



TABLE OF CONTENTS
SR-91 Corridor
Improvement Project



**Riverside County
Transportation Commission
(RCTC)**
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Introduction 1

Section I
Project Description..... 2

Section II
Project Parties 4

Section III
Grant Funds and Sources/Uses of Project Funds 5

Section IV
Selection Criteria..... 6

A. Long-Term Outcomes 6

 1. *State of Good Repair*..... 6

 2. *Economic Competitiveness* 6

 3. *Livability*..... 8

 4. *Environmental Sustainability*..... 12

 5. *Safety* 15

B. Job Creation & Near-Term Economic Activity16

C. Innovation 17

D. Partnership 20

E. Results of Benefit-Cost Analysis..... 21

Section V
Project Readiness and NEPA 22

Project Schedule..... 22

Environmental Approvals..... 23

Legislative Approvals 23

Support for the Project 23

State and Local Planning 24

Technical Feasibility 24

Financial Feasibility..... 24

Section VI
Federal Wage Rate Certification 25

Section VII
Changes to the Pre-Application Form..... 25

Appendix A – Benefit Cost Analysis

Appendix B – Federal Wage Rate Certification

Appendix C – Letters of Support

Appendix D – TIFIA Letter of Interest





Introduction

Connecting Riverside and Orange Counties: Could it be the Nation’s Toughest Transportation Challenge?

Try finding a transportation solution that links a two-county area of more than four million people. Make that challenge even harder by winding that solution through a narrow canyon while protecting environmentally sensitive areas and a national forest. Remember also that it’s in a severe non-attainment area for ozone and other air pollutants. Most importantly, keep in mind the economic and quality of life stakes involved, it’s Southern California, an economic powerhouse. It includes the nation’s largest port complex, major employers, universities, international trade and tourism and part of a larger regional area of more than 17 million people who have to get around without insufferable congestion and delay.

RCTC stands ready to deliver a project that is worthy of TIGER consideration and needs USDOT support in the form of a TIGER TIFIA Payment of \$33.4 million.

To meet that challenge, the Riverside County Transportation Commission (RCTC) stands ready to deliver a project that is worthy of TIGER consideration and needs U.S. Department of Transportation (USDOT) support in the form of a TIGER TIFIA Payment of \$33.4 million. In a recent document highlighting the TIGER program, the USDOT stated:

“The competitive nature of the TIGER program and its broad eligibility allow DOT to avoid narrow, formula-based eligibility categories and fund large, multi-modal, multi-jurisdictional projects not funded through traditional DOT programs. . .”

The TIGER TIFIA Payment would be the first step in securing a TIFIA Loan that provides the financial catalyst needed to leverage over \$1.3 billion in local funding

More accurate words could not be used to describe the State Route 91 (SR-91) Corridor Improvement Project (Project). The Project is a critical element in an integrated strategy that the RCTC and its partner agencies are pursuing to support a robust and connected corridor. The TIGER TIFIA Payment would be the first step in securing a TIFIA Loan that provides the financial catalyst needed to leverage over \$1.3 billion in local funding to deliver the Project and the regional and national benefits it offers, including:

- Addressing current and future transportation deficiencies in one of the most congested corridors in Southern California.
- Improving the quality of life in the corridor and adjacent communities by reducing congestion on SR-91 and local streets and providing a congestion-free option to those willing to pay a toll to travel on the express lanes.
- Providing more transportation choices by supporting the expansion of express bus service on SR-91 and providing an incentive for carpools and vanpools to use the congestion-free express lanes.
- Creating more than 16,000 jobs in Riverside County, currently home to one of the highest unemployment rates of the nation’s largest metropolitan areas.





- Contributing to the economic competitiveness of the United States by improving the efficiency and reliability of goods movement in and out of the Ports of Los Angeles and Long Beach (POLA/POLB), the largest port complex in the United States.
- Ensuring the long-term safety, maintainability and reliability of the regional and interstate transportation network, including the SR-91/I-15 interchange.

SECTION I Project Description



State Route 91 and 91 Express Lanes

State Route 91 (SR-91) is part of the only multi-modal transportation corridor between Riverside and Orange counties in southern California (Figure 1). The corridor also includes the Metrolink commuter rail line and the Santa Ana River Trail (SART). SR-91 is currently used by more than 280,000 vehicles per day, and this volume is forecast to increase by approximately 50% by 2035. The corridor provides a vital link between employment opportunities in Los Angeles, Orange, Riverside and San Bernardino counties, home to nearly 6.6 million jobs or approximately 45% of all jobs in California. SR-91 also serves national goods movement between Interstate 15 (I-15) and Interstate 10 (I-10) and the POLA/POLB, where more than 40% of the nation’s imported goods enter the United States.

Key elements of the corridor, including the Project, are described below.

State Route 91

SR-91 currently includes two tolled lanes (91 Express Lanes) in each direction within a 10-mile segment in Orange County. The Project will extend the 91 Express Lanes and construct one general

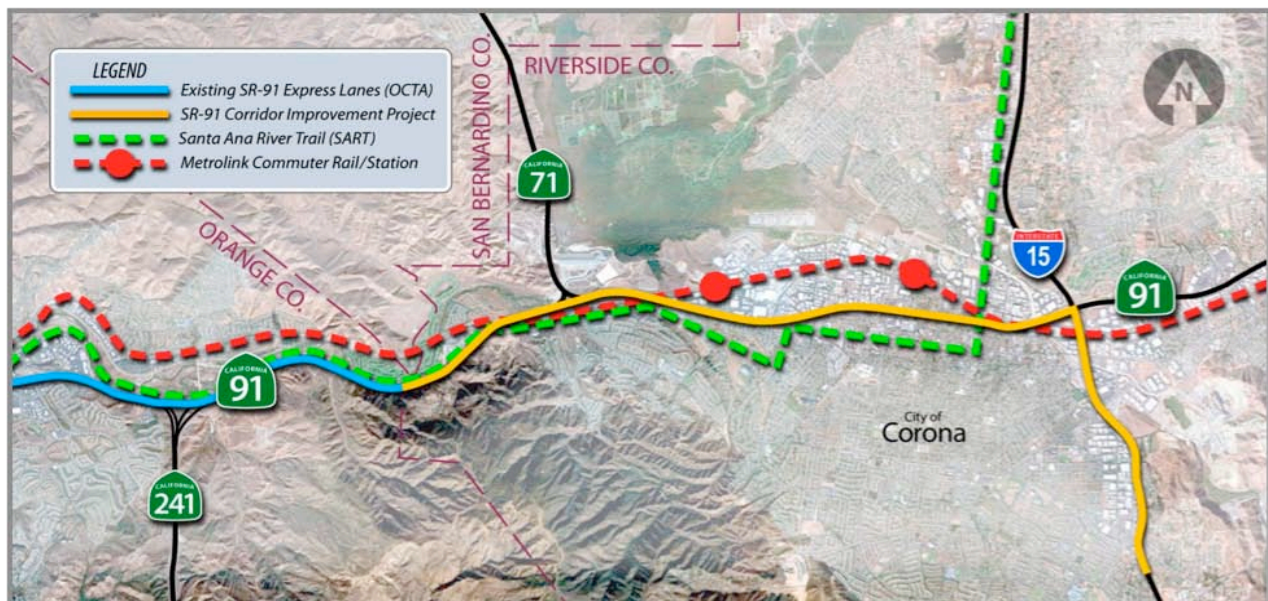


Figure 1
SR-91 Multi-Modal Corridor

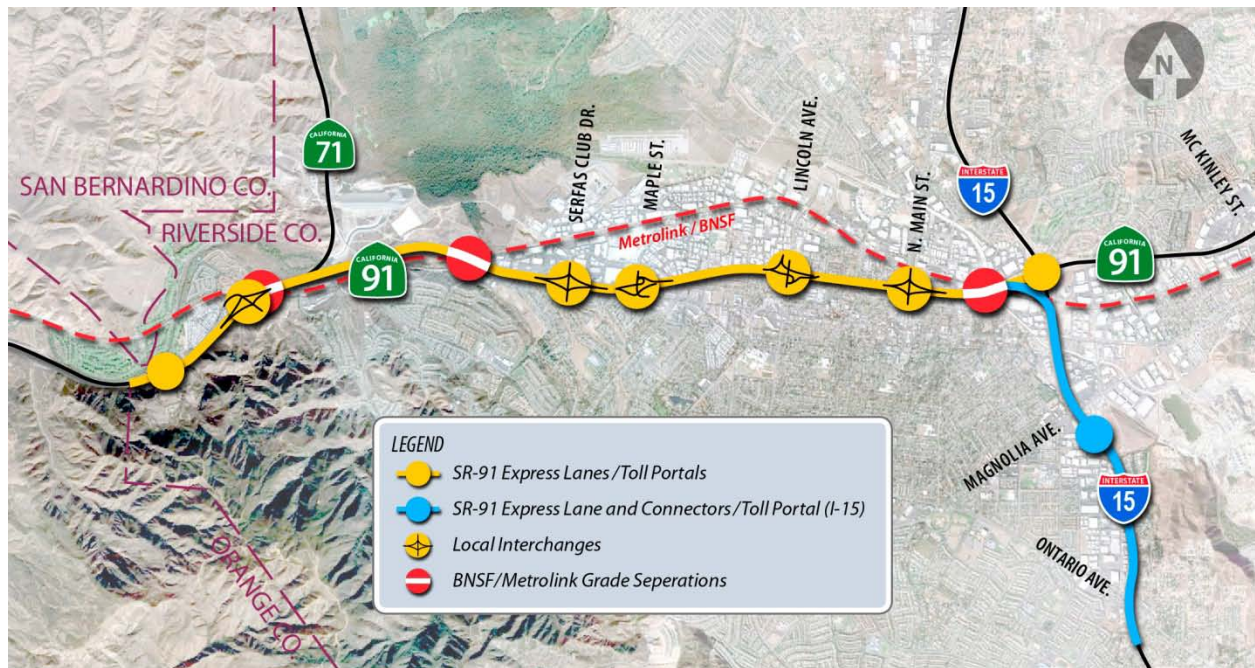


Figure 2 - Project Features

Using the new 91 Express Lanes, commuters will save 30 minutes on average on the 8-mile segment of SR-91 in Riverside County.

purpose lane in each direction from the Orange County line to I-15 in Riverside County, a distance of approximately 8 miles (Figure 2). The Project will also provide express lane connectors to I-15. The existing 91 Express Lanes feature fully automated tolling and was the first application of managed lane variable pricing in the United States, which adjusts toll rates based on the number of vehicles on the road to maximize total throughput. The use of Electronic Toll Collection (ETC) technology eliminates the need to stop and pay tolls, thus ensuring efficient traffic flow. This same technology will be deployed on the proposed 91 Express Lanes and be completely integrated with the existing express lanes in Orange County. Using the new 91 Express Lanes, commuters will save 30 minutes on average on the 8-mile segment of SR-91 in Riverside County. The primary features of the Project are depicted in Figure 2. Additional information is provided on the Project website at <http://sr91project.info/>.



Metrolink Commuter Rail Line

Metrolink Commuter Rail Lines

Since 1995, RCTC has made a significant investment in expanding commuter rail service between Riverside and Orange counties. This includes two commuter rail lines (IEOC and 91 Lines) operated adjacent to SR-91 on the BNSF railroad. The IEOC line operates eight trains in each direction during peak periods and the 91 line operates four trains in each direction. Two stations located in Corona are within 0.25-miles of SR-91 and the Project will improve access and reduce local congestion at the stations. RCTC is developing the Perris Valley Line (PVL), which will extend Metrolink 22 miles south of SR-91 at a cost of \$235 million. Completion of the PVL in 2013 will increase ridership opportunities between Riverside and Orange counties and provides an attractive alternative to driving on SR-91.



Santa Ana River Trail

Santa Ana River Trail (SART)

The SART stretches from the Pacific Ocean in Huntington Beach along the Santa Ana River and SR-91 to Riverside County for a distance of 68 miles. The trail provides a dedicated, safe, and uninterrupted route for recreational and commuting cyclists and pedestrians. The trail will ultimately be extended east of Riverside County to the crest of the San Bernardino Mountains, making it approximately 100 miles long, the longest paved bicycle and pedestrian corridor in Southern California.

**SECTION II
Project Parties**

Riverside County Transportation Commission

RCTC is seeking a TIFIA Loan and a TIGER TIFIA Payment. As the applicant and borrower, RCTC will assume responsibility for providing the investment grade rating opinion letter, financial plan, and project management and monitoring plan, supporting documentation regarding the borrower’s legal status, and other items as required. As the lead sponsor of the Project, RCTC is working in partnership with the California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA) to environmentally clear the Project; procure a design-build contractor; secure project financing; design and construct; and operate and maintain the tolled express lane facility.



Toll Road Entrance, State Route 91

RCTC was created by the California Legislature in 1976 and is governed by a Commission that includes a mayor or council member from each of Riverside County’s cities, all five members of the County Board of Supervisors, and a nonvoting appointee of the Governor. The county’s primary transportation funding source is a half-cent sales tax program approved by voters in 1988 and renewed in 2002. The sales tax program represents a stable funding source with popular support. Both Measure A elections received support in excess of a two-thirds margin. Today, RCTC plans and implements transportation and transit improvements, assists local governments with money for local streets and roads, helps smooth the way for commuters and goods movement, and works to ensure mobility choice. RCTC also approves projects for allocation of state and federal transportation funds in Riverside County.

Federal Highway Administration

FHWA’s roles and responsibilities under the High Profile Project Agreement (HPPA) will include review and/or approval of federal funds obligations, right-of-way (ROW) certifications, utility relocations, environmental conformity to the Environmental Impact Statement (EIS), Financial Plans, final Request for Proposals (RFP), Project Management Plans, and Cost Estimate Reviews (CER), as well as various construction phase activities. RCTC and FHWA executed a Section 129 Toll Agreement on August 18, 2009. Additionally, FHWA has indicated that the Project will be admitted into the Every Day Counts program.





RCTC and FHWA executed a Section 129 Toll Agreement on August 18, 2009.

RCTC and Caltrans are entering into two separate agreements: a Design-Build Cooperative Agreement relating to Caltrans' role and oversight of the design and construction of the Project and a Toll Facilities Agreement relating to RCTC's leasehold rights to Caltrans' ROW and Caltrans' role and oversight of the operations and maintenance of the Project.

**SECTION III
Grant Funds and Sources/Uses of Project Funds**

California Department of Transportation (Caltrans)

The Project will be built on Caltrans ROW, under rights granted to RCTC pursuant to Senate Bill 1316 (SB 1316) and pursuant to an assignment or amendment of the existing franchise agreement between Caltrans and the Orange County Transportation Authority (OCTA), as set forth in SB 1316. SB 1316 provides RCTC the right to toll the new facilities for 50 years following service commencement. RCTC and Caltrans are entering into two separate agreements: a Design-Build Cooperative Agreement (relating to Caltrans' role and oversight of the design and construction of the Project) and a Toll Facilities Agreement (relating to RCTC's leasehold rights to Caltrans' ROW and Caltrans' role and oversight of the operations and maintenance of the Project). Both agreements are nearing completion and are expected to be executed in early 2012.

Orange County Transportation Authority (OCTA)

Beginning in 2003, OCTA assumed responsibility for the 91 Express Lanes in Orange and Riverside counties under assignment of an existing franchise agreement. SB 1316 authorizes OCTA to terminate its rights, interests, and obligations in the Riverside County portion of the SR-91 express lanes in favor of RCTC. Under a cooperative agreement, RCTC and OCTA will use a common toll operator (currently Cofiroute USA LLC) and agree on cost and revenue sharing, toll policies and business rules, interoperability of technology, OCTA review of design plans and construction activities, and sharing marketing activities. This agreement is expected to be completed in early 2012 and will ensure a seamless 91 Express Lane facility crossing the two counties.

With this application, RCTC is requesting a TIGER TIFIA Payment of \$33,400,000 (\$33.4 million). The TIGER TIFIA Payment would fund the subsidy cost of credit assistance for a TIFIA Loan. Award of the TIGER TIFIA Payment is very important because it's the first step to receiving TIFIA assistance. Without the TIFIA loan, the Project would be delayed for at least a decade, and a rare opportunity would be missed to put more than \$1 billion in local funds to work improving the regional and interstate transportation network and provide jobs when they are most needed. RCTC has submitted its TIFIA Letter of Interest (LOI) to the Joint Program Office and is ready to move forward with the Project quickly upon approval of a TIFIA loan. The TIFIA LOI is also included in Appendix D.

The planned sources and uses of funds are summarized in Figure 3.



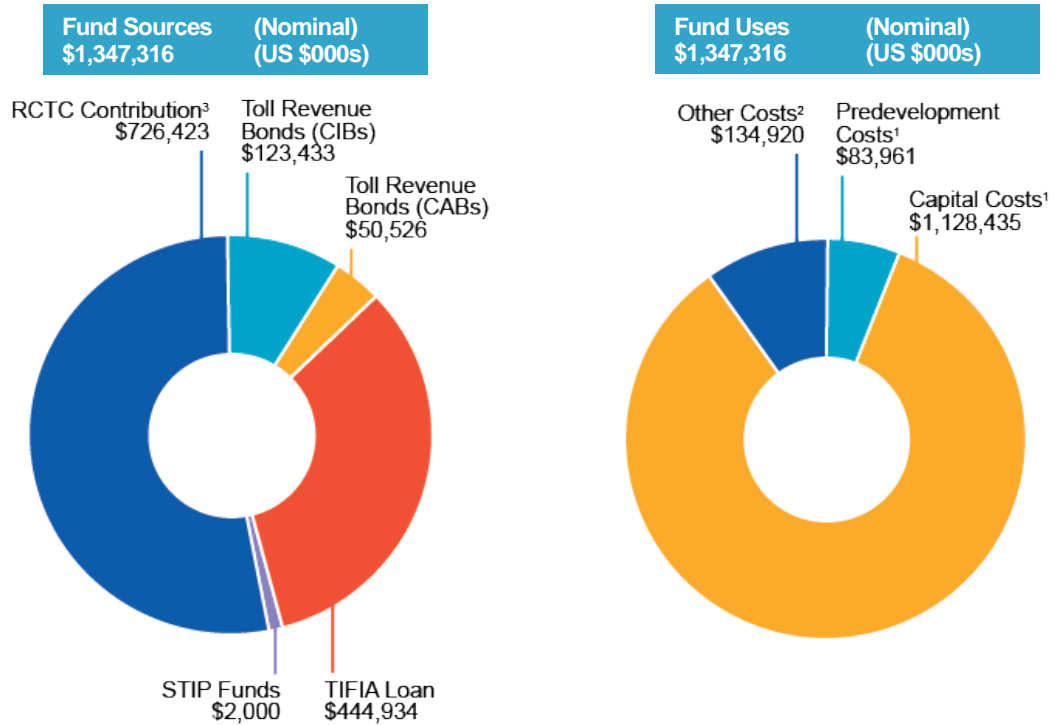


Figure 3 – Fund Sources and Uses

- ¹ On a nominal basis, predevelopment costs and capital costs total approximately \$1,212,396,000. These estimates are based on a total project cost of \$1,104,240,000 in 2010 dollars adjusted for inflation based on the capital cost schedule.
- ² Other costs include reserve account funding, financing fees, and capitalized interest.
- ³ RCTC's contribution comes from receipts of its Measure A sales tax, a portion of which will be used for pre-development costs, annual payments to the construction fund or proceeds from sales tax revenue bonds.

SECTION IV Selection Criteria



Prado Dam on the Santa Ana River

A. Long-Term Outcomes

1. State of Good Repair

Future maintenance and repair of the proposed 91 Express Lanes will be paid by the users of the facility through the collection of tolls. Over the 50-year life of the facility, this will reduce the overall federal and state cost to maintain I-15 and SR-91 at a time when the nation's unmet infrastructure maintenance needs are at an all-time high and funding resources are limited.

Life-Cycle Cost Analysis (LCCA) was used to evaluate long-term alternative investment options, especially for comparing the value of alternative pavement structures and strategies. The life-cycle cost consists of the agency cost, the road user cost, and the toll fee revenue loss in the work zone for construction, future maintenance and rehabilitation, and routine annual maintenance. Based on the conclusions of the LCCA study, the Project will include long-life (40 years) Portland Cement Concrete (PCC) pavements (PCCP/jointed plain concrete pavement [JPCP]) on the SR-91 and I-15 lane widening and on the SR-91 ramps. Using the long-life pavement for the Project is approximately 30% more cost effective in net present value (NPV) compared to the next best alternative,



Continuous Reinforced Concrete Pavement

which includes Continuous Reinforced Concrete Pavement (CRCP).

Based on the April 2007 pavement condition survey, the predominant pavement distresses observed in the Project limits were faulting at the concrete pavement panel joints and poor ride quality. This situation has required above-average maintenance efforts to maintain pavement structural integrity and ride quality. In response, two roadway rehabilitation projects are underway in advance of the Project to restore the pavement on SR-91 and I-15 to a state of good repair. This work includes replacing damaged PCC slabs, pavement grinding/leveling, and an overlay of recycled rubberized asphalt concrete (RAC) on SR-91 and similar rehabilitation on I-15.

Structure rehabilitation and seismic upgrading requirements have been identified by the Project, which will restore and extend the service life and reliability of several major structures, including:

- I-15/Ontario Avenue UC (56-0498 L/R) – Extend abutment seats
- I-15/Old Temescal Road UC (56-0644 L/R) – Extend abutment seats
- SR-91/SR-71 Connector (56-0635) – Abutment diaphragm upgrade
- SR-91/Serfas Club Drive UC (56-0638 L/R) – Abutment diaphragm/vertical restrainer



Container Facility, Port of Los Angeles

2. Economic Competitiveness

To increase global economic competitiveness, the Obama Administration has laid out an ambitious vision for “winning the future” that includes investing in our transportation infrastructure; putting people back to work, and doubling United States exports over the next five years. Much of this depends on our ability to efficiently move goods and commodities through our major ports, most notably the POLA/POLB. As one of the primary routes between the ports and I-10/I-15, SR-91 is a part of a highly interconnected and dependent network where congestion, delay, and incidents have a dramatic effect on interstate and interregional mobility. An investment in the SR-91 corridor is a proven means to address severe congestion in the corridor and an important step in enhancing economic competitiveness as described below:

Efficient Goods Movement

The SR-91 corridor is one of three primary freight routes between the POLA/POLB and I-15 and I-10 (Figure 4). More than 40% of the nation’s imported goods enter the United States through the POLA/POLB, which are then distributed to markets throughout the country. United States container traffic doubled over the past decade and is expected to nearly triple by 2030 according to studies completed in July 2009.

The rail lines and highways are already heavily congested, and with





Figure 4
Primary Routes Serving POLA/POLB

The POLA/POLB, the largest port complex in the United States, suffers from the worst congestion in the nation, averaging approximately 72 hours of annual traffic delay per traveler.

an expected 25% increase in regional population by 2030, the congestion problem will only get worse. A recent study published by the USDOT Bureau of Transportation Statistics identified traffic bottlenecks on the landside transportation system serving the nation's seaports as a critical impediment to the efficient movement of goods. According to the study, the POLA/POLB, largest port complex in the United States, suffers from the worst congestion in the nation, averaging approximately 72 hours of annual traffic delay per traveler¹. Nowhere is this more evident than on SR-91, which has the worst peak-hour congestion of the primary routes serving the POLA/POLB (Table 1).

Recognizing the critical goods movement issues being faced in the region, a multi-agency collaborative team has been assembled to address existing and projected landside transportation system congestion and its potential impact on cargo throughout the Ports, and environmental and community impacts caused by goods

Table 1
POLA/POLB Freight Travel Time Comparison

	Distance	Travel Time (Off-Peak)	Travel Time (Peak)
POLA/POLB to I-15 East (Devore)			
Via I-10	75 miles	1:20	2:50
Via SR-91	78 miles	1:23	3:30
POLA/POLB to I-10 East (Banning)			
Via I-10	98 miles	1:45	3:10
Via SR-91	94 miles	1:42	3:40

¹ U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, America's Container Ports: Freight Hubs that Connect Our Nation to Global Markets (Washington, DC: 2009).



RCTC is advancing the Project as the best way to reduce congestion and delay and improve the long-term efficiency, cost, and reliability of goods movement, which influences the price of goods delivered throughout the United States.



North Main Corona Metrolink Station and Corona Transit Center

Without the Project, express bus service is not competitive with single-occupant vehicles. The Project provides the necessary reliability, flexibility and cost- and time-savings to entice commuters of all income levels to shift modes.

movement. The Southern California National Freight Gateway Collaboration encompasses five southern California counties and extends from the POLA/POLB to the border with Nevada and Arizona. As a member of the collaborative, RCTC is advancing the Project as the best way to reduce congestion and delay and improve the long-term efficiency, cost, and reliability of goods movement, which influences the price of goods delivered throughout the United States.

3. Livability

The Project not only delivers transportation benefits, but is also designed and planned in such a way that it will have a positive impact on the communities it serves. Home to more than 17 million Americans; Los Angeles, Orange, Riverside and San Bernardino counties form the largest urban area in the United States. Traveling to and from work without insufferable congestion and delay is a critical measure of livability and the quality of life in southern California. The project corridor, including SR-91 and Metrolink, serves millions of users annually, all of whom will benefit from the large scale improvements proposed by the Project. Over the next 30 years, the number of potential users is expected to nearly double, magnifying the livability benefits even further. The Project will play an essential role in improving the livability of the surrounding community as summarized below.

Provide More Transportation Choices

Creating a strong integration of alternative commuting choices is a cornerstone element of a comprehensive multi-modal strategy that RCTC, Metrolink and the Riverside Transit Agency (RTA) have been implementing to address growing travel demand in the SR-91 corridor. The Project will enable RCTC and RTA to implement an enhanced Express Bus plan on the SR-91 Corridor that includes:

- Nearly doubling current express bus trips on SR-91;
- Providing 15-20 minute headways on the 91 Express Lanes during peak hours;
- Add five new express bus routes in Western Riverside County;
- Direct rides to employment centers in Orange County with no need to transfer;
- Implement “interceptor” routes that take SR-91 commuters to Metrolink stations before they get to the freeway; and
- Wi-Fi enabled buses to maximize commuter productivity while in transit.

Without the Project, express bus service is not competitive with single-occupant vehicles. The Project provides the necessary reliability, flexibility and cost- and time-savings to entice commuters of all income levels to shift modes. These and other elements of the strategy are discussed below:

91 Express Lanes - The proposed 91 Express Lanes will offer non-tolled or discounted tolls in peak hours to transit buses and carpool/vanpool vehicles. Based on 2035 traffic projections,





demand for the 91 Express Lanes will account for approximately 20% of the total demand on SR-91 during the peak hour, or about 30% of all person movement using typical auto occupancy rates for HOV and bus service. The current experience of the 91 Express Lanes in Orange County demonstrates that the current tolling structure encourages carpooling. In FY 2010/11, 25% of all trips on the 91 Express Lanes were made by 3+ carpools or transit vehicles. RCTC expects a similar mode split on the Riverside County section of the Express Lanes.

The Project will feature a managed lane variable pricing approach, which adjusts toll rates to maximize total throughput and ensure attractive express bus service and travel time savings. Using the new 91 Express Lanes, commuters will save 30 minutes on average on the 8-mile segment of SR-91 in Riverside County. Without the Project, future congestion in the corridor would be severe and express bus service would not be viable.

Upon completion of the proposed 91 Express Lanes, RCTC expects to nearly double express bus service on SR-91.

Express Bus Service – Upon completion of the proposed 91 Express Lanes, RCTC expects to nearly double express bus service on SR-91. Currently, RTA and OCTA operate 21 bus trips per day on SR-91 and RCTC envisions adding 20 additional trips, bringing the total to 40 daily trips. Service duration for this expansion will increase by 11,500 hours per year and will be served by six new transit coaches to be procured specifically for this service.

RTA operates eight intercity bus transit routes with current annual ridership of 299,392 and two SR-91 express bus routes (Routes 216 and 794) with current annual ridership of 119,680. In 2011, RCTC undertook an extensive analysis of express bus service for all of western Riverside County and specifically focused on express bus service and performance relative to the SR-91 corridor. The study resulted in an express bus service plan that would leverage investments in the proposed 91 Express Lanes and Metrolink’s Perris Valley Line.



RTA Commuterlink

RCTC, in partnership with RTA, proposes doubling express bus service along the SR-91 corridor concurrent with new express bus feeder service to Metrolink stations which serve the SR-91 corridor. As a result of this integrated approach, RCTC’s proposal leverages the Project to provide Riverside and Orange County commuters with the widest possible range of congestion free travel choices. At peak, RCTC intends that the 91 Express Lanes will provide 15-20 minute bus headways with minimal transfers, minimizing last mile issues at either origin or destination. The enhanced express bus service will complement Metrolink in the corridor by servicing different employment destination points within Orange County that cannot be accessed directly by the train.

Metrolink –The Project will support and enhance the significant



Metrolink Commuter Rail



investments already made in the North Main Corona and West Corona Metrolink Stations by improving station access to SR-91 and reducing local street congestion near the stations. Easier access and less congestion in and out of the stations will make Metrolink a more attractive travel choice. RCTC’s plan also intends to leverage the investment in four new stations that will serve the PVL in order to attract more riders to the train directly serving the SR-91 corridor.

Commuter Assistance Program – Since 1991, RCTC has offered a Commuter Assistance Program (CAP) funded entirely through RCTC’s local sales tax Measure A. The CAP is charged with increasing alternative mode choices at both the employer and commuter levels by offering ride matching services, financial incentives, a guaranteed ride home program and the IE511 traveler information system. The CAP has averaged well over 8,000 participants over the past three years and in FY 2011, the CAP program recorded a reduction of 1.9 million one-way auto based trips with a savings of 44.3 million vehicle miles and a reduction of 790,000 pounds of emissions.

For the proposed 91 Express Lanes, the CAP will assign incentives directly related to a commuter’s use of available alternative commute options on SR-91. Examples include express bus pass subsidies along with potential reduced or eliminated tolling charges based on occupancy.

IE511 is a web and telephone based traveler information service that is available for free to any motorist/commuter in Riverside County simply by dialing 511. Providing up to date freeway congestion, speed and incident information along with a robust transit trip planner and direct access to a rideshare operator, motorists and commuters have access to all of the information they need to make a travel decision or mode shift choice.

RCTC is about to deliver both an iPhone and Android application for IE511 that will include rideshare information and a direct linkage to Google Transit for transit trip planning. The applications will be made available for free to residents and commuters and provide a convenient and powerful use of technology to support better mode choice decision-making in the SR-91 corridor and throughout Riverside County.

Promote Equitable, Affordable Housing

In a perfect world, Southern California residents could live within a short distance to work; however, this ignores the unique housing and employment realities faced by its workforce. Riverside, Orange and Los Angeles counties form a large and dynamic urban economy with a diverse mix of employment and housing opportunities. Extremely high housing prices in Los Angeles and Orange counties have left little choice for many workers but to live in Riverside County and commute to jobs in Orange and Los Angeles counties. Based on August 2011 data, the housing affordability advantage in Riverside County is

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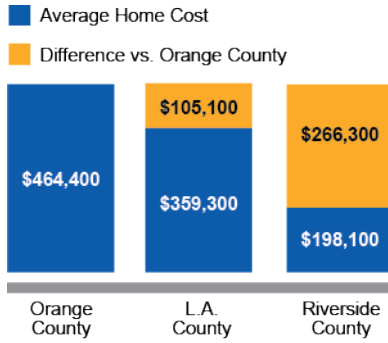


Figure 5 – Housing Affordability

By 2035 annual vehicle hours of delay will be reduced by 5,900,000 hours in the corridor, a reduction of just over 10% overall, a benefit that will not be realized if the Project does not go forward.

\$266,300 compared to Orange County (Figure 5). Assuming a 30-year mortgage at 5% interest, this amounts to a monthly savings of \$1,430 per month. These savings are reduced by the increased commuting costs of \$400 per month, assuming an extra 40 miles per day at 50 cents per mile. The resulting affordability advantage of \$1,030/month is with the Riverside County commuter when comparing the combined cost of housing and transportation, a key livability metric. These are unavoidable facts. As the region continues to grow, it requires a continued investment in the transportation system that allows people to access affordable housing and get to and from work without insufferable congestion and delay. The Project is the most significant investment planned for the next several decades.

Finally, if Riverside County is to increase the number of jobs located near affordable housing, it must be possible for employers, employees, and their goods and services to travel on SR-91 at all times of the day, which is currently not possible without extreme loss of economic productivity. The Project is a critical step within a larger mobility strategy to make that possible. Currently, a typical afternoon commute on SR-91 from Anaheim to Corona, which is approximately 23 miles, can take an hour and 40 minutes during the peak hour. The Project will reduce this time by approximately 30 minutes if the 91 Express Lanes are used. By 2035 annual vehicle hours of delay will be reduced by 5,900,000 hours in the corridor, a reduction of just over 10% overall, a benefit that will not be realized if the Project does not go forward.

Enhanced Economic Competitiveness

In addition to the benefits to trade associated with the POLA/POLB, improvements on SR-91 will enhance the reliability of another important link in the national and regional goods movement supply chain, the March Inland Port (MIP) located near I-215 south of SR-91. The MIP operates as a true public/private partnership with the March Air Reserve Base to satisfy a growing air cargo market in Southern California. The Project will reduce travel times to and from the MIP, which will help ensure that the facility remains competitive in the high-value air cargo sector.

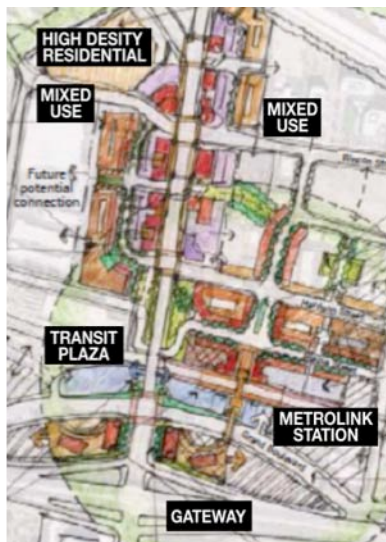


Figure 6
North Main Corona Station TOD Plan

The Project will further enhance access to jobs and education opportunities near SR-91. The primary employment centers adjacent to the SR-91 corridor project include government, military and higher education. Over 20,000 government employees work in western Riverside County, where the SR-91 project is located. Two major military operations are located within the corridor: March Air Force Base, including the MIP, between Riverside and Moreno Valley and a branch of the Naval Sea Systems Command in Norco. There are six major college and university campuses within the corridor with a combined student population of 50,000. These important facilities plus a wide variety of recreational opportunities served by SR-91 will significantly enhance the quality of life in the county, particularly as the population and employment base



expands.

Support Existing Communities

To enhance the livability and quality of life in Corona, RCTC supports transit-oriented redevelopment (TOD) plans for the North Main Corona Station including the area along North Main Street immediately north of SR-91 (Figure 6). The Western Riverside Council of Governments (WRCOG) has taken the lead in organizing a TOD Advisory Committee to develop the station area planning effort. As a member of the advisory committee, RCTC works in collaboration with the city of Corona and other stakeholders to realize a vision “on the ground” for the station. The Project is consistent with that vision, and by reducing congestion on the local streets near the station, it will improve the viability and implementation of the TOD plan.

Coordinate Policies and Leverage Investments

RCTC and stakeholder agencies at all levels of government have been working together to remove institutional barriers, create and approve innovative project delivery approaches and leverage local, federal and private funding sources to complete this critical project. This includes state and federal approval to collect tolls on SR-91 and utilize the design-build approach and completion of an investment grade financing plan. More details regarding this coordination are provided in Part D – Partnership. In recognition of the national significance of this project and the critical need for jobs creation, this project is expected to be included in the Enhanced Technical Assistance component of the FHWA’s Every Day Counts program. An acceptance letter from FHWA is pending.

Value Communities and Neighborhoods

During peak-periods, traffic on SR-91 backs up onto city streets, causing drivers to choose parallel local streets cutting through neighborhoods to avoid congestion on SR-91 and I-15. The Project will directly benefit the quality of life in communities along SR-91 by relieving severe traffic congestion on the city streets adjoining each of the five interchanges of SR-91. Most notably, the ramps at Maple Street and Lincoln Avenue will be reconfigured, including the use of a braided on-ramp that will move traffic away from sensitive residential areas. The Project will also improve the interchanges at North Main Street, Serfas Club Drive and Green River Road, which will improve local circulation and access to the North Main Corona and Corona West Metrolink Stations located 0.25-mile north of SR-91. Each of these interchanges will include standard sidewalks and bicycle lanes to enhance the safety and convenience for bicyclists and pedestrians near SR-91.



The Project will directly benefit the quality of life in communities along SR-91 by relieving severe traffic congestion on the city streets adjoining each of the five interchanges of SR-91.

Each of these interchanges will include standard sidewalks and bicycle lanes to enhance the safety and convenience for bicyclists and pedestrians near SR-91.

4. Environmental Sustainability

The Project is an important element in promoting a more environmentally sustainable and efficient transportation corridor between Orange and Riverside counties. The variable pricing approach of the 91 Express Lanes adjusts toll rates based on the





number of vehicles on the road to optimize system efficiency and maximize total throughput. Motorists pay tolls through the convenient use of windshield-mounted FasTrak transponders that automatically deduct fees from a prepaid account. FasTrak transponders are fully interoperable with all other toll roads, bridges, and express lanes in California. The Project will provide greater control and the flexibility to respond to a variety of future scenarios and uncertainties, including jobs and housing shifts, gas price fluctuations, scarcity of other funding sources, changing travel behavior, and attitudes about sustainability, among others. The variable pricing approach provides a means to actively respond to any future scenario in a way that balances the benefits of the individual user, society, and the environment.



Without the Project, CO₂ emissions would increase by 65% by 2035. With the Project, CO₂ emissions would decrease by up to 4.4%, a 69.4% reduction in emissions compared to the no project conditions.

Greenhouse Gas (GHG) Reduction

A quantitative analysis was completed to determine the estimated daily carbon dioxide (CO₂) emissions associated with vehicle trips that would be generated with the Project. The analysis indicates that without the Project CO₂ emissions would increase by 65% by 2035. With the Project CO₂ emissions would decrease by up to 4.4%, a 69.4% reduction in emissions compared to the no project conditions.

Another factor in reducing GHG emissions is the reduction in vehicle hours traveled (VHT). Without the Project, the peak-hour travel time on the SR-91 HOV lane increases from 44 minutes currently to 86 minutes in 2035 and average speed is reduced to 14 miles per hour (mph). With the Project, the travel time in the 91 Express Lanes would be decreased to approximately 12 minutes with a speed over 50 mph; therefore, the reduced travel time and increased speeds of the build alternative will result in reduced VHT in the project area, which is critical in reducing CO₂ emissions.

The Project is consistent with the Caltrans Climate Action Program, which indicates that relieving congestion by enhancing operations and improving travel times in highly congested corridors would lead to an overall reduction in GHG emissions and fuel consumption. The build versus no-build operational conditions will result in reduced fuel consumption of 156 million gallons of fuel by 2035 - the equivalent of 10.4 million barrels of crude oil.



Wetlands Near the 91 Project

Biology – Natural Communities

To assist with sustaining the biodiversity in this area, the Project will implement mitigation measures in the Riverside County/Santa Ana Watershed area, including Chino Hills State Park and Riverside County Regional Conservation Lands. SR-91 is located within the Santa Ana Canyon, which is an important area for biodiversity because of the Santa Ana River, Cleveland National Forest, and Puente-Chino Hills. This area has been disrupted by encroaching development and infrastructure improvements over the years. Mitigation will include creation of wetlands, restoration of riparian/riverine areas, and restoration of upland habitats. Within the Project area are marginal habitat areas, and as part of mitigation





Mitigation will include creation of wetlands, restoration of riparian/riverine areas, and restoration of upland habitats.



Least Bell's Vireo

The MSHCP is the largest in the nation providing protection of 146 plant and animal species within a planning area of 1.26 million acres. Nearly 500,000 acres of resources, or about 40% of the planning area, will be protected and placed into conservation.

CETAP was identified as a priority project under Executive Order 13274 for environmental stewardship.



Coyote

for impacts to these areas, RCTC will mitigate offsite in areas identified for conservation or open space. RCTC's approach to environmental stewardship provides mitigation in advance of construction completion whenever possible. Mitigation will be deployed during construction of the Project to ensure early and successful establishment of habitat success.

Multiple Species Habitat Conservation Plan (MSHCP)

RCTC and the Riverside County government are utilizing a pioneering planning process to ensure transportation, land use, and environmental planning are coherent and consistent. The Riverside County Integrated Project (RCIP) was one of the first efforts in the nation to incorporate three formerly distinct plans that affect the placement of infrastructure and open spaces in the County. The plan includes a General Plan for land use, a Multiple Species Habitat Conservation Plan (MSHCP) to determine which land should be set aside for conservation, and the Community and Environmental Transportation Acceptability Process (CETAP) identifying improvements for highways and transit systems. In recognition of this collaborative planning approach, the CETAP was identified as a priority project under Presidential Executive Order 13274 for environmental stewardship.

The Western Riverside County MSHCP is the largest in the nation providing protection of 146 plant and animal species within a planning area of 1.26 million acres. Nearly 500,000 acres of resources, or about 40% of the planning area, will be protected and placed into conservation. RCTC continues to demonstrate its firm commitment to environmental protection and the MSHCP by pledging \$153 million for environmental mitigation. Within the first five years of MSHCP implementation, RCTC provided over \$125 million to the Western Riverside County Regional Conservation Authority to assist in the acquisition of 9,000 acres of habitat now placed in conservation.

Wildlife Connectivity

In addition, RCTC also plans to enhance wildlife connectivity in the Santa Ana Canyon area by improving the B Canyon wildlife corridor, which is widely used by small to mid-sized mammals between the Cleveland National Forest, Santa Ana River, and Puente-Chino Hills. This effort will be completed through widening of an existing SR-91 culvert and by restoring native habitat between the Cleveland National Forest and the Chino Hills State Park. The B Canyon wildlife corridor will be completed through the collaborative effort of several agencies including the RCTC, Caltrans, US Fish and Wildlife Service, United States Forest Service and California Department of Fish and Game. The B Canyon Wildlife Crossing is a holistic approach toward mitigating the cumulative impacts of projects within this environmentally sensitive area.





Reclaimed Asphalt Pavement

The Project will reduce the waste stream by recycling and reusing pavement millings and other construction waste where possible.

Project Sustainability Plan

The sustainability "triple bottom line" captures the need to balance the economic, ecological, and social aspects in the planning and implementation of infrastructure projects. RCTC will deploy sustainable solutions to the design, construction and operations and maintenance of the Project through the "Best Value" Design Build selection process and the integration of the operations and maintenance requirements. As part of the technical selection process, evaluation criteria have been established that score potential design-build proposers on their "Project Sustainability Plan". This Plan will be based on specific criteria defined in the technical provisions of the procurement documents that use existing state standards with respect to recycled materials, as well as defined objectives in reducing life cycle energy and emissions; alternative fuel incentives/credits for construction fleet conversion; recycle, reuse and renewable construction methods; conservation and ecosystem management; watershed driven storm water management; and, total life cycle cost reductions. RCTC and the design-build team will implement the Plan to define the measures needed to ensure delivery of a sustainable project, including:

- Improve air quality and lower fuel consumption, by incentivizing the design-build contractor to use alternative fuel and hybrid vehicles and equipment.
- Protect water quality through the use of non potable and recycled water. Water treatment Best Management Practices (BMPs), LID techniques, and spill containment practices will be deployed to prevent transport of sediments and pollutants.
- Support the local economy and reduce secondary transport impacts, with the utilization of local labor and locally sourced material that account for the full life-cycle savings.
- Reduce the waste stream by recycling and reusing pavement millings and other construction waste where possible. In addition, the contractor will resource materials with high contents of repurposed waste products and embedded energy.
- Introduce and reinforce the use of sustainability measures with the construction and inspection staff through training and regular brown bag meetings.
- Respect community values through continuous stakeholder engagement programs.



Rush Hour Collision 15/91 Interchange

5. Safety

The Project will improve overall corridor safety and reduce accident potential at the following locations:

- The actual accident rate on eastbound SR-91 mainline is higher than the statewide average. The predominant types of accidents are rear end accidents, which account for approximately 50% of all accident types. The Project will reduce congestion and the stop and go traffic conditions that cause most rear end accidents.
- The accident rates on southbound SR-71 to westbound





91 Express Lanes “Soft Barrier”



In Riverside County, unemployment stands at 14%, one of the highest of any major metropolitan area in the United States.

- SR-91 are more than twice the state average for highway connectors. This is potentially due to the tight radius of the horizontal alignment, which will be upgraded to current standards to reduce accident potential.
- The northbound I-15 to SR-91 connectors experience an accident rate that is more than four times the statewide average. The connectors will be improved using a collector-distributor facility in the westbound direction on SR-91 between I-15 and Main Street, which is expected to reduce congestion and related accidents on the connectors.
- The fatality rate on the eastbound SR-91 to northbound I-15 connector is above the statewide average, likely due to weaving operations from the Main Street ramps. The Project will braid the Main Street ramps, which is expected to improve safety by eliminating the short weave section and potential vehicle conflicts.
- Approximately 35% of all local interchange ramps in the project area have reported accident rates higher than the statewide average. In addition, some interchange ramps have reported fatality rates above the state average. All of the interchanges in the Project limits will be improved to current design standards, which will enhance operations, efficiency, and safety.
- The 91 Express Lanes will be separated from the general purpose (GP) lanes using a “soft barrier,” including a 4-foot-wide buffer and plastic delineators to deter vehicles from crossing into the toll lanes. This is the same configuration used on many managed lane facilities nationally and the existing 91 Express Lanes, which have an excellent safety record since opening in 1995. Accident data indicates that the cut through traffic has not resulted in an increase in accidents compared to the GP lanes. According to a 2009 Customer Survey, over 95% of drivers using the 91 Express Lanes in Orange County perceive that the facility is safe.

B. Job Creation & Near-Term Economic Activity

The SR-91 corridor provides a vital link between employment opportunities in Los Angeles and Orange counties and the Inland Empire. According to the Bureau of Labor Statistics (BLS), these areas are home to nearly 6.6 million jobs or approximately 45% of all jobs in California. In Riverside County, unemployment stands at 14%, one of the highest of any major metropolitan area in the United States. Current data show that every sector of the Inland Empire economy, except for construction and manufacturing, are slowly recovering, but many areas remain economically distressed with unemployment 55% higher than the national average of 9.1%. In November 2010, 62% of Riverside County voters approved Measure K to increase the debt limit to borrow against future Measure A sales tax revenue. The vote was a clear indication that residents value infrastructure investment enough that they are willing to pay for it with local sales tax revenue. More importantly, the vote was a call to accelerate construction of transportation





Near - Term Job Creation



Figure7 – Job Creation (By Quarter)

The Project would create over 16,000 jobs directly involved with construction and support of the Project.



projects and create badly needed jobs in Riverside County.

The Project would provide an urgently needed “employment bridge,” employing those with construction skills who have been hit hardest by job losses until a broad-based recovery occurs. It is estimated that the Project would create over 16,000 jobs directly involved with construction and support of the Project (Figure 7).

The Project is expected to permanently increase the area’s base taxable sales by 2.3%, illustrating the Project’s positive long-term economic benefit. In addition, it is imperative that infrastructure investments are made to support the growth sectors that will replace declining construction and manufacturing employment in the area. According to a 2006 Southern California Association of Governments (SCAG)¹ study, in Riverside County, the most promising industry sector is the logistics group, which includes companies in fields such as wholesale trade; truck and rail transportation; and general warehousing required to support the POLA/POLB. Since 1990, the logistics group was one of the few non population-related sections of the economy to provide significant job growth. Despite the recent economic downturn, the POLA/POLB continue to provide more than 3.4 million jobs nationally; however, continued growth of the sector depends on timely investments in transportation infrastructure between the POLA/POLB and logistics centers in Riverside County. The Project is a key component of that investment strategy, ensuring a healthy and efficient goods movement industry and the jobs it provides.

These near and long-term economic benefits are badly needed in Riverside County and RCTC has positioned the project for implementation in 2013. Please refer to Section V - Project Readiness and NEPA for details.

¹ Southern California Association of Governments, Logistics & Distribution: An Answer to Regional Upward Social Mobility (2006)



C. Innovation



Technology

As with the existing 91 Express Lanes, the Project will include an ETC system to streamline collections and avoid forcing motorist to stop for cash transactions. All users will be required to have an account with a tolling agency that will issue a FasTrak transponder or “toll tag” to the customer. FasTrak transponders are fully interoperable with all toll roads and bridges and express lanes in California. The Project will allow free or reduced toll access to HOV 3+ carpool vehicles and tolled access for vehicles with less than three occupants.

If the vehicle does not have a valid transponder, a digital image or photo is taken of the vehicle’s license plate. The photo is used for enforcement purposes based on California statutes and a notification letter is sent to the vehicle’s owner. Vehicles will utilize a separate third lane to declare themselves as carpoolers consistent with existing practice.

As presently envisioned, the toll rate will be set by time of day based on traffic demand observed over the previous 3-month period.

As presently envisioned, the toll rate will be set by time of day based on traffic demand observed over the previous 3-month period. This variable pricing approach is identical to the current pricing approach used successfully on the existing 91 Express Lanes for the last 16 years. Toll rates average \$2.93 per trip and currently vary from a minimum of \$1.30 to a maximum of \$9.75 for 1-hour during the Friday afternoon peak period. The tolling system will have the ability to operate under dynamic pricing in the future where the actual travel time in the 91 Express Lanes or the travel time differential between the SR-91 GP lanes and 91 Express Lanes will be measured in real time between the entry and exit point, and the price to travel in the 91 Express Lanes will be adjusted, usually at 15-minute intervals, as required to maintain traffic flow.



Transponder Plaza, 91 Express Lanes

RCTC currently contemplates that the Project tolling computers will be connected by a fiber backbone communications network to the existing SR-91 Toll Operations Center (TOC) and also to the existing customer service center (CSC) currently operated by OCTA. The existing OCTA SR-91 TOC and CSC will be used for the Project pursuant to an agreement between OCTA and RCTC, under which the two agencies shall collaborate, share costs, and cooperate in making the entire 91 Express Lanes a seamless facility to the user. The TOC will serve as the 24/7 operating and maintenance information hub for the Project, while the CSC will provide account services directly related to the facility’s toll customers and violations verification and processing. The CSC is the central facility where customer accounts for ETC are set up and managed, toll transponders are issued and tested, and violation processing takes place.

Alternative Project Delivery

The Project will be procured and contracted through a single private entity under a competitively bid, best-value, design-build

The Project will be procured and contracted through a single private entity under a competitively bid, best-value, design-build procurement.





RCTC expects that the design-build approach will save more than three years compared to a traditional design-bid-build contract.

The Project is one of only a few projects in California authorized to use design-build.

RCTC has secured the key legislative approval steps for tolling and alternative project delivery

RCTC is providing an overwhelming share of the total funding through the Measure A local sales tax program to develop and construct the Project.

procurement. Design-build is a prerequisite to securing financing through the sale of toll revenue bonds in providing cost and schedule certainty by a qualified design-build contractor. The design-build contractor as a major private participant assumes risk in areas relating to design, construction schedule, differing site conditions, third party approvals and utilities relocation. Other benefits of the design-build approach include single source responsibility and opportunities for innovation that can be captured through alternative technical concepts offered during procurement and value engineering during design and construction. These opportunities offer means to mitigate impacts to project cost and schedule and are critical to the delivery process and securing the Project financing. RCTC expects that the design-build approach will save more than three years compared to a traditional design-bid-build contract. This time savings is achieved primarily through overlapping final design and construction.

D. Partnership

Jurisdictional Collaboration

The Project exemplifies the type of innovative partnerships and collaboration required to deliver large scale transportation improvements in the current economic environment. RCTC, working in partnership with Caltrans, is the Project developer providing the investment capital needed to advance the Project through the project development and approval process. RCTC has secured the key legislative approval steps for tolling and alternative project delivery including:

- ✓ Federal tolling authority through execution of a Section 129 Agreement with the FHWA and Caltrans
- ✓ State tolling authority through SB 1316
- ✓ State design-build authority through AB 2098

In addition, RCTC is obtaining state and local agency cooperative agreements that define project delivery roles and responsibilities and review and approval rights between the parties.

Private Participation

Operation and maintenance of the 91 Express Lanes will be provided through a three party agreement with OCTA to Cofiroute, the existing operator for the 91 Express Lanes in Orange County. The services provided by Cofiroute will include toll systems installation, integration, testing and acceptance and facility operation and maintenance including toll collection and enforcement and back office accounting and customer service. Cofiroute has been operating and maintaining the OCTA 91 Express Lanes for the past 16 years with proven performance and metrics that provide certainty in costs and in facility performance that add significant value to the financing of the Project.

Local Funding

RCTC is providing an overwhelming share of the total funding



A MEASURE

Other than the TIGER and TIFIA assistance, the Project includes only \$2 million in state and federal funding, or about 0.15% of the total financing plan.

through the Measure A local sales tax program to develop and construct the Project. This contribution will be funded with sales tax revenue bonds, and is a primary component of the “publicly-driven” P3 approach selected for the Project. Project financing will be secured through the issuance of toll revenue bonds as supported by the investment grade traffic and revenue study performed by Stantec, through RCTC’s financing team of Fieldman, Rolapp & Associates, Goldman Sachs and Bank of America Merrill Lynch. Significant financial review, modeling work and market analysis has been performed in support of the financial plan.

RCTC has both the legal and financial capacity to issue the bonds required under the financing plan. The RCTC “publically driven” P3 model provides the best opportunity for success with the optimal balance of public and private participation and allocation of risks. This balance between private and public participation from project inception through the 50-year term of operations and maintenance represents a level of private participation of over 96% of the Project’s lifecycle costs which amounts to \$2.175 billion. Other than the TIGER and TIFIA assistance, the Project includes only \$2 million in state and federal funding, or about 0.15% of the total financing plan. No other federal and state funds are available for the project. The only remaining hurdle to complete the Project’s overall financing package is the award of a TIGER TIFIA Payment and a TIFIA Loan.

E. Results of Benefit-Cost Analysis

A benefit-cost analysis (BCA) was conducted for the Project in accordance with the methodology recommended by the USDOT. The BCA is included in Appendix A and the results summarized below.

BCA Summary Results

The BCA takes into account travel time savings, vehicle operating savings, safety benefits, operating and maintenance costs, capital costs, and environmental benefits over the 50 years following the Project’s completion.

Two “cases” were evaluated as part of the BCA. Case A assumes a 7% discount rate, the presumed baseline as prescribed by the USDOT. Case B assumes a 3% discount rate, which provides an alternate comparison of costs and benefits justified because the project utilizes public funds so the opportunity cost is in public, not private, investment. As depicted in Table 2, the Project’s benefits significantly exceed the cost of the Project resulting in a B/C ratio of 1.93 under Case A and 4.48 under Case B.

As depicted in Table 2, the Project’s benefits significantly exceed the cost of the Project.

Table 2
Benefit Cost Ratios

Discount Rate	Net Benefits	Rate of Return	Benefit Cost Ratio
7%	\$773.6 million	11.2%	1.93
3%	\$3.92 billion	11.2%	4.48





The Project bolsters economic competitiveness as users save a total of \$1.5 billion in travel time over 50 years.

SECTION V
Project Readiness and NEPA

In January 2012, RCTC will issue an RFP to four pre-qualified design-build teams including:

- *Atkinson/Walsh*
- *Flatiron/Skanska/Rados*
- *Kiewit*
- *Shimmick/Obayashi/FNF*

Benefits by Category

In total, the economic benefits of the Project are estimated to be \$1.61 billion during the 50-year analysis period. Approximately 93% of all benefits are attributable to travel time savings. User fuel savings constitute an additional 5.9%; reductions in emissions categories another 0.6%; and savings from reducing oil imports are 0.5%.

Travel Time Savings - By adding capacity to SR-91 and establishing a managed lane system, the Project will reduce vehicle hours traveled (VHT) by approximately 468.3 million vehicle-hours, a 36% reduction. The Project bolsters economic competitiveness as users save a total of \$1.5 billion in travel time (in 7% discounted 2010 dollars); or an average of nearly \$30 million per year for the entire 50 year analysis period.

Reduced Fuel Consumption - In total, the Project is estimated to save over 285 million gallons of fuel for users at a value of \$94 million (in 7% discounted 2010 dollars); or an annual average of 35.7 million gallons of fuel, or \$2.3 million per year.

Reduced Emissions - The Project reduces emissions by allowing faster (and less emissions-intensive) speeds to be realized. In doing so, 2.3 million tons of CO₂ are prevented from entering the atmosphere over 50 years. There is also a reduction of 365 tons of CO, 191 tons of PM₁₀, and 22 tons of SO_x. These emissions are estimated to save society a cost of \$9.6 million over the same period (in 7% discounted 2010 dollars).

Project Schedule

RCTC continues to meet each of the project delivery milestones and is actively engaged in continuously monitoring and managing the project schedule. The Project is ready to move forward quickly upon receiving a TIGER TIFIA Payment and TIFIA Loan based on the following schedule milestones.

Key Project Milestones	Completion
Pre-qualified four design-build teams	January 2011
Issued draft environmental document (DEIR/DEIS) and public hearing	June 2011
Submitted final environmental document (FEIR/FEIS)	October 2011
Acceptance into FHWA's Every Day Counts Program (Pending)	November 2011
Receive TIFIA invitation to submit application	December 2011
Issue industry RFP to four pre-qualified design-build teams	January 2012
Assignment of franchise agreement to RCTC by Caltrans	January 2012
Execution of Cooperative Agreement between OCTA and RCTC	January 2012
Environmental approval (Record of Decision)	May 2012
Issue final RFP to pre-qualified design-build teams	April 2012





Conclusion of 180-Day NEPA Protest Period	November 2012
Receive design-build proposals	December 2012
Award of design-build contract	February 2013
Financial close	March 2013
Start construction	June 2013
New lanes open to traffic	March 2017
Project complete	October 2017

Expected completion of the environmental review through a Record of Decision is anticipated in May 2012.

Environmental Approvals

Preliminary engineering and environmental studies were initiated on the Project in September 2007. The studies determined that a full EIS and Environmental Impact Report (EIR) were required. Caltrans is the lead agency for the environmental process under NEPA delegation. The draft EIS/EIR was circulated in June 2011. RCTC submitted the final EIS/EIR to Caltrans in October 2011. Expected completion of the environmental review through a Record of Decision is anticipated in May 2012. Additional information about the EIS/EIR can be found at: http://sr91project.info/environmental/draft_eir_eis.php

Legislative Approvals

RCTC has identified and secured federal tolling authority through execution of a Section 129 Agreement with the FHWA and Caltrans, state tolling authority through SB 1316, and state design-build authority through AB 2098.

Support for the Project (Partial List)

- ✓ **Riverside County Voters:** The majority voted to extend the County’s transportation sales tax in 2002, including plans to widen and improve SR-91 through Corona.
- ✓ **91 Express Lanes Customers:** When asked in a 2009 Customer Survey if they would use the new 91 Express Lanes, 88% replied YES.
- ✓ **Federal Officials:** Senators Feinstein and Boxer and Congress Members Ken Calvert, Jerry Lewis, Mary Bono Mack, Gary Miller and Joe Baca support the Project.
- ✓ **State Officials:** State Legislature’s unanimous passage of AB 2098, which authorized RCTC to use design-build delivery of the Project and Assembly Joint Resolution 4.
- ✓ **Federal Agencies:** U.S. Fish and Wildlife Service
- ✓ **State Agencies:** Caltrans is a project delivery partner with RCTC
- ✓ **California Transportation Commission (CTC):** Granted RCTC design-build authority
- ✓ **Regional Metropolitan Planning Organization (MPO):** The Project is consistent with regional goals necessary to achieve regional air quality conformity.





- ✓ **Transit Agencies:** Metrolink, RTA and OCTA support letters.
- ✓ **Environmental Agencies:** Regional Conservation Authority of Western Riverside County support letter.
- ✓ **Industry Advocacy Group:** Monday Morning Group (Western Riverside County) support letter.
- ✓ **Ports:** The POLA and POLB support letters.
- ✓ **Chambers of Commerce:** Support from the Greater Corona Valley and Greater Riverside Chambers of Commerce.
- ✓ **Business Leaders:** California Inland Empire District Export Council support letter.
- ✓ **I-15 Mobility Alliance:** Alliance support letter from DOT Directors from Arizona, California, Nevada and Utah.
- ✓ **Mobility 21:** Southern California Transportation Coalition letter of support.

METROLINK



Selected letters of support are included Appendix C

State and Local Planning

The Project is consistent with all state and local planning documents. No additional planning coordination or approvals are needed in order to initiate construction of the Project.

Technical Feasibility

A project and construction management firm experienced in delivering large, design-build freeway projects was hired to assist RCTC in all aspects of the project development including design-build procurement, right-of-way acquisition, utility relocation, interagency agreements, design oversight, construction management and inspection, and the toll operations startup. Feasibility studies have been carried out on a regular basis as the Project and other circumstances affecting the Project evolved. RCTC conducted a comprehensive feasibility study in 2007 and recently updated the study to an investment-grade level based on refinements to project scope, schedule, costs, socio-economic factors, bond market conditions, and the general economy. This updated investment-grade traffic and revenue study forms the basis for the current financial plan summarized in this application.

In March 2010, RCTC initiated the Advance Right of Way Acquisition program and began acquiring properties defined under federal regulation and Caltrans policy as hardship, protection and open-market transactions. RCTC has successfully acquired nine properties and is in the process of purchasing two additional properties. The next phase of the Right of Way Implementation Plan is the initiation of Early Acquisition. Early Acquisition authority, granted by Caltrans in April 2011, involves the acquisition of 147 parcels that are considered core parcels to the





Project. Core parcels are those parcels that are common to all alternatives and variations of the Project. Currently, appraisals are in process for 13 properties and mitigation planning has begun for nine of the most complex and challenging properties. RCTC expects that the remaining parcels will be acquired by March 2013.

The only remaining hurdle to financial feasibility of the Project is the award of a TIGER TIFIA Payment to fund the subsidy cost of credit assistance for a TIFIA Loan.

Financial Feasibility

The only remaining hurdle to financial feasibility of the Project is the award of a TIGER TIFIA Payment to fund the subsidy cost of credit assistance for a TIFIA Loan. Every other financial aspect of the Project has been reviewed and determined to be both feasible and creditworthy as summarized below:

- **RCTC contribution is available.** RCTC’s contribution to the Project comes in the form of the proceeds of Sales Tax Revenue Bonds based on the existing Measure A and annual payments during construction from current receipts of sales tax. RCTC’s outstanding Sales Tax Revenue Bonds are rated Aa1/AA+/AA; moreover, RCTC has both legal and financial capacity to issue the \$510 million of bonds required under the Plan of Finance.
- **Toll revenue financings (including the TIFIA Loan) are feasible.** RCTC has structured the TIFIA Loan, which is subordinate to the Senior Lien Toll Revenue Bonds, to obtain investment grade ratings (at or above “Baa3”/“BBB-“) and is seeking a preliminary credit assessment from Fitch Ratings that will confirm the investment grade rating.
- **No significant dependence on State or Federal funding.** Other than the TIFIA Loan, the Plan of Finance has only a \$2 million STIP funding. If the STIP funding is not available, RCTC would face no problem making up the shortfall from its sales tax funds.

SECTION VI Federal Wage Rate Certification

The application will comply with the Federal wage rate requirements of Subchapter IV of Chapter 31 of Title 40, United States Code as required by the FY 2011 Continuing Appropriations Act. A federal rate certification is included in Appendix B.

SECTION VII Changes to the Pre-Application Form

There are no material changes to the pre-application form.





Appendix A – Benefit Cost Analysis



SR-91 Corridor Improvement Project Benefit-Cost Analysis

Prepared for the Riverside County Transportation Commission

October 20, 2011

FINAL

Contents

Figures.....	iii
Tables.....	iv
1.0 - Introduction	5
2.0 - Key Analytical Assumptions	5
2.1 - Real Discount Rate	5
2.2 - Evaluation Period.....	5
2.3 – Project Region.....	5
2.4 - Travel Demand Sources and Forecast Years for Highway Benefits	6
2.4.1 Travel Demand Models	6
2.4.2 Travel Demand Model Results	7
3.0 - Economic Benefits Included.....	10
3.1 Economic Competitiveness.....	10
3.1.1 - Travel Time Savings.....	10
3.1.2 - Reductions in Vehicle Operating Costs.....	12
<i>Vehicle Operating Costs – Non-Fuel</i>	13
3.1.3 - Reductions in the Economic Cost of Oil Imports	13
3.2 - Safety	14
3.2.1 – Accident Cost Savings.....	14
3.3 – Sustainability.....	15
3.3.1 Auto Emissions.....	16
3.3.2 Noise Pollution.....	17
3.4 – State of Good Repair.....	17
4.0 - Economic Benefits Not Included.....	17
4.1 – Reliability.....	17
4.2 - Toll Revenues.....	18
4.3 - Induced Highway Travel.....	18
4.4 - Construction Delay.....	18
4.5 – Land Use Impacts / Land Value Impacts	18
4.6 – Improved Economic Productivity.....	18
5.0 - Economic Costs Included and Assumptions.....	18

5.1 - Initial Project Investment Costs 19

 5.1.1 Right of Way Costs 19

5.2 - Annual Operating and Maintenance Costs 19

5.3 - Periodic Capital Equipment Replacement Costs and Major Rehabilitation 19

6.0 - Economic Costs Not Included 19

 6.1 - Residual Value (Cost Offset or Negative Cost)..... 19

7.0 - Key Benefit-Cost Evaluation Measures 20

 7.1 Sensitivity Analysis 20

8.0 – SR-91 CIP BENEFIT-COST ANALYSIS RESULTS 21

 8.1 - Results in Brief 21

 8.2 - Benefits by Category 21

 8.3 - Costs over Time..... 23

 8.4 Cumulative Benefits and Costs 24

9.0 Conclusion..... 26

APPENDIX – Benefit-Cost Model Details..... 27

References 32

Figures

Figure 1. Average Speeds in SR-91 Corridor General Purpose Lanes, 2010-2067 8
Figure 2. Average Speeds in SR-91 Corridor HOV/HOT Lanes, 2010-2067 8
Figure 3. Vehicle-Hours Traveled Savings, SR-91 Corridor, 2010-2067 9
Figure 4. Vehicle-Miles Traveled Savings, SR-91 Corridor, 2010-2067 10
Figure 5. Cumulative Benefits by Category, SR-91 CIP, 2017-2067 23
Figure 6. Capital and Rehabilitation Expenditures in 2010 Dollars before Present Value Discounting..... 24
Figure 7. Cumulative Benefits and Costs in 2010 Dollars (Discounted at 7 percent) 25
Figure 8. Cumulative Benefits and Costs in 2010 Dollars (Discounted at 3 percent) 26

Tables

Table 1. Annual Vehicle Miles Traveled for SR-91 Corridor, SR-91 CIP, 2010-2060	6
Table 2. Annual Vehicle Hours Traveled for SR-91 Corridor, SR-91 CIP, 2010-2060	7
Table 3. Fuel Economy and Fuel Prices – 2010 and 2055 (Projected)	13
Table 4. Non-fuel Operating Cost Assumptions.....	13
Table 5. Accident Rate Assumptions.....	14
Table 6. Value of a Statistical Life and of Accidents by MAIS Category	15
Table 7. Emissions Factors From Cal B/C Model, 2007 at 35 mph.....	16
Table 8. Emissions Factors From Cal B/C Model, 2027 at 35 mph.....	16
Table 9. Cost of Emissions – CAL/BC	17
Table 10. Benefit Cost Analysis Summary Results	21
Table 11. Project Impacts for SR-91 CIP, Cumulative 2017-67	22
Table 12. Detailed Travel Demand and Travel Time Savings	28
Table 13. Detailed Non-Travel Time Benefits	29
Table 14. Detailed Costs.....	30
Table 15. Detailed Cost/Benefit Summary.....	31

1.0 - Introduction

A benefit-cost analysis (BCA) was conducted for the SR-91 Corridor Improvement Project (CIP) for submission to the U.S. Department of Transportation (US DOT) as a requirement of a discretionary grant application for the TIGER III program. The analysis was conducted in accordance with the benefit-cost methodology as recommended by the US DOT in the Federal Register (76 Fed. Reg. 38719).

2.0 - Key Analytical Assumptions

2.1 - Real Discount Rate

For SR-91 CIP investments, dollar figures in this analysis are expressed in constant 2010 dollars. In instances where certain cost or benefit estimates were expressed in dollar values in other (historical) years, the U.S. Bureau of Labor Statistics' Consumer Price Index for Urban Consumers (CPI-U) for 2010 was used to adjust.

The real discount rate this analysis uses for evaluating the SR-91 CIP is 7.0 percent. This discount rate is consistent with US DOT guidance for TIGER III grants and OMB Circular A-4 and A-94 (Office of Management and Budget, 1992, 2003).

Sensitivity analysis is conducted with a 3.0 percent discount rate as well since the US DOT recommends the use of a 7.0 percent discount rate as a baseline, but a lower discount rate can be used when the project is being funded with public funds.

2.2 - Evaluation Period

For the SR-91 CIP, the evaluation period includes the relevant (post-design) construction period during which capital expenditures are undertaken, plus 50 years of operations beyond project completion within which to accrue benefits.

For the purposes of this study, it has been assumed that construction of the SR-91 investments has already begun as early as 2008, and larger investments will begin in FY 2012. The construction period continues through FY 2018, although operations will begin in 2017. The analysis period, thus, begins with the first expenditures in FY 2008 and continues through a 50-year period after operations begin, through 2067.

While financial data is expressed in fiscal years, these costs were converted to calendar years for consistency with travel demand models and benefit calculations. This evaluation period is consistent with capital and O&M cost modeling. All benefits and costs are assumed to occur at the end of each year, and all benefits begin in the calendar year immediately following the final construction year.

2.3 - Project Region

The geographic coverage of this analysis is the SR-91 corridor from the Orange County / Riverside County line to the I-15 Interchange. It is assumed that travel impacts from this project will be contained in this corridor and impacts outside the corridor are not significant.

2.4 - Travel Demand Sources and Forecast Years for Highway Benefits

2.4.1 Travel Demand Models

Travel demand modeling was conducted for a base year 2010, with forecasts at 2020 and 2035, by Stantec Inc. (Stantec). These figures are for all trips within the defined region above.

Table 1 and Table 2 outline overall vehicle miles traveled (VMT) and vehicle-hours traveled (VHT) at different points in the analysis period. While these tables illustrate disaggregation between autos in the general purpose lane, HOV/HOT lanes, and trucks, the model also had disaggregation available by time of day (peak versus off-peak).

Table 1. Annual Vehicle Miles Traveled for SR-91 Corridor, SR-91 CIP, 2010-2060

Vehicle-Miles Traveled, Annual	2010	2035	2060
No Build			
Auto – General Purpose	466.2 million	573.9 million	722.6 million
Auto – HOV	53.5 million	65.1 million	83.8 million
Truck – General Purpose	35.7 million	43.9 million	55.3 million
Total	555.4 million	682.9 million	861.7 million
Build			
Auto – General Purpose	466.2 million	542.2 million	695.3 million
Auto – HOT	53.5 million	106.7 million	195.2 million
Truck – General Purpose	35.7 million	42.0 million	54.0 million
Total	555.4 million	690.9 million	933.3 million

Source: Stantec

Table 2. Annual Vehicle Hours Traveled for SR-91 Corridor, SR-91 CIP, 2010-2060

Vehicle-Hours Traveled, Annual	2010	2035	2060
No Build			
Auto – General Purpose	13.2 million	16.2 million	31.5 million
Auto – HOV	0.820 million	1.3 million	2.2 million
Truck – General Purpose	0.865 million	1.1 million	2.1 million
Total	14.9 million	18.6 million	35.8 million
Build			
Auto – General Purpose	13.2 million	10.0 million	15.9 million
Auto – HOT	0.820 million	1.8 million	3.3 million
Truck – General Purpose	0.865 million	0.741 million	1.1 million
Total	14.9 million	12.5 million	20.4 million

Source: Stantec

For all years for 2011 to 2020, the compound annual growth rate (CAGR) from the model for 2010 to 2020 was used to grow the base year 2010 data in annual increments. Beyond 2020, the 2020 to 2035 CAGR was used and applied to the base 2020, and subsequently 2035 data. These calculations were extended through the end of the analysis period in 2067.

Truck VMT and VHT were assumed to be the same proportions as used in the travel demand models. The models indicated that trucks constitute 4.2 percent of peak trips and 9.2 percent of off-peak trips.

2.4.2 Travel Demand Model Results

The SR-91 CIP has the strongest improvements in reducing VHT across the entire corridor. This is due to the additional capacity that has the effect of improving speeds on the highway, thus reducing the time spent by users on the road.

Figure 1 and Figure 2 below show how there are substantial differences in average speeds as a result of the project. This is especially true in the HOV/HOT lanes, which maintain much higher speeds due to the fact that they are managed lanes.

Figure 3 shows the overall VHT savings throughout the analysis period that result from the speed improvements and the fact that there is less delay along the corridor. Overall, there are 468.3 million vehicle-hours of savings from the beginning of operations in 2017 to the end of the analysis period in 2067. This translates to a savings of approximately 36 percent relative to no-build.

Figure 1. Average Speeds in SR-91 Corridor General Purpose Lanes, 2010-2067

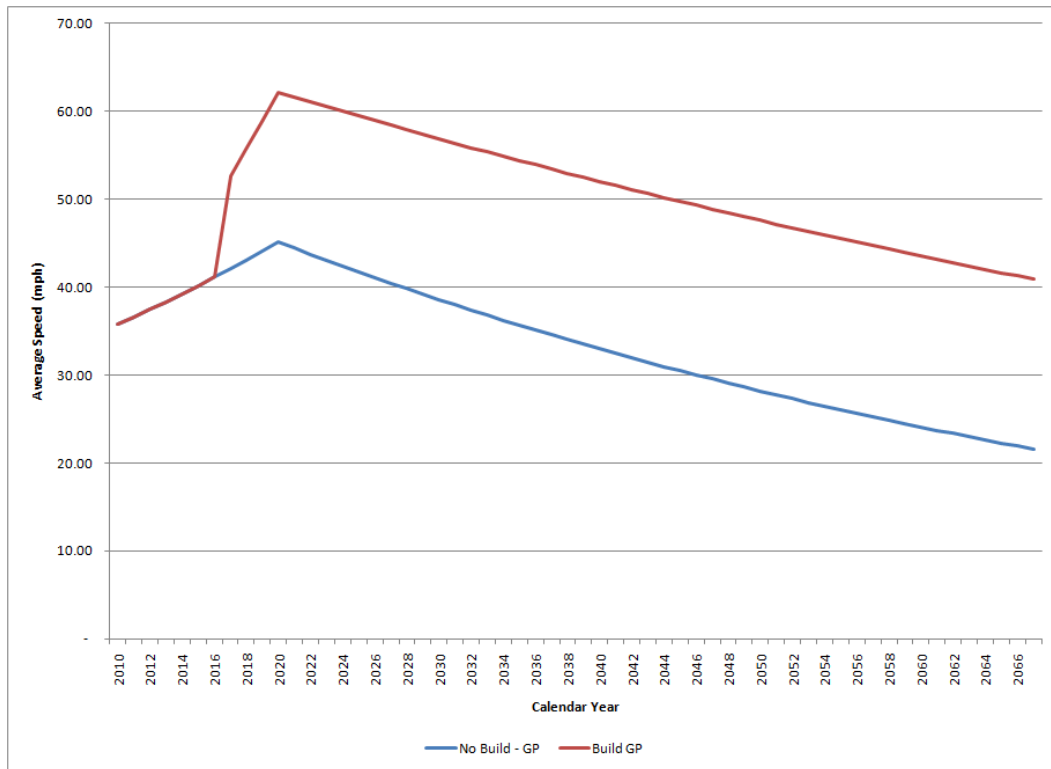


Figure 2. Average Speeds in SR-91 Corridor HOV/HOT Lanes, 2010-2067

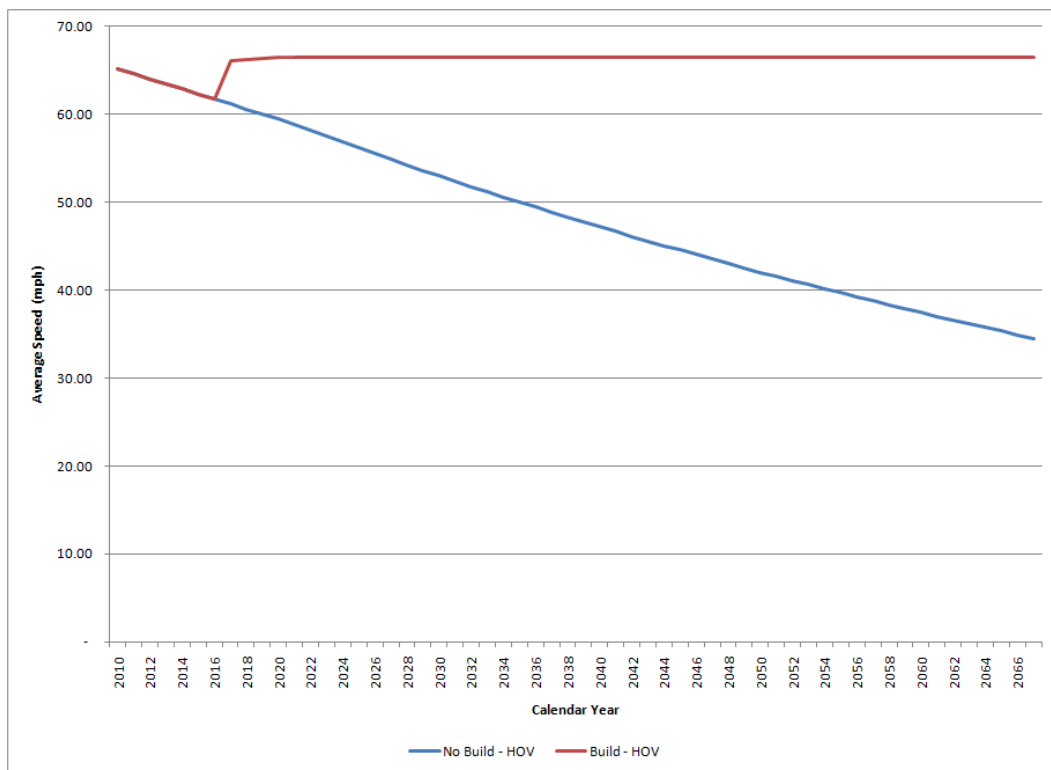
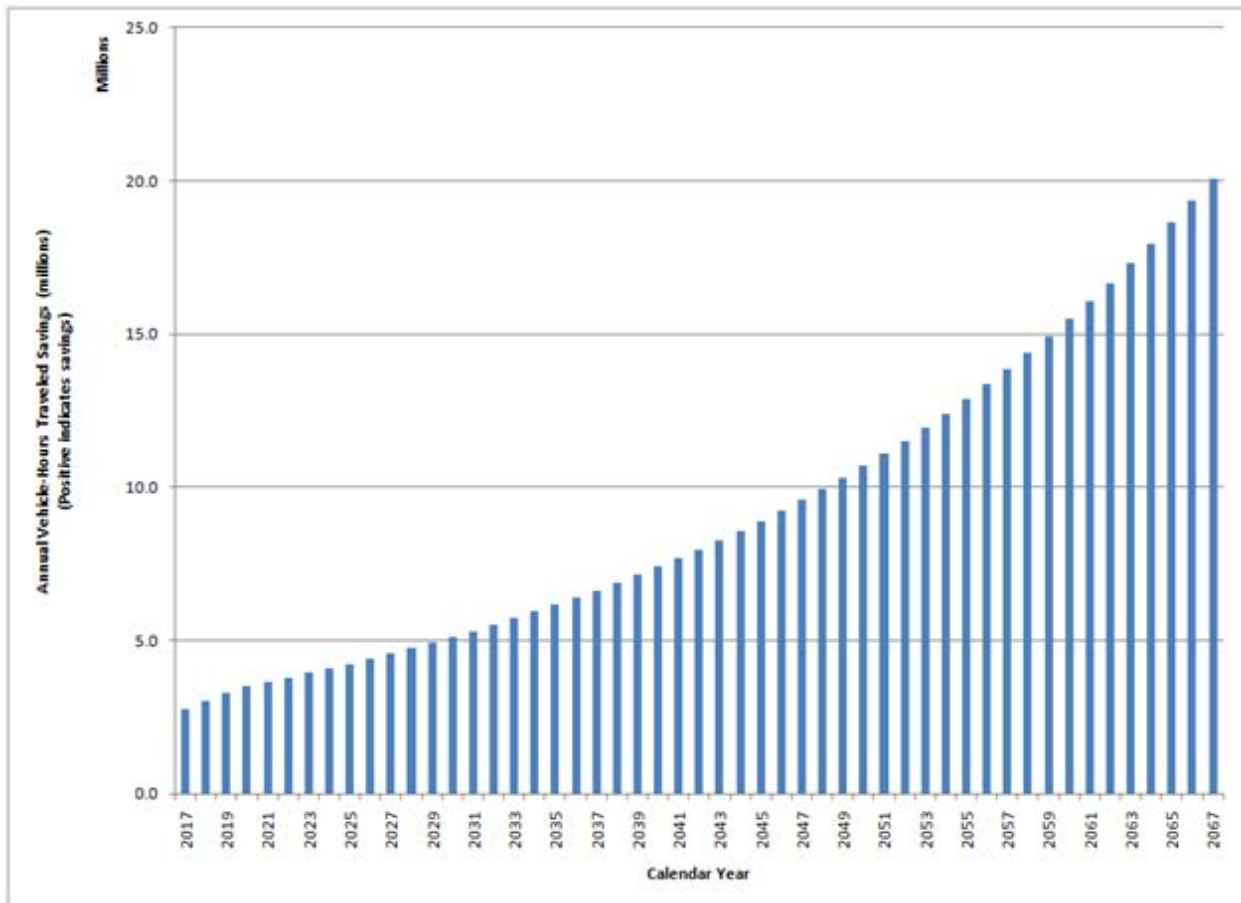
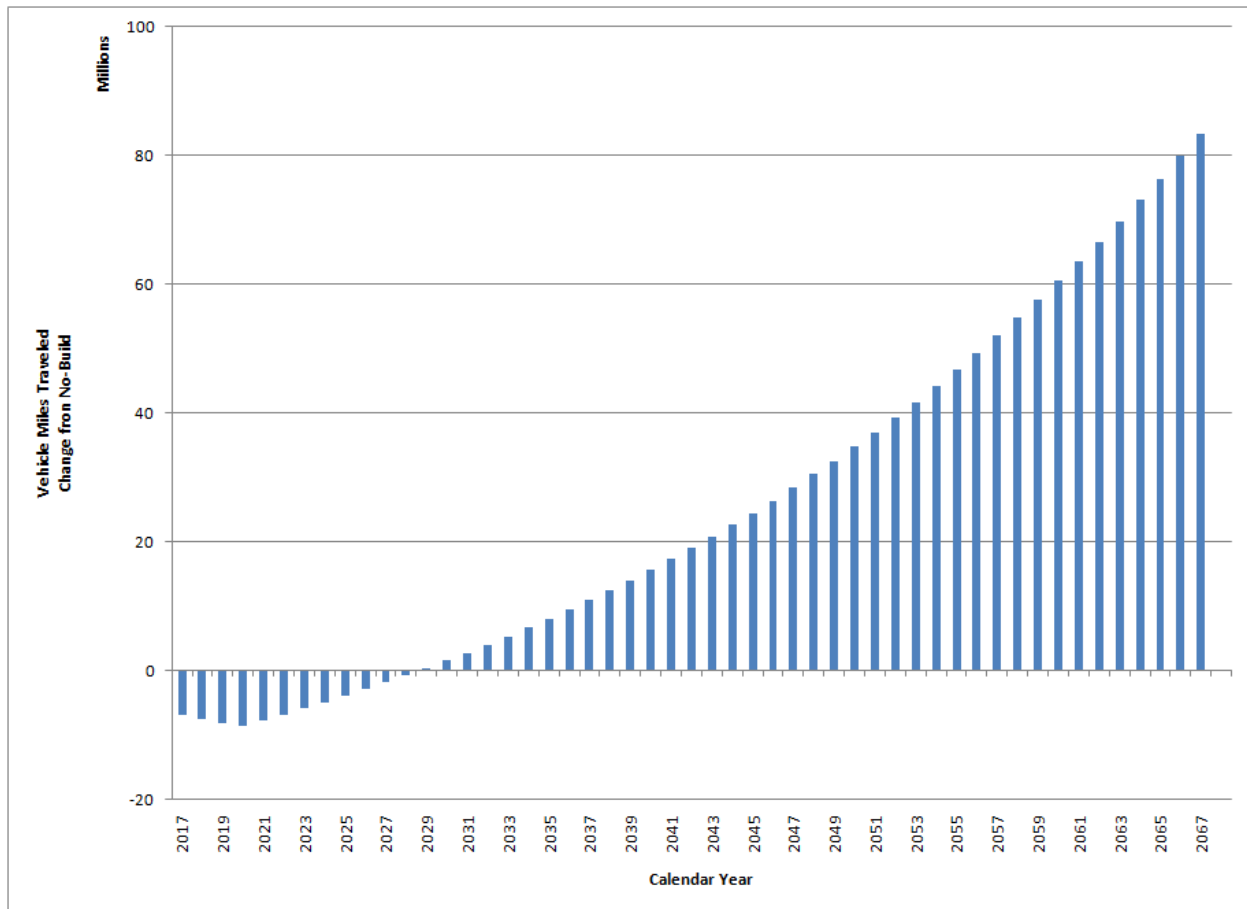


Figure 3. Vehicle-Hours Traveled Savings, SR-91 Corridor, 2010-2067



Because the Project is a capacity improvement, it has the effect of increasing VMT as users begin to use the facility and it begins to attract trips. As Figure 4 below shows, there is an initial decrease in VMT relative to the no-build scenario. In the long-run, the attraction of the facility begins to increase VMT. On net, there is an increase in VMT. Cumulatively, however, the increase in VMT represents only an increase of approximately 3.1 percent relative to no-build.

Figure 4. Vehicle-Miles Traveled Savings, SR-91 Corridor, 2010-2067



Thus, travel time savings are the strongest benefit area of this project. Despite increases in VMT in the long run, there are other benefits that result from increased speed. In particular, higher speeds yield greater fuel efficiency and lower emissions rates for pollutants. These benefits will be discussed later in this report.

3.0 - Economic Benefits Included

The following identifies and groups the benefits that are included in the BCA for the SR-91 CIP.

3.1 Economic Competitiveness

3.1.1 - Travel Time Savings

Travel time savings includes in-vehicle travel time savings for auto passengers and truck drivers. Travel time is considered a cost to users, and its value depends on the disutility that travelers attribute to time spent traveling. A reduction in travel time would translate into more time available for work, leisure, or other activities, which travelers value.

Value of Time Assumptions

Travel time savings must be converted from hours to dollars in order for benefits to be aggregated and compared against costs. This is performed by assuming that travel time is valued as a percentage of the average wage rate, with different percentages for different trip purposes. For this analysis, assumptions for value of time (VOT) estimates were derived from US DOT recommended values (Office of the Secretary of Transportation, 2009, p. 4).

This process typically involves valuing travel time for a work commute trip higher than a trip for non-work (any discretionary trip). However, trip information is not available explicitly by trip purpose in the travel demand models. Utilizing data from the National Household Travel Survey (Federal Highway Administration, 2009) for the state of California, vehicle-miles across the state can be disaggregated by peak and off-peak hour, and subsequently by trip purpose. These figures allow us to disaggregate travel demand model results, as well as develop individual values of time.

The standard wage rate used comes from the U.S. Bureau of Labor Statistics for the state of California. This analysis uses the 2010 wage rate for all private employees, which is \$26.39 per hour.

The US DOT (Office of the Secretary of Transportation, 2009, p. 4) accepts the use of 100 percent of the local wage rate as the value of time for work-related trips, and 50 percent of the local wage rate as the value of time for non-work trips. Using this, the following assumptions are used for valuing travel time savings as expressed in real 2010 dollars.

Peak Period Travel — 32.4 percent of trips in the peak period are work-related; 67.6 percent of peak-period trips were non-work related. This creates a weighted peak-period passenger VOT of \$17.47.

Off-Peak Period Travel — 22.2 percent of trips in the peak period are work-related; 77.8 percent of peak-period trips were non-work related. This creates a weighted off-peak period passenger VOT of \$16.12 per hour.

Commercial Trip Assumptions

In addition, it is acknowledged that commercial trips tend to have a much higher value of time than personal travel. The cost of the driver's time represents the minimum opportunity cost for the business owner for travel delays in freight movement. The true value of time lost or saved for a commercial trip would be even higher than the driver cost if the cargo were perishable or very high value added commodity. This analysis does not differentiate traffic by commodity and uses the U.S. Bureau of Labor Statistics wage rate for the "transportation and utilities" industry in California as a proxy for the truck VOT.

The value of time used for trucks in this analysis is 100 percent of that wage rate, or \$23.65 per hour in 2010 dollars.

Value of Time Real Growth Assumptions

Historically, wages and salaries have increased, on average, at a higher annual rate than general price inflation. Thus, the VOT should increase as well. Increases in the level of wage and salary incomes per job above and beyond general inflation are referred to as real increases. However, this analysis conservatively assumes a constant VOT in real 2010 dollars.

Average Vehicle Occupancy Assumption

Because travel time savings are incurred per individual person, not vehicle, it is necessary to identify the number of person-hours traveled as opposed to the vehicle-hours that travel demand models produce.

In order to do this, this analysis assumes an average vehicle occupancy (AVO) rate of 1.74 persons per vehicle for all trips. This AVO rate is adopted from the National Household Travel Survey 2009's data for California for all trips (Federal Highway Administration, 2009). Because the travel demand model did not disaggregate AVO between trips on different roads (arterial versus highway), this universal AVO was used.

Annualizing Factor Assumptions

Regional travel demand models produce outputs on daily or sub-daily basis. For example, the travel demand model evaluates travel conditions for two three hour peak periods (a.m. and p.m. peak conditions, for a total of six hours out of the day), and an 18-hour off-peak period. The outputs represent an average weekday. Accordingly, annualizing factors are necessary to convert the travel demand outputs associated with each evaluation period to yearly values.

The travel demand model indicates an annualizing factor of 338.

3.1.2 - Reductions in Vehicle Operating Costs

In the short-run, the proposed SR-91 CIP investments would not only affect travel times, but they would also reduce vehicle operating and ownership costs overall. In the long-run, however, the SR-91 CIP project increases auto and truck VMT relative to the "no build." As a consequence, vehicle and truck operating costs that are linked to mileage will also increase in total. In other words, driving greater miles leads to greater costs of operating the vehicle.

Vehicle Operating Costs - Fuel

The reduction in fuel costs analysis utilizes the Energy Information Administration's (EIA) Annual Energy Outlook 2011 projections for auto, trucks, as well as the price of gasoline and diesel (Energy Information Administration, 2011a, 2011b).

The EIA only projects figures to 2035, so it was necessary to further project for years 2036 to 2067. Based on the EIA's "reference case," this analysis projected fuel efficiency and prices based on the compound annual growth rate (CAGR) in the EIA's model for 2010 to 2035. Further, because the EIA expresses fuel prices in 2009 dollars, CPI-U was utilized to adjust fuel prices to 2010 dollars. Table 3 outlines the range utilized.

Table 3. Fuel Economy and Fuel Prices – 2010 and 2055 (Projected)

	2010	2055
Auto Fuel Economy	20.8 miles per gallon	32.9 miles per gallon
Truck Fuel Economy	6.1 miles per gallon	7.0 miles per gallon
Gasoline Price	\$2.86 per gallon (2010 \$)	\$5.00 per gallon (2010 \$)
Diesel Price	\$2.97 per gallon (2010 \$)	\$5.14 per gallon (2010 \$)

Source: U.S. Energy Information Administration

Fuel efficiency varies by speed, and this element was modeled into the analysis. Adjustment factors for fuel emissions by speed were taken from the California Benefit-Cost Analysis model, which outlines differing fuel efficiencies at various speeds.

Vehicle Operating Costs – Non-Fuel

Non-fuel operating costs include the cost of operations and maintenance to vehicles, the cost of tires, and vehicle depreciation. An increase in VMT due to project investments results in cost changes in these categories. The per-mile values of these categories were derived from a study conducted by Barnes and Langworthy (2003). This analysis uses their “baseline costs” which reflected the most conservative estimate of operating costs because it assumes highway conditions and smooth pavements (see Table 4). This analysis uses these average costs per mile values (to calculate variable non-fuel vehicle operating costs).

Table 4. Non-fuel Operating Cost Assumptions

Operating Cost Category	Cost per Vehicle-mile Traveled (2010 \$)
Auto - Maintenance/Repair	4.1 cents per VMT
Auto – Tires	1.1 cents per VMT
Auto – Depreciation	7.9 cents per VMT
Truck – Maintenance / Repair	12.4 cents per VMT
Truck – Tires	4.1 cents per VMT
Truck – Depreciation	9.5 cents per VMT

Source: Barnes and Langworthy, 2003.

These costs are spread evenly across the vehicle fleet and represent an average, which is necessary because VMT data disaggregated by vehicle type (aside from auto versus truck) is not available in the travel demand model. This analysis uses the average cost per mile values to calculate vehicle operating cost and vehicle ownership savings.

3.1.3 - Reductions in the Economic Cost of Oil Imports

Fuel consumption has a cost beyond the actual operating costs or the environmental costs of the consumption which is expressed as the economic cost of oil imports. This concept reflects two ideas: a monopsony component and a price shock component.

The monopsony component suggests that because the U.S. is such a large consumer of oil that an increase in U.S. oil demand will lead to higher fuel prices (based on supply and demand relationships). The price shock component suggests that a reduction in oil supplies leads to higher oil prices thereby reducing the level of U.S. economic output. As a consequence, reducing oil imports by consuming less

fuel reduces these costs on the U.S. economy. The National Highway Traffic and Safety Administration (2009, pp. viii.22-viii.27) suggests that each gallon of fuel saved reduces total U.S. imports of refined fuel or crude oil by 0.95 gallons.

This analysis uses NHTSA's (2009) estimate for the per gallon cost of oil imports for the monopsony and price shock components, which is \$0.41 per gallon in real 2010 after CPI-U adjustment.

3.2 - Safety

3.2.1 – Accident Cost Savings

The BCA assumes constant accident rates for the “build” and “no build” scenarios. As a result, the only accident changes will result from changes in VMT, not a structural change to the safety conditions on the roadway network.

The cost savings from potentially reducing the number of accidents include direct savings (e.g., reduced personal medical expenses, lost wages, and lower individual insurance premiums), as well as significant avoided costs to society (e.g., second party medical and litigation fees, emergency response costs, incident congestion costs, and litigation costs). The value of all such benefits – both direct and societal – could also be approximated by the cost of service disruptions to other travelers, emergency response costs to the region, medical costs, litigation costs, vehicle damages, and economic productivity loss due to workers inactivity. However, should the number of accidents increase, these areas are no longer cost savings but costs incurred by individuals and society.

The state-of-the-practice in benefit-cost analyses is to estimate accident cost savings for each of three accident types (fatal accidents, injury accidents, or property damage only accidents) using the change in highway VMT. Some studies perform more disaggregate estimates of the accident cost savings, applying different accident rates to different types of roadways (e.g., interstate, highway, arterial).

This BCA estimates the benefits associated with accident cost savings using 2009 statewide accident data reported by the California Highway Patrol (2010, Sec 1). The accident figures are statewide averages and represent accidents on interstate highways, state highways, county roads, and arterials. The California Highway Patrol reports aggregated injury accidents, and we disaggregated the injury accident rates into Maximum Injury Abbreviated Scale (MAIS) categories based on the share of nationwide accident data reported by the National Highway Traffic Safety Administration (2002, p. 9). Below is the accident rate data used for this study.

Table 5. Accident Rate Assumptions

Category	Accident Rate (per million VMT)
MAIS 6 (fatal)	0.009486
MAIS 5 (critical)	0.001290
MAIS 4 (severe)	0.004975
MAIS 3 (serious)	0.017158
MAIS 2 (moderate)	0.059418
MAIS 1 (minor)	0.634997

Property Damage Only	0.801477
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Source: California Highway Patrol

The SR-91 CIP will reduce congestion due to weaving and chokepoints throughout the corridor as a result of the braided ramps, reconfigured ramps, collector-distributor facilities for interchanges, appropriate weaving distances, and other operational improvements. Additionally, the SR-91 CIP will improve safety and reduce accident rates in the corridor by widening the travel lanes from 11 to 12 feet and adding standard shoulders in most locations. Wider lanes and shoulders allow for more maneuvering room for both normal and emergency situations and result in fewer accidents. In addition, interchange improvements along with the addition of auxiliary lanes will reduce weaving conflicts, which also will contribute to a reduction in traffic accidents.

If lower accident rates were utilized for the “build” scenario versus the “no build” scenario there would be additional safety benefits. However, because the magnitude of that reduction is unknown, this analysis maintains the conservative assumption that the rates are constant between the two scenarios.

The benefits resulting from accident reduction are converted to monetary values using the cost of fatal and injury highway accidents recommended by the U.S. DOT (Office of the Secretary of Transportation, 2009, pp. 1-8). The value of ‘property damage only’ accidents is derived from a Federal Highway Administration (1994) technical advisory. The following table outlines the values used as expressed in real 2010 dollars after CPI-U adjustment.

Table 6. Value of a Statistical Life and of Accidents by MAIS Category

Category	Value
Value of a Statistical Life	\$ 6,102,000
MAIS 6 (fatal) – cost	\$ 6,102,000
MAIS 5 (critical) – cost	\$ 4,652,775
MAIS 4 (severe) – cost	\$ 1,144,125
MAIS 3 (serious) – cost	\$ 350,865
MAIS 2 (moderate) – cost	\$ 94,581
MAIS 1 (minor) – cost	\$ 12,204
MAIS 0 (property only) –cost	\$ 3,790

Source: U.S. Department of Transportation

3.3 – Sustainability

The SR-91 CIP will create environmental and sustainability benefits by reducing air pollution associated with automobile travel. Because reductions in VMT will also lead to reductions in CO2 emissions, the project will contribute to some level of reductions in global warming. These benefits are the consequence of the SR-91 CIP leading to faster travel speeds, and thus lower emissions rates at the higher speeds than would be realized if there was no project. Overall, the improved emissions rates leads to reductions in tons of pollutants emitted.

Six emissions from which to measure and monetize benefits were identified, including: carbon monoxide, nitrous oxide, particulate matter, sulfur dioxide, volatile organic compounds, and carbon dioxide.

3.3.1 Auto Emissions

Per mile emissions factors differ depending on vehicle, fuel efficiency, average speed, and driving conditions. This BCA used the California Department of Transportation's emissions factors from the California Life-cycle Benefit-Cost Analysis Model (Cal B/C) (California Department of Transportation, 2010). This model provides emissions factors for automobiles and trucks at varying speeds, and applies a dynamic model. In general, at slower speeds vehicles emit pollutants at a greater rate.

This analysis used the year 2007 and 2027 emissions factors provided for cars and trucks (see Table 7 and Table 8). Emissions factors were subsequently extrapolated to other years in order to build a dynamic time series.

It is important to note that a unique set of emissions factors exists at each speed. Thus, emissions data set consisted of emissions factors for each emissions type, by year, and by speed.

Consistent with the Cal B/C model's technical documentation (California Department of Transportation, 2009, pp. iii.60-iii.61), CO₂ and SO_x were assumed to grow linearly, while the remaining factors (CO, NO_x, PM₁₀, and VOC) grew exponentially. The CAGR for 2007 to 2027 was used and applied through 2047 (a twenty year extrapolation). Beyond this point, this analysis assumed the factors to "flat line," reflecting the uncertainty of estimating emissions factors beyond this period.

Table 7. Emissions Factors From Cal B/C Model, 2007 at 35 mph

Emissions type (grams per VMT)	Passenger Cars	Trucks
CO	4.0952	5.7648
NOX	0.4291	11.3895
PM10	0.0342	0.4438
SOX	0.0040	0.0130
VOC	0.3216	1.0098
CO ₂	388.20	1,348.50

Source: California Department of Transportation, Cal B/C

Table 8. Emissions Factors From Cal B/C Model, 2027 at 35 mph

Emissions type (grams per VMT)	Passenger Cars	Trucks
CO	1.0774	1.3326
NOX	0.0883	2.4211
PM10	0.036	0.1133
SOX	0.0038	0.0134
VOC	0.1015	0.315
CO ₂	381.72	1396.52

Source: California Department of Transportation, Cal B/C

Emissions costs were also taken from the California Life-cycle Benefit Cost model (California Department of Transportation, 2010). These costs were on a per-ton basis and are as follows:

Table 9. Cost of Emissions – CAL/BC

Emissions Type	Cost per ton (2010 \$)
CO	\$ 70
NOX	\$ 16,300
PM10	\$ 131,800
SOX	\$ 65,800
VOC	\$ 1,140
CO2	\$ 37

Source: California Department of Transportation, Cal B/C

While a dynamic, and growing, value for carbon dioxide emissions is justifiable on the basis of increasing global warming, a constant value was used to be consistent with the Cal B/C approach.

3.3.2 Noise Pollution

The SR-91 CIP investments also contribute to slight increases in noise pollution due to the overall net increases in VMT (see Figure 4). This is because increases in VMT translate to slight increases in noise output by the additional vehicles. This BCA assumes a cost of noise of \$0.001 per VMT as expressed in real 2010 dollars (after CPIU-adjustment), consistent with the National Traffic Highway and Safety Administration's figures (2009).

3.4 – State of Good Repair

It was necessary to model the effect that changes in VMT would have on the pavements of the highway. In general, additional VMT leads to greater pavement damage, and reducing VMT would lead to pavement damage savings.

The costs used for this analysis were \$0.0005 per VMT for autos, and \$0.0008 per VMT for trucks (Federal Highway Administration, 1994, ES-6).

4.0 - Economic Benefits Not Included

The following is a summary of other potential benefits that are excluded from the BCA. The ensuing discussion describes these possible benefits and explains the rationale for their exclusion.

4.1 – Reliability

As mentioned previously, this BCA estimates highway user benefits conservatively and does not include reliability benefits in the quantitative evaluation. The increase in travel time reliability as a result of a demand managed tolled express lane has an economic value to users beyond the travel time savings itself, but this effect could not be calculated. Any potential reliability improvements for non-highway users are also excluded from this BCA.

4.2 - Toll Revenues

Toll revenues are an economic transfer from users to the highway operator. Because they are a pecuniary transfer, they represent neither an economic benefit nor an economic cost of the project. In the BCA, toll revenues are excluded from both the benefit and O&M cost tabulations.

4.3 - Induced Highway Travel

This BCA is built upon a travel demand model that does not include feedback that changes the number of trips. Thus, it assumes a constant number of trips between the build and no-build scenarios, and induced trips are not modeled. Improved accessibility on highway infrastructure can have the effect of inducing more travel. That is to say, as speeds increase, people are willing to take more trips because the travel conditions are improved. Thus, trips are created that were not made prior to the facility improvements.

Travel demand modeling capabilities prohibited formal inclusion of SR-91 induced vehicular travel in the quantified evaluation.

4.4 - Construction Delay

During the period of project construction there are expected lane closures and other disruptions as a consequence of the highway building. This would theoretically create additional delay on the system during the five year period of construction, thereby offsetting against some travel time savings. These effects were not incorporated in the RCTC travel demand model, and thus were not incorporated in the BCA. However, a 15 percent sensitivity analysis is conducted for the total benefits.

4.5 - Land Use Impacts / Land Value Impacts

This BCA does not incorporate or monetize the land use impacts that the SR-91 CIP may cause. Because of the improved speeds in the SR-91 corridor as well as improved reliability, it is possible that land values may change to reflect the improvements in accessibility. Furthermore, changes in travel times may influence employment and housing patterns, creating land-use impacts throughout the region. Such changes were not included in this BCA.

4.6 - Improved Economic Productivity

Improved travel times along the SR-91 corridor may create shifts in employment patterns and allow workers access to more job markets that were not previously feasible. As a result, workers may seek employment in higher output work that puts their labor to the highest and best use. This has the effect of increasing overall economic productivity in the region as workers can be gainfully employed in a broader geographic job market. Such impacts, however, were excluded from this BCA as they would require detailed labor market analysis beyond the scope of the data available.

5.0 - Economic Costs Included and Assumptions

In the benefit-cost analysis, the term 'cost' refers to the additional resource costs or expenditures required to implement, perpetuate, and maintain the investments associated with the SR-91 CIP.

The BCA uses project costs that have been estimated for the SR-91 CIP on an annual basis. Operations and maintenance costs were initially expressed in real 2009 dollars; rehabilitation costs were initially expressed in real 2009 dollars; and capital costs were initially expressed in real 2010 dollars. All costs were converted to real 2010 dollars based on CPI-U adjustments.

5.1 - Initial Project Investment Costs

Initial project investment costs include engineering and design, construction, real estate services, vehicles, other capital investments, and contingency factors. These costs were reported by RCTC and included costs beginning in 2008 and ending in 2018. The facility is expected to be operational in 2017.

Costs prior to 2010 included some costs of professional project staffing, preliminary engineering, planning and development, and contingencies on those costs.

5.1.1 Right of Way Costs

Outlays spent for the acquisition of real assets (right of way) are excluded from total costs in this BCA. This is because when the government acquires a real asset, is considered an asset purchase and not a cost. RCTC would be in possession of tangible assets that, at least historically, had not depreciated in value. Thus, the costs of right of way and other property costs are excluded from this analysis.

5.2 - Annual Operating and Maintenance Costs

The annual cost of operating and maintaining the proposed highway improvements and toll facilities is included in the analysis. Operations and maintenance activities apply to several assets, including tolling infrastructure, toll processing facilities and staff, highway operations and safety, operations infrastructure, support facilities and the highway physical infrastructure (pavement, barriers, etc). Operating and maintenance costs are assumed to begin in 2017 which is year 1 of the project.

The O&M costs reported were the marginal operating costs, or the costs above and beyond the “no build” scenario.

5.3 - Periodic Capital Equipment Replacement Costs and Major Rehabilitation

Several types of initial asset investments will need to be replaced or rehabilitated during the evaluation period. To account for this, the RCTC created a schedule of rehabilitation and associated costs. These costs include: upgrading and replacing toll collection equipment; and structures and roadway improvements and repaving.

6.0 - Economic Costs Not Included

6.1 - Residual Value (Cost Offset or Negative Cost)

The SR-91 CIP is assumed to have a 50 year life cycle, after which point the facility will be in need of replacement and rehabilitation. This occurs in year 2067, which is year 50 of project operations. Because this BCA ends in 2067, there is no remaining economic value of the facility. In other words, this analysis assumes that there is no residual value after 2067. Right of way is not included as a residual value because those costs have already been excluded from the capital costs.

7.0 - Key Benefit-Cost Evaluation Measures

The benefit-cost analysis converts potential gains (benefits) and losses (costs) from the Project into monetary units and compares them. The following three common benefit-cost evaluation measures are included in this BCA, each tailored to compare benefits and costs from different perspectives.

Net Present Value (NPV): NPV compares the net benefits (benefits minus costs) after being discounted to present values using the real discount rate assumption. The NPV provides a perspective on the overall dollar magnitude of cash flows over time in today's dollar terms.

Economic Rate of Return (ERR): The ERR is the discount rate that makes the present value of all benefits just equal to the present value of all costs (i.e., the real discount rate at which the project's NPV is zero and its benefit-cost is unity). Note that the ERR is interpreted as a real rate of return (after accounting for inflation), since the assumption is that benefits and costs are expressed in constant dollars. As such, it should not be directly compared with investment returns calculated from inflated or nominal future year dollars.

Benefit Cost (B/C) Ratio: The evaluation also estimates the benefit-cost ratio; where the present value of incremental benefits divided by the present value of incremental costs yields the benefit-cost ratio. The B/C Ratio expresses the relation of discounted benefits to discounted costs as a measure of the extent to which a project's benefits either exceed or fall short of their associated costs.

7.1 Sensitivity Analysis

To test the robustness of the estimated NPV, ERR, and B/C Ratio, the economic analysis also conducts several sensitivity tests, where the estimated measures are re-calculated under varying scenarios (i.e. assumptions). These scenarios include:

- Scenario A1: 7% discount rate; 15% increase in all calculated benefits
- Scenario A2: 7% discount rate; 15% decrease in all calculated benefits
- Scenario A3: 7% discount rate; 15% increase in initial capital costs
- Scenario A4: 7% discount rate; 15% decrease in initial capital costs

- Scenario B1: 3% discount rate; 15% increase in all calculated benefits
- Scenario B2: 3% discount rate; 15% decrease in all calculated benefits
- Scenario B3: 3% discount rate; 15% increase in initial capital costs
- Scenario B4: 3% discount rate; 15% decrease in initial capital costs

8.0 – SR-91 CIP BENEFIT-COST ANALYSIS RESULTS

8.1 - Results in Brief

There were two “Cases” conducted for this analysis. Case A assumes a 7.0 percent discount rate, and Case B assumes a 3.0 percent discount rate. Case A is the presumed baseline as prescribed by the US DOT.

Case B is a comparison justified because the project utilizes public funds so the opportunity cost is in public, not private, investment. Thus, there is some justification to consider a lower discount rate of 3.0 percent.

For the SR-91 CIP Case A, the proposed highway investments yield a net present value of \$774 million, which provides a real economic rate of return of 11.2 percent; the associated benefit-cost ratio is 1.9. Table 10 presents the evaluation results for the base case and eight sensitivity tests. All benefits and costs were estimated in constant 2010 dollars over an evaluation period extending 50 years beyond system completion in 2016.

Table 10. Benefit Cost Analysis Summary Results

Scenario	Net Present Value	Economic Rate of Return	Benefit Cost Ratio
Base Case A (7 percent discount rate)	\$773.6 million	11.2%	1.93
A1: 15% increase in benefits	\$1.01 billion	12.3%	2.22
A2: 15% decrease in benefits	\$532 million	10.0%	1.64
A3: 15% increase in costs	\$1.61 billion	10.2%	1.68
A4: 15% decrease in costs	\$898 million	12.5%	2.27
Base Case B (3 percent discount rate)	\$3.92 billion	11.2%	4.48
A1: 15% increase in benefits	\$4.69 billion	12.3%	5.15
A2: 15% decrease in benefits	\$3.17 billion	10.0%	3.81
A3: 15% increase in costs	\$3.76 billion	10.2%	3.90
A4: 15% decrease in costs	\$4.10 billion	12.5%	5.27

8.2 - Benefits by Category

Over the entire analysis period, SR-91 CIP exhibits increases in VMT and decreases in VHT. However, the increases in VMT represent only a 3.1 percent increase in VMT, for the entire 50 year period, than in no-build. On the other hand, VHT show much larger savings of 35.8 percent.

Table 11 below outlines the changes in some of the impact categories. Some categories increased, while others decreased. Overall, the savings in many categories like VHT (and thus travel times), fuel consumption, and emissions reductions provided significant benefits to offset other categories like increases in accidents. On net, the project provides significant benefits.

Table 11. Project Impacts for SR-91 CIP, Cumulative 2017-67

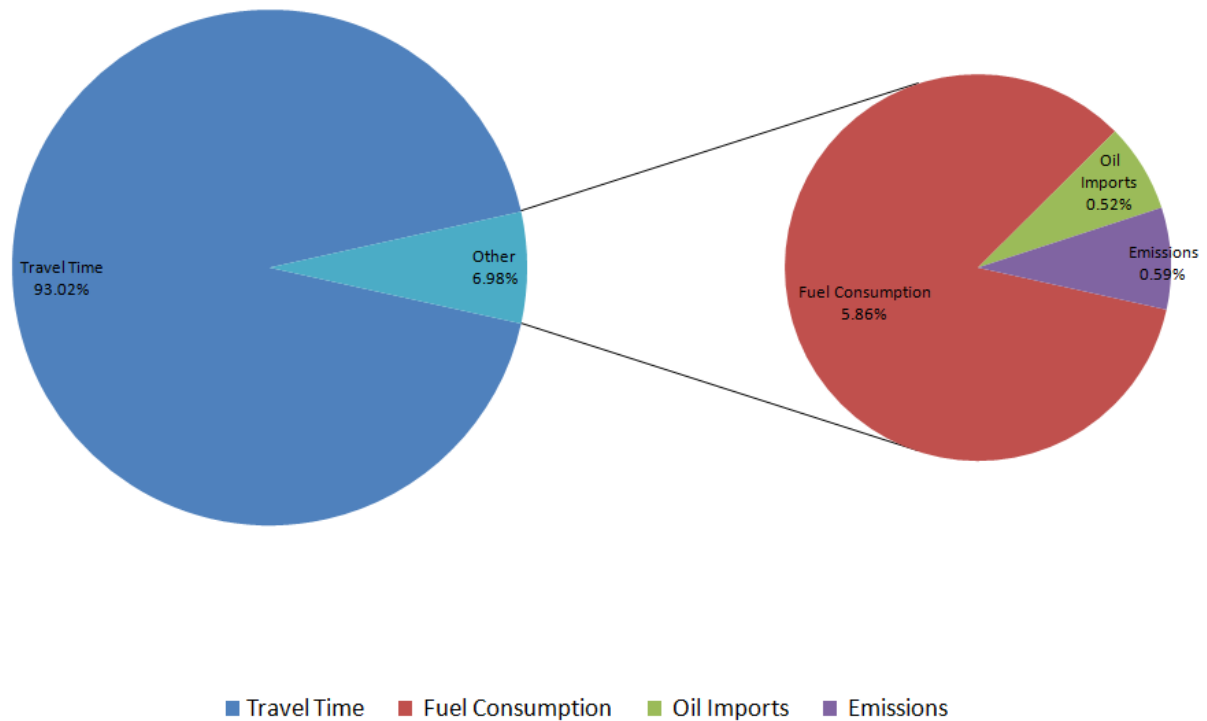
Category	Quantity
Vehicle-miles traveled (VMT)	▲ 1.27 billion
Vehicle-hours traveled (VHT)	▼ 468.3 million
Fuel consumed (gal.)	▼ 285.3 million
Oil Imported (gal.)	▼ 271.0 million
Fatalities (number)	▲ 10*
Injury Accidents (number)	▲ 910*
Property Damage Only Accidents (number)	▲ 1,024*
CO2 Emissions (tons)	▼ 2.3 million
CO Emissions (tons)	▼ 1,377
NOx emissions (tons)	▼ 365
PM10 (tons)	▼ 191
SOX (tons)	▼ 22
VOC (tons)	▲ 5*

*Due to increases in total vehicle miles traveled in the build scenario. Accident rates remain the same.

Over the 50 year analysis period, there are \$1.61 billion in benefits over the entire 50 year analysis period (in 7% discounted 2010 dollars). In discounted dollars, of positive benefits, travel time savings constitute approximately \$1.5 billion; user fuel savings are \$94 million; emissions savings are \$9.6 million; and oil import savings are \$8.4 million.

Most of the positive benefits occurred in the travel time savings (93 percent), while fuel consumption savings were 5.9 percent of total benefits. Thus, the vast majority of benefits (99.4 percent) were in the economic competitiveness category, with some additional benefits (0.6 percent) in the environmental category.

Figure 5. Cumulative Benefits by Category, SR-91 CIP, 2017-2067



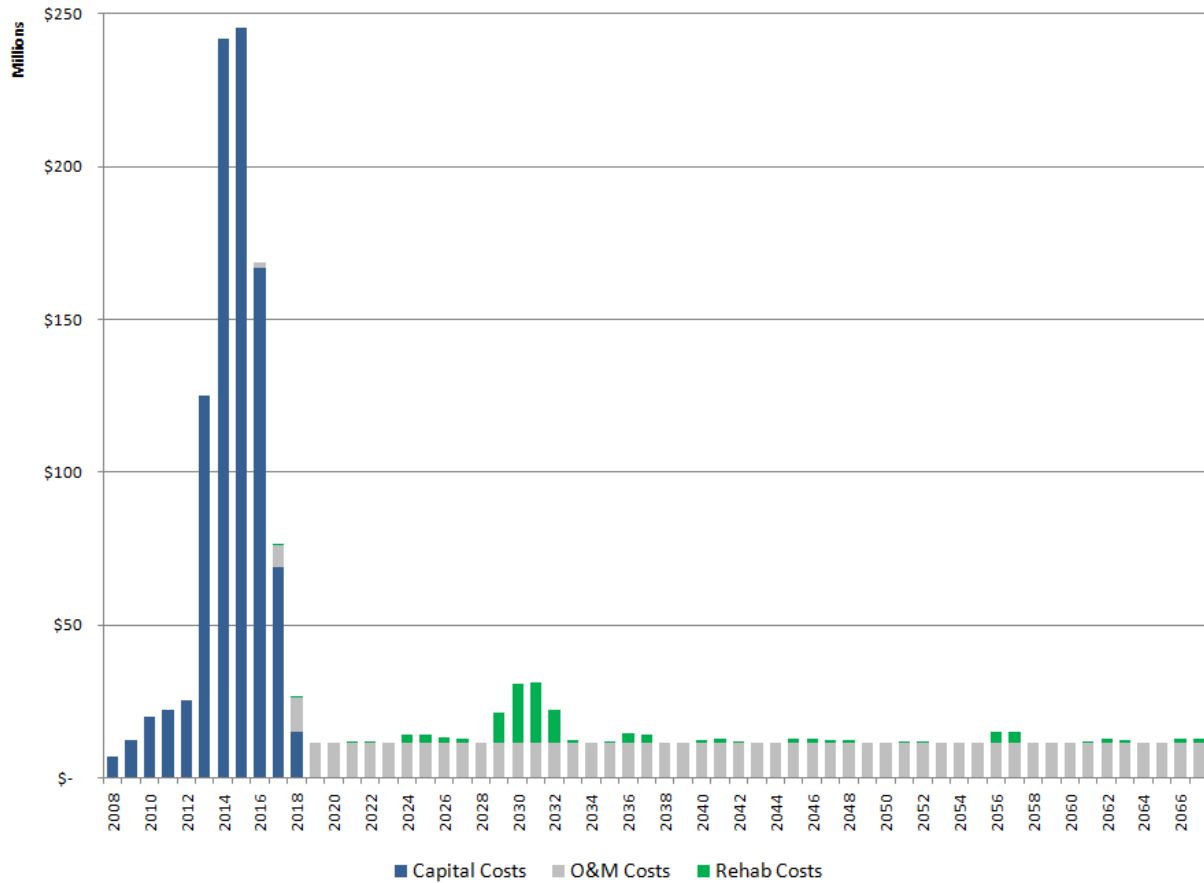
8.3 - Costs over Time

Figure 6 presents the capital expenditures over time, expressed in constant 2010 dollars before present value discounting. The capital investments (\$1.1 billion, or \$950 without ROW costs) were assumed to begin in 2010 and conclude by the end of 2017. These capital costs translate to \$708 million when discounted at 7 percent.

Annual operating and maintenance (O&M) costs over the economic evaluation period are also expressed in constant 2010 dollars before present value discounting. In real dollars, RCTC predicts that these costs will remain generally constant through 2067. O&M costs total \$579 million over 50 years, or \$103.6 million in discounted dollars. This is an average of \$2.1 million per year on a 7 percent discounted basis.

Periodic rehabilitation of the SR-91 CIP facility totaled \$96.5 million, or \$20.9 million discounted at 7 percent. On average, this is \$0.42 million per year (discounted) over the 50 year period

Figure 6. Capital and Rehabilitation Expenditures in 2010 Dollars before Present Value Discounting



8.4 Cumulative Benefits and Costs

Figure 7 and Figure 8 compare the cumulative present value of benefits with the cumulative present value of costs over time for both cases. The figure shows that the cumulative discounted benefits exceed the cumulative discounted costs by mid 2033 with a 7 percent discount rate, and by mid 2027 with a 3 percent discount rate.

Figure 7. Cumulative Benefits and Costs in 2010 Dollars (Discounted at 7 percent)

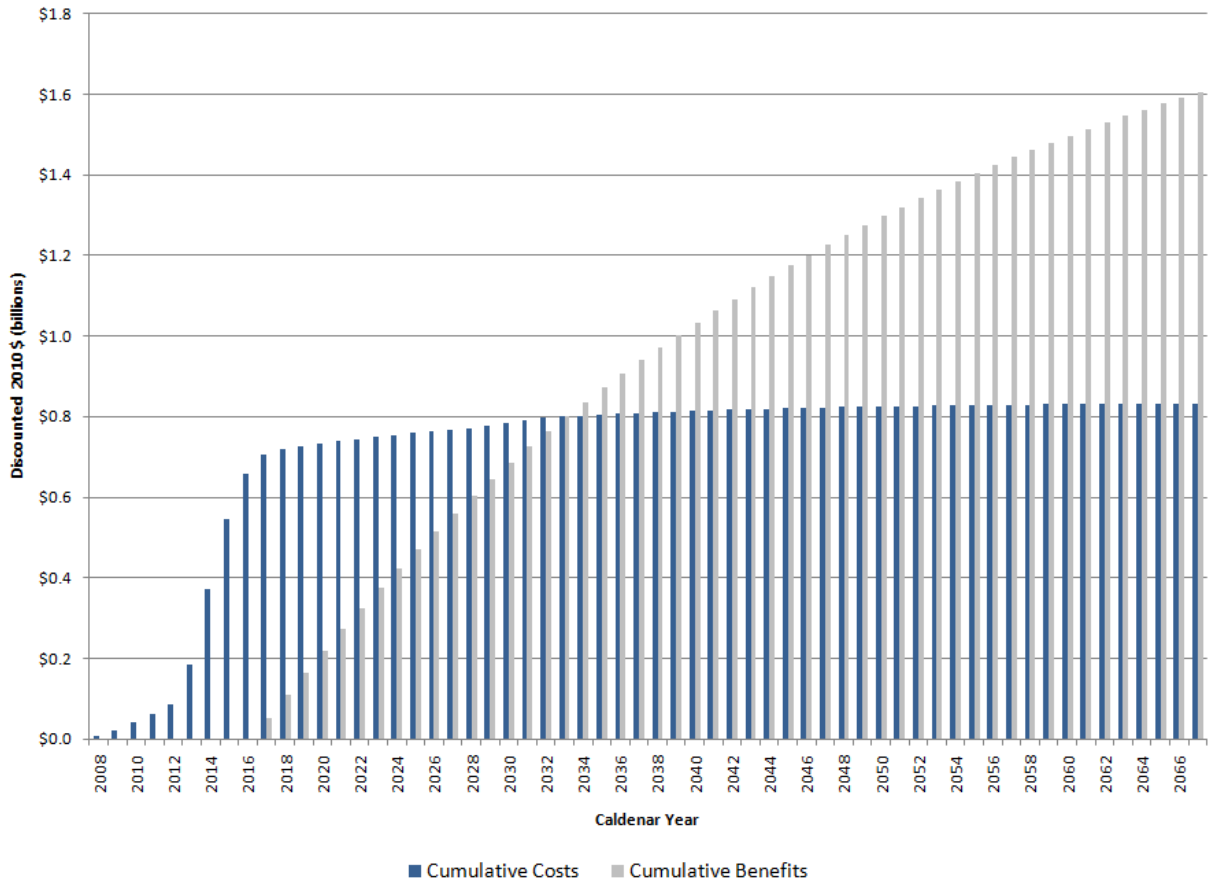
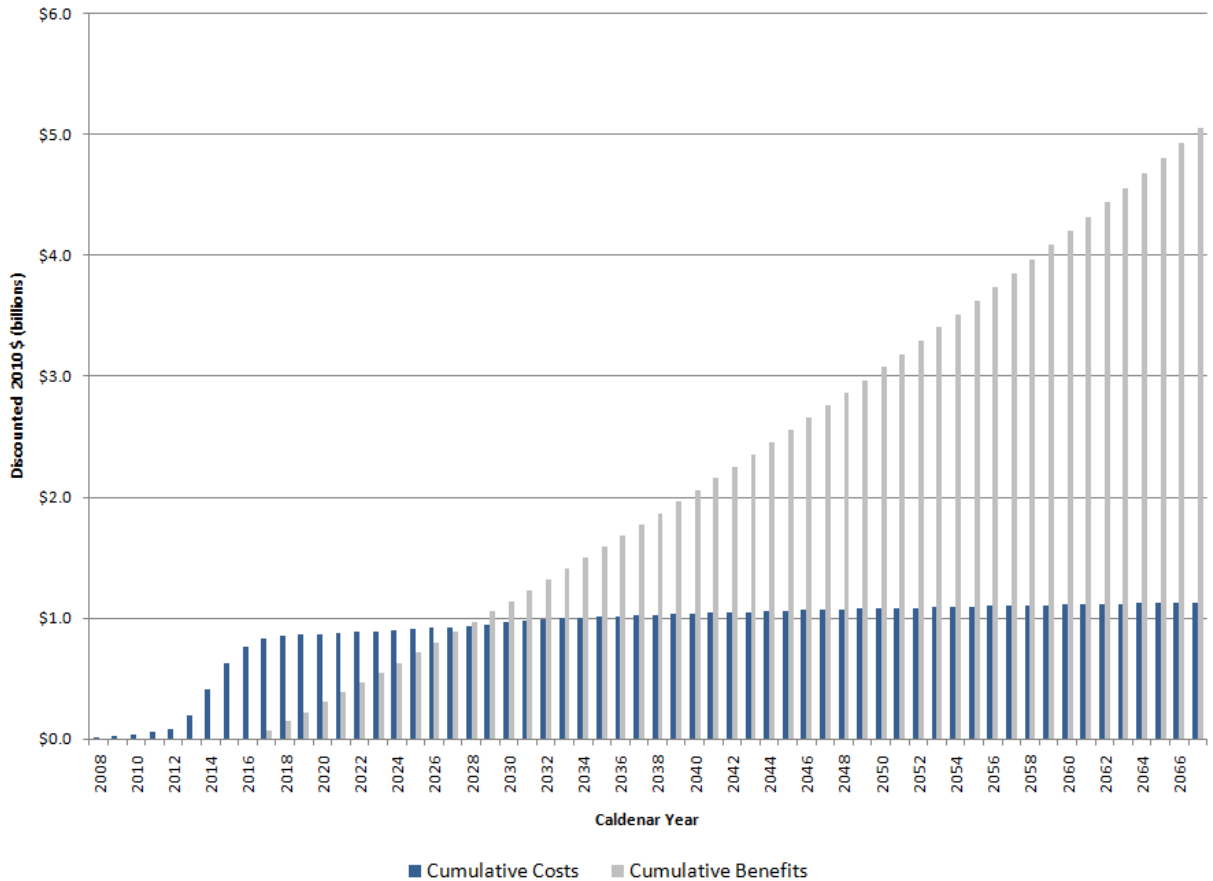


Figure 8. Cumulative Benefits and Costs in 2010 Dollars (Discounted at 3 percent)



9.0 Conclusion

This analysis shows that the anticipated quantifiable benefits from the SR-91 CIP exceed their anticipated costs. It is important to note this analysis does not include all of the potential benefits that highway investments will contribute to region. The value of providing additional transportation capacity in a heavily congested corridor is substantial, both for today’s residents and for the continued economic growth expected in the future.

APPENDIX – Benefit-Cost Model Details

Table 12. Detailed Travel Demand and Travel Time Savings

	VMT Change	VHT Change	VHT Change	Value of Travel Time Savings	Value of Travel Time Savings
	Vehicle-miles	Vehicle-Hours	Person-hours	2010\$, undiscounted	Discounted at 7%
2008	-	-	-	\$ -	\$ -
2009	-	-	-	\$ -	\$ -
2010	-	-	-	\$ -	\$ -
2011	-	-	-	\$ -	\$ -
2012	-	-	-	\$ -	\$ -
2013	-	-	-	\$ -	\$ -
2014	-	-	-	\$ -	\$ -
2015	-	-	-	\$ -	\$ -
2016	-	-	-	\$ -	\$ -
2017	6,833,724	2,752,037	4,671,568	\$ 81,074,348	\$ 50,489,029
2018	7,512,539	3,028,928	5,140,250	\$ 89,162,731	\$ 51,893,521
2019	8,103,787	3,284,285	5,572,118	\$ 96,604,171	\$ 52,546,268
2020	8,602,471	3,519,999	5,970,403	\$ 103,455,537	\$ 52,591,549
2021	7,738,217	3,655,534	6,199,678	\$ 107,419,156	\$ 51,034,067
2022	6,843,098	3,795,961	6,437,240	\$ 111,526,599	\$ 49,519,144
2023	5,916,284	3,941,461	6,683,398	\$ 115,783,291	\$ 48,045,949
2024	4,956,925	4,092,226	6,938,477	\$ 120,194,870	\$ 46,613,643
2025	3,964,150	4,248,453	7,202,810	\$ 124,767,200	\$ 45,221,375
2026	2,937,066	4,410,347	7,476,749	\$ 129,506,379	\$ 43,868,291
2027	1,874,758	4,578,123	7,760,657	\$ 134,418,748	\$ 42,553,533
2028	776,289	4,752,003	8,054,910	\$ 139,510,901	\$ 41,276,242
2029	(359,303)	4,932,218	8,359,901	\$ 144,789,697	\$ 40,035,558
2030	(1,533,002)	5,119,007	8,676,040	\$ 150,262,269	\$ 38,830,626
2031	(2,745,818)	5,312,623	9,003,750	\$ 155,936,036	\$ 37,660,593
2032	(3,998,783)	5,513,323	9,343,474	\$ 161,818,717	\$ 36,524,615
2033	(5,292,959)	5,721,378	9,695,671	\$ 167,918,342	\$ 35,421,851
2034	(6,629,431)	5,937,071	10,060,818	\$ 174,243,262	\$ 34,351,470
2035	(8,009,312)	6,160,692	10,439,414	\$ 180,802,169	\$ 33,312,651
2036	(9,433,741)	6,392,546	10,831,975	\$ 187,604,102	\$ 32,304,581
2037	(10,903,888)	6,632,951	11,239,039	\$ 194,658,471	\$ 31,326,459
2038	(12,420,948)	6,882,234	11,661,166	\$ 201,975,064	\$ 30,377,496
2039	(13,986,150)	7,140,739	12,098,938	\$ 209,564,066	\$ 29,456,915
2040	(15,600,750)	7,408,822	12,552,962	\$ 217,436,079	\$ 28,563,951
2041	(17,266,036)	7,686,854	13,023,868	\$ 225,602,134	\$ 27,697,852
2042	(18,983,328)	7,975,220	13,512,313	\$ 234,073,712	\$ 26,857,882
2043	(20,753,977)	8,274,322	14,018,978	\$ 242,862,763	\$ 26,043,315
2044	(22,579,369)	8,584,579	14,544,575	\$ 251,981,724	\$ 25,253,443
2045	(24,460,924)	8,906,423	15,089,844	\$ 261,443,540	\$ 24,487,570
2046	(26,400,095)	9,240,310	15,655,555	\$ 271,261,689	\$ 23,745,016
2047	(28,398,375)	9,586,708	16,242,508	\$ 281,450,199	\$ 23,025,114
2048	(30,457,288)	9,946,109	16,851,537	\$ 292,023,672	\$ 22,327,213
2049	(32,578,399)	10,319,023	17,483,512	\$ 302,997,314	\$ 21,650,675
2050	(34,763,312)	10,705,981	18,139,336	\$ 314,386,954	\$ 20,994,881
2051	(37,013,667)	11,107,535	18,819,949	\$ 326,209,071	\$ 20,359,221
2052	(39,331,148)	11,524,262	19,526,332	\$ 338,480,825	\$ 19,743,103
2053	(41,717,479)	11,956,761	20,259,504	\$ 351,220,085	\$ 19,145,949
2054	(44,174,424)	12,405,655	21,020,528	\$ 364,445,454	\$ 18,567,196
2055	(46,703,793)	12,871,594	21,810,508	\$ 378,176,308	\$ 18,006,293
2056	(49,307,440)	13,355,255	22,630,597	\$ 392,432,823	\$ 17,462,706
2057	(51,987,264)	13,857,342	23,481,992	\$ 407,236,009	\$ 16,935,913
2058	(54,745,210)	14,378,587	24,365,943	\$ 422,607,750	\$ 16,425,407
2059	(57,583,272)	14,919,756	25,283,749	\$ 438,570,835	\$ 15,930,692
2060	(60,503,490)	15,481,642	26,236,765	\$ 455,149,002	\$ 15,451,289
2061	(63,507,957)	16,065,074	27,226,401	\$ 472,366,973	\$ 14,986,729
2062	(66,598,816)	16,670,914	28,254,124	\$ 490,250,501	\$ 14,536,559
2063	(69,778,262)	17,300,061	29,321,466	\$ 508,826,411	\$ 14,100,335
2064	(73,048,544)	17,953,450	30,430,018	\$ 528,122,644	\$ 13,677,628
2065	(76,411,967)	18,632,055	31,581,442	\$ 548,168,309	\$ 13,268,021
2066	(79,870,891)	19,336,892	32,777,464	\$ 568,993,728	\$ 12,871,108
2067	(83,427,733)	20,069,018	34,019,886	\$ 590,630,492	\$ 12,486,495
TOTAL	(1,277,207,235)	468,324,341	793,680,101	13,760,403,128	1,499,856,983

Table 13. Detailed Non-Travel Time Benefits

	Passenger O&M Savings (Fuel)	Passenger O&M Savings (non-fuel)	Safety Benefits	Emissions Benefits	Oil Import Savings	Noise Reduction Benefits	Pavement Damage Benefits	Undiscounted Other Benefits	Total Other Discounted Benefits at 7%
	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, disc. 7%
2008	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2009	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2010	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2011	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2012	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 2,495,897	\$ 1,048,994	\$ 67,766	\$ 440,098	\$ 282,978	\$ 6,834	\$ 3,774	\$ 4,346,340	\$ 2,706,682
2018	\$ 3,486,529	\$ 1,160,578	\$ 83,760	\$ 563,212	\$ 390,905	\$ 7,513	\$ 4,167	\$ 5,696,663	\$ 3,315,510
2019	\$ 3,364,316	\$ 1,260,869	\$ 83,760	\$ 528,303	\$ 375,049	\$ 8,104	\$ 4,515	\$ 5,624,916	\$ 3,059,581
2020	\$ 3,082,595	\$ 1,349,214	\$ 182,131	\$ 493,689	\$ 335,966	\$ 8,602	\$ 4,818	\$ 5,457,015	\$ 2,774,070
2021	\$ 3,068,429	\$ 1,237,731	\$ 83,760	\$ 493,773	\$ 332,667	\$ 7,738	\$ 4,390	\$ 5,228,490	\$ 2,484,018
2022	\$ 3,322,863	\$ 1,122,217	\$ 67,766	\$ 496,831	\$ 354,071	\$ 6,843	\$ 3,947	\$ 5,374,538	\$ 2,386,359
2023	\$ 2,955,874	\$ 1,002,562	\$ 67,766	\$ 444,743	\$ 312,399	\$ 5,916	\$ 3,487	\$ 4,792,748	\$ 1,988,820
2024	\$ 2,962,588	\$ 878,655	\$ 51,772	\$ 431,902	\$ 310,642	\$ 4,957	\$ 3,012	\$ 4,643,528	\$ 1,800,840
2025	\$ 3,755,034	\$ 750,383	\$ 47,982	\$ 499,848	\$ 389,952	\$ 3,964	\$ 2,519	\$ 5,449,682	\$ 1,975,216
2026	\$ 4,103,045	\$ 617,627	\$ 31,988	\$ 536,698	\$ 424,601	\$ 2,937	\$ 2,010	\$ 5,718,906	\$ 1,937,191
2027	\$ 3,717,490	\$ 480,269	\$ 19,784	\$ 485,895	\$ 378,722	\$ 1,875	\$ 1,483	\$ 5,085,518	\$ 1,609,945
2028	\$ 4,537,564	\$ 338,186	\$ 3,790	\$ 586,300	\$ 468,321	\$ 776	\$ 938	\$ 5,935,876	\$ 1,756,211
2029	\$ 4,969,163	\$ 191,251	\$ -	\$ 623,546	\$ 512,789	\$ (359)	\$ 375	\$ 6,296,765	\$ 1,741,108
2030	\$ 5,241,741	\$ 39,336	\$ (15,994)	\$ 656,027	\$ 539,673	\$ (1,533)	\$ (208)	\$ 6,459,042	\$ 1,669,139
2031	\$ 5,937,271	\$ (117,691)	\$ (31,988)	\$ 725,039	\$ 611,067	\$ (2,746)	\$ (810)	\$ 7,120,143	\$ 1,719,608
2032	\$ 6,187,914	\$ (279,966)	\$ (47,982)	\$ 747,054	\$ 632,377	\$ (3,999)	\$ (1,432)	\$ 7,233,967	\$ 1,632,802
2033	\$ 7,125,459	\$ (447,627)	\$ (51,772)	\$ 842,021	\$ 725,979	\$ (5,293)	\$ (2,075)	\$ 8,186,692	\$ 1,726,957
2034	\$ 8,700,788	\$ (620,817)	\$ (67,766)	\$ 994,318	\$ 876,660	\$ (6,629)	\$ (2,739)	\$ 9,873,814	\$ 1,946,589
2035	\$ 8,887,295	\$ (799,682)	\$ (83,760)	\$ 996,514	\$ 884,027	\$ (8,009)	\$ (3,424)	\$ 9,872,961	\$ 1,819,085
2036	\$ 9,119,869	\$ (984,370)	\$ (198,125)	\$ 1,010,986	\$ 895,655	\$ (9,434)	\$ (4,132)	\$ 9,830,449	\$ 1,692,759
2037	\$ 11,906,389	\$ (1,175,036)	\$ (214,119)	\$ 1,282,022	\$ 1,156,788	\$ (10,904)	\$ (4,863)	\$ 12,940,277	\$ 2,082,484
2038	\$ 12,799,708	\$ (1,371,834)	\$ (230,113)	\$ 1,352,617	\$ 1,228,160	\$ (12,421)	\$ (5,617)	\$ 13,760,500	\$ 2,069,610
2039	\$ 13,167,926	\$ (1,574,927)	\$ (246,107)	\$ 1,367,541	\$ 1,247,408	\$ (13,986)	\$ (6,395)	\$ 13,941,460	\$ 1,959,651
2040	\$ 13,203,247	\$ (1,784,479)	\$ (265,891)	\$ 1,346,325	\$ 1,234,698	\$ (15,601)	\$ (7,198)	\$ 13,711,102	\$ 1,801,188
2041	\$ 16,272,493	\$ (2,000,658)	\$ (281,885)	\$ 1,622,771	\$ 1,504,020	\$ (17,266)	\$ (8,026)	\$ 17,091,449	\$ 2,098,369
2042	\$ 17,738,768	\$ (2,223,638)	\$ (297,879)	\$ 1,742,337	\$ 1,619,165	\$ (18,983)	\$ (8,880)	\$ 18,550,889	\$ 2,128,550
2043	\$ 19,377,688	\$ (2,453,595)	\$ (317,663)	\$ 1,882,946	\$ 1,746,845	\$ (20,754)	\$ (9,760)	\$ 20,205,707	\$ 2,166,753
2044	\$ 22,317,494	\$ (2,690,710)	\$ (333,657)	\$ 2,123,589	\$ 1,987,396	\$ (22,579)	\$ (10,668)	\$ 23,370,864	\$ 2,342,213
2045	\$ 24,130,003	\$ (2,935,171)	\$ (365,645)	\$ 2,259,409	\$ 2,121,965	\$ (24,461)	\$ (11,604)	\$ 25,174,497	\$ 2,357,917
2046	\$ 23,925,655	\$ (3,187,167)	\$ (476,220)	\$ 2,204,724	\$ 2,076,935	\$ (26,400)	\$ (12,569)	\$ 24,504,958	\$ 2,145,053
2047	\$ 25,649,114	\$ (3,446,893)	\$ (496,004)	\$ 2,339,987	\$ 2,198,612	\$ (28,398)	\$ (13,564)	\$ 26,202,854	\$ 2,143,625
2048	\$ 30,380,987	\$ (3,714,549)	\$ (862,863)	\$ 2,746,345	\$ 2,572,473	\$ (30,457)	\$ (14,588)	\$ 31,077,348	\$ 2,376,076
2049	\$ 29,353,184	\$ (3,990,341)	\$ (894,851)	\$ 2,626,254	\$ 2,453,420	\$ (32,578)	\$ (15,644)	\$ 29,499,443	\$ 2,107,883
2050	\$ 33,578,148	\$ (4,274,478)	\$ (914,635)	\$ 2,964,853	\$ 2,771,557	\$ (34,763)	\$ (16,732)	\$ 34,073,949	\$ 2,275,471
2051	\$ 36,677,442	\$ (4,567,175)	\$ (946,623)	\$ 3,207,186	\$ 2,989,515	\$ (37,014)	\$ (17,852)	\$ 37,305,478	\$ 2,328,293
2052	\$ 37,249,158	\$ (4,868,653)	\$ (966,407)	\$ 3,214,209	\$ 2,997,494	\$ (39,331)	\$ (19,006)	\$ 37,567,464	\$ 2,191,257
2053	\$ 41,905,389	\$ (5,179,138)	\$ (982,401)	\$ 3,561,725	\$ 3,330,016	\$ (41,717)	\$ (20,194)	\$ 42,573,680	\$ 2,320,806
2054	\$ 39,806,026	\$ (5,498,859)	\$ (1,108,970)	\$ 3,346,694	\$ 3,122,482	\$ (44,174)	\$ (21,417)	\$ 39,601,780	\$ 2,017,569
2055	\$ 45,412,708	\$ (5,828,056)	\$ (1,140,958)	\$ 3,766,037	\$ 3,517,771	\$ (46,704)	\$ (22,677)	\$ 45,658,121	\$ 2,173,942
2056	\$ 49,055,359	\$ (6,166,970)	\$ (1,164,532)	\$ 4,026,622	\$ 3,752,182	\$ (49,307)	\$ (23,974)	\$ 49,429,380	\$ 2,199,538
2057	\$ 51,841,952	\$ (6,515,850)	\$ (1,196,520)	\$ 4,206,075	\$ 3,915,059	\$ (51,987)	\$ (25,309)	\$ 52,173,420	\$ 2,169,760
2058	\$ 52,099,807	\$ (6,874,951)	\$ (7,330,508)	\$ 4,177,675	\$ 3,884,381	\$ (54,745)	\$ (26,683)	\$ 45,874,977	\$ 1,783,013
2059	\$ 60,970,375	\$ (7,244,534)	\$ (7,362,496)	\$ 4,777,055	\$ 4,432,135	\$ (57,583)	\$ (28,097)	\$ 55,486,856	\$ 2,015,510
2060	\$ 63,399,095	\$ (7,624,866)	\$ (7,476,861)	\$ 4,976,965	\$ 4,608,729	\$ (60,503)	\$ (29,552)	\$ 57,793,007	\$ 1,961,943
2061	\$ 68,248,610	\$ (8,016,222)	\$ (7,512,639)	\$ 4,929,845	\$ 4,898,704	\$ (63,508)	\$ (31,049)	\$ 62,453,742	\$ 1,981,462
2062	\$ 71,580,974	\$ (8,418,882)	\$ (7,544,627)	\$ 5,106,157	\$ 5,072,741	\$ (66,599)	\$ (32,589)	\$ 65,697,177	\$ 1,948,006
2063	\$ 75,152,395	\$ (8,833,134)	\$ (7,580,405)	\$ 4,927,565	\$ 5,258,319	\$ (69,778)	\$ (34,173)	\$ 68,820,790	\$ 1,907,126
2064	\$ 78,661,398	\$ (9,259,272)	\$ (7,616,183)	\$ 5,106,724	\$ 5,434,186	\$ (73,049)	\$ (35,803)	\$ 72,218,001	\$ 1,870,344
2065	\$ 84,409,551	\$ (9,697,597)	\$ (7,754,956)	\$ 5,444,589	\$ 5,757,584	\$ (76,412)	\$ (37,480)	\$ 78,045,279	\$ 1,889,030
2066	\$ 91,515,293	\$ (10,148,421)	\$ (7,790,734)	\$ 5,497,835	\$ 6,163,373	\$ (79,871)	\$ (39,204)	\$ 85,118,272	\$ 1,925,446
2067	\$ 91,028,482	\$ (10,612,058)	\$ (7,826,512)	\$ 5,355,502	\$ 6,052,557	\$ (83,428)	\$ (40,977)	\$ 83,873,567	\$ 1,773,168
TOTAL	\$ 1,429,836,541	\$ (153,950,394)	\$ (89,205,226)	\$ 116,086,978	\$ 111,141,172	\$ (1,277,207)	\$ (607,525)	\$ 1,412,024,340	\$ 106,253,545

Table 14. Detailed Costs

	Capital Costs, less ROW	Net O&M Costs	Rehabilitation Costs	Total undiscounted costs	Total discounted costs at 7%
	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, undiscounted	2010\$, disc. 7%
2008 \$	6,750,000	\$ -	\$ -	\$ 6,750,000	\$ 7,728,075
2009 \$	12,455,000	\$ -	\$ -	\$ 12,455,000	\$ 13,326,850
2010 \$	19,905,000	\$ -	\$ -	\$ 19,905,000	\$ 19,905,000
2011 \$	22,335,000	\$ -	\$ -	\$ 22,335,000	\$ 20,873,832
2012 \$	25,390,000	\$ -	\$ -	\$ 25,390,000	\$ 22,176,609
2013 \$	125,090,000	\$ -	\$ -	\$ 125,090,000	\$ 102,110,701
2014 \$	241,900,000	\$ -	\$ -	\$ 241,900,000	\$ 184,544,352
2015 \$	245,430,000	\$ -	\$ -	\$ 245,430,000	\$ 174,988,198
2016 \$	166,835,000	\$ 1,776,594	\$ -	\$ 168,611,594	\$ 112,353,025
2017 \$	69,060,000	\$ 7,207,758	\$ 195,855	\$ 76,463,613	\$ 47,617,695
2018 \$	14,925,000	\$ 11,139,514	\$ 195,855	\$ 26,260,370	\$ 15,283,774
2019 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 6,209,930
2020 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 5,803,673
2021 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 5,586,594
2022 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 5,221,115
2023 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 4,737,526
2024 \$	-	\$ 11,416,703	\$ 2,467,624	\$ 13,884,327	\$ 5,384,581
2025 \$	-	\$ 11,416,703	\$ 2,663,479	\$ 14,080,182	\$ 5,103,306
2026 \$	-	\$ 11,416,703	\$ 1,625,608	\$ 13,042,311	\$ 4,417,882
2027 \$	-	\$ 11,416,703	\$ 1,429,753	\$ 12,846,455	\$ 4,066,859
2028 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 3,377,790
2029 \$	-	\$ 11,416,703	\$ 9,760,090	\$ 21,176,793	\$ 5,855,560
2030 \$	-	\$ 11,416,703	\$ 19,520,180	\$ 30,936,882	\$ 7,994,678
2031 \$	-	\$ 11,416,703	\$ 19,862,429	\$ 31,279,131	\$ 7,554,320
2032 \$	-	\$ 11,416,703	\$ 10,925,697	\$ 22,342,399	\$ 5,042,974
2033 \$	-	\$ 11,416,703	\$ 823,357	\$ 12,240,060	\$ 2,582,003
2034 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 2,250,764
2035 \$	-	\$ 11,416,703	\$ 378,654	\$ 11,795,356	\$ 2,173,285
2036 \$	-	\$ 11,416,703	\$ 3,198,734	\$ 14,615,437	\$ 2,516,712
2037 \$	-	\$ 11,416,703	\$ 2,820,081	\$ 14,236,783	\$ 2,291,131
2038 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 1,717,097
2039 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 1,604,764
2040 \$	-	\$ 11,416,703	\$ 797,243	\$ 12,213,946	\$ 1,604,511
2041 \$	-	\$ 11,416,703	\$ 1,139,493	\$ 12,556,196	\$ 1,541,562
2042 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 1,349,235
2043 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 1,224,267
2044 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 1,144,174
2045 \$	-	\$ 11,416,703	\$ 1,512,746	\$ 12,929,449	\$ 1,211,010
2046 \$	-	\$ 11,416,703	\$ 1,512,746	\$ 12,929,449	\$ 1,131,785
2047 \$	-	\$ 11,416,703	\$ 797,243	\$ 12,213,946	\$ 999,209
2048 \$	-	\$ 11,416,703	\$ 797,243	\$ 12,213,946	\$ 933,840
2049 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 815,781
2050 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 762,412
2051 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 733,895
2052 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 685,883
2053 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 622,355
2054 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 581,640
2055 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 543,589
2056 \$	-	\$ 11,416,703	\$ 3,617,324	\$ 15,034,027	\$ 668,993
2057 \$	-	\$ 11,416,703	\$ 3,617,324	\$ 15,034,027	\$ 625,227
2058 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 443,731
2059 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 414,701
2060 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 387,571
2061 \$	-	\$ 11,416,703	\$ 342,250	\$ 11,758,952	\$ 373,075
2062 \$	-	\$ 11,416,703	\$ 1,139,493	\$ 12,556,196	\$ 372,307
2063 \$	-	\$ 11,416,703	\$ 797,243	\$ 12,213,946	\$ 338,467
2064 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 295,676
2065 \$	-	\$ 11,416,703	\$ -	\$ 11,416,703	\$ 276,333
2066 \$	-	\$ 11,416,703	\$ 1,429,753	\$ 12,846,455	\$ 290,597
2067 \$	-	\$ 11,416,703	\$ 1,429,753	\$ 12,846,455	\$ 271,586
TOTAL \$	950,075,000	\$ 579,542,301	\$ 96,508,497	\$ 1,626,125,799	\$ 833,044,068

Table 15. Detailed Cost/Benefit Summary

	Total Undiscounted Costs 2010\$, undiscounted	Total Undiscounted Benefits 2010\$, undiscounted	Undiscounted Net Benefits 2010\$, undiscounted	Discounted Net Benefits at 7% 2010\$, disc. 7%	Discounted Net Benefits at 3% 2010\$, disc. 3%
2008	\$ 6,750,000	\$ -	\$ (6,750,000)	\$ (7,728,075)	\$ (7,161,075)
2009	\$ 12,455,000	\$ -	\$ (12,455,000)	\$ (13,326,850)	\$ (12,828,650)
2010	\$ 19,905,000	\$ -	\$ (19,905,000)	\$ (19,905,000)	\$ (19,905,000)
2011	\$ 22,335,000	\$ -	\$ (22,335,000)	\$ (20,873,832)	\$ (21,684,466)
2012	\$ 25,390,000	\$ -	\$ (25,390,000)	\$ (22,176,609)	\$ (23,932,510)
2013	\$ 125,090,000	\$ -	\$ (125,090,000)	\$ (102,110,701)	\$ (114,475,070)
2014	\$ 241,900,000	\$ -	\$ (241,900,000)	\$ (184,544,352)	\$ (214,925,017)
2015	\$ 245,430,000	\$ -	\$ (245,430,000)	\$ (174,988,198)	\$ (211,710,074)
2016	\$ 168,611,594	\$ -	\$ (168,611,594)	\$ (112,353,025)	\$ (141,209,556)
2017	\$ 76,463,613	\$ 85,420,688	\$ 8,957,076	\$ 5,578,017	\$ 6,657,516
2018	\$ 26,260,370	\$ 94,859,394	\$ 68,599,025	\$ 39,925,257	\$ 51,539,543
2019	\$ 11,416,703	\$ 102,229,087	\$ 90,812,384	\$ 49,395,920	\$ 64,122,858
2020	\$ 11,416,703	\$ 108,912,552	\$ 97,495,849	\$ 49,561,946	\$ 63,348,533
2021	\$ 11,758,952	\$ 112,647,645	\$ 100,888,693	\$ 47,931,491	\$ 65,132,815
2022	\$ 11,758,952	\$ 116,901,137	\$ 105,142,184	\$ 46,684,387	\$ 66,535,194
2023	\$ 11,416,703	\$ 135,225,286	\$ 120,576,038	\$ 109,159,335	\$ 67,897,824
2024	\$ 13,884,327	\$ 124,838,398	\$ 110,954,071	\$ 43,029,902	\$ 67,228,614
2025	\$ 14,080,182	\$ 130,216,883	\$ 116,136,700	\$ 42,093,285	\$ 69,266,762
2026	\$ 13,042,311	\$ 135,225,286	\$ 122,182,975	\$ 41,387,601	\$ 71,402,934
2027	\$ 12,846,455	\$ 139,504,267	\$ 126,657,811	\$ 40,096,619	\$ 72,256,446
2028	\$ 11,416,703	\$ 145,446,777	\$ 134,030,074	\$ 39,654,663	\$ 75,429,104
2029	\$ 21,176,793	\$ 151,086,462	\$ 129,909,669	\$ 35,921,106	\$ 71,514,261
2030	\$ 30,936,882	\$ 156,721,311	\$ 125,784,428	\$ 32,505,087	\$ 67,185,087
2031	\$ 31,279,131	\$ 163,056,179	\$ 131,777,048	\$ 31,825,882	\$ 68,742,183
2032	\$ 22,342,399	\$ 169,052,684	\$ 146,710,285	\$ 33,114,443	\$ 75,051,850
2033	\$ 12,240,060	\$ 176,105,034	\$ 163,864,973	\$ 34,566,805	\$ 81,959,911
2034	\$ 11,416,703	\$ 184,117,076	\$ 172,700,373	\$ 34,047,295	\$ 83,946,567
2035	\$ 11,795,356	\$ 190,675,129	\$ 178,879,773	\$ 32,958,451	\$ 84,858,993
2036	\$ 14,615,437	\$ 197,434,551	\$ 182,819,114	\$ 31,480,628	\$ 84,949,590
2037	\$ 14,236,783	\$ 207,598,748	\$ 193,361,965	\$ 31,117,812	\$ 87,262,086
2038	\$ 11,416,703	\$ 215,735,564	\$ 204,318,861	\$ 30,730,009	\$ 89,476,191
2039	\$ 11,416,703	\$ 223,505,526	\$ 212,088,823	\$ 29,811,802	\$ 90,908,077
2040	\$ 12,213,946	\$ 231,147,181	\$ 218,933,235	\$ 28,760,628	\$ 91,498,421
2041	\$ 12,556,196	\$ 242,693,583	\$ 230,137,387	\$ 28,254,659	\$ 93,465,264
2042	\$ 11,758,952	\$ 252,624,602	\$ 240,865,649	\$ 27,637,196	\$ 95,133,358
2043	\$ 11,416,703	\$ 263,068,470	\$ 251,651,767	\$ 26,985,801	\$ 96,443,573
2044	\$ 11,416,703	\$ 275,352,588	\$ 263,935,885	\$ 26,451,481	\$ 98,833,350
2045	\$ 12,929,449	\$ 286,618,037	\$ 273,688,588	\$ 25,634,478	\$ 99,715,122
2046	\$ 12,929,449	\$ 295,766,647	\$ 282,837,198	\$ 24,758,283	\$ 100,246,744
2047	\$ 12,213,946	\$ 307,653,053	\$ 295,439,107	\$ 24,169,530	\$ 101,405,182
2048	\$ 12,213,946	\$ 323,101,020	\$ 310,887,074	\$ 23,769,449	\$ 103,878,018
2049	\$ 11,416,703	\$ 332,496,758	\$ 321,080,055	\$ 22,942,778	\$ 104,725,345
2050	\$ 11,416,703	\$ 348,460,903	\$ 337,044,200	\$ 22,507,940	\$ 106,584,872
2051	\$ 11,758,952	\$ 363,514,548	\$ 351,755,596	\$ 21,953,619	\$ 107,775,434
2052	\$ 11,758,952	\$ 376,048,289	\$ 364,289,337	\$ 21,248,476	\$ 109,204,557
2053	\$ 11,416,703	\$ 393,793,764	\$ 382,377,061	\$ 20,844,400	\$ 110,974,151
2054	\$ 11,416,703	\$ 404,047,235	\$ 392,630,532	\$ 20,003,125	\$ 111,442,803
2055	\$ 11,416,703	\$ 423,834,429	\$ 412,417,727	\$ 19,636,647	\$ 112,993,512
2056	\$ 15,034,027	\$ 441,862,204	\$ 426,828,177	\$ 18,993,251	\$ 113,796,673
2057	\$ 15,034,027	\$ 459,409,430	\$ 444,375,403	\$ 18,480,447	\$ 115,419,167
2058	\$ 11,416,703	\$ 468,482,727	\$ 457,066,024	\$ 17,764,689	\$ 115,429,867
2059	\$ 11,416,703	\$ 494,057,691	\$ 482,640,988	\$ 17,531,501	\$ 117,798,670
2060	\$ 11,416,703	\$ 512,942,008	\$ 501,525,306	\$ 17,025,660	\$ 119,365,903
2061	\$ 11,758,952	\$ 534,820,714	\$ 523,061,762	\$ 16,595,117	\$ 120,839,365
2062	\$ 12,556,196	\$ 555,947,678	\$ 543,391,482	\$ 16,112,257	\$ 121,651,045
2063	\$ 12,213,946	\$ 577,647,200	\$ 565,433,254	\$ 15,668,995	\$ 123,550,095
2064	\$ 11,416,703	\$ 600,340,645	\$ 588,923,942	\$ 15,252,296	\$ 124,624,904
2065	\$ 11,416,703	\$ 626,213,588	\$ 614,796,885	\$ 14,880,718	\$ 125,786,075
2066	\$ 12,846,455	\$ 654,112,000	\$ 641,265,545	\$ 14,505,956	\$ 127,351,362
2067	\$ 12,846,455	\$ 674,504,060	\$ 661,657,604	\$ 13,988,076	\$ 128,123,616
TOTAL	\$ 1,626,125,799	\$ 15,172,427,468	\$ 13,546,301,669	\$ 773,066,460	\$ 3,956,897,970

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Appendix B - Federal Wage Rate Certification

Federal Wage Rate Requirement

Certification of Compliance with Title 40 USC, Chapter 31, Subchapter IV

The Riverside County Transportation Commission certifies that it will comply with all provisions and requirements set forth in Title 40, United States Code, Chapter 31, Subchapter IV – Wage Rate Requirements.

9/26/11
Date



Anne Mayer
Executive Director
Riverside County Transportation Commission



Appendix C – Letters of Support



Moving People Moving Goods

A Growing List of Alliance Partners

American Magline Group ■ Amtrak
 ■ Arizona Dept of Transportation ■
 Arizona Game & Fish Dept ■ Bear
 River Assoc of Governments ■
 BNSF Railway ■ Brookings
 Mountain West ■ Bureau of Land
 Management ■ Cache Metropolitan
 Planning Organization ■ California
 Dept of Transportation ■ California
 High Speed Rail Authority ■
 California Trucking Assoc ■
 California-Nevada Super Speed
 Train Commission ■ Carmen Group
 ■ City of Clearfield ■ City of
 Fontana ■ City of Henderson ■ City
 of Las Vegas ■ City of Layton ■ City
 of North Las Vegas ■ City of Ontario
 ■ City of Orem ■ City of Rancho
 Cucamonga ■ City of South Salt
 Lake ■ City of St George ■ Clark
 County Public Works ■ County of
 San Bernardino ■ Economic
 Development Corporation of Utah ■
 El Dorado Holdings ■ Envision Utah
 ■ Federal Highway Administration ■
 Federal Railroad Administration ■
 Five County Assoc of Governments
 ■ Freeway & Arterial System of
 Transportation ■ Iron County ■ Los
 Angeles Metro Transportation
 Authority ■ McCarran Airport ■
 Mohave County ■ Mountainland
 Assoc of Governments ■ National
 Park Service - Lake Mead National
 Rec Area ■ Nellis Air Force Base ■
 Nevada Dept of Transportation ■
 Nevada Division of State Parks ■
 Nevada Highway Patrol ■ Nevada
 Motor Transport Assoc ■ Nevada
 State Office of Energy ■ Northern
 Arizona Council of Governments ■
 NV Energy ■ Orange County
 Transportation Authority ■ Port of
 Long Beach ■ Port of San Diego ■
 Regional Transportation
 Commission of Southern Nevada ■
 Riverside County Transportation
 Commission ■ Riverside Transit
 Agency ■ Salt Lake City Chamber of
 Commerce ■ San Bernardino Assoc
 of Governments ■ San Diego Assoc
 of Governments ■ Sierra Club - San
 Diego & Utah Chapters ■ Southern
 California Assoc of Governments ■
 Southwest Airlines ■ State of
 Nevada Division of Environmental
 Protection ■ The Toll Roads ■
 Union Pacific Railroad ■ US Army
 Corps of Engineers ■ Utah Dept of
 Transportation ■ Utah Transit
 Authority ■ Utah Trucking Assoc ■
 Wasatch Front Regional Council ■
 Washington County ■ Western High
 Speed Rail Alliance

For More Information:
www.i15alliance.org

Follow us on Facebook:
 "I-15 Mobility Alliance"

The Honorable Ray LaHood, Secretary
 US Department of Transportation
 1200 New Jersey Avenue, SE
 Washington, DC 20590

Dear Secretary LaHood:

The I-15 Mobility Alliance strongly endorses the TIGER 3 TIFIA application for the SR-91 Corridor Improvement Project submitted by the Riverside County Transportation Commission.

The Alliance is dedicated to sustaining and enhancing the economic prosperity and quality of life of the mega-regions connected by I-15 from Southern California to northern Utah through planning, developing, financing, constructing and managing a safer, more efficient and reliable multimodal transportation corridor.



The I-15/SR-91 junction, which will be vastly improved by this project, has been identified by the American Transportation Institute as one of the top 100 freight bottlenecks in the country. More than three million heavy trucks pass through this point annually carrying an estimated \$85 billion in goods and this is expected to increase steadily in the future. This cross roads is also used by millions of tourists who spend an estimated \$8 billion annually visiting the natural and man-made wonders of California, Nevada, Arizona, and Utah.

Improvements to the I-15/SR-91 interchange and connecting roadways are a near-term priority project for the Alliance. Delays experienced by people and goods at this bottleneck significantly impact the economies of southern California, Nevada, Utah, and the country. The resulting lower productivity, higher costs, lost jobs, and diminished economic competitiveness are enormous impediments to sustainable economic recovery that must be removed quickly.

Completely fixing the bottleneck at I-15/SR-91 is a complex project that will be undertaken in multiple phases over the next decade but a substantive step in that solution can be taken now. A TIGER 3 grant will leverage the investment of state and local funds in the first phase of this project creating thousands of jobs over the next several years and building infrastructure vital for long term economic prosperity. This is why the four state Departments of Transportation leading the Alliance and Alliance stakeholders urge you to give the highest, favorable consideration to the TIGER 3 TIFIA application submitted for this project.

FOR THE I-15 MOBILITY ALLIANCE

John Halikowski, Director
 Arizona Department of Transportation

Susan Martinovich, Director
 Nevada Department of Transportation

Malcolm Dougherty, Acting Director
 California Department of Transportation

John Njord, Executive Director
 Utah Department of Transportation

October 27, 2011

Secretary Ray LaHood
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Support for the Riverside County Transportation Commission's TIGER III TIFIA application for the SR-91 Corridor Improvement Project

Dear Secretary LaHood:

On behalf of Mobility 21, I am pleased to offer strong support of the Riverside County Transportation Commission's (RCTC) TIGER III TIFIA application in the amount of \$33.4 million for the SR-91 Corridor Improvement Project. The project, which focuses on reducing congestion on one of the most heavily traveled freeways in Southern California, plays a pivotal role in the region's goods movement network.

Mobility 21 brings together transportation providers, businesses and community stakeholders to develop solutions to the transportation issues facing Southern California. A nonprofit organization, Mobility 21 fights for regional transportation solutions for our 21 million residents.

Through its sales tax initiative, Measure A, Riverside County is prepared to leverage hundreds of millions of local dollars with a TIGER III TIFIA loan to break ground on the SR-91 Corridor Improvement Project by June 2013 and create 16,200 near-term jobs. The overall SR-91 Corridor Improvement Project will result in a \$1.3 billion investment and create more than 18,000 jobs.

On a daily basis, the main stretch of the SR-91 handles more than 280,000 vehicle trips per day including commuters and freight trucks. Not only is the freeway a key connection between the Inland Empire and jobs in Los Angeles and Orange counties, the SR-91 is a critical goods movement corridor. In fact, it is the most congested east-west highway serving the Ports of Long Beach and Los Angeles. Together, the ports are the busiest in the nation and the fifth busiest in the world. As "America's Gateway," the complex moves nearly 50% of the nation's imported cargo, creating jobs, income and tax revenue in all fifty states.

A TIFIA loan is needed to fully fund the SR-91 Corridor Improvement Project, which will create thousands of much-needed jobs, improve congestion and get goods to market faster. Thank you for consideration of this application.

Sincerely,



Marnie O'Brien Primmer
Executive Director

COALITION PARTNERS

Automobile Club of
Southern California

Chambers of Commerce Alliance
of Ventura & Santa Barbara Counties

Greater Riverside
Chambers of Commerce

Inland Empire
Economic Partnership

Los Angeles Area
Chamber of Commerce

Los Angeles County
Metropolitan
Transportation Authority

Orange County
Business Council

Orange County
Transportation Authority

Riverside County
Transportation Commission

San Bernardino Associated
Governments

Southern California
Association of Governments

Ventura County
Transportation Commission



The Port of
LONG BEACH

October 25, 2011

Ms. Anne Mayer
Executive Director
Riverside County Transportation Commission
4080 Lemon Street, 3rd Floor
Riverside, CA 92502-2208

Re: Support for TIGER III Grant Application for the State Route 91 (SR-91) Corridor Improvement Project

Dear Anne,

The Port of Long Beach (POLB) is pleased to offer our support for the SR-91 Corridor Improvement Project and the Riverside County Transportation Commission's (RCTC) request for a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan to complete the funding package for this vital goods movement project.

The SR-91 is one of the most congested goods movement corridors in the entire state. Despite the recent downturn in the economy, the amount of goods that reach their final destination across the country via Southern California's goods movement network is expected to triple by 2030. As the largest port complex in the nation, the Ports of Long Beach and Los Angeles serve as the primary gateway for over \$380 billion in cargo. Of the imported goods, over 70% were transported from the Ports by truck or railroad to markets outside Southern California, many traveling through the Inland Empire.

The Project leverages hundreds of millions of dollars of voter-approved sales taxes known as Measure A and seeks a TIGER TIFIA payment of \$33.4 million. With a TIGER TIFIA loan, this project can go to construction by June 2013 creating approximately 16,200 near-term jobs in an area experiencing high unemployment rate. In addition to easing congestion and creating jobs, the project will:

- Connect urban centers;
- Leverage \$1 billion in local funds; and
- Give Southern California a livable commute.

RCTC's Project is a \$1.3 billion extension of the SR-91 Express Lanes Project in Orange County, which adds general purpose lanes and operational improvements to the SR-91 corridor. RCTC is advancing the project as a means to reduce congestion and delay and improve the long-term efficiency, cost and reliability of goods movement, which influences the price of goods delivered throughout the United States.

The TIFIA loan is the last step needed to complete the financing plan for the SR-91 Project. The project is ready to go, will create much needed construction jobs to aid the region's struggling economy, and will create the safe, multi-modal facility needed for long-term economic growth. On behalf of the POLB, I urge you to award a TIFIA loan in support of the SR-91 Project and thank you for your leadership in addressing national transportation priorities.

If you have any questions, please contact Eric C. Shen, Director of Transportation Planning at (562) 590-4155 or shen@polb.com.

Sincerely,

Richard D. Steinke
Executive Director



**THE PORT
OF LOS ANGELES**

425 S. Palos Verdes Street Post Office Box 151 San Pedro, CA 90733-0151 TEL/TDD 310 SEA-PORT www.portoflosangeles.org

Antonio R. Villaraigosa

Mayor, City of Los Angeles

Board of Harbor
Commissioners

Cindy Miscikowski
President

David Arian
Vice President

Robin M. Kramer

Douglas P. Krause

Sung Won Sohn, Ph.D.

Geraldine Knatz, Ph.D.

Executive Director

October 24, 2011

Secretary Ray La Hood
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington DC 20590

Re: State Route 91 (SR-91) Corridor Improvement Project

Dear Secretary LaHood:

The Port of Los Angeles (POLA) strongly supports the SR-91 Corridor Improvement Project and the Riverside County Transportation Commission's (RCTC) request for a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan to complete the funding package for this vital goods movement project. The project leverages hundreds of millions of dollars of voter-approved sales taxes known as Measure A and seeks only a TIGER TIFIA payment of \$33.4 million. With a TIGER TIFIA loan, this project can go to construction by June 2013 creating approximately 16,200 near-term jobs in an area experiencing a 14.9% unemployment rate.

The SR-91 Corridor Improvement Project is a \$1.3 billion extension of the Express Lanes in Orange County. RCTC's project will extend the 91 Express Lanes and construct one general purpose lane in each direction from the Orange County line to Interstate 15 (I-15) in Riverside County, a distance of approximately eight miles. The project will also provide express lane connectors to I-15 and includes highway improvements, express bus and commuter rail service, and an expansive bike and pedestrian trail that transverses over 68 miles through Orange, Riverside and San Bernardino Counties.

Over 280,000 cars and trucks traverse the SR-91 everyday. The corridor serves to connect residents in the Inland Empire of Riverside and San Bernardino Counties to the millions of jobs in Los Angeles and Orange Counties. In addition, the SR-91 is one of the most congested goods movement corridors in the entire State, serving domestic and Ports of Los Angeles/Long Beach cargo, which handle more than 40% of the nation's goods. United States container traffic doubled over the past decade and is expected to nearly triple by 2030 according to studies completed in July 2009.

The TIFIA loan is the last step needed to complete the financing plan for the SR-91 Project. The project is ready to go, will create much needed construction jobs to aid the region's struggling economy, and will create the safe, multi-modal facility needed for long-term economic growth.

On behalf of the POLA, I urge you to award a TIFIA loan in support of the SR-91 Project and thank you for your leadership in addressing national transportation priorities.

Sincerely,



Geraldine Knatz, Ph.D.
Executive Director

GM 006
GK:KC:dg



Appendix D – TIFIA Letter of Interest



SR-91 Corridor Improvement Project

A) Project Description

State Route 91 (SR-91) is a critical element of the only multi-modal transportation corridor between Riverside and Orange counties in Southern California (Figure 1). The corridor also includes the Metrolink commuter rail line and the Santa Ana River Trail (SART). SR-91 is currently used by more than 280,000 vehicles per day, and this volume is forecasted to increase by approximately 50% by 2035. The corridor provides a vital link between employment opportunities in Los Angeles, Orange, Riverside and San Bernardino counties, home to nearly 6.6 million jobs or approximately 45% of all jobs in California. SR-91 also serves national goods movement between Interstate 15 (I-15) and Interstate 10 (I-10) and the Ports of Los Angeles and Long Beach (POLA/POLB), the largest port complex in the United States.

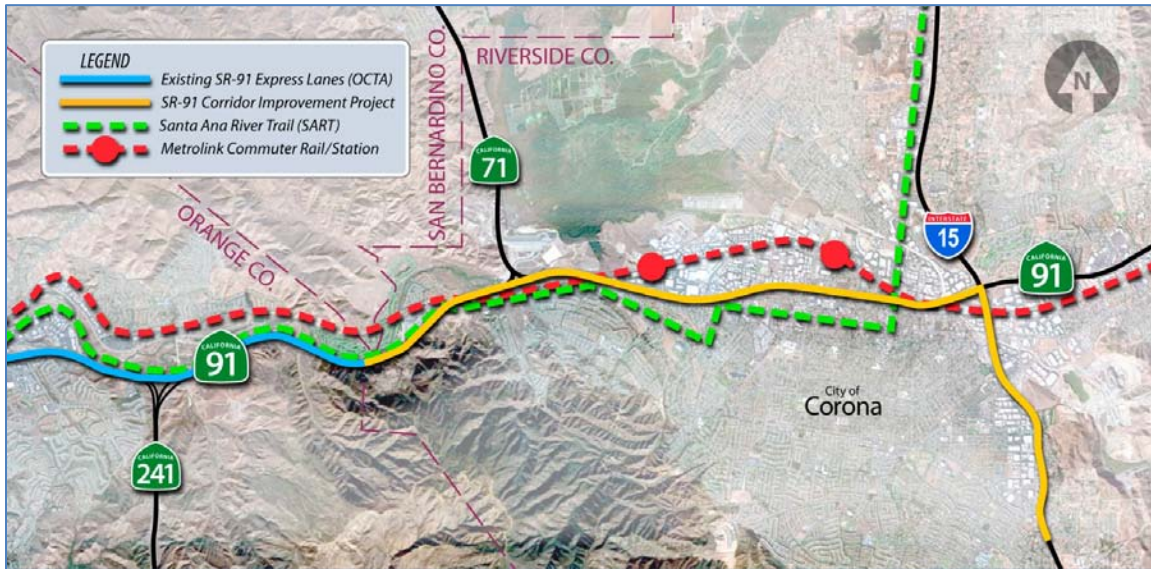


Figure 1 – SR-91 Multi-Modal Transportation Corridor

Based on long-term regional population and employment growth and increasing international trade projections, the need for additional investments in the SR-91 corridor is critical to achieve the following:

- Improve the quality of life in the corridor and adjacent communities by reducing congestion in general purpose lanes and local streets and provide a congestion-free option to those willing to pay a toll.
- Provide more transportation choices between affordable housing and jobs in southern California, home to more than 17 million Americans. The Project allows express bus to operate more efficiently making Bus Rapid Transit (BRT) a viable option in the corridor.
- Contribute to the economic competitiveness of the United States by improving the efficiency and reliability of goods movement in and out of the POLA/POLB, where more than 40% of the nation's imported goods enter the United States.
- Invest in the corridor to ensure the long-term safety, maintainability and reliability of the regional and interstate transportation network. The Project improves the existing bottleneck at the SR-91/I-15 interchange.

The proposed SR-91 Corridor Improvement Project (Project) is a critical element in an integrated strategy that the Riverside County Transportation Commission (RCTC), Caltrans and other partner agencies are pursuing to support a robust and connected corridor. Key elements of that strategy, including the Project, are described below.

State Route 91 – SR-91 includes two tolled lanes (91 Express Lanes) in each direction within a 10-mile segment in Orange County. The Project will extend the 91 Express Lanes and construct one general purpose lane in each direction from the Orange County line to I-15 in Riverside County, a distance of approximately 8 miles.





The Project will also provide express lane connectors to I-15. The existing 91 Express Lanes feature fully automated tolling, including the first application of managed lane variable pricing in the United States. The variable pricing approach adjusts toll rates based on the number of vehicles on the road to maintain “free flow” conditions and maximize throughput. Using the extended 91 Express Lanes, commuters will save 30 minutes on average on the 8-mile segment of SR-91 in Riverside County. The primary features of the Project are shown in Figure 2.

Metrolink Commuter Rail Lines –RCTC has made a significant investment in expanding commuter rail service between Riverside and Orange counties, including two commuter rail lines (IEOC and 91 Lines) adjacent to SR-91 on the Burlington Northern Santa Fe railroad. The IEOC line operates eight trains in each direction during peak periods and the 91 line operates four trains in each direction. Two stations located in Corona are within 0.25-mile of SR-91 and the Project will improve access and reduce local congestion at the stations. RCTC is developing the Perris Valley Line (PVL), which will extend Metrolink 22 miles south of SR-91 at a cost of \$235 million. Completion of the PVL in 2013 will increase ridership opportunities between Riverside and Orange counties.

Express Bus Service - The addition of tolled Express Lanes on SR-91 provides the opportunity to nearly double the amount of express bus service that is currently offered along the corridor to a total of 40 trips per day. Commuters throughout Riverside County will be able to access buses with direct routes to employment centers in Orange County and additional buses will provide a direct connection to the Metrolink Commuter Rail system.

Santa Ana River Trail (SART) – The Santa Ana River Trail stretches from the Pacific Ocean in Huntington Beach along the Santa Ana River and SR-91 to Riverside County for a distance of 68 miles. The trail provides a dedicated, safe, and uninterrupted route for recreational and commuting cyclists and pedestrians. Ultimately, the trail will go from the Pacific Ocean to the crest of the San Bernardino Mountains for a distance of approximately 100 miles, making it the longest paved bicycle and pedestrian corridor in southern California.

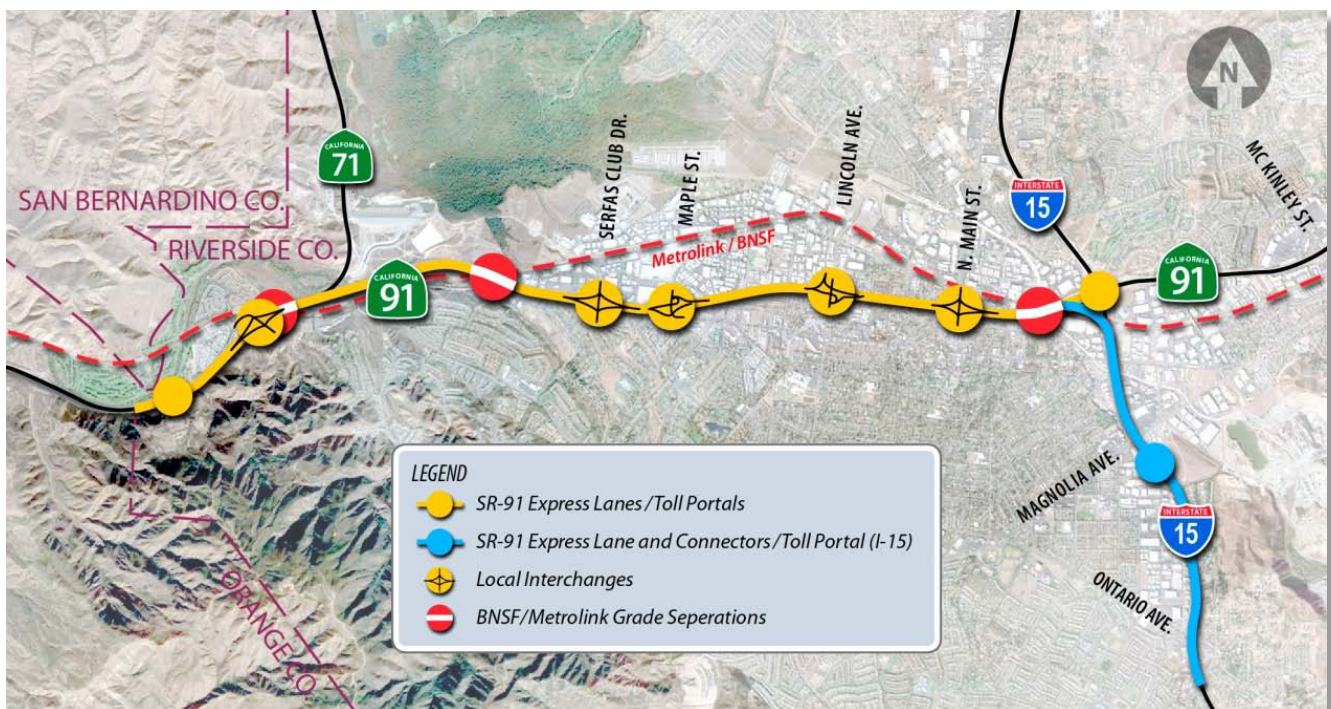
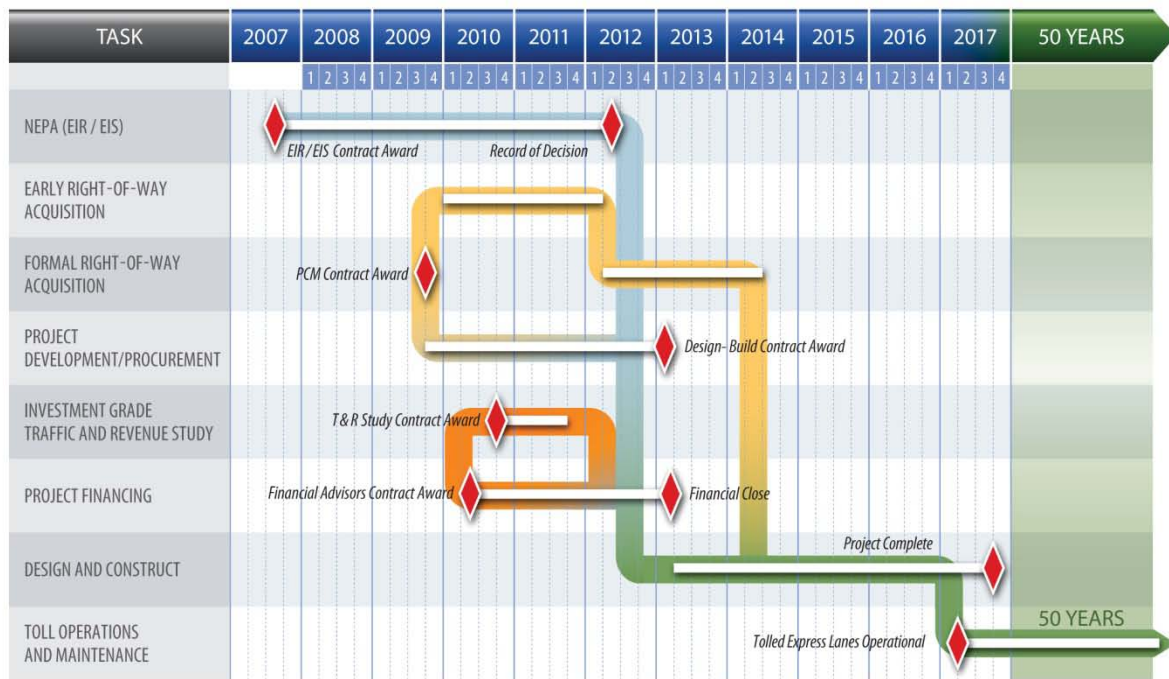


Figure 2 - Project Features



Project Schedule



Predevelopment and Capital Costs

RCTC SR-91 Corridor Improvement Project Predevelopment and Capital Cost Estimate (\$000) (2010)		
RCTC Costs	Preliminary Engineering & Environmental	\$33,000
	Program Management	\$68,630
	Project & Construction Management	\$128,660
	Project Financing	\$9,700
	Transit Enhancements 91 Express Bus	\$5,000
	Right-of-Way Acquisition	\$157,730
Subtotal RCTC Costs		\$402,720
Design-Build Costs	Final Design	\$49,560
	Utility Relocation	\$14,250
	Roadway and Drainage	\$161,200
	Structures	\$297,370
	ITS, Traffic, Environmental and Safety	\$156,930
	Toll Collection System	\$22,210
Subtotal Design-Build Costs		\$701,520
Total Pre-Development and Capital Costs	Subtotal RCTC Costs	\$402,720
	Subtotal Design-Build Costs	\$701,520
	Total	\$1,104,240



B) Project Participants

Name of Applicant/Borrower

Riverside County Transportation Commission (RCTC)

RCTC will be the TIFIA applicant and borrower and will assume responsibility for providing the investment grade rating opinion letter, financial plan, and project management and monitoring plan, supporting documentation regarding the borrower's legal status, and other items as required. As the lead sponsor of the Project, RCTC is working in partnership with the California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA) to environmentally clear the Project; procure a design-build contractor; secure project financing; design and construct; and operate and maintain the tolled express lane facility.

RCTC was created by the State Legislature in 1976 as one of four Southern California transportation commissions designed to provide more local control and input into transportation matters. RCTC is governed by a Commission that includes a mayor or council member from each of Riverside County's cities, all five members of the County Board of Supervisors, and a nonvoting appointee of the Governor.

In 1988, Measure A authorized a half-cent sales tax and spelled out a 20-year plan for transportation improvements that would help ensure mobility in Riverside County. When 78.9% of voters approved Measure A, RCTC became the agency charged with ensuring that the projects and programs voters wanted became a reality. In 2002, 69.2% of the voters approved an extension of Measure A through 2039. Today, RCTC plans and implements transportation and transit improvements, assists local governments with money for local streets and roads, helps smooth the way for commuters and goods movement, and works to ensure mobility choice. RCTC is also the agency that approves projects for allocations of state and federal transportation funds in Riverside County

Organizational Structure

FHWA, Caltrans, and RCTC are planned signatory parties to the High Profile Project Agreement (HPPA), which outlines the roles and responsibilities of the three major participants in the Project. These roles and responsibilities are in relation to FHWA's charge with stewardship and oversight responsibilities for all federally funded programs under the Federal-Aid Highway Program (FAHP). A description of each key agency participant is provided below. An organization chart, shown in Appendix A, provides additional details about the Project team structure.

Federal Highway Administration (FHWA)

FHWA's roles and responsibilities under the High Profile Project Agreement (HPPA) will include review and/or approval of federal funds obligations, right-of-way (ROW) certifications, utility relocations, environmental conformity to the Environmental Impact Statement (EIS), Financial Plans, and final Request for Proposals (RFP), Project Management Plans, and Cost Estimate Reviews (CER), as well as various construction phase activities. RCTC and FHWA executed a Section 129 Toll Agreement on August 18, 2009. In recognition of the national significance of the project and the critical need for jobs creation, this project is expected to be included in the Enhanced Technical Assistance component of the FHWA's Every Day Counts Program. An acceptance letter from FHWA is pending.

California Department of Transportation (Caltrans)

The Project will be built on Caltrans ROW, under rights granted to RCTC pursuant to Senate Bill 1316 (SB 1316) and pursuant to amendment of the existing franchise agreement between Caltrans and the Orange County Transportation Authority (OCTA), as set forth in SB 1316. SB 1316 provides RCTC the right to toll the new facilities for 50 years following service commencement. RCTC and Caltrans are entering into two separate agreements: a Design-Build Cooperative Agreement (relating to Caltrans' role and oversight of the design and construction of the Project) and a Toll Facilities Agreement (relating to RCTC's leasehold rights to Caltrans' ROW and Caltrans' role and oversight of the operations and maintenance of the Project). Both agreements are nearing completion and are expected to be executed in early 2012.



Orange County Transportation Authority (OCTA)

Beginning in 2003, OCTA assumed responsibility for the 91 Express Lanes in Orange and Riverside counties under assignment of a franchise agreement between Caltrans and a private toll road operator. SB 1316 authorizes OCTA to assign its rights, interests, and obligations in the Riverside County portion of the SR-91 toll lanes to RCTC. As conceived, the new managed lanes will be interoperable with OCTA’s express lanes and share a common operator.

Under a cooperative agreement, RCTC and OCTA will use a common toll operator (currently Cofiroute USA LLC) and agree on cost and revenue sharing, toll policies and business rules, interoperability of technology, OCTA review of design plans and construction activities, and sharing marketing activities. This agreement is expected to be complete in early 2012 and will ensure a seamless 91 Express Lane facility crossing the two counties. RCTC and OCTA have recently executed a term sheet defining the sharing of operating costs and revenues.

Project Website or Applicant/Borrower Website

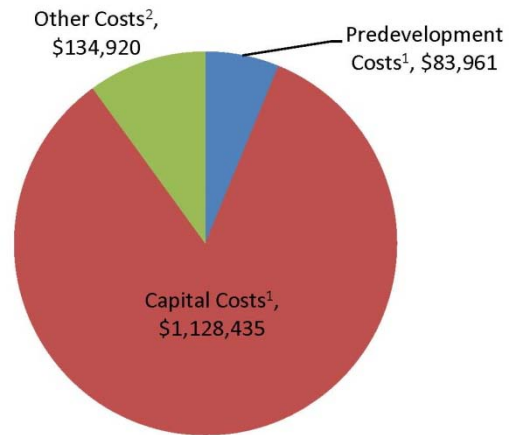
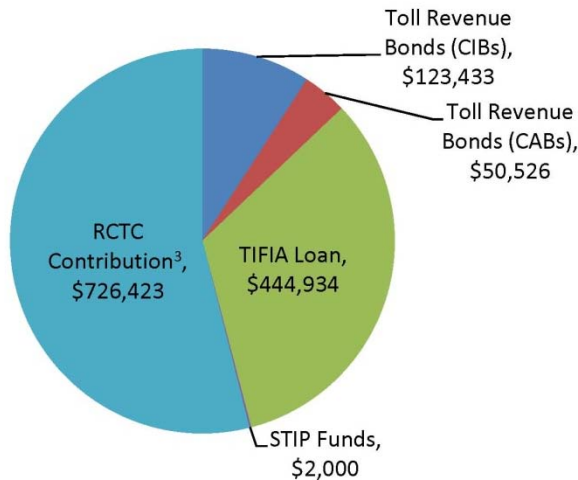
SR-91 Corridor Improvement Project Web site: www.sr91project.info
Riverside County Transportation Commission Web site: www.rctc.org

C) Proposed Financing

Sources and Uses of Funds

Fund Sources (Nominal) \$1,347,316 (US \$000s)

Fund Uses (Nominal) \$1,347,316 (US \$000s)



¹ On a nominal basis, pre-development costs and capital costs total approximately \$1,212,396,000. These estimates are based on a total project cost of \$ 1,104,240,000 in 2010 dollars adjusted for inflation based on the capital cost schedule.
² Other costs include reserve account funding, financing fees, and capitalized interest.
³ RCTC’s contribution comes from receipts of its Measure A sales tax, a portion of which will be used for pre-development costs that will not be reimbursed from the financing, in the form of annual payments to the construction fund during construction or proceeds from Sales Tax Revenue Bonds.



Type of Credit Assistance: TIFIA Loan

TIFIA Sizing (Nominal)	US \$000s
Capital Costs	\$1,122,741
Predevelopment Costs	\$83,961
Capitalized Interest	\$111,050
Debt Service Reserve Fund	\$17,050
Total TIFIA Eligible	\$1,334,802

Maximum TIFIA Amount \$444,934,000

Description of Revenue Source(s) Pledged to Repayment

The TIFIA Loan will be secured by a pledge of the toll revenues generated by operation of the 91 Express Lanes in Riverside County. RCTC has structured the TIFIA Loan to obtain investment grade ratings (at or above “Baa3”/“BBB-“) and is seeking a preliminary credit assessment from Fitch Ratings that will confirm the investment grade rating. Among the features supporting the investment grade structure are:

Coverage: The coverage for all debt, including the TIFIA Loan, the junior lien, is structured to begin with a ratio of revenues to debt service of 1.15x, growing to 1.75x by the final maturity.

Repayment: The term of the TIFIA Loan is 15 years shorter than the term of RCTC’s authority to impose tolls.

Flexibility: The proposed toll policy is designed to maximize throughput, not revenue, providing flexibility in raising additional revenues if necessary through toll policy alterations.

Reserves: RCTC will provide an additional reserve of \$20 million dedicated solely to payment of the TIFIA Loan from the proceeds of the sale of excess right of way property (estimated to be more than \$29 million) and from residual revenues. RCTC has agreed to fund the additional reserve by June 30, 2019 if right of way sale proceeds have not provided at least \$20 million by that date.

RCTC has based its Plan of Finance on projections completed in August 2011. First, an Investment Grade Traffic and Revenue study was prepared by Stantec Engineering. The study included traffic counts along SR-91 and its ingress and egress points to develop an hourly travel demand profile of the corridor. Second, projections of capital and operating costs and non-operating revenues were developed by Parsons Transportation Group, the project manager.

The Traffic and Revenue study projects toll revenues based on a toll policy focused on maximizing throughput while maintaining speed targets. This policy is not focused directly on maximizing toll revenues. However, in the event that additional toll revenues are needed to pay debt service on either the Toll Revenue Bonds or the TIFIA Loan, RCTC can alter the policy to adopt elements which increase revenues.

While project construction would start in early 2013, the Plan of Finance anticipates that the beginning of toll operations is March 2017, although that date would likely be accelerated with a TIGER III grant and related TIFIA Loan. Debt service payable from toll revenues will begin during FY 2017-18 and will continue through FY 2050-51. However, RCTC’s authority to levy tolls continues for 50 years after opening day, providing significant ability to make up any shortfall in revenues during the scheduled repayment. Moreover, tolls have been collected in the corridor for the existing Express Lanes since 1995, providing a significant history of data on which to base projections.

Key features of the Plan of Finance are:

- Beginning of toll operations in March 2017 (likely accelerated upon award of TIFIA Loan).
- Debt service payable from toll revenues starts in FY 2017-18 and continues through FY 2050-51.
- Senior Toll Revenue bonds have debt service coverage from 1.80x to 4.90x.
- For all debt, including the TIFIA Loan, coverage ranges from 1.15x in early years to 1.75x later.
- O&M and Repair and Rehabilitation reserve funded through toll revenues after all debt service.
- Funds anticipated to be received from sale of surplus right of way (estimated at \$29 million) are directed to fund a reserve up to \$20 million to make payments on the TIFIA Loan.



D) Satisfaction of TIFIA Selection Criteria

Significance (20%)

The Project is nationally and regionally significant in terms of its ability to generate economic, livability, and safety benefits in Riverside County, as well as supporting international commerce through the POLA/POLB and the associated logistics industry in the region. Key considerations include:

- **Livability:** The Project will provide transportation options that are linked with housing and commercial development to enhance economic opportunities and the quality of life for those living along the corridor.
- **Economic Competitiveness:** The Project will contribute to the economic competitiveness of the United States by improving the long-term efficiency and reliability of goods movement and direct creation of permanent jobs.
- **Safety:** The Project will improve the safety of SR-91, SR-71, I-15, and adjoining local roadways.



Livability

Home to more than 17 million Americans; Los Angeles, Orange, Riverside and San Bernardino counties form the largest urban area in the United States. Traveling to and from work without insufferable congestion and delay is the primary measure of livability and the quality of life in southern California. The Project not only delivers transportation benefits, but is also designed and planned in such a way that it will have a positive impact on the communities it serves. SR-91 and Metrolink serve millions of users annually, all of whom will benefit from the large scale improvements proposed by the Project. Over the next 30 years, the number of potential users is expected to nearly double, magnifying the livability benefits even further.

Provide More Transportation Choices

Creating a strong integration of alternative commuting choices is a cornerstone element of a comprehensive multi-modal strategy that RCTC, Metrolink and the Riverside Transit Agency (RTA) have been implementing to address growing travel demand in the SR-91 corridor. The Project will enable RCTC and RTA to implement an enhanced Express Bus plan on the SR-91 Corridor that includes:

- Nearly doubling current express bus trips on SR-91;
- Providing 15-20 minute headways on the 91 Express Lanes during peak hours;
- Add five new express bus routes in Western Riverside County;
- Direct rides to employment centers in Orange County with no need to transfer;
- Implement “interceptor” routes that take SR-91 commuters to Metrolink stations before they get to the freeway; and
- Wi-Fi enabled buses to maximize commuter productivity while in transit.

Without the Project, express bus service is not competitive with single-occupant vehicles. The Project provides the necessary reliability, flexibility and cost- and time-savings to entice commuters of all income levels to shift modes. These and other elements of the strategy are discussed below:

91 Express Lanes - The current experience of the 91 Express Lanes in Orange County demonstrates that the current tolling structure encourages carpooling. In FY 2010/11, 25% of all trips on the 91 Express Lanes were made by 3+ carpools or transit vehicles. RCTC expects a similar mode split on the Riverside County section of the Express Lanes. The Project will feature a managed lane variable pricing approach, which adjusts toll rates to maximize total throughput and ensure attractive express bus service and travel time savings. Express lane users will save 30 minutes on average on the 18-mile segment of SR-91 between Orange and Riverside counties. Without the Project, future congestion in the corridor would be severe and express bus service would not be viable.

Express Bus Service – Upon completion of the proposed 91 Express Lanes, RCTC expects to nearly double express bus service on SR-91. Currently, RTA and OCTA operate 21 bus trips per day on SR-91 and RCTC envisions adding 20 additional trips,



bringing the total to 40 daily trips. Service duration for this expansion will increase by 11,500 hours per year and will be served by six new transit coaches to be procured specifically for this service.

Metrolink –The Project will support and enhance the significant investments already made in the North Main Corona and Corona Metrolink Stations by improving station access to SR-91 and reducing local street congestion near the stations. Easier access and less congestion in and out of the stations will make Metrolink a more attractive travel choice. RCTC’s plan also intends to leverage the investment in four new stations that will serve the PVL in order to attract more riders to the train directly serving the SR-91 corridor.

Commuter Assistance Program (CAP) The CAP has averaged well over 8,000 participants over the past three years and in FY 2011, the CAP program recorded a reduction of 1.9 million one-way auto based trips with a savings of 44.3 million vehicle miles and a reduction of 790,000 pounds of emissions. For the proposed 91 Express Lanes, the CAP will provide incentives including express bus pass subsidies along with reduced or toll-free use of the express lane by carpoolers. RCTC is about to deliver both an iPhone and Android application that will include rideshare information and a direct linkage to Google Transit for transit trip planning. The applications will provide a convenient and powerful use of technology to support better mode choice decision-making in the SR-91 corridor and throughout Riverside County.

Access to Affordable Housing

In a perfect world, southern California residents could live within a short distance to work; however, this ignores the unique housing and employment realities faced by its workforce. Riverside, Orange and Los Angeles counties form a large and dynamic urban economy with a diverse mix of employment and housing opportunities. Extremely high housing prices in Los Angeles and Orange counties have left little choice for many workers but to live in Riverside County and commute to jobs in Orange and Los Angeles counties. Based on August 2011 data, the housing affordability advantage in Riverside County is \$266,300 compared to Orange County (Figure 3). Assuming a 30-year mortgage at 5% interest, this amounts to a monthly savings of \$1,430 per month. These savings are reduced by the increased commuting costs of \$400 per month, assuming an extra 40 miles per day at 50 cents per mile. The resulting affordability advantage of \$1,030/month is with the Riverside County commuter when comparing the combined cost of housing and transportation, a key livability metric. These are unavoidable facts, and as the region continues to grow, it requires a continued investment in the transportation system that allows people to access affordable housing and get to and from work without insufferable congestion and delay.

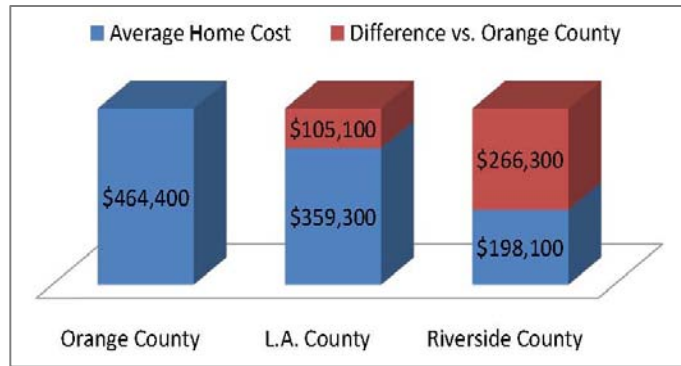


Figure 3 – Average Housing Costs

Finally, if Riverside County is to increase the number of jobs located near affordable housing, it must be possible for employers, employees, and their goods and services to traverse SR-91 eastward at all times of the day, which is currently not possible without extreme loss of economic productivity. The Project is a critical step within a larger mobility strategy to make that possible. Currently, a typical afternoon commute on SR-91 from Anaheim to Corona, which is approximately 23 miles, can take an hour and 40 minutes during the peak hour. The Project will reduce this time by approximately 30 minutes if the 91 Express Lanes are used. By 2035, annual vehicle hours of delay will be reduced by 5,900,000 hours in the corridor, a reduction of over 10% overall, a benefit that will not be realized if the Project does not go forward.

Enhanced Quality of Life

During peak-periods, traffic on SR-91 backs up onto city streets, and drivers choose to use parallel local streets cutting through neighborhoods to avoid congestion on the freeway and interchanges. The Project will directly benefit the quality of life in communities along SR-91 by relieving severe traffic congestion on the city streets adjoining each of the five interchanges of SR-91. Most notably, the ramps at Maple Street and Lincoln Avenue will be reconfigured, including the use of a braided on-ramp that will move traffic away from sensitive residential areas. The Project will also improve the interchanges at North Main Street, Serfas Club Drive and Green River Road, which will improve local circulation and



access to the North Main Corona and West Corona Metrolink stations located 0.25-mile north of SR-91. Each of these locations will include standard sidewalks and bicycle lanes to enhance the safety and convenience for bicyclists and pedestrians.

To enhance the livability and quality of life in Corona, RCTC and its partners have transit-oriented redevelopment (TOD) plans for the North Main Corona Station including the area along North Main Street north of SR-91 (Figure 4). The Western Riverside Council of Governments (WRCOG) has taken the lead in organizing a TOD Advisory Committee to develop the station area planning effort. As a member of the advisory committee, RCTC works in close collaboration with the City of Corona and other stakeholders to realize a vision “on the ground” for the station. The Project is consistent with that vision, and by reducing congestion on the local streets near the station, it will improve the viability and implementation of the TOD plan.

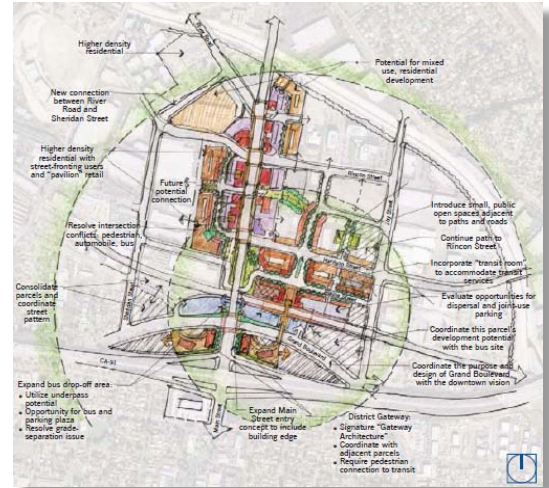


Figure 4 – North Main Corona Station TOD Plan

Economic Competitiveness

To increase global economic competitiveness, the Obama Administration has laid out an ambitious vision for “winning the future” that includes investing in our transportation infrastructure; putting people back to work, and doubling United States exports over the next five years. Much of this depends on our ability to efficiently move goods and commodities through our major ports, most notably the POLA/POLB. As one of the primary routes between the ports and I-10/I-15, SR-91 is a part of a highly interconnected and dependent network where congestion, delay, and incidents have a dramatic effect on interstate and interregional mobility. An investment in the SR-91 corridor is a proven means to address severe congestion in the corridor and an important step in enhancing economic competitiveness as described below:

Efficient Goods Movement

The SR-91 corridor is one of three primary freight routes between the POLA/POLB and I-15 and I-10 (Figure 5). More than 40% of the nation’s imported goods enter the United States through the POLA/POLB, which are then distributed to markets throughout the country. United States container traffic doubled over the past decade and is expected to nearly triple by 2030 according to studies completed in July 2009.



Figure 5 – Primary Routes Serving POLA/POLB

The rail lines and highways are already heavily congested, and with an expected 25% increase in regional population by 2030, the congestion problem will only get worse. A recent study published by the USDOT Bureau of Transportation Statistics¹ identified traffic bottlenecks on the landside transportation system serving the nation’s seaports as a critical impediment to the efficient movement of goods. According to the study, the POLA/POLB was the largest port complex in



the United States and, at the same time, suffered from the worst congestion in the nation, averaging approximately 72 hours of annual traffic delay per traveler. Nowhere is this more evident than on SR-91, which has the worst peak-hour congestion of the primary routes serving the POLA/POLB (Table 1).

Table 1 – POLA/POLB Freight Travel Time Comparison

POLA/POLB to I-15 East (Devore)	Distance	Travel Time (Off-Peak)	Travel Time (Peak)
Via I-10	75 miles	1:20	2:50
Via SR-91	78 miles	1:23	3:30
POLA/POLB to I-10 East (Banning)			
Via I-10	98 miles	1:45	3:10
Via SR-91	94 miles	1:42	3:40

¹ U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, America's Container Ports: Freight Hubs that Connect Our Nation to Global Markets (Washington, DC: 2009).

Recognizing the critical goods movement issues being faced in the region, a multi-agency collaborative team has been assembled to address existing and projected landside transportation system congestion (i.e., outside the Ports) and its potential impact on cargo throughout the Ports, and environmental and community impacts caused by goods movement. The Southern California National Freight Gateway Collaboration encompasses five southern California counties and extends from the POLA/POLB to the border with Nevada and Arizona. As a member of the collaborative, RCTC is advancing the Project as a means to reduce congestion and delay and improve the long-term efficiency, cost, and reliability of goods movement, which influences the price of goods delivered throughout the United States.

Job Creation and the Economy

The SR-91 corridor provides a vital link between employment opportunities in Los Angeles and Orange counties and the Inland Empire. According to the Bureau of Labor Statistics (BLS), these areas are home to nearly 6.6 million jobs or approximately 45% of all jobs in California. In Riverside County, unemployment stands at 14 %, one of the highest of any major metropolitan area in the United States. Current data show that every sector of the Inland Empire economy, except for construction and manufacturing, are slowly recovering, but many areas remain economically distressed with unemployment 62% higher than the national average of 9.4%. In November 2010, 63% of Riverside County voters approved Measure K to increase the debt limit to borrow against future Measure A sales tax revenue. The vote was a clear indication that residents value infrastructure investment enough that they are willing to pay for it with local sales tax revenue. More than that, the vote was a call to accelerate construction of transportation projects and create badly needed jobs in Riverside County.

In Riverside County, unemployment stands at 14%, one of the highest of any major metropolitan area in the United States.

The Project would provide an urgently needed “employment bridge,” employing those with construction skills who have been hit hardest by job losses until a broad-based recovery occurs. It is estimated that the Project would create over 16,000 jobs, including 4,600 jobs directly involved with construction and support of the Project.

The Project is estimated to permanently increase the area’s base taxable sales by 2.3%, illustrating the Project’s positive long-term economic benefit. In addition, it is imperative that infrastructure investments are made to support the growth sectors that will replace declining construction and manufacturing employment in the area. According to a 2006 Southern California Association of Governments (SCAG)² study, in Riverside County, the most promising sector is the logistics group, which includes companies in fields such as wholesale trade; truck and rail transportation; and general warehousing required to support the POLA/POLB. Since 1990, the logistics group was one of the few nonpopulation-related sections of the economy to provide significant job growth. Despite the recent economic downturn, the POLA/POLB continue to provide more than 3.4 million jobs nationally, with one-third of those located in six states of the





southwest United States; however, continued growth of the sector depends on timely investments in transportation infrastructure between the POLA/POLB and logistics centers in Riverside County. The Project is a key component of that investment strategy, ensuring a healthy and efficient goods movement industry and the jobs it provides.

² *Southern California Association of Governments, Logistics & Distribution: An Answer to Regional Upward Social Mobility (2006)*

Safety

The Project will improve overall corridor safety and reduce accident potential at the following locations:

- The actual accident rate on the eastbound direction of the SR-91 mainline is higher than the statewide average. The predominant types of accidents are rear end accidents, which account for approximately 50% of all accident types. The Project will reduce congestion and the stop and go traffic conditions that cause most rear end accidents.
- The accident rates on southbound SR-71 to westbound SR-91 are more than twice the state average for highway connectors. This is potentially due to the tight radius of the horizontal alignment, which will be upgraded to current standards to reduce accident potential.
- The northbound I-15 to SR-91 connectors experience an accident rate that is more than four times the statewide average. The connectors will be improved using a collector-distributor facility in the westbound direction on SR-91 between I-15 and Main Street, which is expected to reduce congestion and related accidents on the connectors.
- The fatality rate on the eastbound SR-91 to northbound I-15 connector is above the statewide average, likely due to weaving operations from the Main Street ramps. The Project will braid the Main Street ramps, which is expected to improve safety by eliminating the short weave section and potential vehicle conflicts.
- Approximately 35% of all local interchange ramps in the project area have reported accident rates higher than the statewide average. In addition, some interchange ramps have reported fatality rates above the state average. All of the interchanges in the Project limits will be improved to current design standards, which will enhance operations, efficiency, and safety.
- The 91 Express Lanes will be separated from the general purpose (GP) lanes using a “soft barrier,” including a 4-foot-wide buffer and plastic delineators to deter vehicles from crossing into the toll lanes. This is the same configuration used on many managed lane facilities nationally and the existing 91 Express Lanes, which have an excellent safety record since opening in 1995. Accident data indicate that the cut through traffic has not resulted in an increase in accidents compared to the GP lanes. According to a 2009 Customer Survey, over 95% of drivers using the 91 Express Lanes in Orange County perceive that the facility is safe.



Private Participation (20%)

RCTC's early planning activities included a rigorous assessment of alternative project delivery models and how best to meet the objectives of the agency, including expediting project delivery, risk allocation and the need for a common toll operator for the 91 Express Lanes in Orange and Riverside counties. This assessment also considered RCTC's ability to use the excess revenues generated from the 91 Express Lanes to fund long-term corridor needs, including alternative modes. With the assistance of a diverse team of advisors and consultants with substantial experience developing and delivering public-private-partnership (P3) projects, it was determined that a traditional tax-exempt, “publicly-driven” P3 approach would best achieve RCTC's objectives, while complying with state legislative mandates.

Under the “publicly driven” P3 approach, RCTC, working in partnership with Caltrans, is the Project developer providing the investment capital needed to advance the Project through the NEPA and the project development process. In this capacity, RCTC has identified and mitigated the legislative and political risks of the Project including securing federal tolling authority through execution of a Section 129 Agreement with the FHWA and Caltrans, state tolling authority through SB 1316, and state design-build authority through AB 2098, which amended Section 6800 of the Public Contract Code. In addition, RCTC is obtaining state and local agency cooperative agreements that define project delivery roles and responsibilities and review and approval rights between the parties. RCTC is providing the local funding contribution through their Measure A local sales tax program to support the financial planning and affordability of the Project. This



contribution will be issued as supplemental debt, and is a primary component of the “publicly-driven” P3 approach summarized below:

- **Private Financing** – Project financing will be secured through the issuance of toll revenue bonds. These bonds will be issued on a non-recourse 30 year basis, as supported by the investment grade traffic and revenue study performed by Stantec, through RCTC’s financing team of Fieldman, Rolapp & Associates, Goldman Sachs and Bank of America Merrill Lynch. Significant financial review, modeling work and market analysis has been performed in support of the financial plan presented in Section C of this LOI.
- **Design/Build Delivery** – The Project will be procured and contracted through a single private entity under a competitively bid, best-value, design-build procurement. Design-build is a prerequisite to securing financing through the sale of toll revenue bonds in providing cost and schedule certainty by a qualified design-build contractor. The design-build contractor as a major private participant assumes risk in areas relating to design, construction schedule, differing site conditions, third party approvals and utilities relocation. Other benefits of the design-build approach include single source responsibility and opportunities for innovation that can be captured through alternative technical concepts offered during procurement and value engineering during design and construction. These opportunities offer means to mitigate impacts to project cost and schedule and are critical to the delivery process and securing the Project financing.
- **Toll Operations** - Operation and maintenance of the 91 Express Lanes will be provided through a three party agreement with OCTA to Cofiroute USA LLP (Cofiroute), the existing operator for the 91 Express Lanes in Orange County. The services provided by Cofiroute will include toll systems installation, integration, testing and acceptance and facility operation and maintenance including toll collection and enforcement and back office accounting and customer service. Cofiroute has been operating and maintaining the OCTA 91 Express Lanes for the past 16 years with proven performance and metrics that provide certainty in costs and in facility performance that add significant value to the financing of the Project.

The RCTC “publically driven” P3 model selected for the Project, and the structuring of the public-private partnerships provides the best opportunity for success with the optimal balance of public and private participation and allocation of risks. This balance between private and public participation from project inception through the 50-year term of operations and maintenance represents a level of private participation of over 96% of the Project’s lifecycle costs which amounts to \$2.175 billion.

....private participation of over 96% of the project’s lifecycle costs which amounts to \$2.175 billion.

Environment (20%)

The Project utilizes a context-sensitive approach to development, implementation, and operation of the facility, which will yield sustainable and tangible benefits to the environment. Key environmental considerations are summarized here and discussed in more detail below:

- **Sustainability:** The Project includes tolled express lanes and pricing structures designed to manage the high levels of congestion on SR-91 and encourage the use of alternative transportation options. This will encourage energy efficiency, reduce our dependence on oil, reduce greenhouse gas (GHG) emissions, and reduce other transportation-related impacts.
- **Environmental Stewardship:** The Project will address its potential impacts within the framework of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), a pioneering Habitat Conservation Plan that takes an integrated approach to the mitigation and enhancement of sensitive habitats in the corridor.
- **State of Good Repair:** The Project will make a significant investment in the corridor to ensure its long-term maintainability and a reduction in life-cycle costs.



Sustainability

Congestion Management Pricing

The Project is an important element in ensuring that traffic flows more smoothly between Orange and Riverside counties. The variable pricing approach of the 91 Express Lanes adjusts toll rates based on the number of vehicles on the road to maintain a “free flow” commute at all times. RCTC will optimize operation of the 91 Express Lanes to maximize total throughput. Motorists pay tolls through the convenient use of windshield-mounted FasTrak transponders that automatically deduct fees from a prepaid account. FasTrak transponders are fully interoperable with all other toll roads, bridges, and express lanes in California. Depending on the time of day, commuters will save 30 minutes on average on their drive time by using the 91 Express Lanes in Riverside County.

The benefits to the individual user are clear, but just as important, the extension of the 91 Express Lanes into Riverside County provides greater control and the flexibility to respond to a variety of future scenarios and uncertainties, including jobs and housing shifts, gas price fluctuations, scarcity of other funding sources, changing travel behavior, and attitudes about sustainability, among others. The variable pricing approach provides a means to actively respond to any future scenario in a way that balances the benefits of the individual user, society, and the environment.

.... incentives could be adjusted to include the use of alternative fuel vehicles and the expansion of other mode such as express bus service on SR-91.

Greenhouse Gas (GHG) Reduction

A quantitative analysis was completed to determine the estimated daily carbon dioxide (CO₂) emissions associated with vehicle trips that would be generated with the Project. The analysis indicates that, without the Project, CO₂ emissions would increase by 65% by 2035. With the Project, CO₂ emissions would decrease by up to 4.4%, a 69.4% reduction in emissions compared to the no project conditions.

Another factor in reducing GHG emissions is the reduction in vehicle hours traveled (VHT). Without the Project, the peak-hour travel time on the SR-91 HOV lane increases from 44 minutes currently to 86 minutes in 2035 and average speed is reduced to 14 miles per hour (mph). With the Project, the travel time in the 91 Express Lanes would be decreased to approximately 12 minutes with a speed over 50 mph; therefore, the reduced travel time and increased speeds of the build alternative will result in reduced VHT in the project area, which is critical in reducing CO₂ emissions.

Without the Project, CO₂ emissions would increase by 65% by 2035. With the Project, CO₂ emissions would decrease by up to 4.4%.

The Project is consistent with the Caltrans Climate Action Program, which indicates that relieving congestion by enhancing operations and improving travel times in highly congested corridors would lead to an overall reduction in GHG emissions and fuel consumption. The build versus no-build operational conditions will result in reduced fuel consumption of up to 4% within the Project area, saving 8,320,000 gallons of fuel by 2035 – the equivalent of 554,000 barrels of crude oil and 2% within the SCAG region, saving 156,000,000 gallons of fuel by 2035 - the equivalent of 10,400,000 barrels of crude oil, primarily associated with local and regional congestion relief.

Project Sustainability Plan

The sustainability "triple bottom line" captures the need to balance the economic, ecological, and social aspects in the planning and implementation of infrastructure projects. RCTC will deploy sustainable solutions to the design, construction and operations and maintenance of the Project through the “Best Value” Design Build selection process and the integration of the operations and maintenance requirements. As part of the technical selection process, evaluation criteria have been established that score potential design-build proposers on their “Project Sustainability Plan”. This Plan will be based on specific criteria defined in the technical provisions of the procurement documents that use existing state standards with respect to recycled materials, as well as defined objectives in reducing life cycle energy and emissions; alternative fuel incentives/credits for construction fleet conversion; recycle, reuse and renewable construction methods; conservation and ecosystem management; watershed driven storm water management; and, total life cycle cost reductions. RCTC and the design-build team will implement the Plan to define the measures needed to ensure delivery of a sustainable project, including:



- Improve air quality and lower fuel consumption, by incentivizing the design-build contractor to use alternative fuel and hybrid vehicles and equipment.
- Protect water quality through the use of non potable and recycled water. Water treatment BMPs, LID techniques, and spill containment practices will be deployed to prevent transport of sediments and pollutants.
- Support the local economy and reduce secondary transport impacts, with the utilization of local labor and locally sourced material that account for the full life-cycle savings.
- Reduce the waste stream by recycling and reusing pavement millings and other construction waste where possible. In addition, the contractor will resource materials with high contents of repurposed waste products and embedded energy.
- Introduce and reinforce the use of sustainability measures with the construction and inspection staff through training and regular brown bag meetings.
- Respect community values through continuous stakeholder engagement programs.

Environmental Stewardship

Biology – Natural Communities

To assist with sustaining the biodiversity in this area, the Project will implement mitigation measures in the Riverside County/Santa Ana Watershed area, including Chino Hills State Park and Riverside County Regional Conservation Lands. SR-91 is located within the Santa Ana Canyon, which is an important area for biodiversity because of the Santa Ana River, Cleveland National Forest, and Puente-Chino Hills. This area has been disrupted by encroaching development and infrastructure improvements over the years. Mitigation will include creation of wetlands, restoration of riparian/riverine areas, and restoration of upland habitats. Within the Project area are marginal habitat areas, and as part of mitigation for impacts to these areas, RCTC will mitigate offsite in areas identified for conservation or open space. RCTC's approach to environmental stewardship provides mitigation in advance of construction completion whenever possible. Mitigation will be deployed during construction of the Project to ensure early and successful establishment of habitat success.



Multiple Species Habitat Conservation Plan (MSHCP)

RCTC and the Riverside County government are utilizing a pioneering planning process to ensure transportation, land use, and environmental planning are coherent and consistent. The Riverside County Integrated Project (RCIP) was one of the first efforts in the nation to incorporate three formerly distinct plans that affect the placement of infrastructure and open spaces in the County. The plan includes a General Plan for land use, a Multiple Species Habitat Conservation Plan (MSHCP) to determine which land should be set aside for conservation, and the Community and Environmental Transportation Acceptability Process (CETAP) identifying improvements for highways and transit systems. In recognition of this collaborative planning approach, the CETAP was identified as a priority project under Presidential Executive Order 13274 for environmental stewardship.

The MSHCP is the largest in the nation providing protection of 146 plant and animal species within a planning area of 1.26 million acres. Nearly 500,000 acres of resources, or about 40% of the planning area, will be protected and placed into conservation.

The Western Riverside County MSHCP is the largest in the nation providing protection of 146 plant and animal species within a planning area of 1.26 million acres. Nearly 500,000 acres of resources, or about 40% of the planning area, will be protected placed into conservation. RCTC continues to demonstrate its firm commitment to environmental protection and the MSHCP by pledging \$153 million for environmental mitigation.

Within the first five years of MSHCP implementation, RCTC provided over \$125 million to the Western Riverside County Regional Conservation Authority to assist in the acquisition of 9,000 acres of habitat now placed in conservation.



Wildlife Connectivity

In addition, RCTC also plans to enhance wildlife connectivity in the Santa Ana Canyon area by improving the B Canyon wildlife corridor, which is widely used by small to mid-sized mammals between the Cleveland National Forest, Santa Ana River, and Puente-Chino Hills. This effort will be completed through widening of an existing SR-91 culvert and by restoring native habitat between the Cleveland National Forest and the Chino Hills State Park. The B Canyon wildlife corridor will be completed through the collaborative effort of several agencies including the RCTC, US Fish and Wildlife Service, United States Forest Service, and the California Department of Fish and Game. The B Canyon Wildlife Crossing is a holistic approach toward mitigating the cumulative impacts of projects within this environmentally sensitive area.

Air Quality Benefits

The Project will provide air quality benefits by supplying preferential lanes for carpoolers, ramp metering, auxiliary lanes, traffic signal coordination, and bike/pedestrian facilities, which will improve the efficiency of the system and reduce emissions. The Project will also promote current RCTC and OCTA ride-sharing programs. The Project incorporates a Transportation Demand Management (TDM) strategy by allowing the express lanes to provide free or discounted tolls to vehicles with three or more occupants. More HOV users in the express lane will result in a higher vehicle occupancy rate for SR-91 and less traffic demand.

By 2015, the RCTC is planning to increase commuter rail service by 2 trips on the Metrolink Inland Empire-Orange County Line and 3 trips on the 91 Line (doubling peak-hour service) so that there is a train every 30 minutes in the peak direction. It is expected that the extension of the Express Lanes into Riverside County will decrease travel time for existing express bus services and facilitate the planned expansion of express buses to work with the Metrolink schedule. The Project will provide reliable connectivity between the region's robust bus and rail transit network.

State of Good Repair

Future maintenance and repair of the 91 Express Lanes system will be paid by the users of the facility through the collection of tolls. Over the 50-year life of the facility, this will reduce the overall federal and state cost to maintain I-15 and SR-91 at a time when the nation's unmet infrastructure maintenance needs are at an all-time high and funding resources are limited.

Life-Cycle Cost Analysis (LCCA) was used to evaluate long-term alternative investment options, especially for comparing the value of alternative pavement structures and strategies. The life-cycle cost consists of the agency cost, the road user cost, and the toll fee revenue loss in the work zone for construction, future maintenance and rehabilitation, and routine annual maintenance. Based on the conclusions of the LCCA study, the Project will include long-life (40 years) Portland Cement Concrete (PCC) pavements (PCCP/jointed plain concrete pavement [JPCP]) on the SR-91 and I-15 lane widening and on the SR-91 ramps. Using the long-life pavement for the Project is approximately 30% more cost effective in net present value (NPV) compared to the next best alternative, which includes Continuous Reinforced Concrete Pavement (CRCP).

Based on the April 2007 pavement condition survey, the predominant pavement distresses observed in the Project limits were faulting at the concrete pavement panel joints and poor ride quality. This situation has required above-average maintenance efforts to maintain pavement structural integrity and ride quality. In response, two roadway rehabilitation projects are underway in advance of the Project to restore the pavement on SR-91 and I-15 to a state of good repair. This work includes replacing damaged PCC slabs, pavement grinding/leveling, and an overlay of recycled rubberized asphalt concrete (RAC) on SR-91 and similar rehabilitation on I-15.

Structure rehabilitation and seismic upgrading requirements have been identified by the Project, which will restore and extend the service life and reliability of several major structures, including:

- I-15/Ontario Avenue UC (56-0498 L/R) – Extend abutment seats
- I-15/Old Temescal Road UC (56-0644 L/R) – Extend abutment seats
- SR-91/SR-71 Connector (56-0635) – Abutment diaphragm upgrade
- SR-91/Serfas Club Drive UC (56-0638 L/R) – Abutment diaphragm/vertical restrainer



Project Acceleration (12.5%)

TIFIA assistance will ensure the accelerated delivery of the Project and the benefits it provides, including better mobility and travel mode choices, travel time savings, safer roadway operations, improved air quality, increased job opportunities, and easier access to affordable housing. Without TIFIA assistance, it is likely that the Project would be delayed for at least a decade, and a rare opportunity would be missed to put more than \$1 billion in local funds to work improving the regional and interstate transportation network and provide jobs when they are most needed. This would deal a serious blow to efforts to bridge the near and long-term job losses in the Inland Empire, where unemployment is one of the highest of the 50 largest metropolitan areas in the U.S. Throughout the Project development phase, RCTC has adopted and implemented innovative strategies to accelerate Project delivery for this very reason, including:

Leveraging Toll Revenues

The funding plan detailed in this LOI leverages the Project's anticipated toll revenues by proposing the use of less-traditional funding sources – TIFIA and toll revenue bonds. These funding sources are critical to complete the plan of finance given the current dearth of traditional federal and state funding. Without TIFIA and toll revenue bonds, RCTC's local monies cannot fund the Project, thereby delaying project progress; therefore, using TIFIA and toll revenue bonds will allow the Project to be fully funded earlier compared to traditional sources. It is difficult to determine how long it would take to fund the Project with traditional state and federal funding; however, we anticipate a lengthy delay of many years.

Early Implementation Authority

Another strategy to accelerate the Project was to gain authority for project implementation early in development to maintain the schedule. Several authorities were needed – state and federal tolling authority and design-build authority. In the case of state tolling authority (SB 1316) and design-build authority (AB 2098), legislation was approved by the California State Legislature and signed by the Governor on a bi-partisan basis with broad support from labor and business groups throughout California. Obtaining TIFIA loan approval in 2011 would build upon past implementation authority milestones to proceed with the Project.

Design-Build Project Delivery

RCTC expects that the design-build approach will save more than three years compared to a traditional design-bid-build contract. This time savings is achieved primarily through overlapping final design and construction. Obtaining TIFIA loan approval in 2011 directly impacts RCTC's ability to issue an RFP to procure a design-builder for the Project. Without TIFIA loan approval, RCTC will likely delay this procurement due to the lack of full project funding and the expense and time for RCTC and industry to participate in a design-build procurement. Obtaining a TIFIA loan is critical to maintain the current momentum of the design-build delivery approach.

At-Risk Project Development

RCTC has committed its resources to perform the project development phases concurrently and created forward momentum to deliver the benefits of the Project as early as possible. RCTC has engaged FHWA throughout these phases of work to move the Project forward, including commencing a NEPA EIS in 2007, entering into a Section 129 Toll Agreement for the Project on August 18, 2009, and negotiating an HPPA between FHWA, Caltrans, and RCTC. Design-build planning and procurement has been underway since 2009. Acquisition of residential and commercial property on the open market began in 2010 consistent with state and federal laws. This nonlinear approach poses some risk to RCTC; however, we have managed and balanced these risks against the clear benefits of early project delivery and lower project costs overall.

Creditworthiness (12.5%)

The Creditworthiness of the TIFIA Loan and the related low Credit Subsidy Cost are results of the existence of solid Recovery Factors, based on the nature of the Project and toll revenues, and the Default Mitigants, including the structure of all of the debt financings and the anticipated ratings. RCTC has structured the TIFIA Loan to obtain investment grade ratings (at or above "Baa3"/"BBB-") and is seeking a preliminary credit assessment from Fitch Ratings that will confirm the investment grade rating. The key features supporting the investment grade credit quality are:

Strategic Location. The SR-91 corridor has a strategic location as the only freeway connecting Riverside and Orange counties, with a combined population of 5,305,996. These counties, along with their solid economic foundations, have benefited from considerable population and employment growth over the last decade.



Conservative Debt Structure. The Plan of Finance provides for significant levels of coverage for all toll related debt. Specifically, the net revenues are projected to be no less than 1.15 times all debt service, including payments on the TIFIA Loan. Moreover, the coverage is projected to be no less than 1.15 times at any time, less than 1.20 times for only three years and over 1.40 times every year after 2034. Coverage exceeds 1.70 times during the last six years of the term up to a projected maximum of 1.75x.

RCTC will also create an additional reserve of \$20 million pledged to fund the TIFIA Loan from the proceeds received from sales of excess right of way property, estimated at over \$29 million. In addition, if RCTC does not receive proceeds of right of way sales of at least \$20 million by June 30, 2019, it will provide such funds.

Commitment of RCTC Resources. The Plan of Finance has a mix of debt and equity. The equity comes in two forms: RCTC contributions of pre-development expenses and RCTC annual payments into the construction fund. The total amount in addition to the proceeds of debt that RCTC will provide is \$203,067,000. That amount is more than 15% of the total TIFIA eligible costs of the Project and more than 27% of RCTC's total contribution to the Project.

Length of Toll Authority. RCTC's authority to impose tolls on SR-91 extends for fifty years after opening, currently estimated to be 2067, while the debt under the Plan of Finance, including the TIFIA Loan, matures in 2051. After payment of the TIFIA Loan, the net toll revenues are projected to exceed \$100 million each year. If payments on the TIFIA Loan became delinquent, the continuing receipts would ensure ultimate repayment of the TIFIA Loan with any accrued interest.

Toll Policy Flexibility. The currently anticipated toll policy is designed to maximize throughput on the corridor, not toll revenues. If the toll revenues are less than the projections, RCTC has the option to modify the toll policy to generate additional revenues.

Existing Congestion Fuels Demand. Traffic congestion in the corridor is a fact of life. The Traffic and Revenue projection estimates that in 2017 there will be more than 4.2 million toll transactions, with that number growing to over 9.2 million by 2020. The corridor is estimated to handle 11.5 million transactions annually in 2035.

Demonstrated Success of Tolls in the Corridor. The project is not a Greenfield project, but builds on the success of the 91 Express Lanes in Orange County, effectively extending the existing 91 Express Lanes into Riverside County. These lanes have a 16 year proven history of traffic demand and profitability. A survey of existing 91 Express Lanes customers found that 8 out of 10 will use the extension into Riverside County, demonstrating a significant demand from the current customer base. The Project will be interoperable with the existing 91 Express Lanes and provide a seamless experience for users. This substantially reduces the execution and implementation risk of similar toll facilities. Toll revenue bonds secured by revenues derived from operation of the existing 91 Express Lanes by OCTA have been assigned a long-term, unsecured debt rating by Standard & Poor's of "A" with a stable outlook.

Synergy of Operations with Existing 91 Express Lanes. The Project will share a common operator and operations center with the existing 91 Express Lanes. It will benefit from OCTA's extensive record of operations and experience in managing the 91 Express Lanes' variable tolling system effectively and efficiently in a manner that maximized throughput while maintaining speed targets and delivering cost and time-to-destination certainty to users. This also means RCTC will have an accurate estimate of operations and maintenance costs, and RCTC and OCTA will benefit from having lower operating costs for each agency than would occur with two stand-alone operations.

Political Support. The Project benefits from strong political support. Despite the challenging economy, lowered sales tax receipts, lack of state funding, and other challenges of delivering the Project, RCTC's willingness to proceed with the Project and the scope of the funding it is contributing, both in the form of bond proceeds and cash on hand, estimated at \$726,423,000, underscores the importance of this Project to RCTC and the region. This high level of support allows the Project to be financed with a lower amount of overall toll-based funding, considering both the first lien toll revenue bonds and the TIFIA Loan.

RCTC's High Quality Credit. RCTC's sales tax revenue bonds have very strong ratings of "Aa1"/"AA+"/"AA" from Moody's Investors Service, Standard & Poor's Ratings Service and Fitch Ratings, respectively. While the Plan of Finance provides for \$510,985,000 of sales tax revenue bonds as part of RCTC's contribution to the Project, the credit strength of those bonds will continue to be in the "AA" category. Sales tax revenues will continue to generate significant coverage of total debt service even after issuance of the bonds for the Project. The issuance of that principal amount of bonds does not bring RCTC up to its legal maximum for outstanding sales tax revenue bonds.

Additional Financial Detail

Appendix B includes a more specific description of the Plan of Finance and the structural elements of the TIFIA Loan.



Use of Technology (5%)

As with the existing 91 Express Lanes, the Project will include an all Electronic Toll Collection (ETC) system to streamline collections and avoid forcing motorists to stop for cash transactions. All users will be required to have an account with a tolling agency that will issue a FasTrak transponder or “toll tag” to the customer. FasTrak transponders are fully interoperable with all toll roads and bridges and express lanes in California. The Project will allow free or reduced toll access to HOV 3+ carpool vehicles and tolled access for vehicles with less than three occupants.

If the vehicle does not have a valid transponder, a digital image or photo is taken of the vehicle’s license plate. The photo is used for enforcement purposes based on California statutes and a notification letter is sent to the vehicle’s owner. Vehicles will utilize a separate third lane to declare themselves as carpoolers consistent with existing practice.

As presently envisioned, the toll rate will be set by time of day based on traffic demand observed over the previous three month period. This variable pricing approach is identical to the current pricing approach used successfully on the existing 91 Express Lanes for the last 16 years. Toll rates average \$2.93 per trip and currently vary from a minimum of \$1.30 to a maximum of \$9.75 for one hour during the Friday afternoon peak period. The Project tolling system will have the ability to operate under dynamic pricing in the future where the actual travel time in the 91 Express Lanes or the travel time differential between the SR-91 general purpose lanes and 91 Express Lanes will be measured in real time between the entry and exit point, and the price to travel in the 91 Express Lanes will be adjusted, usually at 15-minute intervals, as required to maintain traffic flow.



RCTC currently contemplates that the Project tolling computers will be connected by a fiber backbone communications network to the existing SR-91 Toll Operations Center (TOC) and also to the existing customer service center (CSC) currently operated by OCTA. The existing OCTA SR-91 TOC and CSC will be used for the Project pursuant to an agreement between OCTA and RCTC, under which the two agencies shall collaborate, share costs, and cooperate in making the entire 91 Express Lanes a seamless facility to the user. The TOC will serve as the 24/7 operating and maintenance information hub for the Project, while the CSC will provide account services directly related to the facility’s toll customers and violations verification and processing. The CSC is the central facility where customer accounts for ETC are set up and managed, toll transponders are issued and tested, and violation processing takes place.

Budget Authority (5%)

The ultimate credit quality and, in turn, subsidy rate for the Project will be a function of Project-specific (see above) and proposer-specific credit concerns (e.g., the final capital structure, the nature of the successful proposer, performance bonds obtained). RCTC is developing the Project to establish and maintain a strong credit profile. This strong credit is developed through the willingness of RCTC to invest large amounts of its Measure A sales tax revenues in the financial plan. Sales tax revenues are projected to be the primary source of funding and financing for the Project. Given the importance of TIFIA credit assistance to the Project, the inverse relationship between credit quality and subsidy cost encourages RCTC to strengthen credit quality in an effort to minimize the impact on budget authority.

The financial strength of the Project enhances the position of the federal government. The Project maintains a strong credit profile by: (1) its straightforward capital structure; (2) the conservative nature of RCTC and successful financial history and credit ratings; and (3) the performance bonds that will be required from any proposer.

Reduced Federal Grant Assistance (5%)

The costs of the Project, with the minor exception of \$2 million of federal and state STIP funds, will be borne completely by the users of the 91 Express Lanes and residents of Riverside County. The current financial plan does not include any federal grant assistance. The TIFIA loan will reduce and possibly eliminate the need for federal grant assistance for the Project. Assuming all else remains constant, except for leverage ratios, if there is no competitively priced and structured subordinate or mezzanine debt available to replace TIFIA, and TIFIA is not available to the Project, then the level of public funds required of RCTC increases by approximately \$391 million (\$2010). Under traditional pay-as-you go financing for National Highway System-designated projects, FHWA pays 80% of construction costs, and the state and local governments pay for the remaining costs. If the public funds contribution for the Project is sourced using similar split, federal grant



J) Identify a key contact person with whom all communication should flow.

Michael Blomquist
Toll Program Director
4080 Lemon Street, 3rd Floor
Riverside, CA 92501-3634
Phone: (951) 787-7141
Fax: (951) 787-7920
E-mail: mblomquist@rctc.org

Fees – The undersigned certifies that, if invited to submit a formal application, payment of a nonrefundable \$50,000 application fee will be made to the DOT concurrent with the application submission. For projects that enter credit negotiations, the undersigned further certifies that a transaction fee will be paid at closing or, in the event no final credit agreement is reached, upon invoicing by the DOT, in the amount equal to the actual costs incurred by the DOT in procuring the assistance of outside financial advisors and legal counsel. This fee is due whether or not the loan closes.

Debarment – The undersigned certifies that it is not currently, nor has it been in the preceding three years: (1) debarred, suspended, or declared ineligible from participating in any federal program; (2) formally proposed for debarment, with a final determination still pending; (3) voluntarily excluded from participation in a federal transaction; or (4) indicted, convicted, or had a civil judgment rendered against it for any of the offenses listed in the Regulations Governing Debarment and Suspension (Government-wide Nonprocurement Debarment and Suspension Regulations: 49 CFR Part 29).

Default/Delinquency – The undersigned further certifies that neither it nor any of its subsidiaries or affiliates are currently in default or delinquent on any debt or loans provided or guaranteed by the federal government.

Signature – By submitting this LOI, the undersigned certifies that the facts stated herein are true, to the best of the applicant's knowledge and belief after due inquiry, and that the applicant has not omitted any material facts. The undersigned is an authorized representative of the applicant.

Submitted by:

Applicant/Borrower Name: Anne Mayer

Title: Executive Director

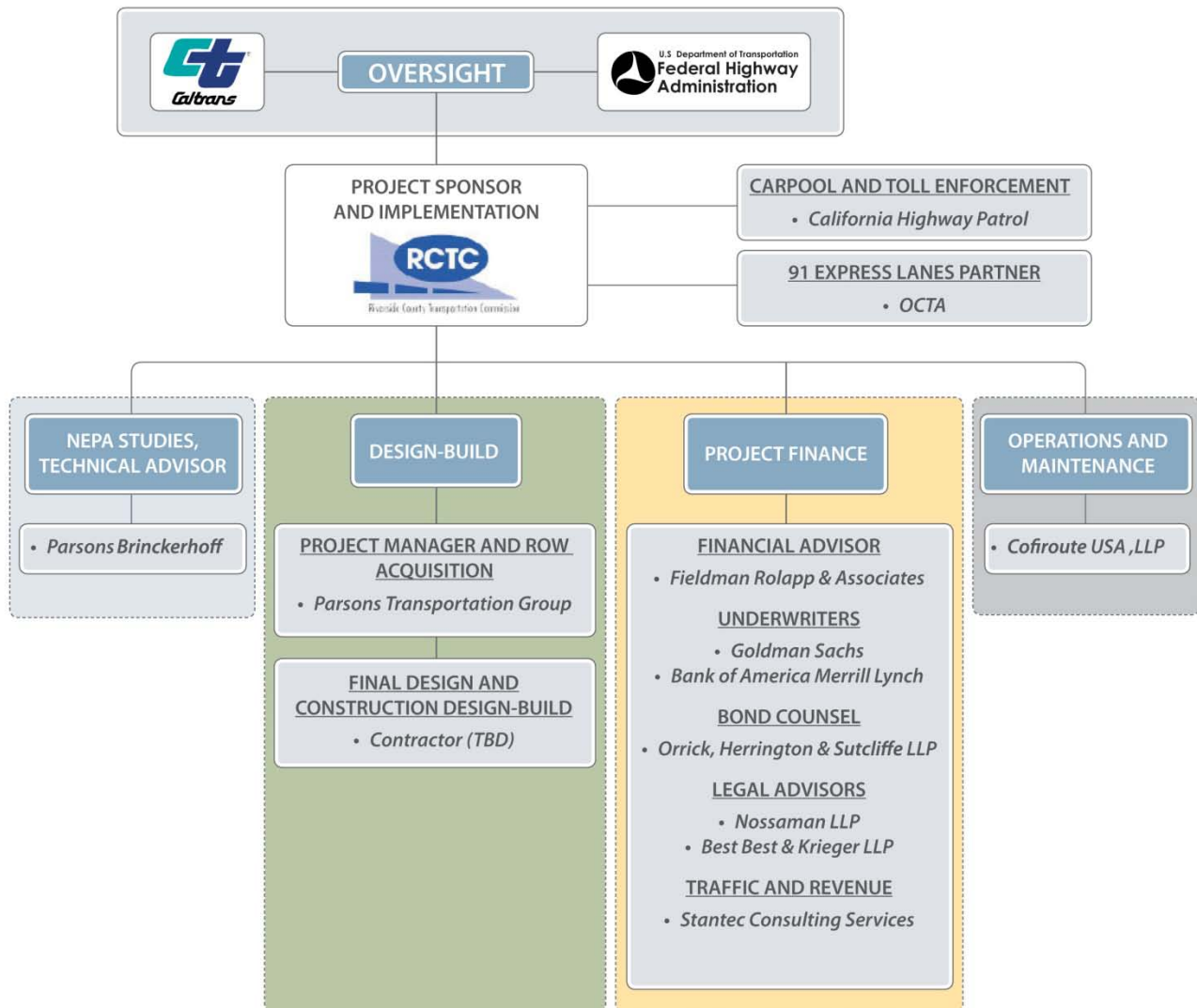
Organization: Riverside County Transportation Commission

Date: October 31, 2011



Appendix A

Exhibit 1 - Project Team Organization





Appendix B

Detailed Financial Information

Sources of Funding for the Project. Funding for the project comes primarily from toll revenues paid by users of the project, sales tax revenues from taxable transactions within Riverside County and State Transportation Improvement Program funds.

- **Toll revenues** – A senior lien on toll revenues is provided to toll revenue bonds issued to the public. Repayments of the TIFIA Loan have a subordinate priority. RCTC has structured the TIFIA Loan to obtain investment grade ratings (at or above “Baa3”/“BBB-”) and is seeking a preliminary credit assessment from Fitch Ratings that will confirm the investment grade rating.
- **Sales tax revenues (RCTC contribution)** – RCTC will apply funds received under its Measure A sales tax in three ways: (i) contribution of predevelopment costs; (ii) annual contribution during construction – RCTC will make an annual contribution to the construction costs during FYs 2013-14, 2014-15, and 2015-16 of approximately \$39,700,000; and (iii) sales tax revenue bonds – RCTC will issue sales tax revenue bonds, to be rated in the “AA/Aa” category (existing ratings of “Aa1”/“AA+”/“AA”), at financial close in an estimated principal amount of \$510,985,000, resulting in \$525,354,000 including investment proceeds.
- **State Transportation Improvement Program** – RCTC will apply \$2,000,000 of funds received under STIP to the project.

Breakdown of RCTC Contribution (000’s)

RCTC’s contribution to the Project comes from its Measure A sales tax, a 0.50% sales tax within Riverside County.

RCTC Sales Tax Bonds	\$ 525,354	72.3%
Pay Go during Construction	\$ 119,107	16.4%
Pre-development Costs	\$ 81,962	11.3%
	<u>\$ 726,423</u>	

Application of Financing Proceeds (000’s)

The portion of Project costs not previously paid by RCTC as pre-development costs or paid by RCTC on an annual basis will be funded through the issuance of four series of financings:

- First Lien Current Pay Toll Revenue Bonds
- First Lien Capital Appreciation Bonds
- TIFIA Loan (Third Lien to provide the possibility of an additional second lien of bonds while maintaining projected investment grade ratings on TIFIA Loan)
- RCTC Sales Tax Revenue Bonds

Sources	Third Lien (TIFIA)	First Lien CAB	First Lien Current Pay	RCTC Sales Tax Bonds	Total
Par Amount	\$ 444,934	\$ 49,317	\$ 121,180	\$ 510,985	\$ 1,126,416
Investment Earnings		1,209	2,253	14,369	17,831
TOTAL	\$ 444,934	\$ 50,526	\$ 123,433	\$ 525,354	\$ 1,144,247
Uses					
Project Fund Deposit	\$ 444,934	\$ 45,101	\$ 78,218	\$ 441,073	\$ 1,009,326
Debt Service Reserve Fund		4,932	12,118		17,050
Capitalized Interest Fund			31,883	79,167	111,050
Issuance Costs		493	1,214	5,114	6,821
TOTAL	\$ 444,934	\$ 50,526	\$ 123,433	\$ 525,354	\$ 1,144,247



Amortization of TIFIA Loan (000s)

The table below contains the proposed amortization of the TIFIA Loan, including the accretion and repayment of interest.

	TIFIA Draws	Principal	Interest	Compounded Interest	Debt Service	Nominal Principal Balance	Accreted Interest	Total Bond Value
6/30/2012								
12/31/2012								
6/30/2013	\$ 54,065					\$ 54,065		\$ 54,065
12/31/2013						54,065	1,216	55,281
6/30/2014	107,099					161,164	2,460	163,624
12/31/2014						161,164	6,142	167,306
6/30/2015	119,219					280,383	9,906	290,289
12/31/2015						280,383	16,438	296,821
6/30/2016	101,865					382,248	23,116	405,364
12/31/2016						382,248	32,237	414,485
6/30/2017	48,588					430,836	41,563	472,399
12/31/2017						430,836	65,981	496,817
6/30/2018	14,098					444,934	63,061	507,995
12/31/2018		447		261	708	444,487	74,233	518,720
6/30/2019		457		267	724	444,030	85,632	529,662
12/31/2019		464		271	735	443,566	97,280	540,846
6/30/2020		474		277	751	443,092	109,173	552,265
12/31/2020		916		536	1,452	442,176	121,067	563,243
6/30/2021		937		548	1,485	441,239	133,191	574,430
12/31/2021		1,879		1,098	2,977	439,360	145,013	584,373
6/30/2022		1,922		1,123	3,045	437,438	157,038	594,476
12/31/2022		1,021		597	1,618	436,417	169,820	606,237
6/30/2023		1,044		610	1,654	435,373	182,852	618,225
12/31/2023		1,480		865	2,345	433,893	195,896	629,789
6/30/2024		1,514		885	2,399	432,379	209,179	641,558
12/31/2024		7,107		4,154	11,261	425,272	219,462	644,734
6/30/2025		7,267		4,247	11,514	418,005	229,722	647,727
12/31/2025		6,495		3,796	10,291	411,510	240,503	652,013
6/30/2026		771	14,670	450	15,891	410,739	240,053	650,792
12/31/2026			14,643		14,643	410,739	240,053	650,792
6/30/2027			14,643		14,643	410,739	240,053	650,792
12/31/2027			14,643		14,643	410,739	240,053	650,792
6/30/2028			14,643		14,643	410,739	240,053	650,792
12/31/2028			14,643		14,643	410,739	240,053	650,792
6/30/2029			14,643		14,643	410,739	240,053	650,792
12/31/2029		107	14,643	63	14,813	410,632	239,990	650,622
6/30/2030		107	14,639	63	14,809	410,525	239,927	650,452
12/31/2030		920	14,635	538	16,093	409,605	239,389	648,994
6/30/2031		920	14,602	537	16,059	408,685	238,852	647,537
12/31/2031		1,833	14,570	1,072	17,475	406,852	237,780	644,632
6/30/2032		1,834	14,504	1,072	17,410	405,018	236,709	641,727
12/31/2032		2,860	14,439	1,672	18,971	402,158	235,037	637,195
6/30/2033		2,860	14,337	1,671	18,868	399,298	233,366	632,664
12/31/2033		4,008	14,235	2,343	20,586	395,290	231,023	626,313
6/30/2034		4,009	14,092	2,343	20,444	391,281	228,680	619,961
12/31/2034		4,059	13,949	2,373	20,381	387,222	226,307	613,529
6/30/2035		4,061	13,804	2,373	20,238	383,161	223,934	607,095
12/31/2035		3,862	13,660	2,257	19,779	379,299	221,677	600,976
6/30/2036		3,863	13,522	2,257	19,642	375,436	219,420	594,856
12/31/2036		4,564	13,384	2,667	20,615	370,872	216,752	587,624
6/30/2037		4,564	13,222	2,668	20,454	366,308	214,085	580,393
12/31/2037		5,323	13,059	3,111	21,493	360,985	210,974	571,959
6/30/2038		5,324	12,869	3,111	21,304	355,661	207,862	563,523
12/31/2038		6,302	12,679	3,683	22,664	349,359	204,179	553,538
6/30/2039		6,303	12,455	3,683	22,441	343,056	200,496	543,552
12/31/2039		7,341	12,230	4,291	23,862	335,715	196,205	531,920
6/30/2040		7,341	11,968	4,291	23,600	328,374	191,915	520,289
12/31/2040		8,291	11,706	4,846	24,843	320,083	187,069	507,152
6/30/2041		8,293	11,411	4,846	24,550	311,790	182,222	494,012
12/31/2041		9,314	11,115	5,443	25,872	302,476	176,779	479,255
6/30/2042		9,314	10,783	5,444	25,541	293,162	171,335	464,497
12/31/2042		10,413	10,451	6,086	26,950	282,749	165,249	447,998
6/30/2043		10,412	10,080	6,086	26,578	272,337	159,134	431,471
12/31/2043		11,593	9,709	6,775	28,077	260,744	152,389	413,133
6/30/2044		11,593	9,295	6,775	27,663	249,151	145,613	394,764
12/31/2044		12,860	8,882	7,516	29,258	236,291	138,097	374,388
6/30/2045		12,859	8,424	7,516	28,799	223,432	130,582	354,014
12/31/2045		14,218	7,965	8,310	30,493	209,214	122,272	331,486
6/30/2046		14,218	7,458	8,310	29,986	194,996	113,962	308,958
12/31/2046		15,675	6,952	9,161	31,788	179,321	104,801	284,122
6/30/2047		15,675	6,393	9,161	31,229	163,646	95,640	259,286
12/31/2047		17,266	5,834	10,091	33,191	146,380	85,549	231,929
6/30/2048		17,265	5,218	10,091	32,574	129,115	75,459	204,574
12/31/2048		19,283	4,603	11,270	35,156	109,832	64,189	174,021
6/30/2049		19,282	3,915	11,270	34,467	90,550	52,919	143,469
12/31/2049		21,462	3,228	12,544	37,234	69,088	40,376	109,464
6/30/2050		21,462	2,463	12,543	36,468	47,626	27,833	75,459
12/31/2050		23,812	1,698	13,916	39,426	23,814	13,916	37,730
6/30/2051		23,811	849	13,916	38,576			
		\$ 444,931	\$ 562,457	\$ 260,040	\$ 1,267,428		\$ 11,612,496	\$ 36,568,821



	TIFIA Draws	Principal	Interest	Compounded Interest	Debt Service	Nominal Principal Balance	Accreted Interest	Outstanding Obligation
6/30/2039		6,303	12,455	3,683	22,441	343,056	200,496	543,552
12/31/2039		7,341	12,230	4,291	23,862	335,715	196,205	531,920
6/30/2040		7,341	11,968	4,291	23,600	328,374	191,915	520,289
12/31/2040		8,291	11,706	4,846	24,843	320,083	187,069	507,152
6/30/2041		8,293	11,411	4,846	24,550	311,790	182,222	494,012
12/31/2041		9,314	11,115	5,443	25,872	302,476	176,779	479,255
6/30/2042		9,314	10,783	5,444	25,541	293,162	171,335	464,497
12/31/2042		10,413	10,451	6,086	26,950	282,749	165,249	447,998
6/30/2043		10,412	10,080	6,086	26,578	272,337	159,134	431,471
12/31/2043		11,593	9,709	6,775	28,077	260,744	152,389	413,133
6/30/2044		11,593	9,295	6,775	27,663	249,151	145,613	394,764
12/31/2044		12,860	8,882	7,516	29,258	236,291	138,097	374,388
6/30/2045		12,859	8,424	7,516	28,799	223,432	130,582	354,014
12/31/2045		14,218	7,965	8,310	30,493	209,214	122,272	331,486
6/30/2046		14,218	7,458	8,310	29,986	194,996	113,962	308,958
12/31/2046		15,675	6,952	9,161	31,788	179,321	104,801	284,122
6/30/2047		15,675	6,393	9,161	31,229	163,646	95,640	259,286
12/31/2047		17,266	5,834	10,091	33,191	146,380	85,549	231,929
6/30/2048		17,265	5,218	10,091	32,574	129,115	75,459	204,574
12/31/2048		19,283	4,603	11,270	35,156	109,832	64,189	174,021
6/30/2049		19,282	3,915	11,270	34,467	90,550	52,919	143,469
12/31/2049		21,462	3,228	12,544	37,234	69,088	40,376	109,464
6/30/2050		21,462	2,463	12,543	36,468	47,626	27,833	75,459
12/31/2050		23,812	1,698	13,916	39,426	23,814	13,916	37,730
6/30/2051		23,811	849	13,916	38,576			
	\$ 444,931	\$ 562,457	\$ 260,040	\$ 1,267,428				

¹ differences due to rounding

Total Debt Service Payable

The chart below demonstrates a comparison between the available cashflow (revenues after payment of O&M) and the projected debt service. It also includes the coverage calculation of the TIFIA Loan, both including and excluding the proposed reserve fund.

