



RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Grade Separation Priority Update Study for Alameda Corridor East (Riverside County)

FINAL REPORT



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Prepared By:



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for
Alameda Corridor East (Riverside County)

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1.0 Introduction

Riverside County serves as a conduit for the ports of Los Angeles and Long Beach for transportation of goods to areas beyond the state with more than 77 percent of freight being pass-by freight destined for areas beyond. Of the pass-by freight 65 percent passes through by rail and the remaining 35 percent on trucks¹. This results in having a train at most rail crossings at least twice an hour. Slow freight trains create delays for vehicles at many of the 55 at-grade crossings in the county, which are owned by private freight operators Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), both being Class I railroads. In addition to freight rail traffic, commuter and passenger rail services (Metrolink and Amtrak) share tracks with freight trains, which often result in poor on-time performance due to constrained track capacity.

The 2010 Census reported a population of 2.2 million people in Riverside County which is about a 41.7% increase from the 2000 Census report of 1.5 million². In comparison, the state of California grew at the rate of approximately 10% during the same time period. Within the Southern California Association of Governments' (SCAG) six county region (Counties of Los Angeles, Ventura, Orange, Riverside, San Bernardino, and Imperial), Riverside County's growth rate for the past ten years (2000-2010) was the highest.

One of the major effects of the rapid growth has been the continued increase of traffic congestion on roadways. Long-distance commute patterns have created substantial peak hour congestion and deteriorated air quality, particularly in corridors where topographic barriers limit the number of available roadways.

Freight movement through Southern California is also increasing at a rapid rate. In order to manage this growth, following the 2008 Regional Transportation Plan (RTP), SCAG initiated its Comprehensive Regional Goods Movement Plan and Implementation Strategy. The plan incorporates findings and recommendations from completed and ongoing studies, like the Multi-County Goods Movement Action Plan (MCGMAP) and SCAG's Port and Modal Elasticity Study Phase II, etc. The regional goods movement system defined through this plan (Comprehensive Regional Goods Movement Plan) will be the basis of the Goods Movement section of the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The draft 2012 RTP/SCS is currently in circulation and is under a formal review and comment period until February 15, 2012. The assumptions for this study was finalized after discussion and collaboration with SCAG RTP and Goods Movement technical staff and consultant, so that the findings from this study and the Goods Movement project recommendation in the 2012 RTP/SCS are in sync.

Effective and efficient movement of goods is critical to getting people and businesses the products they need in a timely manner. According to SCAG, the Ports of Los Angeles and Long Beach currently (2011 data) handle 13.5 million twenty-foot equivalent units (TEUs) of freight annually. This quantity is approximately 40 percent of containers entering the United States and is projected to triple to 43.2

¹ RCTC: http://www.rctc.org/downloads/Mobility_21_Goods_Move_Brochure_proof.pdf

² 2010 Census: <http://quickfacts.census.gov/qfd/states/06/06065.html>

million (TEUs) by year 2035^{3,4}. While this growth presents significant economic opportunities to Southern California and the nation, it also presents challenges in terms of improving the region's goods movement highway and rail infrastructure, as well as warehouse/industrial capacity to accommodate anticipated growth. Major investments in infrastructure will be required to provide short and long-term solutions to support moving goods both locally and throughout the country while mitigating associated environmental and community impacts.

Figure 1.1: Alameda Corridor



Source: Alameda Corridor Transportation Authority

In order to accommodate increasing freight rail traffic leaving the Ports of Los Angeles and Long Beach, the Alameda Corridor was constructed and has been operational since April 2002⁵. The Alameda Corridor (see **Figure 1.1**) is a 20-mile rail cargo expressway linking the ports of Long Beach and Los Angeles to the transcontinental rail network near downtown Los Angeles. The corridor is comprised of a series of bridges, underpasses, overpasses and street improvements that separate freight trains from street traffic and passenger trains, facilitating more efficient goods movement. The project's centerpiece is the Mid-Corridor Trench, which carries freight trains in a 10-mile long and roughly 33 feet deep open trench, which widens to about 50 feet between SR-91 in Carson and 25th Street in Los Angeles.

After leaving the Alameda Corridor, the majority of trains travel east, destined to intermodal terminals in the Inland Empire and to other parts of the country. This area, known as the Alameda Corridor East (ACE) passes through the San Gabriel Valley (Los Angeles County), Orange County, San Bernardino County, and Riverside County. **Figure 1.2** shows the Alameda Corridor and ACE Rail Lines.

In 2001, the Riverside County Transportation Commission (RCTC), partnering with the Coachella Valley Association of Governments (CVAG) and the Western Riverside Council of Governments (WRCOG), identified long-term needs for grade separation at grade crossings on railroad mainlines passing through Riverside County. The 2001 study prioritized grade separation needs based on several technical criteria, which were subsequently updated in 2006. This report is a 2012 update of priority evaluation and its results for 46 at-grade rail crossings in the county.

³ <http://www.scaq.ca.gov/goodsmove/regionalplan.htm>

⁴ San Pedro Bay Ports Container Forecast

⁵ http://www.acta.org/projects/projects_completed_alameda.asp

The evaluation of rail crossings addresses five mainline freight rail lines in Riverside County⁶:

- Union Pacific (Los Angeles Subdivision);
- Burlington Northern Santa Fe (San Bernardino Subdivision);
- Burlington Northern Santa Fe and Union Pacific (Riverside);
- Burlington Northern Santa Fe and Union Pacific (San Bernardino Subdivision); and
- Union Pacific (Yuma Main).

These rail lines accommodate freight service as well as passenger service (Metrolink commuter rail service and Amtrak). Currently about 66 freight trains pass through Riverside County per day, and the number is projected to increase to 137 by 2035. Increase in train volume means that rail crossing gates will be down for longer periods of time, further delaying Riverside County motorists at the rail crossings. In 2035, with the projected growth of rail traffic, population and employment, the following impacts are anticipated, if railroad crossings are maintained at-grade:

- Total vehicle hours of delay at all railroad crossings combined is anticipated to increase from 600 hours per day in 2010 to 3,700 hours per day in 2035, which is more than six-folds;
- Total emissions at all railroad crossings combined is anticipated to increase from 9 tons per year in 2010 to 53 tons per year in 2035;
- Population being impacted by at least 63 dB of noise due to train activity and horn blowing is expected to increase from 811,000 in 2008 to 1,380,000 by 2035; and
- At least 25 injury/fatal accident per million vehicles will occur at railroad crossings in the next 10 years, or at least 230 injury/fatal accident per million vehicles will occur with 250 feet of railroad crossings in the next 10 years.

Therefore, safety and delay issues at rail crossings are becoming an increasingly important concern.

1.1 Grade Crossing Project Status since 2006 Update

This report is the third iteration of Grade Crossing Priority Study since its inception in 2001. In the 2006 update, 62 at-grade crossings were evaluated and prioritized in five priority groups. Since that update, several rail crossing locations were grade separated, closed or have secured monies towards construction through the Proposition 1B Trade Corridors Improvement Funds (TCIF) Program. In 2008, the RCTC Commission adopted a Funding Strategy for grade separation based on the 2006 prioritization with 28 at-grade crossings ranked in the top two tiers as the highest priority for grade separations. Based on funding availability as well as project deliverability, the 2008 Funding Strategy Update⁷ also identified the following three additional at-grade crossings as high priority projects:

- Avenue 52;
- Avenue 56/Airport Boulevard; and
- Avenue 66.

⁶ The San Jacinto Branch Line and the spur line off the Union Pacific line do not carry regional rail traffic, and are therefore not included in the analysis

⁷ Source: Grade Separation Funding Strategy: A Blueprint for Advancing Projects, RCTC, 2008

Figure 1.2: Alameda Corridor and Alameda Corridor East Rail Lines



Since the 2008 funding strategy was adopted, significant progress has been made in constructing grade separations and the following four projects have been completed:

- Avenue 48/Dillon Road;
- Columbia Avenue (TCIF Project);
- Magnolia Avenue (TCIF Project); and
- Jurupa Avenue.

The following two at-grade crossings have been permanently closed:

- Jane Street; and
- Mountain View Avenue.

In April 2008, \$162.7 million in Proposition 1B funds was allocated to 13⁸ goods movement projects (12 are at-grade crossings and one interchange project) through the Trade Corridor Improvement Fund (TCIF) Program. Grade separation projects at Columbia Avenue and Magnolia Avenue in the City of Riverside have been completed. Grade separation projects at Auto Center Drive and Iowa Avenue, and a goods movement interchange project at I-215/Van Buren Boulevard will start construction by Spring/Summer of 2012. The remaining seven at-grade crossings are slated to start construction by December 2013. **Table 1.1** presents a project status update for at-grade railroad crossings since the 2006 Study.

Table 1.1: Grade Crossing Projects Status and Projected Construction Start Dates

At-Grade Crossing Location	Rail Line	Jurisdiction	Total Project Cost (in million)	2006 RCTC Priority Tier	TCIF Allocation ⁹	Projected Construction Start Date ¹⁰
Fully Funded Projects – Funding Priority Group A						
Sunset Avenue	UP	Banning	\$36.5	1	\$10.0	March 2013
Avenue 52	UP	Coachella	\$17.3	3	\$10.0	July 2013
Avenue 56/Airport Boulevard	UP	County	\$60.0	4	\$10.0	March 2013
Auto Center Drive	BNSF	Corona	\$32.0	2	\$16.0	April 2012
Iowa Avenue	BNSF/UP	Riverside	\$32.0	1	\$13.0	April 2012
Partially Funded Projects – Funding Priority Group B						
Clay Street	UP	County	\$37.4	2	\$12.5	August 2013
Magnolia Avenue	BNSF	County	\$81.8	1	\$13.7	April 2013
Riverside Avenue	UP	Riverside	\$30.3	1	\$8.5	December 2012
Streeter Avenue	UP	Riverside	\$36.8	2	\$15.5	August 2012

Source: Grade Separation Funding Strategy: A Blueprint for Advancing Projects, RCTC, 2008

⁸ In March 2011, at the City of Riverside's request, the RCTC Commission deleted the 3rd Street grade separation project from the TCIF program

⁹ Source: Grade Separation Funding Strategy: A Blueprint for Advancing Projects, RCTC, 2008

¹⁰ RCTC Staff (RCTC Staff Report for March 14, 2012 RCTC Commission Meeting)

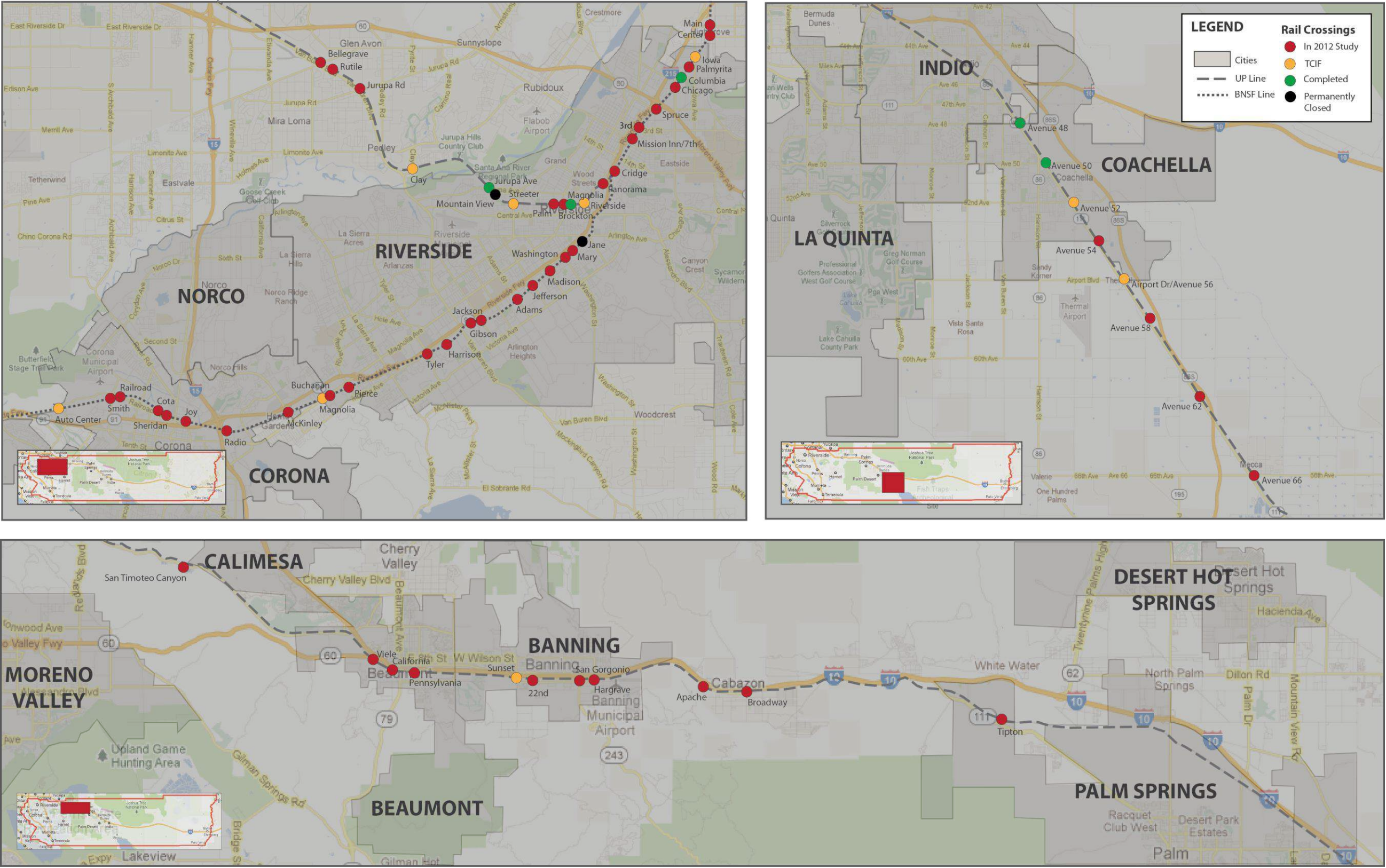
Although the anticipated completion of the Auto Center Drive grade separation project may reduce the need for future grade separation at Railroad Street and Smith Avenue, those crossings were included in the 2012 Study. In summary, 46 rail road crossings were studied in this 2012 study. This includes the omission of the following 15 crossings since the 2006 Study that evaluated 62 crossings:

- Two closed;
- Four completed; and
- Nine with TCIF funding commitments (all scheduled to start construction no later than December 2013).

Figure 1.3 shows the location and status of railroad crossings in the county.

The remainder of this report presents the methodology by which the remaining 46 rail crossing improvements were prioritized, potential benefits of grade separations, results and recommendations of the prioritization analysis.

Figure 1.3: Location and Status of Rail Crossings in 2012 Study



2.0 Methodology

The purpose of this rail crossing priority analysis is to update the 2006 Study¹¹ and re-prioritize rail crossing locations with the greatest need for improvement in Riverside County. This study uses the approved methodology from the 2006 Study for the evaluation of updated data. In addition to the seven factors that were considered in the 2006 Study, two new criteria were added to this iteration. These were confirmed in consultation with technical staff of the affected jurisdictions, however the results of the 2012 study was approved by the RCTC Commission on March 14, 2012. The factors used in the 2006 Study include:

- Safety (accident score rating, combination of frequency and severity)
- Existing (2010) Daily Vehicle Delay
- Future (2035) Daily Vehicle Delay
- Emissions (2035)
- Residential Noise
- Adjacent Grade Separations
- Local Priority

The two additional criteria that were added to the 2012 study are:

- Project Readiness
- Isolated Location (bonus criterion)

The rail crossing was evaluated in terms of each of these nine factors, and a score was assigned based on the potential for benefits from grade separation. For example, a location with a high accident rating was given a high score because of the potential to improve safety through grade separation. A location with a high delay was given a high score because of the potential to reduce delay through grade separation.

The scores for each factor were weighted to achieve the relative importance approved by the RCTC Commission. The weighted factor scores were combined to achieve an overall score for each location. The overall scores were used to assign each location a relative priority of 1 through 5, with priority #1 and #2 locations being the locations with greatest need for grade separation.

2.1 Weighting Options

Based on feedback from the Technical Team (comprising of staff of the affected jurisdictions) meeting at the RCTC offices on November 8, 2011, two weighting options were reviewed. For each weighting option the criteria were scored slightly differently. Weighting option #1 is identical to the weighting that was used for the 2006 Study. Weighting option #2 differed from weighting option #1 by adding criterion “Project Readiness” and altering the weights for criteria “Existing (2010) Delay”, “Future (2035) Delay” and “Safety”. To the final scores obtained from each weighting option, a bonus score was added for the “Isolated Location” criterion. Each criterion was evaluated separately after which the scores for each

¹¹ Riverside County Grade Crossing Priority Analysis, Kimley Horn and Associates, October 2006

criterion were combined into an overall score for the crossing. In calculating the overall score, the individual criteria were weighted as shown in **Table 2.1**.

Table 2.1: Evaluation Criteria and Weighting

Weighting Option #1 (2006 Criteria)		Weighting Option #2 (2012 Criteria)	
Safety	20%	Safety	25%
Existing (2010) Vehicle Delay	20%	Existing (2010) Vehicle Delay	15%
Future (2035) Vehicle Delay	20%	Future (2035) Vehicle Delay	15%
Emissions	10%	Emissions	10%
Residential Noise	10%	Residential Noise	10%
Adjacent Grade Separation	10%	Adjacent Grade Separation	10%
Local Priority	10%	Local Priority	10%
Project Readiness	0%	Project Readiness	5%

For both weighting options, a bonus criterion (Isolated Location) was added as contributing to an additional 5% to the overall score

To achieve the desired weighting, each score was multiplied by a weighting factor that was applied in order to achieve the following:

- Normalize all the scores relative to each other; and
- Apply the additional weighting to the delay and safety scores.

Table 2.2 shows the scoring and weighting factors applied to each criterion for each weighting options.

Table 2.2: Criterion, Weighting Factors and Weighted Scores for each Weighting Option

Criteria	Maximum Score	Weighting Option #1		Weighting Option #2	
		Weighting Factor	Maximum Possible Weighted Score	Weighting Factor	Maximum Possible Weighted Score
Safety	5	200	1,000	250	1,250
Existing (2010) Vehicle Delay	5	200	1,000	150	750
Future (2035) Vehicle Delay	5	200	1,000	150	750
Emissions	100	5	500	5	500
Residential Noise	100	5	500	5	500
Adjacent Grade Separation	5	100	500	100	500
Local Priority	25	20	500	20	500
Project Readiness	3	0	0	83.33	250
Bonus: Isolated Location	1	250	250	250	250
Total Score			5,250		5,250

The following discussion describes each factor used in the prioritization analysis, and how it was evaluated and scored.

2.2 Methodology for Safety Evaluation

Consistent with the 2006 Study, recent rail crossing accident data was obtained from the Federal Railroad Administration (FRA). The FRA maintains a database of incidents involving rail equipment (both passenger and freight trains) at the crossings. From this database, accident data for each crossing was obtained, representing the accident history for each crossing over a 10-year period (2001-2010). In addition, at the November Technical Team meeting, the local agencies suggested that the 2012 Study

incorporate accidents within 250 feet of railroad crossings. This data was available from the cities of Beaumont, Corona, Jurupa Valley, and the County of Riverside.

An overall accident rate was developed for each rail crossing based on the 10 years of recorded incidents from FRA and where available from within 250 feet of the railroad crossing. The accident rate took into account both frequency (number of accidents per million vehicles) and severity (property damage only, injury accident, fatality). The calculation produced an overall accident rating that is weighted according to the total number of injury and fatality accidents. Each location was assigned a safety score of 0 through 5 based on its overall accident rating. The scoring of FRA data and local data within 250 feet of crossings is shown in **Table 2.3**. For each location, the higher of the two scores (using FRA and local data) was used as the final rating for scoring purposes.

Table 2.3: Overall Accident Rating

FRA Data (accidents per million vehicles)		Local Data (within 250 feet of Crossings) (accidents per million vehicles)	
Rating Criteria	Rating Points	Rating Criteria	Rating Points
> 0.20	5	> 10	5
0.15 - 0.20	4	5 - 10	4
0.10 - 0.15	3	3 - 5	3
0.05 - 0.10	2	1 - 3	2
0.001 - 0.05	1	0 - 1	1
0.0	0	0	0

2.3 Methodology for Rail Crossing Delay

Delay impacts at railroad crossings are characterized in terms of total gate down time in minutes and vehicle-hours of delay per day.

The grade crossing delay analysis used for this study followed the same methodology in the 2006 Study¹² to estimate existing and future levels of delay at each grade crossing being analyzed. The delay for each grade crossing was calculated based on through train traffic plus the delay attributable to local train traffic and switching/operational delays.

The calculation produced the total crossing-gate down-time and vehicle-hours of delay experienced by roadway traffic at each grade crossing location. In addition, it produced an estimate of the length of roadway traffic queue due to the gate down interval caused by trains passing through the crossing. The formulas are as follows:

- Gate down time (for each train) = $0.603 + \frac{60 * (\text{train length} + 50 + (12 * \# \text{ lanes}))}{5280 * \text{train speed}}$
- Vehicle delay (for each train) = $\frac{(\text{gate down time})^2 * \text{vehicle queue per lane}}{2 * (1 - \frac{\text{vehicle queue per lane}}{\text{vehicle departure rate}})} * \frac{1}{60} * \# \text{ lanes}$
- Queue length (for each train) = $\text{gate down time} * \text{vehicle queue per lane} * \text{avg. vehicle length}$

¹² Riverside County Grade Crossing Priority Analysis, Kimley Horn and Associates, October 2006

Vehicle hours of delay at grade crossings were calculated for both 2010 and 2035 conditions based on existing and future train volumes, and traffic volumes on arterial streets.

Existing train activity was determined by means of train observations conducted at seven crossings throughout the study area. These locations were chosen to be geographically representative of each of the rail corridors within the county, and counts were collected over two consecutive weekdays. Of these seven locations, two were chosen to be representative where switching activity was reported in the 2006 Study. Switching activity for this study's purpose is defined as a location where short trains were observed to stop at crossings, instead of moving through. **Table 2.4** summarizes the details of train count observation for this study. These count locations are identified in **Figure 2.1**. Observed train counts are included in **Appendix A** to this report.

Table 2.4: Train Count

Location	Rail Line	Duration	Data Collection Date	Switching Activity	Included in the Study
Clay Street	UP (LA Sub)	24-hour	10/26/11 – 10/27/11	No	No
Center Street	BNSF & UP (SB Sub)	24-hour	10/26/11 – 10/27/11	No	Yes
McKinley Street	BNSF (SB Sub)	24-hour	10/26/11 – 10/27/11	No	Yes
Avenue 54	UP (Yuma Main)	24-hour	10/26/11 – 10/27/11	No	Yes
Sunset Avenue	UP (Yuma Main)	24-hour	10/26/11 – 10/27/11	No	No
Jurupa Road	UP (LA Sub)	15-hour	01/11/12-01/12/12	Yes	Yes
Riverside Avenue	UP (LA Sub)	15-hour	01/11/12-01/12/12	Yes	Yes

For each location the following was observed:

- For each train:
 - type of train (freight, passenger)
 - company (BNSF, UP, Metrolink, Amtrak)
 - direction of train travel
 - time of day (the time the bells start ringing)
 - train speed
 - number of locomotives
 - number of cars
 - gate down time (time during which cars are unable to cross) (min: sec)
 - is it a through train (no evidence of stopping or backing up)
 - does the train stop
 - does the train back-up
- Other information:
 - number of tracks
 - number of emergency vehicles that cross the tracks (and time of crossing)
 - predominant land use type around the crossing

In addition to the train observations, train data was gathered from some of the local jurisdictions (Corona and the County of Riverside) that had recently completed studies in the area.

Information on existing passenger train operations was obtained from Metrolink and Amtrak timetables. The forecasts of freight train and passenger train growth are consistent with SCAG's assumptions for their 2012 RTP/SCS.

Figure 2.1: Count Locations and Identification of Railroad Lines in Riverside County



Existing average daily traffic volumes on roadways crossing the railroad tracks were obtained from the local jurisdictions, where available (for the larger jurisdictions, the County, Corona etc.). To forecast traffic volumes for 2035, the current TransCAD model for Riverside County (Riverside County Transportation Analysis Model (RIVTAM)) was used to determine how much the existing volume would increase by the year 2035. 2035 traffic forecast at each location was calculated by applying a growth factor to existing (observed) vehicle counts at each location. The growth factor was derived from the RIVTAM.

The train observation data were used to ascertain the switching and operational delays at each location. Local trains and switching/operational delays were identified in the train counts if trains were short (<10-15 cars), or if trains stopped or backed up. The level of local/switching delay was estimated for each of the seven locations observed in 2011/2012, and that amount of delay was applied to other rail crossings in proportion to the local/switching delay observed in 2006, then added to through train delays to obtain the total daily delay at each crossing. Based on these calculations, each location was assigned a score of 0 through 5 based on the average daily vehicle delay as follows:

Table 2.5: Vehicle Delay Criteria and Score

2005 Average Daily Vehicle Delay	2030 Average Daily Vehicle Delay	Score
> 30 vehicle hours/day	>150 vehicle hours/day	= 5
20-30 vehicle hours/day	100-150 vehicle hours/day	= 4
15-19 vehicle hours/day	50-99 vehicle hours/day	= 3
10-14 vehicle hours/day	25-49 vehicle hours/day	= 2
5-9 vehicle hours/day	10-24 vehicle hours/day	= 1
<5 vehicle hours/day	< 10 vehicle hours/day	= 0

2.4 Methodology for Vehicle Emissions

Vehicle emissions resulting from grade crossing delays were calculated under both existing and future conditions by multiplying estimated daily delay by the idling vehicle emissions factors established by the California Environmental Protection Agency Air Resources Board (ARB) and summarized in **Table 2.6**. On September 30, 2011, the ARB released their EMFAC2011 (**EM**ission **FA**ctors). The EMFAC2011 is the latest installment of the EMFAC series of models, which is ARB's tool for estimating emissions from on-road vehicles. The EMFAC outputs emission factors categorized by region (county and air basin where a county may encompass multiple air basins), calendar year, season (annual, summer, winter), vehicle category (passenger cars, trucks etc.), fuel type (gas, diesel), model year of vehicle and speed. For the purpose of this study idling emissions factors were obtained at five miles per hour speed under summer conditions, for all vehicle types and fuel.

As different emission factors are provided for different vehicle classifications, total delay was disaggregated proportional to vehicle classification. In the absence of a specific estimated vehicle classification breakdown for each grade crossing, vehicle classifications were assumed to be proportional to the 2008 estimated total vehicles for the State of California¹³ as presented in **Table 2.7** and **Table 2.8**.

¹³ Source: 2008 California Motor Vehicle Stock, Travel and Fuel Forecast, Caltrans, June 2009

Table 2.6: Emission Factors

Pollutant (grams per hour)	Gasoline				Diesel		
	Autos	Light Trucks	Heavy Trucks	Motor-cycles	Autos	Light Trucks	Heavy Trucks
South Coast Air Basin							
ROG	1.59	2.70	2.76	24.37	0.96	1.46	2.16
CO	23.35	40.29	43.65	167.98	6.83	8.68	14.09
NO _x	1.20	2.93	1.65	4.79	5.47	6.03	33.30
PM ₁₀	0.07	0.10	0.05	0.01	0.72	1.22	0.53
Salton Sea Air Basin							
ROG	1.68	2.93	3.84	25.41	1.16	1.40	2.96
CO	24.50	42.29	49.03	193.29	7.23	8.39	18.94
NO _x	1.41	3.39	2.09	4.86	5.11	6.02	35.09
PM ₁₀	0.07	0.10	0.05	0.01	0.88	1.18	0.66

Notes: ROG: Reactive Organic Gas; CO: Carbon Monoxide; NO_x: Oxides of Nitrogen; PM₁₀: Particulate Matter
Source: EMFAC2011, California Environmental Protection Agency Air Resources Board, Summer Conditions

Table 2.7: State of California 2008 Total Vehicles by Classification

Total (millions)	Gasoline				Diesel		
	Autos	Light Trucks	Heavy Trucks	Motor-cycles	Autos	Light Trucks	Heavy Trucks
28.279	20.528	4.705	1.472	0.724	0.101	0.142	0.607
100.00%	72.59%	16.64%	5.21%	2.56%	0.36%	0.50%	2.15%

Source: 2008 California Motor Vehicle Stock, Travel and Fuel Forecast, Caltrans, June 2009, Table 6, 2010 Forecast

Table 2.8: State of California 2008 Total Vehicles by Classification by Mode

Total (millions)	Auto (Gas)	Motorcycles (Gas)	Auto - Diesel	Total (millions)	Light (Gas)	Heavy (Gas)	Light (Diesel)	Heavy (Diesel)
21.353	20.528	0.724	0.101	6.926	4.705	1.472	0.142	0.607
100.00%	96.14%	3.39%	0.47%	100.00%	67.93%	21.25%	2.05%	8.76%

Source: 2008 California Motor Vehicle Stock, Travel and Fuel Forecast, Caltrans, June 2009, Table 6, 2010 Forecast

The formula used for calculating the vehicle emissions for each vehicle classification is as follows:

$$VC_{ie} = vhd * ms * vc * ef$$

where

- VC_{ie} is idle emissions for vehicle classification type
- vhd is total vehicle hours of delay at crossing
- ms is vehicle type mode split at crossing
- vc is vehicle type classification split by mode for State of California (from **Table 2.8**)
- ef is emissions factor for vehicle and fuel type (from **Table 2.6**)

The total vehicle idle emissions resulting from grade crossing delay is obtained by summing the idle emissions for each vehicle classification type. Using the delay data from 2035, each location is assigned an emissions score of 0 through 100 based on the total daily emissions generated by delayed traffic.

2.5 Methodology for Noise Impacts

Noise impacts resulting from mandatory whistle blowing at grade crossings was determined by plotting whistle noise profiles as concentric rings corresponding to estimated decibel levels and judging intrusion into residential areas. Noise profiles are based on a whistle noise level of 108 dB at 100 feet from the source extending ¼ mile (1,320 feet) on either side of the subject crossing¹⁴. This level is consistent with the upper threshold of the allowed maximum range of whistle levels and the maximum warning distance prescribed in the *Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule, FRA, August 2006*. Concentric rings corresponding to each 15 dB reduction in noise level (noise levels typically reduce by 7.5 dB with each doubling in distance from the source) are drawn until a level of 55 dB is observed. A noise level of 55 dB is considered to be below the ambient noise level of a typical residential neighborhood, and therefore the impact of a whistle below this level is considered insignificant. The concentric rings correspond to the distances indicated in **Table 2.9**, although actual observed distances could vary based on topological and climatic conditions.

Table 2.9: Noise Level from Source

Noise Level (dB)	108/110	93	78	63	55.5
Distance from Source (feet)	100	400	1,600	6,400	12,800

Source: *Use of Locomotive Horns at Highway-Rail Grade Crossings, Final Rule, August 2006*

(http://www.fra.dot.gov/downloads/safety/trainhorn_2005/amended_final_rule_081706.pdf)

Each location was assigned a noise score of 0 through 100 based on a weighted percentage of existing residential development within 1,600-feet and 6,400-feet contours, and based on the number of trains per day that pass through each crossing. Population within the 1,600-feet and 6,400-feet contours was obtained from the recent RIVTAM.

2.6 Methodology for Distance to Nearest Grade Separation

The distance to the nearest adjacent grade separation was measured using map and field information. Each grade crossing location was assigned a score of 0 through 5 for adjacent grade separations based on the distance to the nearest grade separation, as follows:

Distance to nearest grade separation	> 1.0 mile = 5
	0.5 – 1.0 mile = 3
	0.25 – 0.499 mile = 1
	< 0.25 mile = 0

2.7 Methodology for Local Agency Priority

Local agency priorities were determined through a survey of the affected local jurisdiction, and the results were scaled so that the highest priority location in each jurisdiction received the highest score and the lowest priority location in each jurisdiction received the lowest score. Rankings from the cities of Corona, Jurupa Valley, Riverside, Beaumont and County of Riverside were updated with input from each of the jurisdictions. For the rest, rankings are consistent with the 2006 Study. Each crossing was assigned a score of 1 through 25 for local priority, with the local agency's highest priority location

¹⁴ Source: *Determination of a Sound Level for Railroad Horn Regulatory Compliance, Final Report, October 2002* (http://www.fra.dot.gov/downloads/RRDev/Compliance_Level_Derivation.pdf)

receiving 25 points, with lower priority locations receiving points in a descending scale so that in each jurisdiction the lowest priority location received 25/x points (where “x” is the number of crossings within that jurisdiction). Following is an example from the City of Corona:

Table 2.10: Local Ranking Scoring Example

Cross Street	Local Rank	Score
McKinley Street	1	25
Cota Street	2	21
Sheridan Street	3	18
Joy Street	4	14
Radio Road	5	11
Smith Avenue	6	7
Railroad Street	7	4

Note: Local Rank 1 denotes highest priority crossing for a particular jurisdiction

2.8 Methodology for Project Readiness

One of the key factors of success in securing funding for a grade separation project through the TCIF Program is the ability for the project to be completed and delivered in a timely manner, consistent with California Transportation Commission’s (CTC) directives when allocating Proposition 1B funds. Hence, at the request of the project technical team, “Project Readiness” was included as a criterion in weighting option #2 for scoring each at-grade crossing. Project readiness generally provides information on how far along each at-grade crossing is in its planning process namely:

- Whether or not environmental clearance is obtained; and/or
- Whether or not plans, specification and estimates (PS&E) is completed; and/or
- Whether or not right-of-way (ROW) acquisition is secured.

Each jurisdiction impacted by this study was requested to provide pertinent information on each of the grade crossings in their jurisdiction. Based on the information received, a score of 1 through 3 was assigned to rank at-grade crossing based on the following “Project Readiness” criterion:

Project Readiness:	All project elements completed = 3
	Two out of three project elements completed = 2
	One out of three project elements completed = 1

2.9 Methodology for Isolated Locations

The Task Order recommended the inclusion of this criterion to measure and rank an at-grade crossing based on its accessibility to an alternate route for vehicular traffic to be diverted, should there be an incident at the railroad crossing or on the arterials or at an adjacent freeway. An example of such a location is the rail crossing of San Timoteo Canyon in Calimesa. If there was an incident blocking a portion of I-10 parallel to the railroad and a train was blocking the rail crossing at the same time, traffic through the area would be unable to move because there are no other available alternate routes. Based on feedback from the Technical Team meeting at the RCTC offices on November 8, 2011, this criterion was included as a “bonus” criterion, with a weighted score of 250 assigned to those locations that are determined as being “isolated”.

The following two locations were assigned bonus points for this criterion:

- San Timoteo Canyon Road in Calimesa
- Apache Trail in the County of Riverside

2.10 Priority Groupings

From the evaluation of these factors, the rail crossings were separated into five groups to indicate their relative priority for improvement, with the crossings grouped according to their overall score, with group #1 representing the highest priority locations.

2.11 Consistency and Coordination with SCAG

Following the 2008 RTP, SCAG initiated its Comprehensive Regional Goods Movement Plan and Implementation Strategy. The regional goods movement system defined through this plan will be the basis of the Goods Movement section of the 2012 RTP/SCS. The train assumptions, particularly future growth rates for freight rail assumed in this study were finalized after discussion and collaboration with SCAG RTP and Goods Movement technical staff and consultant, so that the project list identified from this study can be incorporated within SCAG's Goods Movement Plan in a consistent manner. Until recently, the draft 2012 RTP/SCS was in circulation and was under a formal review and comment period which ended on February 15, 2012. Railroad crossings identified in priority groups #1 and #2 were forwarded to SCAG to include in its Constrained RTP/SCS project list, while the rest were recommended to be included in the agency's list of Strategic projects.

3.0 At-grade Crossing Analyses

The methodologies described in the previous section were applied to each of the nine evaluation factors. Two separate scoring calculations were performed corresponding to each weighting options discussed in **Section 1.2**. The resulting analysis data gives insight into the potential benefits associated with grade separation construction for each crossing in the study area.

Existing and future train operating characteristics are summarized in the following four tables. **Table 3.1** summarizes the current (observed) and future (estimated) train volumes applied in the analysis.

Table 3.1: Train Volumes

Rail Line	2011				2035 (Projected)			
	Freight	Metrolink	Amtrak	Total	Freight	Metrolink	Amtrak	Total
UP (LA SUB)	24	12	0	36	46	12	0	58
BNSF (SB SUB)	42	23	3	68	91	42	4	137
BNSF & UP (RIV)	66	35	3	104	137	54	4	195
BNSF & UP (SB SUB)	66	8	3	77	137	42	4	183
UP (YUMA MAIN)	40	0	1	41	90	0	1	91

Notes: Metrolink train include 91 and Inland Empire-Orange County line (normal operating schedule); Year 2011 freight train volume was factored up by 2.71 consistent with SCAG growth factors

Table 3.2 and **Table 3.3** show the distribution of existing and future passenger and freight train activity by time period during the day, respectively.

Table 3.2: Train Volume by Time Period

Train Line	AM Peak 6-9 am	Mid-day 9 am-3 pm	PM Peak 3 pm-7 pm	PM Off-peak 7 pm-10 pm	Night 10 pm-6 am	Daily
EXISTING (2011)						
UP (LA SUB)	5	7	8	6	10	36
Freight	2	6	4	4	8	24
Metrolink	3	1	4	2	2	12
Amtrak	0	0	0	0	0	0
BNSF (SB SUB)	13	16	13	7	19	68
Freight	7	10	5	5	15	42
Metrolink	5	6	8	1	3	23
Amtrak	1	0	0	1	1	3
BNSF & UP (RIV)	18	23	21	13	29	104
Freight	9	16	9	9	23	66
Metrolink	8	7	12	3	5	35
Amtrak	1	0	0	1	1	3
BNSF & UP (SB SUB)	11	18	12	10	26	77
Freight	9	16	9	9	23	66
Metrolink	1	2	3	0	2	8
Amtrak	1	0	0	1	1	3
UP (YUMA MAIN)	7	11	9	3	11	41
Freight	7	11	8	3	11	40
Metrolink	0	0	0	0	0	0
Amtrak	0	0	1	0	0	1

Table 3.2: Train Volume by Time Period (continued)

Train Line	AM Peak 6-9 am	Mid-day 9 am-3 pm	PM Peak 3 pm-7 pm	PM Off-peak 7 pm-10 pm	Night 10 pm-6 am	Daily
FUTURE (2035)						
UP (LA SUB)	7	12	12	10	17	58
Freight	4	11	8	8	15	46
Metrolink	3	1	4	2	2	12
Amtrak	0	0	0	0	0	0
BNSF (SB SUB)	24	31	26	17	39	137
Freight	14	21	12	12	32	91
Metrolink	9	10	13	4	6	42
Amtrak	1	0	1	1	1	4
BNSF & UP (RIV)	31	43	38	27	56	195
Freight	18	32	20	20	47	137
Metrolink	12	11	17	6	8	54
Amtrak	1	0	1	1	1	4
BNSF & UP (SB SUB)	28	42	34	25	54	183
Freight	18	32	20	20	47	137
Metrolink	9	10	13	4	6	42
Amtrak	1	0	1	1	1	4
UP (YUMA MAIN)	17	24	19	8	23	91
Freight	17	24	18	8	23	90
Metrolink	0	0	0	0	0	0
Amtrak	0	0	1	0	0	1

Table 3.3 reports the observed train speeds and lengths on each line.

Table 3.3: Train Speeds and Length

Railroad Line	Train Speed		Train Length				
	Freight	Passenger	Freight		Metrolink		Amtrak
	2011/2035	2011/2035	2011	2035	2011	2035	2011/2035
UP (LA SUB)	25-40 ^(a)	60	4,000	5,200	500	750	1,000
BNSF (SB SUB)	40	55	5,000	6,500	500	750	1,000
BNSF & UP (RIV)	40	55	4,900	6,400	500	750	1,000
BNSF & UP (SB SUB)	30	45	4,900	6,400	500	750	1,000
UP (YUMA) – Banning	25	55	4,700	6,100			1,000
UP (YUMA) - Coachella ^(b)	40	60	4,700	6,100			1,000

Note: Speed on UP Yuma Main line is from Amtrak trains. There are no Metrolink services on this line

(a) Riverside crossing has a freight speed of 25 mph due to slow speed approaching the merge with the BNSF rail line.

(b) faster speeds observed through Coachella (Ave 48 - Ave 66)

(c) Note: freight train lengths assumed to increase by 50% for Year 2035

The analysis evaluates several areas of concern for Riverside County residents that affect existing daily life and would increasingly affect daily life in the forecasted year 2035. **Table 3.4** summarizes gate down time and vehicle hours of delay per day under existing and future conditions. The total gate down time per day was measured in minutes for each crossing, and is the number of minutes every day that the crossing gates are down. Under future conditions (2035), it is estimated that the crossing gates will be down for all crossings in Riverside County for a total of 214 hours per day which is triple the existing levels of 84 hours per day. Vehicle hours of delay per day takes queue length into consideration and

quantifies the number of hours drivers are delayed per day at each crossing due to train activity. Under future conditions (2035), it is anticipated that drivers will experience a total of 3,700 hours of daily delay for train activity. Though gate down time is forecasted to be the maximum at a number of railroad crossings on the BNSF/UP San Bernardino line (over 7.5 hours daily at 7th Street, 3rd Street, Spruce Street, Chicago Avenue, Center Street and Main Street), Spruce Street is expected to experience the most delay (320 hours) under future conditions, an 18-fold increase from the existing conditions.

Table 3.4: Vehicle Delay and Gate Down Time

Rail Line	Cross Street	Jurisdiction	Vehicle Hours of Delay		Gate Down Time (in minutes)	
			2010	Projected 2035	2010	Projected 2035
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	5.18	44.88	55.29	111.00
	Rutile Street	Jurupa Valley	5.63	17.31	55.29	110.64
	Jurupa Road	Jurupa Valley	10.43	27.24	55.29	110.64
	Palm Avenue	Riverside	5.50	33.48	61.55	130.71
	Brockton Avenue	Riverside	9.83	53.55	61.82	130.71
	Panorama Road	Riverside	6.06	27.90	69.39	149.25
BNSF (SB SUB)	Smith Avenue	Corona	16.69	59.60	105.35	261.45
	Railroad Street	Corona	11.35	52.44	105.35	261.45
	Cota Street	Corona	7.21	18.72	104.94	260.60
	Sheridan Street	Corona	2.61	36.60	104.94	260.60
	Joy Street	Corona	8.95	123.15	104.94	261.45
	Radio Road	Corona	4.99	35.03	104.94	260.60
	McKinley Street	Corona	56.72	322.63	105.35	261.45
	Buchanan Street	Riverside	12.51	42.54	104.94	261.45
	Pierce Street	Riverside	13.47	69.76	105.35	261.45
	Tyler Street	Riverside	19.32	111.79	105.35	261.45
	Harrison Street	Riverside	8.23	22.48	104.94	260.60
	Gibson Street	Riverside	0.92	3.00	104.94	260.60
	Jackson Street	Riverside	9.11	80.56	105.35	261.45
	Adams Street	Riverside	22.88	157.86	105.35	261.45
	Jefferson Street	Riverside	8.89	21.88	104.94	260.60
	Madison Street	Riverside	19.77	140.14	105.35	261.45
	Washington Street	Riverside	10.21	61.43	104.94	261.45
	Mary Street	Riverside	14.14	111.79	105.35	261.45
BNSF & UP (RIV)	Cridge Street	Riverside	6.42	19.04	159.97	241.78
BNSF & UP (SB SUB)	7 th Street	Riverside	12.84	144.29	173.42	457.66
	3 rd Street	Riverside	27.39	127.30	173.42	457.66
	Spruce Street	Riverside	17.91	322.67	173.42	457.66
	Chicago Avenue	Riverside	36.31	115.28	173.42	457.66
	Palmyrita Avenue	Riverside	9.15	35.47	172.75	456.13
	Center Street	Riverside County	15.06	56.56	173.42	457.66
	Main Street	Riverside County	6.08	18.47	172.75	457.66
UP (YUMA MAIN)	San Timoteo Canyon Road	Calimesa	2.77	41.65	111.83	307.75
	Viele Avenue	Beaumont	0.20	69.06	111.83	308.74
	California Avenue	Beaumont	14.12	187.05	111.83	308.74
	Pennsylvania Avenue	Beaumont	18.08	164.92	111.83	308.74
	22nd Street	Banning	33.90	122.10	112.27	308.74
	San Gorgonio Avenue	Banning	32.19	124.49	111.83	308.74

Table 3.4: Vehicle Delay and Gate Down Time (continued)

Rail Line	Cross Street	Jurisdiction	Vehicle Hours of Delay		Gate Down Time (in minutes)	
			2010	Projected 2035	2010	Projected 2035
UP (YUMA MAIN)	Hargrave Street	Banning	46.69	230.34	111.83	308.74
	Apache Trail	Riverside County	4.94	39.45	111.83	308.74
	Broadway	Riverside County	14.35	42.18	112.01	308.74
	Tipton Road	Palm Springs	0.22	12.92	112.27	308.74
	Avenue 54	Coachella	0.72	27.72	79.50	213.59
	Avenue 58	Riverside County	1.88	7.85	79.22	212.98
	Avenue 62	Riverside County	3.45	95.57	79.22	214.21
	Avenue 66	Riverside County	8.11	46.68	79.22	214.21
Total			603	3,727	5,060	12,829
Total (hours per day)			603	3,727	84	214

Air pollution emissions associated with delay from train activity at each grade crossing was measured in tons per year for particulate matter (PM₁₀), nitrogen oxide (NO_x), reactive organic gas (ROG), and carbon monoxide (CO). **Table 3.5** summarizes the emissions in tons per year under existing and future conditions. Under future conditions (2035), it is anticipated that 53 tons per year of the various emissions will pollute Riverside County air due to traffic delays attributable to train activity and operational delay. This is almost a six-fold increase from existing levels of 9 tons per year.

Accident analysis included data both from FRA as well as from local jurisdictions where it was available. **Table 3.6** shows accident history and noise-impacted population for all study crossings. According to FRA data, a total of 25 injury/fatal accidents over a ten year period might have been avoided if all crossings were grade separated. During the same period, from the limited accident data within 250 feet of these crossing, approximately 230 injury/fatal accidents could have been avoided.

The corresponding noise analysis quantifies existing population surrounding each grade crossing affected by 78 dB and 63 dB noise levels from train whistles; this population is within 1,600 feet and 6,400 feet from the railroad crossings, respectively. If crossings were grade separated today, a single grade separation could eliminate 63 dB train whistle impacts on as many as 33,600 people around Avenue 54. However the magnitude of people affected by train whistles will decrease as Quiet Zones are implemented in many of the populated areas in the County.

A Quiet Zone is a section of a rail line that contains one or more consecutive at-grade crossings at which locomotive horns are not routinely sounded. Since Quiet Zones imposes restrictions on sounding horns to keep vehicles and pedestrians off the tracks when a train passes through crossings, it uses alternative measures to implement safety at railroad crossings. These improvements, dictated by federal guidelines, include sidewalks and fences to keep pedestrians out of the railroad right-of-way, raised medians to prevent cars from driving around lowered gates, and signs to alert people that no horn will sound.

Grade Separation Priority Update Study for Alameda Corridor East (Riverside County)

Table 3.5: Vehicle Emissions

Rail Line	Cross Street	Jurisdiction	Air Basin	PM ₁₀	2010			CO	PM ₁₀	Projected 2035		
					NO _x	ROG				NO _x	ROG	CO
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	SC	0.46	30.46	12.49	0.16	4.02	264.10	108.26	1.35	
	Rutile Street	Jurupa Valley	SC	0.50	33.14	13.58	0.17	1.55	101.89	41.76	0.52	
	Jurupa Road	Jurupa Valley	SC	0.93	61.38	25.16	0.31	2.44	160.32	65.72	0.82	
	Palm Avenue	Riverside	SC	0.43	27.09	13.03	0.16	2.60	164.93	79.35	0.96	
	Brockton Avenue	Riverside	SC	0.80	51.56	23.43	0.29	4.38	280.89	127.67	1.56	
	Panorama Road	Riverside	SC	0.47	29.84	14.35	0.17	2.17	137.44	66.13	0.80	
BNSF (SB SUB)	Smith Avenue	Corona	SC	1.50	98.24	40.27	0.50	5.34	350.73	143.77	1.80	
	Railroad Street	Corona	SC	1.02	66.79	27.38	0.34	4.70	308.63	126.51	1.58	
	Cota Street	Corona	SC	0.65	42.44	17.39	0.22	1.68	110.19	45.17	0.56	
	Sheridan Street	Corona	SC	0.22	14.51	6.25	0.08	3.14	203.72	87.79	1.09	
	Joy Street	Corona	SC	0.80	52.67	21.59	0.27	11.03	724.72	297.07	3.71	
	Radio Road	Corona	SC	0.45	29.34	12.03	0.15	3.14	206.14	84.50	1.06	
	McKinley Street	Corona	SC	4.86	315.64	136.02	1.68	27.63	1,795.56	773.75	9.57	
	Buchanan Street	Riverside	SC	1.07	69.62	30.00	0.37	3.64	236.75	102.02	1.26	
	Pierce Street	Riverside	SC	1.15	74.98	32.31	0.40	5.98	388.26	167.31	2.07	
	Tyler Street	Riverside	SC	1.58	101.34	46.06	0.56	9.13	586.46	266.55	3.26	
	Harrison Street	Riverside	SC	0.71	45.82	19.75	0.24	1.93	125.11	53.91	0.67	
	Gibson Street	Riverside	SC	0.08	5.10	2.20	0.03	0.26	16.68	7.19	0.09	
	Jackson Street	Riverside	SC	0.71	44.87	21.59	0.26	6.27	396.85	190.94	2.31	
	Adams Street	Riverside	SC	1.96	127.32	54.87	0.68	13.52	878.58	378.60	4.68	
	Jefferson Street	Riverside	SC	0.76	49.47	21.32	0.26	1.87	121.75	52.46	0.65	
	Madison Street	Riverside	SC	1.62	34.50	47.13	0.58	11.45	244.60	334.14	4.09	
	Washington Street	Riverside	SC	0.83	17.82	24.35	0.30	5.02	107.21	146.46	1.79	
	Mary Street	Riverside	SC	1.16	24.68	33.71	0.41	9.13	195.12	266.55	3.26	
BNSF & UP (RIV)	Cridge Street	Riverside	SC	0.58	13.81	15.49	0.19	1.71	40.93	45.93	0.57	
BNSF & UP (SB SUB)	7 th Street	Riverside	SC	1.10	25.01	30.79	0.38	12.36	281.02	346.06	4.28	
	3 rd Street	Riverside	SC	2.45	58.89	66.08	0.83	11.40	273.65	307.08	3.84	
	Spruce Street	Riverside	SC	1.60	38.50	43.21	0.54	28.91	693.66	778.38	9.73	
	Chicago Avenue	Riverside	SC	3.11	70.72	87.09	1.08	9.87	224.51	276.47	3.42	
	Palmyrita Avenue	Riverside	SC	0.82	19.66	22.06	0.28	3.18	76.26	85.57	1.07	
	Center Street	Riverside County	SC	1.35	32.37	36.32	0.45	5.07	121.58	136.43	1.71	
	Main Street	Riverside County	SC	0.54	13.06	14.66	0.18	1.65	39.71	44.56	0.56	

Table 3.5: Vehicle Emissions (continued)

Rail Line	Cross Street	Jurisdiction	Air Basin	2010				2035			
				PM ₁₀	NO _x	ROG	CO	PM ₁₀	NO _x	ROG	CO
UP (YUMA MAIN)	San Timoteo Canyon Road	Calimesa	SC	0.22	4.28	6.57	0.08	3.24	64.28	98.72	1.19
	Viele Avenue	Beaumont	SC	0.02	0.39	0.48	0.01	5.91	134.49	165.62	2.05
	California Avenue	Beaumont	SC	1.21	27.50	33.86	0.42	16.02	364.28	448.59	5.55
	Pennsylvania Avenue	Beaumont	SC	1.55	35.22	43.37	0.54	14.13	321.19	395.53	4.89
	22nd Street	Banning	SC	2.77	59.17	80.83	0.99	9.98	213.10	291.11	3.56
	San Geronio Avenue	Banning	SC	2.88	69.19	77.64	0.97	11.15	267.62	300.30	3.75
	Hargrave Street	Banning	SC	4.18	100.37	112.63	1.41	20.64	495.18	555.66	6.95
	Apache Trail	Riverside County	SS	0.38	8.71	12.43	0.15	3.01	69.48	99.24	1.21
	Broadway	Riverside County	SS	1.16	28.43	36.53	0.45	3.40	83.58	107.39	1.32
	Tipton Road	Palm Springs	SS	0.02	0.39	0.56	0.01	0.98	22.75	32.49	0.40
	Avenue 54	Coachella	SS	0.05	1.26	1.80	0.02	2.11	48.81	69.72	0.85
	Avenue 58	Riverside County	SS	0.14	3.32	4.74	0.06	0.60	13.83	19.76	0.24
	Avenue 62	Riverside County	SS	0.26	6.07	8.67	0.11	7.29	168.32	240.41	2.93
	Avenue 66	Riverside County	SS	0.62	14.29	20.41	0.25	3.56	82.21	117.41	1.43
	Total (grams per day)			51.73	2,079.21	1,452.48	17.98	318.18	12,207.06	8,976.01	111.01
	Total (tons per year)			0.02	0.84	0.58	7.23	0.13	4.91	3.61	44.67

Notes: all emission reported as grams per day except Carbon Monoxide (CO) which is reported as kilograms per day

Air Basin: South Coast Air Basin (SC); Salton Sea Air Basin (SS)

Table 3.6: Accident History and Noise-Impacted Population

Rail Line	Cross Street	Jurisdiction	Federal Railroad Administration (FRA)				Within 250 feet of railroad crossings				Noise	
			Non-Injury	Injury	Fatal	Total	Non-Injury	Injury	Fatal	Total	Population (1,600 feet)	Population (6,400 feet)
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	1	0	0	1	63	53	3	119	570	10,640
	Rutile Street	Jurupa Valley	0	0	0	0	47	50	1	98	1,140	12,577
	Jurupa Road	Jurupa Valley	2	1	1	4	80	47	1	128	1,065	13,871
	Palm Avenue	Riverside	0	0	0	0					1,980	25,355
	Brockton Avenue	Riverside	0	0	0	0					1,806	23,469
	Panorama Road	Riverside	0	0	0	0					2,069	20,557
BNSF (SB SUB)	Smith Avenue	Corona	0	0	0	0	26	10	0	36	51	20,515
	Railroad Street	Corona	0	0	0	0	3	0	0	3	58	24,115
	Cota Street	Corona	0	0	0	0	14	15	0	29	973	25,233
	Sheridan Street	Corona	1	0	1	2	19	7	0	26	1,187	28,436
	Joy Street	Corona	1	4	0	5	9	2	0	11	778	31,308
	Radio Road	Corona	0	0	0	0	8	1	0	9	84	22,594
	McKinley Street	Corona	2	0	1	3	109	22	0	131	1,790	27,382
	Buchanan Street	Riverside	0	0	2	2					1,574	25,990
	Pierce Street	Riverside	1	0	0	1					2,348	25,118
	Tyler Street	Riverside	1	1	0	2					1,728	22,984
	Harrison Street	Riverside	0	0	0	0					1,540	22,297
	Gibson Street	Riverside	0	0	0	0					1,523	23,178
	Jackson Street	Riverside	1	0	1	2					1,975	21,896
	Adams Street	Riverside	1	0	0	1					1,000	22,655
	Jefferson Street	Riverside	2	0	0	2					765	21,486
	Madison Street	Riverside	1	0	0	1					1,928	21,415
	Washington Street	Riverside	0	1	0	1					1,764	23,198
	Mary Street	Riverside	0	0	0	0					1,852	22,591
	Cridge Street	Riverside	0	0	0	0					1,743	22,888

Table 3.6: Accident History and Noise-Impacted Population (continued)

Rail Line	Cross Street	Jurisdiction	FRA				Within 250 feet of railroad crossings				Noise*	
			Non-Injury	Injury	Fatal	Total	Non-Injury	Injury	Fatal	Total	Population (1,600 feet)	Population (6,400 feet)
BNSF & UP (SB SUB)	7 th Street	Riverside	0	0	0	0					1,485	29,040
	3 rd Street	Riverside	0	1	1	2					1,832	28,740
	Spruce Street	Riverside	1	1	1	3					1,032	28,896
	Chicago Avenue	Riverside	4	1	0	5					1,670	16,408
	Palmyrita Avenue	Riverside	0	0	1	1					110	10,161
	Center Street	Riverside County	0	0	0	0	9	2	0	11	814	5,059
	Main Street	Riverside County	0	0	0	0					698	4,797
UP (YUMA MAIN)	San Timoteo Canyon Road	Calimesa	0	0	0	0					35	361
	Viele Avenue	Beaumont	0	4	0	4	0	1	0	1	521	8,798
	California Avenue	Beaumont	0	0	0	0	0	3	0	3	649	8,077
	Pennsylvania Avenue	Beaumont	0	0	0	0					534	10,225
	22nd Street	Banning	1	0	0	1					966	9,570
	San Gorgonio Avenue	Banning	1	0	0	1					1,138	11,425
	Hargrave Street	Banning	0	0	0	0					856	10,151
	Apache Trail	Riverside County	0	0	0	0	9	1	0	10	144	885
	Broadway	Riverside County	0	0	0	0	10	0	0	10	215	1,438
	Tipton Road	Palm Springs	0	0	0	0					5	190
	Avenue 54	Coachella	0	0	0	0					1,804	33,646
	Avenue 58	Riverside County	0	0	0	0					1,639	8,109
	Avenue 62	Riverside County	0	0	0	0	4	9	0	13	585	12,582
	Avenue 66	Riverside County	0	0	2	2	13	4	2	19	4,952	10,518
Total			21	14	11	46	423	277	7	657	54,975	810,824

Note: Population within 1,600 feet of railroad crossing endure 78 dB of noise, while those as far as 6,400 feet endure 63 dB

Population estimates are based on 2008 Base Year from the RIVTAM

* Population may overlap at adjacent crossings – totals are likely to include double counting

4.0 2012 Analysis Results

At the Technical Team meeting on January 26, 2012, results using both weighting option were presented for discussion and direction on which to recommend for adoption. The group unanimously opted to move forward the rankings based on weighting option #2. Subsequently this weighting option #2 was reviewed and recommended for adoption by the Technical Advisory Committee (TAC) on January 30, 2012.

Weighting option #2 uses “Project Readiness” as one of the criterion. It also reduces the relative importance of both existing and future “Vehicle Delay” while putting more weightage on “Safety”. **Table 4.1** presents the overall breakdown of Priority Groups 1 through 5, and lists the number of crossings in each group using each weighting options.

Table 4.1: Priority Group Breakdown

Priority Group	Weighting Option #1		Weighting Option #2	
	Score Range	Number of Crossings	Score Range	Number of Crossings
1	> 3,200	9	> 3,000	9
2	2,520 - 3,200	10	2,490 – 3,000	9
3	2,030 – 2,520	10	2,000 – 2,490	11
4	1,400 – 2,040	8	1,300 – 2,000	8
5	< 1,400	9	< 1,300	9
Total		46		46

Individual scores for each of the nine criteria factors were calculated, and are reported in **Table 4.2**. The overall weighted score for each crossing represents the sum of the individual factor scores after being multiplied by their respective weighting factors. This methodology was followed for both weighting option #1 and #2 (presented in **Section 1.2**).

Table 4.3 and **Figure 4.1** show the priority group ranking for all crossings studies for this analysis, using each of the weighting options. Each location is indicated with a half circle representing the results of each weighting option. The left half circle represent weighting option #1, while the right half circle represents weighting option #2. Results indicate that crossings may shift one level up or one level down using each of the weighting option. For example, Joy Street crossing in Corona is placed in Priority Group #2, using weighting option #1, but moves up to Priority Group #1 using weighting option #2. On the other hand, 22nd Street crossing in Banning is placed in Priority Group #1, using weighting option #1, but moves down to Priority Group #2 using weighting option #2.

Table 4.4 and **Figure 4.2** identifies those locations that received the highest priority scores and ranked in Priority Group #1 or #2 using weighting option #2.

Total quantitative benefits for the construction of grade crossings under existing conditions and under future conditions for the top two priority tiers are summarized in **Table 4.5**. If all crossings in the top two Priority Groups are grade separated by the year 2035, a total of approximately 90 hours of gate down time per day would be avoided, vehicle hours of delay per day would be reduced by over 2,400 hours, anywhere between 20 to 150 accidents may be avoided over a ten year period, 34.7 tons of air pollutants would not be released into the atmosphere, and approximately 634,000 people would experience less noise from train whistles.

Table 4.2: Scores for each Criterion

Rail Line	Cross Street	Jurisdiction	Land Use	# of Lanes			VHD		Accident		Adjacent Crossing			Local Rank	Emissions	Noise	Project Readiness				
				2008	2035	Tracks	2010	2035	FRA	250'	¼ mile	½ mile	1 mile				Env.	PS&E	ROW	Score	Isolated
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	MI	2	6	2	5.2	44.9	1	5				2	65	10				0	
	Rutile Street	Jurupa Valley	MI	2	4	2	5.6	17.3		5				1	25	20				0	
	Jurupa Road	Jurupa Valley	MI	2	4	3	10.4	27.2	3	4				3	40	20				0	
	Palm Avenue	Riverside	RE	2	4	2	5.5	33.5				x	x	6	45	50				0	
	Brockton Avenue	Riverside	CM	4	4	2	9.8	53.5			x	x	x	9	65	50				0	
	Panorama Road	Riverside	RE	2	2	1	6.1	27.9					x	2	40	50				0	
BNSF (SB SUB)	Smith Avenue	Corona	MI	4	4	2	16.7	59.6		2			x	2	70	20				0	
	Railroad Street	Corona	MI	4	4	3	11.3	52.4		1			x	1	65	30				0	
	Cota Street	Corona	MI	2	2	2	7.2	18.7		3		x	x	6	25	60				0	
	Sheridan Street	Corona	LI	2	2	2	2.6	36.6	5	4	x	x	x	5	45	70				0	
	Joy Street	Corona	MI	2	4	3	8.9	123.1	5	1		x	x	4	100	60				0	
	Radio Road	Corona	MI	2	2	3	5.0	35.0		1	x	x	x	3	45	30				0	
	McKinley Street	Corona	LI	4	4	2	56.7	322.6	1	2			x	7	100	80				0	
	Buchanan Street	Riverside	LI	2	4	2	12.5	42.5	2		x	x	x	4	65	80				0	
	Pierce Street	Riverside	LI	4	4	2	13.5	69.8	1				x	13	85	90				0	
	Tyler Street	Riverside	CM	4	4	2	19.3	111.8	1					16	85	80				0	
	Harrison Street	Riverside	LI	2	2	2	8.2	22.5					x	5	25	70				0	
	Gibson Street	Riverside	LI	2	2	3	0.9	3.0				x	x	1	20	80				0	
	Jackson Street	Riverside	RE	4	4	2	9.1	80.6	2				x	3	85	80				0	
	Adams Street	Riverside	LI	4	4	2	22.9	157.9	1				x	17	100	60				0	
	Jefferson Street	Riverside	LI	2	2	2	8.9	21.9	2					8	25	50				0	
	Madison Street	Riverside	CM	4	4	2	19.8	140.1	1					20	95	80				0	
	Washington Street	Riverside	CM	2	4	2	10.2	61.4	1				x	11	55	80				0	
	Mary Street	Riverside	CM	4	4	2	14.1	111.8					x	18	75	80				0	
BNSF & UP (RIV)	Cridge Street	Riverside	MI	2	2	4	6.4	19.0				x	x	12	20	90				0	
BNSF & UP (SB SUB)	7 th Street	Riverside	LI	4	4	4	12.8	144.3			x	x	x	14	95	90				0	
	3 rd Street	Riverside	MI	4	4	3	27.4	127.3	2			x	x	19	95	100				0	
	Spruce Street	Riverside	MI	4	4	3	17.9	322.7	4					10	100	90				0	
	Chicago Avenue	Riverside	LI	4	4	3	36.3	115.3	3			x	x	15	80	90				0	
	Palmyrita Avenue	Riverside	MI	2	2	3	9.1	35.5	3			x	x	7	35	10				0	
	Center Street	Riverside County	MI	4	4	4	15.1	56.6		1			x	5	55	40				0	
	Main Street	Riverside County	MI	2	4	3	6.1	18.5					x	1	20	40				0	
UP (YUMA MAIN)	San Timoteo Canyon Road	Calimesa	RE	2	2	2	2.8	41.7						1	35					0	X
	Viele Avenue	Beaumont	LI	2	4	2	0.2	69.1	5	5			x	2	70	30				0	
	California Avenue	Beaumont	LI	2	4	2	14.1	187.0		1		x	x	3	100	20				0	
	Pennsylvania Avenue	Beaumont	LI	2	4	2	18.1	164.9					x	1	95	30				0	
	22nd Street	Banning	CM	4	4	1	33.9	122.1	1				x	2	75	50				0	
	San Gorgonio Avenue	Banning	MI	2	4	2	32.2	124.5	1				x	1	95	50				0	
	Hargrave Street	Banning	MI	2	4	2	46.7	230.3						3	100	50				0	
	Apache Trail	Riverside County	RE	2	4	2	4.9	39.5		2				4	35					0	X
	Broadway	Riverside County	CM	2	4	3	14.3	42.2		1				3	55	10				0	
	Tipton Road	Palm Springs	RE	4	4	2	0.2	12.9						1	20					0	
	Avenue 54	Coachella	RE	4	4	2	0.7	27.7						1	30					0	
	Avenue 58	Riverside County	RE	2	2	2	1.9	7.9						2	20					0	
	Avenue 62	Riverside County	RE	2	6	4	3.4	95.6		3				6	75					0	
	Avenue 66	Riverside County	RE	2	6	1	8.1	46.7	3	2				7	50	10				0	

Notes: Land Use type – RE: Residential; CM: Commercial; LI: Light Industrial; MI: Medium Industrial

Table 4.3: 2012 Priority Groups

Rail Line	Cross Street	Jurisdiction	Weighting Option #1		Recommended by TAC Weighting Option #2		2006 Ranking
			Score	Ranking	Score	Ranking	
BNSF & UP (SB SUB)	Spruce Street	Riverside	4100	1	3900	1	1
BNSF (SB SUB)	McKinley Street	Corona	4100	1	3700	1	1
BNSF & UP (SB SUB)	Chicago Avenue	Riverside	3725	1	3425	1	1
UP (YUMA MAIN)	Hargrave Street	Banning	3750	1	3250	1	2
BNSF & UP (SB SUB)	3rd Street	Riverside	3550	1	3250	1	1
BNSF (SB SUB)	Joy Street	Corona	3186	2	3186	1	4
BNSF (SB SUB)	Madison Street	Riverside	3475	1	3175	1	2
BNSF (SB SUB)	Adams Street	Riverside	3525	1	3125	1	2
BNSF (SB SUB)	Tyler Street	Riverside	3325	1	3025	1	2
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	2808	2	2908	2	3
UP (LA SUB)	Jurupa Road	Jurupa Valley	2900	2	2900	2	1
UP (YUMA MAIN)	22nd Street	Banning	3258	1	2858	2	2
UP (YUMA MAIN)	Viele Avenue	Beaumont	2733	2	2833	2	4
UP (YUMA MAIN)	San Geronio Avenue	Banning	3192	2	2792	2	2
UP (YUMA MAIN)	Avenue 62	Riverside County	2504	3	2504	2	3
UP (YUMA MAIN)	Avenue 66	Riverside County	2500	3	2500	2	3
BNSF (SB SUB)	Pierce Street	Riverside	2700	2	2500	2	3
UP (YUMA MAIN)	California Avenue	Beaumont	2800	2	2500	2	3
BNSF (SB SUB)	Sheridan Street	Corona	2332	3	2482	3	5
UP (LA SUB)	Rutile Street	Jurupa Valley	2292	3	2442	3	4
BNSF (SB SUB)	Mary Street	Riverside	2725	2	2425	3	2
BNSF (SB SUB)	Jackson Street	Riverside	2400	3	2300	3	4
BNSF (SB SUB)	Smith Avenue	Corona	2493	3	2293	3	2
UP (YUMA MAIN)	Pennsylvania Avenue	Beaumont	2692	2	2292	3	4
BNSF & UP (SB SUB)	Center Street	Riverside County	2532	2	2282	3	2
BNSF (SB SUB)	Washington Street	Riverside	2450	3	2250	3	4
BNSF & UP (SB SUB)	7th Street	Riverside	2475	3	2175	3	2
UP (YUMA MAIN)	Apache Trail	Riverside County	2011	4	2011	3	4
BNSF (SB SUB)	Cota Street	Corona	1954	4	2004	3	4
BNSF (SB SUB)	Buchanan Street	Riverside	2025	4	1925	4	3
UP (YUMA MAIN)	Broadway	Riverside County	2039	3	1889	4	4
BNSF (SB SUB)	Jefferson Street	Riverside	1875	4	1875	4	4
BNSF (SB SUB)	Railroad Street	Corona	2046	3	1846	4	3
UP (YUMA MAIN)	San Timoteo Canyon Road	Calimesa	1825	4	1725	4	3
BNSF & UP (SB SUB)	Palmyrita Av (UP)	Riverside	1700	4	1700	4	2
UP (YUMA MAIN)	Avenue 54	Coachella	1550	4	1450	4	5
UP (LA SUB)	Brockton Avenue	Riverside	1600	4	1400	4	2
BNSF & UP (RIV)	Cridge Street	Riverside	1350	5	1250	5	4
UP (LA SUB)	Panorama Road	Riverside	1400	5	1250	5	3
UP (YUMA MAIN)	Tipton Road	Palm Springs	1300	5	1250	5	4
BNSF (SB SUB)	Harrison Street	Riverside	1300	5	1200	5	4
UP (LA SUB)	Palm Avenue	Riverside	1325	5	1175	5	3
BNSF (SB SUB)	Radio Road	Corona	1189	5	1139	5	5
BNSF & UP (SB SUB)	Main Street	Riverside County	1071	5	971	5	4
UP (YUMA MAIN)	Avenue 58	Riverside County	743	5	743	5	5
BNSF (SB SUB)	Gibson Street	Riverside	625	5	625	5	5

Note: Red bold font indicate different priority ranking using Weighting Option #1

Figure 4.1: 2012 Priority Rankings

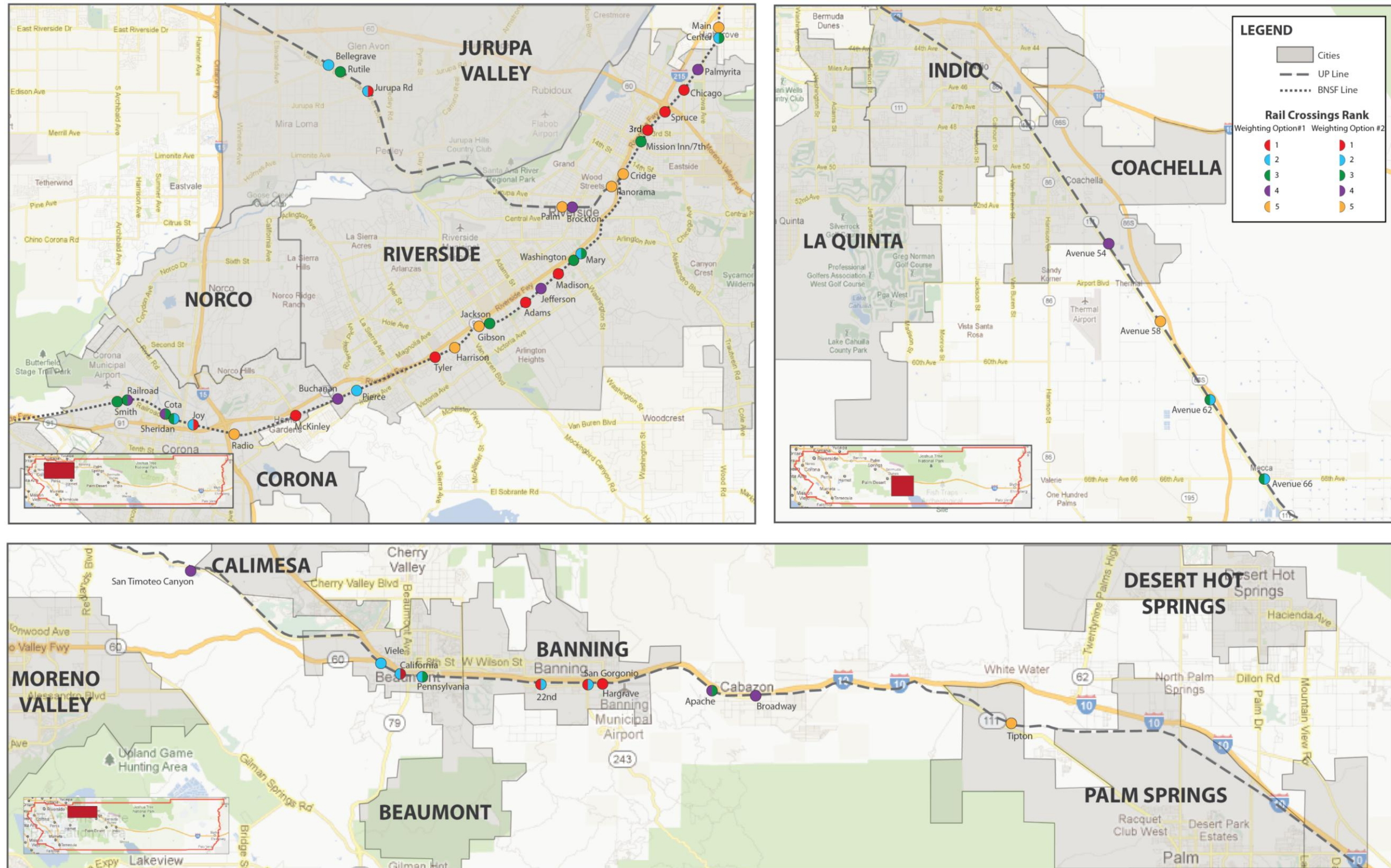


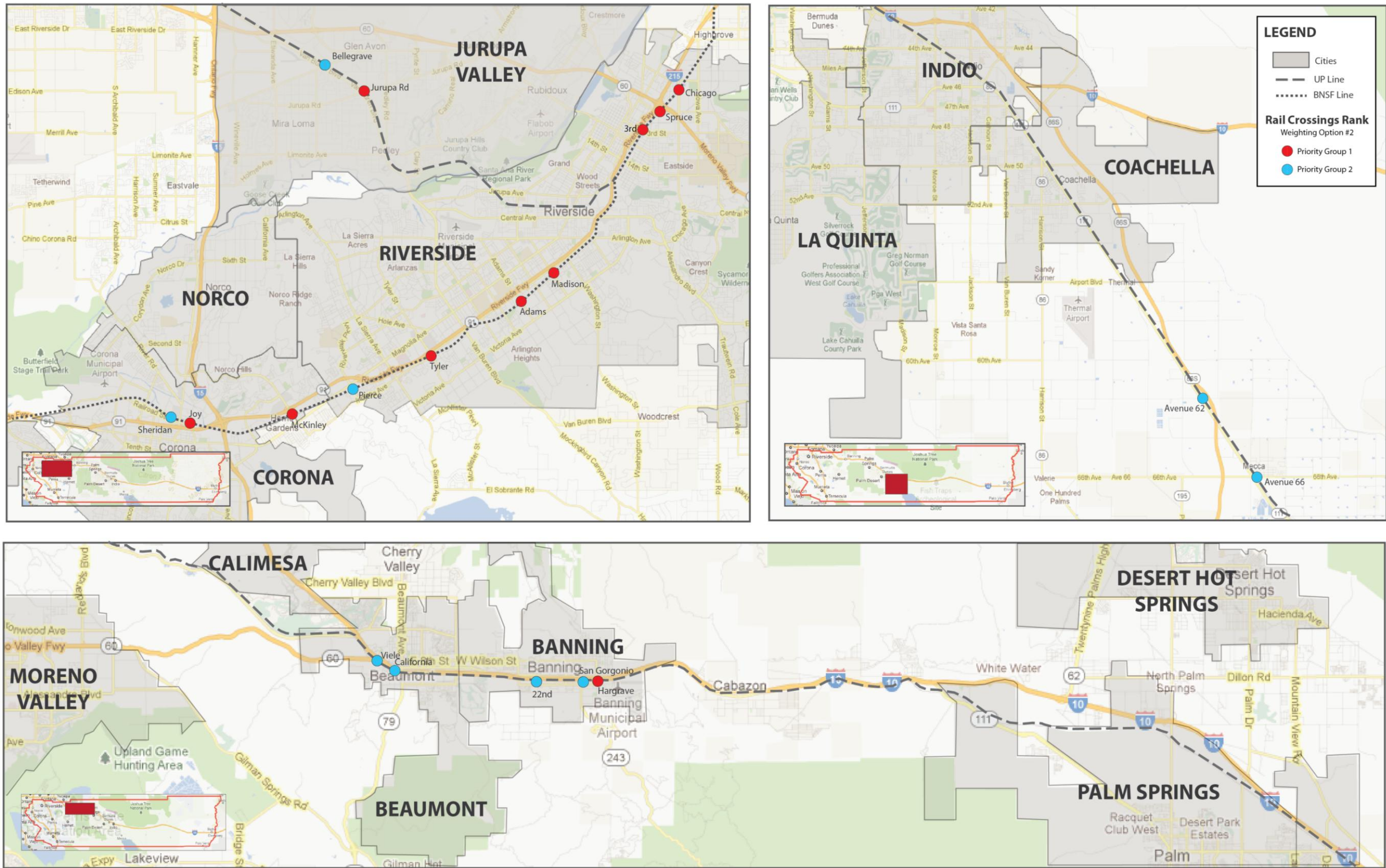
Table 4.4: List of Crossing within 2012 Priority Groups #1 and #2

Rail Line	Cross Street	Jurisdiction	Weighting Option #2		2006
			Score	Ranking	Ranking
BNSF & UP (SB SUB)	Spruce Street	Riverside	3900	1	1
BNSF (SB SUB)	McKinley Street	Corona	3700	1	1
BNSF & UP (SB SUB)	Chicago Avenue	Riverside	3425	1	1
UP (YUMA MAIN)	Hargrave Street	Banning	3250	1	2
BNSF & UP (SB SUB)	3rd Street	Riverside	3250	1	1
BNSF (SB SUB)	Joy Street	Corona	3186	1	4
BNSF (SB SUB)	Madison Street	Riverside	3175	1	2
BNSF (SB SUB)	Adams Street	Riverside	3125	1	2
BNSF (SB SUB)	Tyler Street	Riverside	3025	1	2
UP (LA SUB)	Bellgrave Avenue	Jurupa Valley	2908	2	3
UP (LA SUB)	Jurupa Road	Jurupa Valley	2900	2	1
UP (YUMA MAIN)	22nd Street	Banning	2858	2	2
UP (YUMA MAIN)	Viele Avenue	Beaumont	2833	2	4
UP (YUMA MAIN)	San Geronio Avenue	Banning	2792	2	2
UP (YUMA MAIN)	Avenue 62	Riverside County	2504	2	3
UP (YUMA MAIN)	Avenue 66	Riverside County	2500	2	3
BNSF (SB SUB)	Pierce Street	Riverside	2500	2	3
UP (YUMA MAIN)	California Avenue	Beaumont	2500	2	3

Table 4.5: Quantitative Benefits

Accidents at Railroad Crossings (injury and fatal combined)	20-150	
Noise: 2008 Population affected by train whistles of 78 dB (within 1,600 feet of railroad crossings)	25,400	
Noise: 2008 Population affected by train whistles of 63 dB (within 6,400 feet of railroad crossings)	320,500	
Noise: 2035 Population affected by train whistles of 78 dB (within 1,600 feet of railroad crossings)	67,600	
Noise: 2035 Population affected by train whistles of 63 dB (within 6,400 feet of railroad crossings)	634,000	
	2010	2035
Gate down time (hours per day)	30	90
Vehicle hours of Delay per day	380	2,400
Emissions from Vehicle Delay (in tons per year)		
PM ₁₀	0.01	0.10
NO _x	0.50	3.20
ROG	0.36	2.40
CO	4.52	29.00
Total	5.40	34.70

Figure 4.2: Location of Crossings within 2012 Priority Groups #1 and #2



5.0 Recommendations

While many of the rail crossings in Riverside County are projected to experience high levels of delay under future conditions (2035), the prioritization of rail grade crossings is based on the factors approved by the RCTC Commission. The underlying assumptions for train count and freight forecast were finalized after discussion and collaboration with SCAG RTP and Goods Movement technical staff and consultants, so that the project list identified from this study can be incorporated within SCAG's Goods Movement Plan in a consistent manner.

The 18 crossings that have been identified with the highest priority for improvements (those within Priority Groups #1 and #2) are typically characterized by high train and vehicular traffic volumes, extensive vehicle delay and emissions, and one or more traffic incidents in recent years. These crossings have the highest priority for near-term improvement and it is recommended that these locations be programmed for improvements as funding becomes available. Railroad crossings identified in priority groups #1 and #2 were forwarded to SCAG during its comment period for the 2012 RTP/SCS to include in its Constrained project list, while the rest were recommended to SCAG to include in the agency's list of Strategic projects.

Appendix A:

2011/2012 Observed Train Counts

Counts at Jurupa Avenue
(Wednesday and Thursday – January 2012)

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 12-6005-001 Day_1

Location: Railway Crossing @ Jurupa Road & Van Buren Boulevard

City: Jurupa Valley

Time Interval From: 5:00 AM **To** 8:00 PM

Type of Land use Around Location: *Business/ Residential*

Number of Tracks at Location: 3

Day: Wednesday

Date: 1/11/2012

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
5:20:37	5:20:41	5:21:16	27	Freight	Union Pacific	North	3	96	Yes	No	No
5:24:42	5:24:36	5:24:28									
5:55:22	5:55:27	5:56:02	45	Passenger	Metrolink	North	1	6	Yes	No	No
5:56:20	5:56:16	5:56:08									
6:27:11	6:27:20	6:27:36	45	Passenger	Metrolink	North	1	6	Yes	No	No
6:27:55	6:27:50	6:27:42									
7:03:53	7:03:59	7:04:30	51	Passenger	Metrolink	North	1	6	Yes	No	No
7:04:50	7:04:43	7:04:37									
7:55:19	7:55:25	7:55:39	15	Freight	UPY-GMTX	North	2	0	Yes	No	Yes
7:56:13	7:56:10	7:55:46									
8:10:23	8:10:25	8:10:35	12	Freight	UPY-GMTX	South	2	4	Yes	No	Yes
8:11:11	8:11:06	8:10:57									
8:20:55	8:21:08	8:21:13	12	Freight	UPY-GMTX	South	2	0	Yes	No	Yes
8:21:31	8:21:27	8:21:19									
8:27:23	8:27:30	8:27:34	12	Freight	Union Pacific	North	2	16	Yes	No	No
SAME GATE		8:29:29									
		8:27:51		Passenger	Metrolink	North	1	4	Yes	No	No
8:29:45	8:29:40	8:27:57									
10:27:31	10:27:38	10:27:56	17	Freight	BNSF	South	4	110	Yes	No	No
10:31:34	10:31:28	10:31:21									
11:18:37	11:18:41	11:19:09	24	Freight	BNSF	South	2	78	Yes	No	No
11:21:42	11:21:36	11:21:29									
13:28:02	13:28:04	13:28:15	10	Freight	Union Pacific	South	2	12	Yes	No	No
13:32:19	13:32:15	13:32:05									
14:22:38	14:23:40	14:23:48	50	Passenger	Metrolink	South	2	6	Yes	No	No
14:24:09	14:24:05	14:23:57									
15:20:26	15:20:27	15:20:38	60	Passenger	Metrolink	North	2	6	Yes	No	No
15:21:10	15:21:06	15:21:01									
17:15:08	17:15:12	17:15:18	60	Passenger	Metrolink	South	2	5	Yes	No	No
17:15:33	17:15:28	17:15:23									
17:58:08	17:58:13	17:58:19	57	Passenger	Metrolink	South	1	6	Yes	No	No
17:58:33	17:58:29	17:58:24									
18:37:21	18:37:26	18:37:31	56	Passenger	Metrolink	South	1	6	Yes	No	No
18:37:43	18:37:39	18:37:35									
19:06:20	19:06:24	19:06:30	50	Passenger	Metrolink	South	1	6	Yes	No	No
19:06:44	19:06:39	19:06:35									
19:36:17	19:36:21	19:36:29	40	Passenger	Metrolink	South	1	5	Yes	No	No
19:36:45	19:36:41	19:36:36									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 12-6005-001 Day_2

Location: Railway Crossing @ Jurupa Road & Van Buren Boulevard

City: Jurupa Valley

Time Interval From: 5:00 AM **To** 8:00 PM

Type of Land use Around Location: *Business/ Residential*

Number of Tracks at Location: 3

Day: Thursday

Date: 1/12/2012

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
5:56:58	5:57:03	5:57:34	53	Passenger	Metrolink	North	1	6	Yes	No	No
5:57:51	5:57:48	5:57:41									
6:27:03	6:27:08	6:27:46	55	Passenger	Metrolink	North	1	6	Yes	No	No
6:28:07	6:28:04	6:27:57									
7:02:21	7:02:26	7:02:57	57	Passenger	Metrolink	North	1	6	Yes	No	No
7:03:10	7:03:07	7:03:02									
7:34:42	7:34:48	7:35:25	39	Freight	Union Pacific	North	4	80	Yes	No	No
7:38:51	7:38:45	7:38:30									
7:54:21	7:54:26	7:54:55	12	Freight	Union Pacific	North	2	0	Yes	No	No
7:55:15	7:55:10	7:55:03									
8:28:22	8:28:26	8:29:06	59	Passenger	Metrolink	North	1	4	Yes	No	No
8:29:21	8:29:18	8:29:13									
8:39:15	8:39:20	8:39:38	16	Freight	Union Pacific	South	2	9	Yes	No	No
8:41:20	8:40:15	8:40:07									
9:57:02	9:57:07	9:57:15	41	Freight	Union Pacific	North	5	69	Yes	No	No
9:59:13	9:59:09	9:59:05									
12:41:17	12:41:23	12:41:35	61	Freight	Union Pacific	South	4	126	Yes	No	No
12:43:24	12:43:20	12:43:16									
13:57:16	13:57:20	13:57:31	47	Freight	Union Pacific	South	3	78	Yes	No	No
13:58:35	13:58:30	13:58:25									
14:14:55	14:14:59	14:15:07	72	Passenger	Metrolink	South	2	5	Yes	No	No
14:15:18	14:15:15	14:15:12									
15:20:09	15:20:13	15:20:24	59	Passenger	Metrolink	North	2	5	Yes	No	No
15:20:39	15:20:35	15:20:30									
17:19:31	17:19:37	17:19:45	76	Passenger	Metrolink	South	2	3	Yes	No	No
17:20:02	17:19:57	17:19:51									
17:56:47	17:56:51	17:56:59	72	Passenger	Metrolink	South	2	5	Yes	No	No
17:57:16	17:57:11	17:57:05									
18:35:25	18:35:28	18:35:34	76	Passenger	Metrolink	South	2	5	Yes	No	No
18:35:50	18:35:46	18:35:40									
18:56:20	18:56:24	18:56:41	32	Freight	Union Pacific	South	4	106	Yes	No	No
18:59:35	18:59:29	18:59:21									
19:04:36	19:04:40	19:04:47	70	Passenger	Metrolink	South	1	6	Yes	No	No
19:05:02	19:04:58	19:04:53									
19:42:31	19:42:36	19:42:42	77	Passenger	Metrolink	South	1	4	Yes	No	No
19:42:59	19:42:54	19:42:48									

Counts at Riverside Avenue
(Wednesday and Thursday – January 2012)

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 12-6005-002 Day_1

Location: Railway Crossing @ Riverside Avenue

Day: Wednesday

City: Riverside

Date: 1/11/2012

Time Interval From: 5:00 AM **To** 8:00 PM

Type of Land use Around Location: Residential

Number of Tracks at Location: 1

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
9:18:37	Fire Truck		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
5:47:25	5:47:28	5:47:32	48	Passenger	Metrolink	West	1	6	Yes	No	No
5:47:43	5:47:39	5:47:36									
6:05:00	6:05:06	6:06:14	46	Freight	Union Pacific	East	4	94	Yes	No	No
6:08:17	6:08:14	6:08:10									
6:18:47	6:18:49	6:18:58	46	Passenger	Metrolink	West	1	6	Yes	No	No
6:19:11	6:19:09	6:19:05									
6:54:14	6:54:20	6:54:30	44	Passenger	Metrolink	West	1	6	Yes	No	No
6:54:45	6:54:41	6:54:36									
8:19:00	8:19:04	8:19:23	45	Passenger	Metrolink	West	1	4	Yes	No	No
8:19:36	8:19:31	8:19:27									
10:49:15	10:49:23	10:49:42	20	Freight	BNSF	East	4	110	Yes	No	No
10:54:12	10:54:04	10:53:56									
11:47:40	11:47:59	11:48:07	28	Freight	BNSF	East	2	78	Yes	No	No
11:49:19	11:49:13	11:49:07									
14:33:28	14:33:38	14:33:50	40	Passenger	Metrolink	East	2	6	Yes	No	No
14:34:15	14:34:09	14:34:00									
15:11:28	15:11:32	15:11:40	25	Passenger	Metrolink	West	2	6	Yes	No	No
15:12:07	15:12:00	15:11:54									
17:25:27	17:25:31	17:25:46	39	Passenger	Metrolink	East	2	5	Yes	No	No
17:26:06	17:26:02	17:25:58									
18:10:10	18:10:15	18:10:35	29	Passenger	Metrolink	East	1	6	Yes	No	No
18:10:56	18:10:52	18:10:45									
18:47:01	18:47:08	18:47:25	31	Passenger	Metrolink	East	1	6	Yes	No	No
18:47:48	18:47:40	18:47:33									
19:07:50	19:07:55	NO TRAIN									
19:08:36	19:08:30										
19:16:20	19:16:23	19:16:40	28	Passenger	Metrolink	East	1	6	Yes	No	No
19:17:15	19:17:11	19:16:55									
19:46:10	19:46:13	19:46:38	24	Passenger	Metrolink	East	1	5	Yes	No	No
19:47:05	19:46:59	19:46:45									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 12-6005-002 Day_2

Location: Railway Crossing @ Riverside Avenue

Day: Thursday

City: Riverside

Date: 1/12/2012

Time Interval From: 5:00 AM **To** 8:00 PM

Type of Land use Around Location: Residential

Number of Tracks at Location: 1

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
5:46:41	5:46:49	5:47:12	43	Passenger	Metrolink	West	1	6	Yes	No	No
5:47:29	5:47:22	5:47:19									
6:06:30	6:06:34	6:06:46	30	Freight	Union Pacific	East	4	80	Yes	No	No
6:09:28	6:09:22	6:09:15									
6:18:15	6:18:19	6:18:30	47	Passenger	Metrolink	West	1	6	Yes	No	No
6:18:55	6:18:49	6:18:35									
6:53:02	6:53:06	6:53:30	46	Passenger	Metrolink	West	1	6	Yes	No	No
6:53:44	6:53:41	6:53:35									
7:26:06	7:26:09	7:26:28	39	Freight	Union Pacific	West	4	80	Yes	No	No
7:28:42	7:28:37	7:28:32									
7:55:57	7:56:04	NO TRAIN									
7:56:48	7:56:42										
8:19:20	8:19:25	8:19:48	48	Passenger	Metrolink	West	1	4	Yes	No	No
8:19:59	8:19:55	8:19:52									
9:02:03	9:02:13	9:02:25	17	Freight	Union Pacific	East	2	9	Yes	No	No
9:03:10	9:03:03	9:02:55									
9:46:50	9:47:01	9:47:10	28	Freight	Union Pacific	West	5	69	Yes	No	No
9:49:09	9:49:01	9:48:52									
10:36:03	10:36:13	10:36:20	40	Freight	Union Pacific	West	1	8	Yes	No	No
10:36:48	10:36:40	10:36:29									
12:51:44	12:51:53	12:51:58	26	Freight	Union Pacific	East	4	126	Yes	No	No
12:57:19	12:57:11	12:56:59									
14:09:22	14:09:30	14:09:50	24	Freight	Union Pacific	East	3	78	Yes	No	No
14:16:21	14:16:16	14:16:00									
14:24:43	14:24:51	14:25:10	46	Passenger	Metrolink	East	2	5	Yes	No	No
14:25:38	14:25:32	14:25:20									
15:11:59	15:12:06	15:12:13	50	Passenger	Metrolink	West	2	5	Yes	No	No
15:12:31	15:12:25	15:12:20									
17:30:30	17:30:39	17:30:57	36	Passenger	Metrolink	East	2	3	Yes	No	No
17:31:29	17:31:22	17:31:05									
18:06:31	18:06:37	18:06:58	37	Passenger	Metrolink	East	2	5	Yes	No	No
18:07:29	18:07:21	18:07:09									
18:45:07	18:45:11	18:45:27	40	Passenger	Metrolink	East	2	5	Yes	No	No
18:45:50	18:45:44	18:45:39									
19:14:09	19:14:14	19:14:32	35	Passenger	Metrolink	East	1	6	Yes	No	No
19:14:58	19:14:51	19:14:40									
19:24:31	19:24:39	19:24:54	27	Freight	Union Pacific	East	4	106	Yes	No	No
19:27:58	19:27:50	19:27:43									
19:53:05	19:53:12	19:53:27	40	Passenger	Metrolink	East	1	4	Yes	No	No
19:53:59	19:53:51	19:53:35									

Counts at McKinley Street
(Wednesday and Thursday – October 2011)

NATIONAL DATA & SURVEYING SERVICES

Train Count
Project No. 11-6107-001

Location: McKinley Street Crossing
City: Corona
Time Interval From: 12:00 AM **To** 23:59:00 PM
Type of Land use Around Location: Residential/ Commercial
Number of Tracks at Location: 2

Day: Wednesday
Date: 10/26/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
11:58:14	Ambulance		
16:05:20	Ambulance		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:28:10	0:28:14	0:28:23	45	FREIGHT	UNION	WEST	2	80	Y	N	N
0:31:10	0:31:10	0:31:07									
1:08:54	1:08:56	1:09:07									
1:11:23	1:11:22	1:11:19	50	FREIGHT	BNSF	EAST	4	115	Y	N	N
1:20:48	1:20:50	1:20:57	44	FREIGHT	BNSF	EAST	4	118	Y	N	N
1:24:10	1:24:15	1:22:38									
1:43:13	1:43:19	1:43:30									
1:45:31	1:45:33	1:45:28	25	FREIGHT	BNSF	WEST	3	40	Y	N	N
1:55:06	1:55:10	1:55:15	45	FREIGHT	BNSF	WEST	5	154	Y	N	N
2:00:24	2:00:23	1:58:20									
1:58:09	1:58:15	1:58:20									
2:01:49	2:01:40	2:00:30	47	FREIGHT	BNSF	EAST	6	142	Y	N	N
2:53:37	2:53:40	2:53:50	58	PASSENGER	AMTRAK	WEST	1	6	Y	N	N
2:54:13	2:54:10	2:54:00									
3:18:20	3:18:22	3:18:40									
3:20:42	3:20:41	3:20:12	45	FREIGHT	BNSF	EAST	4	78	Y	N	N
3:45:53	3:45:53	3:45:56	46	FREIGHT	USBF	EAST	5	130	Y	N	N
3:47:11	3:47:10	3:47:03									
4:01:15	4:01:17	4:01:20									
4:03:06	4:03:05	4:03:01	27	FREIGHT	USBF	EAST	3	55	Y	N	N
4:25:18	4:25:19	4:25:28	45	FREIGHT	USBF	WEST	6	174	Y	N	N
4:29:31	4:29:30	4:29:28									
4:49:10	4:49:11	4:49:19									
4:51:27	4:51:26	4:51:22	50	FREIGHT	USBF	EAST	3	96	Y	N	N
5:01:36	5:01:37	5:01:39	51	FREIGHT	USBF	EAST	5	92	Y	N	N
5:03:41	5:03:40	5:03:37									
5:19:45	5:19:47	5:19:49									
5:22:04	5:22:03	5:21:58	48	FREIGHT	USBF	EAST	5	110	Y	N	N
5:22:08	5:22:09	5:22:10	59	PASSENGER	METROLINK	WEST	1	5	Y	N	N
5:22:21	5:22:20	5:22:19									
5:32:11	5:32:12	5:32:14									
5:34:28	5:34:27	5:34:25	48	FREIGHT	USBF	EAST	4	113	Y	N	N
5:44:56	5:44:57	5:45:01	58	PASSENGER	METROLINK	WEST	1	7	Y	N	N
5:45:13	5:45:12	5:45:08									
5:53:07	5:53:13	5:53:34									
5:54:01	5:53:56	5:53:46	58	PASSENGER	METROLINK	WEST	1	7	Y	N	N
6:32:15	6:32:23	6:32:43	58	PASSENGER	METROLINK	WEST	1	7	Y	N	N
6:33:12	6:33:07	6:33:01									
6:44:02	6:44:08	6:44:34									
6:45:00	6:44:55	6:44:42	58	PASSENGER	METROLINK	WEST	2	3	Y	N	N
6:53:11	6:53:16	6:53:41	46	FREIGHT	BNSF	WEST	1	63	Y	N	N
6:54:59	6:54:53	6:54:39									
7:00:40	7:00:45	7:01:03									
7:01:23	7:01:21	7:01:17	53	PASSENGER	METROLINK	EAST	1	5	Y	N	N
7:11:58	7:12:03	7:12:32	43	FREIGHT	BNSF	EAST	4	170	Y	N	N
7:15:01	7:14:56	7:14:49									
7:23:26	7:23:30	7:23:51									
7:24:24	7:24:19	7:24:05	53	PASSENGER	AMTRAK	WEST	1	10	Y	N	N
7:34:29	7:34:32	7:34:56	58	PASSENGER	METROLINK	EAST	1	5	Y	N	N
7:35:13	7:35:10	7:35:08									
7:41:28	7:41:33	7:41:56									
7:42:21	7:42:16	7:42:03	49	PASSENGER	METROLINK	WEST	2	3	Y	N	N
7:43:37	7:43:41	7:44:08	41	FREIGHT	BNSF	EAST	4	91	Y	N	N
7:45:44	7:45:40	7:45:35									
7:50:40	7:50:45	7:51:13									
7:53:05	7:53:00	7:52:45	36	FREIGHT	BNSF	WEST	4	77	Y	N	N
8:12:28	8:12:33	8:13:00	41	FREIGHT	BNSF	WEST	2	130	Y	N	N
8:15:10	8:15:05	8:14:51									

Train Count
Project No. 11-6107-001

Number of Tracks at Location: 2

Date: 10/26/2011

TRAIN INFO											
TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
8:38:11	8:38:13	8:38:41	48	FREIGHT	BNSF	EAST	4	93	Y	N	N
8:40:21	8:40:16	8:40:13									
8:56:47	8:56:51	8:57:20									
8:59:03	8:58:58	8:58:42	51	FREIGHT	BNSF	WEST	4	107	Y	N	N
9:12:56	9:13:03	9:13:29	46	FREIGHT	BNSF	WEST	4	134	Y	N	N
9:15:53	9:15:48	9:15:30									
9:31:28	9:31:34	9:32:00									
9:33:34	9:33:30	9:33:25	50	FREIGHT	BNSF	EAST	4	95	Y	N	N
10:05:52	10:05:56	10:06:25	58	PASSENGER	METROLINK	EAST	1	4	Y	N	N
10:06:39	10:06:36	10:06:32									
10:08:48	10:08:50	10:09:09									
10:09:53	10:09:49	10:09:36	41	FREIGHT	BNSF	EAST	3	4	Y	N	N
10:56:18	10:56:21	10:56:52	58	PASSENGER	METROLINK	WEST	2	3	Y	N	N
10:57:17	10:57:11	10:56:58									
11:52:40	11:52:44	11:53:15									
11:55:31	11:55:25	11:55:12	29	FREIGHT	BNSF	EAST	3	88	Y	N	N
11:55:00	11:55:04	11:55:29	51	PASSENGER	METROLINK	WEST	2	4	Y	N	N
11:56:10	11:56:05	11:55:53									
12:03:24	12:03:28	12:04:02									
12:04:25	12:04:18	12:04:10	41	FREIGHT	BNFS	WEST	2	2	Y	N	N
12:54:38	12:54:40	12:55:34	36	FREIGHT	BNFS	WEST	4	145	Y	N	N
12:58:01	12:57:56	12:57:40									
13:35:16	13:35:20	13:35:45									
13:37:16	13:37:12	13:36:58	51	FREIGHT	BNFS	WEST	4	72	Y	N	N
14:03:56	14:04:01	14:04:40	58	PASSENGER	METRO LINK	EAST	2	48	Y	N	N
14:05:06	14:05:01	14:04:48									
14:15:01	14:15:05	14:15:34									
14:17:18	14:17:15	14:17:10	50	FREIGHT	BNFS	EAST	4	108	Y	N	N
14:35:27	14:35:32	14:36:03	49	FREIGHT	BNFS	EAST	4	115	Y	N	N
14:37:48	14:37:42	14:37:32									
14:43:59	14:44:06	14:44:30									
14:44:56	14:44:48	14:44:38	59	PASSENGER	METRO LINK	WEST	2	5	Y	N	N
14:54:20	14:54:27	14:54:53	49	FREIGHT	BNFS	WEST	2	115	Y	N	N
14:56:45	14:56:38	14:56:23									
14:58:45	14:58:54	14:59:15									
14:59:37	14:59:31	14:59:21	60	PASSENGER	METRO LINK	EAST	2	5	Y	N	N
15:43:15	15:43:20	15:43:55	59	PASSENGER	METRO LINK	WEST	1	5	Y	N	N
15:44:06	15:44:01	15:43:59									
15:54:36	15:54:41	15:55:10									
15:56:33	15:56:28	15:56:24	51	FREIGHT	BNFS	EAST	2	92	Y	N	N
17:05:54	17:06:03	17:06:26	59	PASSENGER	METRO LINK	EAST	2	4	Y	N	N
17:07:09	17:07:05	17:06:30									
17:20:39	17:20:48	17:21:10									
17:23:41	17:23:37	17:23:15	44	FREIGHT	BNFS	WEST	4	133	Y	N	N
17:27:35	17:27:40	17:27:51	58	PASSENGER	METRO LINK	EAST	1	4	Y	N	N
17:28:55	17:28:48	17:28:15									
17:48:02	17:48:07	17:48:12									
17:48:58	17:48:54	17:48:41	59	PASSENGER	METRO LINK	EAST	1	5	Y	N	N
17:59:27	17:59:37	17:59:45	48	FREIGHT	BNFS	EAST	6	106	Y	N	N
18:01:57	18:01:52	18:01:32									
18:05:40	18:05:45	18:06:10									
18:06:52	18:06:45	18:06:38	60	PASSENGER	METRO LINK	WEST	2	4	Y	N	N
18:44:36	18:44:39	18:45:00	59	PASSENGER	METRO LINK	EAST	2	2	Y	N	N
18:45:17	18:45:12	18:45:05									
18:49:38	18:49:46	18:50:00									
18:53:32	18:53:25	18:53:20	25	FREIGHT	BNSF	EAST	4	107	Y	N	N
18:58:23	18:58:30	18:58:55	41	FREIGHT	BNSF	WEST	4	63	Y	N	N
19:00:37	19:00:32	19:00:00									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-001

Location: McKinley Street Crossing

City: Corona

Day: Wednesday

Date: 10/26/2011

Time Interval From: 12:00 AM To 23:59:00 PM

Type of Land use Around Location: Residential/ Commercial

Number of Tracks at Location: 2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
11:58:14	Ambulance		
16:05:20	Ambulance		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
19:08:10	19:08:16	19:08:42	23	FREIGHT	BNSF	WEST	6	98	Y	N	N
19:13:20	19:13:14	19:12:52									
19:27:15	19:27:36	19:27:52	20	FREIGHT	BNSF	WEST	3	99	Y	N	N
19:30:45	19:30:39	19:30:21									
19:36:45	19:36:49	19:37:10	57	PASSENGER	METRO LINK	EAST	2	3	Y	N	N
19:37:24	19:37:20	19:37:15									
19:51:50	19:51:57	19:52:24	59	PASSENGER	AMTRAK	EAST	2	8	Y	N	N
19:52:53	19:52:47	19:52:36									
19:58:14	19:58:20	19:58:45	49	FREIGHT	UNION	WEST	2	73	Y	N	N
20:00:08	20:00:01	19:59:49									
20:12:24	20:12:25	20:12:54	46	FREIGHT	BNSF	EAST	4	112	Y	N	N
20:15:00	20:14:56	20:14:24									
20:24:02	20:24:07	20:24:36	50	FREIGHT	BNSF	EAST	4	105	Y	N	N
20:26:20	20:26:17	20:26:10									

Train Count
Project No. 11-6107-001

Number of Tracks at Location: 2

Date: 10/27/2011

TRAIN INFO											
TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:31:17	0:31:23	0:31:36	48	FREIGHT	BNSF	EAST	5	100	Y	N	N
0:33:25	0:33:19	0:33:07									
0:59:33	0:59:41	1:00:06									
1:01:27	1:01:21	1:01:08	44	FREIGHT	BNSF	WEST	4	66	Y	N	N
1:09:21	1:09:33	1:09:54	48	FREIGHT	BNSF	EAST	4	129	Y	N	N
1:11:58	1:11:52	1:11:48									
Train at same time in opposite direction											
1:38:36	1:38:46	1:39:08	49	FREIGHT	BNSF	EAST	5	134	Y	N	N
1:41:41	1:41:36	1:41:25									
1:45:22	1:45:32	1:45:56									
1:48:23	1:48:18	1:48:12	46	FREIGHT	BNSF	WEST	5	160	Y	N	N
2:21:40	2:21:49	2:22:10	51	FREIGHT	BNSF	EAST	4	57	Y	N	N
2:23:27	2:23:23	2:23:17									
2:35:47	2:35:52	2:35:57									
2:36:53	2:36:46	2:36:43	50	FREIGHT	BNSF	EAST	4	88	Y	N	N
2:42:56	2:48:02	2:48:26	51	FREIGHT	BNSF	EAST	4	130	Y	N	N
2:50:40	2:50:34	2:50:02									
Train at same time in opposite direction											
3:00:54	3:00:59	3:01:29	48	FREIGHT	BNSF	WEST	4	76	Y	N	N
3:02:58	3:02:51	3:02:35									
3:11:01	3:11:07	3:11:42									
3:15:00	3:14:54	3:14:36	22	FREIGHT	BNSF	WEST	4	88	Y	N	N
3:43:22	3:43:28	3:43:48	24	FREIGHT	BNSF	EAST	7	60	Y	N	N
3:45:32	3:45:25	3:45:22									
4:02:32	4:02:38	4:03:03									
4:04:29	4:04:23	4:04:19	52	FREIGHT	BNSF	EAST	3	83	Y	N	N
4:16:51	4:16:57	4:17:27	50	FREIGHT	BNSF	EAST	4	137	Y	N	N
4:19:25	4:19:20	4:19:14									
5:17:12	5:17:17	5:17:46									
5:19:46	5:19:42	5:19:37	49	FREIGHT	BNSF	EAST	4	126	Y	N	N
5:21:13	5:21:16	5:21:42	60	PASSENGER	METROLINK	WEST	2	3	Y	N	N
5:22:08	5:22:02	5:21:47									
5:30:09	5:30:14	5:30:30									
5:32:11	5:32:09	5:32:07	50	FREIGHT	BNSF	EAST	4	115	Y	N	N
5:43:09	5:43:11	5:43:44	62	PASSENGER	METROLINK	WEST	3	3	Y	N	N
5:44:09	5:44:03	5:43:49									
5:52:20	5:52:25	5:52:51									
5:53:19	5:53:12	5:52:58	60	PASSENGER	METROLINK	WEST	2	5	Y	N	N
5:57:21	5:57:27	5:57:55	49	FREIGHT	BNSF	EAST	2	127	Y	N	N
5:59:43	5:59:37	5:59:35									
6:01:08	6:01:15	6:01:24									
6:03:31	6:03:24	6:03:15	52	FREIGHT	BNSF	WEST	2	96	Y	N	N
6:28:05	6:28:13	6:28:49	62	PASSENGER	METROLINK	WEST	1	5	Y	N	N
6:30:04	6:29:58	6:29:52									
6:41:46	6:41:52	6:42:08									
6:42:45	6:42:39	6:42:16	60	PASSENGER	METROLINK	WEST	1	4	Y	N	N
6:48:24	6:48:29	6:48:57	60	PASSENGER	METROLINK	EAST	1	4	Y	N	N
6:49:37	6:49:32	6:49:05									
6:50:30	6:50:36	6:50:56									
6:52:22	6:52:16	6:52:04	44	FREIGHT	BNSF	WEST	3	57	Y	N	N
7:04:40	7:04:46	7:05:10	62	PASSENGER	AMTRAK	WEST	1	10	Y	N	N
7:05:41	7:05:35	7:05:20									
7:30:00	7:30:38	7:30:45									
7:31:21	7:31:16	7:31:05	60	PASSENGER	METROLINK	EAST	1	4	Y	N	N
7:39:38	7:39:45	7:40:09	58	PASSENGER	METROLINK	WEST	1	4	Y	N	N
7:40:37	7:40:31	7:40:16									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-001

Location: McKinley Street Crossing

City: Corona

Day: Thursday

Date: 10/27/2011

Time Interval From: 12:00 AM **To** 23:59:00 PM

Type of Land use Around Location: Residential/ Commercial

Number of Tracks at Location: 2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
8:07:08	Police	21:25:26	Ambulance
15:53:02	Rail Truck	22:55:00	Police
17:19:03	Ambulance		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
7:51:06	7:51:12	7:51:40	48	FREIGHT	BNSF	WEST	2	90	Y	N	N
7:53:30	7:53:25	7:53:12									
8:02:30	8:02:35	8:02:48	44	FREIGHT	BNSF	WEST	4	137	Y	N	N
8:05:20	8:05:16	8:04:58									
8:13:04	8:13:12	8:13:34	49	FREIGHT	BNSF	WEST	4	108	Y	N	N
8:15:32	8:15:28	8:15:12									
8:45:31	8:45:36	8:46:03	48	FREIGHT	BNSF	WEST	4	114	Y	N	N
8:47:58	8:47:54	8:47:35									
9:09:33	9:09:39	9:10:18	22	FREIGHT	BNSF	EAST	4	122	Y	N	N
9:14:36	9:14:31	9:14:16									
9:23:05	9:23:09	9:23:40	55	PASSENGER	METROLINK	EAST	1	4	Y	N	N
9:23:52	9:23:48	9:23:45									
10:07:05	10:07:10	10:07:36	58	PASSENGER	METROLINK	EAST	1	4	Y	N	N
10:07:49	10:07:45	10:07:40									
10:54:25	10:54:28	10:54:57	44	FREIGHT	BNSF	EAST	4	125	Y	N	N
10:56:58	10:56:54	10:56:46									
10:57:31	10:57:35	10:57:40	59	PASSENGER	METROLINK	WEST	1	4	Y	N	N
10:58:10	10:58:06	10:57:59									
11:03:10	11:03:16	11:03:53	25	FREIGHT	SANTA FE	EAST	2	8	Y	N	N
11:04:58	11:04:54	11:04:40									
11:06:46	11:06:50	11:06:54	10	FREIGHT	SANTA FE	WEST	2	8	Y	N	N
11:08:09	11:08:05	11:08:01									
11:11:00	11:11:05	11:11:34	37	FREIGHT	BNSF	WEST	5	91	Y	N	N
11:13:37	11:13:33	11:13:16									
11:52:02	11:52:07	11:52:32	60	PASSENGER	METROLINK	WEST	4	4	Y	N	N
11:52:49	11:52:45	11:52:38									
12:02:13	12:02:18	12:02:19	28	FREIGHT	BNSF	EAST	2	8	Y	N	N
12:02:47	12:02:46	12:02:45									
13:13:57	13:13:58	13:13:59	45	FREIGHT	BNSF	WEST	3	114	Y	N	N
13:16:03	13:16:01	13:15:59									
13:37:13	13:37:21	13:37:50	21	FREIGHT	BNSF	WEST	2	8	Y	N	N
13:38:37	13:38:34	13:38:32									
13:50:42	13:50:45	13:50:47	60	PASSENGER	METROLINK	EAST	2	4	Y	N	N
13:51:01	13:51:04	13:50:59									
14:08:26	14:08:35	14:08:38	49	FREIGHT	BNSF	EAST	4	107	Y	N	N
14:10:35	14:10:32	14:10:27									
14:23:06	14:23:10	14:23:15	50	FREIGHT	BNSF	EAST	4	134	Y	N	N
14:25:34	14:25:32	14:25:30									
14:37:54	14:37:56	14:38:20	48	FREIGHT	BNSF	EAST	3	105	Y	N	N
14:40:12	14:40:19	14:40:06									
14:45:39	14:45:45	14:45:50	59	PASSENGER	METROLINK	WEST	3	3	Y	N	N
14:46:20	14:46:17	14:46:12									
14:59:26	14:59:29	14:59:32	59	PASSENGER	METROLINK	EAST	2	4	Y	N	N
14:59:56	14:59:51	14:59:46									
15:06:05	15:06:10	15:06:18	41	FREIGHT	SANTA FE	WEST	4	136	Y	N	N
15:09:49	15:09:43	15:09:28									
15:45:25	15:45:30	15:45:48	60	PASSENGER	METROLINK	WEST	2	4	Y	N	N
15:46:07	15:46:01	15:45:58									
16:02:29	16:02:31	16:02:34	47	FREIGHT	SANTA FE	WEST	4	101	Y	N	N
16:04:14	16:04:12	16:04:09									
17:08:51	17:08:54	17:09:03	60	PASSENGER	METROLINK	EAST	2	4	Y	N	N
17:09:27	17:09:24	17:09:20									
17:26:39	17:26:41	17:26:58	60	PASSENGER	METROLINK	EAST	2	4	Y	N	N
17:27:26	17:27:22	17:27:19									
17:50:13	17:50:16	17:50:20	59	PASSENGER	METROLINK	EAST	2	4	Y	N	N
17:50:42	17:50:40	17:50:36									
18:01:09	18:01:12	18:01:27	51	FREIGHT	BNSF	EAST	5	83	Y	N	N
18:06:13	18:03:10	18:03:06									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-001

Location: McKinley Street Crossing

City: Corona

Day: Thursday

Date: 10/27/2011

Time Interval From: 12:00 AM To 23:59:00 PM

Type of Land use Around Location: Residential/ Commercial

Number of Tracks at Location: 2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
8:07:08	Police	21:25:26	Ambulance
15:53:02	Rail Truck	22:55:00	Police
17:19:03	Ambulance		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
18:09:05	18:09:11	18:09:16	59	PASSENGER	METROLINK	WEST	2	5	Y	N	N
18:09:34	18:09:31	18:09:28									
18:12:06	18:12:16	18:12:21	42	FREIGHT	BNSF	EAST	4	119	Y	N	N
18:14:07	18:14:04	18:14:01									
18:18:01	18:18:06	18:18:10	50	FREIGHT	BNSF	WEST	2	63	Y	N	N
18:19:20	18:19:16	18:19:10									
18:32:10	18:32:14	18:32:39	69	FREIGHT	BNSF	WEST	3	49	Y	N	N
18:34:00	18:33:57	18:33:43									
18:34:56	18:35:01	18:35:25	61	PASSENGER	METROLINK	EAST	1	4	Y	N	N
18:36:06	18:36:01	18:35:35									
18:45:01	18:45:09	18:45:31	50	PASSENGER	METROLINK	EAST	1	4	Y	N	N
18:46:06	18:46:01	18:45:42									
18:51:42	18:51:47	18:52:15	27	FREIGHT	BNSF	WEST	6	57	Y	N	N
18:54:42	18:54:38	18:54:21									
19:21:32	19:21:36	19:22:03	45	FREIGHT	BNSF	WEST	8	39	Y	N	N
19:23:12	19:23:07	19:22:52									
19:32:16	19:32:21	19:32:48	60	PASSENGER	AMTRAK	EAST	2	13	Y	N	N
19:33:20	19:33:16	19:33:04									
19:42:07	19:42:11	19:42:39	59	PASSENGER	METROLINK	EAST	2	4	Y	N	N
19:42:53	19:42:50	19:42:45									
19:51:03	19:51:09	19:51:35	40	FREIGHT	BNSF	EAST	4	103	Y	N	N
19:54:13	19:54:09	19:53:36									
20:02:05	20:02:11	20:02:38	41	FREIGHT	BNSF	EAST	2	131	Y	N	N
20:04:11	20:04:06	20:04:00									
21:18:16	21:18:20	21:18:49	49	FREIGHT	BNSF	EAST	4	130	Y	N	N
21:21:15	21:21:10	21:20:38									
22:00:14	22:00:17	22:00:45	46	FREIGHT	BNSF	WEST	4	42	Y	N	N
22:01:47	22:01:41	22:01:26									

Counts at Sunset Avenue
(Wednesday and Thursday – October 2011)

Train Count
Project No. 11-6107-004

Day: Wednesday
Date: 10/26/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
11:41:34	Rail Truck		

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:15:21 0:18:50	0:15:29 0:18:39	0:15:37 0:18:32	24	FREIGHT	UNION PACIFIC	EAST	3	107	Y	N	N
0:50:37 0:55:20	0:50:48 0:55:13	0:51:04 0:55:04	23	FREIGHT	CSX	WEST	2	102	Y	N	N
1:08:18 1:14:07	1:08:25 1:13:58	1:08:39 1:13:48	16	FREIGHT	UNION PACIFIC	WEST	3	106	Y	N	N
1:22:55 1:26:13	1:23:03 1:26:07	1:23:14 1:26:00	27	FREIGHT	UNION PACIFIC	EAST	3	103	Y	N	N
3:14:23 3:18:14	3:14:34 3:18:03	3:14:50 3:17:49	25	FREIGHT	UNION PACIFIC/ CSX	EAST	3	104	Y	N	N
4:45:12 4:48:09	4:45:27 4:48:07	4:45:41 4:47:58	33	FREIGHT	UNION PACIFIC	EAST	1	68	Y	N	N
4:56:31 4:57:57	4:56:45 4:57:54	4:56:59 4:57:46	32	FREIGHT	UNION PACIFIC	EAST	2	35	Y	N	N
5:10:42 5:13:05	5:10:54 5:13:02	5:11:13 5:12:49	34	FREIGHT	UNION PACIFIC	EAST	3	71	Y	N	N
5:18:28 5:22:53	5:18:42 5:22:51	5:18:55 5:22:37	22	FREIGHT	UNIOPN PACIFIC	WEST	2	111	Y	N	N
5:43:47 5:44:32	5:43:58 5:44:29	5:44:07 5:44:16	55	PASSENGER	METROLINK	WEST	2	10	Y	N	N
5:57:01 6:00:18	5:57:15 6:00:16	5:57:30 6:00:02	32	FREIGHT	UNION PACIFIC	EAST	4	113	Y	N	N
6:13:40 6:16:32	6:13:52 6:16:30	6:14:07 6:16:16	27	FREIGHT	UNION PACIFIC	WEST	2	79	Y	N	N
6:58:52 7:01:34	6:59:05 7:01:32	6:59:20 7:01:18	32	FREIGHT	UNION PACIFIC	EAST	4	89	Y	N	N
7:09:39 7:10:53	7:09:52 7:10:50	7:10:05 7:10:36	37	FREIGHT	UNION PACIFIC	EAST	2	36	Y	N	N
7:46:17 7:48:45	7:46:30 7:48:43	7:46:46 7:48:29	32	FREIGHT	UNION PACIFIC	EAST	3	108	Y	N	N
7:47:23 7:50:14	7:47:40 7:50:10	7:47:56 7:49:56	26	FREIGHT	UNION PACIFIC	WEST	4	70	Y	N	N
8:00:44 8:03:03	8:00:52 8:02:57	8:01:09 8:02:49	31	FREIGHT	UNION PACIFIC	EAST	2	80	Y	N	N
8:20:40 8:24:06	8:20:49 8:24:06	8:21:04 8:23:57	22	FREIGHT	UNION PACIFIC	WEST	3	70	Y	N	N
8:31:55 8:34:23	8:32:04 8:34:14	8:32:20 8:34:07	34	FREIGHT	UNION PACIFIC	EAST	4	83	Y	N	N
9:43:29 9:46:53	9:43:38 9:46:46	9:43:54 9:46:36	19	FREIGHT	UNION PACIFIC	WEST	2	55	Y	N	N
9:48:29 9:51:14	9:48:37 9:51:05	9:48:56 9:50:58	37	FREIGHT	UNION PACIFIC	EAST	5	99	Y	N	N
10:30:31 10:34:04	10:30:40 10:33:54	10:30:57 10:33:46	21	FREIGHT	UNION PACIFIC	EAST	4	110	Y	N	N
12:02:31 12:04:29	12:02:44 12:04:27	12:02:58 12:04:11	16	FREIGHT	UNION PACIFIC	WEST	2	40	Y	N	N
12:14:48 12:17:45	12:15:01 12:17:43	12:15:16 12:17:29	24	FREIGHT	UNION PACIFIC	WEST	3	63	Y	N	N
12:38:24 12:41:22	12:38:37 12:41:20	12:38:53 12:41:06	33	FREIGHT	UNION PACIFIC	EAST	5	100	Y	N	N
12:50:28 12:53:23	12:50:41 12:53:21	12:50:57 12:53:07	30	FREIGHT	UNION PACIFIC	EAST	6	99	Y	N	N
13:15:22 13:18:52	13:15:35 13:18:50	13:15:51 13:18:37	24	FREIGHT	UNION PACIFIC	EAST	3	101	Y	N	N

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-004

Location: Sunset Avenue Crossing

City: Banning

Time Interval From: 12:00 AM **To** 23:59:00 PM

Type of Land use Around Location: Residential/Commercial

Number of Tracks at Location: 2

Day: Wednesday

Date: 10/26/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
11:41:34	Rail Truck		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
13:21:15	13:21:28	13:21:43	12	FREIGHT	UNION PACIFIC	WEST	5	102	Y	N	N
13:27:30	13:27:28	13:27:10									
14:10:05	14:10:18	14:10:33	25	FREIGHT	UNION PACIFIC	WEST	3	53	Y	N	N
14:12:49	14:12:47	14:12:33	21	FREIGHT	UNION PACIFIC	WEST	4	112	Y	N	N
14:28:29	14:28:41	14:29:00									
14:33:00	14:32:58	14:32:43	21	FREIGHT	UNION PACIFIC	WEST	5	121	Y	N	N
15:53:20	15:53:33	15:53:49	19	FREIGHT	UNION PACIFIC	WEST	4	133	Y	N	N
15:57:39	15:57:37	15:57:22									
16:43:02	16:43:12	16:43:36	55	PASSENGER	AMTRAK	EAST	2	13	Y	N	N
16:47:41	16:47:33	16:47:25									
17:18:23	17:18:31	17:18:48	34	FREIGHT	UNION PACIFIC	EAST	4	100	Y	N	N
17:19:17	17:19:08	17:19:02									
17:29:35	17:29:44	17:30:05	20	FREIGHT	UNION PACIFIC	WEST	4	97	Y	N	N
17:32:39	17:32:32	17:32:23									
17:47:18	17:47:27	17:47:50	17	FREIGHT	UNION PACIFIC	WEST	1	50	Y	N	N
17:51:22	17:51:16	17:51:05									
18:35:12	18:35:21	18:35:43	25	FREIGHT	UNION PACIFIC	EAST	5	66	Y	N	N
18:38:45	18:38:38	18:38:29									
18:54:40	18:54:50	18:55:13	23	FREIGHT	UNION PACIFIC	WEST	4	111	Y	N	N
18:57:17	18:57:09	18:57:03									
19:06:43	19:06:54	19:07:21	23	FREIGHT	UNION PACIFIC	WEST	3	83	Y	N	N
19:11:14	19:11:06	19:10:57									
19:25:27	19:25:38	19:25:59	27	FREIGHT	UNION PACIFIC	WEST	4	77	Y	N	N
19:28:47	19:28:39	19:28:31									
19:48:00	19:48:10	19:48:29	24	FREIGHT	UNION PACIFIC	WEST	3	105	Y	N	N
19:50:38	19:50:30	19:50:22									
21:47:24	21:47:37	21:47:50	20	FREIGHT	UNION PACIFIC	WEST	3	101	Y	N	N
21:50:40	21:50:39	21:50:24									
22:54:27	22:54:40	22:54:57	35	FREIGHT	UNION PACIFIC	EAST	5	108	Y	N	N
22:58:32	22:58:30	22:58:15									
23:23:19	23:23:31	23:23:47									
23:26:28	23:26:26	23:26:12									

Train Count
Project No. 11-6107-004

Day: Thursday
Date: 10/27/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
1:18:18	1:18:29	1:18:45	34	FRIEGHT	UNION PACIFIC	EAST	3	95	Y	N	N
1:21:14	1:21:06	1:20:57									
1:43:47	1:43:58	1:44:23		19	FRIEGHT	UNION PACIFIC	WEST	8	64	Y	N
1:46:59	1:46:51	1:46:44	34	FRIEGHT	UNION PACIFIC	EAST	3	85	Y	N	N
2:01:14	2:01:26	2:01:43									
2:03:50	2:03:42	2:03:34									
3:30:08	3:30:19	3:30:39	22	FRIEGHT	UNION PACIFIC	WEST	7	68	Y	N	N
3:33:14	3:33:06	3:32:58									
4:11:53	4:12:07	4:12:22		17	FRIEGHT	UNION PACIFIC	WEST	4	70	Y	N
4:15:05	4:15:03	4:14:49	37	FRIEGHT	UNION PACIFIC	WEST	3	36	Y	N	N
4:30:13	4:30:27	4:30:39									
4:31:34	4:31:33	4:31:20									
4:53:09	4:53:22	4:53:40	18	FRIEGHT	UNION PACIFIC	WEST	4	66	Y	N	N
4:56:03	4:56:01	4:55:47									
5:11:48	5:12:00	5:12:13		18	FRIEGHT	UNION PACIFIC	EAST	3	96	Y	N
5:17:08	5:17:06	5:16:52	34	FRIEGHT	UNION PACIFIC	EAST	2	88	Y	N	N
5:56:57	5:57:10	5:57:25									
5:59:30	5:59:28	5:59:15									
6:05:26	6:05:39	6:05:55	34	FRIEGHT	UNION PACIFIC	EAST	2	40	Y	N	N
6:06:46	6:06:44	6:06:33									
6:46:43	6:46:57	6:47:12		28	FRIEGHT	UNION PACIFIC	EAST	4	112	Y	N
6:50:37	6:50:35	6:50:21	10	FRIEGHT	UNION PACIFIC	WEST	4	88	Y	N	N
7:15:06	7:15:20	7:15:35									
7:19:19	7:19:17	7:19:03									
7:25:27	7:25:38	7:25:53	36	FRIEGHT	UNION PACIFIC	EAST	5	100	Y	N	N
7:28:15	7:28:13	7:27:59									
7:40:42	7:40:55	7:41:15		21	FRIEGHT	UNION PACIFIC	WEST	3	81	Y	N
7:43:51	7:43:49	7:43:35	34	FRIEGHT	UNION PACIFIC	EAST	4	109	Y	N	N
8:39:25	8:39:35	8:39:51									
8:42:48	8:42:39	8:42:33									
9:02:02	9:02:12	9:02:31	15	FRIEGHT	UNION PACIFIC	WEST	4	103	Y	N	N
9:06:43	9:06:34	9:06:27									
10:11:52	10:12:01	10:12:19		24	FRIEGHT	UNION PACIFIC	WEST	4	71	Y	N
10:14:32	10:14:23	10:14:16	16	FRIEGHT	UNION PACIFIC	WEST	2	40	Y	N	N
10:37:56	10:38:06	10:38:25									
10:39:59	10:39:46	10:39:37									
11:12:32	11:12:41	11:12:58	40	FRIEGHT	UNION PACIFIC	EAST	2	105	Y	N	N
11:15:25	11:15:17	11:15:10									
12:03:02	12:03:15	12:03:30		17	FRIEGHT	UNION PACIFIC	WEST	3	75	Y	N
12:07:21	12:07:20	12:07:05	33	FRIEGHT	UNION PACIFIC	EAST	4	79	Y	N	N
12:18:50	12:19:03	12:19:19									
12:21:12	12:21:10	12:20:56									
12:32:26	12:32:38	12:32:54	24	FRIEGHT	UNION PACIFIC	EAST	3	85	Y	N	N
12:35:15	12:35:13	12:34:58									
12:46:28	12:46:42	12:46:57		35	FRIEGHT	UNION PACIFIC	EAST	4	99	Y	N
12:49:33	12:49:31	12:49:17									

Train Count
Project No. 11-6107-004

Day: Thursday
Date: 10/27/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

[illegible]

Counts at Clay Street
(Wednesday and Thursday – October 2011)

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-002

Location: Clay Street Crossing

City: Riverside

Time Interval From: 12:00 AM **To** 23:59:59

Type of Land use Around Location: Commercial

Number of Tracks at Location: 1

Day: Wednesday

Date: 10/26/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
2:57:36	2:57:51	2:58:11	33	FREIGHT	UNION PACIFIC	EAST	2	84	Y	N	N
3:00:38	3:00:51	3:00:37									
3:29:01	3:29:31	3:29:52		31	FREIGHT	UNION PACIFIC	EAST	3	69	Y	N
3:32:16	3:32:29	3:32:15									
4:05:48	4:06:02	4:06:25	54	FREIGHT	UNION PACIFIC	EAST	4	143	Y	N	N
4:08:08	4:08:21	4:08:06									
4:50:03	4:50:17	4:50:30	58	FREIGHT	METROLINK	WEST	2	3	Y	N	N
4:50:42	4:50:55	4:50:41									
4:56:48	4:57:02	4:57:18	51	FREIGHT	UNION PACIFIC	EAST	4	84	Y	N	N
4:58:35	4:58:48	4:58:33									
5:49:32	5:49:46	5:50:01	70	PASSENGER	METROLINK	WEST	2	4	Y	N	N
5:50:09	5:50:22	5:50:08									
5:56:13	5:56:27	5:56:40	38	FREIGHT	UNION PACIFIC	EAST	3	79	Y	N	N
5:58:03	5:58:16	5:58:01									
6:23:00	6:23:14	6:23:35	71	PASSENGER	METROLINK	WEST	2	4	Y	N	N
6:23:42	6:23:55	6:23:37									
6:57:01	6:57:45	6:58:02	70	PASSENGER	METROLINK	WEST	2	4	Y	N	N
6:58:10	6:58:23	6:58:08									
7:04:22	7:04:36	7:04:54	45	FREIGHT	UNION PACIFIC	EAST	4	121	Y	N	N
7:06:39	7:06:52	7:06:37									
8:22:43	8:22:57	8:23:13	69	PASSENGER	METROLINK	WEST	2	3	Y	N	N
8:23:21	8:23:34	8:23:19									
10:47:56	10:48:10	10:48:25	39	FREIGHT	UNION PACIFIC	EAST	5	101	Y	N	N
10:50:37	10:50:50	10:50:34									
12:29:52	12:30:06	12:30:36	40	FREIGHT	UNION PACIFIC	WEST	3	72	Y	N	N
12:32:37	12:32:50	12:32:34									
13:15:20	13:15:34	13:16:05	36	FREIGHT	UNION PACIFIC	WEST	2	59	Y	N	N
13:17:36	13:17:49	13:17:33									
14:25:15	14:25:29	14:25:40	53	PASSENGER	METROLINK	EAST	2	5	Y	N	N
14:25:57	14:26:10	14:25:53									
15:15:02	15:15:16	15:15:22	67	PASSENGER	METROLINK	WEST	2	5	Y	N	N
15:15:29	15:15:42	15:15:27									
15:25:26	15:25:40	15:25:57	44	FREIGHT	UNION PACIFIC	EAST	4	103	Y	N	N
15:27:59	15:28:12	15:27:55									
16:48:15	16:48:30	16:48:53	35	FREIGHT	UNION PACIFIC	WEST	3	57	Y	N	N
16:50:22	16:50:35	16:50:21									
17:21:36	17:21:50	17:22:04	53	PASSENGER	METROLINK	EAST	2	4	Y	N	N
17:22:14	17:22:27	17:22:11									
18:02:41	18:02:52	18:03:07	53	PASSENGER	METROLINK	EAST	2	5	Y	N	N
18:03:17	18:03:22	18:03:15									
18:36:01	18:36:07	18:36:13	59	PASSENGER	METROLINK	EAST	2	5	Y	N	N
18:36:42	18:36:48	18:36:40									
19:10:28	19:10:42	19:11:00	44	PASSENGER	METROLINK	EAST	8	1	Y	N	N
19:11:12	19:11:25	19:11:11									
19:40:25	19:40:34	19:40:48	60	PASSENGER	METROLINK	EAST	2	3	Y	N	N
19:40:56	19:41:09	19:40:53									
20:14:01	20:14:14	20:14:39	44	FREIGHT	UNION PACIFIC	WEST	3	7	Y	N	N
20:14:53	20:15:06	20:14:50									
20:22:50	20:23:01	20:23:24	54	FREIGHT	UNION PACIFIC	EAST	2	40	Y	N	N
20:23:51	20:24:04	20:23:48									

Project No. 11-6107-002

Location: Clay Street Crossing

Day: Wednesday

City: Riverside

Date: 10/26/2011

Time Interval From: 12:00 AM **To** 23:59:59

Type of Land use Around Location: Commercial

Number of Tracks at Location: 1

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
21:50:46	21:50:58	21:51:14	40	FREIGHT	UNION PACIFIC	EAST	5	109	Y	N	N
21:53:32	21:53:45	21:53:30									
22:13:50	22:14:03	22:14:22	34	FREIGHT	UNION PACIFIC	EAST	2	4	Y	N	N
22:14:33	22:14:46	22:14:30									
23:05:00	23:05:12	23:05:28	22	FREIGHT	UNION PACIFIC	EAST	3	96	Y	N	N
23:10:03	23:10:23	23:10:01									
23:31:04	23:31:24	23:31:29	42	FREIGHT	UNION PACIFIC	WEST	4	77	Y	N	N
23:32:40	23:32:58	23:32:38									

Train Count
Project No. 11-6107-002

Number of Tracks at Location: 1

Date: 10/27/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
9:44:48	Ambulance	19:08:00	Ambulance
13:01:37	Ambulance		
18:33:42	Ambulance		

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
12:12:38	12:12:50	12:13:06	26	FREIGHT	UNION PACIFIC	EAST	4	97	Y	N	N
12:15:53	12:16:06	12:15:50									
3:17:47	3:18:01	3:18:11	35	FREIGHT	UNION PACIFIC	EAST	2	105	Y	N	N
3:20:31	3:20:44	3:20:30									
3:42:39	3:42:53	3:43:12	43	FREIGHT	UNION PACIFIC	EAST	2	94	Y	N	N
3:44:35	3:44:48	3:44:32									
4:50:46	4:51:00	4:51:05	52	FREIGHT	UNION PACIFIC	EAST	2	3	Y	N	N
4:51:10	4:51:23	4:51:09									
4:57:10	4:57:23	4:57:38	26	FREIGHT	UNION PACIFIC	EAST	4	116	Y	N	N
5:00:35	5:00:48	5:00:34									
5:51:25	5:51:39	5:51:45	50	PASSENGER	METROLINK	WEST	2	4	Y	N	N
5:51:52	5:52:05	5:51:51									
6:23:19	6:23:33	6:23:54	50	PASSENGER	METROLINK	WEST	2	5	Y	N	N
6:24:03	6:24:18	6:23:59									
6:57:45	6:57:59	6:58:12	59	PASSENGER	METROLINK	WEST	2	4	Y	N	N
6:58:19	6:58:32	6:58:18									
8:22:32	8:22:46	8:22:58	65	PASSENGER	METROLINK	WEST	1	5	Y	N	N
8:23:16	8:23:29	8:23:13									
8:48:56	8:49:10	8:49:23	17	FREIGHT	UNION PACIFIC	EAST	1	7	Y	N	N
8:49:45	8:49:58	8:49:43									
9:23:32	9:23:45	9:23:54	24	FREIGHT	UNION PACIFIC	EAST	3	112	Y	N	N
9:26:13	9:26:24	9:26:11									
10:22:40	10:22:52	10:23:04	36	FREIGHT	UNION PACIFIC	EAST	3	85	Y	N	N
10:24:33	10:24:46	10:24:32									
10:59:25	10:59:39	11:00:06	46	FREIGHT	UNION PACIFIC	WEST	2	10	Y	N	N
11:00:23	11:00:36	11:00:20									
11:15:32	11:15:46	11:15:59	28	FREIGHT	UNION PACIFIC	EAST	4	133	Y	N	N
11:18:39	11:18:52	11:18:37									
10:22:46	10:22:52	10:23:04	29	FREIGHT	UNION PACIFIC	EAST	3	108	Y	N	N
10:24:33	10:24:46	10:24:32									
13:16:04	13:16:18	13:16:33	54	FREIGHT	UNION PACIFIC	EAST	4	118	Y	N	N
13:17:54	13:18:07	13:17:51									
13:54:14	13:54:18	13:54:57	41	FREIGHT	UNION PACIFIC	WEST	4	72	Y	N	N
13:55:58	13:56:11	13:55:55									
14:21:45	14:22:00	14:22:08	52	FREIGHT	UNION PACIFIC	EAST	2	5	Y	N	N
14:22:17	14:22:24	14:22:15									
15:16:26	15:16:40	15:16:58	69	FREIGHT	UNION PACIFIC	EAST	2	5	Y	N	N
15:17:07	15:17:20	15:17:04									
15:24:49	15:25:02	15:25:18	40	FREIGHT	UNION PACIFIC	EAST	3	95	Y	N	N
15:27:28	15:27:41	15:27:25									
16:35:06	16:35:18	16:35:33	23	FREIGHT	UNION PACIFIC	EAST	2	75	Y	N	N
16:38:32	16:38:45	16:38:28									
16:51:20	16:51:34	16:52:00	36	FREIGHT	UNION PACIFIC	EAST	3	76	Y	N	N
16:54:00	16:54:13	16:53:59									
17:25:48	17:26:01	17:26:11	52	FREIGHT	UNION PACIFIC	EAST	2	4	Y	N	N
17:26:21	17:26:34	17:26:17									
18:46:06	18:46:16	18:46:31	54	PAS							

Train Count
Project No. 11-6107-002

Date: 10/27/2011

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
19:21:22	19:21:32	19:21:45	52	FREIGHT	UNION PACIFIC	EAST	4	131	Y	N	N
19:22:10	19:22:20	19:22:08									
19:41:53	19:42:06	19:42:17	57	PASSENGER	METROLINK	EAST	4	2	Y	N	N
19:42:24	19:42:36	19:42:22									
20:44:21	20:44:35	20:44:51	37	FREIGHT	UNION PACIFIC	EAST	3	104	Y	N	N
20:47:10	20:47:23	20:47:08									
21:12:00	21:13:13	21:13:39	43	FREIGHT	UNION PACIFIC	WEST	2	2	Y	N	N
21:13:46	21:13:59	21:13:43									
21:21:26	21:21:39	21:21:56	50	FREIGHT	UNION PACIFIC	EAST	4	108	Y	N	N
21:23:48	21:24:01	21:23:46									
21:51:55	21:52:03	21:53:18	42	FREIGHT	UNION PACIFIC	EAST	3	94	Y	N	N
21:53:47	21:53:58	21:53:45									
23:18:27	23:18:41	23:18:57	26	FREIGHT	UNION PACIFIC	EAST	3	51	Y	N	N
23:19:31	23:19:44	23:19:28									
23:42:51	23:43:05	23:43:24	52	FREIGHT	UNION PACIFIC	EAST	3	124	Y	N	N
23:44:54	23:45:07	23:44:50									
23:50:00	23:50:05	23:50:23	30	FREIGHT	UNION PACIFIC	EAST	2	2	Y	N	N
23:50:34	23:50:47	23:50:30									

Counts at Center Street
(Wednesday and Thursday – October 2011)

Train Count
Project No. 11-6107-003

Number of Tracks at Location: 2

Date: 10/26/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TRAIN INFO											
TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:09:40	0:09:47	0:09:58	45	FREIGHT	UNION PACIFIC	SOUTH	2	80	N	Y	Y
0:11:34	0:11:38	0:11:25									
1:05:30	1:05:30	N/A									
1:06:35	1:06:35	N/A									
1:07:02	1:07:12	N/A									
1:07:31	1:07:31	N/A	SAME TRAIN								
1:08:43	1:08:51	1:08:55	13	FREIGHT	SANTA FE	SOUTH	2	0	Y	N	N
1:09:40	1:09:45	1:09:10									
1:22:51	1:22:59	1:23:01	26	FREIGHT	BNSF	SOUTH	3	37	Y	N	N
1:24:30	1:24:35	1:24:20									
1:24:44	1:24:50	1:25:20	26	FREIGHT	BNSF	SOUTH	5	130+	Y	N	N
1:27:00	1:27:01	1:26:51									
1:28:20	1:28:35	1:29:30	22	FREIGHT	BNSF	NORTH	4	118	Y	N	N
1:31:20	1:31:20	1:31:10									
1:46:23	1:46:36	1:47:03	32	FREIGHT	BNSF	NORTH	4	121	Y	N	N
1:49:19	1:49:19	1:49:11									
2:15:04	2:15:15	2:15:24	28	FREIGHT	BNSF	NORTH	5	143	Y	N	N
2:19:08	2:19:08	2:19:00									
2:22:05	2:22:10	2:22:45	23	FREIGHT	BNSF	NORTH	2	8	Y	N	N
2:23:10	2:23:10	2:23:05									
3:16:30	3:16:35	3:16:40	26	FREIGHT	UNION PACIFIC	NORTH	2	76	Y	N	N
3:19:48	3:19:48	3:19:38									
3:37:14	3:37:26	3:37:57	28	FREIGHT	BNSF	NORTH	4	78	Y	N	N
3:39:41	3:39:41	3:39:32									
3:45:48	3:45:58	3:46:04	31	FREIGHT	UNION PACIFIC	NORTH	3	71	Y	N	N
3:48:13	3:48:13	3:48:03									
4:02:31	4:02:36	4:03:02	33	FREIGHT	BNSF	SOUTH	2	177	Y	N	N
4:07:11	4:07:36	4:07:05									
Crossing Same Time			Could not See	FREIGHT	BNSF	NORTH	Could not See	Could not See	Y	N	N
4:10:13	4:10:17	4:10:21	21	FREIGHT	BNSF	NORTH	1	7	Y	N	N
4:12:19	4:12:17	4:12:15									
4:20:52	4:20:58	4:21:43	32	FREIGHT	BNSF	NORTH	2	56	Y	N	N
4:23:22	4:23:21	4:23:18									
4:33:19	4:33:23	4:34:01	31	FREIGHT	BNSF	NORTH	2	112	Y	N	N
4:37:11	4:37:09	4:37:07									
4:59:06	4:59:15	4:59:35	38	PASSENGER	METROLINK	SOUTH	2	6	Y	N	N
5:01:25	5:01:23	5:01:20									
5:06:48	5:06:51	5:07:04	31	FREIGHT	BNSF	NORTH	4	99	Y	N	N
5:09:15	5:09:13	5:09:11									
5:10:39	5:10:42		NO TRAIN								
5:10:49	5:10:47										
5:16:37	5:16:43	5:17:53	37	FREIGHT	UNION PACIFIC	NORTH	4	87	Y	N	N
5:19:23	5:19:22	5:19:20									
5:30:16	5:30:21	5:31:29	22	FREIGHT	BNSF	NORTH	4	96	Y	N	N
5:33:02	5:33:03	5:33:01									
Crossing at the same time		5:31:42	42	PASSENGER	METROLINK	SOUTH	1	4	Y	N	N
5:42:03	5:42:07	5:43:14	23	FREIGHT	BNSF	SOUTH	2	4	Y	N	N
5:43:54	5:43:52	5:43:50									
5:48:32	5:48:35	5:49:39	35	FREIGHT	BNSF	NORTH	4	110	Y	N	N
5:52:16	5:52:14	5:52:12									
5:54:21	5:54:27		NO TRAIN								
5:54:33	5:54:31										
5:59:58	6:00:02	6:01:10	19	FREIGHT	BNSF	NORTH	4	113	Y	N	N
6:03:18	6:03:17	6:03:15									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-003

Location: Center Street Crossing

Day: Wednesday

City: Riverside

Date: 10/26/2011

Time Interval From: 12:00 AM To 23:59:59 PM

Type of Land use Around Location: Residential/Commercial

Number of Tracks at Location: 2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
14:56:00	14:56:10	14:56:39	37	FREIGHT	BNSF	NORTH	4	116	Y	N	N
14:58:56	14:58:56	14:58:46									
15:41:47	15:41:59	15:42:33	28	FREIGHT	UNION PACIFIC	NORTH	4	100	Y	N	N
15:45:57	15:45:59	15:45:49									
16:17:15	16:17:21	16:19:19	33	FREIGHT	BNSF	NORTH	2	92	Y	N	N
16:20:29	16:20:27	16:20:23									
16:29:51	16:29:57		NO TRAIN								
16:30:47	16:30:44										
16:31:19	16:31:19	16:31:51	30	FREIGHT	BNSF	SOUTH	3	53	Y	N	N
16:33:52	16:33:52	16:33:39	22	FREIGHT	SANTA FE	NORTH	2	83	Y	N	N
16:34:04	16:34:07	16:36:15									
16:41:19	16:41:14	16:41:05	35	FREIGHT	BNSF	SOUTH	4	133	Y	N	N
16:59:33	16:59:39	17:00:10									
17:02:51	17:02:48	17:02:41	48	PASSENGER	METROLINK	NORTH	2	4	Y	N	N
17:29:07	17:29:14	17:29:53									
17:30:07	17:30:05	17:30:00	33	FREIGHT	BNSF	SOUTH	4	83	Y	N	N
17:56:17	17:56:20	17:56:47									
17:59:17	17:59:12	17:58:29	14	FREIGHT	BNSF	SOUTH	6	104	Y	N	N
18:08:40	18:08:46	18:09:14									
18:14:25	18:14:20	18:14:13	42	PASSENGER	METROLINK	NORTH	2	4	Y	N	N
18:08:40	18:08:46	18:10:05									
18:14:25	18:14:20	18:10:24	37	FREIGHT	BNSF	NORTH	5	109	Y	N	N
18:20:54	18:21:05	18:21:32									
18:24:17	18:24:14	18:24:06	NO TRAIN								
18:29:01	18:29:07										
18:29:59	18:29:56		NO TRAIN								
18:30:42	18:30:48	18:31:25									
18:34:38	18:34:34	18:33:46	28	FREIGHT	BNSF	SOUTH	3	95	Y	N	N
18:55:06	18:55:13	18:55:49	46	PASSENGER	METROLINK	NORTH	1	4	Y	N	N
18:56:05	18:56:02	18:55:56									
19:12:13	19:12:18	19:12:53	45	FREIGHT	BNSF	NORTH	4	112	Y	N	N
19:14:55	19:14:50	19:14:46									
19:37:16	19:37:22	19:37:49	39	FREIGHT	BNSF	SOUTH	2	69	Y	N	N
19:39:24	19:39:22	19:39:15									
20:10:25	20:10:30	20:11:09	48	PASSENGER	AMTRAK	NORTH	2	9	Y	N	N
20:11:30	20:11:28	20:11:22									
20:36:28	20:36:33	20:37:09	38	FREIGHT	BNSF	NORTH	2	40	Y	N	N
20:37:48	20:37:45	20:37:40									
20:44:31	20:44:36	20:45:10	42	FREIGHT	BNSF	NORTH	4	104	Y	N	N
20:47:17	20:47:15	20:47:09									
21:16:09	21:16:13	21:16:49	42	FREIGHT	BNSF	NORTH	4	106	Y	N	N
21:18:15	21:18:13	21:18:07									
22:07:32	22:07:45	22:08:21	33	FREIGHT	BNSF	NORTH	5	108	Y	N	N
22:11:12	22:11:45	22:11:05									
23:09:40	23:09:56		NO TRAIN								
23:10:38	23:10:38										
23:10:51	23:11:00	23:11:33	32	FREIGHT	BNSF	SOUTH	4	77	Y	N	N
23:13:12	23:13:12	23:13:03	36	FREIGHT	BNSF	NORTH	3	94	Y	N	N
23:36:21	23:36:24	23:37:06									
23:39:40	23:39:40	23:39:36									

Train Count
Project No. 11-6107-003

Day: Thursday
Date: 10/27/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
3:37:47	Fire Truck		

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:30:51	0:31:03	0:31:30									
0:33:50	0:33:50	0:33:42	27	FREIGHT	UNION PACIFIC	NORTH	3	94	Y	N	N
0:37:10	0:37:20	0:37:54									
0:40:43	0:40:43	0:39:52	39	FREIGHT	BNSF	SOUTH	4	66	Y	N	N
0:49:03	0:49:13	0:49:20									
		0:51:36	36	FREIGHT	BNSF	SOUTH	2	104	Y	N	N
ARM/BELL still DOWN/ON		0:49:35	Could Not See								
		0:51:50		FREIGHT	BNSF	NORTH	Could Not See	Could Not See	Y	N	N
1:24:50	1:25:00	1:25:10									
1:31:16	1:31:16	1:28:50	39	FREIGHT	BNSF	SOUTH	5	162	Y	N	N
1:24:50	1:25:00	1:28:50									
1:31:16	1:31:16	1:31:10	38	FREIGHT	BNSF	NORTH	3	146	Y	N	N
1:32:35	1:32:47		NO TRAIN								
1:33:10	1:33:10										
1:53:46	1:55:56	2:02:24									
2:03:26	2:03:26	2:02:24	34	FREIGHT	BNSF	NORTH	5	143	Y	N	N
2:27:00	2:27:10	2:27:45									
2:30:14	2:30:14	2:30:01	27	FREIGHT	BNSF	SOUTH	3	73	Y	N	N
2:44:40	2:44:45	2:45:05									
2:48:00	2:48:00	2:47:43	27	FREIGHT	BNSF	SOUTH	4	88	Y	N	N
2:56:02	2:56:16	2:56:30									
2:58:30	2:58:30	2:58:20	36	FREIGHT	BNSF	NORTH	4	92	Y	N	N
3:07:36	3:07:44	3:08:21									
3:10:38	3:10:38	3:10:30	35	FREIGHT	BNSF	NORTH	4	107	Y	N	N
3:37:20	3:37:30	3:37:40									
3:40:47	3:40:47	3:40:38	30	FREIGHT	BNSF	NORTH	3	95	Y	N	N
4:02:33	4:02:38	4:03:19									
4:05:12	4:05:08	4:05:01	32	FREIGHT	BNSF	NORTH	7	60	Y	N	N
4:07:08	4:07:13		NO TRAIN								
4:07:43	4:07:41										
4:10:21	4:10:31	4:11:14									
4:13:10	4:13:06	4:13:01	38	FREIGHT	BNSF	NORTH	2	88	Y	N	N
4:20:41	4:20:45	4:20:59									
4:22:15	4:22:11	4:22:02	13	FREIGHT	BNSF	NORTH	2	10	Y	N	N
4:22:45	4:22:49	4:23:35									
4:30:46	4:30:42	4:30:35	8	FREIGHT	BNSF	NORTH	2	86	Y	Y	N
4:39:25	4:39:29	4:40:37									
4:45:25	4:45:21	4:45:13	20	FREIGHT	BNSF	NORTH	4	137	Y	N	N
4:59:11	4:59:15	4:59:45									
4:59:58	4:59:55	4:59:51	50	PASSENGER	METROLINK	SOUTH	2	4	Y	N	N
5:16:12	5:16:14	5:16:52									
5:20:55	5:20:49	5:20:43	30	FREIGHT	BNSF	NORTH	4	114	Y	N	N
5:23:17	5:23:21		NO TRAIN								
5:33:52	5:28:47										
5:32:30	5:32:34	5:33:13									

Train Count
Project No. 11-6107-003

Day: Thursday
Date: 10/27/2011

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
3:37:47	Fire Truck		

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
6:14:36	6:14:40	6:15:10	39	FREIGHT	BNSF	SOUTH	3	57	Y	N	N
6:19:05	6:19:02	6:16:18									
6:14:36	6:14:40	6:16:24	35	FREIGHT	BNSF	NORTH	3	124	Y	N	N
6:19:05	6:19:02	6:18:58									
6:45:10	6:45:15	6:46:05	43	PASSENGER	AMTRAK	SOUTH	2	9	Y	N	N
6:46:28	6:46:24	6:46:20									
7:26:22	7:26:24	7:26:52	19	FREIGHT	BNSF	SOUTH	2	90	Y	N	N
7:29:27	7:29:24	7:29:19									
7:41:15	7:41:22	7:41:57	19	FREIGHT	BNSF	SOUTH	4	136	Y	N	N
7:45:15	7:45:12	7:45:10									
7:51:22	7:51:27	7:51:56	39	FREIGHT	BNSF	SOUTH	6	111	Y	N	N
7:54:04	7:54:01	7:53:56									
8:24:40	8:24:45	8:25:15	39	FREIGHT	BNSF	SOUTH	4	114	Y	N	N
8:27:18	8:27:15	8:27:10									
9:34:12	9:34:16	9:34:52	40	FREIGHT	BNSF	NORTH	4	123	Y	N	N
9:38:21	9:38:18	9:37:10									
9:51:14	9:51:55	9:51:55	25	FREIGHT	BNSF	NORTH	5	105	Y	N	N
9:55:08	9:55:00	9:55:00									
10:07:01	10:07:15		NO TRAIN								
10:07:52	10:07:52										
10:28:50	10:28:55	10:29:05	47	PASSENGER	METROLINK	NORTH	2	3	Y	N	N
10:29:15	10:29:15	10:29:10									
10:37:28	10:37:41	10:38:13	20	FREIGHT	BNSF	SOUTH	5	Could Not See	Y	N	N
ARM/BELL still DOWN/ON		10:40:28									
		10:38:00	39	FREIGHT	UNION PACIFIC	NORTH	3	87	Y	N	N
10:41:20	10:41:20	10:39:40									
11:14:50	11:14:56	11:15:25	40	FREIGHT	BNSF	NORTH	4	123	Y	N	N
11:17:46	11:17:46	11:17:37									
11:31:37	11:31:50	11:32:13	48	PASSENGER	METROLINK	SOUTH	2	4	Y	N	N
11:32:30	11:32:30	11:32:21									
11:34:20	11:34:28	11:34:57	33	FREIGHT	UNION PACIFIC	NORTH	4	130	Y	N	N
11:38:12	11:38:12	11:38:02									
11:40:25	11:40:38		NO TRAIN								
11:40:58	11:40:59										
12:30:50	12:31:03	12:31:42	32	FREIGHT	UNION PACIFIC	NORTH	4	116	Y	N	N
12:34:22	12:34:22	12:34:14									
12:53:16	12:53:29	12:53:52	36	FREIGHT	BNSF	SOUTH	3	113	Y	N	N
12:55:51	12:55:51	12:55:42									
13:33:59	13:34:03	13:34:44	28	FREIGHT	UNION PACIFIC	NORTH	4	117	Y	N	N
13:39:44	13:39:44	13:37:45									
13:33:59	13:34:03	13:37:58	27	FREIGHT	UNION PACIFIC	SOUTH	4	71	Y	N	N
13:39:44	13:39:44	13:39:36									
14:26:05	14:26:13	14:26:44	43	FREIGHT	BNSF	NORTH	4	108	Y	N	N
14:28:37	14:28:37	14:28:30									
14:40:00	14:40:10	14:40:36	22	FREIGHT	BNSF	SOUTH	4	131	Y	N	N
14:43:50	14:43:50	14:43:37									
14:40:00	14:40:10	14:41:20		FREIGHT	BNSF	NORTH	3		Y	N	N
14:43:50	14:43:50	14:43:37									
14:56:15	14:56:20	14:56:29	27	FREIGHT	BNSF	NORTH	3				

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-003

Location: Center Street Crossing

Day: Thursday

City: Riverside

Date: 10/27/2011

Time Interval From: 12:00 AM **To** 23:59:59 PM

Type of Land use Around Location: Residential/Commercial

Number of Tracks at Location: 2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY
3:37:47	Fire Truck		

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
16:29:39	16:29:44	16:30:23	27	FREIGHT	UNION PACIFIC	SOUTH	3	73	Y	N	N
16:33:09	16:33:06	16:32:59									
16:41:04	16:41:09										
16:42:03	16:42:00		NO TRAIN								
16:42:09	16:45:11	16:45:46	21	FREIGHT	SANTA FE	SOUTH	3	29	Y	N	N
16:48:27	16:48:23	16:48:16									
16:58:57	16:59:03	16:59:35									
17:04:49	17:01:47	17:01:45	39	FREIGHT	UNION PACIFIC	NORTH	2	70	Y	N	N
17:02:08	17:02:10										
17:03:06	17:03:02										
17:28:45	17:28:47	17:29:27	48	PASSENGER	METROLINK	NORTH	2	5	Y	N	N
17:29:43	17:29:40	17:29:35									
17:44:45	17:44:49	17:45:25									
17:48:01	17:47:57	17:47:39	22	FREIGHT	BNSF	SOUTH	2	63	Y	N	N
17:53:29	17:53:34										
17:54:24	17:54:20										
18:11:17	18:11:21	18:11:48	24	FREIGHT	BNSF	SOUTH	3	62	Y	N	N
18:14:12	18:14:08	18:13:48									
18:11:17	18:11:21	18:13:24									
18:14:12	18:14:08	18:13:30	43	PASSENGER	METROLINK	NORTH	2	4	Y	N	N
18:18:25	18:18:32	18:20:07									
18:22:07	18:22:02	18:21:55									
18:28:30	18:28:33	18:29:05	39	FREIGHT	BNSF/ SANTA FE	NORTH	5 4=BNSF 1=SANTA FE	80	Y	N	N
18:31:25	18:31:22	18:30:36									
18:33:14	18:33:19	18:34:05									
18:37:16	18:37:14	18:37:08	17	FREIGHT	BNSF	NORTH	4	118	Y	N	N
18:54:11	18:54:15	18:54:57									
18:55:13	18:55:11	18:55:02									
19:00:02	19:00:06	19:00:39	41	FREIGHT	BNSF	SOUTH	8	42	Y	N	N
19:01:42	19:01:39	19:01:33									
19:36:56	19:36:59	19:37:43									
19:40:52	19:40:48	19:40:44	30	FREIGHT	BNSF	NORTH	3	142	Y	N	N
19:56:28	19:56:35	19:57:12									
19:57:34	19:57:31	19:57:28									
20:11:05	20:11:09	20:11:38	49	PASSENGER	AMTRAK	NORTH	2	10	Y	N	N
20:13:49	20:13:46	20:13:41									
20:15:12	20:15:16										
20:15:52	20:15:47		NO TRAIN								
20:23:08	20:23:11	20:24:05	22	FREIGHT	BNSF	NORTH	2	112	Y	N	N
20:25:11	20:25:08	20:25:05									
20:58:31	20:58:36	20:59:11									
21:01:59	21:01:55	21:01:49	36	FREIGHT	BNSF	NORTH	3	103	Y	N	N
21:34:57	21:35:01	21:35:36									
21:38:38	21:38:34	21:38:26									
21:38:53	21:38:56	21:39:23	40	FREIGHT	UNION PACIFIC	NORTH	3	109	Y	N	N
21:40:22	21:40:16	21:40:03									
21:46:26	21:46:31	21:47:30									
21:51:34	21:51:32	21:51:26	18	FREIGHT	BNSF	SOUTH	4	137	Y	N	N
22:06:00	22:06:07	22:07:39									
22:09:49	22:09:46	22:09:43									
23:12:56	23:13:00	23:13:37	34	FREIGHT	UNION PACIFIC	NORTH	3	93	Y	N	N
23:15:31	23:15:28	23:15:24									
23:31:12	23:31:16	23:31:53									
23:32:32	23:32:27	23:32:23	40	FREIGHT	BNSF	SOUTH	4	103	Y	N	N
23:58:16	23:58:19	23:59:04									
0:01:15	0:01:13	0:01:07									
0:01:15	0:01:13	0:01:07	36	FREIGHT	UNION PACIFIC	NORTH	3	99	Y	N	N
0:01:15	0:01:13	0:01:07									
0:01:15	0:01:13	0:01:07									

Counts at Avenue 54
(Wednesday and Thursday – October 2011)

Train Count
Project No. 11-6107-005

2

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:05:03	0:05:10	0:05:30	40	FREIGHT	UNION PACIFIC	SOUTH	2	72	Y	N	N
0:07:17	0:07:20	0:07:11	21	FREIGHT	UNION PACIFIC	SOUTH	4	110	Y	N	N
0:45:36	0:45:42	0:46:02									
0:47:33	0:47:40	0:47:24	24	FREIGHT	UNION PACIFIC	SOUTH	3	117	Y	N	N
1:36:00	1:36:08	1:36:34									
1:38:21	1:38:26	1:38:04	28	FREIGHT	UNION PACIFIC	SOUTH	3	102	Y	N	N
2:29:26	2:29:30	2:29:57									
2:31:34	2:31:40	2:31:26	26	FREIGHT	UNION PACIFIC	NORTH	2	108	Y	N	N
3:21:41	3:21:47	3:22:11									
3:24:16	3:24:32	3:24:08	36	FREIGHT	UNION PACIFIC	NORTH	2	79	Y	N	N
4:12:58	4:13:00	4:13:25									
4:41:00	4:14:57	4:14:50	27	FREIGHT	UNION PACIFIC	SOUTH	3	104	Y	N	N
4:39:55	4:39:59	4:40:24									
ARM/BELL STILL DOWN/ON		4:41:53	Could Not See	FREIGHT	UNION PACIFIC	NORTH	1	Could Not See	Y	N	N
		4:41:23									
4:42:17	4:42:19	4:42:13	29	FREIGHT	UNION PACIFIC	NORTH	5	53	Y	N	N
5:35:44	5:35:48	5:36:21									
5:38:11	5:38:14	5:38:01	45	FREIGHT	UNION PACIFIC	SOUTH	2	79	Y	N	N
6:13:08	6:13:12	6:13:38									
6:15:21	6:15:22	6:15:14	30	FREIGHT	UNION PACIFIC	SOUTH	2	30	Y	N	N
6:38:27	6:38:31	6:38:59									
6:39:42	6:39:42	6:39:36	46	FREIGHT	UNION PACIFIC	NORTH	4	78	Y	N	N
6:42:51	6:42:53	6:43:19									
6:44:58	6:45:04	6:44:49	50	FREIGHT	UNION PACIFIC	SOUTH	2	72	Y	N	N
6:52:10	6:52:20	6:52:39									
6:53:49	6:53:54	6:53:43	46	FREIGHT	UNION PACIFIC	SOUTH	4	112	Y	N	N
7:02:10	7:02:19	7:02:41									
7:04:34	7:04:40	7:04:28	37	FREIGHT	UNION PACIFIC	NORTH	2	56	Y	N	N
7:38:30	7:38:37	7:38:58									
7:40:37	7:40:43	7:40:28	45	FREIGHT	UNION PACIFIC	SOUTH	4	87	Y	N	N
8:04:55	8:05:03	8:05:16									
8:07:13	8:07:16	8:07:00	25	FREIGHT	UNION PACIFIC	NORTH	4	107	Y	N	N
8:35:23	8:35:31	8:36:00									
8:39:08	8:39:13	8:39:08	50	FREIGHT	UNION PACIFIC	SOUTH	4	76	Y	N	N
8:59:28	8:59:33	8:59:50									
9:01:12	9:01:17	9:01:04	51	FREIGHT	UNION PACIFIC	SOUTH	5	85	Y	N	N
9:37:34	9:37:43	9:38:05									
9:39:33	9:39:36	9:39:23	*	FREIGHT	UNION PACIFIC	SOUTH	*	*	N	Y	N
*	*	9:55:00									
*	*	*	49	FREIGHT	UNION PACIFIC	NORTH	3	67	Y	N	N
10:35:30	10:35:36	10:35:55									
10:37:10	10:37:15	10:37:05	25	FREIGHT	UNION PACIFIC	SOUTH	3	84	Y	N	N
10:56:24	10:56:30	10:56:55									
10:59:30	10:59:36	10:59:22	47	FREIGHT	UNION PACIFIC	SOUTH	5	104	Y	N	N
11:15:44	11:15:50	11:16:11									
11:17:54	11:17:58	11:17:47	55	FREIGHT	UNION PACIFIC	NORTH	3	53	Y	N	N
11:59:40	11:59:46	11:59:53									
12:02:02	12:02:05	12:01:53	54	FREIGHT	UNION PACIFIC	SOUTH	4	110	Y	N	N
12:13:17	12:13:26	12:13:45									
12:15:15	12:15:21	12:15:08	40	FREIGHT	UNION PACIFIC	NORTH	4	112	Y	N	N
12:23:50	12:23:56	12:24:21									
12:26:39	12:26:45	12:26:34									

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-005

Location: Avenue 54 Crossing

City: Coachella

Time Interval From: 12:00:00 AM

Type of Land use Around Location:

Number of Tracks at Location:

Day: Wednesday

Date: 10/26/2011

To 23:59:59 PM

Industrial

2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
13:52:09	13:52:20	13:52:36	33	FREIGHT	UNION PACIFIC	NORTH	5	122	Y	N	N
13:54:32	13:54:38	13:54:26									
14:05:54	14:06:03	14:06:25	27	FREIGHT	NORFOLK S	SOUTH	5	102	Y	N	N
14:08:29	14:08:34	14:08:22									
14:36:54	14:37:00	14:37:21	34	FREIGHT	UNION PACIFIC	NORTH	4	133	Y	N	N
14:39:13	14:39:19	14:39:08									
14:58:00	14:58:09	14:58:23	25	FREIGHT	UNION PACIFIC	SOUTH	5	100	Y	N	N
15:00:30	15:00:38	15:00:24									
15:41:34	15:41:43	15:42:02	31	FREIGHT	UNION PACIFIC	NORTH	4	98	Y	N	N
15:43:48	15:43:53	15:43:42									
15:52:33	15:52:41	15:53:00	48	FREIGHT	UNION PACIFIC	SOUTH	2	96	Y	N	N
15:54:40	15:54:49	15:54:36									
15:56:18	15:56:29	15:56:47	26	FREIGHT	UNION PACIFIC	NORTH	1	51	Y	N	N
15:58:25	15:58:29	15:58:17									
16:29:36	16:29:44	16:30:01	53	FREIGHT	UNION PACIFIC	NORTH	4	113	Y	N	N
16:31:56	16:32:04	16:31:49									
16:39:00	16:39:08	16:39:27	53	FREIGHT	UNION PACIFIC	NORTH	3	86	Y	N	N
16:40:50	16:40:55	16:40:43									
17:42:26	17:42:36	17:42:55	50	FREIGHT	UNION PACIFIC	NORTH	4	81	Y	N	N
17:44:07	17:44:13	17:44:01									
18:31:06	18:31:12	18:31:20	67	PASSENGER	AMTRACK	SOUTH	2	14	Y	N	N
18:31:50	18:31:56	18:31:45									
18:48:50	18:49:00	18:49:22	49	FREIGHT	UNION PACIFIC	NORTH	4	103	Y	N	N
18:51:12	18:51:19	18:51:06									
19:49:42	19:49:50	19:50:10	45	FREIGHT	UNION PACIFIC	NORTH	3	108	Y	N	N
19:51:43	19:51:48	19:51:37									
20:42:38	20:42:48	20:43:10	28	FREIGHT	UNION PACIFIC	SOUTH	5	84	Y	N	N
20:45:00	20:45:07	20:44:53									
20:52:14	20:52:24	20:52:41	48	FREIGHT	UNION PACIFIC	NORTH	3	104	Y	N	N
20:54:31	20:54:36	20:54:23									
21:20:58	21:21:08	21:21:31	46	FREIGHT	UNION PACIFIC	NORTH	8	67	Y	N	N
21:22:45	21:22:50	21:22:40									

* Train going 5 MPH stops 500 ft North of crossing at 9:55:00 and starts again at 10:56:24

Train Count
Project No. 11-6107-005

2

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
0:44:31	0:44:42	0:45:01	46	FREIGHT	UNION PACIFIC	SOUTH	5	108	Y	N	N
0:46:56	0:47:01	0:46:49									
1:28:05	1:28:16	1:28:34									
1:29:57	1:30:01	1:29:50	47	FREIGHT	UNION PACIFIC	NORTH	7	79	Y	N	N
1:44:59	1:45:06	1:45:25	42	FREIGHT	UNION PACIFIC	NORTH	4	73	Y	N	N
1:46:44	1:46:51	1:46:40									
2:03:51	2:03:58	2:04:13	26	FREIGHT	UNION PACIFIC	NORTH	3	37	Y	N	N
2:05:25	2:05:31	2:05:17									
2:29:35	2:29:46	2:30:10	31	FREIGHT	UNION PACIFIC	NORTH	4	64	Y	N	N
2:31:38	2:31:44	2:31:30									
3:28:30	3:28:40	3:28:52	46	FREIGHT	UNION PACIFIC	SOUTH	3	97	Y	N	N
3:30:40	3:30:45	3:30:34									
3:58:10	3:58:20	3:58:39	43	FREIGHT	UNION PACIFIC	SOUTH	3	106	Y	N	N
4:00:04	4:00:09	4:00:00									
5:26:49	5:27:00	5:27:02	47	FREIGHT	UNION PACIFIC	NORTH	3	86	Y	N	N
5:28:35	5:28:39	5:28:26									
6:32:00	6:32:09	6:32:18	39	FREIGHT	UNION PACIFIC	NORTH	4	105	Y	N	N
6:33:28	6:33:32	6:33:24									
6:56:15	6:56:24	6:56:48	39	FREIGHT	UNION PACIFIC	SOUTH	3	95	Y	N	N
6:58:57	6:59:02	6:58:49									
7:24:48	7:24:56	7:25:19	46	FREIGHT	UNION PACIFIC	SOUTH	2	88	Y	N	N
7:26:43	7:26:48	7:26:36									
8:20:55	8:21:00	8:21:22	48	FREIGHT	UNION PACIFIC	NORTH	4	75	Y	N	N
8:22:34	8:22:40	8:22:28									
8:33:30	8:33:36	8:34:00	50	FREIGHT	UNION PACIFIC	SOUTH	4	116	Y	N	N
8:35:58	8:36:04	8:35:52									
9:20:20	9:20:30	9:20:51	49	FREIGHT	UNION PACIFIC	SOUTH	5	107	Y	N	N
9:22:31	9:22:38	9:22:24									
9:50:05	9:50:12	9:50:30	48	FREIGHT	UNION PACIFIC	NORTH	3	76	Y	N	N
9:52:18	9:52:24	9:52:12									
10:04:53	10:05:00	10:05:23	48	FREIGHT	UNION PACIFIC	SOUTH	4	114	Y	N	N
10:07:12	10:07:19	10:07:05									
12:05:28	12:05:35	12:05:52	48	FREIGHT	UNION PACIFIC	NORTH	3	99	Y	N	N
12:07:15	12:07:21	12:07:09									
12:29:18	12:29:27	12:29:47	49	FREIGHT	UNION PACIFIC	SOUTH	4	112	Y	N	N
12:31:34	12:31:39	12:31:26									
13:11:39	13:11:48	13:12:11	47	FREIGHT	UNION PACIFIC	NORTH	3	88	Y	N	N
13:13:44	13:13:50	13:13:39									
13:30:50	13:31:00	13:31:26	29	FREIGHT	UNION PACIFIC	NORTH	2	92	Y	N	N
13:47:06	13:47:12	13:46:56									
13:44:30	13:44:39	13:45:00	47	FREIGHT	UNION PACIFIC	SOUTH	4	78	Y	N	N
13:46:14	13:46:20	13:46:08									
14:59:08	14:59:17	14:59:42	38	FREIGHT	UNION PACIFIC	NORTH	3	98	Y	N	N
15:01:28	15:01:34	15:01:21									
15:01:48	15:01:56	15:02:18	45	FREIGHT	UNION PACIFIC	SOUTH	3	87	Y	N	N
15:03:37	15:03:42	15:03:30									
15:23:49	15:23:56	15:24:20	48	FREIGHT	UNION PACIFIC	SOUTH	4	104	Y	N	N
15:26:00	15:26:08	15:25:57									
15:48:57	15:49:05	15:50:07	40	FREIGHT	UNION PACIFIC	SOUTH	4	100	Y	N	N
ARM/BELL STILL DOWN/ON		15:52:09									
15:52:32	15:52:39	15:52:29	58	FREIGHT	UNION PACIFIC	NORTH	4	117	Y	N	N

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 11-6107-005

Location: Avenue 54 Crossing

City: Coachella

Time Interval From: 12:00:00 AM

Type of Land use Around Location:

Number of Tracks at Location:

Day: Thursday

Date: 10/27/2011

To 23:59:59 PM

Industrial

2

EMERGENCY VEHICLES			
TIME	QUANTITY	TIME	QUANTITY

TRAIN INFO

TIME OF BELL	GATE DOWN TIME	TIME OF TRAIN	SPEED	TYPE	TRAIN COMPANY	DIRECTION	# OF LOCOMOTIVE	# OF CARS	THRU TRAIN	DOES TRAIN STOP	DOES TRAIN BACK-UP
16:21:03	16:21:11	16:21:32	31	FREIGHT	UNION PACIFIC	SOUTH	4	115	Y	N	N
16:23:39	16:23:45	16:23:35									
16:32:22	16:32:30	16:32:52	46	FREIGHT	UNION PACIFIC	SOUTH	4	120	Y	N	N
16:34:29	16:34:35	16:34:23									
17:10:51	17:10:58	17:11:15	45	FREIGHT	NORFOLK S	NORTH	3	42	Y	N	N
17:12:11	17:12:17	17:12:07									
17:21:19	17:21:29	17:21:52	47	FREIGHT	UNION PACIFIC	NORTH	3	71	Y	N	N
17:23:06	17:23:11	17:23:00									
18:25:32	18:25:42	18:26:01	58	FREIGHT	UNION PACIFIC	SOUTH	3	98	Y	N	N
18:27:31	18:27:37	18:27:26									
18:34:25	18:34:31	18:34:52	42	FREIGHT	UNION PACIFIC	SOUTH	5	87	Y	N	N
18:36:22	18:36:28	18:36:17									
20:13:08	20:13:19	*	*	*	*	*	*	*	*	*	*
20:14:19	20:14:25	*									
21:05:27	21:05:34	21:05:54	18	FREIGHT	UNION PACIFIC	SOUTH	4	64	Y	N	N
21:07:44	21:07:50	21:07:36									
22:11:04	22:11:15	22:11:35	16	FREIGHT	UNION PACIFIC	NORTH	3	135	Y	N	N
22:16:55	22:17:01	22:16:48									
22:27:22	22:27:33	22:27:52	17	FREIGHT	UNION PACIFIC	NORTH	5	133	Y	N	N
22:33:27	22:33:35	22:33:22									
22:52:51	22:53:01	22:53:18	46	FREIGHT	UNION PACIFIC	NORTH	6	108	Y	N	N
22:54:55	22:55:01	22:54:50									
23:07:53	23:08:01	23:08:20	52	FREIGHT	UNION PACIFIC	SOUTH	4	132	Y	N	N
23:10:32	23:10:39	23:10:27									

* Truck arrived just East of tracks at utility box to test Bell and Gate