
	Subtotal	19	18	92.6%	0.0	0.1	A
EB	Left Turn	247	242	97.9%	75.4	25.9	F
	Through						
	Right Turn	29	31	106.2%	68.6	48.1	F
	Subtotal	276	273	98.8%	74.4	27.1	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		316	311	98.3%	67.2	25.0	F

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	2	4	205.0%	3.6	0.2	A
	Subtotal	2	4	205.0%	3.6	0.2	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	18	16	88.3%	0.2	0.2	A
	Right Turn						
	Subtotal	18	16	88.3%	0.2	0.2	A
WB	Left Turn	12	12	97.5%	0.3	0.0	A
	Through	31	30	98.1%	0.1	0.0	A
	Right Turn						
	Subtotal	43	42	97.9%	0.2	0.0	A
Total		63	62	98.6%	0.4	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Existing Plus Project
AM

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1	1	100.0%	1.1	2.3	A
	Through						
	Right Turn	12	11	90.8%	16.9	21.8	C
	Subtotal	13	12	91.5%	15.9	20.2	C
EB	Left Turn	19	17	89.5%	1.6	1.2	A
	Through	228	222	97.3%	8.9	0.6	A
	Right Turn						
	Subtotal	247	239	96.7%	8.5	0.5	A
WB	Left Turn						
	Through	163	159	97.8%	22.5	14.8	C
	Right Turn	21	21	100.5%	8.0	10.5	A
	Subtotal	184	181	98.1%	20.5	12.5	C
Total		444	431	97.1%	13.8	5.8	B

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn	3	3	113.3%	0.2	2.4	2.0	A
	Through	2	1	65.0%	0.5	1.8	2.9	A
	Right Turn	34	32	94.7%	0.3	131.2	59.3	F
	Subtotal	39	37	94.6%	0.3	103.7	49.3	F
SB	Left Turn	2	4	205.0%	1.2	140.0	162.1	F
	Through	1	0	0.0%	1.4			
	Right Turn							
	Subtotal	3	4	136.7%	0.6	115.8	137.4	F
EB	Left Turn							
	Through	2	2	115.0%	0.2	118.6	175.0	F
	Right Turn	1	2	170.0%	0.6	0.9	1.2	A
	Subtotal	3	4	133.3%	0.5	81.6	114.0	F
WB	Left Turn	18	19	106.1%	0.3	130.7	63.7	F
	Through	4	4	100.0%	0.0	88.4	145.5	F
	Right Turn	6	6	98.3%	0.0	84.3	119.0	F
	Subtotal	28	29	103.6%	0.2	117.2	41.2	F
Total		73	74	101.4%	0.1	113.4	21.1	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn	2	2	120.0%	0.3	0.1	0.2	A
	Through	39	37	94.6%	0.3	0.3	0.1	A
	Right Turn							
	Subtotal	41	39	95.9%	0.3	0.3	0.1	A
SB	Left Turn							
	Through	3	2	80.0%	0.4	0.6	0.9	A
	Right Turn	17	18	107.1%	0.3	0.5	0.3	A
	Subtotal	20	21	103.0%	0.1	0.5	0.3	A
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		61	60	98.2%	0.1	0.4	0.1	A

Intersection 3 Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn							
	Through	3	4	133.3%	0.5	0.1	0.3	A
	Right Turn							
	Subtotal	3	4	133.3%	0.5	0.1	0.3	A
SB	Left Turn							
	Through	3	2	80.0%	0.4	0.0	0.0	A
	Right Turn							
	Subtotal	3	2	80.0%	0.4	0.0	0.0	A
EB	Left Turn	38	35	92.9%	0.4	5.6	0.6	A
	Through							
	Right Turn	4	5	132.5%	0.6	4.1	2.1	A
	Subtotal	42	41	96.7%	0.2	5.4	0.7	A
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		48	47	97.9%	0.1	4.6	0.6	A

Intersection 4 Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	3	4	133.3%	0.5	0.1	0.0	A
	Right Turn							
	Subtotal	3	4	133.3%	0.5	0.1	0.0	A
WB	Left Turn	2	3	125.0%	0.3	0.2	0.2	A
	Through	5	5	98.0%	0.0	0.1	0.1	A
	Right Turn							
	Subtotal	7	7	105.7%	0.1	0.1	0.1	A
Total		10	11	114.0%	0.4	0.1	0.0	A

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn							
	Through							
	Right Turn	2	4	205.0%	1.2	4.6	1.0	A
	Subtotal	2	4	205.0%	1.2	4.6	1.0	A
EB	Left Turn	3	3	96.7%	0.1	0.1	0.1	A
	Through	35	36	102.0%	0.1	0.0	0.0	A
	Right Turn							
	Subtotal	38	39	101.6%	0.1	0.0	0.1	A
WB	Left Turn							
	Through	26	25	95.4%	0.2	0.0	0.0	A
	Right Turn	3	3	93.3%	0.1	0.2	0.2	A
	Subtotal	29	28	95.2%	0.3	0.1	0.1	A
Total		69	70	101.9%	0.2	0.4	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base
AM Peak Hour

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	40	36	88.8%	3.3	0.5	A
	Through	30	27	90.3%	5.3	1.1	A
	Right Turn	500	439	87.9%	8.3	0.8	A
	Subtotal	570	502	88.1%	7.9	0.7	A
SB	Left Turn	30	28	93.7%	5.7	0.6	A
	Through	20	19	94.0%	7.0	0.9	A
	Right Turn	10	10	99.0%	4.7	2.2	A
	Subtotal	60	57	94.7%	6.0	0.6	A
EB	Left Turn	10	9	91.0%	4.4	2.3	A
	Through	20	19	94.5%	6.9	0.9	A
	Right Turn	20	17	84.0%	5.9	1.7	A
	Subtotal	50	45	89.6%	6.1	0.8	A
WB	Left Turn	250	244	97.8%	7.9	1.1	A
	Through	50	49	97.2%	5.6	1.0	A
	Right Turn	80	80	99.9%	4.8	2.0	A
	Subtotal	380	373	98.1%	7.0	0.9	A
Total		1,060	977	92.1%	7.4	0.4	A

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	30	29	95.7%	2.0	1.2	A
	Through	570	502	88.1%	2.5	0.3	A
	Right Turn						
	Subtotal	600	531	88.5%	2.4	0.3	A
SB	Left Turn						
	Through	40	40	100.5%	0.7	0.3	A
	Right Turn	250	240	96.2%	1.0	0.1	A
	Subtotal	290	281	96.8%	1.0	0.1	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		890	811	91.2%	2.0	0.2	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base
AM Peak Hour

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	50	48	95.6%	0.6	0.1	A
	Right Turn						
	Subtotal	50	48	95.6%	0.6	0.1	A
SB	Left Turn						
	Through	40	40	100.8%	0.1	0.1	A
	Right Turn						
	Subtotal	40	40	100.8%	0.1	0.1	A
EB	Left Turn	550	483	87.8%	483.7	31.1	F
	Through						
	Right Turn	60	50	83.3%	483.4	32.7	F
	Subtotal	610	533	87.3%	483.6	31.3	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		700	621	88.7%	410.6	25.7	F

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	10	10	97.0%	5.7	1.2	A
	Through						
	Right Turn	10	7	72.0%	3.4	1.6	A
	Subtotal	20	17	84.5%	4.8	1.0	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	40	38	94.5%	0.3	0.1	A
	Right Turn	10	8	82.0%	0.5	0.1	A
	Subtotal	50	46	92.0%	0.3	0.1	A
WB	Left Turn	30	28	93.7%	0.6	0.5	A
	Through	70	66	93.9%	0.1	0.0	A
	Right Turn						
	Subtotal	100	94	93.8%	0.3	0.2	A
Total		170	157	92.2%	0.8	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base
AM Peak Hour

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	10	10	98.0%	11.2	5.4	B
	Through						
	Right Turn	30	27	90.3%	7.5	1.3	A
	Subtotal	40	37	92.3%	8.3	1.4	A
EB	Left Turn	40	36	90.0%	2.8	1.8	A
	Through	510	451	88.4%	0.1	0.0	A
	Right Turn						
	Subtotal	550	487	88.5%	0.3	0.1	A
WB	Left Turn						
	Through	350	346	98.8%	0.7	0.1	A
	Right Turn	50	50	99.0%	1.3	0.6	A
	Subtotal	400	395	98.9%	0.7	0.2	A
Total		990	919	92.8%	0.8	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base Plus Project
AM Peak Hour

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	40	32	79.8%	7.2	2.3	A
	Through	30	25	84.0%	8.9	3.4	A
	Right Turn	500	389	77.7%	102.8	12.5	F
	Subtotal	570	446	78.2%	90.8	10.9	F
SB	Left Turn	30	28	93.7%	127.1	71.5	F
	Through	20	19	92.5%	55.4	47.0	F
	Right Turn	10	10	104.0%	50.9	63.0	F
	Subtotal	60	57	95.0%	92.4	55.3	F
EB	Left Turn	10	9	88.0%	50.7	79.1	F
	Through	20	18	87.5%	108.0	78.3	F
	Right Turn	20	17	85.0%	50.7	74.5	F
	Subtotal	50	43	86.6%	76.5	66.6	F
WB	Left Turn	250	244	97.8%	121.3	12.3	F
	Through	50	50	100.8%	94.0	54.3	F
	Right Turn	80	79	98.4%	86.5	34.3	F
	Subtotal	380	374	98.3%	111.3	8.1	F
Total		1,060	920	86.8%	100.3	9.3	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	30	25	82.0%	12.0	21.3	B
	Through	570	446	78.3%	81.5	8.1	F
	Right Turn						
	Subtotal	600	471	78.5%	76.8	6.2	F
SB	Left Turn						
	Through	40	39	96.3%	1.6	0.5	A
	Right Turn	250	242	96.8%	1.9	0.2	A
	Subtotal	290	280	96.7%	1.8	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		890	751	84.4%	40.5	2.9	E

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base Plus Project
AM Peak Hour

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	50	48	95.8%	0.6	0.2	A
	Right Turn						
	Subtotal	50	48	95.8%	0.6	0.2	A
SB	Left Turn						
	Through	40	39	96.5%	0.1	0.1	A
	Right Turn						
	Subtotal	40	39	96.5%	0.1	0.1	A
EB	Left Turn	550	423	76.8%	646.9	27.8	F
	Through						
	Right Turn	60	44	72.7%	628.5	37.5	F
	Subtotal	610	466	76.4%	645.0	28.2	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		700	553	79.0%	550.8	26.3	F

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	10	10	99.0%	5.2	0.4	A
	Through						
	Right Turn	10	7	70.0%	3.0	1.7	A
	Subtotal	20	17	84.5%	4.3	0.7	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	40	36	91.0%	0.2	0.1	A
	Right Turn	10	10	97.0%	0.5	0.4	A
	Subtotal	50	46	92.2%	0.3	0.1	A
WB	Left Turn	30	26	88.0%	0.4	0.2	A
	Through	70	66	94.7%	0.1	0.0	A
	Right Turn						
	Subtotal	100	93	92.7%	0.2	0.1	A
Total		170	156	91.6%	0.8	0.1	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base Plus Project
AM Peak Hour

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	10	9	94.0%	57.9	103.4	F
	Through						
	Right Turn	30	28	91.7%	77.0	57.1	F
	Subtotal	40	37	92.3%	69.1	59.4	F
EB	Left Turn	40	33	82.0%	11.7	26.0	B
	Through	510	402	78.8%	7.0	2.5	A
	Right Turn						
	Subtotal	550	435	79.1%	7.5	0.4	A
WB	Left Turn						
	Through	350	347	99.0%	129.6	23.2	F
	Right Turn	50	49	97.0%	115.2	39.5	F
	Subtotal	400	395	98.8%	128.0	18.8	F
Total		990	867	87.5%	76.1	8.9	F

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	24	26	107.1%	19.3	26.2	C
	Through	18	20	109.4%	20.0	28.8	C
	Right Turn	295	284	96.3%	92.3	7.1	F
	Subtotal	337	330	97.8%	83.1	5.9	F
SB	Left Turn	18	16	91.1%	127.0	95.0	F
	Through	12	11	90.0%	74.2	102.7	F
	Right Turn	6	6	95.0%	10.0	16.9	A
	Subtotal	36	33	91.4%	83.0	72.1	F
EB	Left Turn	6	5	75.0%	63.1	105.7	F
	Through	12	10	81.7%	75.5	81.4	F
	Right Turn	12	9	78.3%	5.7	4.2	A
	Subtotal	30	24	79.0%	47.7	59.3	E
WB	Left Turn	148	142	95.8%	141.2	19.6	F
	Through	30	27	91.0%	122.1	67.3	F
	Right Turn	47	48	102.8%	128.3	50.4	F
	Subtotal	225	217	96.6%	135.9	17.3	F
Total		628	604	96.1%	102.4	11.0	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	18	19	102.8%	6.1	13.6	A
	Through	337	329	97.7%	62.8	5.6	F
	Right Turn						
	Subtotal	355	348	97.9%	59.5	5.3	F
SB	Left Turn						
	Through	24	24	98.3%	1.9	1.2	A
	Right Turn	148	139	93.6%	1.6	0.3	A
	Subtotal	172	162	94.3%	1.6	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		527	510	96.7%	39.8	3.9	E

Intersection 3

Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through	30	29	97.0%	74.4	40.3	F
	Right Turn						
	Subtotal	30	29	97.0%	74.4	40.3	F
SB	Left Turn						
	Through	24	24	98.8%	0.1	0.1	A
	Right Turn						
	Subtotal	24	24	98.8%	0.1	0.1	A
EB	Left Turn	325	319	98.0%	172.7	29.8	F
	Through						
	Right Turn	35	36	103.4%	139.7	71.5	F
	Subtotal	360	355	98.6%	169.8	30.3	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		414	408	98.5%	152.4	27.2	F

Intersection 4

Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn	6	5	78.3%	5.1	0.6	A
	Through						
	Right Turn	6	4	73.3%	3.1	1.9	A
	Subtotal	12	9	75.8%	4.3	0.8	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	24	19	80.8%	0.2	0.1	A
	Right Turn	6	5	88.3%	0.7	0.6	A
	Subtotal	30	25	82.3%	0.3	0.2	A
WB	Left Turn	18	17	95.6%	0.3	0.1	A
	Through	42	42	99.0%	0.1	0.1	A
	Right Turn						
	Subtotal	60	59	98.0%	0.2	0.1	A
Total		102	93	90.8%	0.7	0.2	A

VISSIM Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Valero Refinery TIA
Cumulative Base Plus Project
AM

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	Total Delay (sec/veh)		
		Demand	Served		Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	6	6	98.3%	4.9	5.8	A
	Through						
	Right Turn	18	15	84.4%	42.9	37.8	E
	Subtotal	24	21	87.9%	32.6	27.7	D
EB	Left Turn	24	24	101.3%	1.9	1.3	A
	Through	301	286	95.0%	8.1	0.4	A
	Right Turn						
	Subtotal	325	310	95.4%	7.7	0.4	A
WB	Left Turn						
	Through	207	202	97.5%	43.9	21.9	E
	Right Turn	30	32	106.7%	45.8	40.3	E
	Subtotal	237	234	98.6%	43.7	22.1	E
Total		586	565	96.4%	24.7	10.1	C

Intersection 1

Bayshore Road/Park Road

All-way Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn	4	3	82.5%	0.4	2.2	1.8	A
	Through	3	3	86.7%	0.2	2.1	2.6	A
	Right Turn	45	39	87.6%	0.9	111.6	38.7	F
	Subtotal	52	45	87.1%	1.0	88.4	33.8	F
SB	Left Turn	3	2	70.0%	0.6	42.3	73.5	E
	Through	2	1	35.0%	1.1	1.0	2.2	A
	Right Turn	1	1	130.0%	0.3	1.3	2.3	A
	Subtotal	6	4	68.3%	0.8	25.3	41.3	D
EB	Left Turn	1	1	50.0%	0.6			
	Through	2	1	50.0%	0.8	21.4	43.8	C
	Right Turn	2	2	85.0%	0.2	1.1	1.4	A
	Subtotal	5	3	64.0%	0.9	12.8	24.7	B
WB	Left Turn	23	23	101.3%	0.1	141.1	52.5	F
	Through	5	5	98.0%	0.0	125.9	146.3	F
	Right Turn	7	7	102.9%	0.1	116.1	138.9	F
	Subtotal	35	35	101.1%	0.1	138.0	38.2	F
Total		98	88	89.8%	1.0	102.1	17.2	F

Intersection 2

Bayshore Road/I-680 SB On-Ramp

Uncontrolled

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn	3	3	113.3%	0.2	0.1	0.2	A
	Through	52	45	86.5%	1.0	0.3	0.1	A
	Right Turn							
	Subtotal	55	48	88.0%	0.9	0.3	0.1	A
SB	Left Turn							
	Through	4	3	70.0%	0.7	0.0	0.0	A
	Right Turn	23	23	100.0%	0.0	0.8	0.4	A
	Subtotal	27	26	95.6%	0.2	0.7	0.3	A
EB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		82	74	90.5%	0.9	0.4	0.1	A

Intersection 3 Bayshore Road/I-680 NB Off-Ramp

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn							
	Through	5	4	80.0%	0.5	0.0	0.0	A
	Right Turn							
	Subtotal	5	4	80.0%	0.5	0.0	0.0	A
SB	Left Turn							
	Through	4	3	70.0%	0.7	0.0	0.0	A
	Right Turn							
	Subtotal	4	3	70.0%	0.7	0.0	0.0	A
EB	Left Turn	50	44	88.4%	0.8	5.9	0.7	A
	Through							
	Right Turn	5	5	108.0%	0.2	5.4	0.8	A
	Subtotal	55	50	90.2%	0.7	5.8	0.6	A
WB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
Total		64	56	88.1%	1.0	5.0	0.6	A

Intersection 4 Bay Vista Court/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn	1	0	0.0%	1.4			
	Through							
	Right Turn	1	0	0.0%	1.4			
	Subtotal	2	0	0.0%	2.0	0.0	0.0	A
SB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
EB	Left Turn							
	Through	4	3	80.0%	0.4	0.1	0.0	A
	Right Turn	1	1	80.0%	0.2	0.2	0.3	A
	Subtotal	5	4	80.0%	0.5	0.1	0.1	A
WB	Left Turn	3	3	103.3%	0.1	0.1	0.2	A
	Through	7	7	92.9%	0.2	0.0	0.1	A
	Right Turn							
	Subtotal	10	10	96.0%	0.1	0.1	0.1	A
Total		17	14	80.0%	0.9	0.1	0.0	A

Intersection 5

Valero Refinery Entrance/Park Road

Side-street Stop

Direction	Movement	Volume (vph)		Percent Served	GEH	Total Delay (sec/veh)		
		Demand	Served			Average	Std. Dev.	LOS
NB	Left Turn							
	Through							
	Right Turn							
	Subtotal							
SB	Left Turn	1	1	80.0%	0.2	0.5	1.5	A
	Through							
	Right Turn	3	3	110.0%	0.2	4.2	2.0	A
	Subtotal	4	4	102.5%	0.0	3.7	1.1	A
EB	Left Turn	4	3	65.0%	0.8	1.2	2.1	A
	Through	46	40	86.3%	1.0	0.0	0.0	A
	Right Turn							
	Subtotal	50	42	84.6%	1.1	0.1	0.2	A
WB	Left Turn							
	Through	32	32	100.3%	0.0	0.0	0.0	A
	Right Turn	5	5	98.0%	0.0	0.2	0.2	A
	Subtotal	37	37	100.0%	0.0	0.0	0.1	A
Total		91	83	91.6%	0.8	0.3	0.1	A