



Grade Separation Funding Strategy: A Blueprint for Advancing Projects



RCTC

Riverside County Transportation Commission



Executive Summary

The impact of delays caused by freight trains traveling through Riverside County is rapidly becoming one of the area's most pressing transportation concerns. In 2003, 68 million tons of rail freight passed through Riverside County with less than five percent of that total either originating or ending locally.

The impact of freight rail growth has led to numerous quality of life concerns in a number of communities that are faced with traffic delays, disruptions to public safety and emergency responses and an increase in harmful emissions.

Funding and subsequently constructing railroad grade separations has become an important transportation priority for Riverside County. The Riverside County Transportation Commission (RCTC) has developed this funding strategy to serve as a blueprint for advancing many of these needed projects.

Almost all freight rail traffic in Riverside County is from trains passing through. In 2003, three million tons of rail freight moved to or from destinations in Riverside County. By contrast, 68 million tons of rail freight, almost 23 times the local amount, passed through the county.

RCTC Funding Strategy Highlights 18 Crossings

Currently there are 61 at-grade Alameda Corridor East (ACE) crossings in Riverside County. These crossings present conflicts between rail and highway traffic and are located on the main lines of either the Union Pacific (UP) or Burlington Northern Santa Fe (BNSF) railroads.

During its April 2006 meeting, RCTC ranked the 61 railroad crossings into five priority tiers based upon a set of criteria that includes traffic congestion, safety, air quality noise and local community preferences. The Commission has chosen to identify 28 crossings that are ranked in the top two tiers as the highest priority for grade separations.

The cost of constructing grade separations at these 28 locations is currently estimated at \$815.8 million, yet only \$199 million is currently committed from various funding sources. This results in a \$616.8 million gap from fully funding all 28 projects. In short, funding to address Riverside County is only 24% complete or 76% short of the needed amount.

The amount of funding available to fund all 28 projects is significantly less than the estimated cost. The purpose of this report is to develop a strategy and funding plan that leverages existing funding commitments of local jurisdictions, to close that gap by 2015. In doing so, the plan develops a strategy for funding 18 of the 28 crossings for a total project cost of \$560.8 million and groups them according to three funding priority groups:

- Funding Priority Group A (4 Projects fully funded and under design.)
- Funding Priority Group B (12 Projects partially funded.)
- Funding Priority Group C (2 Projects with no funding but are Tier 1)

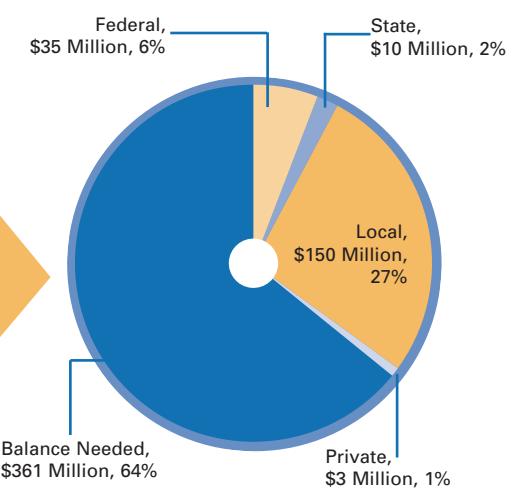
Among the 18 high priority projects, eight are located on UP mainline tracks and 10 are on BNSF mainline tracks (five of which UP operates over as well).

Crossing	Responsible Agency	Total Project Cost	RCTC Priority Tier
Funding Priority Group A (4 Projects fully funded and under design.)			
Columbia Ave/BNSF & UP	Riverside	\$21.0 M	1
Sunset Ave/UP	Banning	\$21.0 M	1
Ave 48/Dillon Rd/UP	Coachella/Indio	\$16.1 M	2
Jurupa Ave/UP	Riverside	\$21.7 M	2
Funding Priority Group B (12 Projects partially funded.)			
Chicago Ave/BNSF & UP	Riverside	\$48.7 M	1
Magnolia Ave/BNSF	County	\$26.7 M	1
3rd St/BNSF & UP	Riverside	\$31.7 M	1
McKinley St/BNSF	Corona	\$109.2 M	1
Magnolia Ave/UP	Riverside	\$27.2 M	1
Iowa Ave/BNSF & UP	Riverside	\$19.0 M	1
Adams St/BNSF	Riverside	\$24.0 M	1
Auto Center Dr/BNSF	Corona	\$27.0 M	2
Clay St/UP	County	\$25.0 M	2
Center St/BNSF & UP	County	\$36.3 M	2
Streeter Ave/UP	Riverside	\$33.7 M	2
Madison St/BNSF	Riverside	\$19.0 M	2
Funding Priority Group C (2 Projects with no funding but are Tier 1)			
Jurupa Rd/UP	County	\$26.5 M	1
Riverside Ave/UP	Riverside	\$27.0 M	1
TOTAL		\$560.8 M	



Only four of the 18 projects are fully funded. However, project development is underway for six of the 18 projects.

Currently, \$199.0 Million of the \$560.8 Million is either planned or programmed, principally through Local Funds (\$133.9 Million in Transportation Uniform Mitigation Fees (TUMF)). This results in a funding gap of \$361.8 Million.



Current Funding Status



Project Impact: (18 Crossings)

Elimination Of:

2005 Daily Gate Down Time (Min)

2,237.8 (37 hrs, 18 min)

2030 Daily Gate Down Time (Min)

4,374.8 (72 hrs, 55 min)

2005 Daily Vehicle Hours of Delay

776.9

2030 Daily Vehicle Hours of Delay

2,745.3

Accidents (10 years)

36

2030 Total Emissions (tons/year)

212.3

Noise Impact*:

Noise Population Affected w/in 1600'

27,758

Noise Population Affected w/in 6400'

317,089

* Populations may overlap at adjacent crossings – Totals likely include double-counting.

Building grade separations improves the quality of life in our communities and makes our nation's goods movement network more efficient and reliable. Upon completion, these projects would eliminate 2,745 hours of 2030 forecast daily vehicle hours of delay and 212 tons per year of emissions.

Recommended Funding Strategy

Commitment from all levels of the public sector, matched with the participation of the private sector will bring us closer to achieving meaningful results. The proposed funding mix is a combination of funding available today and potential future funding for the 18 high priority crossings. The table below summarizes the proposed funding mix for the 18 high priority crossings:

Funding Source	Plan/Totals	Program	Currently Available for Programming	Projected Funding
Federal				
Congressional Earmarks	\$19.4M	\$ 3.4M	-	\$16.0M
Projects of Nat'l & Regional Significance	\$109.0M	\$21.0M	\$10.2M	\$77.8M
Transp. & Community & System Preservation	\$ 4.0M	-	\$2.0M	\$ 2.0M
<i>Formula Funds</i>				
Congestion Mitigation & Air Quality	\$40.8M	\$10.8M	-	\$30.0M
Section 130	-	-	-	-
Surface Transportation Program	\$30.0M	-	-	\$30.0M
<i>Discretionary Funds</i>				
High Priority Project	-	-	-	-
Nat'l Corridor Infrastructure Improvement Program	\$30.0M	-	-	\$30.0M
Transportation Improvement Projects	-	-	-	-
Total Federal (41%)	\$233.2M	\$35.2M	\$12.2M	\$185.8M
State				
Section 190	\$40.0M	\$10.0M	-	\$30.0M
<i>Discretionary Funds</i>				
Bond Initiative	\$66.7M	-	-	\$66.7M
Total State (19%)	\$106.7M	\$10.0M	-	\$96.7M
Local				
Measure A – Local Streets & Roads	\$15.0M	\$2.0M	-	\$13.0M
Transportation Uniform Mitigation Fee	\$175.0M	\$133.9M	-	\$41.1M
<i>Discretionary Funds</i>				
Direct Contribution from Private	\$ 7.9M	\$ 7.9M	-	-
Direct Contribution from Railroads	\$ 6.3M	\$ 3.3M	-	\$3.0M
Measure A – Economic Development	\$10.0M	-	-	\$10.0M
County General Fund	\$ 6.7M	\$ 6.7M	-	-
Total Local (40%)	\$220.9M	\$153.8M	-	\$67.1M
Totals (100%)	\$560.8M	\$199.0M		
Funding Needed		(\$361.8M)	\$12.2M	\$349.6M





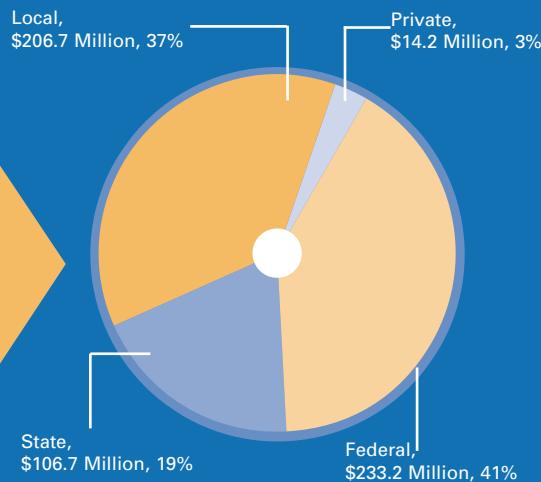
Key Factors for Success

Critical factors to the success of achieving the funding strategy are:

- *Lead Agency Commitment* to develop shelf-ready projects in order to compete effectively on a national, state, and local level for discretionary funds;
- *Project Completion* of Funding Priority Group A is required to demonstrate the region's ability to deliver projects in a timely manner. These projects must be completed prior to the reauthorization of the transportation bill in order to leverage the ability to receive the \$361.8 Million of potential future funds; and
- *Legislative Action* is required to streamline the delivery of projects as well as increase the eligibility of grade separation projects for funding.

The funding strategy recommends that the \$361.8M needed to address the funding gap be secured from federal (55% or \$198.0M), state (27% or \$96.7M), and local/private sources (19% or \$67.1M) between now and 2015 in order to fully fund the 18 high priority crossings. This would result in the following funding strategy for the \$560.8M in project costs: federal (41% or \$233.2M), state (19% or \$106.7M), local (37% or \$206.7M), and private (3% or \$14.2M).

Proposed Funding Strategy



18 Priority Crossings



In 2003, 104 million tons were shipped through Riverside County. 65% of this through traffic is on trains (68 million tons) and 35% on trucks (36 million tons).



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Introduction

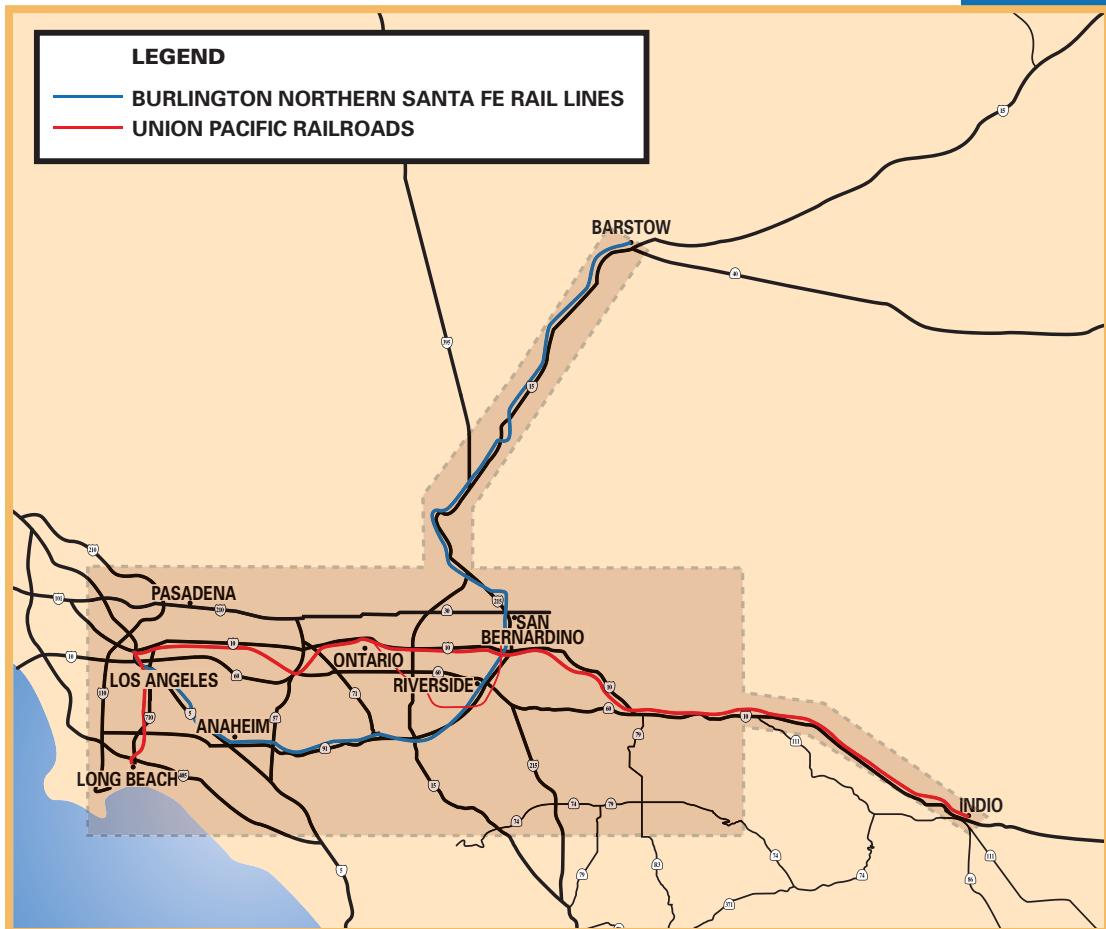
At its October 2005 meeting, the Riverside County Transportation Commission (RCTC) requested the development of a funding strategy for grade separation projects in Riverside County. There are 61 at-grade mainline highway-rail Alameda Corridor East (ACE) crossings in Riverside County. At its April 2006 meeting, the RCTC ranked the crossings into five priority tiers based upon congestion, safety, air quality, noise, and local preference. (see Appendix A) The top two tiers, comprised of 28 crossings, are identified as high priority projects for grade separation.

Given that the combined capital cost estimate exceeds \$815.8 Million and there is not enough funding to grade separate all the crossings at this time, the funding plan focuses on 18 of the 28 high priority crossings.

The funding plan identifies potential funding sources and presents a funding strategy for an optimal funding program for the grade separation of 18 high priority crossings in Riverside County. Existing and potential future funding sources for highway-rail grade separation are discussed, and some case study examples are presented to give an overview of how and why some innovative projects received funding.



Alameda Corridor East (ACE) Trade Area



Project Impact:

Funding Priority Group A (4 Crossings)

Elimination Of:

2005 Daily Gate Down Time (Min)

444.6 (7 hrs, 25 min)

2030 Daily Gate Down Time (Min)

887.4 (14 hrs, 47 min)

2005 Daily Vehicle Hours of Delay

103.6

2030 Daily Vehicle Hours of Delay

469.6

Accidents (10 years)

6

2030 Total Emissions (tons/year)

42.68

Noise Impact*:

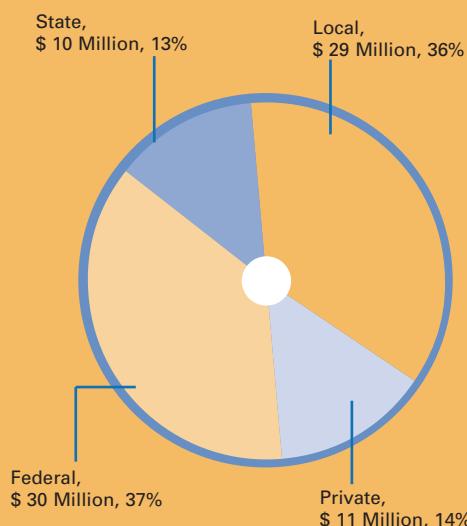
Noise Population Affected w/in 1600'

5,396

Noise Population Affected w/in 6400'

50,658

* Populations may overlap at adjacent crossings – Totals likely include double-counting.



Group A Funding Status

Funding Priority Groups Defined

The 18 crossings are divided into three “funding priority groups: A, B, C. Because funding commitments, either planned or programmed, are an indication of local jurisdiction priorities, the funding plan seeks to leverage existing funding commitments for crossings and highlight the importance of funding the top 10 crossings in the County.

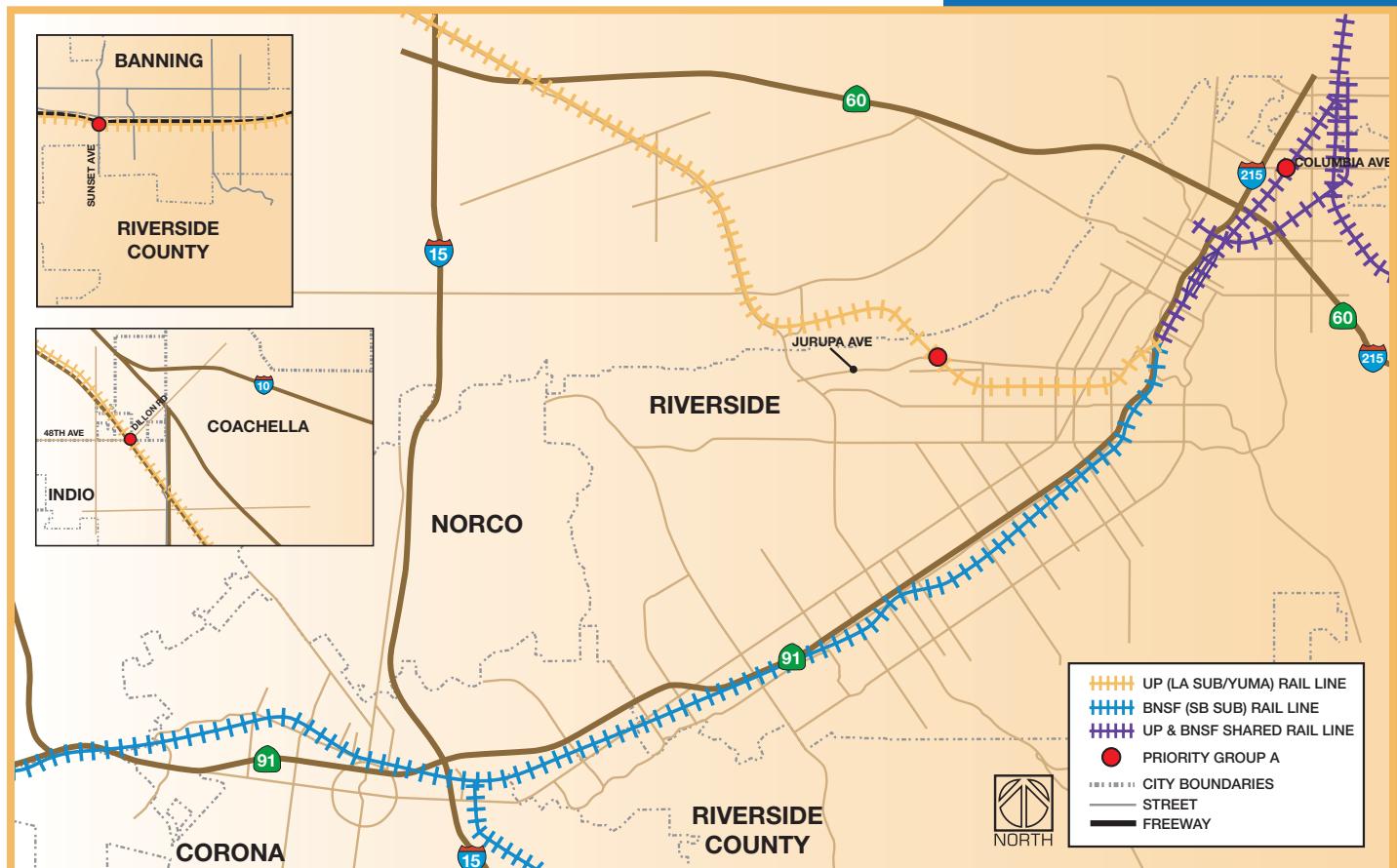
Funding Priority Group A is comprised of four crossings that are currently fully funded:

Crossing	Lead Agency	Total Project Cost	Project Status	Status Priority Tier
Funding Priority Group A				\$79.8 M
Columbia Ave/BNSF & UP	Riverside	\$21.0 M	PE	1
Sunset Ave/UP	Banning	\$21.0 M	PE	1
Ave 48/Dillon Rd/UP	Coachella/Indio	\$16.1 M	Final Design	2
Jurupa Ave/UP	Riverside	\$21.7 M	Final Design	2

The funding mix of the \$79.8 Million is 37.47% federal, 12.53% state, 35.96% local, and 14.04% private. \$16 Million of the \$79.8 Million is funded through the SAFETEA-LU Projects of National and Regional Significance (PNRS).



Funding Strategy – Map for Priority Group A (4 Crossings)



All four projects are scheduled to be completed before 2010. Projects in Priority B and C will be more competitive if the region can demonstrate that projects in Priority A are completed.



Project Impact:

Funding Priority Group B (12 Crossings)

Elimination Of:

2005 Daily Gate Down Time (Min)
1,551.7 (25 hrs, 52 min)

2030 Daily Gate Down Time (Min)
3,075.5 (51 hrs, 51 min)

2005 Daily Vehicle Hours of Delay
479.6

2030 Daily Vehicle Hours of Delay
1,844.6

Accidents (10 years)
22

2030 Total Emissions (tons/year)
154.85

Noise Impact*:

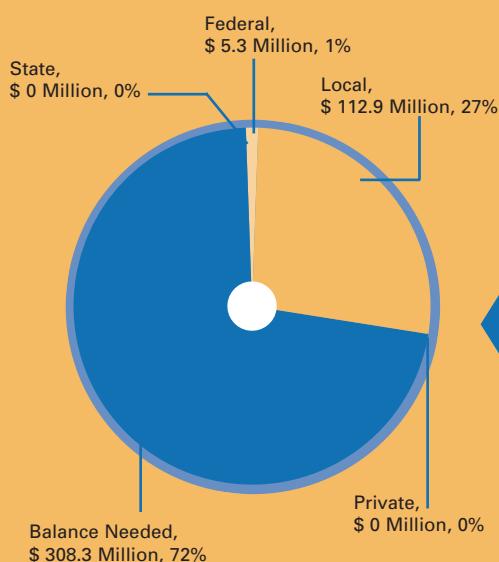
Noise Population Affected w/in 1600'
20,137

Noise Population Affected w/in 6400'
234,639

* Populations may overlap at adjacent crossings – Totals likely include double-counting.

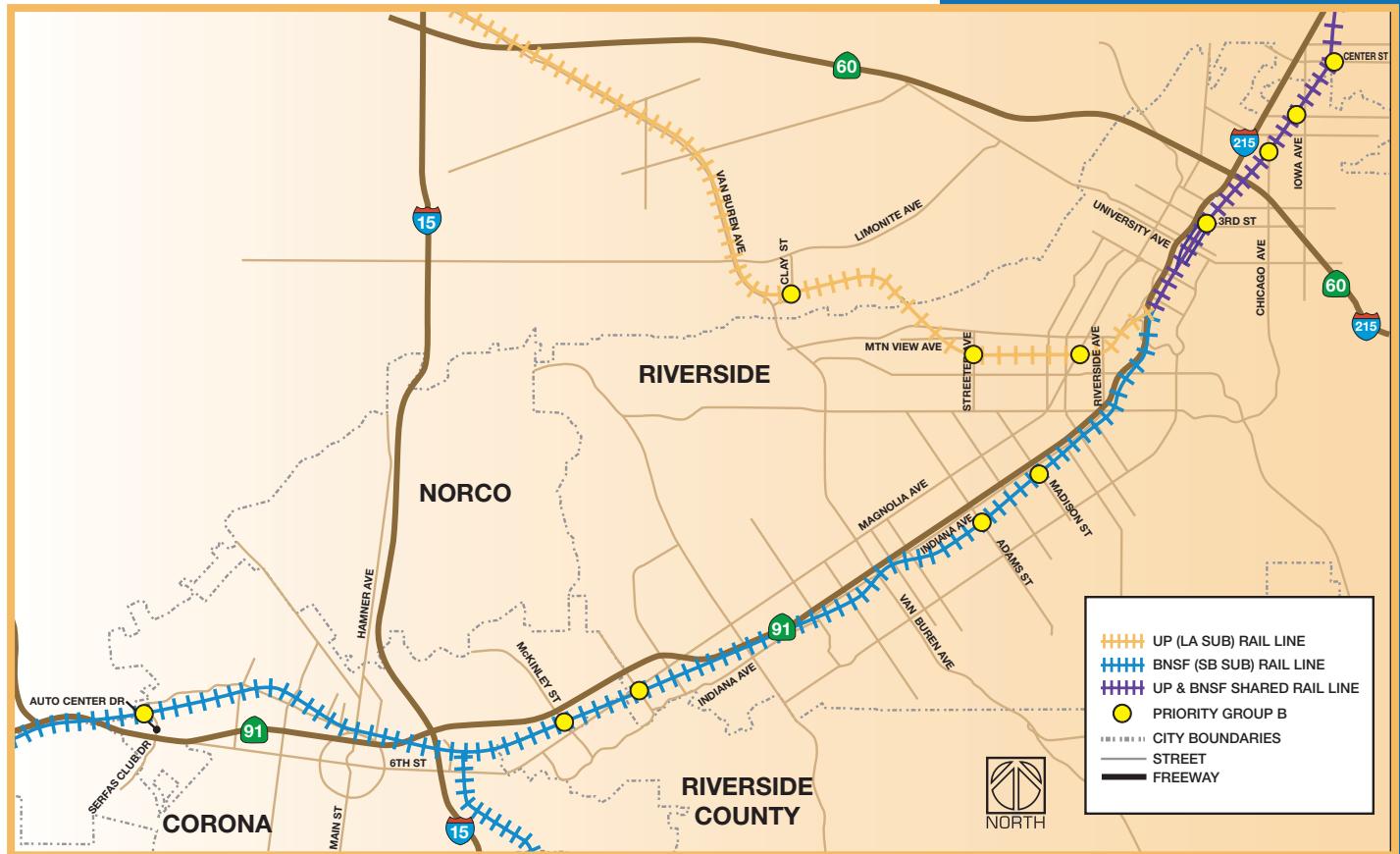
Funding Priority Group B is comprised of 12 crossings that are partially funded:

Crossing	Lead Agency	Total Project Cost	Project Status	RCTC Priority Tier
Funding Priority Group B				\$427.5 M
Chicago Ave/BNSF & UP	Riverside	\$48.7 M		1
Magnolia Ave/BNSF	County	\$26.7 M		1
3rd St/BNSF & UP	Riverside	\$31.7 M	PE	1
McKinley St/BNSF	Corona	\$109.2 M		1
Magnolia Ave/UP	Riverside	\$27.2 M	PE	1
Iowa Ave/BNSF & UP	Riverside	\$19.0 M		1
Adams St/BNSF	Riverside	\$24.0 M		1
Auto Center Dr/BNSF	Corona	\$27.0 M		2
Clay St/UP	County	\$25.0 M		2
Center St/BNSF & UP	County	\$36.3 M		2
Streeter Ave/UP	Riverside	\$33.7 M		2
Madison St/BNSF	Riverside	\$19.0 M		2



Group B Funding Status

Currently, \$119.2 Million or 27.88% of the \$427.5 Million is either planned or programmed, principally through Local Funds (\$112.9 Million in Transportation Uniform Mitigation Fees (TUMF)). Currently, no State or Private funds have been secured for this group and only two of the projects have initiated project development. This contributes to the funding gap of \$308.3 Million.



Funding Strategy – Map for Priority Group B (12 Crossings)

Project Impact:

Funding Priority Group C (2 Crossings)

Elimination Of:

2005 Daily Gate Down Time (Min)

241.5 (4 hrs, 2 min)

2030 Daily Gate Down Time (Min)

411.9 (6 hrs, 52 min)

2005 Daily Vehicle Hours of Delay

193.7

2030 Daily Vehicle Hours of Delay

431.1

Accidents (10 years)

8

2030 Total Emissions (tons/year)

14.72

Noise Impact*:

Noise Population Affected w/in 1600'

2,225

Noise Population Affected w/in 6400'

31,792

* Populations may overlap at adjacent crossings – Totals likely include double-counting.

Funding Priority Group C is comprised of 2 Priority Tier 1 crossings that have no funding identified.

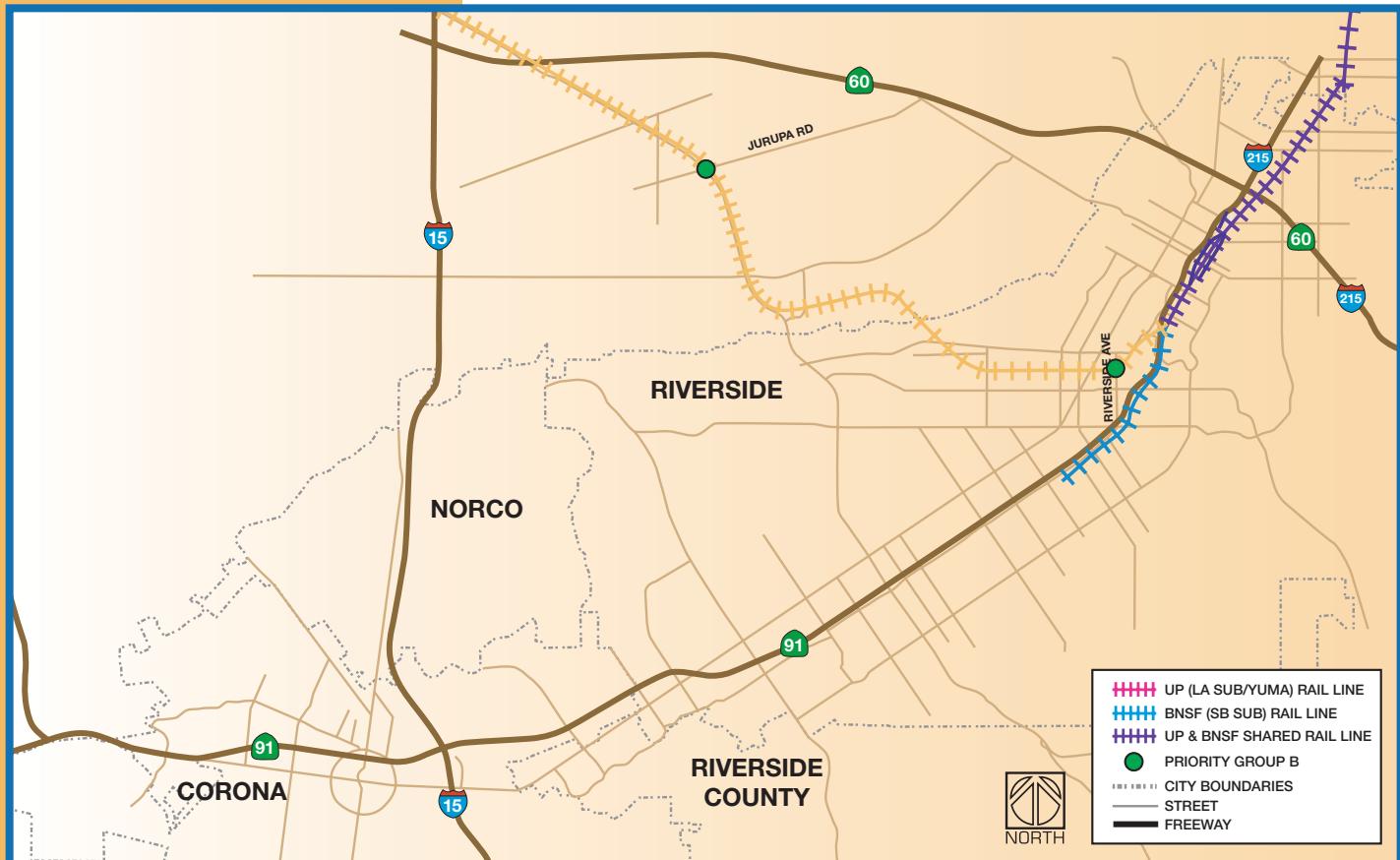
Crossing	Lead Agency	Total Project Cost	RCTC Priority Tier
Funding Priority Group C		\$53.5 M	
Jurupa Rd/UP	County	\$26.5 M	1
Riverside Ave/UP	Riverside	\$27.0 M	1

The creation of Funding Priority Group C with Jurupa Road and Riverside Avenue ensures that the top 10 at grade crossings ranked by RCTC are addressed in this Funding Plan. (see Appendix A) Specifically, in April 2006, Jurupa Road became the top ranked RCTC at grade crossing in need of grade separation due to its:

- 2005 Daily Vehicle Hours of Delay at 105.4
- Forecast 2030 Daily Vehicle Hours of Delay at 291.7

Both of which are the highest in the County among all 61 at grade crossings. In addition, the frequency of accidents in the last 10 years (6) is the highest in the County, tied with the Magnolia Avenue crossing in the unincorporated area of the County.

Funding Strategy – Map for Priority Group C (2 Crossings)





Summary of Funding Needed

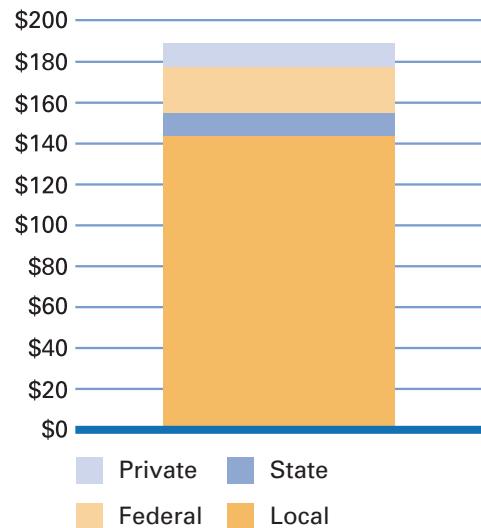
This blueprint develops a strategy for funding the 18 high priority crossings that total \$560.8 Million. The funding plan leverages the local funding commitments made by the lead agencies responsible for constructing the grade separation projects: Banning, Corona, Riverside, Coachella/Indio, and County.

Currently, \$199.0 Million of the \$560.8 Million is either planned or programmed, principally through Local Funds (\$133.9 Million in Transportation Uniform Mitigation Fees (TUMF)). This results in a funding gap of \$361.8 Million.

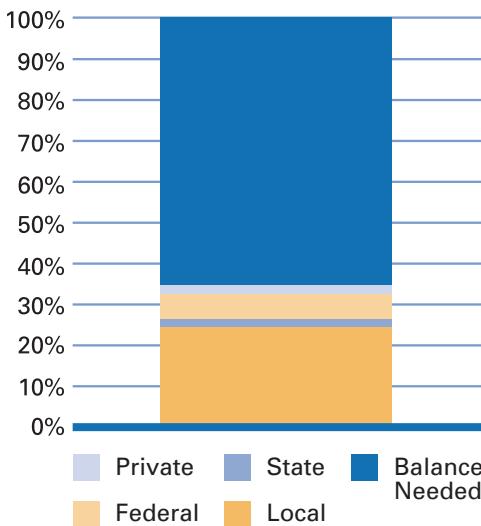
Lead Agency	Total Project Cost	Funding Priority Group A		Funding Priority Group B		Funding Priority Group C	
		Planned	Funding Needed	Planned	Funding Needed	Planned	Funding Needed
Riverside (10)	\$273.0M	\$42.7M	\$0.0M	\$64.2M	\$139.1M	\$0.0M	\$27.0M
County (4)	\$114.5M	-	-	\$22.4M	\$65.6M	\$0.0M	\$26.5M
Corona (2)	\$136.2M	-	-	\$32.6M	\$103.6M	-	-
Banning (1)	\$21.0M	\$21.0M	\$0.0M	-	-	-	-
Coachella/Indio (1)	\$16.1M	\$16.1M	\$0.0M	-	-	-	-
TOTALS	\$560.8M	\$79.8M	\$0.0M	\$119.2M	\$308.3M	\$0.0M	\$53.5M

The ACE corridor includes Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) mainline tracks. Among the 18 high priority projects, eight are located on UP mainline tracks and 10 are on BNSF mainline tracks (five of which UP operates over as well).

Only four of the 18 projects are fully funded. However, project development is underway for six of the 18 high priority projects.



Current Programmed Funds



Current Funding Status Showing Shortfall



Funding Sources Available Now

There are several funding sources that are typically used for highway-rail grade separation projects. This section describes those sources and assesses the likelihood of receiving funding for grade separation from each one.

Federal:

Projects of National & Regional Significance

Twenty-five designated Projects of National and Regional Significance (PNRS) are identified in the federal transportation bill, commonly referred to as SAFETEA-LU. These are typically large projects with large funding amounts. Alameda Corridor East is one of these projects, receiving a \$125 Million allocation for the life of SAFETEA-LU (FY2005-FY2009). These funds are to be split evenly between four ACE county transportation commissions. RCTC will receive \$31.25 Million for grade separations from this earmark.

The federal share for this program is 80% except for designated projects, which have a federal share of 80% subject to the sliding scale adjustment under 23 USC 120(b). A total of \$1.8 billion nationally is allocated to PNRS in SAFETEA-LU, but no additional funding will be available before SAFETEA-LU expires in 2009.

In April 2006, the Commission awarded \$21 Million (of the \$31.25 Million) of PNRS funds through a Call for Projects:

Crossing	Jurisdiction	Total Project Cost	PNRS Award
McKinley St/BNSF	Corona	\$109.2 M	\$1.0 M
Auto Center Dr/BNSF	Corona	\$27.0 M	\$1.5 M
Clay St/UP	County	\$25.0 M	\$2.5 M
Sunset Ave/UP	Banning	\$21.0 M	\$7.5 M
Jurupa Ave/UP	Riverside	\$21.7 M	\$6.0 M
Ave 48/Dillon Rd/UP	Coachella/Indio	\$16.1 M	\$2.5 M
TOTALS		\$220.0 M	\$21.0 M
Balance Available			\$10.2 M

The remaining balance of \$10.2 Million will be awarded on a rolling basis to projects that are shelf-ready. It should be noted that future earmarks for PNRS (or any federal program) are always uncertain. Because federal programs are constantly changing, the post-2009 existence of PNRS (or any other federal program) is also not guaranteed. However taking an optimistic approach regarding future PNRS funding is not unreasonable. Recently, the United States Department of Transportation identified freight traffic in Southern California as a top priority. As a result of this interest, RCTC could receive more than twice as much money for the ACE in the next highway bill. Depending on when Congress acts, this would take place in 2010 or 2011. **The total contribution of PNRS funds available for grade separation projects through 2015 is projected at \$109 Million (of which \$21 Million is committed leaving a net of \$88 Million (\$10.2 Million is available now)).**

Transportation & Community & System Preservation Program (TCSP)

TCSP is a discretionary federal program that is supposed to improve the efficiency of the transportation system; reduce the environmental impacts of transportation; reduce the need for costly future public infrastructure investments; ensure efficient access to jobs, services, and centers of trade; and examine development patterns and identify strategies to encourage compatible private sector development patterns.¹ Rail grade separation projects make up a fairly small portion of TCSP grants, but the program has been used for rail realignment, overpass construction, and studies of grade separations and redevelopment of rail-served brownfields.²

When TCSP was originally established, it was a U.S. DOT discretionary program. For the last several years, Congressional appropriators have earmarked all these funds, essentially turning it into another way of getting an appropriations earmark. Unless complete earmarking of the program ceases before funding is needed for the 18 high priority projects, earmarking support from Congressional appropriations would be paramount to receive these funds.

Based on amounts given in previous appropriations, the TCSP would act as a supplement to any grade separation project rather than a primary source. Funding amounts are typically less than \$1 million per project, but SAFETEA-LU increased annual funding authorization levels for the program from \$25 Million to \$61.25 Million beginning in FY2006. Nevertheless, TCSP funds might be pursued for apportion of a project that fits the program description.

It would be optimistic to expect receiving TCSP funds for one or more projects in any given year. The program should essentially be considered the same as an annual federal appropriations earmark at this time.

TCSP funds could be used to initiate project development/studies for Funding Priority B and C projects. **The total contribution of TCSP funds available for grade separation projects through 2015 is projected at \$4 Million.**

Congressional Earmarks

Projects with Congressional support – especially with support from a member of an appropriations committee – might receive earmarks in the annual federal appropriations bill. There are multiple earmark sections in the appropriations bill, but the logical sections for highway-rail grade separation projects in the 2006 appropriations bill are Surface Transportation Projects (not to be confused with the Surface Transportation Program) or High Priority Projects.³



¹ <http://www.fhwa.dot.gov/tcsp/faq.html>

² AASHTO, "Freight-Rail Bottom Line Report," 2002.

³ Sections are frequently created and destroyed in the appropriations bill.



Since Federal Fiscal Year 2005, the following grade crossing projects have received appropriation earmarks:

Crossing	Jurisdiction	Total Project Cost	Approp. Amount	District	Bill
Sunset Ave/UP	Banning*	\$21.0 M	\$0.5 M	Lewis – 41	HR4818 – FY05
Sunset Ave/UP	Banning	\$21.0 M	\$1.0 M	Lewis – 41	HR3058 – FY06
Streeter Ave/UP	Riverside	\$33.7 M	\$0.3 M	Calvert – 44	HR3058 – FY06
TOTALS		\$1.8 M			

*Banning has received a total of \$3.1M in earmarks for Sunset Ave

Under an optimistic scenario, Riverside County might receive \$1 Million — \$2.5 Million per year on average from federal appropriations. While the future of congressional earmarks is uncertain, the need for grade separations in Riverside County is so significant that it is assumed that funds will be available if the funding program continues. **The total contribution of appropriation earmark funds available for grade separation projects through 2015 is projected at \$16 Million.**

State:

Section 190 Grade Separation Fund

The Section 190 Grade Separation Fund allocates \$15 Million per year in state funds among grade crossing separation or alteration projects. For any one project, the amount of funding is limited to \$5 Million per year or one-third of the total fund (whichever is less), and the cumulative project funding allocation cannot exceed \$20 Million.⁴ The Caltrans program can fund up to 80% of the estimated cost, but no allocation can be made unless the railroad agrees to contribute 10% of the project cost.

An agency that has received a total cumulative project allocation greater than \$5 Million is not eligible for an allocation for another crossing project for a period of 10 years from the date of approval of that project.⁵ This would prohibit the cities of Riverside and Coachella from seeking funding for additional grade separation projects. A bill introduced in 2006 by Assemblyman John J. Benoit (R-Palm Desert) and sponsored by the City of Riverside, AB 2630, seeks to lift the ten year restriction on agencies that have allocated more than \$5 million to one grade separation. As of July 2006, this bill has passed unanimously through the State Assembly and is on its way to the Senate Committee on Appropriations.

Caltrans distributes the funds according to the funding priority list generated by the California Public Utilities Commission (CPUC). CPUC establishes a funding priority list (every two years, with updating in the second year) of grade crossing projects that are most urgently in need of separation or alteration. Currently, the Jurupa Avenue and Avenue 48/Dillon Road grade separation projects in Funding Priority Group A have received \$5 Million each from Section 190.

⁴ Also, projects cannot be grouped together.

⁵ "Grade Separation Program," CPUC Rail Crossing Engineering Section, January 2006.



While this program is competitive and typically only allocates funds to a small number of projects, some local jurisdictions might nominate their strongest grade separation candidate crossing if they can meet the requirements. Projects at the top of the priority list are first in line for funding, but there are several requirements that are often not met by candidate projects, leading to projects that are lower on the priority list being funded. For example, projects ranking 14, 38, and 52 received funding in FY2002-2003.

The requirements for funding are:

- Design/final construction plans must be completed
- A maintenance agreement with the affected railroads must be established
- Authority to construct the project must be obtained from the CPUC
- The environmental review must be completed
- The local funding share or remainder of the project cost must be procured

CPUC strongly recommends that agencies apply for funding if candidate projects can meet the requirements listed above within two years. The Avenue 48/Dillon Rd and Avenue 50⁶ grade separation projects have been awarded CPUC funding in the last 10 years, as well as the Jurupa Avenue grade separation project in Riverside. The CPUC Priority List for FY06/07 includes the following Riverside County ACE Projects:

Crossing	Lead Agency	CPUC Rank	Funding Priority
3rd Street/BNSF & UP	Riverside	4	B
Chicago Ave/BNSF & UP	Riverside	6	B
Madison St/BNSF	Riverside	14	B
Iowa Ave/BNSF & UP	Riverside	19	B
Riverside Ave/UP	Riverside	20	C
Columbia Ave/BNSF & UP	Riverside	21	A
Tyler St/BNSF	Riverside	22	-
Streeter Ave/UP	Riverside	30	B
Adams St/BNSF	Riverside	31	B
Brockton Ave/UP	Riverside	32	-
Jane St/BNSF	Riverside	41	-
Magnolia Ave/UP	Riverside	43	B
Mary St/BNSF	Riverside	44	-
Palm Ave/UP	Riverside	56	-

Many highway-rail grade separation projects struggle with getting railroads to contribute the mandatory 10% share of the project cost. **The total contribution of Section 190 funds through 2015 is projected at \$30 Million, but will depend on the passage of legislation.**

⁶ The Avenue 50 grade separation project in the City of Coachella was completed in 2004.



Local:

Measure A – Local Streets and Roads

The Measure A expenditure plan allocates 40% of the revenues to local street and road improvements in Western Riverside County. Five-year Capital Improvement Programs are prepared and annually updated within the City and each County with public participation. Grade Separation projects are an eligible expenditure for this Program. In April 2006, the Measure A revenue apportionment projections for FY2007 – 2011 were released by RCTC. A total of \$133,144,000 is projected for the cities of Banning, Corona, Riverside, and the County (western Riverside portion)⁷. Assuming 10% of the proceeds is available for grade separation projects, **the total contribution of Measure A Local Streets & Roads funds available for grade separation projects through 2015 is projected at \$13 Million.**

Transportation Uniform Mitigation Fee (TUMF)

Some grade crossings are eligible for TUMF funding. The amount of funding available varies, and not all crossings are eligible. It should be reasonable to assume that the proposed TUMF funding amounts listed below will be approved and available for grade separation in the near future.⁸

Crossing	Lead Agency	TUMF Funding	Funding Priority
Columbia Ave/BNSF & UP	Riverside	\$21.0 M	A
Chicago Ave/BNSF & UP	Riverside	\$19.3 M	B
Magnolia Ave/BNSF	County	\$ 9.7 M	B
McKinley St/BNSF	Corona	\$29.4 M	B
Magnolia Ave/UP	Riverside	\$ 9.7 M	B
Iowa Ave/BNSF & UP	Riverside	\$14.5 M	B
Adams St/BNSF	Riverside	\$ 9.7 M	B
Auto Center Dr/BNSF	Corona	\$ 0.7 M	B
Clay St/UP	County	\$ 0.5 M	B
Center St/BNSF & UP	County	\$ 9.7 M	B
Madison St/BNSF	Riverside	\$ 9.7 M	B
TOTAL		\$133.9 M	

Additional TUMF funding of \$41.1 Million could be available for grade separations through 2015. **The total contribution of TUMF funds available for grade separation projects through 2015 is projected at \$175.0 Million.**

⁷ Source: April 10, 2006 Schedule of 2007-2011 Measure A Revenue Projections
⁸ March 28, 2006 phone conversation with Paul Blackwelder, RCTC.

Funding Sources Potentially Available Later

Federal:

Surface Transportation Program (STP)

The STP – established under ISTEA – is the most flexible federal funding source. Federal-aid highway projects, bridges, transit capital projects, and inter-city and intra-city bus terminals and facilities are eligible for these funds. Highway-rail grade crossing elimination or improvements are eligible for STP funds if the roadway is a federal-aid highway. Projects must be (i) consistent with Title 23 United States Code (USC) and/or Title 49 USC and (ii) derived from the Regional Transportation Plan, included in a Federal Transportation Improvement Program (FTIP) and/or Federal Statewide Transportation Improvement Program (FSTIP), and consistent with the conformity determinations of the Clean Air Act and its amendments.⁹ STP funds are apportioned based on a federal formula; therefore, they are not a new source of funding for the region.

RCTC is intending to fund other projects with STP funds throughout the life of SAFETEA-LU, but these funds might be available for grade separations after SAFETEA-LU expires. Perhaps \$16 Million - \$20 Million per year in STP funds might be available beginning in 2010.¹⁰ If 25% of these funds were dedicated to funding grade separation projects, \$24 Million - \$30 Million could be raised over a six year period (2010 – 2015). **The total contribution of STP funds available for grade separation projects through 2015 is projected at \$30 Million.**

Congestion Mitigation & Air Quality Improvement (CMAQ)

The CMAQ program provides flexible federal funding for projects and programs that reduce transportation-related emissions in air quality non-attainment and maintenance areas. The primary purpose is to reduce carbon monoxide, ozone, and particulate matter emissions. Intermodal freight facility improvements are eligible, and the CMAQ program has funded rail yards, branch lines, and clearance improvements.¹¹ In the context of grade separation, highway-rail crossings that have large amounts of delay (and consequently emissions) could help achieve the objectives of this program.

CMAQ funds, which are distributed by states and MPOs, are apportioned according to a formula based on population and the severity of pollution in ozone and carbon monoxide areas. With some limitations, states may transfer CMAQ funds to STP, NHS Program, Interstate Maintenance Programs, Bridge Program, Highway Safety Improvement Program, and/or Recreational Trails Program apportionments. The federal share is generally 80%, subject to the sliding scale and 90% for Interstate projects.¹²

Similar to STP funds, RCTC is not likely to use CMAQ funds for grade separation projects before 2010. With the next reauthorization, RCTC might receive in the neighborhood of \$20 Million per year from the CMAQ program.¹³ If 25% of these funds were used for grade separation projects over six years, there would be \$30 Million in CMAQ funding for grade separation between 2010 and 2015. **The total contribution of CMAQ funds available for grade separation projects through 2015 is projected at \$30 Million.**

⁹ http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g04stp.pdf

¹⁰ April 3, 2006 phone conversation with Shirley Medina, RCTC.

¹¹ AASHTO, "Freight-Rail Bottom Line Report," 2002

¹² Some activities receive a federal share of 100%.

¹³ April 3, 2006 phone conversation with Shirley Medina, RCTC.



Railway-Highway Crossing Program (Section 130)

Until 2005, ten percent of STP funds were reserved for safety, which included railway-highway crossing projects (Section 130) and hazard elimination activities (Section 152).¹⁴

Beginning in 2006, the federal railway-highway crossing program is funded with a \$220 Million set-aside from the total amount authorized under SAFETEA-LU for the new Highway Safety Improvement Program (HSIP).¹⁵

The purpose of the railway-highway crossing program is to eliminate hazards at highway-rail crossings. From the federal government's perspective, this can be in the form of grade separation or more incremental improvements (e.g., protective devices). Activities funded under this program are also eligible for funding under the broader eligibilities of the HSIP. FHWA administers the distribution of railway-highway crossing funds; however, states determine which public crossings need improvement and what the improvements should be.¹⁶

Highway-rail grade separation projects are legally allowed under this program, although these projects have never been funded through Section 130 in California.¹⁷ Therefore, these funds are not considered a potential source for RCTC grade separation projects at this time. If California's policy changes, however, these funds could be a source for ACE crossing grade separation. In the interim, this program might be used to fund other crossing improvements where safety is a crucial issue.

In order to qualify for the program, a project must (i) be included in the California Public Utilities (CPUC) "Recommended List of Public Crossings in California for Improved Crossing Protection with Federal Funding, (ii) be on a public road open to vehicular traffic, and (iii) be included in the appropriate Federal Transportation Improvement Program (FTIP) developed by a metropolitan planning organization and the Federal Statewide Transportation Improvement Program (FSTIP) approved by the FHWA.¹⁸ The CPUC evaluates projects under existing conditions and any projects to improve roadway capacity, such as roadway widening, will not be considered.¹⁹

The federal share for this program is 90% and the remaining 10% is to be paid by the state, local authorities, and/or the railroad. A railroad participating in a hazard elimination project is responsible for compensating the state transportation department for the net benefit to the railroad of the project, but this may not exceed 10% of the project cost.²⁰ The federal program is funded by contract authority, to remain available for four years.

California's average annual federal funding for the highway-rail crossing program is \$13,015,226 for FY2005 – FY2009.²¹

¹⁴ http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g04stp.pdf

¹⁵ <http://www.fhwa.dot.gov/safetealu/factsheets/railcrossings.htm>

¹⁶ SAFETEA-LU specifies that 50% of a state's apportionment must be set aside for the installation of protective devices at railway-highway crossings. [1401, 23 USC 130 (e)]

¹⁷ February 10, 2006 phone conversation with Ken Galt, Caltrans.

¹⁸ <http://www.dot.ca.gov/hq/rail/dorwebsite/section130.pdf>

¹⁹ <http://www.dot.ca.gov/hq/rail/dorwebsite/section130.pdf>

²⁰ <http://www.fhwa.dot.gov/safetealu/factsheets/railcrossings.htm>

²¹ PB Guide to SAFETEA-LU



Federal Discretionary Funds

Although new funding from the sources listed in this section is not available at this time, new funding may become available when SAFETEA-LU is reauthorized. Funding appropriations and allocations in past federal transportation bills do not indicate future funding; however, knowing which funding sources may be available and their historical funding amounts can be an approximate gauge for assessing potential future RCTC funding amounts.

Because the High Priority Project, Transportation Improvement Project, and National Corridor Improvement programs were completely earmarked in SAFETEA-LU, Congressional support will likely be necessary to obtain funding from any of these sources if the reauthorization bill is similar to SAFETEA-LU. High benefit/cost ratios might help build support for funding the projects.

High Priority Project (HPP) Authorization

Many highway-rail grade crossing projects are funded with High Priority Project authorization earmarks in SAFETEA-LU. These allocations, however, are relatively small. Most HPP authorizations are \$1 Million or less, and the upper limit is a few million dollars over the life of the authorization. There were 5,173 HPP earmarks totaling \$14.832 Billion over five years; some projects received multiple earmarks.

One of the larger HPP authorizations in SAFETEA-LU is in the Alameda Corridor East. The ACE Gateway to America Trade Corridor Project, which is a grade separation project from the Alameda Corridor (Hobart Junction) to Los Angeles/San Bernardino County Line, will receive \$12.4 Million over the life of SAFETEA-LU. The City of Riverside received a \$5 Million HPP earmark for grade separations.

Transportation Improvement Projects(TIP)

Similar to HPP authorizations, highway-rail grade separation funds are also earmarked in the Transportation Improvements section of SAFETEA-LU. There are fewer projects earmarked in this program (465), but the average authorization is slightly higher than HPP earmarks, typically in the \$1 Million - \$10 Million range. Typically, highway improvement projects receive funding from this section. Only a few (less than five) grade separation projects received funding from this section.

One recipient is the ACE Construction Authority, which will receive a \$30 Million Transportation Improvement authorization from SAFETEA-LU for grade separations. A total of \$2.56 Billion is authorized for this program through 2009. RCTC did not receive any Transportation Improvement grade separation funding, and no additional funding from this source will become available before the next federal reauthorization.

National Corridor Infrastructure Improvement Program (NCIP)

This program is for projects in corridors of national significance that promote economic growth and international or interregional trade. All funds from this program are earmarked in SAFETEA-LU. A total of \$1.948 Billion is authorized for FY2005 – FY2009. **The total contribution of HPP, TIP, and NCIP funds available for grade separation projects through 2015 is projected at \$30 Million.**



State:

Prop 1B Bond Initiative

The \$19.95 billion transportation bond initiative that will be put before California voters on November 6th, also known as Proposition 1B, creates two new accounts worth \$3.25 billion in total which could fund grade separation projects.

Prop 1B authorizes \$2 billion to the Trade Corridors Improvement Fund (TCIF). The proposition states that, "projects that separate rail lines from highway or local road traffic" are eligible for TCIF funding. This \$2 billion will be allocated by the California Transportation Commission (CTC) along federally designated "Trade Corridors of National Significance" and other corridors with high volumes of freight movement. Prop 1B requires the CTC to consult trade infrastructure and goods movement plans adopted by regional transportation planning agencies, which would include the Multi-County Goods Movement Action Plan (MCGMAP)²¹.

Another \$1 billion is authorized for distribution by the CTC to goods movement projects that result in emissions reductions. Although the CTC must allocate the funds through the State Air Resources Board, BT&H officials have expressed a desire that the CTC's guidelines consider grade separations as air quality projects. Depending on the guidelines the CTC adopts, it may be feasible to fund grade separation projects from this \$1 billion air quality fund.

Finally, Prop 1B creates the Highway-Railroad Crossing Safety Account, which is authorized at \$250 million. Projects funded from this account require a dollar-for-dollar match of non-state funds. \$150 million is to be allocated according to the Public Utilities Commission's (PUC) existing process for identifying and funding high-priority grade crossings. The other \$100 million is to be allocated by the CTC, in consultation with the PUC, considering projects that are not on the PUC's statewide list of high-priority grade crossings. Assuming passage of the Bond Initiative, **the total contribution of funds available for grade separation projects through 2015 is projected at \$67 Million.**

Local:

Measure A – Economic Development Incentives Program

In November 2002, Riverside County voters passed an extension of the Measure A 1/2 cent sales tax program. The program includes a new category of funding: Economic Development Incentives with an allocation of \$40 Million over the 30-year life of the Measure. The intent is to improve existing interchanges, construct new interchanges, provide public transit linkages or stations, and make other improvements to the transportation system.²³ Existing grade separation projects located in a commercial and industrial development in Western Riverside County could be eligible to compete in this category. If 25% of these funds were used for grade separation projects over six years, there would be \$10 Million in Economic Development Incentives funding for grade separation between 2010 and 2015. **The total contribution of Measure A Economic Development Incentives funds available for grade separation projects through 2015 is projected at \$10 Million.**

²³ Measure A 2002 Expenditure Plan

Railroad User Fees

In some cases, railroad user fees have been used to fund rail grade separation projects. ACE could consider levying a user charge on railroads; however, railroads would likely resist such charges unless they believed they would benefit from grade separations. Additionally, railroad user fees need stable and increasing volumes of traffic.²⁴

The most renowned example of using railroad user fees is the Alameda Corridor Project, which is discussed below.

The Alameda Corridor Transportation Authority (ACTA) charges a \$16.75 fee for each loaded waterborne twenty-foot equivalent unit (TEU) container, \$4.47 for each empty or non-waterborne TEU container, and \$8.93 for other types of loaded waterborne rail cars that originate or terminate at the San Pedro Bay Ports and utilize the Alameda rail corridor. The user fees were used to back \$1.2 Billion in revenue-backed bonds. The revenues from this are expected to be \$74 Million for FY2006.

User fees are just one part of the Alameda Corridor Project funding plan. Other major funding sources were the ports of Long Beach and Los Angeles (\$394 Million), a U.S. DOT loan (\$400 Million), the Los Angeles County MTA (\$347 Million), and interest and other resources (\$160 Million).

The ACTA project is unique in that it consolidated four meandering train lines into one throughway, eliminating approximately 200 at-grade highway-rail crossings. Along with drivers and air quality along the corridor, the railroads benefited considerably from the Alameda Corridor Project. The railroads realized speed improvements, which helped them meet their shippers' needs. Although the railroads experience intense competition from trucks in the Alameda Corridor, the railroads clearly benefited from the rail line consolidation, making the user fees more acceptable.

Sources: http://www.acta.org/newsroom_factsheet.htm
www.innovativefinance.org
ACTA, Program and Operating Budget for FY2005/2006



The ACE project differs from the Alameda Corridor project in that no clear grade separation speed advantages have been identified for the railroads. Railroads would benefit from grade separation if the improvements allowed them to store trains over longer segments of track (when parking trains, railroads often have to split trains into multiple segments to permit vehicles to cross at-grade crossings), although the dollar value of this benefit is unclear. Trains currently experience little or no delay that can be attributed to the highway-rail grade crossings in this study, so speed benefits appear to be small or non-existent. Therefore, it seems unlikely that railroads would be willing to contribute a large amount of funding for highway-rail grade separation at the RCTC high priority crossings, if anything. Railroads are commonly resistant about contributing to highway-rail grade separation projects.

Direct Contribution from Ports/Private

If the ports of Los Angeles and Long Beach believe goods movement through the port is constrained by ACE grade crossings, they might be willing to make contributions. However, because no significant delays due to the at-grade nature of the crossings have been identified as of yet, this type of contribution is unlikely as an ACE funding source at this time.

²⁴ AASHTO, "Freight-Rail Bottom Line Report," 2002.



In addition to a contribution from the Ports, lead agencies have received funding commitments from private developers for grade separation projects. The City of Banning anticipates receiving \$7.9 Million of these funds to support the Sunset Avenue Grade Separation Project.

[Direct Contributions from Railroads to support Section 190](#)

Section 190 awards from the State require a 10% local match from the host railroad. (see page 12). The total contribution of Section 190 funds through 2015 is projected at \$30 Million. Therefore, **the total contribution from the railroads to support Section 190 through 2015 is projected at \$3 Million.**

Unlikely Sources of Funding

[Tax Increment Finance \(TIF\) District](#)

TIF is a formal reallocation of future property tax collections such that a predetermined proportion is dedicated to a specific use, in this case, the repayment of debt for the project. TIF districts are typically established to recapture the additional growth that jurisdictions are directly experiencing as a result of an infrastructure expansion or improvement project, which in this case is the grade separation of rail crossings. Taxpayer would not experience an increased tax burden; rather the tax collecting jurisdiction would redirect a proportion of future growth in the tax revenues toward the repayment of project debt. Because this funding mechanism can be politically controversial and the projects are not likely to cause substantial additional growth like a new highway might, it does not seem to fit the RCTC funding plan program well.

[Development Impact Fee \(DIF\) District](#)

DIFs are a one-time fee charged to developers of new residential and/or commercial property. The revenue stream from development impact fees can be volatile as it is tied to the cyclical nature of residential and commercial development. DIFs are typically used in areas where there will be high levels of new development taking place. Although DIFs have been used in multiple cases for highways, which tend to spur growth by increasing accessibility, rail grade separation is not likely to directly cause significant development. Therefore, this is an unlikely funding source.

[Special Assessment District \(SAD\)](#)

A special assessment district is a tax that typically is in the form of an additional "cents per \$100 in real property" that would be paid on all residential and commercial property in parity with existing property taxes. SADs represent an increase in the tax rate rather than a reallocation of taxes already being paid in the Tax Increment Finance. This is an option local leaders may want to consider if there is strong support for the need to grade separate the highway-rail crossings and/or other sources cannot fully pay for the project; however, the amount is still likely to be relatively small and unpopular with those being forced to make a contribution.

[Direct or Indirect Contributions from Private Beneficiaries](#)

Many of the grade separation benefits accrue to residences and businesses located near the grade crossings. The grade separation project could potentially capture this, and receive in-kind contributions from adjacent landowners (e.g., right-of-way or cash contributions in exchange for more favorable zoning or accelerated transportation improvements). This source might be more likely if landowners have a significant investment near a crossing, although few (if any) donations should be expected.



County or City Fuel/Sales Tax

Because much of the grade separation benefits would accrue to drivers and people living or working along the corridor, an additional county or city fuel tax may be a potential funding source. As an example, San Bernardino County has raised \$6 Million for grade separation from a portion of the county half-cent transportation sales tax (Measure I).²⁵

An alternative approach is a ? cent city sales tax with a 10 year sunset provision. Approval of this type of tax would require a 2/3rds majority vote, and could generate up to \$11 Million per year for the City of Riverside. However, due to recent TUMF measures, it is unlikely voters would approve a new fuel/sales tax surcharge for a highway-rail grade separation program in at least the next five years.

Key Factors for Success

Critical to the success of achieving the RCTC funding strategy:

- *Lead Agency Commitment* to develop shelf-ready projects. In order to compete effectively on a national, state, and local stage for discretionary funds, projects must be shelf-ready (i.e. completion of preliminary engineering, final design, and environmental clearance). It will be critical for the lead agencies to develop shelf-ready projects through the use of local fund sources in order to leverage the federal and state discretionary dollars;
- *Project Completion of Funding Priority Group A* is required to demonstrate the region's ability to deliver the projects in a timely manner. These four projects must be completed prior to reauthorization of the transportation bill in order to leverage the ability to receive the \$361.8 Million of potential future funding; and
- *Legislative Action* is required to streamline the delivery of projects as well as increase the eligibility of grade separation projects for funding. For example, Section 190 restricts the ability of lead agencies to seek future funds for a period of 10 years if they receive an award of \$6 Million. A bill introduced in 2006 by Assemblyman John J. Benoit (R-Palm Desert) and sponsored by the City of Riverside, AB 2630, seeks to lift the ten year restriction on agencies that have allocated more than \$5 million to one grade separation. As of July 2006, this bill has passed unanimously through the State Assembly and is on its way to the Senate Committee on Appropriations.

Federal funding through Congress must also remain a top priority. In many ways, the goods movement need that creates Riverside County's grade crossing crisis is a natural byproduct of federal economic policy. The nation's economy depends on free trade which has led to additional rail demand. As a result, it is incumbent on the Congress to fund goods movement-related projects.

In addition, the County Transportation Commissions in Southern California have launched a "trade corridor approval process" as part of the Southern California Leadership Council Green Freight Initiative. The purpose is to address streamlining CPUC approval of utility relocations associated with grade separation projects through development of public-private partnerships. This could result in a single pre-approval process for international trade corridors rather than a project by project basis which can prolong the delivery of projects and increase project costs.

²⁵ <http://www.sanbag.com>

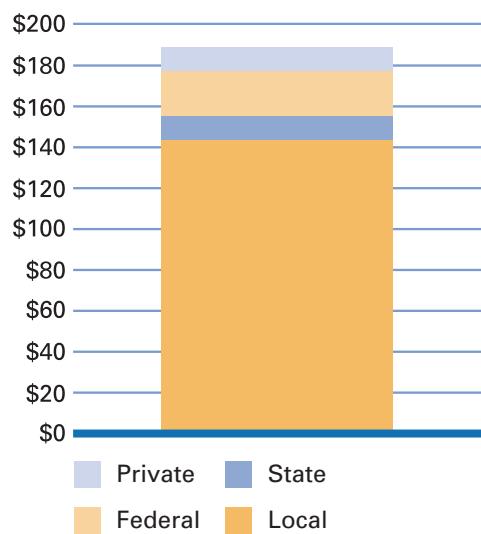


Summary of Funding Sources

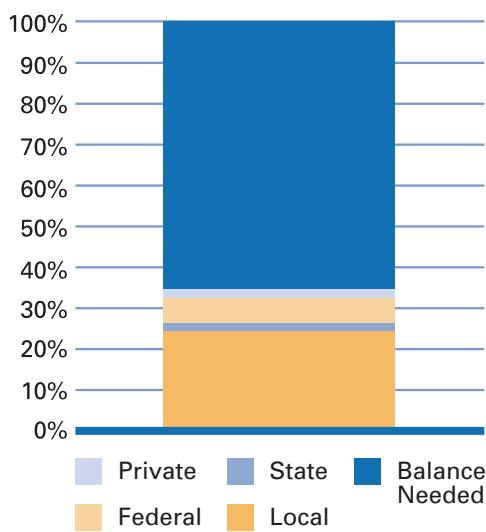
The table below summarizes the proposed funding mix for the 18 high priority crossings:

Funding Source	Totals	Plan/ Program	Currently Available for Funding	Projected Funding
Federal				
Congressional Earmarks	\$19.4M	\$ 3.4M	-	\$16.0M
Projects of Nat'l & Regional Significance	\$109.0M	\$21.0M	\$10.2M	\$77.8M
Transp. & Community & System Preservation	\$ 4.0M	-	\$2.0M	\$ 2.0M
Formula Funds				
Congestion Mitigation & Air Quality	\$40.8M	\$10.8M	-	\$30.0M
Section 130	-	-	-	-
Surface Transportation Program	\$30.0M	-	-	\$30.0M
Discretionary Funds				
High Priority Project	\$30.0M	-	-	\$30.0M
Nat'l Corridor Infrastructure Improvement Program	-	-	-	-
Transportation Improvement Projects	-	-	-	-
Total Federal	\$233.2M	\$35.2M	\$12.2M	\$185.8M
State				
Section 190	\$40.0M	\$10.0M	-	\$30.0M
Discretionary Funds				
Bond Initiative	\$66.7M	-	-	\$66.7M
Total State	\$106.7M	\$10.0M	-	\$96.7M
Local				
Measure A – Local Streets & Roads	\$15.0M	\$2.0M	-	\$13.0M
Transportation Uniform Mitigation Fee	\$175.0M	\$133.9M	-	\$41.1M
Discretionary Funds				
Direct Contribution from Private	\$ 7.9M	\$ 7.9M	-	-
Direct Contribution from Railroads	\$ 6.3M	\$ 3.3M	-	\$ 3.0M
Measure A – Economic Development	\$10.0M	-	-	\$10.0M
County General Fund	\$ 6.7M	\$ 6.7M	-	-
Total Local	\$220.9M	\$153.8M	-	\$67.1M
Totals	\$560.8M	\$199.0M		
Funding Needed			(\$361.8M)	\$12.2M
				\$349.6M

The funding strategy recommends that the \$361.8M needed to address the funding gap be secured from federal (55% or \$198.0M), state (27% or \$96.7M), and local/private sources (19% or \$67.1M) between now and 2015 in order to fully fund the 18 high priority crossings.



Current Programmed Funds



Current Funding Status Showing Shortfall

Appendix A

RCTC ACE Trade Corridor Grade Crossing Separation Needed List, April 2006

Rail Line	Cross Street	Lead Agency	Overall Weighted Score*	Priority Group
UP (LA SUB)	Jurupa Rd	Riverside County	4412	1
BNSF & UP (SB SUB)	Chicago Av	Riverside	4330	1
BNSF (SB SUB)	Magnolia Av	Riverside County	4250	1
BNSF & UP (SB SUB)	3rd St	Riverside	4010	1
BNSF (SB SUB)	McKinley St	Corona	3950	1
BNSF & UP (SB SUB)	Columbia Av (BNSF)	Riverside	3950	1
UP (LA SUB)	Magnolia Av	Riverside	3880	1
UP (YUMA MAIN)	Sunset Av	Banning	3800	1
UP (LA SUB)	Riverside Av	Riverside	3785	1
BNSF & UP (SB SUB)	Iowa Av (BNSF)	Riverside	3770	1
BNSF (SB SUB)	Adams St	Riverside	3665	1
BNSF (SB SUB)	Auto Center Dr	Corona	3638	2
UP (YUMA MAIN)	Hargrave St	Banning	3625	2
UP (LA SUB)	Clay St	Riverside County	3535	2
BNSF (SB SUB)	Smith Av	Corona	3263	2
BNSF & UP (SB SUB)	7th St	Riverside	3110	2
BNSF (SB SUB)	Tyler St	Riverside	3100	2
UP (YUMA MAIN)	22nd St	Banning	3100	2
UP (YUMA MAIN)	Avenue 48/Dillon Road	Indio/Coachella	3075	2
BNSF & UP (SB SUB)	Center St	Riverside County	3008	2
UP (YUMA MAIN)	San Gorgonio Av	Banning	3000	2
UP (LA SUB)	Streeter Av	Riverside	2965	2
UP (LA SUB)	Jurupa Ave	Riverside	2925	2
BNSF & UP (SB SUB)	Palmyrita Av (UP)	Riverside	2835	2
BNSF & UP (SB SUB)	Spruce St (BNSF)	Riverside	2695	2
BNSF (SB SUB)	Madison St	Riverside	2690	2
UP (LA SUB)	Brockton Av	Riverside	2650	2
BNSF (SB SUB)	Mary St	Riverside	2640	2
BNSF (SB SUB)	Pierce St	Riverside	2590	3
UP (YUMA MAIN)	Avenue 62	Riverside County	2544	3
BNSF (SB SUB)	Railroad St	Corona	2475	3
UP (LA SUB)	Panorama Rd	Riverside	2465	3
BNSF (SB SUB)	Buchanan St	Riverside	2400	3
UP (LA SUB)	Bellgrave Av	Riverside County	2348	3
UP (YUMA MAIN)	Avenue 66	Riverside County	2265	3
UP (LA SUB)	Palm Av	Riverside	2265	3
UP (YUMA MAIN)	Avenue 52	Coachella	2258	3
UP (YUMA MAIN)	California Av	Beaumont	2200	3
UP (YUMA MAIN)	San Timoteo Canyon Rd	Calimesa	2100	3
BNSF (SB SUB)	Washington St	Riverside	2080	4
UP (YUMA MAIN)	Apache Trail	Riverside County	2052	4
UP (LA SUB)	Rutile St	Riverside County	2046	4
BNSF (SB SUB)	Jefferson St	Riverside	2030	4
BNSF & UP (RIV)	Cridge St	Riverside	2025	4
UP (YUMA MAIN)	Viele Av	Beaumont	1983	4
BNSF (SB SUB)	Cota St	Corona	1938	4
UP (YUMA MAIN)	Broadway	Riverside County	1904	4
UP (LA SUB)	Mountain View Av	Riverside	1650	4
UP (YUMA MAIN)	Airport Drive	Riverside County	1592	4
BNSF & UP (SB SUB)	Main St	Riverside County	1531	4
BNSF (SB SUB)	Jackson St	Riverside	1330	4
UP (YUMA MAIN)	Pennsylvania Av	Beaumont	1267	4
BNSF (SB SUB)	Joy St	Corona	1250	4
BNSF (SB SUB)	Harrison St	Riverside	1120	4
UP (YUMA MAIN)	Tipton Rd	Palm Springs	1100	4
BNSF (SB SUB)	Radio Rd	Corona	1075	5
BNSF (SB SUB)	Jane St	Riverside	1060	5
UP (YUMA MAIN)	Avenue 54	Coachella	767	5
UP (YUMA MAIN)	Avenue 58	Riverside County	688	5
BNSF (SB SUB)	Sheridan St	Corona	663	5
BNSF (SB SUB)	Gibson St	Riverside	520	5

Seven factors were considered in determining the overall score and resulting priority group; they were identified in consultation with technical staff of the affected jurisdictions, and approved by the Riverside County Transportation Commission (RCTC).

The factors include:

- **Safety – Accident Score**
(combination of frequency & severity)
20% of total score
- **Delay – 2005 Daily Vehicle Delay**
20% of total score
- **Delay – 2030 Daily Vehicle Delay**
20% of total score
- **Emissions Reduction**
10% of total score
- **Noise Reduction**
10% of total score
- **Adjacent Grade Separations**
10% of total score
- **Local Priority Ranking**
10% of total score

RCTC established a Priority List in March 2001. The List was updated in April 2006. Between March 2001 and April 2006, one grade separation project was completed: Avenue 50, Coachella in January 2004.



Appendix B

RCTC Grade Separation Funding Strategy: Funding – Summary

(\$ in Millions)

RCTC Priority Tier	Project	Project Total	Total Program/Plan	FEDERAL	STATE	LOCAL	PRIVATE	Balance Needed	Project Status
Funding Strategy Priority A									
1	Columbia Av/BNSF & UP- Riverside	\$21.0	21.0	-	-	21.0	-	\$0.0	PE
1	Sunset Av/UP - Banning	\$21.0	21.0	10.6	-	9.4	1.0	\$0.0	PE
2	Jurupa Ave/UP - Riverside	\$21.7	21.7	12.2	5.0	3.4	1.1	\$0.0	Final Design
2	Avenue 48/Dillon Road/UP - Coachella/Indio	\$16.1	16.1	7.1	5.0	2.8	1.2	\$0.0	Final Design
Subtotal Priority A		\$79.8	\$79.8	\$29.9	\$10.0	\$36.6	\$3.3	\$0.0	-
<i>Funding Source Split</i>		100.00%	-	37.47%	12.53%	45.86%	4.14%	0.00%	-
Funding Strategy Priority B									
1	Chicago Av/BNSF & UP - Riverside	\$48.7	19.3	-	-	19.3	-	\$29.4	-
1	Magnolia Av/BNSF - Riverside County	\$26.7	9.7	-	-	9.7	-	\$17.0	-
1	3rd St/BNSF & UP - Riverside	\$31.7	1.0	-	-	1.0	-	\$30.7	PE
1	McKinley St/BNSF - Corona	\$109.2	30.4	1.0	-	29.4	-	\$78.8	-
1	Magnolia Av/UP - Riverside	\$27.2	9.7	-	-	9.7	-	\$17.5	PE
1	Iowa Av/BNSF & UP- Riverside	\$19.0	14.5	-	-	14.5	-	\$4.5	-
1	Adams St/BNSF - Riverside	\$24.0	9.7	-	-	9.7	-	\$14.3	-
2	Auto Center Dr/BNSF - Corona	\$27.0	2.2	1.5	-	0.7	-	\$24.8	-
2	Clay St/UP - Riverside County	\$25.0	3.0	2.5	-	0.5	-	\$22.0	-
2	Center St/BNSF & UP- Riverside County	\$36.3	9.7	-	-	9.7	-	\$26.6	-
2	Streeter Av/UP - Riverside	\$33.7	0.3	0.3	-	-	-	\$33.4	-
2	Madison St/BNSF - Riverside	\$19.0	9.7	-	-	9.7	-	\$9.3	-
Subtotal Priority B		\$427.5	\$119.2	5.3	-	\$113.9	-	\$308.3	-
<i>Funding Source Split</i>		100.00%	-	1.24%	0.00%	26.64%	0.00%	72.12%	-
Funding Strategy Priority C									
1	Jurupa Rd/UP - Riverside County	\$26.5	-	-	-	-	-	\$26.5	-
1	Riverside Av/UP - Riverside	\$27.0	-	-	-	-	-	\$27.0	-
Subtotal Priority C		\$53.5	-	-	-	-	-	\$53.5	-
<i>Funding Source Split</i>		100.00%	-	0.00%	0.00%	0.00%	0.00%	100.00%	-
TOTALS		\$560.8	\$199.0	\$35.2	\$10.0	\$150.5	\$3.3	\$361.8	
<i>Funding Source Split</i>		100.00%	-	6.28%	1.78%	26.84%	0.59%	64.51%	

Non Priority 1 & 2 Crossings w/Funding

Railroad St/Corona
San Timoteo Canyon Road/Calimesa
Viele Av/Beaumont



Appendix C

RCTC Grade Separation Funding Strategy: Funding – Detail

(\$ in Millions)		FEDERAL				STATE		LOCAL			PRIVATE		
RCTC Priority Tier	Project	Project Total	Total Program Plan	ACE SAFETEA LU	CMAQ/ STP	Approp Earmark	CPUC 190	Measure A	TUMF	Gen Fund	RRds	Other	Balance Needed
Funding Strategy Priority A													
1	Columbia Av/BNSF & UP- Riverside	\$21.0	21.0	-	-	-	-	-	21.0	-	-	-	-
1	Sunset Av/UP - Banning	\$21.0	21.0	7.5	-	3.1	-	1.5	-	-	1.0	7.9	-
2	Jurupa Ave/UP - Riverside	\$21.7	21.7	6.0	6.2	-	5.0	0.5	-	2.9	1.1	-	-
2	Avenue 48/Dillon Road/UP - Coachella/Indio	\$16.1	16.1	2.5	4.6	-	5.0	-	-	2.8	1.2	-	-
Subtotal Priority A		\$79.8	\$79.8	\$16.0	\$10.8	\$3.1	\$10.0	\$2.0	\$21.0	\$5.7	\$3.3	\$7.9	\$0.0
<i>100.00%</i>		<i>100.00%</i>											<i>0.00%</i>
Funding Strategy Priority B													
1	Chicago Av/BNSF & UP - Riverside	\$48.7	19.3	-	-	-	-	-	19.3	-	-	-	\$29.4
1	Magnolia Av/BNSF - Riverside County	\$26.7	9.7	-	-	-	-	-	9.7	-	-	-	\$17.0
1	3rd St/BNSF & UP - Riverside	\$31.7	1.0	-	-	-	-	-	-	1.0	-	-	\$30.7
1	McKinley St/BNSF - Corona	\$109.2	30.4	1.0	-	-	-	-	29.4	-	-	-	\$78.8
1	Magnolia Av/UP - Riverside	\$27.2	9.7	-	-	-	-	-	9.7	-	-	-	\$17.5
1	Iowa Av/BNSF & UP- Riverside	\$19.0	14.5	-	-	-	-	-	14.5	-	-	-	\$4.5
1	Adams St/BNSF - Riverside	\$24.0	9.7	-	-	-	-	-	9.7	-	-	-	\$14.3
2	Auto Center Dr/BNSF - Corona	\$27.0	2.2	1.5	-	-	-	-	0.7	-	-	-	\$24.8
2	Clay St/UP - Riverside County	\$25.0	3.0	2.5	-	-	-	-	0.5	-	-	-	\$22.0
2	Center St/BNSF & UP- Riverside County	\$36.3	9.7	-	-	-	-	-	9.7	-	-	-	\$26.6
2	Streeter Av/UP - Riverside	\$33.7	0.3	-	-	0.3	-	-	-	-	-	-	\$33.4
2	Madison St/BNSF - Riverside	\$19.0	9.7	-	-	-	-	-	9.7	-	-	-	\$9.3
Subtotal Priority B		\$427.5	\$119.2	\$5.0	\$0.0	\$0.3	\$0.0	\$0.0	\$112.9	\$1.0	\$0.0	\$0.0	\$308.3
<i>100.00%</i>		<i>27.88%</i>											<i>72.12%</i>
Funding Strategy Priority C													
1	Jurupa Rd/UP - Riverside County	\$26.5	-	-	-	-	-	-	-	-	-	-	\$26.5
1	Riverside Av/UP - Riverside	\$27.0	-	-	-	-	-	-	-	-	-	-	\$27.0
Subtotal Priority C		\$53.5	-	-	-	-	-	-	-	-	-	-	\$53.5
<i>100.00%</i>		<i>0.00%</i>											<i>100.00%</i>
TOTALS		\$560.8	\$199.0	\$21.0	\$10.8	\$3.4	\$10.0	\$2.0	\$133.9	\$6.7	\$3.3	\$7.9	\$361.8
<i>100.00%</i>													<i>64.51%</i>
Available But Unprogrammed													
Non Priority 1& 2 Crossings w/Funding													TUMF
3	Railroad St/Corona												9.7
3	San Timoteo Canyon Road/Calimesa												9.7
4	Viele Av/Beaumont												19.3
Projects Completed in Last 5 Years													
Ave 50/UP - Coachella (Jan 2004)													



Appendix D

RCTC Grade Separation Funding Strategy: Impacts – Elimination Of:

RCTC Priority Tier Project (Min)	2005 Gate Down Time (Min)	2030 Daily Gate Down of Delay	2005 Daily Vehicle Hours of Delay	2030 Daily Vehicle Hours 10 yrs	Accidents Eliminated/ (tons/year)	2030 Total Emissions w/in 1600'	*Noise Population Affected w/in 6400'	*Noise Population Affected
Funding Strategy Priority A								
1 Columbia Av/BNSF & UP- Riverside	185.6	383.4	33.9	145.4	1	13.90	1,082	12,937
1 Sunset Av/UP - Banning	101.2	200.6	40.4	194.0	1	17.74	921	8,334
2 Jurupa Ave/UP - Riverside	83.3	162.5	16.4	48.7	2	4.05	2,811	21,987
2 Avenue 48/Dillon Road/UP - Coachella/Indio	74.5	140.9	12.9	81.5	2	6.99	582	7,400
Subtotal Priority A	444.6	887.4	103.6	469.6	6	42.68	5,396	50,658
7 hrs 25 min. 14 hrs 47 min.								
Funding Strategy Priority B								
1 Chicago Av/BNSF & UP - Riverside	185.6	383.4	33.0	168.1	4	15.85	1,264	21,672
1 Magnolia Av/BNSF - Riverside County	104.8	203.5	24.8	103.4	6	9.93	2,851	23,596
1 3rd St/BNSF & UP - Riverside	185.6	383.4	37.4	148.0	1	14.14	1,140	26,686
1 McKinley St/BNSF - Corona	106.2	204.9	65.2	276.7	3	25.80	2,851	20,202
1 Magnolia Av/UP - Riverside	96.7	175.9	99.3	187.3	1	7.68	1,233	24,520
1 Iowa Av/BNSF & UP- Riverside	185.6	383.4	51.8	254.1	1	23.96	524	9,325
2 Adams St/BNSF - Riverside	104.8	203.5	38.4	114.5	1	10.99	2,630	24,406
2 Auto Center Dr/BNSF - Corona	114.4	214.6	23.3	264.1	1	18.96	843	18,169
2 Clay St/UP - Riverside County	84.3	163.5	42.5	131.8	1	11.36	1,247	9,227
2 Center St/BNSF & UP- Riverside County	187.4	385.2	20.0	85.0	0	7.92	965	9,989
2 Streeter Av/UP - Riverside	91.5	170.7	29.2	72.8	1	4.58	2,898	24,226
2 Madison St/BNSF - Riverside	104.8	203.5	14.7	38.8	2	3.68	1,691	22,621
Subtotal Priority B	1,551.7	3,075.5	479.6	1,844.6	22	154.85	20,137	234,639
25 hrs 52 min. 51 hrs 15 min.								
Funding Strategy Priority C								
1 Jurupa Rd/UP - Riverside County	126.9	205.9	105.4	291.7	6	8.48	972	9,856
1 Riverside Av/UP - Riverside	114.6	206.0	88.3	139.4	2	6.24	1,253	21,936
Subtotal Priority C	241.5	411.9	193.7	431.1	8	14.72	2,225	31,792
25 hrs 52 min. 51 hrs 15 min.								
TOTALS	\$560.8	\$199.0	\$35.2	\$10.0	\$150.5	\$3.3	\$361.8	
37 hrs 18 min. 72 hrs 55 min.								

Data in **BLUE** denotes highest in County among all 60 at grade crossings.

*Populations may overlap at adjacent crossings - Totals likely include double-counting.





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