

U.S. Department of Transportation

National Infrastructure Investments Grant Program

“2012 TIGER Discretionary”

GRANT APPLICATION

Project Name: South Orient Rehabilitation – Sulphur Junction to Fort Stockton

Project Type: Rural Freight Rail Transportation Project

Funds Requested: \$ 5,943,611 (68.5% of total project)

Project Cost: \$8,532,793

DUNS #: 806782553

EIN / TIN: 74 6000170

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I. Project Description

A. Introduction

The South Orient rail line (SORR) rehabilitation project from Sulphur Junction to Fort Stockton, Texas, is a rural freight rail project that will have a significant impact on the region as well as the nation. The SORR is classified as Excepted Track from Sulphur Junction (MP 869.4) to Fort Stockton (MP 881.92) due to substandard rail, defective ties, and track alignment deficiencies. If left unimproved, this section of the line is expected to become inoperable within 5 to 10 years, threatening future transportation network efficiency, freight mobility, and economic growth in an Economically Distressed Area. The project will upgrade this 12.52 mile section of the SORR from Excepted Track status to Class 2 (25 mph) conditions. The rehabilitation of this section of the line is necessary in order to continue operations and provide safe and efficient rail service to existing customers. Mining interests have located on this section of the line and other mining businesses have requested rates for the transportation of petroleum products to/from the Fort Stockton region. This section of the rail line cannot support the movement of these hazmat cars in the volumes requested due to the operational impacts of the Excepted Track status.

This 12.52 mile section of the SORR is constructed of 70# rail¹ supported by cross ties that were installed in the 1930's to 1950's. A customer located at Fort Stockton is receiving carloads of "frac-sand" (fracture sand) which is rapidly increasing the deterioration of this undersized and aged infrastructure. The project will provide significant benefits to the region, state, and nation through the integration and better use of multimodal connections on the facility; avoid the diversion of existing freight from rail to truck, avoided heavy truck traffic and truck miles traveled, avoided truck emissions, avoided increased transportation costs, improved freight rail efficiency and capacity, and through job creation. This is the only rail line providing service to the cities and businesses in the region, which includes agricultural interests, steel manufacturers, mining businesses, energy resources, and other miscellaneous customers.

The benefits from rehabilitating the SORR between Sulphur Junction and Fort Stockton exceed \$204 million over 20 years, with a benefit – cost ratio of 20.7 to 1 and a return on investment of 1,970%.

The entire SORR is a 391 mile state-owned facility that extends from San Angelo Junction (in Coleman County, 5 miles southwest of Coleman, Texas) through San Angelo and other west Texas towns, to Presidio at the Texas/Mexico border. TxDOT has leased operations on the line to Texas Pacific Transportation, Ltd (TXPF). TxDOT and TXPF have used their available funding to rehabilitate approximately 225 miles of the eastern portion of the

¹ Rail is designated by weight in pounds per linear yard. Typical rail sizes currently being installed on freight rail lines are 115#, 119#, 132#, 136#, and 141#.

line between San Angelo Junction (Milepost 0 [MP 0]) and Sulphur Junction (MP 869.4). The final phase of that work is under construction and the line will be FRA Class 2 (25 mph) from MP 0 to MP 869.4 upon completion in the summer of 2012

Fort Stockton is located 12.52 miles west of Sulphur Junction. The freight moved to Fort Stockton has risen from 144 car loads in 2007 to 414 car loads in 2010, a 187% increase. In 2011, Tex-Sand received 924 carloads, a 123% increase in carloads from 2010 to 2011, and a 542% increase since 2007, despite a struggling economy. In addition, if the track is rehabilitated, this section of the line would see a projected 2,544% increase in traffic from 2007 to 2014. If the track is not rehabilitated between Sulphur Junction and Fort Stockton, that segment of the line will become inoperable within 5 to 10 years and all this freight will be diverted to trucks.

The project area encompasses a large oil and gas development region as well as a wind turbine development area. The West Texas (Ouachita) Overthrust Resource Play covers the entire SORR area as can be seen in Figure 1. The Ouachita Overthrust is a geologic area characterized by natural gas production from shallow wells, and has been (and will continue to be) a significant contributor to the local economy through natural gas production. Multiple news reports have highlighted significant investment in natural gas development throughout this region with Vortex Resources, for example, executing an option on a fifth well after a 100% success rate on its initial drilling program. SandRidge Energy Inc, has 892 gross producing wells in the Ouachita area and drilled 112 wells across this prospect in 2010. Friendly Energy Exploration acquired ten natural gas drilling sites and has optioned an additional 40 sites in Crockett County Texas. EOG Resources recently signed a contract with TXPF to load and ship unit trains of crude oil at the San Angelo yard. This contract and the existing customers on the SORR have now secured all loading capacity in San Angelo.

SandRidge Energy has requested rates for moving petroleum products from the Fort Stockton area across the SORR. TXPF cannot provide these rate quotes because the 70# rail restricts the movement of hazardous materials, therefore limiting capacity on this section of the line. The proposed project will increase capacity and enable the unrestricted transportation of hazardous materials. This will facilitate the continued development of these energy resources in west Texas, assisting in making the nation energy independent. Development of natural resources in the region has been hampered due to the lack of efficient and competitive rail service.

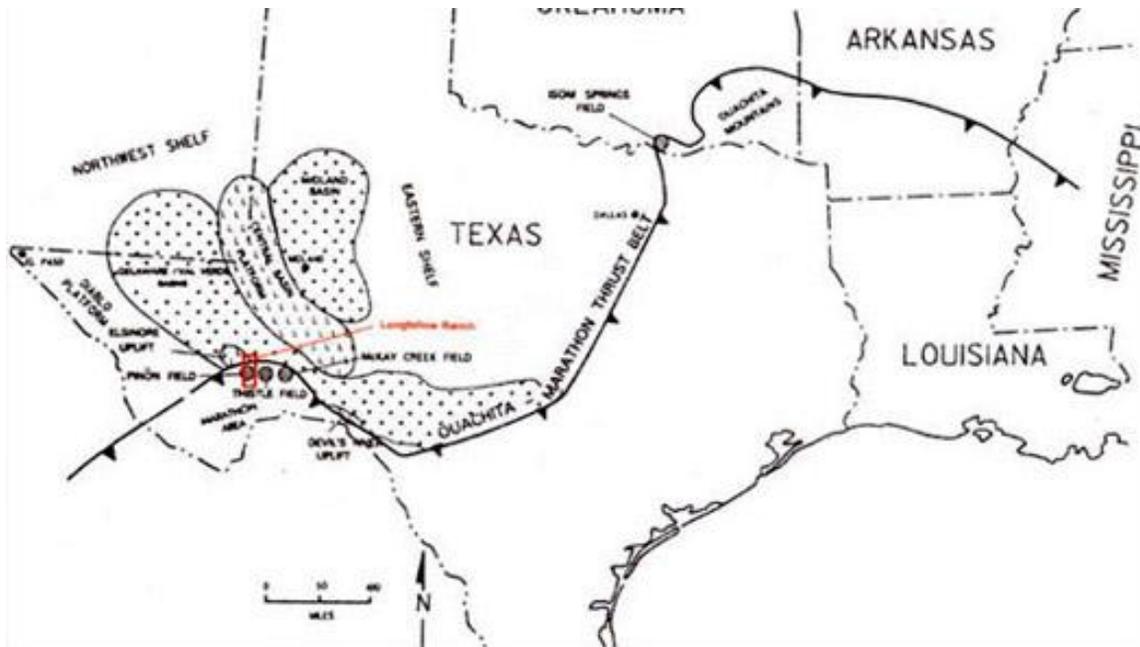


Figure 1: West Texas (Ouachita) Overthrust

Source: Longfellow Exploration LLC

West Texas also has significant wind and other renewable energy capacity. According to ORCA, Texas has more potential than any other state to produce renewable energy from the sun, wind, crops, and crop and forest waste. The American Wind Energy Association has ranked Texas's potential capacity for wind energy at 136,100 MW. Texas now leads the nation as the number one producer of wind energy. Production leaped from 180MW in 1999 to 7,115 MW as at December 2008. There are over 4,881 commercial wind turbine units on 72 wind farms in Texas. Some of the wind towers have moved across the SORR to Fort Stockton for unloading and erection. Martifer-Hirschfeld Energy Systems recently opened a wind-tower manufacturing plant on the SORR in San Angelo. This facility is perfectly situated to ship towers west to Fort Stockton for the energy developments there. However, future towers will have to be moved by truck if the SORR is not rehabilitated between Sulphur Junction and Fort Stockton. The Texas Competitive Renewable Energy Zones are shown in Figure 2 which covers the main area where the SORR operates.

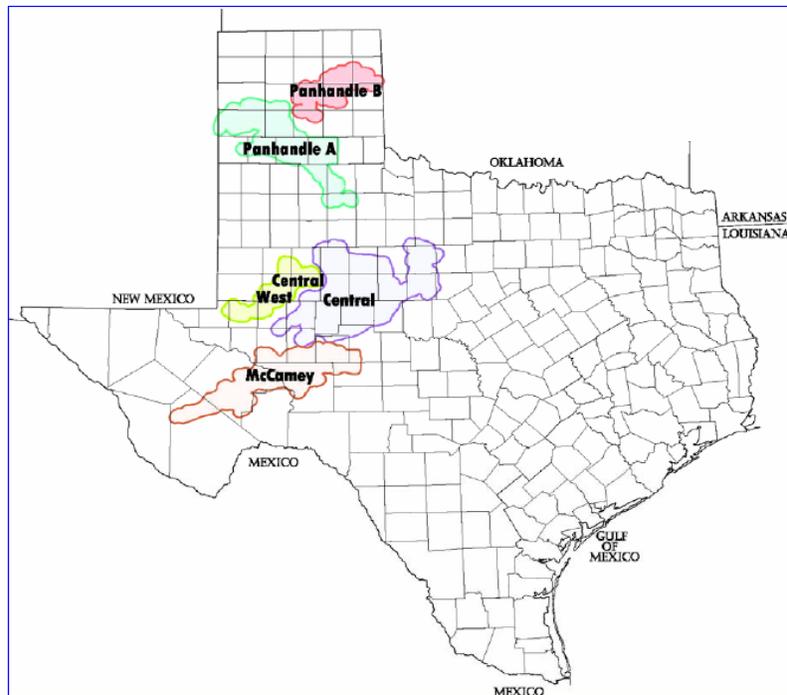
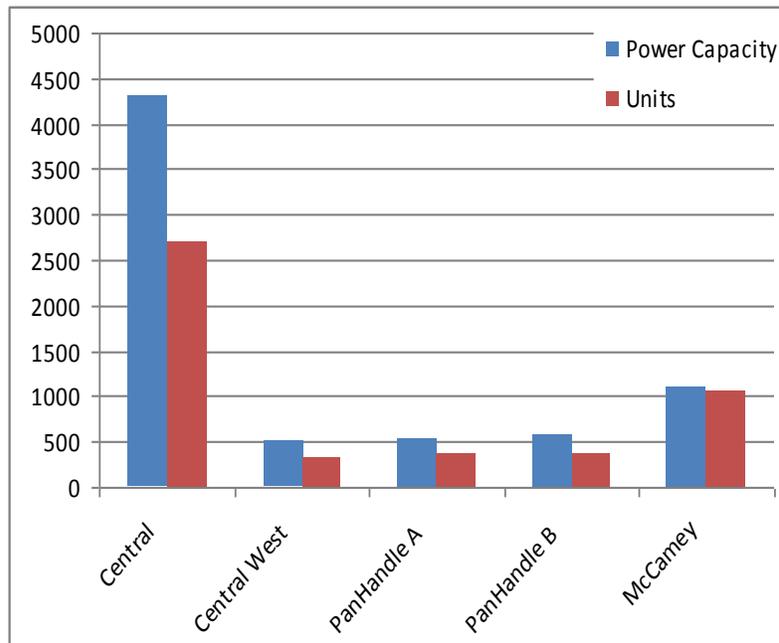


Figure 2 : Renewable Energy Zones & Area Output
 Source: Electricity Reliability Council of Texas

A map of the state location of the project is shown in Figure 3. The project area is shown in Figure 4 and at <http://www.txdot.gov/business/rail/tiger2012.htm>.

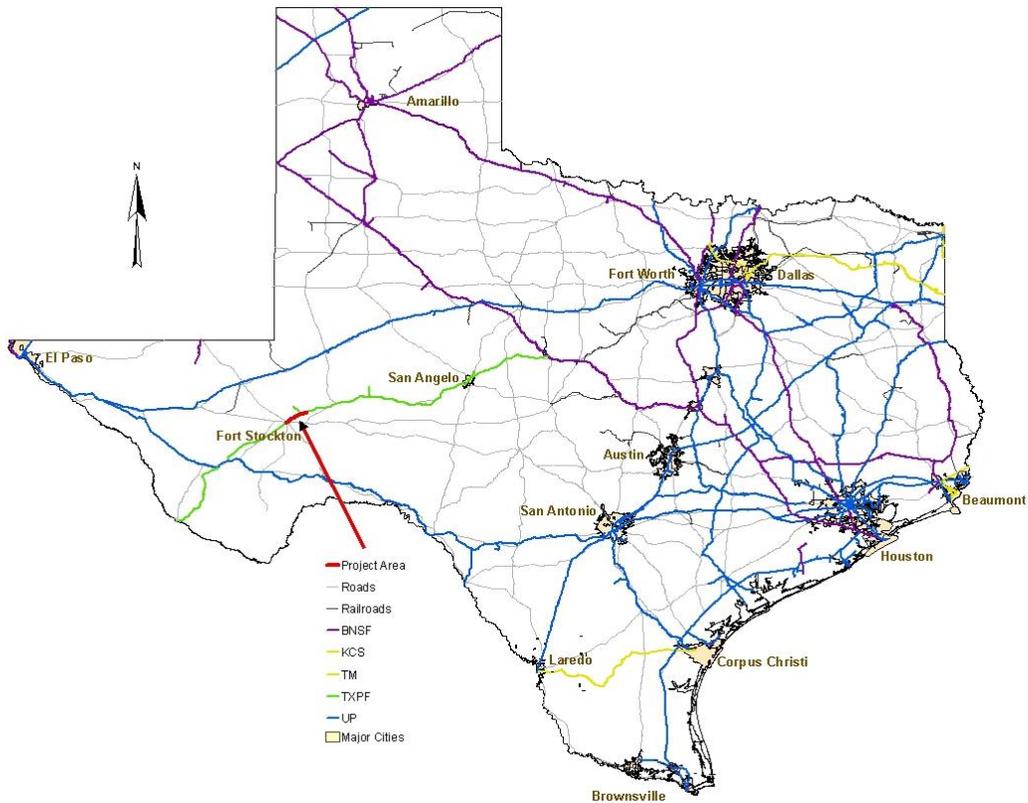


Figure 3: Project Location



Figure 4: Project Area

B. Project Components

The project is wholly within Pecos County and is designed to rehabilitate a 12.52 mile section of the state-owned South Orient rail line from Sulphur Junction to Fort Stockton, Texas. The project limits are between Sulphur Junction (MP 869.4) and the west side of Fort Stockton (MP 881.92). This 12.52 mile section of the South Orient main line is constructed of 70# jointed rail and is currently designated as Excepted Track due to this substandard rail and deteriorating tie conditions. Train speeds are limited to 10 mph and hazardous materials cars are restricted to five cars per train. This segment of the line is in need of significant rehabilitation in order to keep it operable and to raise the line to Class 2 status, which will improve freight mobility and enable the efficient movement of hazardous materials on the line. In this segment of the rail line (MP 869.4 – 881.92), the project will consist of:

1. Replace 132,211 linear feet of 70# rail with 115# CWR ²	\$5,288,440
2. Replace 20,000 defective cross ties	\$1,540,000
3. Install and regulate 7,512 tons of ballast	\$ 375,600
4. Surface and align 12.52 miles of track	\$ 81,380
5. Replace 4 turnouts (70#) with 115# (or heavier) turnouts	\$ 80,000
6. Reconstruct 3 roadway-rail at grade crossings (68 linear feet)	\$ 54,400
Subtotal	\$7,419,820
Engineering & Contingencies	\$ 519,387
Mobilization	\$ 593,586
Total Project Cost	= \$ 8,532,793

Requested TIGER Grant Funding = \$5,943,611

Figures 5 and 6 show typical tie and rail conditions in the project area. Figure 7 shows a typical crossing surface that will be reconstructed.

² Continuously Welded Rail



Figure 5 – MP 870, Track Conditions

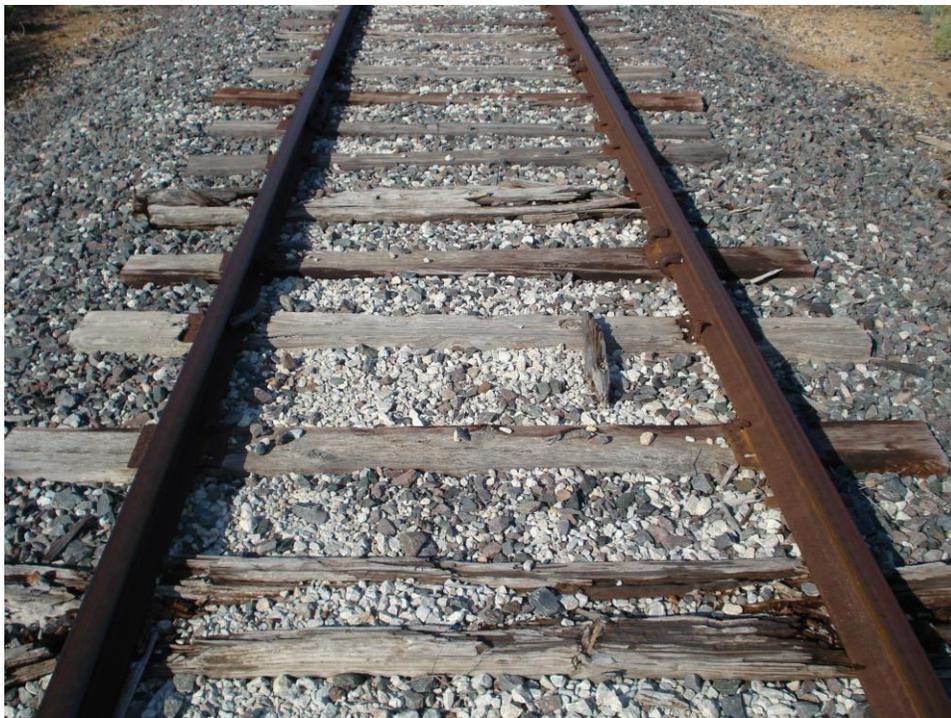


Figure 6 – MP 876.1, Track Conditions



Figure 7 – MP 882.45, Typical Crossing To Be Replaced

C. Geospatial Data

The geospatial data for the beginning and end of the rail and tie replacement project as well as the specific bridge and crossing locations where work will be performed is shown in Table 1. The table also gives a general description of the type of work to be performed.

Location	Latitude	Longitude	Description of Work
Project Begins	30.99379	-102.71336	MP 869.4 - Begin rail & tie replacement through end of project limits
MP 870.30	30.99031	-102.72282	Reconstruct 18’ grade crossing DOT #18925R
MP 874.6	30.95781	-102.78528	Reconstruct 18’ grade crossing DOT #18926X
MP 879.4	30.91777	-102.85011	Reconstruct 32’ grade crossing DOT #18928L
Project Ends	30.89207	-102.88024	MP 882.84 – Nelson St. - End rail & tie replacements

Table 1: Project Geospatial Data

II. Project Parties

The SORR is owned by TxDOT on behalf of the state of Texas. TxDOT has a workforce of more than 12,000 employees and is headquartered in Austin, Texas, with 21 divisions and offices in the capital area. Four regional support centers provide operational and project delivery support for the agency's 25 geographical districts located around the state. TxDOT has vast experience managing federal and state infrastructure projects and rail rehabilitation/construction projects.

TxDOT leased operations on the SORR line to Texas Pacifico Transportation Company, Ltd. (“TXPF”). Under the terms of the agreement, TxDOT became the permanent owner of the right-of-way and infrastructure, and TXPF obtained a 40-year operating lease with renewal options. TXPF is a wholly owned subsidiary of Grupo Mexico, a large mining conglomerate headquartered in Mexico. TxDOT and TXPF have invested over \$25.8 million in track rehabilitation east of Sulphur Junction to keep the line operable and upgrade those sections to 25 mph. The ownership of the line by TxDOT, the lease to TXPF, and their joint efforts to rehabilitate the line makes this a true public-private partnership.

III. Grant Funds and Sources/Uses of Project Funds

TxDOT is prohibited by state statute from using fuel-tax revenues for non-highway projects. This severely restricts the funds available for rail projects as this is TxDOT’s primary source of revenue. TxDOT and TXPF have used their available resources to complete the rehabilitation of the line from San Angelo Junction to Sulphur Junction and do not have adequate revenue to invest in the proposed rehabilitation project. All remaining TxDOT and TXPF funding will be used for matching the TIGER grant if this application receives a TIGER award. The Fort Stockton Economic Development Corporation is also contributing \$200,000 to this project if it is selected for grant funding.

The cost of developing plans, specifications, estimates, and environmental clearances for the project has been absorbed by TxDOT. The actual construction and project management costs would be funded by a 1.2% contribution in state funds from TxDOT, 2.3% in funds from Fort Stockton Economic Development Corporation, 28.0% in private contributions from TXPF, and 68.5% in TIGER Grant Funds. Any cost overruns would be paid by TXPF.

The project estimate and uses of funds is shown in Table 2 and the source of funds is shown in Table 3.



Item	Unit	Quantity	Unit Cost	Total
Rail Replacement	Linear Foot	132,211	\$40	\$5,288,440
Tie Removal & Replacement	Each	20,000	\$77	\$1,540,000
Ballast Delivery	Ton	7,512	\$50	\$375,600
Ballasted Track Surfacing & Alignment	Mile	12.52	\$6,500	\$81,380
Turnouts - complete	Each	4	\$20,000	\$80,000
Timber Road Crossings	Linear Foot	68	\$800	\$54,400
Subtotal				\$7,419,820
Engineering & Contingencies	%	7		\$519,387
Mobilization	%	8		\$593,586
Total				\$ 8,532,793

Table 2: Project Estimate and Uses of Funds

Funding Source	Participation	Total
TxDOT	1.2%	\$ 100,000
Fort Stockton Economic Development Corp.	2.3%	\$ 200,000
TXPF	28.0%	\$2,389,182
TIGER	68.5%	\$ 5,843,611
TOTAL	100%	\$8,532,793

Table 3: Source of Funds

IV. Selection Criteria

A. Long-Term Outcomes

i State of Good Repair

The rehabilitation of the line using TIGER grant funds will improve the condition of an existing rail transportation system and minimize life-cycle costs by bringing the SORR into a state of good repair and maintaining it in that condition beyond the expected lifespan of the materials used in the rehabilitation project. The line will remain in the rehabilitated condition because TXPF is contractually obligated to maintain any segment of the SORR that is rehabilitated by TxDOT in the same or better condition as when the project is completed.



According to the Association of American Railroads³, the average train speed of the Class 1 railroads is between 23 and 25 mph. The scope of work for this project (Build) and associated funding levels are appropriate for improving track speed on the SORR to 25 mph. This would allow increased, improved service and provide for the state of good repair and an efficient, effective, and safe rail service in the region. This level of investment is adequate for existing and projected needs without “over investment” in unnecessary higher speeds.

If this segment of the SORR becomes inoperable (No Build), there would be an immediate and dramatic increase in large trucks upon the local, regional, state, and national roadways as the existing shippers were forced to divert their rail freight to roadways.⁴ The diversion of this freight from rail to truck would add 200,838,348 truck miles to the regions roadways over the 20 year period. Other shippers, such as agricultural cooperatives and smaller businesses, could be forced to close due to the increase in transportation costs of truck over rail.

The project would be appropriately capitalized up-front via a public-private partnership between the federal government, TxDOT, the Fort Stockton Economic Development Corporation, and TXPF.

TxDOT has an effective asset management approach that optimizes the long-term cost structure and viability of the project, which includes:

- direct supervision of contractors during construction activities,
- random inspections of SORR infrastructure and TXPF maintenance practices,
- mandatory monthly maintenance and operating reports from TXPF,
- a Joint Operations and Marketing Committee that meets twice annually, and
- TXPF is contractually obligated to maintain any segment of the SORR that is rehabilitated by TxDOT in the same or better condition as when the project is completed.

The facility’s current condition and performance and the projected condition and performance can be established and measured by the following quantifiable metrics:

1. Track Construction

Current: The current condition of the existing track between MP 869.4 and 881.92 is substandard 70# rail on crossties that are generally in fair to bad condition. This segment is classified as Excepted Track, which inhibits

³ <http://www.aar.org/>

⁴ See the “Sustainability” and “Economic Analysis” sections in this document and BCA attachment “Benefit Cost Analysis and Economic Impacts” or at <http://www.txdot.gov/business/rail/tiger2012.htm> for a brief description of roadway impacts if this section of the line is not rehabilitated.

performance by limiting hazardous materials shipments to 5 cars per train and prohibiting occupied passenger cars.

Projected: The project will improve the facilities' condition by the replacement of the 70# substandard rail and defective crossties with 115# (or heavier) CWR, new crossties, and will remove the Excepted Track classification.

2. Track Conditions

Current: The current tie conditions cause alignment and profile deviations which result in the infrastructure being classified as Excepted Track. This also restricts the track to 10 mph with no more than five hazardous materials cars per train.

Projected: The project will replace the defective ties, install ballast as necessary, and address alignment and profile deviations to raise the Excepted Track to Class 2 (25 mph). The infrastructure will be maintained at that classification in perpetuity in accordance with TXPF's contractual maintenance obligations.

3. Continuation of Service

Current: The existing infrastructure is deteriorating and is expected to become inoperable within the next 5 to 10 years. This would cause the cessation of service to shippers located on this segment of the line.

Projected: The project will provide for the rehabilitation of this segment of the line and the continuation of service in accordance with TXPF's contractual maintenance obligations.

Maintenance costs of the rehabilitated section of the line are estimated at \$5,000 per mile per year. These costs will be the sole responsibility of TXPF in accordance with their contractual maintenance obligations. TXPF and its parent company, Grupo Mexico, have adequate resources to meet this obligation. This will eliminate any future maintenance or rehabilitation requirements by the state for track infrastructure or the local communities for grade crossing surface conditions.

ii. Economic Competitiveness

The project will improve the long-term efficiency, reliability, and cost-competitiveness of freight movements to and from an Economically Disadvantaged Area by providing a safe, efficient, and truck-competitive rail line with national linkages. The rehabilitated SORR will increase the efficiency and effectiveness of the existing multi-modal transportation system as a whole by enabling increased freight rail volumes to the Fort Stockton region, where it can be trans-loaded to truck for delivery to local destinations. The Fort Stockton road system includes Interstate 10, U.S. Highways 67, 285, and 385, State Highway 18,



and other regional and local roads such as FMs 1053 and 1776. These roadways provide an extensive distribution system for rail freight that would be shipped to the region and trans-loaded at Fort Stockton.

The SORR is near capacity between Sulphur Junction and Fort Stockton due to the substandard infrastructure which restricts the efficient movement of rail freight in one of the nation's largest petroleum and natural gas production regions. In addition, this segment of the SORR will become inoperable within 5 to 10 years if it is not rehabilitated. This would greatly reduce the region and nation's economic competitiveness as a result of increased freight transportation costs. The closure of some businesses that are increasingly rail dependent would result in a reduction in local, state, and federal tax revenues and the associated loss of jobs. The economic stability and growth of the region relies on the continuation and improvement of rail service on the SORR.

The expenditure of \$8,532,793 for freight rail infrastructure rehabilitation in the region will result in over \$42.54 million in economic output for this region,⁵ in a county where the per capita income is \$15,939⁶. Pecos County is an economically distressed county as defined by the Federal Highway Administration.⁷

The Association of American Railroads (AAR) has determined that a freight train (on average) can carry one ton of cargo a distance of 480 miles on a single gallon of fuel. This high level of efficiency reduces the nation's dependence on foreign oil and helps shrink its carbon footprint. The AAR has also determined that railroads are four times more fuel efficient than trucks.⁸ Moving freight by rail instead of truck therefore contributes to the region and nation's economic competitiveness.

An example of the long-term efficiency, reliability, and cost-competitiveness of moving freight by rail into the region involves the Tex-Sand Corporation, which located a sand unloading facility at the rail yard in Fort Stockton in 2009. In 2010, Tex-Sand received 414 carloads at the facility in Fort Stockton, an average rate of approximately 34 carloads per month. In 2011, Tex-Sand received 924 carloads, a 123% increase in carloads from 2010 to 2011. If the project is not completed, causing this freight to divert to trucks. The

⁵ AAR studies indicate that every dollar invested in freight-rail infrastructure created by investment tax incentives generates more than three dollars in total economic output due to investment, purchases and employment occurring among upstream suppliers. The same benefit can be expected from grant investments. <http://www.aar.org/Home/AAR/IndustryInformation/InfrastructureTaxIncentive/~media/AAR/PositionPapers/819.ashx>.

⁶Source: US Census Quick Facts and Texas Association of Counties

⁷ See U.S. DEP'T. OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION, ECONOMICALLY DISTRESSED AREAS PLANNING, ENVIRONMENT, REALTY (HEP), http://hepgis.fhwa.dot.gov/hepgis_v2/GeneralInfo/Map.aspx

⁸ See ASSOCIATION OF AMERICAN RAILROADS, ENVIRONMENT, <http://www.aar.org/~media/aar/backgroundpapers/railroadsgreenfromthestart.ashx>



rehabilitation of the line will allow these movements to continue by rail while effectively reducing the time spent operating trains in this area by more than half.⁹

iii. Livability

The rehabilitation of the SORR will benefit the livability of the region and have a positive impact on community life by improving vehicular mobility and safety at roadway-rail grade crossings and reducing truck traffic on roadways in the region. Three at-grade crossings that have deteriorated crossing surfaces and track structure will be reconstructed during the project. A typical crossing surface that will be reconstructed is shown in Figure 5.

The project will enhance points of modal connectivity by rehabilitating a deteriorating transportation asset and increasing the amount and types of freight that can move over this section of the SORR, which connects to an extensive highway system. The project will also enhance energy-related and support services, provide economic development opportunities, and bring additional jobs and businesses to the area as a result of an improved regional freight rail transportation system that connects to two Class 1 railroads (BNSF at San Angelo Junction and UP at Alpine).

The SORR runs through eleven counties in West Texas: Brewster, Coleman, Crane, Crockett, Irion, Pecos, Presidio, Reagan, Runnels, Tom Green, and Upton. For the purposes of this application the funding will be used for infrastructure rehabilitation in Pecos County.

The counties near the project area cover two of the Workforce Development Areas (WDA) set out by the Texas Workforce Commission. Crockett, Irion, Reagan, and Tom Green Counties fall in the Concho Valley WDA; while Crane, Pecos, and Upton Counties fall in the Permian Basin WDA. Aside from Tom Green County, all but one of these counties has small populations with attrition occurring over the past twenty years. Most of these counties are largely minority communities and earn less than the median average income that is seen in many other Texas regions. These can be classed as economically disadvantaged communities. Demographic information is shown in Table 4.

⁹ Increasing train speeds from 10 mph to 25 mph reduces the operating times by more than half.

County	Population 2010	County Size (square miles)	Population Density per square mile (2010)	Income Per Capita \$	% Ethnicity (Hispanic)	Persons Below Poverty % (2009)	Median Age
Crane	4,375	786	5.6	20,063	55.1	12.1	36.5
Crockett	3,719	2,808	1.3	22,719	63.2	14.1	40.8
Irion	1,599	1,052	1.5	26,328	25.5	10.9	40.1
Pecos	15,507	4,764	3.3	15,939	67.3	19.7	32.7
Reagan	3,367	1,175	2.9	23,369	60.9	9.5	37
Tom Green	110,224	1,522	72.4	21,483	35.7	16.2	34.4
Upton	3,355	3,031	2.47	18,972	49.0	16.0	42.3

Table 4: Demographic Data for Counties Near Project Area

Sources: US Census Quick Facts and Texas Association of Counties

Small cities (under 3000 population) located along the line that are within this area are Barnhart, Big Lake, McCamey, Metzton, and Rankin. Fort Stockton is the only city in the project limits. The populations of cities that are in the area (from 2010 US Census) can be seen in Table 5.

Barnhart	105	McCamey	1,805
Big Lake	2,885	Mertzton	839
Rankin	800	Fort Stockton	7,846

Table 5: Populations of Towns in the Region Along the SORR

According to the US Census Bureau, the national per capita income was \$27,041 in 2009. As Table 4 shows, the counties in this area have low per capita incomes, a large Hispanic population, a youthful population, and relatively high poverty rates; with Pecos County (project location) having a having a poverty rate of 19.7 % and the lowest per capita income at \$15,939 per year. It is estimated that the project will create 251 construction related job positions over a period of 16 months, and will have a short-term employment impact of approximately \$926,541.¹⁰ It will also provide for the retention of 144 jobs at the TexSand facility¹¹.

This project will eliminate over 300.8 million¹¹ truck-miles over a 20 year period from the national highway system by preventing the diversion of rail freight to roads, which will occur if this section of the line is not rehabilitated. The rehabilitation of the SORR will

¹⁰ See “Job Creation & Near-Term Economic Activity” in this application and BCA attachment “Benefit-Cost Analysis and Economic Impacts” or at <http://www.txdot.gov/business/rail/tiger2012.htm>

enhance the livability of the region and nation by the continued and increased diversion of freight from the roadways to rail. The project is part of a regionally focused effort to improve rail service on the SORR. It has broad, regional support from the eleven counties that the line passes through and the communities and citizens in those locations. The project also has the support of the connecting railroads, as well as state officials from other regions. International support also exists from the operator's parent company (Grupo Mexico) and the Martifer-Hirschfeld Energy Corporation. The project includes a potential NAFTA trade corridor through the connections with Ferromex at Presidio.

iv. Sustainability

The rehabilitation of the SORR from Sulphur Junction to Fort Stockton will improve energy efficiency by increasing capacity on the line, reduce dependence on foreign oil by transporting freight in the most energy efficient manner, and reduce greenhouse gas emissions by over 427,139 tons over 20 years. The project will enable the existing shippers to continue using rail transportation and encourage the diversion of freight from the highway to rail. The project will also support the on-going development of new energy industries in west Texas that will have multiple benefits for many generations from air quality improvements, sustainability, economic growth, and reductions in the use of greenhouse gas hydrocarbons.

Emissions impacts were determined in accordance with the TIGER Benefit-Cost Analysis Resource Guide. The methodology was used to determine the emissions impacts from the diversion of existing and projected freight from rail to trucks. The analysis determined that the discounted cost of carbon dioxide emissions alone was \$11,664,936 over a 20 year period. The rehabilitation of the SORR from Sulphur Junction to Fort Stockton would prevent the diversion of this freight from rail to roadway, therefore providing this CO₂ cost as a benefit as avoided emissions.

This shows that there are substantial transportation-related costs related to energy consumption and greenhouse gas emissions. If the SORR is not rehabilitated, those costs and greenhouse gas emissions would increase dramatically as a result of the diversion of freight from rail to highway and would cause adverse effects to the environment.

v. Safety

The rehabilitation of the SORR will provide safety improvements for the traveling public as well as the operating railroad by diverting freight from highway to rail, enabling rail movements of hazardous materials, and improving highway-rail grade crossing surfaces.

Improved grade crossings - The project area includes 3 roadway/rail at-grade crossings which are in "fair" or "poor" condition. These crossings have substandard rail with deteriorated ties, subgrade and drainage. This causes the track to pump under load, resulting in the possibility of derailments and vehicular accidents. These crossings present a hazard to vehicular traffic, which is susceptible to damage from the rough condition of



the crossing surface. This also causes most drivers to cross the tracks at extremely low speed, which can contribute to vehicular-train accidents. The scope of the project includes removing the existing crossing, reconstructing the subgrade and track with new materials, and replacing the crossing with a new timber surface.

Hazardous materials movement - Rail is the safest way to transport hazardous materials, with 99.99% of shipments arriving at their destination safely. A major oil and natural gas distributor has presented plans to construct over 22,000 feet of new track in the area which will be used for outbound loading of crude oil. This company projects shipping between 15 and 40 carloads of crude oil outbound per day and receiving 15 carloads of sand inbound per day. It is essential that the SORR rehabilitation be completed from Sulphur Junction to Fort Stockton in order to support these developments and to prevent this freight from being diverted to trucks. The rehabilitation of the SORR would allow the transportation of these materials by the safest method available.

Estimated Additional VMT Due to Modal Shift from Rail To Highway									
Annual	Total Loaded Railcars		Avg. Truckloads per Railcar	=	Total Trucks		Route Mileage*	=	Truck Mileage
Current	924	x	3.5	=	3,234	x	676	=	2,186,184
Forecast	3,808	x	3.5	=	13,328	x	676	=	9,009,728
							Total	=	11,195,912

Table 6: Estimated Avoided Truck VMT between Fort Stockton and Fort Worth

B. Job Creation & Near Term Economic Activity¹¹

The project promotes both short and long-term job creation and preservation of jobs by providing for the rehabilitation of an existing, deteriorating rail line that is expected to become inoperable within 5 to 10 years. According to the project schedule and manning estimates, a total of 251 construction related job positions will be manned during the 16 month construction period. This includes skilled positions such as project supervisors, machine operators, welders, carpenters, and concrete workers. It is also estimated that at least five (5) of these jobs will be entry-level laborer positions that will be manned from the

¹¹ See BCA attachment “Benefit-Cost Analysis and Economic Impacts” or at <http://www.txdot.gov/business/rail/tiger3.htm>



local communities, creating employment and on-the-job training opportunities in an Economically Disadvantaged Area.

The recently opened Tex-Sand trans-loading facility¹² created 144 permanent job positions, averaging \$2,916 per month, that are staffed by Fort Stockton residents. Tex-Sand has projected that an additional 144 jobs would be created if train service increases as a result of the track rehabilitation.

AAR studies indicate that every dollar invested in freight-rail infrastructure created by investment tax incentives¹³ generates more than three dollars in total economic output due to investment, purchases and employment occurring among upstream suppliers. The expenditure of \$8,532,793 for freight rail infrastructure rehabilitation in this segment of the SORR region will result in over \$25.59 million in economic output from this region.¹⁴

The economic impacts from job creation are shown in Table 7.

Impact	Category	Value
Construction Jobs	Direct Benefit	\$753,774
Engineering & Construction Management Jobs	Direct Benefit	\$172,767
Current job retention (trans-loading facility)	Direct Benefit	\$420,000
Projected job creation (trans-loading facility)	Direct Benefit	\$420,000
Economic Output	Indirect Benefit	\$25,598,379
Total		\$ 27,364,920

Table 7: Job Creation and Near Term Economic Output

The project's procurement plan is likely to create follow-on jobs and near-term economic activity for manufacturers and suppliers. All materials and capital equipment used on the project will be purchased from U.S. manufacturers, creating additional jobs. The project's job creation impact from the construction expenditures on the economy of the United States was estimated, based on the employment impact multiplier recommended by the Council of Economic Advisors (CEA), which estimates that 1 job year is created for every \$76,923 in transportation infrastructure spending.

Based upon that methodology, the indirect job benefits created was estimated by dividing \$8.5 million (project expenditures) by \$76,923

¹² See additional information on Tex-Sand in sections "iii. Livability", "iv Sustainability", and BCA attachment "Benefit-Cost Analysis and Economic Impacts" or at <http://www.txdot.gov/business/rail/tiger2012.htm>

¹³ The same level of impact can be assumed from the use of TIGER federal grant investments in rail infrastructure projects.

¹⁴ http://www.aar.org/Home/AAR/IndustryInformation/InfrastructureTaxIncentive/~/_media/AAR/PositionP

CEA Job Creation Impact: \$8.5 million / \$76,923 = 110 job years created.

The project will be managed by TxDOT, which has a solid track record of complying with Federal labor laws regarding safety and equitable treatment of workers. The contractor will be required to comply with these regulations and equal opportunity laws in the hiring of workers.

Traffic Projections

A report entitled “*Potential Economic Impact of the South Orient Railroad*” was produced by Alliance Transportation Group for the Fort Stockton Economic Development Corporation in 2007, using data reported by the University of Texas’ Center for Transportation Research and the Fort Stockton Economic Development Corporation¹⁵. The study projected that the rehabilitation of the line would increase the total number of rail cars moved to Fort Stockton to 3,808. According to the report, these goods would travel in a northeast/southwest direction between Fort Stockton and Fort Worth.

The information presented in the report was used to determine the impact on the highway system as a result of the current traffic (924 cars) and the projected 3,808 carloads being moved by truck. The analysis used the FHWA’s Highway Cost Allocation Study (updated May 2008) methodology. A conservative diversion of 3.5 trucks per rail car was assumed, though sometimes a 4-to-1 ratio is used. Table 6 shows that the railcars that could be moved from Fort Worth to Fort Stockton represent over 11 million vehicle-miles-traveled by trucks on an annual basis.

C. Innovation

There are no definitive technological benefits from this project as described in the NOFA. However, from a practical standpoint, the preservation and continued operation of the SORR has required an innovative approach by TxDOT since the acquisition of the line was considered. The Texas Legislature appropriated \$6 million toward the \$9.5 million sale price for the line. TxDOT entered into an agreement with Grupo Mexico, a large mining conglomerate, to provide the remaining \$3.5 million necessary to purchase the line. Grupo Mexico formed Texas Pacifico Transportation, Ltd. to operate and maintain the SORR. Grupo Mexico is also the majority owner (73%) of Ferromex, the railroad operating in Mexico that connects to the SORR in Presidio. TxDOT believes this corporate relationship can foster the use of the line for NAFTA traffic, providing an additional route for rail movements between the U.S. and Mexico.

The rehabilitation and maintenance of the line has also been innovative in securing additional funds from TXPF (of at least 25%) for each project using state or federal funds. The lease agreement has also been amended and requires TXPF to maintain each segment

¹⁵ Report available for review at <http://www.txdot.gov/business/rail/tiger2012.htm>



of the line in the same or better condition as it is when a TxDOT project is completed. This contractual requirement insures that the funds invested by TxDOT provide a long-term benefit by maintaining the line in perpetuity.

D. Partnership

TxDOT's ownership of the SORR and the lease agreement with TXPF constitute a true public-private partnership to provide essential transportation services to a large region in west Texas. TxDOT and TXPF have invested over \$25 million in addressing critical deficiencies to keep the line operational and increase speeds in those sections to 25 mph. It is estimated that rehabilitating the project area to 25 mph speeds will require a \$5,000 per mile annual maintenance program to keep the line in good condition. TXPF will be wholly responsible for that maintenance program.

The rehabilitation of the line from Sulphur Junction to Fort Stockton is necessary to continue providing service to existing customers on the line, for further economic development in the region, and to allow the shipment of wind tower components from San Angelo south to Fort Stockton, which is located in a region of intense wind farm development. The rehabilitation of the line to Fort Stockton will also provide for the development of additional industries in support of energy production and other new industrial developments in an Economically Disadvantaged Area of the state. There are abundant petroleum and natural gas resources in the region which are in the process of development. Several companies have contacted TXPF and requested rates for the shipment of diesel fuels from refineries to Fort Stockton for use in their mining equipment. TXPF has not been able to provide this service due to hazardous materials movement restrictions that exist from the Excepted Track status of the rail line. Rehabilitation of the line would enable these materials to be diverted from truck to the SORR.

The rehabilitation of the SORR is also part of a broader state and local partnership for economic development in the region. The project has letters of support from:

Texas Pacifico Transportation, Ltd. (financial partner)
City of Fort Stockton (financial partner)
Congressman K. Michael Conaway
Representative Drew Darby
Senator Carlos Uresti
Judge Michael D. Brown
City of San Angelo
San Angelo Chamber of Commerce
San Angelo Metropolitan Planning Organization
Angelo State University
Howard College



E. Results of Benefit-Cost Analysis

The project provides significant benefits for the region as well as the state and nation. The various categories of benefits have been detailed in the previous sections of this application. The discounted avoided costs for continuing to move traffic by rail total over \$204 million for the 20 year period. The project has a Return-On-Investment (ROI) of 1,970% and a benefit cost ratio of 20.7/1 with a modest 3% growth. The discounted project benefits are shown in Table 8. The detailed benefits and costs are shown in Table 9. The complete Benefit–Cost and Economic Impact Analysis are available at <http://www.txdot.gov/business/rail/tiger2012.htm>.

Economic Indicators	Total	Discounted 7%	Discounted 3%
Total Costs	\$ 10,123,865	\$ 9,415,194	\$ 9,820,149
Total Benefits	\$ 219,730,329	\$ 204,349,088	\$ 213,138,419
NPV	\$ 209,606,464	\$ 194,933,894	\$ 203,318,270
ROI	1,970%	2,070%	5,217%
B/C	20.7 / 1	20.7 / 1	20.7 / 1

Table 8: Discounted Project Benefit/Cost Summary

Description	Category	Effects	Benefit	Cost
Track Rehabilitation	State of Good Repair	Preservation of Service, increased track speed		\$8,532,793
Track Maintenance ¹⁶	State of Good Repair	Preservation of Service, increased track speed		\$1,591,072
Highway Maintenance	Sustainability	Avoided 20 yr highway maintenance	\$38,206,470	
Congestion	Safety	Avoided 20 yr highway congestion	\$6,588,774	
Safety	Safety	Avoided 20 yr highway safety impacts	\$2,707,545	
Noise	Sustainability	Avoided 20 yr noise impacts	\$600,550	
Emissions	Sustainability	Avoided 20 yr emissions impacts	\$12,542,942	
Fuel	Economic Competitiveness	Avoided 20 yr fuel usage	\$159,084,048	
Total		Benefit/Cost = 20.7 / 1	\$ 219,730,329	\$10,123,865

Table 9: Benefit – Cost Calculations

The estimated avoided costs for moving the projected traffic by rail total over \$219 million for the 20 year period. The project has a ROI of 1,970% and a benefit cost ratio of 20.7/1.

¹⁶ 20 year annualized track maintenance at \$5,000 per mile for 16 miles, with 1.5% growth. This cost will remain the responsibility of TXPF in accordance with their contractual obligations.

V. Project Readiness and NEPA

A. Project Schedule

The project is ready to proceed rapidly upon receipt of a TIGER Grant as evidenced by the fact that TxDOT has completed the project development process for the project and the track rehabilitation plans and specifications for that portion of the project are complete.

The project schedule is dependent upon the timing of the TIGER grant award. The project is virtually “shovel ready” and could go to letting and construction quickly after all agreements were finalized and the grant was approved. Assuming the TIGER grant is approved for \$5,843,611 as requested and the agreement is finalized by the end of April 2012, the project would be completed within 20 months of letting, as shown in Table 10.

Task	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
PSE Completion	■																						
Env. Clearance	■																						
TIGER Agreement	■	■																					
Project Letting			■																				
Contract Execution			■	■	■																		
Mobilization						8	8																
Rail Replacement								8	8	8	8	8	8	5									
Turnout Construction												5	5	5	5	5							
Ballast Delivery										4	4	4	4	4	4	4	4	4					
Surfacing & Regulating										3	3	3	3	3	3	3	3	3	3	3	3		
Grade Crossings											6	6	6										
Construction Management						2	2	3	4	4	4	4	4	4	4	4	4	4	2	2	2	1	
Monthly Jobs						10	10	11	12	19	19	25	30	30	21	17	16	11	9	5	5	1	

Table 10: Project Schedule & Construction Jobs Created



The project is in the State Transportation Improvement Plan¹⁷ (STIP) and has tentatively been scheduled for letting in July 2012. That date may be set back based upon the time needed to complete the federal funding agreement. Any delays in the TIGER approval and appropriation process would result in similar delays in project implementation.

B. Environmental Approvals – NEPA

This proposed project consists of rail replacement, tie replacement, crossing replacement, and ballast addition within the project limits, on existing track, in existing right-of-way. Most of this work will be performed using on-track equipment which has little to no effect on the environment. The only excavation of soils will be at the crossing replacement locations and will be of minimal depth to remove the existing crossing, reprofile the base, and reconstruct the crossing. The total length of all crossings combined is 68 linear feet, with an estimated maximum width of 12 feet. The project site is located in the Trans Pecos Natural Region of Texas. The project is entirely located in Pecos County. The project area itself is primarily rural and contains vegetation associated with small ephemeral creeks and rangeland. The land use adjacent to the rail line in Pecos County consists almost entirely of ranching, but passes through the town of Fort Stockton. Within Fort Stockton the land use adjacent to the tracks is associated with farming, ranching, and manufacturing.

The engineering, social, economic, and environmental studies conducted thus far indicate that no significant environmental effects would occur; therefore, the proposed project qualifies as a Categorical Exclusion. In addition, the proposed action has no significant impacts as described in 23CFR771.117 (a) and (b).

The track rehabilitation was environmentally cleared by the State in 2009. TxDOT has included a FRA Categorical Exclusion checklist for submittal with this application. The environmental documentation is attached and also available for review at the web site at <http://www.txdot.gov/business/rail/tiger2012.htm>.

VI. Federal Wage Rate Certification

TxDOT follows federal wage rate requirements and the federal wage rate certification is provided as an attachment to the application.

VII. Changes from Pre-application

The project funding has not changed from the pre-application.

¹⁷ April 3, 2009, STIP revision: ftp://ftp.dot.state.tx.us/pub/txdot-info/tpp/stip/rev/april3_09/highway/odessa_hwy_040309.pdf



VIII. Summary

The rehabilitation of the SORR from Sulphur Junction to Fort Stockton will provide for the continued development of energy resources in an Economically Disadvantaged Area with a low per-capita income and a high percentage of the population living below the poverty level. The “shovel ready” status of the project would cause the immediate creation of construction jobs while stimulating local economies and providing an incentive for businesses to begin planning for improved rail service in the region. The estimated impacts from avoided truck traffic show a discounted savings of over \$204 million over a 20 year period¹⁸. The project will have positive direct and indirect impacts on the economy, employment levels, tax revenues, and highway costs. The discounted economic indicators are shown in Table 11.

Economic Indicators	Total	Discounted 7%	Discounted 3%
Total Costs¹⁹	\$ 10,123,865	\$ 9,415,194	\$ 9,820,149
Total Benefits	\$ 219,730,329	\$ 204,349,088	\$ 213,138,419
NPV	\$ 209,606,464	\$ 194,933,894	\$ 203,318,270
ROI	1,970%	2,070%	5,217%
B/C	20.7 / 1	20.7 / 1	20.7 / 1

Table 11: Discounted Project Benefit/Cost Summary

The project will maintain the rail line in a state of good repair through a contractual agreement that requires the lessee to keep the rail line in the improved condition once the project is completed. It will improve the long-term efficiency and reliability of this transportation resource and contribute to the economic competitiveness of the region and state. It will provide additional transportation choices for energy and other businesses in the region and avoid adverse environmental impacts by encouraging the diversion of freight from highway to rail and prevent the diversion of existing freight from highway to rail.

¹⁸ See BCA attachment “Benefit-Cost Analysis and Economic Impacts” attachment or at <http://www.txdot.gov/business/rail/tiger2012.htm>

¹⁹ Total Costs = \$8,532,793 (project) + \$1,591,072 (maintenance)