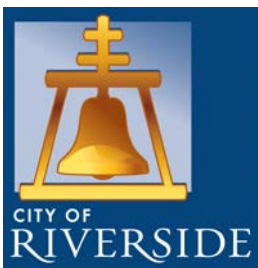


**DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION, HOUSING AND URBAN DEVELOPMENT, AND  
RELATED AGENCIES APPROPRIATION ACT FOR 2010**

**APPLICATION FOR NATIONAL TRANSPORTATION INVESTMENTS  
TIGER II DISCRETIONARY GRANT**



**ACE: IOWA AVENUE GRADE SEPARATION (BNSF & UP)**

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**August 23, 2010**

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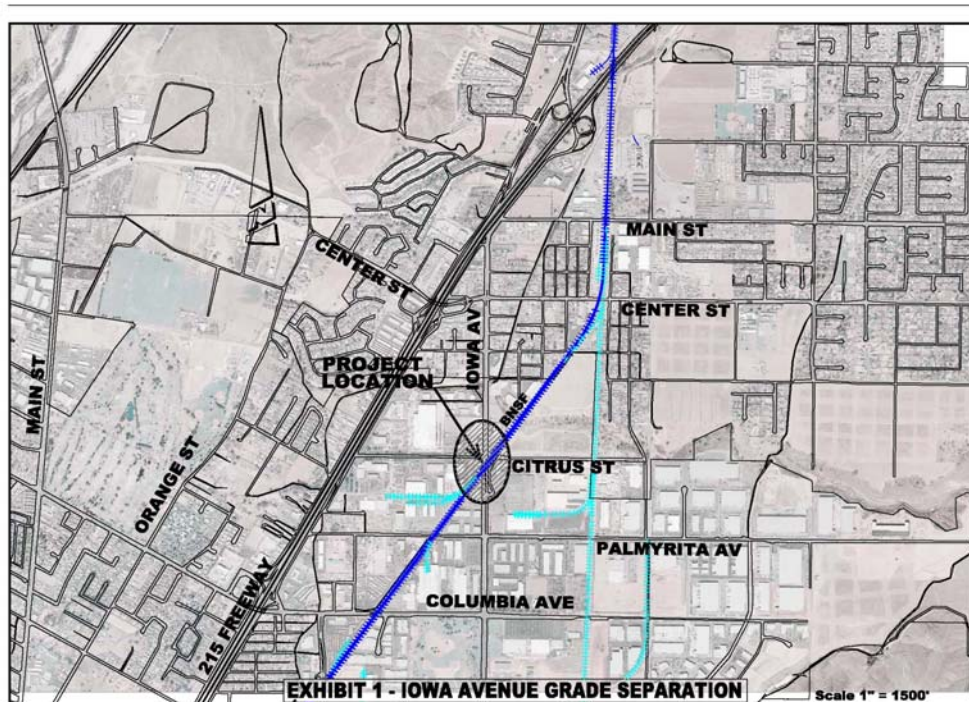
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#### 4. Project Background

The City of Riverside is the 12<sup>th</sup> largest city in California and the county seat of economically distressed Riverside County, California. Riverside County is the 11<sup>th</sup> most populous county in the United States and ranks 11<sup>th</sup> in economic stress amongst all other counties in the country. The City of Riverside is requesting \$15.9 million in TIGER II funds to construct an overhead grade separation at the Burlington Northern Santa Fe (BNSF) San Bernardino Subdivision (SB SUB) mainline at Iowa Avenue in the City of Riverside. The project is located along the most heavily traveled and congested freight corridor in southern California. Approximately 100 trains per day utilize this section of the BNSF's SB SUB including Union Pacific Railroad (UP) mainline freight traffic coupled with Metrolink and Amtrak passenger rail. The proposed grade separation is needed to enhance safety and improve local traffic circulation by eliminating an at-grade crossing between rail, vehicular and pedestrian traffic. The proposed project would also support local and regional economic growth by accommodating forecast traffic growth, facilitating goods movement, and creating short-term and long-term jobs. The project is expected to generate up to 630 annual full time equivalent jobs (FTEs) jobs at the regional level and 370 FTEs at the county level. Recently released data from the State of California Employment Development Department (EDD) indicates a rise in unemployment in the Riverside and San Bernardino County Metropolitan Area to 15.1% in July 2010 from 14.3% a year ago. The EDD also reports a statewide decline of 54,310 jobs in the construction industry over the last year ([http://www.edd.ca.gov/About\\_EDD/pdf/urate201008.pdf](http://www.edd.ca.gov/About_EDD/pdf/urate201008.pdf)). The ACE Iowa Grade Separation Project will create or preserve critically needed jobs in the construction industry. The total project cost is \$32.1 million. The City's request for \$15.9 million in TIGER funds represents approximately 50 percent of the project cost.

The Iowa Avenue grade separation is part of the Alameda Corridor East (ACE) which is defined as a program of railroad grade separation projects located on the BNSF and UP mainline tracks in the southern California basin. The \$4.5 billion ACE plan set in motion 11 years ago is being implemented to build grade-separated rail corridors that will follow UP lines from east L.A. to the Colton Crossing and the BNSF lines from L.A. to San Bernardino and Barstow via Riverside. The improvements consist of both rail mainline improvements and the grade separation of many existing highway/rail crossings (25 in the City of Riverside alone), creating a faster, safer, more efficient method of distributing the goods across the country. Along with mainline rail capacity improvements, this program will promote an increase in movement of goods by rail. This will result in reduced reliance on trucks for long-haul transportation and thereby reduce impacts on Southern California freeways and local streets, improve energy efficiency, and reduce regional emissions. ACE is designated as a project of national and regional significance for goods movement in SAFETEA-LU. The entire set of ACE corridor improvements is incorporated into the Multi-County Goods Movement Action Plan (MCGMAP), the "Master Plan" for goods movement in Southern California (see [http://www.metro.net/projects/mcgmap/goods\\_action\\_plan/](http://www.metro.net/projects/mcgmap/goods_action_plan/)).





#### 4.1 Project Description including Purpose, Need and Benefits

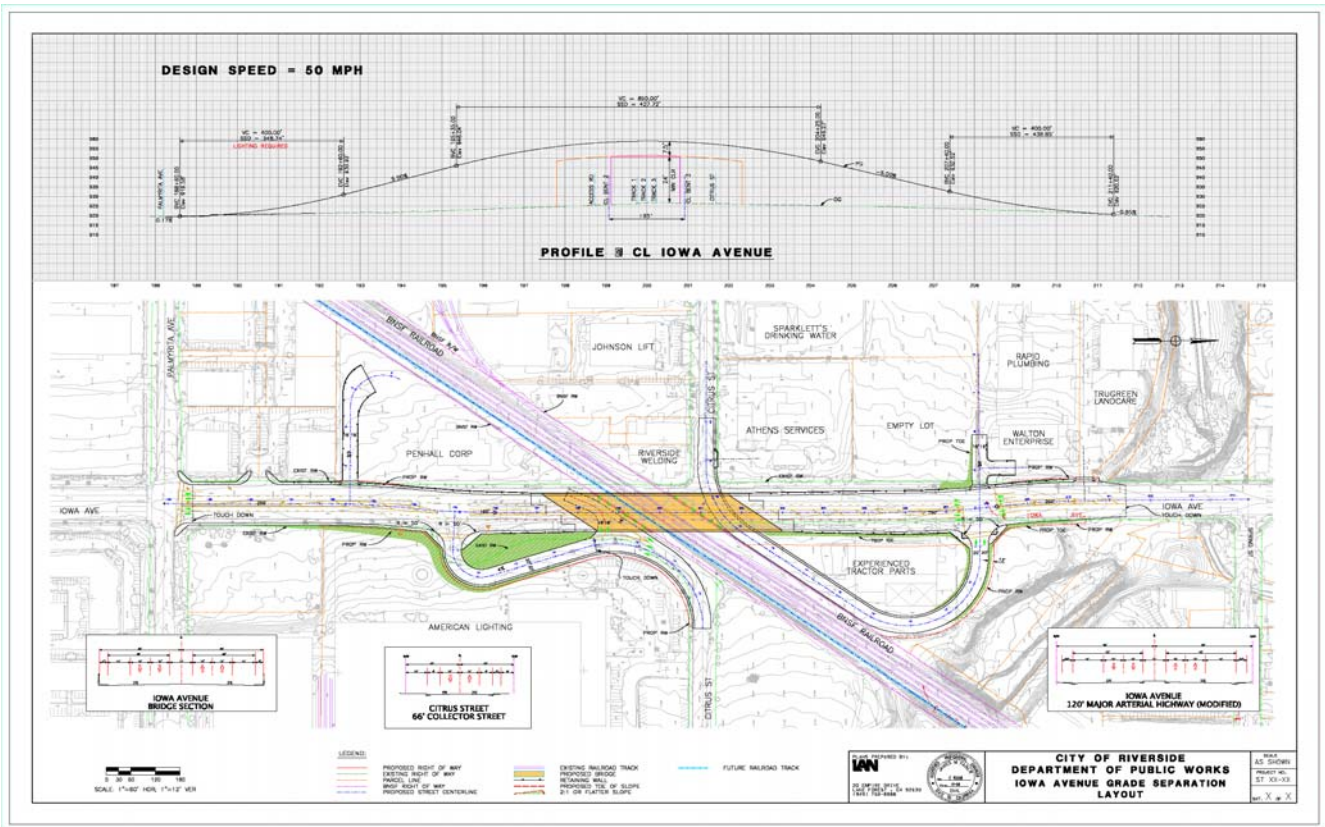
Iowa Avenue is a 4 to 6-lane north-south arterial that links the 1,100 acre Hunter Business Park logistic/manufacturing/industrial area on the City of Riverside’s north side to Interstate 215. Twelve businesses with rail spurs and 43 distribution/warehouse centers are located within a one mile radius of the BNSF crossing. Iowa Avenue carries over 16,000 vehicles per day including 1,750 school children crossing the tracks each day on school buses and 25 Riverside Transit Agency buses. The Riverside Transit Agency is the regional transit provider for Western Riverside County. Traffic volumes on Iowa Avenue are expected to increase to over 32,000 vehicles per day by the year 2025.

This project will grade separate the BNSF SB SUB mainline at Iowa Avenue in the City of Riverside (See Exhibit 1-Location Map) thereby eliminating:

- The daily gate down time of 6.29 hours (2030).
- The greenhouse gases and PM 2.5 emissions generated by the idling trucks and automobiles delayed by the passing trains.
- The average delay of almost 3 minutes to each emergency response vehicle that encounters a train.
- Adverse community impacts including traffic congestion and train horn noise.

The SB SUB connects the Ports of Los Angeles and Long Beach to the BNSF’s system serving the west coast northerly to Vancouver and the southwestern, southern and central United States easterly to Illinois and Alabama. This section of the SB SUB also carries the UP mainline freight traffic. Approximately 100 trains per day (2007) utilize this section of the SB SUB including UP mainline freight traffic which coupled with Metrolink and Amtrak passenger rail makes this the most heavily traveled and congested freight corridor in southern California. The number of trains is expected to grow to 169 per day and length of the trains will increase to over 7,000 feet by 2030.

The ACE Iowa Avenue Grade Separation project includes the design, right-of-way acquisition, construction and construction management of a railroad overpass at the existing Iowa Avenue at-grade crossing of the BNSF mainline tracks in the City of Riverside.



The project benefits include:

- **Job Creation and Preservation:** Project will create and preserve jobs, stimulating rapid increases in economic activity in an economically distressed area. Project is expected to generate 630 jobs (FTEs) at the regional level, and 370 FTEs at the County level. Of this amount, 310 FTEs at the regional level and 180 FTEs at the County level are expected to result from TIGER II funding. The job generation estimate is based on analysis performed for the prior application for \$15.9 million in TIGER I fund funds (LAEDC Report, July 2009).
- **Increased Public Safety:** One vehicle versus train accident occurred at the crossing during the last ten years. The potential for vehicle or pedestrian versus train accidents will increase as vehicular traffic doubles and train volumes increase by 69 percent. The project will eliminate the need for pedestrians to walk across the BNSF mainline tracks.

The project will also enhance public safety by reducing the response time for emergency vehicles. Currently, emergency vehicles responding to calls that encounter a train experience a delay of almost 3 minutes on the average (See Table 1) with some delays exceeding 4 minutes or more.

**Table 1 – Emergency Response Delays**

Year	Agency Delayed	Delays (#)	Peak Delay (min)	Average Delay (min)
January 2003 - December 2008	–Riverside Fire Department & American Medical Response	13	4	3.35
January 2007 - December 2008	–Riverside Police Department	5	2	0.94

- Reduced greenhouse gas and PM 2.5 emissions and improved air quality: Construction of the Iowa Avenue Grade Separation Project will eliminate 128,121.56 grams/day (51.54 tons/yr) of CO<sub>2</sub>, 10.3412 grams/day of CH<sub>4</sub>, and 6.1555 grams/day of PM<sub>2.5</sub> emissions by the year 2030.
- Reduced Congestion: On September 11, 2007 gate down time was measured at 6.0 hours per day. This gate down time exceeds the 2.99 hours estimated 2005 gate down time in the Riverside County Transportation Commission's 2006 Rail Crossing Priority Analysis Report. It will also soon exceed the 6.29 hours of down time estimated for 2030 in same report. Additionally, the 2006 Riverside County Transportation Commission Report predicted a total daily vehicle queue length of 7.48 miles at this crossing by the year 2030.
- Improved BNSF System Reliability: The elimination of the existing at-grade crossing will enhance the reliability of rail traffic movement by eliminating the potential for train versus vehicle/pedestrian accidents at the crossing. Each accident at the crossing delays rail traffic by requiring closure of the rail line to clear the accident and complete all required investigations. These rail corridor closures can exceed several hours and they have a ripple effect on the movement of trains to and from the Southern California ports.
- Improved Velocity/Throughput on the UP and BNSF system through Riverside. The eliminations of at-grade rail crossings will improve the velocity and throughput on the both the BNSF and UP mainlines by eliminating the potential for train versus vehicle/pedestrian accidents at the crossing and the associated delays.
- Reduces Impacts on Community: The project will improve the overall health and quality of life for the 32,000 motorists per day (2025) crossing the BNSF on Iowa Avenue and 3,500 residents living within a one mile radius of the crossing by reducing air pollution, eliminating traffic congestion, and reducing train horn noise resulting from the at-grade crossing as well as improving emergency vehicle response times.

The project has previously received federal funding from STP 4818 of \$322,595, PNRS of \$4,050,000, and STP of \$400,000. Other federal funds anticipated for the project include additional STP in the amount of \$3,550,000. The project is included in the Regional Transportation Improvement Program. Total project cost is estimated at \$32.03 million, non-federal portion of total project costs is \$7.8 million. Project construction is scheduled to start in the 3rd quarter of 2011. Federal funds for this request would be used for construction.

The Iowa Avenue at -grade rail crossing is the 10<sup>th</sup> ranked priority in all of Riverside County by the Riverside County Transportation Commission (Commission action of May 10, 2006) and is ranked 37<sup>th</sup> on the California Public Utilities Commission (CPUC) 2009-2010 California Grade Separation Priority list and 32<sup>nd</sup> on the CPUC's 2010-2011 California Grade Separation Priority list.

Elimination of this at-grade rail crossing will:

- Improve the reliability of the BNSF, UPRR and Metrolink systems and increase throughput on the BNSF and UP by eliminating the potential for train versus automobile/pedestrian accidents at this location
- Allow for expansion of the mainline freight traffic to increase to over 169 trains per day without increased vehicle emission, public safety and neighborhood impacts
- Eliminate 128,340 grams/day (51.63 tons/yr) of greenhouse gas emissions (CO<sub>2</sub> equivalent for 2030) and 6.1555 grams per day of PM 2.5 generated by the idling trucks and automobiles delayed by the passing freight trains
- Eliminate average delays of about 3 minutes per incident for emergency response vehicles. For every minute an adult suffering from cardiac arrest by ventricular fibrillation is not treated the chance for death increases 7 to 10 percent. Additionally because fires grow exponentially, a fire will double in size for every minute of free burning
- Eliminate the 6.0 hours per day of gate down time (2007)

## Project Parties

The City of Riverside is submitting the TIGER II request. The ACE Iowa Avenue Grade Separation is a regionally significant project. The project is supported by the Riverside County Transportation Commission (RCTC) and was included in RCTC's TIGER I application and the Southern California Consensus Group's TIGER I proposal.

## 5. Grant Funds

The total project cost is \$32.03 million of which \$24.5 million is for construction. Project funding includes \$15.9 million in TIGER II funds. The City of Riverside has secured \$16.13 million for the project engineering, right-of-way acquisition and construction. The requested TIGER II funds represent 64.9% of the construction costs and 49.6% of the overall project cost. Existing committed and anticipated funding should be sufficient to complete the project. Project funding is shown in the following table.

	TIGER II funds (requested)	State Funds CPUC Sec 190*	Federal Funds STP 4818	Federal Funds PNRS	Federal Funds STP Local	Local Funds RCTC TDA Article #4	Local Funds City & RR Funds
Project Approval/ Environmental Document			\$322,595				\$147,500
Plans, Specifications & Estimate						\$1,500,000	
Right of Way (capital and support)		\$50,000		\$4,050,000	\$400,000		\$1,065,000
Construction (capital and support)	\$15,900,000	\$4,950,000			\$3,550,000		\$100,000
<b>TOTALS:</b>	\$15,900,000	\$5,000,000	\$322,595	\$4,050,000	\$3,950,000	\$1,500,000	\$1,312,500

\* This project is ranked 37<sup>th</sup> on the California Public Utilities Commission (CPUC) 2009-2010 California Grade Separation Priority List and 32<sup>nd</sup> on the CPUC 2010-2011 California Grade Separation Priority List. The State of California's Section 190 Program operates on a reimbursement basis. An allocation request has been submitted for the Section 190 funds. If the project does not qualify for an allocation in the year requested, the City will borrow this portion of the project costs until an allocation is secured.

## 6. Primary Selection Criteria

**7.1 Long Term Outcomes – Applicant must demonstrate a likelihood of significant long-term benefits; information must be quantified to the extent possible and describe the project's impact on the Nation, metropolitan area or region. Information should include projections for both the build and no-build scenarios for 20 years beyond the project's completion date or the lifespan of the project, whichever is closest to the present.**

Without the project, the daily gate down time on Iowa Avenue at the BNSF crossing is projected to be 6.29 hours (2030) resulting in nearly 52 tons per year of greenhouse gas emissions generated by the idling trucks and cars delayed by the passing freight trains. The ACE Iowa Grade Separation Project supports railroad

capacity expansion to help reduce diesel truck traffic congestion and sustain a trade corridor of national significance. The project will sustain economic activity in Southern California of \$80.9 million, generating 630 annual full-time equivalent jobs with earnings of \$26.1 million. An immediate impact due to the grade separation is that employment will take place in Disadvantaged Communities (median income falls below 80% of statewide household income) in Riverside County, an Economically Distressed Area.

**7.1.1 State of Good Repair – How does the project improve the condition of existing transportation facilities and systems and/or minimize life-cycle costs? Include quantifiable metrics of current condition and performance and projected condition and performance.**

Riverside County is impacted by both the UP and BNSF transcontinental mainlines, which are part of a strategic trade corridor linking Southern California to the rest of the country. These lines are an integral part of the ACE Trade Corridor, which was designated as a Project of National and Regional Significance in SAETEA-LU. If the ACE Iowa Grade Separation Project is not completed, the daily gate down time is projected to be over 6.29 hours daily (2030) resulting in 52 tons of greenhouse gas emissions per year and increased PM 2.5 emissions. The grade separation project will eliminate a goods movement system chokepoint.

**7.1.1.1 - Is the project part of or consistent with efforts to maintain transportation facilities or systems in a state of good repair?**

Yes, the project would improve existing transportation facilities and would reduce maintenance related to upkeep of the existing railroad crossing. In addition, the project would result in a redistribution of traffic volumes, thereby decreasing wear-and-tear along heavily used routes.

**7.1.1.2 - Is a goal of the project to rehabilitate, reconstruct or upgrade surface transportation projects that threaten future economic growth and stability due to poor condition?**

Yes, the project would result in improvements to existing transportation facilities that would otherwise hamper economic growth and stability. The project would result in improvements to local traffic circulation in the project area that is currently hindered by delays due to train traffic. The proposed grade separation would result in indirect beneficial effects to the economic conditions in the area through the following means:

- A. The project would enhance connectivity between residential land uses to commercial services and as well as access to freeway corridors.
- B. The project will accommodate forecasted traffic demands resulting from economic growth in the area.
- C. The project will reduce congestion along adjacent routes, some of which serve vital commercial and goods movement traffic.
- D. The elimination of the existing at-grade crossing will enhance the reliability, throughput and velocity of rail traffic movement by eliminating the potential for train versus vehicle/pedestrian accidents at the crossing. Each accident at the crossing delays rail traffic by requiring closure of the rail line to clear the accident and complete all required investigations. These rail corridor closures can exceed several hours and they have a ripple effect on the movement of trains to and from the Southern California ports.



**7.1.1.3 - Is the project capitalized up front and using asset management approaches that optimizes its long-term cost structure?**

Yes, the proposed grade-separation facility is capitalized up front with various programmed state and federal funds (See “Grant Funds” above). The project has been designed to address a 20-year horizon (up to year 2030) design requirement. Project engineers have also taken into consideration the reasonably foreseeable ultimate configuration of Iowa Avenue in order to avoid throw-away costs in the future and have incorporated long-life materials when feasible. The project design standards used meet or exceed standards established by the state, and BNSF as well as other standards such as the American Association of State Highway Transportation Officials.

**7.1.1.4 - Is there a sustainable source of revenue available for long-term operations and maintenance?**

Yes, the City of Riverside and the BNSF have entered into a construction and maintenance agreement for the overpass structure. Maintenance of this facility will be the responsibility of the city and the railroad. Sustainable sources of public and private revenues are available for the long-term operation and maintenance of the facility.

**7.1.2 Economic Competitiveness – How does the project contribute to the economic competitiveness of the United States over the medium- to long-term? Provide evidence of long-term economic benefits provided by the completed project. The quality of jobs as well as the number of jobs will be considered and whether these jobs provide employment in Economically Distressed Areas.**

The UP and BNSF lines serve the largest port complex in the United States capturing 60% of imports from China. The Ports of Los Angeles and Long Beach combined handled 15.7 million TEUs of containerized cargo in 2007, or 35% of all marine containers entering or leaving the U.S. The Ports support over 3.3 million jobs nationally, including 681,000 jobs in the Great Lakes region, which includes Chicago and Detroit. The Project will contribute to the economic competitiveness of the United States over the medium and long term by sustaining growth in goods movement and trade-related economic activity.

The Iowa Avenue Grade Separation project has a budget of 32 million of which \$15.9 million is requested under the TIGER II. An analysis of the economic impact of the project was conducted by the Los Angeles Economic Development Corporation (LAEDC) for the TIGER I grant application for this project. The City is relying on the prior LAEDC report for the economic impact analysis for this application as the project budget and TIGER II request are consistent with the TIGER I application. Based on the LAEDC analysis:

- Total project spending will sustain economic activity in Southern California of \$80.9 million, generating 630 annual full-time equivalent jobs with earnings of \$26.1 million.
- \$15.9 million in TIGER II funding for the project will sustain economic activity in Southern California of \$40.2 million, generating 310 annual full-time equivalent jobs with earnings of \$12.9 million.

An immediate impact due to the grade separation is that employment will take place in Disadvantaged Communities (median income falls below 80% of statewide household income) in Riverside County, an Economically Distressed Area. The project level impact is shown in the following table:

## Regional and County-Level Economic Impact

Total Economic Impact of Proposed Iowa Avenue Grade Separation Project				
	Spending (\$ million)	Output (\$ million)	Jobs (FTEs)	Earnings (\$ million)
<b>Southern California Regional Impact</b>				
Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
TIGER II funding	15.9	40.2	310	12.9
<b>Riverside County Impact</b>				
Project total	\$ 32.0	\$ 59.8	370	\$ 14.9
TIGER II funding	15.9	29.7	180	7.4

May not sum due to rounding

Sources: SCCG; LAEDC; Revised 08/2010 by City of Riverside to replace "ARRA" with TIGER II"

The ACE Iowa Avenue Grade Separation will also contribute to the economic competitiveness of the nation by supporting business and industry at the local and regional levels. Iowa Avenue is a major arterial that provides a vital link between the 1,100 acre Hunter Business Park logistic/manufacturing/industrial area on the City's north side to Interstate 215. Twelve businesses with rail spurs and 43 distribution/warehouse centers are located within a one mile radius of the BNSF crossing. Access on Iowa Avenue is currently cut off 6 hours per day by train traffic. Maintaining adequate access along Iowa Avenue is critical to the economic competitiveness of the City as it impacts both business operations and the City's ability to retain businesses and associated jobs within this important logistic/manufacturing/industrial area.

### 7.1.2.1 - How does the project improve long-term efficiency, reliability or cost-competitiveness in the movement of workers or goods?

Refer to response to 7.1.2 above.

### 7.1.2.2 - How does the project make improvements that allow for expansion, hiring, or other growth of private sector production, particularly in EDAs?

The LAEDC report estimated the economic impact at the county level for the project budget and for the amount to be funded. The output and employment impacts are then disaggregated by industry sector allowing for an estimation and industry identification of "follow-on" jobs and business revenues. The potential employment impact on economically-distressed communities by industry sector is estimated based on underlying employment patterns. Thereafter, LAEDC disaggregated the total potential employment impact on individual economically-distressed communities. The distribution of the jobs (including direct and "follow-on") within the county by industry sector is shown in the following table. [Since Riverside County meets the federal definition of economically distressed areas, these jobs represent the employment creation in distressed areas.](#)

### Impact of Construction Project by Industry Sector – Iowa Avenue Grade Separation

Impact of Project Spending in Riverside County by Industry Sector				
Industry Sector	Project Total		TIGER II Funding	
	Output (\$ million)	Jobs (FTEs)	Output (\$ million)	Jobs (FTEs)
Agriculture	\$ 0.2	2	\$ 0.1	1
Mining	0.3	1	0.2	0
Utilities	0.8	1	0.4	0
Construction	32.2	194	16.0	96
Manufacturing	6.7	21	3.3	10
Wholesale trade	1.6	6	0.8	3
Retail trade	3.5	40	1.8	20
Transportation and warehousing	1.3	6	0.6	3

Information	0.8	2	0.4	1
Finance and insurance	1.3	4	0.6	2
Real estate	3.3	7	1.7	3
Professional, scientific and technical	2.2	14	1.1	7
Management of companies	0.2	1	0.1	0
Administrative and waste management	1.1	14	0.5	7
Education services	0.2	3	0.1	2
Health care and social assistance	1.7	16	0.9	8
Arts, entertainment and recreation	0.2	4	0.1	2
Accommodations and food services	1.0	20	0.5	10
Other services	1.1	11	0.6	5
Households	n/a	2	n/a	1
<b>Total *</b>	<b>\$ 59.8</b>	<b>370</b>	<b>\$ 29.7</b>	<b>180</b>

\* May not sum due to rounding

Source: LAEDC; Revised 08/2010 by City of Riverside to replace “ARRA” with TIGER II”

**7.1.3 Livability – How does the project improve the quality of living and working environments and the experience for people in communities across the U.S? Provide a description of the affected community and the scale of the project’s impact.**

Iowa Avenue is a 4 to 6-lane north-south arterial that links the 1,100 acre Hunter Business Park logistic/manufacturing/industrial area on the City’s north side to Interstate 215. Twelve businesses with rail spurs and 43 distribution/warehouse centers are located within a one mile radius of the BNSF crossing. Iowa Avenue carries over 16,000 vehicles per day including 1,750 school children crossing the tracks each day on school buses and 25 Riverside Transit Agency buses. The Riverside Transit Agency is the regional transit provider for Western Riverside County. Traffic volumes on Iowa Avenue are expected to increase to over 32,000 vehicles per day by the year 2025.

Construction of the grade separation project will improve the overall health and quality of life for the 32,000 motorists per day (2025) crossing the BNSF on Iowa Avenue and 3,500 residents living within a one mile radius of the crossing by reducing air pollution, eliminating traffic congestion, and reducing train horn noise resulting from the at-grade crossing as well as improving emergency vehicle response times. The project will also enhance the reliability, throughput and velocity of rail traffic movement by eliminating the potential for train versus vehicle/pedestrian accidents at the crossing and associated delays.

**7.1.3.1 - How does the project enhance user mobility through the creation of more convenient transportation options?**

The project would improve mobility for both rail and vehicular traffic. The elimination of the at-grade crossing would improve local traffic operations. Traffic on Iowa Avenue is currently delayed approximately 6 hours per day by train traffic. Elimination of the at-grade crossing will reduce traffic congestion allowing Iowa Avenue to serve as an effective and convenient transportation link from the 1,100 acre Hunter Business Park logistic/manufacturing/industrial area on the City’s north side to Interstate 215.

**7.1.3.2 - Does the project enhance points of modal connectivity or reduce congestion on existing modal assets?**

Yes, the project would reduce congestion on existing modal assets through the following means:

- A. The project will allow facilitated access over the tracks for non-motorized users and pedestrians by providing sidewalks and accommodations for bicycles.

- B. The project would enhance bus operations since busses would not have to stop at the railroad crossing.
- C. The grade-separated railroad crossing could enhance the BNSF, UP freight train and Metrolink and Amtrak commuter and passenger rail services by eliminating the potential conflict between train/vehicular/pedestrian traffic at the existing at-grade rail crossing.

**7.1.3.3 - Does the project improve accessibility and transportation services for economically disadvantaged populations, non-drivers, senior citizens, and the disabled or make goods, commodities and services more available to these groups?**

Yes, the project would improve accessibility for those with disabilities, senior citizens, pedestrians, and non-motorized users. The existing at-grade railroad crossing currently does not include provisions for facilitated pedestrian and non-motorized access. The proposed new bridge includes sidewalks and accommodations for bicyclists and is designed according to standards established by the Americans with Disabilities Act (ADA).

**7.1.3.4 - Was a planning process used that coordinated transportation and land-use planning decisions and encouraged community participation in the process?**

The proposed grade separated rail crossing at Iowa Avenue is consistent with the City of Riverside’s General Plan. The General Plan takes into consideration mobility needs as it relates to planned land uses. In addition, the project is consistent with and is included in both 2008 Regional Transportation Improvement Program (RTIP) and the 2008 Regional Transportation Plan (RTP). The RTIP and RTP are both long term plans that outline a respectively five year or 20 year transportation plan for a given region.

**7.1.4 – Environmental Sustainability – How does the project promote a more environmentally sustainable transportation system? Provide quantitative information that validates substantial transportation-related costs related to energy consumption and adverse environmental effects and evidence of the extent to which the project will reduce or mitigate those costs.**

Rail-roadway crossings that are not grade-separated contribute to traffic congestion, lost productivity, adversely impact air quality and jeopardize safety and impact emergency response times. The Iowa Avenue Grade Separation will mitigate impacts of increased rail traffic eliminating idling cars and trucks reducing a projected 52 tons of emissions per year and eliminating over 6.29 hours of daily gate down time by 2030. Project will improve energy efficiency and reduce dependence of oil by supporting Southern California’s regional strategy of moving goods off of less-efficient diesel trucks traveling on congested highways and on to trains.

Construction of the Iowa Avenue Grade Separation will:

- Improve the reliability of the BNSF, UP and Metrolink systems and increase throughput on the BNSF and UP by eliminating the potential for train versus automobile/pedestrian accidents at this location
- Allow for expansion of the mainline freight traffic to increase to over 169 trains per day (2030) without increased vehicle emission, public safety and neighborhood impacts
- Eliminate 128,340 grams/day (51.63 tons/yr) of greenhouse gas emissions (CO<sub>2</sub> equivalent for 2030) and 6.1555 grams per day of PM 2.5 generated by the idling trucks and automobiles delayed by the passing freight trains
- Eliminate average delays of about 3 minutes per incident for emergency response vehicles. For every minute an adult suffering from cardiac arrest by ventricular fibrillation is not treated, the chance for death increases 7 to 10 percent. Additionally because fires grow exponentially, a fire will double in size for every minute of free burning

- Eliminate the 6.0 hours per day of gate down time (2007)
- Improve the overall health and quality of life for the 32,000 motorists per day (2025) crossing the BNSF on Iowa Avenue and 3,500 residents living within a one mile radius of the crossing by reducing air pollution, eliminating traffic congestion, and reducing train horn noise resulting from the at-grade crossing as well as improving emergency vehicle response times.

**7.1.4.1 - Does the project improve energy efficiency, reduce dependence on oil and/or reduce greenhouse gas emissions?**

Yes. The project will eliminate daily gate down time and associated delays from the need for vehicles to stop for rail traffic thus reducing greenhouse gas emissions and increasing fuel efficiency and reducing dependence on oil. The following quantitative information validates the reduction in greenhouse gas emissions and energy consumption:

- Eliminate 128,340 grams/day (51.63 tons/yr) of greenhouse gas emissions (CO<sub>2</sub> equivalent for 2030) and 6.1555 grams per day of PM 2.5 generated by the idling trucks and automobiles delayed by the passing freight trains
- Eliminate the 6.0 hours per day of gate down time (2007)

**7.1.4.2 -Does the project maintain, protect or enhance the environment, avoid adverse environmental impacts, and/or create environmental benefits?**

Yes, the project is expected to avoid adverse environmental impacts and would result in environmental benefits. Various environmental studies that assessed potential impacts related to the environment were conducted for the project and it was determined that the project qualifies for a Categorical Exclusion (CE) under the National Environmental Policy Act (NEPA). The CE was approved on July 31, 2008. In addition, the project would reduce congestion, thereby resulting in traffic, energy, and air quality benefits.

**7.1.5 - Safety – How does the project improve the safety of U.S. transportation facilities and systems? Provide information that will allow US DOT to assess how the project reduces the number, rate and consequences of surface transportation related crashes, injuries and fatalities, or its contribution to the elimination of highway/rail grade crossings, the protection of pipelines, or the prevention of release of hazardous materials.**

The ACE Iowa Avenue Grade Separation project will eliminate an existing highway-rail at-grade crossing, thus eliminating the potential for train-vehicle collisions, delays for emergency responders and the potential for accidental release of hazardous materials. By grade separating the crossing, it is projected that one accident over a ten year period will be eliminated.

The project will eliminate the existing conflict between train and vehicular traffic at the existing at-grade railroad crossing at Iowa Avenue and thereby enhance safety. According to statistics provided by the Federal Highway Administration (FHWA), in 2009, incidents between vehicles and trains at public highway-rail crossings in the United States resulted in 247 deaths and 705 injuries ([http://safety.fhwa.dot.gov/xings/xing\\_facts.cfm](http://safety.fhwa.dot.gov/xings/xing_facts.cfm)).

The existing at-grade railroad crossing does not allow facilitated access for pedestrians and non-motorized users in the area. The proposed project will allow safe pedestrian and non-motorized access over the BNSF line and will disallow pedestrian access into railroad right-of-way. According to FHWA, in 2009, 431 people were killed and 343 were injured while trespassing on railroad rights-of-way and property ([http://safety.fhwa.dot.gov/xings/xing\\_facts.cfm](http://safety.fhwa.dot.gov/xings/xing_facts.cfm)). This project is consistent with the Secretary of Transportation Highway-Rail Safety Action Plan.



**7.2 - Evaluation of Expected Project Costs and Benefits – The analysis should include the monetization and discounting of costs and benefits to a common unit of measurement in present day dollars. The analysis should be applied to the five long-term outcomes described in Section 7.1 above.**

A benefit-cost analysis was conducted for the ACE Iowa Avenue Grade Separation TIGER I application to highlight the benefits to users of the transportation infrastructure. Since project cost and TIGER II request are consistent with the TIGER I application, the former study is referenced with updates as necessary to comply with the requirements as stipulated in the *Notice of Funding Availability for the Department of Transportation’s National Infrastructure Investments Under the Transportation, Housing and Urban Development, and Related Agencies Appropriations Act for 2010.*

This section summarizes the expected benefits and costs for the Iowa Avenue Grade Separation Project. Exhibit 5 shows the results of the benefit-cost analysis for the Iowa Avenue at BNSF Grade Separation Project using a 7-percent discount rate. It also shows the alternate analysis using the 3-percent discount rate. In both cases, the project costs are slightly lower than the total project costs presented earlier in the TIGER II application due to discounting. The net benefit equals the total discounted benefits minus the total discounted costs, while the benefit-cost (B/C) ratio represents the benefits divided by the costs. The exhibit also shows the total reduction in tons of CO<sub>2</sub> over the 20 year period as well as the value in 2010 dollars using the methodology described in the Benefit-Cost Analysis prepared for the project.

The project will deliver undiscounted user benefits equal to the project costs within nine years. Since the requested TIGER II Discretionary Grant is a small portion of the overall project costs, the payback period on the grant money will be much shorter.

**Exhibit 5: Benefit-Cost Results for the Iowa Avenue at BNSF Grade Separation Project**

Analysis Scenario	Total Discounted Benefits (mil. \$)	Total Discounted Costs (mil. \$)	Net Benefit (mil. \$)	B/C Ratio	Total CO <sub>2</sub> Reduction over 20 Yrs (tons)	Total CO <sub>2</sub> Reduction over 20 Yrs (mil. \$)
7% Discount Rate	\$49.7	\$31.5	\$18.2	1.6	38,655	\$0.7
3% Discount Rate	\$79.6	\$32.3	\$47.3	2.5	38,655	\$1.2

Source: SCCG

**7.3-Evaluation of Project Performance – If possible, provide a plan for evaluating the success of the project and how to measure short and long term performance with respect to the economic recovery measures and long-term outcomes.**

Success for the project could be evaluated using metrics used to assess traffic operation performance; these metrics include LOS and delay among others. The project would result in the elimination of delays due to the need for vehicles to stop for train traffic and as well as improvements to LOS along Iowa Avenue. In addition, the elimination of the at-grade railroad crossing enhances the practicability of Iowa Avenue as an important route linking the 1,100 acre Hunter Business Park logistic/manufacturing/industrial area on the City’s north side to Interstate 215 and is supported by forecasted 2030 traffic volumes. This improvement to traffic operations and access to the freeway corridor would improve goods movement in the area. The elimination of the conflict between trains and vehicles could also allow the BNSF to increase rail operations without adverse effects to local traffic.

Success for the project could be assessed through safety data related to the number of rail crossing incidents that are avoided by providing the grade-separated railroad crossing. As previously mentioned, in 2009, at-

grade rail crossing incidents involving pedestrians and vehicles have resulted in approximately 678 fatalities in the United States.

Success for the project could also be assessed through the number of jobs created by construction of the project and the associated increase in economic activity. The proposed project would be consistent with the intent of the program by directly providing new construction jobs and would indirectly result in economic benefits by enhancing goods movement and addressing congestion which could be detrimental to future economic growth in the area. Future economic growth in the area will result in new long term jobs.

**7.4 - Job Creation & Economic Stimulus** – How is the project expected to quickly create and preserve jobs and stimulate rapid increases in economic activity, especially in economically distressed areas? Indicate whether the procurement plan is likely to create follow-on jobs and economic stimulus for manufacturers and suppliers that support the construction industry. Also indicate how quickly jobs will be created.

The Iowa Avenue Grade Separation project will create and preserve jobs, stimulating rapid increases in economic activity in an economically distressed area. The LAEDC report contains a county and regional level analysis of the project’s economic impact. Based on the report, the Iowa Grade Separation Project is expected to generate 630 jobs (FTEs) at the regional level, and 370 FTEs at the County level. Of this amount, 310 FTEs at the regional level and 180 FTEs at the County level are expected to result from TIGER II funding.

Project Level analysis is summarized below:

- ♦ Table 1 below describes the total economic activity preserved and/or created in Southern California, including output, employment and earnings. This includes direct activity, which is directly attributable to the construction spending, and indirect and induced activity (or “follow-on” activity) which stems from the direct activity.

Table 1 below also presents the share of the impact that takes place within the county where the project is located. The county-level impact is the basis for the analysis that follows.

- ♦ Table 2 below shows the distribution of the jobs (including direct and “follow-on”) within the county by industry sector. **Since Riverside County meets the federal definition of economically distressed areas, these jobs represent the employment creation in distressed areas.**
- ♦ Table 3 below shows the estimated distribution of employment creation and preservation in disadvantaged communities (DACs) within Riverside County by industry sector.
- ♦ Table 4 below shows the distribution of these same jobs among individual disadvantaged communities.
- ♦ Table 5 below provides additional information on the economic context in the areas surrounding the project. Within a 5-mile radius of the project (or corridor center point), the table shows the number of households, the percentage of households that meet the state threshold for a disadvantaged community (i.e., 80 percent of the state median household income for 2009). Table 5 also shows the number of businesses and employees located within the same area, broken down by industry. We expect that these businesses would compete for the job creation associated with the construction project, especially follow-on jobs such as those in retail trade, wholesale trade, and accommodation and food services.

## City of Riverside: Iowa Avenue Project

### Regional and County-Level Economic Impact

Table 1 Total Economic Impact of Proposed Project				
	Spending (\$ million)	Output (\$ million)	Jobs (FTEs)	Earnings (\$ million)
<b>Southern California Regional Impact</b>				
Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
TIGER II funding	15.9	40.2	310	12.9
<b>Riverside County Impact</b>				
Project total	\$ 32.0	\$ 59.8	370	\$ 14.9
TIGER II funding	15.9	29.7	180	7.4

Sources: SCCG; LAEDC  
Revised 08/2010 by City of Riverside

### Impact of Construction Project by Industry Sector

Table 2 Impact of Project Spending in Riverside County by Industry Sector				
Industry Sector	Project Total		TIGER II Funding	
	Output (\$ million)	Jobs (FTEs)	Output (\$ million)	Jobs (FTEs)
Agriculture	\$ 0.2	2	\$ 0.1	1
Mining	0.3	1	0.2	0
Utilities	0.8	1	0.4	0
Construction	32.2	194	16.0	96
Manufacturing	6.7	21	3.3	10
Wholesale trade	1.6	6	0.8	3
Retail trade	3.5	40	1.8	20
Transportation and warehousing	1.3	6	0.6	3
Information	0.8	2	0.4	1
Finance and insurance	1.3	4	0.6	2
Real estate	3.3	7	1.7	3
Professional, scientific and technical	2.2	14	1.1	7
Management of companies	0.2	1	0.1	0
Administrative and waste management	1.1	14	0.5	7
Education services	0.2	3	0.1	2
Health care and social assistance	1.7	16	0.9	8
Arts, entertainment and recreation	0.2	4	0.1	2
Accommodations and food services	1.0	20	0.5	10
Other services	1.1	11	0.6	5
Households	n/a	2	n/a	1
<b>Total *</b>	<b>\$ 59.8</b>	<b>370</b>	<b>\$ 29.7</b>	<b>180</b>

\* May not sum due to rounding  
Source: LAEDC; Revised 08/2010 by City of Riverside

## Potential Job Impacts in Economically Distressed Areas

The Federal Highway Administration of the U.S Department of Transportation defines Economically Distressed Areas (EDAs) in accordance with 42 U.S.C. § 3161 as areas where unemployment is 1 percent or more above the national average, or where the per capita income is 80 percent or less than the national average. Using the most recent data available from the Bureau of Economic Analysis for 2007 per capita income, and from the Bureau of Labor Statistics for a 24-month average unemployment rate to March 2010, Riverside County is an EDA.

**Therefore, by definition, all of the employment impacts shown in Table 2 will occur in an Economically Distressed Area.**

However, the county-level data masks considerable community-level variation. The State of California identifies a Disadvantaged Community (DAC) as any community where the median household income is below 80 percent of the statewide household income, relying upon 2000 Census data. According to this definition, there are 27 disadvantaged communities in Riverside County.

The potential employment impact of the project construction in Riverside County DACs is shown in the following two tables. Table 3 projects the number of jobs preserved or created by industry sector in DACs based on underlying employment patterns. For example, in 2000 there were 12,215 people employed in the construction industry in DACs. This represented 21.9 percent of the county-wide construction industry employment. Of the 194 jobs estimated to be created or preserved by the project (from Table 2), 43 will be in DACs.

Table 3 Impact of Project Spending in Riverside County DACs by Industry Sector				
Industry Sector	Employed	% of County	Potential Job Gain	
			Project total	TIGER II funding
Agriculture, forestry, fishing and mining	5,026	38.5%	0.8	0.5
<b>Construction</b>	<b>12,215</b>	<b>21.9%</b>	<b>42.5</b>	<b>21.1</b>
Manufacturing	12,041	16.5%	3.5	1.7
Wholesale trade	3,685	17.2%	1.0	0.5
Retail trade	18,018	23.6%	9.4	4.7
Transportation, warehousing and utilities	6,628	20.9%	1.5	0.7
Information	2,797	20.0%	0.4	0.2
Finance, insurance, real estate and leasing	5,897	17.2%	1.9	0.9
Professional, scientific, management,	11,369	22.0%	6.6	3.2
Education, health and social services	23,466	20.7%	4.1	2.0
Arts, entertainment, accommodation & food	17,973	30.4%	7.0	3.5
Other services	5,868	22.7%	3.2	1.6
<b>Total *</b>	<b>132,581</b>	<b>22.0%</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding

Sources: 2000 Census; LAEDC; Revised 08/2010 by City of Riverside

## Potential Job Gains in Individual DACs Due to the Construction Project

Table 4 uses the same methodology applied in Table 3 to estimate the distribution of preserved or created jobs among individual DACs in Riverside County.

Table 4

**Employment in DACs in Riverside County in 2000  
and Potential Job Gains Due to Project**

Disadvantaged Community	Employed	Potential Job Gain	
		Project total	TIGER II funding
Banning	7,507	4.6	2.3
Beaumont	4,394	2.6	1.3
Blythe	4,540	1.7	0.8
Cabazon	642	0.3	0.1
Calimesa	2,825	1.7	0.8
Coachella	7,412	4.5	2.3
Desert Hot Springs	5,897	4.4	2.2
Glen Avon	5,521	3.1	1.5
Hemet	16,958	9.4	4.7
Highgrove	1,293	0.7	0.3
Homeland	879	0.6	0.3
Idyllwild-Pine Cove	1,625	1.0	0.5
Indio	17,801	12.8	6.4
Lakeland Village	2,047	1.7	0.9
March AFB	128	0.1	0.0
Mecca	2,000	1.1	0.6
Murrieta Hot Springs	847	0.5	0.2
Palm Springs	17,841	10.2	5.1
Perris	11,934	8.1	4.0
Quail Valley	597	0.5	0.3
Romoland	916	0.8	0.4
San Jacinto	7,606	4.5	2.3
Sedco Hills	962	0.8	0.0
Sun City	4,118	2.1	1.1
Thousand Palms	1,748	1.4	0.7
Valle Vista	3,626	2.1	1.0
Winchester	917	0.6	0.3
<b>ALL DACs in county *</b>	<b>132,581</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding

Sources: 2000 Census; LAEDC; Revised 08/2010 by City of Riverside



## Job Opportunities in Proximity to Project by Industry Sector

**Table 5**  
**Within 5-mile Radius of Project**

Total Residential Population:	198,707			
Total Households:	63,763			
Households Under \$50,000 Annual Income:	53.1%			
Total Employees:	132,088			
Total Businesses:	7,775			
Industry	Businesses		Employees	
	Number	Percent	Number	Percent
Public Administration	217	2.8%	44,840	33.9%
Educational Services	169	2.2%	11,364	8.6%
Health Care and Social Assistance	561	7.2%	9,826	7.4%
Retail Trade	1,027	13.2%	9,388	7.1%
Wholesale Trade	517	6.6%	7,578	5.7%
Construction	719	9.2%	7,097	5.4%
Accommodation and Food Services	461	5.9%	6,152	4.7%
Professional, Scientific, and Technical Services	867	11.2%	5,994	4.5%
Manufacturing	299	3.8%	5,836	4.4%
Other Services (except Public Administration)	984	12.7%	4,999	3.8%
Transportation and Warehousing	205	2.6%	4,397	3.3%
Admin. & Support & Waste Mgt & Remediation Serv.	387	5.0%	4,091	3.1%
Finance and Insurance	475	6.1%	3,506	2.7%
Unclassified Establishments	152	2.0%	2,103	1.6%
Real Estate and Rental and Leasing	450	5.8%	2,022	1.5%
Information	129	1.7%	1,455	1.1%
Arts, Entertainment, and Recreation	123	1.6%	1,036	0.8%
Agriculture, Forestry, Fishing and Hunting	15	0.2%	209	0.2%
Utilities	13	0.2%	112	0.1%
Management of Companies and Enterprises	2	0.0%	64	0.0%
Mining	3	0.0%	19	0.0%
<b>Totals</b>	<b>7,775</b>	<b>100.0%</b>	<b>132,088</b>	<b>100.0%</b>

Sources: U.S. Census Bureau; ESRI Forecast 2009

### 7.4.1 - Does the project promote the creation of job opportunities for low-income workers?

Yes. Over 70 percent of the direct and indirect jobs created as a result of the project will be in the construction, manufacturing, wholesale trade, and retail trade fields, providing additional employment opportunities for low-income workers. The job opportunities provided will allow a portion of the residents to eliminate or reduce reliance on public assistance.

### 7.4.2 Will the project provide maximum practicable opportunities for small business and disadvantaged business enterprises, including veteran-owned small businesses?

Yes. The construction contract will comply with the State of California's Race-Conscious Disadvantaged Business Enterprise (RC DBE) Program. Additional disabled veteran business enterprise and small business goals apply to Caltrans contracts.

**7.4.3 Will the project use community based organizations in connecting disadvantaged workers with economic opportunities?**

Yes. Substantial information is provided to contractors and other employers to connect them with disadvantaged workers. The California Construction Contracting Program (CCCP) offers free training courses, 1-on-1 counseling and resources through the use of, but not limited to, former contractors and business owners who are familiar with Caltrans and local agencies' bidding and award processes. The partners in this organization are: Caltrans, the California Community College's Economic Workforce Development Program, and the California Small Business Development Center. In addition, Caltrans District 8 has developed a mentoring program. For general business assistance, the Inland Empire Small Business Development Center offers a wide variety of courses, mentoring programs, and resources.

**7.4.4 Will the project support entities that have a sound track record on labor practices and compliance ensuring that workers are safe and treated fairly?**

Yes. City of Riverside construction contracts financed in whole or in part with Federal funds comply with all of the statutes, rules and regulations promulgated by the Federal Government and applicable to such work. The provisions will cover both worker safety and fair labor practices.

**7.4.5 Does the project implement best practices consistent with civil rights and equal opportunity laws to ensure that all individuals benefit from the TIGER II Grant?**

Yes. See above discussion on Race-Conscious DBE program and related DBE programs. The construction contract will be compliant with Federal and State equal opportunity laws, including 49 CFR 21, to ensure that all individuals benefit. The City of Riverside has executed the California Department of Transportation Disadvantaged Business Enterprise Implementation Agreement.

**7.5 Quick Start Activities – Is the project ready to proceed rapidly upon receipt of a TIGER II Discretionary Grant?**

Yes, the project is ready to proceed rapidly upon receipt of a TIGER II Discretionary Grant. Plans, specifications and estimate (PS&E) will be completed by July 2011. Right of way acquisition is underway and will be complete by July 2011. Project construction is scheduled to begin by September 2011 and be complete prior to January 2013.

**7.5.1 Project Schedule – Demonstrate that the project can begin construction quickly and show how many direct, on-project jobs are expected during each calendar quarter.**

Construction is expected to take 15 months. Construction will begin no later than September 2011 and be complete by January 2013.

**7.5.2 Environmental Approvals – List the receipt or anticipated receipt of all environmental approvals including satisfaction of all Federal, State and local requirements and completion of NEPA.**

All environmental approvals are complete.

A Statutory Exemption (SE) pursuant to the requirements of the California Environmental Quality Act (CEQA) was determined to be appropriate for the project in July 2008 and remains valid. A Notice of Exemption was filed with the Riverside County Clerk on July 22, 2008.

A Categorical Exclusion (CE) pursuant to the requirements NEPA was filed and approved for the project on July 31, 2008 (resigned on March 11, 2009 to reflect new federal project number).

**7.5.3 Legislative Approvals – List the receipt of all necessary legislative approvals (e.g. authority to charge user fees or set toll rates) and evidence that demonstrates broad support.**

There are no legislative approvals required for the project.

**7.5.4 State and Local Planning – Demonstrate that the project is included in relevant planning documents or certification that the project will be included prior to award of a Grant.**

The project is consistent with the City of Riverside General Plan Circulation Element. The Circulation Element for each general plan was developed in conjunction with each city's land use, growth, and economic planning. In addition, the project is included in the adopted 2008 RTIP and RTP. The ACE Grade Separations in Riverside County are also included in the State GMAP, Cal-MITSAC, and the Multi-County Goods Movement Action Plan.

**7.5.5 Technically Feasible – Describe the technical feasibility of the project including completion of substantial preliminary engineering.**

Preliminary engineering is complete and final design is 90% complete. A project study report equivalent was prepared for the project. The project is technically feasible. Constructability reviews will be performed prior to the final approval of the plans.

**7.5.6 Financially Feasible – Describe the viability and completeness of the financing package including evidence of reliable financial commitments and contingency reserves and evidence the recipient can manage grants.**

The federal, state, local and private (railroad) funds have been programmed to fund the construction of the project and the associated support costs (See "Grant Funds" above).

**7.5.7-Demonstrate that the project will be able to obligate funds prior to September 30, 2012.**

The project is currently in the PS&E and ROW acquisition phases with completion scheduled for July 2011. Project award is scheduled for September 2011. The project will be able to obligate funds prior to September 30, 2012.

**8 Secondary Selection Criteria**

**8.1- Innovation – How does the project use innovative strategies (intelligent transportation systems, dynamic pricing, rail wayside or on-board energy recovery, smart cards, etc) to pursue long-term outcomes?**

The project does not incorporate innovative strategies or technology. The proposed project facility would provide a safe crossing for vehicles, pedestrians, and non-motorized users over the BNSF line.

**8.2-Partnership – How does the project demonstrate strong collaboration among a broad range of participants and/or integration of public transportation with other public service efforts?**

The ACE-Iowa Avenue Grade Separation Projects is part of a four county goods movement trade corridor improvement plan encompassing 282 miles of mainline track in Southern California. The ACE Trade Corridor has been designated in the first two Federal Transportation Reauthorization bills as both a National High Priority Corridor and a Project of National and Regional Significance.

**8.2.1-Jurisdictional & Stakeholder Collaboration – Describe the involvement of non-Federal entities and the use of non-Federal funds; financial commitments from State and local governments, other public entities or private or nonprofit entities; use of community based organization to connect disadvantaged people with economic opportunities.**

The Iowa Avenue Grade Separation project is part of the comprehensive Alameda Corridor East (ACE) grade separation program. With increasing cargo volume in the ports and completion of the Alameda

Corridor, rail traffic through Riverside County is projected to more than double over the next 25 years. Plans are underway for construction of the Alameda Corridor East, a 55-mile grade-separated facility that will follow Union Pacific lines from east L.A. to the Colton Crossing and the BNSF lines from L.A. to San Bernardino and Barstow via Riverside. This consists of both rail mainline improvements and the grade separation of many existing highway/rail crossings, creating a faster, safer, more efficient method of distributing the goods across the country. Along with mainline rail capacity improvements, this program will promote an increase in movement of goods by rail. This will result in reduced reliance on trucks for long-haul transportation and thereby reduce impacts on Southern California freeways and local streets, improve energy efficiency, and reduce regional emissions. The Iowa Avenue Grade Separation project will also reduce noise in the local community by eliminating the sounding of train horns. This will make the local residential communities more livable. RCTC partnered with Los Angeles and San Bernardino County agencies to develop the document entitled "Healthy Communities and Healthy Economies – A Toolkit for Goods Movement" which can be found at [http://www.rctc.org/downloads/EJ\\_Toolkit.pdf](http://www.rctc.org/downloads/EJ_Toolkit.pdf) The toolkit serves as a source of ideas for how Southern California's goods movement system, and the communities that are affected by that system, can co-exist. The toolkit offers many potential strategies to assist in the dialogue between public and private partners in supporting continued growth of goods movement industries and in resolving goods movement related impacts.

**8.2.2-Disciplinary Integration** – Describe how the project is supported financially or otherwise by non-transportation public agencies that are pursuing similar objectives. US DOT will give priority to projects that create more livable communities and are supported by relevant public housing agencies or to transportation projects that encourage energy efficiency or improve the environment and are supported by those relevant public agencies.

Not applicable to this project.

**9.-Program Specific Criteria** – Please see Guidelines for additional program-specific criteria for bridge replacement projects, transit projects, port infrastructure investments, or TIFIA Payments.

Not applicable to this project.

**10.-Federal Wage Rate Certification** – This must be signed by the applicant stating it will comply with Subchapter IV of Chapter 31 of Title 40 of the United States Code.

The City of Riverside hereby certifies that all work associated with this project will comply with Subchapter IV of Chapter 31 of Title 40 of the United States Code.

By *Nehorah Anderson, SENIOR ENGINEER* date *08/23/10*

**11.-NEPA Requirement** – Indicate whether NEPA is complete including date of and web site link to the document (CE, FONSI, ROD). If not complete, detail where the project is in the process, anticipated date of completion and web site link or reference to any NEPA documents prepared.

A Categorical Exclusion (CE) pursuant to the requirements NEPA was filed and approved for the project on July 31, 2008 (resigned on March 11, 2009).

Caltrans is not required to publish NEPA related documentation online; however, electronic and paper project records and general administrative records pertaining to the NEPA determination will be available for inspection at any time once the project is approved. Standards utilized during the environmental studies and NEPA compliance work are pursuant to requirements developed and published by Caltrans in the

agency's Standard Environmental Reference site (SER) and can be accessed through the following link:  
"http://www.dot.ca.gov/ser/"

**12.-Environmentally Related Federal, State and Local Actions** – Indicate whether the project is likely to require actions by other agencies (permits), the status of those actions and a web site link or other reference material and/or demonstrate compliance with other Federal, State and local regulations (Section 4(f), Section 106, Clean Air Act, Endangered Species Act, Fishery Conservation & Management Act, Bald & Golden Eagle Protection Act, etc).

The project is not subject to any other permits by local, state or federal agencies.

**13.-Confidential Information** – Any confidential information should be noted as per the Guidelines published in the Federal Register.

There is no confidential information associated with this project.

**14.-Index of Websites for Supporting Information** – A list of websites containing information and reports documenting data, assumptions, and conclusions that are not contained within the application itself.

Information about the project including supporting economic impact and cost-benefits reports and analyses can be found on the City of Riverside website:

[www.riversideca.gov](http://www.riversideca.gov)

Information about the Metrolink Riverside Line can be found in the following link:

<http://www.metrolinktrains.com/schedules/html.php?id=261>

Information on the Environmental Justice report can be found at:

[www.rctc.org/downloads/EJ\\_Toolkit.pdf](http://www.rctc.org/downloads/EJ_Toolkit.pdf)

The entire set of ACE corridor improvements is incorporated into the Multi-County Goods Movement Action Plan (MCGMAP), the "Master Plan" for goods movement in Southern California at:

[http://www.metro.net/projects/mcgmap/goods\\_action\\_plan/](http://www.metro.net/projects/mcgmap/goods_action_plan/)

Standard Environmental Reference site (SER) and can be accessed through the following link:

[www.dot.ca.gov/ser/](http://www.dot.ca.gov/ser/)



## Appendix A

### ACE Iowa Avenue Grade Separation – TIGER II and TIGER Project Application Variations

The City of Riverside's application for TIGER II funds for the ACE Iowa Avenue Grade Separation differs from the TIGER Application in the following areas:

1. Project Sponsor – The TIGER Application for the ACE Iowa Avenue Grade Separation was submitted by the Riverside County Transportation Commission and was sponsored by the Southern California Consensus Group. The TIGER II application is submitted by the City of Riverside.
2. Funding – The funding plan has changed from the TIGER Application. The funding ratios relative the TIGER II request have not changed from the TIGER I application. The overall project costs and requested TIGER II funds are consistent with the TIGER application. However, the funding sources have changed to eliminate \$160,650 in DEMOSTL funds and replace with Local Funds.
3. Schedule – The project schedule was updated. The construction start date was changed from November 2010 to September 2011 and the completion date changed to January 2013.
4. Miscellaneous Text Updates – The application was updated as needed to reflect current information and changes specific the TIGER II requirements.

## **Supporting Documents**

## **BENEFIT-COST ANALYSIS FOR PROPOSED TIGER PROJECTS**

The member agencies of the Southern California Consensus Group (SCCG) are presenting a package of projects for funding under the American Recovery and Reinvestment Act of 2009 (ARRA) TIGER Discretionary Grant Program. By applying together, the agencies are emphasizing the importance of their projects to the regional transportation infrastructure and the economy. These projects are multi-modal and aim to improve both passenger and freight transportation. Examples include port improvements, rail grade separations, bridge construction, rail access improvements, freeway improvements, and advanced train control.

The SCCG member agencies are also adopting consistent methodologies to demonstrate the performance of their projects. The mixture of SCCG projects are intended to benefit the regional and national economy as well as improve Southern California's transportation infrastructure. The economic impact analysis demonstrates the importance of these projects to the economy - many are freight projects and critical to moving goods from Southern California's ports to the rest of the nation.

The benefit-cost analysis highlights the benefits to users of the transportation infrastructure. As stipulated in 74 FR 28755 (2009-06-17), the *Notice of Funding Availability for Supplemental Discretionary Grants for Capital Investments in Surface Transportation Infrastructure under the American Recovery and Reinvestment Act*, all applications for TIGER Discretionary Grants between \$20 million and \$100 million must include well-developed analyses of the expected benefits and costs.

This document provides a description of the input data and the methodological standards used for the analysis of the projects submitted for TIGER Discretionary Grant Funding. It also summarizes the expected benefits and costs for the Iowa Avenue at Burlington Northern Santa Fe (BNSF) Railway Grade Separation Project. A separate summary document describes the projects as a group.

### **ANALYSIS FRAMEWORK**

The TIGER projects are expected to produce both quantifiable and less tangible, qualitative benefits. The benefit-cost analysis conducted for each project includes quantifiable benefits and considers impacts and externalities of sufficient quality. The Southern California Consensus Group expects these projects to produce benefits beyond those captured by simple benefit-cost ratios and calculations of net benefits since not all benefits are quantifiable. As examples, rail grade

separation projects reduce noise and promote livable communities. Some of the proposed bridge projects replace aging infrastructure and represent a down payment on the nation's future. For the Iowa Avenue at BNSF Grade Separation Project, the analysis does not include the potential benefits to train operations.

For every project in the SCCG package, a benefit-cost analysis was conducted using the California Lifecycle Benefit/Cost Analysis Model (Cal-B/C). The California Department of Transportation (Caltrans) developed the model in the mid-1990s and it has been used to evaluate capital projects proposed for the State Transportation Improvement Program (STIP) since 1996. Cal-B/C is consistent with the procedures outlined in the Federal Highway Administration's (FHWA) *Economic Analysis Primer* (2003). For the TIGER Discretionary Grant Applications, its assumptions and economic values have been modified to adhere to the requirements stipulated in 74 FR 28755 (2009-06-17).

The Cal-B/C model uses a standard 20-year lifecycle to facilitate comparisons across projects. A typical benefit-cost analysis measures four primary categories of user benefits:

- Travel time savings
- Vehicle operating cost reductions
- Safety improvements
- Emission reductions, including greenhouse gases.

For the TIGER Discretionary Grant applications, the benefit-cost analysis has been expanded to include benefits due to noise impacts.

Cal-B/C estimates annual user benefits over a 20-year lifecycle in constant dollars for each benefit category. Future benefits are discounted to present values using a real discount rate. Benefits are estimated separately for multiple groups defined by types of users, modes, facilities and times of day. Project costs are estimated annually from the start of construction to 20 years after projects open. Project costs include right-of-way, construction, and project support costs as well as incremental operating and maintenance costs.

The definition of project cost is more inclusive than construction costs or the funding requested from TIGER Discretionary Grants. This methodology is conservative, but it reflects the true agency costs over the lifecycle of the proposed projects. Extensive documentation for the Cal-B/C model is available on the California Department of Transportation (Caltrans) website.

The Cal-B/C model has been updated several times since it was first developed with the most recent update completed in 2009. The current version includes the

ability to estimate reductions in CO<sub>2</sub> emissions (in US tons) and monetize the global benefits of reducing US CO<sub>2</sub> emissions. The methodology for monetizing greenhouse gas emissions is consistent with Chapter VIII of the *Final Regulatory Impact Analysis* of the National Highway Traffic Safety Administration (NHTSA) rulemaking on *Corporate Average Fuel Economy (CAFE) for MY 2011 Passenger Cars and Light Trucks* (March 2009), which is referenced in TIGER application guidelines.

To ensure that consistent input data is used in the analysis of expected benefits and costs, the SCCG developed a project data sheet that provided information for every project evaluated. Member agencies submitted data, which was extensively reviewed during the evaluations. Given the range of projects and modes, several sources of the input data were consulted. Examples include: project study reports, environmental impact reports, traffic counts, model outputs (such as from SYNCHRO, CORSIM, and regional planning models), the Federal Railroad Administration (FRA) Web Accident Prediction System, the Caltrans Accident Surveillance and Analysis System (TASAS), and other transportation databases.

## **ECONOMIC ASSUMPTIONS**

This section summarizes the economic assumptions added to the Cal-B/C model to comply with the guidelines outlined in 74 FR 28759 (2009-06-17). In cases where the TIGER Discretionary Grant Guidelines did not specify value, the standard Cal-B/C assumptions were retained. With the exception of travel time benefits, all benefits and costs are valued in 2009 dollars. The mobility benefits are estimated using US Department of Transportation (US DOT) guidance on the value of time, which is in 2000 dollars. This lowers the value of the travel time benefits by more than 20 percent compared to using a value in 2009 dollars. Since travel time improvements are a primary benefit, the lower value of time reduces the benefit-cost ratios significantly.

### **Discount Rate**

The Cal-B/C model typically uses a rate of 4 percent to discount future benefits and costs to present value. To be consistent with the guidance in the Federal Register, this discount rate has been increased to 7 percent (per OMB in Circulars *A-4 Regulatory Analysis (09/17/2003)* and *A-94 Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*). In addition to this primary analysis, an alternative analysis was conducted using a 3-percent discount rate. Results are presented for both analyses. For all projects, the 3-percent discount rate demonstrates higher benefits by including a higher value for long-term benefits.

The member agencies of the SCCG believe the alternative analysis is more representative of the net benefits of its projects.

**Value of Time**

The analysis uses values of time consistent with the US DOT’s *Revised Department Guidance: Valuation of Travel Time in Economic Analysis (02/11/2003)*. Exhibits 1 and 2 show the values per person-hour provided in the guidance. These values are in 2000 dollars. The US DOT guidance on the Value of Time (VOT) states that “The Office of the Assistant Secretary for Transportation Policy will publish periodic updates of the values of travel time to be used in DOT economic analyses” and that “analysts should not update the values recommended in the guidance using economy-wide measures of general price inflation such as the Consumer Price Index or GDP Deflator.” This could be interpreted that the value of time may be updated to 2009 values using the Bureau of Labor Statistics (BLS) wage rate data cited in the guidance. (NHTSA followed this approach in its rulemaking for MY 2011 CAFE standards.) However, the SCCG adopted a more conservative approach and used the 2000 figures provided in the US DOT guidance. The travel time benefits would be considerably higher (likely more than 20 percent higher) if they were updated to 2009 values to be consistent with the other benefits. For each project analysis, the standard Cal-B/C average vehicle occupancy (AVO) assumptions have been used to convert vehicle-hour travel time savings to person-hour travel time savings.

**Exhibit 1: Recommended Hourly Values of Travel Time Savings**

Recommended Hourly Values of Travel Time Savings (2000 U.S. \$ per person-hour)			
Category	Surface Modes*	Air Travel**	Truck Drivers
Local Travel			
Personal	\$10.60	--	--
Business	\$21.20	--	\$18.10
All Purposes ***	\$11.20	--	--
Intercity Travel			
Personal	\$14.80	\$23.30	--
Business	\$21.20	\$40.10	\$18.10
All Purposes ***	\$15.60	\$28.60	--



**Exhibit 2: Plausible Ranges for Hourly Values of Travel Time Savings**

Plausible Ranges for Hourly Values of Travel Time Savings (2000 U.S. \$ per person-hour)					
Category	Surface Modes*		Air Travel**		Truck Drivers
	Low	High	Low	High	
Local Travel					
Personal	\$7.40	\$12.70	--	--	--
Business	\$17.00	\$25.40	--	--	\$18.10
All Purposes ***	\$7.90	\$13.40			--
Intercity Travel					
Personal	\$12.70	\$19.00	\$20.00	\$30.00	--
Business	\$17.00	\$25.40	\$32.10	\$48.10	\$18.10
All Purposes ***	\$13.20	\$19.80	\$23.80	\$35.60	--

**Value of Statistical Life**

The latest US DOT guidance (*Treatment of the Economic Value of a Statistical Life in Departmental Analyses – 2009 Annual Revision, 03/18/2009*) provides a value of statistical life (VSL) of \$5.8 million in 2007 dollars. Since this guidance does not discourage updates to the value, the benefit analysis for the TIGER application uses a VSL of \$6.0 million in 2009 dollars. The US DOT value was updated using the GDP deflator, which is found in Historical Table 10.1 of the President's Budget for Fiscal Year 2010. Although the US DOT guidance allows a range of alternative VSLs to be provided in the analysis, the SCCG decided to present results using the midpoint VLS consistent with US DOT guidance.

**Injury Costs**

The US DOT guidance provides a method for estimating the value of injury reduction. The value is calculated by using a fraction of VSL that depends on the severity of injury. Exhibit 3 shows the fractions provided in the guidance.

### Exhibit 3: Relative Disutility Factors by Injury Severity Level (MAIS)

MAIS Level	Severity	Fraction of VSL
MAIS 1	Minor	0.0020
MAIS 2	Moderate	0.0155
MAIS 3	Serious	0.0575
MAIS 4	Severe	0.1875
MAIS 5	Critical	0.7625
MAIS 6	Fatal	1.0000

California collects accident data in its TASAS database using the American National Standards Institute (ANSI) standard rather than the Maximum Abbreviated Injury Scale (MAIS). To estimate appropriate injury values, the California statistics are assumed to be equivalent to the following:

- Severe Injury (A) = MAIS 4 (Severe)
- Other Visible Injury (B) = MAIS 2 (Moderate)
- Complaint of Pain (C) = MAIS 1 (Minor).

#### Property Damage Due to Accidents

The TIGER application guidelines do not provide guidance on evaluating the costs of property damage due to highway, rail, or transit accidents. The SCCG decided to use the standard Cal-B/C values. These values were updated to 2009 dollars using the GDP deflator for consistency with the other values in the benefit-cost analysis.

#### Vehicle Operating Costs

The Cal-B/C model includes a combination of fuel and non-fuel vehicle operating costs. For the TIGER benefit-cost analysis, the value of fuel found in NHTSA's *Final Regulatory Impact Analysis of the CAFE for MY 2011 Passenger Cars and Light Trucks* was updated from 2007 dollars (\$3.33 per gallon) to 2009 dollars (\$3.46 per gallon). The original value can be found in Table VIII-5 on page VIII-60 of the NHTSA report. This value excludes the transfer payments associated with fuel taxes.

Non-fuel operating costs include vehicle wear and tear as well as depreciation. For these costs, the benefit-cost analysis uses the standard Cal-B/C values updated by the GDP deflator to 2009 dollars:

- Automobiles = \$0.251
- Trucks = \$0.377.

## **Noise**

The Federal Register cites NHTSA's *Final Regulatory Impact Analysis of the CAFE for MY 2011 Passenger Cars and Light Trucks* as the source of information for valuing the social benefits of externalities. The report includes a cost estimate of \$0.07 per mile (in 2007 dollars) for noise, which can be found on page VIII-57. The original source of this cost is the 1997 Federal Highway Cost Allocation Study. Updated to 2009 dollars using the GDP deflator, this cost remains at \$0.07 per mile. The benefit-cost analysis uses this value to approximate the social benefit of noise impacts due to changes in vehicle-miles traveled (VMT). Since Cal-B/C does not include a separate benefit category for noise impacts, the value of noise impact is added to the value of non-fuel vehicle operating costs, which are also calculated on a VMT basis.

## **Emission Costs**

The benefit-cost analysis includes emissions rates estimated using factors from the California Air Resources Board (CARB) EMFAC model for on-road vehicles and other CARB sources for other modes. The emissions are monetized using values consistent with those found in NHTSA's *Final Regulatory Impact Analysis of the CAFE for MY 2011 Passenger Cars and Light Trucks*. The values are updated to 2009 dollars using the GDP deflator.

The Federal Register refers to an estimate of \$33 per metric ton of carbon cited on page VIII-45 of the NHTSA's *Final Regulatory Impact Analysis of the CAFE for MY 2011 Passenger Cars and Light Trucks*. As shown on page VIII-47 of the NHTSA report, this is the value per metric ton of carbon dioxide equivalent (CO<sub>2e</sub>), which is consistent with the methodology in Cal-B/C. The CO<sub>2e</sub> value has been converted from metric tons to US tons for consistency with EMFAC emissions rate data.

Exhibit 4 provides the emission values used in the analysis. In the case of CO<sub>2e</sub>, this is value for the first year only. The benefit-cost analysis includes a 2.4 percent annual increase in greenhouse damage costs consistent with the methodology in the NHTSA report and the TIGER application guidance.

**Exhibit 4: Cost per US Ton Estimates of Emissions (2009 dollars)**

CO	CO <sub>2</sub> e	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	VOC
\$0	\$34	\$4,150	\$174,500	\$16,600	\$1,750

**Project-Specific Assumptions**

The benefit-cost analysis uses current and forecasted highway average daily traffic (ADT) provided by the Riverside County Transportation Commission (RCTC) from 2007 traffic counts and the City of Riverside’s General Plan forecast for 2025. RCTC also provided daily train data. The rail crossing queuing analysis is built into Cal-B/C. It is a standard methodology that estimates queuing due to gate down time. The analysis assumes that most of the highway traffic occurs during the day and that rail traffic has a relatively similar time of day distribution. Safety data came from the FRA Web Accident Prediction System.

The benefit-cost analysis includes \$50,000 in annual maintenance costs. This lowers the benefit-cost ratio compared to including only construction costs, but it provides a more realistic assessment of the project’s lifecycle costs.

The majority of benefits in the analysis come from travel time savings, but the analysis excludes a number of non-quantifiable benefits. For example, the analysis does not include the potential improvements to freight operations along the rail corridor, especially when combined with other rail improvements. The benefit-cost analysis also does not include benefits due to increased travel time reliability on Iowa Avenue. This could lead to more vehicles using Iowa Avenue. These potential diversion impacts are not included in the analysis. A grade-separation project also has the potential to reduce noise for neighboring residents and businesses.

**Summary of Results**

Exhibit 5 shows the results of the benefit-cost analysis for the Iowa Avenue at BNSF Grade Separation Project using a 7-percent discount rate. It also shows the alternate analysis using the 3-percent discount rate. In both cases, the project costs are slightly lower than the total project costs presented earlier in the TIGER application due to discounting. The net benefit equals the total discounted benefits minus the total discounted costs, while the benefit-cost (B/C) ratio represents the benefits divided by the costs. The exhibit also shows the total reduction in tons of CO<sub>2</sub> over the 20 year period as well as the value in 2009 dollars using the methodology described earlier.

The project will deliver undiscounted user benefits equal to the project costs within nine years. Since the requested TIGER Discretionary Grant is a small portion of the overall project costs, the payback period on the grant money will be much shorter.

**Exhibit 5: Benefit-Cost Results for the  
Iowa Avenue at BNSF Grade Separation Project**

Analysis Scenario	Total Discounted Benefits (mil. \$)	Total Discounted Costs (mil. \$)	Net Benefit (mil. \$)	B/C Ratio	Total CO <sub>2</sub> Reduction over 20 Yrs (tons)	Total CO <sub>2</sub> Reduction over 20 Yrs (mil. \$)
7% Discount Rate	\$49.7	\$31.5	\$18.2	1.6	38,655	\$0.7
3% Discount Rate	\$79.6	\$32.3	\$47.3	2.5	38,655	\$1.2

# THE ECONOMIC IMPACT OF CONSTRUCTION PROJECTS TO BE FUNDED BY THE ARRA TIGER PROGRAM



Los Angeles County Economic Development Corporation

July 15, 2009



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Nine member agencies of the Southern California Consensus Group (SCCG) are applying for funding under the American Recovery and Reinvestment Act of 2009 (ARRA) TIGER program to be used towards a series of infrastructure and transportation projects in Southern California. Projects include such work as grade separation, rail access improvements, bridge construction and freeway improvements.

In this study, the Consulting Practice of the Los Angeles Economic Development Corporation (LAEDC) has estimated the total economic impact of the proposed projects based on the methodology described below.

For each agency which has submitted projects for the ARRA TIGER application, we first estimate the total construction impact for all projects submitted by the agency. The regional impacts are estimated for the total project budget and for the amount to be funded through the ARRA TIGER application.

For each individual project, we estimate the economic impact at the county level for the project budget and for the amount to be funded. The output and employment impacts are then disaggregated by industry sector. This allows an estimation and industry identification of “follow-on” jobs and business revenues.

The potential employment impact on economically-distressed communities by industry sector is estimated based on underlying employment patterns. Thereafter, we disaggregate the total potential employment impact on individual economically-distressed communities.

Finally, for each project we report the number of businesses and employees within a five-mile radius in each industry sector. We also list the number of households within this radius who are below the threshold used for identifying economically-distressed communities.

## METHODOLOGY

The total estimated economic impact includes direct, indirect and induced effects. **Direct activity** includes the employees hired by SCCG agencies and their contractors during the project construction period. Here we account for construction workers which have been added due to the project and the materials purchased for the project. **Indirect effects** are those which stem from the employment and business revenues motivated by the purchases made by SCCG agencies and their contractors. For example, indirect jobs are sustained by the suppliers of the office supplies and insurance purchased by the contractors hired for the construction. **Induced effects** are those generated by the spending of employees whose wages are sustained by both direct and indirect spending.

We used information supplied by SCCG agencies for initial spending, and estimated the direct, indirect and induced effects using multipliers from the Regional Input-Output Modeling System (RIMS II) developed by the Bureau of Economic Analysis at the U.S. Department of Commerce. In all cases, we have proceeded as if the spending will take place within a single year, as is customary when using RIMS II multipliers, although many of the proposed projects are anticipated to last several years.

The estimated economic impacts are based on spending within the identified region. For county-wide impacts, we isolate the spending that occurs within the county and report the expected economic impacts within the county. In some instances, spending related to a project may occur in neighboring counties and thus generate *additional* economic impact that spills over from those neighboring counties. This spillover is not captured by our county-level analysis. However, the regional analysis includes all economic impacts that are expected within the Southern California region of Los Angeles, Orange, Ventura, Riverside and San Bernardino due to the project spending.

### ***Full-time Equivalent (FTE) Employment***

RIMS II input-output models are based on full-time equivalent (FTE) employment, or one year's worth of full-time work. FTEs measure the amount of work involved, *not* the actual number of *workers*. For instance, one FTE could be two people each working half-time (20 hours a week) for a year, or twelve people each working full-time for a month. Because the work associated with construction activities may involve term contracts or part-time work, each FTE likely represents several people.

### ***Potential Job Impacts in Economically Distressed Communities***

According to the definition of Economically Distressed Areas (EDAs) established by 42 U.S.C. § 3161 as used by the Federal Highway Administration of the U.S. Department of Transportation, using the most recent data available, the counties of Los Angeles, Riverside and San Bernardino are Economically Distressed Areas. Therefore, all of the employment impacts at the county-level in these three counties will occur in EDAs.

However, county-level data masks considerable community-level variation. The State of California identifies Disadvantaged Communities (DACs) using a state-level threshold. For each of these identified communities, we obtained employment levels within each industry sector from the 2000 Census. We calculate the share of the county's industry employment that each community represents. The estimated employment impact of the project for each industry sector is then multiplied by the share of the county's employment that occurs in the community. This yields an approximation of the distribution of new or saved jobs related to the project among these communities. We implicitly assume, therefore, that the industry employment distribution among communities has remained relatively stable since 2000. This may *understate* the potential job gains in communities that have experienced fast growth and may *overstate* the potential job gains in communities that have been growing more slowly relative to the county average.

## SUMMARY OF ECONOMIC IMPACT BY AGENCY

The Southern California regional impact of the transportation construction projects by agency is shown below. Each entry in the table shows the impacts for the total budget and for that portion of the budget to be funded through the ARRA TIGER program.

Regional Economic Impact of Project Construction by Agency					
Agency	Initial Spending		Total Economic Impact		
	Type	Amount (\$ million)	Output (\$ million)	Jobs (FTEs)	Earnings (\$ million)
Alameda Corridor East	Project total	70.1	177.1	1,370	57.0
	ARRA funding	33.7	85.1	660	27.4
Alameda Corridor Trans. Authority	Project total	687.0	1,736.9	13,420	559.3
	ARRA funding	42.0	106.2	820	34.2
Metrolink / RCTC	Project total	201.6	509.7	3,940	164.1
	ARRA funding	38.3	96.8	750	31.2
Orange County Trans. Authority	Project total	75.0	189.6	1,470	61.1
	ARRA funding	29.0	73.3	570	23.6
Port of Long Beach	Project total	1,125.0	2,844.3	21,980	915.9
	ARRA funding	30.0	75.8	590	24.4
Port of Los Angeles	Project total	185.6	469.1	3,630	151.1
	ARRA funding	81.3	205.4	1,590	66.2
Riverside County Trans. Commission	Project total	64.0	161.8	1,250	52.1
	ARRA funding	31.8	80.4	620	25.9
San Bernardino Assoc. Governments	Project total	210.2	531.5	4,110	171.1
	ARRA funding	71.3	180.3	1,390	58.0
Ventura County Trans. Commission	Project total	10.1	25.5	200	8.2
	ARRA funding	10.1	25.5	200	8.2
<b>Totals*</b>	<b>Project total</b>	<b>\$ 2,628.5</b>	<b>\$ 6,645.7</b>	<b>51,360</b>	<b>\$ 2,139.9</b>
	<b>ARRA funding</b>	<b>367.4</b>	<b>928.9</b>	<b>7,180</b>	<b>299.1</b>

\* May not sum due to rounding  
Sources: SCCG; LAEDC

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# RIVERSIDE COUNTY TRANSPORTATION COMMISSION

## SUMMARY OF CONSTRUCTION IMPACT

The Riverside County Transportation Commission (RCTC) has proposed two projects for funding under the ARRA. The table below shows the total initial spending and economic impact for the total project budget and for the requested funding.

Southern California Regional Economic Impact of Construction Projects for RCTC					
Project Name	Initial Spending		Total Economic Impact		
	Type	Amount (\$ million)	Output (\$ million)	Jobs (FTEs)	Earnings (\$ million)
City of Corona: Auto Center Drive / BNSF	Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
	ARRA funding	15.9	40.2	310	12.9
City of Riverside: Iowa Avenue / BNSF	Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
	ARRA funding	15.9	40.2	310	12.9
<b>Totals*</b>	<b>Project total</b>	<b>\$ 64.0</b>	<b>\$ 161.8</b>	<b>1,250</b>	<b>\$ 52.1</b>
	<b>ARRA funding</b>	<b>31.8</b>	<b>80.4</b>	<b>620</b>	<b>25.9</b>

\* May not sum due to rounding  
Sources: SCCG; LAEDC

Together, the projects have a total budget of \$64.0 million, of which \$31.8 million is being requested under the ARRA TIGER program.

- Total project spending will sustain economic activity in Southern California of \$161.8 million, generating 1,250 annual full-time equivalent jobs with earnings of \$52.1 million.
- ARRA TIGER funding for the project will sustain economic activity in Southern California of \$80.4 million, generating 620 annual full-time equivalent jobs with earnings of \$25.9 million.

Analysis at the project level follows. For each individual project:

- ♦ Table 1 describes the total economic activity preserved and/or created in Southern California, including output, employment and earnings. This includes direct activity,



which is directly attributable to the construction spending, and indirect and induced activity (or “follow-on” activity) which stems from the direct activity.

Table 1 also presents the share of the impact that takes place within the county where the project is located. The county-level impact is the basis for the analysis that follows.

- ♦ Table 2 shows the distribution of the jobs (including direct and “follow-on”) within the county by industry sector. **Since Riverside County meets the federal definition of economically distressed areas, these jobs represent the employment creation in distressed areas.**
- ♦ Table 3 shows the estimated distribution of employment creation and preservation in disadvantaged communities (DACs) within Riverside County by industry sector.
- ♦ Table 4 shows the distribution of these same jobs among individual disadvantaged communities.
- ♦ Table 5 provides additional information on the economic context in the areas surrounding the project. Within a 5-mile radius of the project (or corridor center point), the table shows the number of households, the percentage of households that meet the state threshold for a disadvantaged community (i.e., 80 percent of the state median household income for 2009).

Table 5 also shows the number of businesses and employees located within the same area, broken down by industry. We expect that these businesses would compete for the job creation associated with the construction project, especially follow-on jobs such as those in retail trade, wholesale trade, and accommodation and food services.

## CITY OF CORONA: AUTO CENTER DRIVE PROJECT

### Regional and County-Level Economic Impact

<b>Table 1 Total Economic Impact of Proposed Project</b>				
	<b>Spending (\$ million)</b>	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>	<b>Earnings (\$ million)</b>
<b>Southern California Regional Impact</b>				
Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
ARRA funding	15.9	40.2	310	12.9
<b>Riverside County Impact</b>				
Project total	\$ 32.0	\$ 59.8	370	\$ 14.9
ARRA funding	15.9	29.7	180	7.4

Sources: SCCG; LAEDC

### Impact of Construction Project by Industry Sector

<b>Table 2 Impact of Project Spending in Riverside County by Industry Sector</b>				
<b>Industry Sector</b>	<b>Project Total</b>		<b>ARRA Funding</b>	
	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>
Agriculture	\$ 0.2	2	\$ 0.1	1
Mining	0.3	1	0.2	0
Utilities	0.8	1	0.4	0
Construction	32.2	194	16.0	96
Manufacturing	6.7	21	3.3	10
Wholesale trade	1.6	6	0.8	3
Retail trade	3.5	40	1.8	20
Transportation and warehousing	1.3	6	0.6	3
Information	0.8	2	0.4	1
Finance and insurance	1.3	4	0.6	2
Real estate	3.3	7	1.7	3
Professional, scientific and technical	2.2	14	1.1	7
Management of companies	0.2	1	0.1	0
Administrative and waste management	1.1	14	0.5	7
Education services	0.2	3	0.1	2
Health care and social assistance	1.7	16	0.9	8
Arts, entertainment and recreation	0.2	4	0.1	2
Accommodations and food services	1.0	20	0.5	10
Other services	1.1	11	0.6	5
Households	n/a	2	n/a	1
<b>Total *</b>	<b>\$ 59.8</b>	<b>370</b>	<b>\$ 29.7</b>	<b>180</b>

\* May not sum due to rounding

Source: LAEDC

### **Potential Job Impacts in Economically Distressed Areas**

The Federal Highway Administration of the U.S Department of Transportation defines Economically Distressed Areas (EDAs) in accordance with 42 U.S.C. § 3161 as areas where unemployment is 1 percent or more above the national average, or where the per capita income is 80 percent or less than the national average. Using the most recent data available from the Bureau of Economic Analysis for 2007 per capita income, and from the Bureau of Labor Statistics for a 24-month average unemployment rate to March 2009, Riverside County is an EDA.

**Therefore, by definition, all of the employment impacts shown in Table 2 will occur in an Economically Distressed Area.**

However, the county-level data masks considerable community-level variation. The State of California identifies a Disadvantaged Community (DAC) as any community where the median household income is below 80 percent of the statewide household income, relying upon 2000 Census data. According to this definition, there are 27 disadvantaged communities in Riverside County.

The potential employment impact of the project construction in Riverside County DACs is shown in the following two tables. Table 3 projects the number of jobs preserved or created by industry sector in DACs based on underlying employment patterns. For example, in 2000 there were 12,215 people employed in the construction industry in DACs. This represented 21.9 percent of the county-wide construction industry employment. Of the 194 jobs estimated to be created or preserved by the project (from Table 2), 43 will be in DACs.

<b>Table 3 Impact of Project Spending in Riverside County DACs by Industry Sector</b>				
<b>Industry Sector</b>	<b>Employed</b>	<b>% of County</b>	<b>Potential Job Gain</b>	
			<b>Project total</b>	<b>ARRA funding</b>
Agriculture, forestry, fishing and mining	5,026	38.5%	0.8	0.5
<b>Construction</b>	<b>12,215</b>	<b>21.9%</b>	<b>42.5</b>	<b>21.1</b>
Manufacturing	12,041	16.5%	3.5	1.7
Wholesale trade	3,685	17.2%	1.0	0.5
Retail trade	18,018	23.6%	9.4	4.7
Transportation, warehousing and utilities	6,628	20.9%	1.5	0.7
Information	2,797	20.0%	0.4	0.2
Finance, insurance, real estate and leasing	5,897	17.2%	1.9	0.9
Professional, scientific, management,	11,369	22.0%	6.6	3.2
Education, health and social services	23,466	20.7%	4.1	2.0
Arts, entertainment, accommodation & food	17,973	30.4%	7.0	3.5
Other services	5,868	22.7%	3.2	1.6
<b>Total *</b>	<b>132,581</b>	<b>22.0%</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding  
Sources: 2000 Census; LAEDC

**Potential Job Gains in Individual DACs Due to the Construction Project**

Table 4 uses the same methodology applied in Table 3 to estimate the distribution of preserved or created jobs among individual DACs in Riverside County.

<b>Table 4 Employment in DACs in Riverside County in 2000 and Potential Job Gains Due to Project</b>			
<b>Disadvantaged Community</b>	<b>Employed</b>	<b>Potential Job Gain</b>	
		<b>Project total</b>	<b>ARRA funding</b>
Banning	7,507	4.6	2.3
Beaumont	4,394	2.6	1.3
Blythe	4,540	1.7	0.8
Cabazon	642	0.3	0.1
Calimesa	2,825	1.7	0.8
Coachella	7,412	4.5	2.3
Desert Hot Springs	5,897	4.4	2.2
Glen Avon	5,521	3.1	1.5
Hemet	16,958	9.4	4.7
Highgrove	1,293	0.7	0.3
Homeland	879	0.6	0.3
Idyllwild-Pine Cove	1,625	1.0	0.5
Indio	17,801	12.8	6.4
Lakeland Village	2,047	1.7	0.9
March AFB	128	0.1	0.0
Mecca	2,000	1.1	0.6
Murrieta Hot Springs	847	0.5	0.2
Palm Springs	17,841	10.2	5.1
Perris	11,934	8.1	4.0
Quail Valley	597	0.5	0.3
Romoland	916	0.8	0.4
San Jacinto	7,606	4.5	2.3
Sedco Hills	962	0.8	0.0
Sun City	4,118	2.1	1.1
Thousand Palms	1,748	1.4	0.7
Valle Vista	3,626	2.1	1.0
Winchester	917	0.6	0.3
<b>ALL DACs in county *</b>	<b>132,581</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding  
Sources: 2000 Census; LAEDC

**Job Opportunities in Proximity to Project by Industry Sector**

Table 5 Within 5-mile Radius of Project				
Total Residential Population:	173,911			
Total Households:	48,502			
Households Under \$50,000 Annual Income:	29.8%			
Total Employees:	65,507			
Total Businesses:	5,383			
Industry	Businesses		Employees	
	Number	Percent	Number	Percent
Retail Trade	781	14.5%	10,842	16.6%
Manufacturing	335	6.2%	9,290	14.2%
Wholesale Trade	415	7.7%	6,508	9.9%
Construction	598	11.1%	5,590	8.5%
Public Administration	73	1.4%	4,798	7.3%
Professional, Scientific, and Technical Services	514	9.5%	4,330	6.6%
Educational Services	122	2.3%	3,945	6.0%
Health Care and Social Assistance	356	6.6%	3,512	5.4%
Accommodation and Food Services	299	5.6%	3,357	5.1%
Admin. & Support & Waste Mgt & Remediation Serv.	261	4.8%	3,189	4.9%
Other Services (except Public Administration)	619	11.5%	2,834	4.3%
Finance and Insurance	364	6.8%	2,159	3.3%
Real Estate and Rental and Leasing	265	4.9%	1,884	2.9%
Arts, Entertainment, and Recreation	81	1.5%	812	1.2%
Information	65	1.2%	649	1.0%
Transportation and Warehousing	117	2.2%	647	1.0%
Management of Companies and Enterprises	4	0.1%	640	1.0%
Unclassified Establishments	88	1.6%	307	0.5%
Agriculture, Forestry, Fishing and Hunting	19	0.4%	150	0.2%
Utilities	6	0.1%	52	0.1%
Mining	1	0.0%	12	0.0%
<b>Totals</b>	<b>5,383</b>	<b>100.0%</b>	<b>65,507</b>	<b>100.0%</b>

Sources: U.S. Census Bureau; ESRI Forecast 2009

## CITY OF RIVERSIDE: IOWA AVENUE PROJECT

### Regional and County-Level Economic Impact

<b>Table 1 Total Economic Impact of Proposed Project</b>				
	<b>Spending (\$ million)</b>	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>	<b>Earnings (\$ million)</b>
<b>Southern California Regional Impact</b>				
Project total	\$ 32.0	\$ 80.9	630	\$ 26.1
ARRA funding	15.9	40.2	310	12.9
<b>Riverside County Impact</b>				
Project total	\$ 32.0	\$ 59.8	370	\$ 14.9
ARRA funding	15.9	29.7	180	7.4

Sources: SCCG; LAEDC

### Impact of Construction Project by Industry Sector

<b>Table 2 Impact of Project Spending in Riverside County by Industry Sector</b>				
<b>Industry Sector</b>	<b>Project Total</b>		<b>ARRA Funding</b>	
	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>	<b>Output (\$ million)</b>	<b>Jobs (FTEs)</b>
Agriculture	\$ 0.2	2	\$ 0.1	1
Mining	0.3	1	0.2	0
Utilities	0.8	1	0.4	0
Construction	32.2	194	16.0	96
Manufacturing	6.7	21	3.3	10
Wholesale trade	1.6	6	0.8	3
Retail trade	3.5	40	1.8	20
Transportation and warehousing	1.3	6	0.6	3
Information	0.8	2	0.4	1
Finance and insurance	1.3	4	0.6	2
Real estate	3.3	7	1.7	3
Professional, scientific and technical	2.2	14	1.1	7
Management of companies	0.2	1	0.1	0
Administrative and waste management	1.1	14	0.5	7
Education services	0.2	3	0.1	2
Health care and social assistance	1.7	16	0.9	8
Arts, entertainment and recreation	0.2	4	0.1	2
Accommodations and food services	1.0	20	0.5	10
Other services	1.1	11	0.6	5
Households	n/a	2	n/a	1
<b>Total *</b>	<b>\$ 59.8</b>	<b>370</b>	<b>\$ 29.7</b>	<b>180</b>

\* May not sum due to rounding

Source: LAEDC



### **Potential Job Impacts in Economically Distressed Areas**

The Federal Highway Administration of the U.S Department of Transportation defines Economically Distressed Areas (EDAs) in accordance with 42 U.S.C. § 3161 as areas where unemployment is 1 percent or more above the national average, or where the per capita income is 80 percent or less than the national average. Using the most recent data available from the Bureau of Economic Analysis for 2007 per capita income, and from the Bureau of Labor Statistics for a 24-month average unemployment rate to March 2009, Riverside County is an EDA.

**Therefore, by definition, all of the employment impacts shown in Table 2 will occur in an Economically Distressed Area.**

However, the county-level data masks considerable community-level variation. The State of California identifies a Disadvantaged Community (DAC) as any community where the median household income is below 80 percent of the statewide household income, relying upon 2000 Census data. According to this definition, there are 27 disadvantaged communities in Riverside County.

The potential employment impact of the project construction in Riverside County DACs is shown in the following two tables. Table 3 projects the number of jobs preserved or created by industry sector in DACs based on underlying employment patterns. For example, in 2000 there were 12,215 people employed in the construction industry in DACs. This represented 21.9 percent of the county-wide construction industry employment. Of the 194 jobs estimated to be created or preserved by the project (from Table 2), 43 will be in DACs.

<b>Table 3 Impact of Project Spending in Riverside County DACs by Industry Sector</b>				
<b>Industry Sector</b>	<b>Employed</b>	<b>% of County</b>	<b>Potential Job Gain</b>	
			<b>Project total</b>	<b>ARRA funding</b>
Agriculture, forestry, fishing and mining	5,026	38.5%	0.8	0.5
<b>Construction</b>	<b>12,215</b>	<b>21.9%</b>	<b>42.5</b>	<b>21.1</b>
Manufacturing	12,041	16.5%	3.5	1.7
Wholesale trade	3,685	17.2%	1.0	0.5
Retail trade	18,018	23.6%	9.4	4.7
Transportation, warehousing and utilities	6,628	20.9%	1.5	0.7
Information	2,797	20.0%	0.4	0.2
Finance, insurance, real estate and leasing	5,897	17.2%	1.9	0.9
Professional, scientific, management,	11,369	22.0%	6.6	3.2
Education, health and social services	23,466	20.7%	4.1	2.0
Arts, entertainment, accommodation & food	17,973	30.4%	7.0	3.5
Other services	5,868	22.7%	3.2	1.6
<b>Total *</b>	<b>132,581</b>	<b>22.0%</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding  
Sources: 2000 Census; LAEDC

**Potential Job Gains in Individual DACs Due to the Construction Project**

Table 4 uses the same methodology applied in Table 3 to estimate the distribution of preserved or created jobs among individual DACs in Riverside County.

<b>Table 4 Employment in DACs in Riverside County in 2000 and Potential Job Gains Due to Project</b>			
<b>Disadvantaged Community</b>	<b>Employed</b>	<b>Potential Job Gain</b>	
		<b>Project total</b>	<b>ARRA funding</b>
Banning	7,507	4.6	2.3
Beaumont	4,394	2.6	1.3
Blythe	4,540	1.7	0.8
Cabazon	642	0.3	0.1
Calimesa	2,825	1.7	0.8
Coachella	7,412	4.5	2.3
Desert Hot Springs	5,897	4.4	2.2
Glen Avon	5,521	3.1	1.5
Hemet	16,958	9.4	4.7
Highgrove	1,293	0.7	0.3
Homeland	879	0.6	0.3
Idyllwild-Pine Cove	1,625	1.0	0.5
Indio	17,801	12.8	6.4
Lakeland Village	2,047	1.7	0.9
March AFB	128	0.1	0.0
Mecca	2,000	1.1	0.6
Murrieta Hot Springs	847	0.5	0.2
Palm Springs	17,841	10.2	5.1
Perris	11,934	8.1	4.0
Quail Valley	597	0.5	0.3
Romoland	916	0.8	0.4
San Jacinto	7,606	4.5	2.3
Sedco Hills	962	0.8	0.0
Sun City	4,118	2.1	1.1
Thousand Palms	1,748	1.4	0.7
Valle Vista	3,626	2.1	1.0
Winchester	917	0.6	0.3
<b>ALL DACs in county *</b>	<b>132,581</b>	<b>80</b>	<b>40</b>

\* May not sum due to rounding  
Sources: 2000 Census; LAEDC

**Job Opportunities in Proximity to Project by Industry Sector**

<b>Table 5</b>				
<b>Within 5-mile Radius of Project</b>				
Total Residential Population:	198,707			
Total Households:	63,763			
Households Under \$50,000 Annual Income:	53.1%			
Total Employees:	132,088			
Total Businesses:	7,775			
Industry	Businesses		Employees	
	Number	Percent	Number	Percent
Public Administration	217	2.8%	44,840	33.9%
Educational Services	169	2.2%	11,364	8.6%
Health Care and Social Assistance	561	7.2%	9,826	7.4%
Retail Trade	1,027	13.2%	9,388	7.1%
Wholesale Trade	517	6.6%	7,578	5.7%
Construction	719	9.2%	7,097	5.4%
Accommodation and Food Services	461	5.9%	6,152	4.7%
Professional, Scientific, and Technical Services	867	11.2%	5,994	4.5%
Manufacturing	299	3.8%	5,836	4.4%
Other Services (except Public Administration)	984	12.7%	4,999	3.8%
Transportation and Warehousing	205	2.6%	4,397	3.3%
Admin. & Support & Waste Mgt & Remediation Serv.	387	5.0%	4,091	3.1%
Finance and Insurance	475	6.1%	3,506	2.7%
Unclassified Establishments	152	2.0%	2,103	1.6%
Real Estate and Rental and Leasing	450	5.8%	2,022	1.5%
Information	129	1.7%	1,455	1.1%
Arts, Entertainment, and Recreation	123	1.6%	1,036	0.8%
Agriculture, Forestry, Fishing and Hunting	15	0.2%	209	0.2%
Utilities	13	0.2%	112	0.1%
Management of Companies and Enterprises	2	0.0%	64	0.0%
Mining	3	0.0%	19	0.0%
<b>Totals</b>	<b>7,775</b>	<b>100.0%</b>	<b>132,088</b>	<b>100.0%</b>

Sources: U.S. Census Bureau; ESRI Forecast 2009