



# SORR Rehabilitation and Presidio International Rail Bridge Reconstruction

<b>Project: SORR Rehabilitation and Presidio International Rail Bridge Reconstruction</b>	
Was a FASTLANE application for this project submitted previously?	No
If yes, what was the name of the project in the previous application?	N/A
<i>Previously Incurred Project Cost</i>	\$143,051
<i>Future Eligible Project Cost</i>	\$16,244,572
Total Project Cost	\$16,244,572
FASTLANE Request	\$7,000,000
Total Federal Funding (including FASTLANE)	\$
Are matching funds restricted to a specific project component? If yes, which one?	Yes - partially Presidio Rail Bridge
Is the project or a portion of the project currently located on National Highway Freight Network?	Yes
Is the project or a portion of the project located on the NHS?	No
Does the project add capacity to the Interstate system?	No
Is the project in a national scenic area?	No
Do the project components include a rail-highway grade crossing or grade separation project? If so, please include the grade crossing ID.	Yes 9; list in narrative
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	Yes
If answered yes to either of the two component questions above, how much of requested FASTLANE fund will be spent on each of these project components?	\$1,368,800
State in which project is located?	Texas
Urbanized Area in which project is located, if applicable?	Rural Project
Population of Urbanized Area?	N/A
Is the project currently programmed in the:	(Rail Plan - Yes)
TIP?	Yes
STIP?	Yes
MPO Long Range Plan?	N/A
State Long Range Transportation Plan?	Yes
State Freight Plan?	Yes

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## Project Description

### *Eligibility*

The South Orient Railroad (SORR) runs approximately 391 miles from San Angelo Junction in Coleman County through San Angelo to Presidio at the Texas-Mexico Border (**Figure 1**). The line, which is one of the eight rail gateways between the U.S. and Mexico, is owned by the Texas Department of Transportation (TxDOT). TxDOT acquired the facility as the result of an application to abandon the old Kansas City, Mexico and Orient line by the Atchison, Topeka and Santa Fe Rail Company (ATSF).

In 2001, TxDOT completed the acquisition of the South Orient Rail Line to prevent its abandonment and the loss of this rail transportation corridor. TxDOT subsequently leased the line to a new shortline railroad, Texas Pacifico Transportation, LTD. (TXPF). TXPF's parent company is Grupo Mexico, the majority owner of Ferromex, the Class 1 railroad in Mexico which also connects to the SORR at the border in Presidio. TXPF immediately began providing service to the few remaining customers on the line, with annual carloads interchanged averaging 2,031 from 2001 through 2009.

In February 2008, the SORR International Rail Bridge, a timber structure, burned to the ground south of the Presidio flood control levee on the U.S. side. This event severed one of the eight rail crossings between the U.S. and Mexico and one of five rail crossings in the state of Texas. Since then, TxDOT has been working with TXPF to develop plans for the reconstruction of the bridge.

In 2009, TxDOT began the rehabilitation of the line starting at the east end and has invested over \$34 million in rehabilitation projects from San Angelo Junction to Mertzon, Texas, a total distance of 112 miles. Additionally, TXPF has invested approximately \$35.8 million in rehabilitation and capacity expansion projects between 2002 and 2015. Rehabilitation of the eastern end of the line has resulted in improved operations and safety along with an increase in freight traffic; with annual carloads interchanged rising from an average of 2,031 pre-rehabilitation to over 25,000 in 2015, an increase of over 1,100 percent (**Figure 2**).

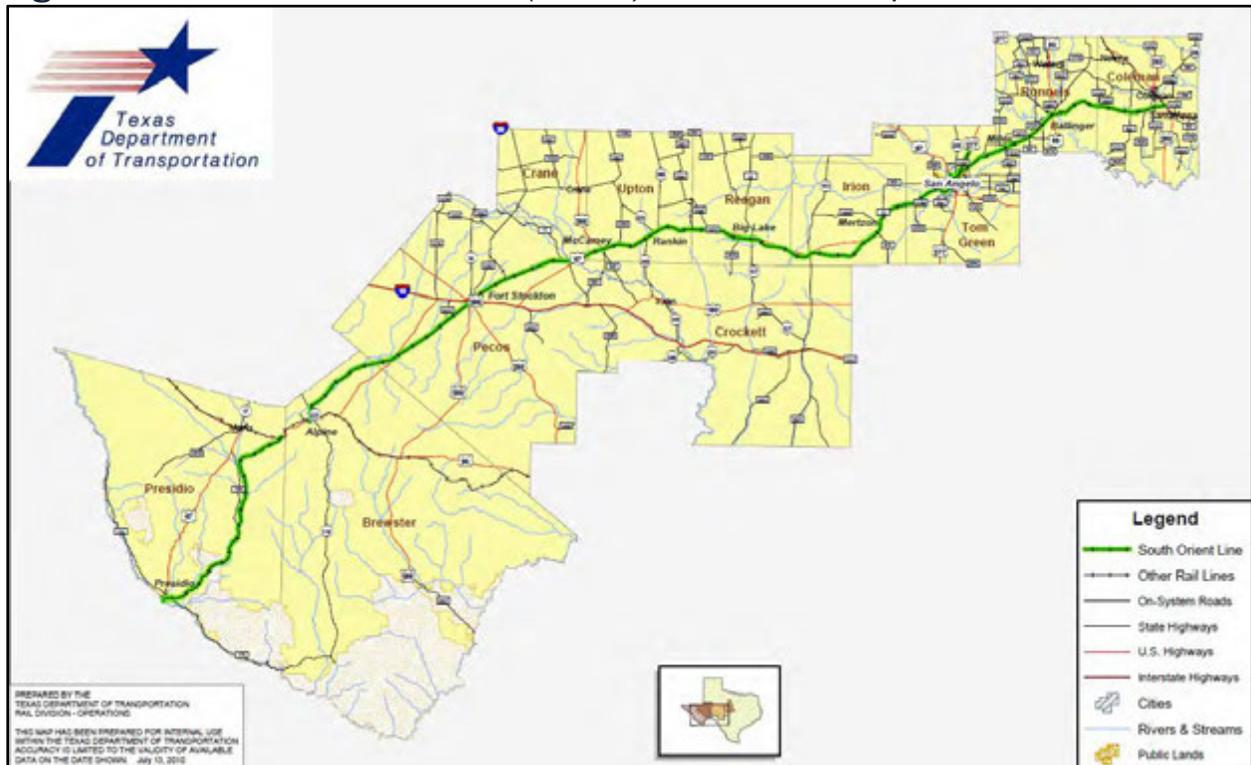
Much of this traffic is related to the energy industry in west Texas and includes significant volumes of frac-sand used in petroleum mining. Even though petroleum prices are down dramatically and new well drilling is almost suspended, shipments of frac-sand to the region remain strong (**Table 1**) reporting a significant increase of 45 percent between 2013 and 2015 and 33 percent between 2013 and October 2016. This is due to the need for "maintenance" fracking of existing wells in order to keep them open for future petroleum extraction.

Table 1. SORR – Carloads

	Year			
	2013	2014	2015	Jan-Oct, 2016
Sand	15,269	22,906	22,104	20,272
Crude Oil	5,787	1,422	416	1,040
Steel	404	333	342	256
Grain	927	196	953	1,368
Pipe			1,362	1,406
Miscellaneous	1,171	503	726	855

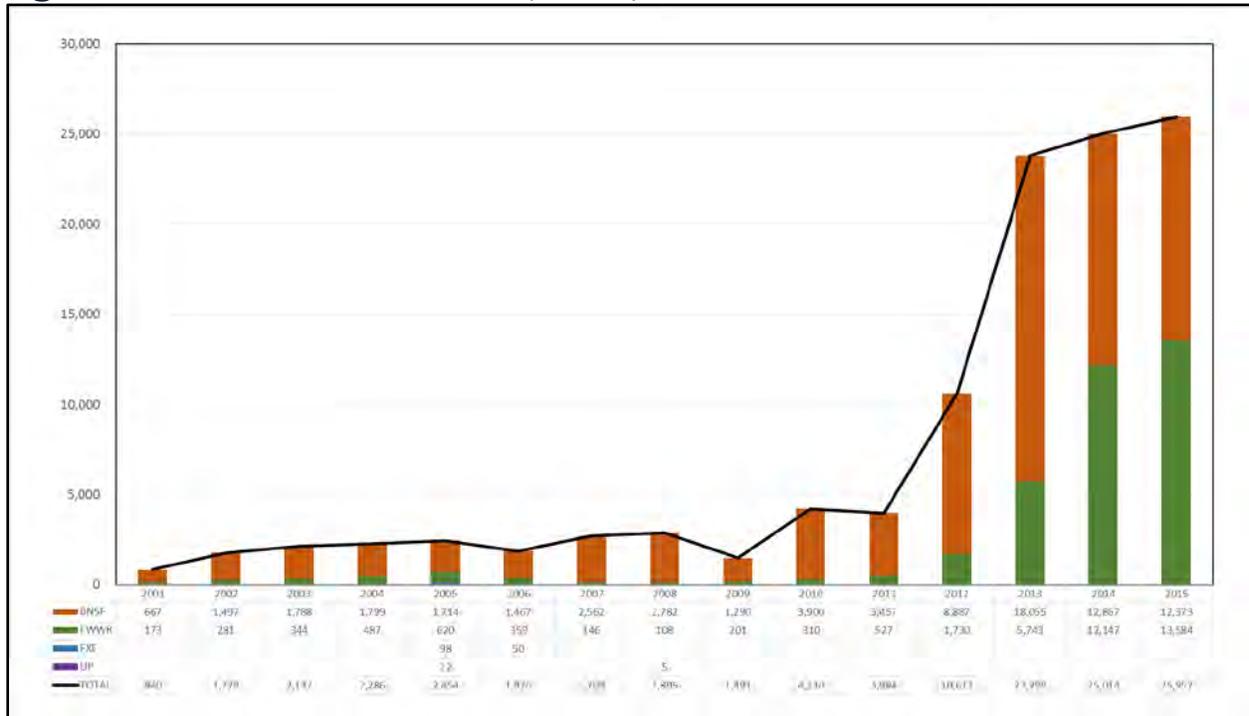
Source: Texas Department of Transportation (TxDOT).

Figure 1: South Orient Railroad (SORR) – Location Map



Source: Texas Department of Transportation (TxDOT).

Figure 2: South Orient Railroad (SORR) – Annual Carloads

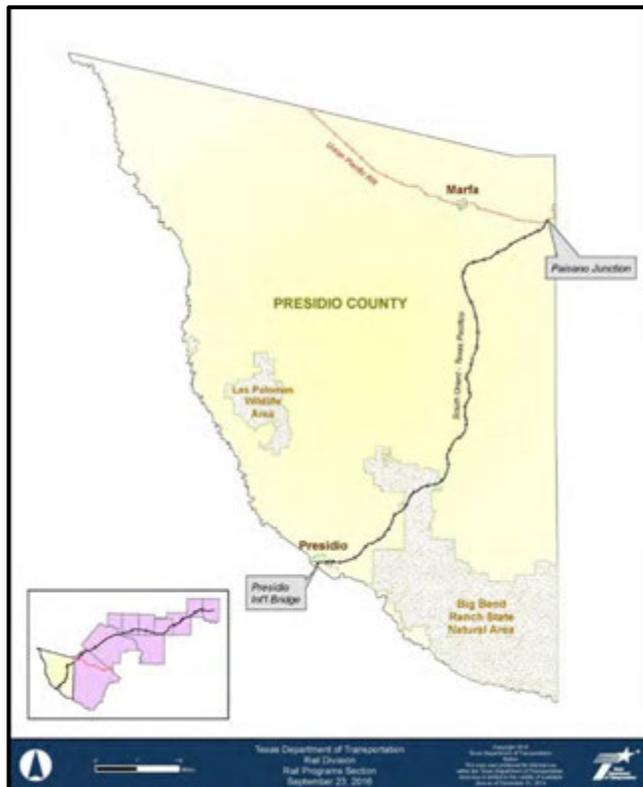


Source: Texas Department of Transportation (TxDOT).

### Detailed Project Description

The Texas Department of Transportation (TxDOT) South Orient Railroad (SORR) Rehabilitation and Presidio International Rail Bridge Reconstruction Project is a rural project that has local, regional, national, and international impacts. The project includes the construction and reestablishment of a border crossing from Ojinaga, Mexico to Presidio, Texas. The Project would also include track tie and surfacing, switch replacement, timber bridge component replacements, and drainage improvements along the existing line from the new international rail bridge north to the Union Pacific Railroad (UPRR) crossing near Paisano Junction, Texas for approximately 72 miles in total, as shown in **Figure 3**.

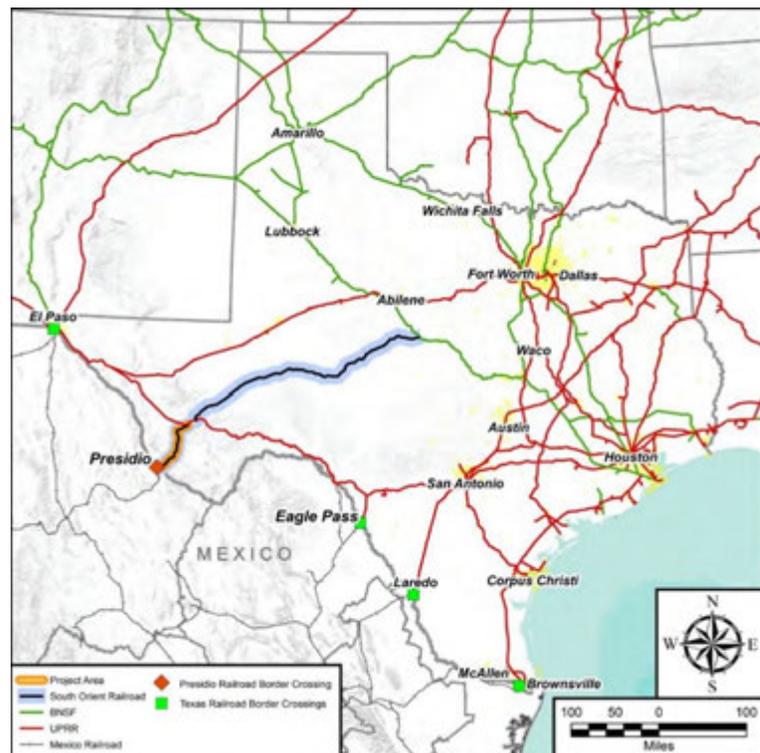
Figure 3: SORR Rehabilitation and Presidio-Ojinaga International Bridge Project – Project Location Map



Source: Texas Department of Transportation (TxDOT).

Proposed improvements to the SORR will generate significant impacts at the local, regional, state, national, and international level by providing direct connectivity to BNSF and UP rail lines in the U.S., connectivity to Fort Worth & Western Railway and Kansas City Southern Railway via trackage rights, and Ferromex railroad in Mexico, as shown in **Figure 4**. The project will provide improved connectivity in this region of Texas with the closest connection at Paisano Junction (**Figure 3**) and the central Texas connection at San Angelo Junction (**Figure 2**).

*Figure 4: SORR Rehabilitation and Presidio-Ojinaga International Bridge Project – Regional Railroad Network*



At the regional level, the Project will have a positive impact by reducing energy producer input prices in the Permian Basin, creating new jobs in support of international trade, and increasing shipments of frac-sand, grain, automobile parts and other commodities. At a national level, this project will support energy independence as well as contribute to the efficient transportation of goods between the U.S. and Mexico, reactivating an international gateway for new service and relief to existing congestion.

On September 6, 2016, TxDOT submitted comments on the Interim National Multimodal Freight Network (NMFN) that was published in the Federal Register on June 6, 2016 (see **Attachment 1**). TxDOT recommended that the 391 mile South Orient Rail Line from San Angelo Junction be included in the Final NMFN. The SORR meets the requirements for inclusion in the NMFN criteria in that it 1) provides access to border crossings; 2) addresses economic factors including balance of trade; 3) provides access to major areas for manufacturing, agriculture, and natural resources; 4) addresses freight choke points by providing an additional route for traffic and congestion relief at other border crossings; and (12) includes significant freight goods movements, including global and domestic supply chains.

The Project has broad local, regional, state, national, and international support, including from the connecting railroad in Mexico, Ferromex. The Project will foster the creation of high-paying jobs in a region with relatively high unemployment rates, reactivate an existing out-of-

service international rail border crossing between the U.S. and Mexico, provide additional infrastructure for the movement of NAFTA freight between the two countries, and will improve safety and environmental conditions by removing truck traffic from state and national roadways.

The total estimated project cost is \$16.2 million (in 2016 dollars). The State of Texas owns the SORR and has partnered with the lessee and operator of the line, Texas Pacifico Transportation Company (TXPF), Ltd., to provide 57 percent of the necessary funding (\$9.2 million) for the United States (U.S.) portion of the SORR Bridge reconstruction over the Rio Grande River. TxDOT is requesting the remainder of the costs, \$7 million, for railroad improvements and upgrades from the Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) grant funds.

The proposed project includes the reconstruction of the Presidio-Ojinaga International Rail Bridge and the rehabilitation of approximately 72 miles of railroad from the U.S./Mexico border (Railroad Mile Post 1029) to Alpine, Texas (Railroad Mile Post 956.7). Rehabilitation will include track, bridge and drainage improvements from the new international rail bridge north to the Union Pacific Railroad (UP) main line at Paisano Junction (located 11 miles west of Alpine, Texas). There are multiple infrastructure issues that need addressed in this segment of track, which includes 83 bridges of varying lengths, heights, and configurations, many of which need repairs; 41 public and private grade crossings of varying lengths and construction, and approximately 38 rock cuts with some obstructed drainage ditches. The proposed scope of work includes:

- 15,000 cross ties replaced with associated securement (spikes, plates, anchors)
- 4,000 tons of ballast installed and regulated
- 11 miles of track surfacing
- 5 miles of drainage ditch clearing and re-profiling
- 38 bridges repaired or rehabilitated (see detailed list in **Attachment 2**)
- 37 grade crossings reconstructed, totalling 944 L.F. (see detailed list in **Attachment 2**)

Proposed funding for the project is being sought through the public-private sector partnership between the State of Texas and the rail line lessee, TXPF. With Federal funding support, the SORR will continue to serve the strategically located Port of Entry (POE) in Presidio, Texas, which has local, national, and international significance, and can make broad economic contributions to the region and nation.

### *Use of FASTLANE Funds*

The requested \$7 million of FASTLANE Discretionary funding is needed to enable completion of the full scope of this project. Currently, the approximately 72-mile section of the SORR between the U.S./Mexico border and the Paisano Junction is classified as FRA Excepted

Track<sup>1</sup> and limited to operating speeds of 10 mph. If rehabilitation funding is not provided, this section of the line is expected to become inoperable within 5 to 10 years, threatening future transportation network efficiency, freight mobility, energy development, and economic growth.

The FASTLANE Discretionary funds will be used to upgrade the 72-mile section to Class 2 standards, which would allow operating speeds to increase to 25 mph. These rail improvements would increase the capacity of the SORR and allow for continued transport of goods on rail rather than increasing freight truck movements in the region. In addition, the rail improvements to Class 2 standards would promote growth of rail freight transport in southwestern Texas, between the U.S. and Mexico, and nationally through the SORR's connectivity to BNSF, Fort Worth & Western Railway, Kansas City Southern Railway (via FWRW), and UPRR.

### *Expected Project Users*

Once completed, the SORR bridge and rail line improvement project will be utilized by:

- TXPF and its existing freight rail customers;
- Southbound freight forwarders moving materials and products from the U.S. to Mexico;
- Northbound freight forwarders moving goods from Mexico to the U.S.;
- Future customers attracted by the capital improvements to the line and resource development in the area; and
- The traveling public using the roadway-rail crossings.

This project will have a significant impact at a national and regional level in terms of reduced transportation prices in the Permian Basin, reactivating an international rail crossing, transporting frac-sand to northern Mexico, and providing for increased rail shipments of grain, automobile parts and other commodities.<sup>2</sup>

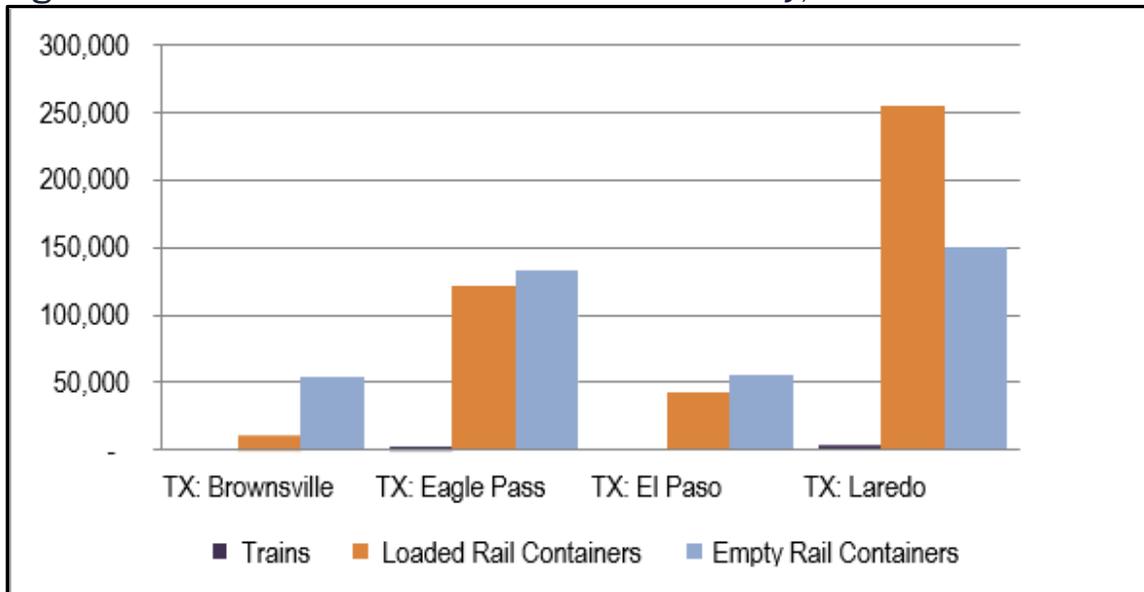
**Figure 5** illustrates the 2014 annual number of trains and empty/loaded rail containers moving through the Texas POEs with rail access. The other rail crossings are at or near the capacity of the specific crossing, supporting infrastructure, and Homeland Security inspection capabilities. The proposed SORR improvements would provide an additional U.S./Mexico rail crossing, located in Texas between El Paso and Eagle Pass. This section of the SORR would have direct connectivity to BNSF and UP rail lines in the U.S., connectivity to Fort Worth & Western Railway and Kansas City Southern Railway via trackage rights, and Ferromex railroad in Mexico, as shown previously in **Figure 4**.

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<sup>1</sup> Federal Railroad Administration (FRA) Excepted Track status regulations limit this segment of the line to 10 mph, restrict hazardous materials to 5 cars per train, and prohibit the movement of occupied passenger cars.

<sup>2</sup> Texas Department of Transportation (TxDOT). *Potential Economic Impacts of an Improved South Orient Railroad*, December 30, 2007.

Figure 5: Rail Movements in Texas Ports of Entry, 2014



Source: U.S. Department of Transportation, Research and Innovative Technology Administration (RITA), Bureau of Transportation Statistics (BTS), based on data from the U.S. Department of Homeland Security.

### Transportation Challenges

The Texas border between Eagle Pass and El Paso is lacking an international rail border crossing and functional railroad, resulting in increased truck freight volumes in the region. Without needed improvements, the SORR between the U.S./Mexico border and Paisano Junction is expected to become inoperable within 5 to 10 years. A decreased ability to ship by rail will result in further increases in truck freight movements, leading to the need for increased road maintenance, decreased safety, and the potential for negative environmental impacts. This region supports the transportation of materials needed to develop the Permian Basin crude oil outputs, and could also support new exports to Mexico, including wheat and frac-sand.

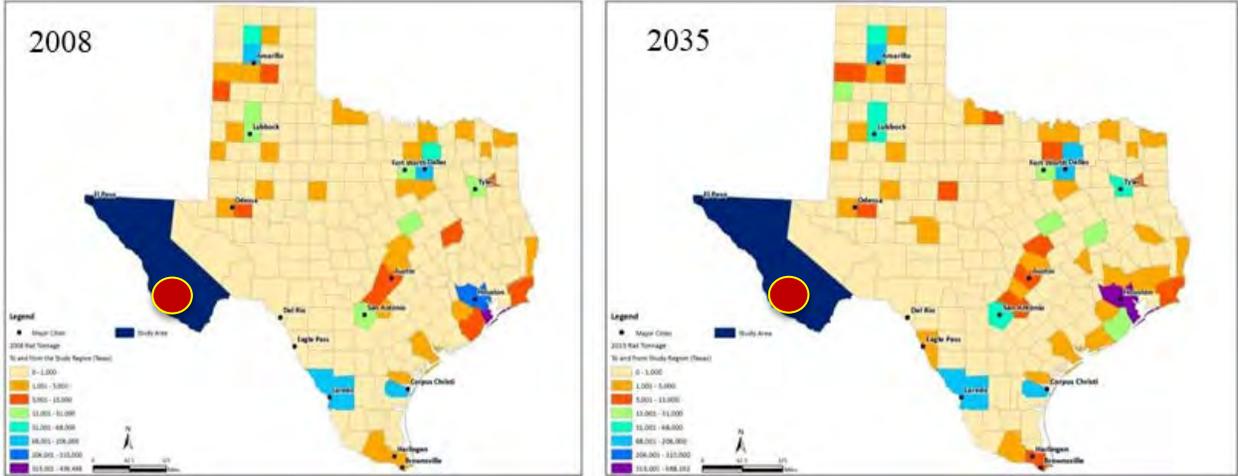
As shown in **Figure 6**, the project area supports rail movements across the state of Texas and is anticipated to grow by 2035. The project provides international rail connectivity to significant areas of growth that are centered near major metropolitan regions including Dallas, Fort Worth, Houston, and the Central United States.

As noted in the Texas A&M Transportation Institute's (TTI) *Potential Impacts of Mexico's Energy Reform on the Texas Transportation System*<sup>3</sup>, three key vulnerabilities of the Texas transportation network were identified, and all three were related to the State's rail network:

<sup>3</sup> Texas Transportation Institute (TTI). *Potential Impacts of Mexico's Energy Reform on the Texas Transportation System*. Available at <http://d2dtl5nnlpr0r.cloudfront.net/tti.tamu.edu/documents/tti-testimony-09192014.pdf>

- The shortage of refineries and absence of pipelines in the Burgos Basin will lead to an increase in use of railways for the transportation of crude oil from Mexico to refineries on the U.S. Gulf Coast.
- Rail border crossings will also be affected, as currently there are capacity constraints at the few existing rail crossings in the region.
- The frac-sand coming from the Midwest by rail to areas like the Eagle Ford and Permian Basin, as well as to Texas' ports, is likely to be extended toward the Mexican side of these shale reserves. Rail volumes through Texas could potentially increase.

Figure 6: 2008 and 2035 Rail Movements within Texas To and From the Study Region



● Presidio  
Source: Texas Department of Transportation (TxDOT).

### Ladders of Opportunity

The SORR International Rail Bridge and proposed rail improvements will create economic ladders of opportunity by bringing additional jobs and businesses to the area as a result of the improved connectivity of the regional freight rail transportation system serving the energy industry and support services. This project will promote the creation of additional high-paying oil and gas extraction jobs in the region. The national average oil and gas extraction job pays a salary of \$89,060 compared with the national mean wage for all occupations of \$48,320<sup>4</sup>. The median household income in Presidio County is \$30,983<sup>5</sup>, while the unemployment rate is at 10 percent. This economically disadvantaged area would benefit from these high-paying jobs which would provide financial security for many who would otherwise be working in lower paying jobs or unemployed.

<sup>4</sup> U.S. Bureau of Labor Statistics (BLS), May 2015 National Industry-Specific Occupational Employment and Wage Estimates.  
<sup>5</sup> U.S. Census Bureau, 2014 American Community Survey 5-Year Estimates.

The project will also foster the creation of additional high-paying jobs in the region in the industries of oil and gas extraction, mineral mining, engineering, and construction positions, creating ladders of opportunity and financial security for many who would otherwise be under- or unemployed. The project will provide the following benefits:

- Reactivate one of eight rail bridges between the U.S. and Mexico;
- Increase operating train speeds from 10 mph to 25 mph;
- Provide better use of multimodal connections;
- Diversion of heavy truck loads from the highway system to rail;
- Decreased highway maintenance costs from reduced truck freight;
- Reduced transportation costs; and
- Job creation.

In addition to the high-paying oil and gas extraction jobs, it is estimated that the construction of the Presidio-Ojinaga International Bridge and the rehabilitation of the SORR between Presidio and Alpine will create 210 short-term jobs during the 18-month construction period. Short-term jobs for many may be considered a ladder of opportunity to gain working experience allowing for further long-term job prospects.

## **Project Location**

Located in central and west Texas, the SORR extends approximately 391 miles from near Coleman, Texas, to Presidio, Texas located along the U.S./Mexico border. The project will be at the Presidio International Rail Bridge and 72 miles northward from that point along the SORR. The 72-mile project area includes the section of the SORR from west of Alpine to Presidio, including the rail border crossing bridge. Upon completion of the project, the SORR will once again connect with Mexico and provide an additional international crossing to facilitate international trade and alleviate some congestion at other crossings.

The Presidio border crossing is one of five rail crossings in Texas and one of only eight along the entire U.S./Mexico border. According to a recent Government Accountability Office report<sup>6</sup>, rail border crossings currently fall short of maximum efficiency due to crew change points, inspections, conflicting freight rail movements, highway-rail grade crossing conflicts, and community impacts. There would be no conflicting freight rail movements at this location and the additional border crossing capacity could provide some relief for other rail border crossing locations.

## **Project Parties**

The SORR is owned by TxDOT on behalf of the State of Texas. TxDOT has a workforce of more than 10,000 employees and is headquartered in Austin, Texas. TxDOT has vast

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<sup>6</sup> U.S. Border Communities: Ongoing DOT Efforts Could Help Address Impacts of International Freight Rail, Government Accounting Office, January 2016

experience managing Federal and state infrastructure projects including successfully completing many rail rehabilitation and construction projects. TxDOT is a cooperating agency with the Federal Railroad Administration (FRA) and is currently managing significant Federally-funded rail projects, such as Dallas to Houston High Speed Rail Preliminary Engineering and Environmental project, the Texas to Oklahoma Passenger Rail Study, and provided oversight of the recently completed, highly successful Tower 55 Multimodal Improvement Project. TxDOT's experienced Rail Division staff will provide effective and efficient oversight and management of this grant.

TxDOT has leased operations on the SORR line to TXPF and, under the terms of the agreement, TxDOT became the permanent owner of the ROW and infrastructure. TXPF obtained a 40-year operating lease with renewal options. TxDOT has invested approximately \$34 million in rehabilitation projects and TXPF has invested approximately \$35.8 million in rehabilitation and capacity projects to keep the line operable and functional at 25 mph. TxDOT completed the rehabilitation of the line from San Angelo east toward Coleman through several rehabilitation projects including: 109,197 cross ties replaced, 965 switch ties replaced, 90,751 feet of rail replaced, 809,290 tons of ballast installed, 127 grade crossings reconstructed, 3 bridge replacements, repairs to 29 additional bridges, 8 grade crossing signals upgraded, repairs to 35 switches, and additional interchange track at San Angelo Junction.

These projects were completed using a combination of Federal American Recovery and Reinvestment Act of 2009 (ARRA) funds, FRA grants, and State, TXPF, and City of San Angelo contributions. These projects have enabled 25 mph speeds from San Angelo Junction (near Coleman) to Sulphur Junction (11 miles east of Fort Stockton).

TxDOT's ownership of the line, the lease to TXPF, and their joint efforts to rehabilitate the line make this project a true public-private partnership. The requested FASTLANE Discretionary grant funds will enable a key segment of the SORR to reach operating parameters necessary to enable large volume increases, to access the UPRR in Alpine, and allow trade with Mexico on the railroad to resume. This volume (and associated earnings) will further enable the partners to invest in future improvements.

The SORR rehabilitation and international bridge reconstruction project is strongly supported by Texas' Congressmen and State Legislators from the region as well as TxDOT, TXPF, counties and cities along the line, and other state and local stakeholders.

### **Grant Funds and Sources/Uses of Project Funds**

TxDOT is prohibited by state statute from using fuel-tax revenues for nonhighway projects, severely restricting the funds available for rail projects. TxDOT and TXPF have used all resources allocated to-date to complete the rehabilitation of the line from San Angelo

Junction to Sulphur Junction and do not have adequate rehabilitation funds remaining for the proposed project. The FASTLANE grant match will be provided by TXPF through in kind services by the reconstruction of the SORR international rail bridge over the Rio Grande, which reestablishes connectivity between the U.S. and Mexico in this region of Texas.

TxDOT and TXPF have funded the cost of developing plans, specifications, estimates, and environmental clearances for the project. The construction and project management costs would be funded by the \$7 million FASTLANE Discretionary grant funds with a 56.9 percent match by TXPF through the construction of the international rail bridge over the Rio Grande River. The funding sources and the uses by project component are shown in **Table 2**.

*Table 2: Project Funding and Component Splits, 2016 Million Dollars*

Project Component	Component Cost	Component %	Funding Source	
			FASTLANE	TXPF (Match)
International Bridge Replacement	\$7,703,810	48%	\$0	\$7,703,810
Track Tie, Surfacing, and Switches	\$4,030,710	25%	\$4,030,710	\$0
Bridge Component Replacements	\$380,520	2%	\$380,520	\$0
Bridge Tie Replacements	\$536,450	3%	\$536,450	\$0
Drainage Improvements	\$1,503,850	9%	\$1,503,850	\$0
Contingency	\$2,089,232	13%	\$548,470	\$1,570,762
<b>Total</b>	<b>\$16,244,572</b>	<b>100%</b>	<b>\$7,000,000</b>	<b>\$9,244,572</b>
<b>Percentage of Project</b>		<b>100%</b>	<b>43.1%</b>	<b>56.9%</b>

### *Previous Federal Funding Requests*

#### **Previous FASTLANE Requests**

TxDOT has applied for previous FASTLANE funding in past years for other nonrail projects listed below. This project has not been submitted before. No Federal funds have been awarded to the other projects to date.

#### **Other Previous Federal Funding Requests**

In the spring of 2005, TxDOT received \$5.5 million in Federal funds to assist with the ongoing rehabilitation of the rail line. TxDOT contracted to install a total of 37,125 new crossties in the line, 93 percent of which were installed from near Alpine to Presidio. Other rehabilitation improvements and enhancements were made to the railroad in Fort Stockton to allow for the city's economic development.

In the spring of 2009, the Texas Transportation Commission approved \$14.01 million in ARRA funding for the rehabilitation of the line. These funds were used to complete the rehabilitation of the line from San Angelo Junction to Sulphur Junction (Mile Post 869.3).<sup>7</sup>

The 2010 Federal Omnibus Act included \$1 million for the rehabilitation of grade crossings in San Angelo and \$1 million for the rehabilitation of the line from San Angelo west toward Fort Stockton.

### *Project Compliance Funding Commitments*

TXPF issued a letter of commitment to provide the \$9 million FASTLANE match through in-kind services in the reconstruction of the Presidio-Ojinaga International Bridge. The letter is included in **Appendix A: Letters of Support**.

## **Selection Criteria**

### *Primary Selection Criteria*

#### **State of Good Repair**

The rehabilitation of the line using FASTLANE Discretionary grant funds will improve the condition of an existing rail transportation system from the Presidio-Ojinaga International Bridge north to the UPRR crossing near Paisano Junction. The project will 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. TXPF's contractual obligations have eliminated any future maintenance or rehabilitation requirements by the state for track infrastructure or the local communities for grade crossing surface conditions.

According to the Association of American Railroads (AAR), the average train speed of the Class 1 railroad is between 23 and 25 mph. The rehabilitation elements proposed as part of this project are appropriate for improving track speed within the project limits to 25 mph. This will result in an efficient, effective, and safe rail service in the region and provide for an ongoing state of good repair. This level of investment is adequate for existing and projected needs without "over investment" in unnecessary higher speeds.

If the international rail bridge and the segment of the SORR between the border and Paisano Junction are not reinstated or rehabilitated, this line will continue to be inoperable, providing no opportunity for rail growth the future exporting of frac-sand and other critical exports. As shown in **Table 3**, trucks will continue to dominate the export markets as the

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<sup>7</sup> Texas Department of Transportation, Fact Sheet. South Orient Line.

existing shippers will continue to be forced to divert their rail freight to roadways as currently there are capacity constraints at the few existing rail crossings in the region.

*Table 3: Freight Traffic Trends at the U.S.- Mexico Border, 2014 – 2040*

Freight Mode	Statewide Growth	Trend
	Percent/Volume	
Trucks	256%/110.7 million tons	Cross-border tonnage increases by 250 percent by 2040, especially in export direction. Truck is the dominate mode of cross-border freight movements at 80.5 percent. Through-state border-crossing movements are estimated to be more than half of the total border crossing movements
Rail	213%/19.4 million tons	

Source: Texas Freight Mobility Plan, Final, January 25, 2016, Adapted from Exhibit 7-33 prepared based on TRANSEARCH, USACE and Forecast Framework Analysis (FAF).

The project is estimated to divert approximately **45 million truck miles to train miles over the next 20 year period**. This diversion of heavy trucks on the highway system reduces highway maintenance costs and in particular pavement re-surfacing and maintenance costs. **Over the study period, nearly \$1.7 million (in 7 percent discounted 2015 dollars) in highway maintenance costs are avoided.**

### Economic Competitiveness

The expenditure of \$7 million for freight rail infrastructure rehabilitation and an additional \$9.2 million for the reconstruction of the Presidio-Ojinaga International Bridge will result in freight transportation cost savings over the 20-year analysis period. In the short-term, the project will improve the long-term efficiency, reliability, and cost-competitiveness of freight movements to and from this region 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 multimodal transportation system as a whole by reestablishing the ability for freight rail to travel between the U.S. and Mexico at this location. With the rail line improvements, freight rail will have connectivity to national rail lines such as BNSF and UPRR and also connectivity to the Fort Stockton region where it can be trans-loaded to trucks for delivery to local destinations. At the U.S./Mexico border, with the reinstatement of the railroad bridge, the SORR would directly connect to the Ferromex railroad. Additionally, at Paisano Junction, the roadway network includes U.S. Highway (U.S.) 90 and U.S. 67 along with other regional and local roads such as Farm-to-Market (FM) 118 and FM 17. In Fort Stockton, via U.S. 67, the roadway network includes Interstate 10 (I-10), U.S. 285, U.S. 385, State Highway (SH) 18, and other regional and local roads such as FM 1053 and FM 1776. These roadways provide an extensive distribution system for rail freight that is being shipped to the region and trans-loaded at Fort Stockton.

The demand for frac-sand in Mexico is growing with fracking expected to increase in Mexico<sup>8</sup> and a bulk of Mexico's shale prospects located in the northeastern sections of the country where infrastructure is largely undeveloped.<sup>9</sup> Due to the expected increase in investments for exploration and production of Mexico's shale reserves that are located south of the Rio Grande River (**Figure 7**), the hydraulic fracturing boom along the Eagle Ford in Texas will likely expand south. The potential influx of investment from foreign companies in the Sabinas and Burgos Basins can have strong implications on Texas' transportation system.

The development of Mexican oil/gas exploration activities could result in the export of drilling materials and frac sand from the U.S. to Mexico. As Mexico has no local sources for frac-sand, it is anticipated frac-sand will be shipped from the U.S. to Mexico. There are sand mines located on rail facilities near the SORR at Brady, Texas, and Cleburn, Texas, which already ship sand to locations on the SORR. This corridor, which connects to northwestern Mexico's oil-rich region, is the logical route for transporting this heavy freight from the mines to the well heads. Other frac-sand sources include mines in the Midwestern U.S., parts of Canada, and Brazil. Sand from those mines would be exported to Mexico by rail or truck, resulting in impacts to Texas ports, highway, and rail networks. The SORR is a logical reliever route for this new traffic as well.

Figure 7: Mexican Oil Reserves



Source: U.S. Energy information Administration. World Shale Gas and Shale Oil Resource Assessment, June 2013.

<sup>8</sup> Forbes. Available at <http://www.forbes.com/forbes/welcome/?toURL=http://www.forbes.com/sites/greatspeculations/2014/08/26/union-pacific-may-benefit-from-mexico-energy-reform/&refURL=&referrer=#d4817296253a>.

<sup>9</sup> Mexico's Huge, Untouched Shale-Oil Fields. Available at <http://www.aiche.org/chenected/2016/01/mexicos-huge-untouched-shale-oil-fields-lure-wildcatters-and-criminals>.

Given the shortage of Mexican refineries and pipelines in the area, it is likely that most of the extracted oil will be shipped to refineries in Texas and Louisiana. Oil will be hauled from drill sites by truck to gathering hubs and terminals for shipment by rail to the nearest refineries. There is a potential that the U.S. railroads serving the Gulf Coast could eventually handle crude-by-rail from Mexico. This could become a concern in Texas as Mexico's energy sector increases. International rail crossing capacity might be an additional concern with increased demand.<sup>10</sup>

Cost savings from avoiding heavy truck travel in favor of rail are efficiencies expected to result from the reinstatement of the international railroad bridge in Presidio and rail line improvements from Presidio to Paisano Junction. TxDOT is conducting an environmental evaluation for improvements to the Presidio- Ojinaga International roadway POE. The study is evaluating alternatives to improve mobility at the Presidio-Ojinaga International POE due to the lack of reliability and public safety for crossing movements, increased congestion, wait times for crossing traffic, and the need to enhance free flow of commodities between the U.S. and Mexico. The study noted that in late 2003, the state of Chihuahua finished the initial phase of a new location highway between Chihuahua City and Ojinaga (**Figure 8**). The new highway reduces driving time by half from the previous existing condition, while providing an excellent roadway for transporting delicate freight materials. Since completion of the road, commercial border crossings have increased over 300 percent at the Presidio-Ojinaga POE.<sup>11</sup> The project to widen the Presidio-Ojinaga International Bridge is anticipated to let in August 2017.<sup>12</sup>

Figure 8: Ojinaga-Chihuahua-Topolobampo Corridor, State of Chihuahua, Mexico



While improvements to the border crossing are being advanced for passenger and commercial vehicles, improving the SORR and reinstating the international rail bridge will provide additional efficiencies for freight rail travel. In particular, transportation shipping cost savings from avoiding heavy truck travel in favor of rail amount to roughly **\$26 million (in 7 percent discounted 2015 dollars) over the 20-year analysis period**. The rehabilitation of

<sup>10</sup> Texas Transportation Institute (TTI). *Potential Impacts of Mexico's Energy Reform on the Texas Transportation System*, TTI. Available at <http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/tti-testimony-09192014.pdf>.

<sup>11</sup> Presidio-Ojinaga International Port of Entry Project, Open House Public Meeting Materials, August 28, 2013. Available at <http://ftp.dot.state.tx.us/pub/txdot-info/elp/notices/082813-presentation.pdf>

<sup>12</sup> Texas Department of Transportation (TxDOT). Letting Schedule for El Paso District (FY 2017). Available at <http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/let/2017/letelp.htm>

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 due to increasing train speeds from 10 mph to 25 mph.

The AAR has determined that a freight train on average can carry one ton of cargo a distance of 473 miles on a single gallon of fuel, some four times more fuel efficient than trucks per ton-mile.<sup>13</sup> This high level of efficiency reduces the nation's dependence on foreign oil and helps shrink its carbon footprint through lower greenhouse gas emissions while also reducing highway gridlock.

### **Quality of Life**

The rehabilitation of the SORR will benefit the livability of the region and have a positive impact on community life by reducing truck traffic on the region's roadways, thereby improving vehicular mobility and roadway safety.

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 rail and highway system.

The project will also enhance energy-related and support services, provide ladders of opportunity through economic development efforts, and bring additional jobs and businesses to the area as a result of an improved regional freight rail transportation system with a connection to the UPRR (Class 1 railroad) in Alpine.

The SORR operates through 11 counties in West Texas, including: Brewster, Coleman, Crane, Crockett, Irion, Pecos, Presidio, Reagan, Runnels, Tom Green, and Upton. Aside from Tom Green County, all of these counties have small populations with fewer than 20,000 residents. Coleman, Crockett, Irion, Pecos, Runnels, and Upton counties have experienced population decline since 2000, ranging from -1.9 to -9.2 percent. Brewster, Presidio, Reagan, and Tom Green counties all experienced moderate population growth between 2000 and 2014, ranging from 2.4 to 9.1 percent. Tom Green County was the only county along the SORR with a population growth rate greater than 10 percent; however, the 15.2 percent population increase in Tom Green County between 2000 and 2014 was still considerably lower than the Texas statewide population growth rate of over 25 percent during the same time period. In 2014, 10 of the 11 counties along the SORR had median household incomes lower than that of the state of Texas.<sup>14</sup>

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<sup>13</sup> Association of American Railroads (AAR). Environmental Benefits of Moving Freight by Rail, Association of American Railroads, April 2016. Available at <https://www.aar.org/BackgroundPapers/Environmental%20Benefits%20of%20Moving%20Freight%20by%20Rail.pdf>.

<sup>14</sup> U.S. Census Bureau, 2014 American Community Survey 5-Year Estimates.

For the purposes of this application, the funding will be used for infrastructure rehabilitation in Presidio County. Presidio County, which is located within the project area, is within the Borderplex (Upper Rio Grande) Workforce Development Areas (WDA) established by the Texas Workforce Commission. Between 2000 and 2014, the population of Presidio County increased by only 2.4 percent compared to a 25.1 percent population increase for the state of Texas during the same period. The population of Presidio County is largely minority (84.3 percent) and earns less than the Texas population on average. The 2014 median household income in Presidio County was \$30,983 compared with \$52,576 for the state of Texas.<sup>15</sup> In 2015, the unemployment rate of Presidio County was 10.8 percent, more than double that of the Texas unemployment rate of 4.5 percent.<sup>16</sup>

Approximately **210 short-term jobs are estimated to be created over the 18-month construction period.** The rehabilitation of SORR and reconstruction of the Presidio-Ojinaga International Bridge will enhance the livability of the region and nation by the continued and increased diversion of freight from the roadways to rail, reducing pavement maintenance costs, improving safety, and reducing emissions related to truck travel. The project is part of a regionally focused effort to improve rail service on the SORR. It has broad, regional and international support. The project includes a potential NAFTA trade corridor via connections with Ferromex at Presidio.

### **Environmental Sustainability**

The SORR project will result in lower shipping costs, reduced emissions, improved safety, and reduced pavement maintenance costs by allowing some freight associated with truck traffic to divert to rail. The proposed bridge at Presidio will reopen an international rail crossing, thus allowing the railroad to become more cost competitive and opening another POE into Mexico.

The project will also support the ongoing development of new energy industries in west Texas and new markets in Mexico. It 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 FASTLANE Benefit-Cost Analysis Resource Guide.<sup>17</sup> The methodology was used to determine the emissions impacts from the diversion of existing and projected freight from rail to trucks. The analysis estimates that the 7 percent discounted cost savings of avoided emissions (VOC, NOx, PM and CO<sub>2</sub>) represent **\$14 million (in 7 percent discounted 2015 dollars) over the 20-year analysis period.** The rehabilitation of the SORR from Presidio to the Paisano Junction and the reconstruction of the international rail bridge would prevent the diversion of this freight from rail to roadway, therefore providing a benefit due to avoided emissions.

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<sup>15</sup> Data USA. Presidio County, Texas. Available at <https://datausa.io/profile/geo/presidio-county-tx/>.

<sup>16</sup> U.S. Bureau of Labor Statistics, Labor Force Data by County, 2015 Annual Averages.

<sup>17</sup> U.S. DOT Benefit-Cost Analysis (BCA) Resource Guide (November 2016) supplement to the *2016 Benefit-Cost Analysis Guidance for Grant Applicants*, Updated November 17, 2016. Available at <https://www.transportation.gov/fastlanegrants/bca-resource-guide>.

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

### **Safety**

The rehabilitation of the SORR and the reconstruction of the international rail bridge will provide safety improvements for the traveling public as well as the operating railroad by diverting freight from trucks on the roadways to rail. Improving the railroad to Class 2 operating standards will also reduce the likelihood of derailments from improved track conditions.

Diverting freight from road to rail will result in fewer trucks on the highway network which translates in an increase in safety. The avoided truck vehicle miles result in accident cost savings of **\$1.3 million (in 7 percent discounted 2015 dollars) through the study period.**

Rail is the safest way to transport hazardous materials, with 99.99 percent of shipments arriving at their destination safely. It is essential that the SORR rehabilitation be completed from the U.S./Mexico border to Paisano Junction in order to support new distribution facilities and other heavy industrial developments and to prevent this freight from being shipped by trucks. The rehabilitation of the SORR would allow the transportation of these materials by the safest method available.

### *Secondary Selection Criteria*

#### **Innovation**

The lease agreement between TxDOT and TXPF was amended and requires TXPF to maintain each segment of the line in the same or better condition as it is in when a TxDOT project is complete. This contractual requirement ensures that the funds invested by TxDOT provide a long-term benefit by maintaining the line on an ongoing basis.

#### **Partnership**

- Jurisdictional and Stakeholder Collaboration.

TxDOT's ownership of 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 has invested over \$34 million in addressing critical deficiencies to keep the line operational and increase speeds in those sections to 25 mph as part of the overall plan of rehabilitating the entire line from east to west. It is estimated that rehabilitating the project area to 25 mph speeds will require a \$5,100 per mile annual maintenance program to keep the line in good condition. TXPF will be wholly responsible for that maintenance program.

The SORR rehabilitation and international bridge reconstruction project is strongly supported by Texas' Congressmen and State Legislators from the region as well as TxDOT, TXPF, Fort Stockton Economic Development Corporation, and other state, and local stakeholders. The letters of support are provided in **Appendix A: Letters of Support**

### **Disciplinary Integration**

All aspects of this project have been fully discussed between TxDOT, as the SORR owner, and TXPF, as the SORR operator/funding partner, as well as consultant teams providing environmental and engineering services. All engineering disciplines involved in the design and cost estimation of the project have fully integrated their work to ensure that the project will advance smoothly and seamlessly.

### **Small Project Requirements**

The rehabilitation of the SORR between Presidio and Paisano Junction and the reconstruction of the Presidio-Ojinaga International Rail Bridge is categorized as a small project with benefits accounting for \$86.6 million (in 2015 dollars) over the analysis period. This represents \$45 million in benefits (in 7 percent discounted 2015 dollars) over the 20-year analysis period and a benefit-cost ratio (BCR) of 2.6 to 1. The quantified project benefits generated by the truck-to-rail mode shift include:

- **Highway System Impacts** – Fewer trucks on the roadway reduces road wear and tear, which in turn, reduces highway maintenance cost and helps to achieve the state of good repair (SOGR) for pavement assets in the region.
- **Freight Transportation Cost Savings** – Freight rail provides an impact to commodity access through the difference in transportation costs of shipping via rail rather than truck.
- **Freight Environmental and Safety Impacts** – Fewer trucks on the roadway has the potential to reduce truck related emissions and improve highway safety.

The project will create 210 job years during the 18- month construction phase.

### **Cost Effectiveness**

A Benefit-Cost Analysis (BCA) was conducted in conformance with United States Department of Transportation (U.S. DOT) guidance to assess the impact of the TxDOT proposed SORR project. TxDOT proposes construction of these cost-effective project components:

- Rehabilitation of track, bridge, and drainage systems along the 72-mile segment from the U.S./Mexico border along the existing South Orient Railroad (SORR) from Presidio, Texas north to the UPRR crossing at Paisano Junction. This segment is located 11 miles

west of Alpine, Texas. Proposed track improvements to Class 2 rail would result in speed increases from 10 miles per hour to 25 miles per hour.

- Construction of a new international bridge railroad crossing between Presidio, Texas and Ojinaga, Mexico.

The BCA was prepared based on an estimate of potential truck-to-rail mode shift benefits. With Federal assistance, rail track improvements along the project corridor and construction of the international bridge at Presidio could result in existing truck freight loads shifting to the SORR. This modal shift would reduce the trip length to one of the other international points of entry at Del Rio, El Paso, Eagle Pass, or Laredo.

A summary of the BCA results is provided in this section and more detail regarding the inputs, sources, analysis, and results is provided in **Appendix B: Benefit-Cost Analysis Details**. All monetary values were adjusted to 2015 dollars based on the Gross Domestic Product Price Index, unless otherwise stated. Both 3 and 7 percent discount rates are used to compute net present values of benefits and costs.

### *Benefit Cost Analysis*

The BCA assumes that trucks carry the existing and projected market demand for freight within the region and cross the border through the points of entry at Del Rio, Eagle Pass, El Paso or Laredo. With the proposed track improvements along the 72-mile project corridor and the reopening of the rail point of entry at Presidio, the BCA assumes that one-half of projected rail carload market demand will be diverted from truck to rail. A spreadsheet model was developed in accordance with U.S. DOT guidance to compute the benefit/cost ratio based on project-specific inputs and industry-standard or U.S. DOT-defined values for modal shipping costs, safety, emissions, and pavement maintenance savings. **Table 4** provides a summary of the BCA results for the SORR project.

*Table 4: SORR Rehabilitation and Presidio-Ojinaga International Bridge Project: Benefit Cost Summary*

	Discounted at 7%	Discounted at 3%
Life-Cycle Benefits (in millions)	\$42,933,329	\$61,677,231
Life-Cycle Costs (in millions)	\$15,220,222	\$15,735,147
Benefit-Cost Ratio = (B) / (C) =	2.8	3.9
Net Present Value = (B) – (C) =	\$27,713,107	\$45,942,084

Note: For more details, see Appendix B: Benefit-Cost Analysis Details,

### *Project Costs*

Project costs incurred each year of the construction period were entered into the BCA model. The project costs are discounted at seven percent to reflect their present value. The initial design and construction costs for the SORR project are approximately **\$16.2 million** (in 2016 dollars) as described in more detail in the Project Description section of this application, within a 10-month construction period. No marginal railroad maintenance of way costs or cyclic capital replacement costs are anticipated or included in the BCA. Project costs are represented by the following capital cost categories: international bridge replacement; track tie, surfacing, and switches; bridge component replacement; bridge tie replacement; drainage improvements; and contingency.

### *Monetized Benefits*

The methodology to estimate and monetize the benefits generated by the project as well as the input data, assumptions and sources underlying the annual benefit totals are presented in **Appendix B: Benefit-Cost Analysis Details**. The annual monetized benefits (undiscounted and discounted) for each benefit category resulting from the Project implementation over the 20-year analysis period are shown in **Table 5**.

*Table 5: SORR Itemized Benefits, Present Value*

<b>Benefit Category</b>	<b>Savings</b>	<b>Discounted at 7%</b>	<b>Discounted at 3%</b>
<b>Economic Competitiveness</b>	Freight Transportation Costs	\$25,937,498	\$38,622,743
<b>Sustainability</b>	Freight Emissions Costs	\$14,026,020	\$18,641,964
<b>State of Good Repair</b>	Pavement Maintenance Costs	\$1,665,109	\$2,474,007
<b>Safety</b>	Freight Accident Costs	\$1,304,702	\$1,938,517
<b>Total Benefits</b>		<b>\$42,933,329</b>	<b>\$61,677,231</b>

### **Project Readiness**

TxDOT and TXPF have been preparing for reinitiating international rail service along SORR since its international rail bridge burned down in February 2008. Currently, the plans, specifications, and estimate (PS&E) for the international bridge reconstruction at the U.S./Mexico border are under review by the U.S. Coast Guard and U.S. Army Corps of Engineers. Further, a track assessment conducted by TxDOT in December 2014 identified locations of needed track improvements along the SORR to upgrade the railroad from excepted track status of 10 mph to Class 2 allowable freight speeds of up to 25 mph. This assessment is the foundation for track improvements detailed in this project application and is included in **Appendix C: Texas Pacific Transportation-South Orient Rail line Infrastructure Assessment**.

## Technical Feasibility

Design and implementation of the project components will follow the latest versions of the American Railway Engineering and Maintenance-of-Way Association (AREMA) guidelines and TxDOT Bridge Design Manual, as applicable. Development of construction cost estimates included detailed quantities from either design plans or infrastructure field assessments with unit costs identified from similar previous projects. The project's statement of work includes:

- Reconstruction of the international rail bridge: No Presidential Permit is required for this bridge since it was permitted by an Act of Congress in 1928.<sup>18</sup> Upon receipt of the U.S. Coast Guard Permit, TXPF will contract for the reconstruction of the international rail bridge. The contractor will remove the existing remaining bridge components and reconstruct the U.S./Mexico international rail bridge per the design plans. The deck girder open deck bridge will be raised an additional eight feet from the previous top-of-rail elevation to accommodate a higher water surface elevation. There will also be additional track work in the vicinity of the bridge approaches to adjust the track for the change in top-of-rail elevation. Substructure installation shall include three pipe piles (14-inch diameter) with precast concrete caps.
- Rehabilitation of the track between the U.S./Mexico Border at Presidio and Alpine to a Class 2 rail line: TxDOT will contract for the rehabilitation of the line once the FASTLANE grant is secured and finalized. The contractor will provide track rehabilitation for components of the existing rail infrastructure, including the following project components and locations:
  - Replacement of bridge ties and timber bridge components including caps, sills, stringers, posts/columns, backwalls, and parapet walls from Mile Post 957.1 to Mile Post 1027.6;
  - Drainage improvements from Mile Post 970.0 to Mile Post 1021.1, including ditch profiling, stabilization of embankment and streambed areas, and replacement of timber box culverts;
  - Track tie replacements (including ties, plates, and fasteners) and surfacing from Mile Post 955 to Mile Post 1029, including an area of extensive rehabilitation from Mile Post 956 to Mile Post 968; and
  - Four switch/switch tie replacements.

## Financial Feasibility

The overall project costs have been developed from final design construction estimate costs and estimated track component replacement costs and locations based on the recommendations within **Appendix C: Texas Pacific Transportation-South Orient Rail-line Infrastructure Assessment**. A contingency of 20 percent was applied to the international

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<sup>18</sup> See Appendix G for U.S. State Department determination that a Presidential Permit is not required.



## *Environmental Reviews and Required Approvals*

### **NEPA**

National Environmental Policy Act (NEPA) requirements and the current environmental status of the SORR project are described below.

- New Bridge at the International Border Crossing

TxDOT prepared and submitted a Categorical Exclusion (CE) document for the reconstruction of the U.S. portion of the Presidio- Ojinaga International Rail Bridge. Because the project includes crossing the Rio Grande, a navigable waterway, a USCG Section 9 permit and a USACE Section 10 permit are required. State and Federal Resource agency coordination is complete and the CE has been submitted to the U.S. Coast Guard and U.S. Army Corps of Engineers with associated documentation requesting permits for construction of the bridge. Permits and environmental clearance is anticipated within the first quarter of 2017. TXPF anticipates awarding a contract for the reconstruction of the international rail bridge within 5 months of TxDOT's receipt of the permits, with TxDOT anticipating a FASTLANE grant award.

- Track Tie and Surfacing, Switch Replacement, Timber Bridge Component Replacements, and Drainage Improvements along Existing SORR

The track, bridge, and drainage improvements along the existing rail line from the new bridge north to the UPRR crossing near Alpine would not result in any significant environmental impacts and would take place fully within the existing ROW. A Federal Railroad Administration Categorical Exclusion Checklist for this additional work is under internal. The ROW has been previously disturbed by operations and maintenance activities on the existing freight rail line.

Consequently, this project would qualify for a CE for NEPA compliance under FRA regulations. The proposed action would be classified as a (c)-list CE under FRA NEPA regulations at 23 CFR 771.118(c)(8), reserved for actions such as:

“Maintenance, rehabilitation, and reconstruction of facilities that occupy substantially the same geographic footprint and do not result in a change in functional use, such as: improvements to bridges, tunnels, storage yards, buildings, stations, and terminals; construction of platform extensions, passing track, and retaining walls; and improvements to tracks and railbeds.”

Letting for this portion of the project is anticipated in late 2017 or early 2018, with an 18 month construction schedule. Again, this work would be substantially completed before the required obligation date of September 2019.

### **Legislative Approvals**

TxDOT leased operations on the SORR line to TXPF, and under the terms of the agreement, TxDOT became the permanent owner of the ROW and infrastructure. TXPF obtained a 40-year operating lease with renewal options.

## **State and Local Planning Approvals**

The project is in the El Paso/Santa Teresa-Chihuahua Border Master Plan, TxDOT April 2013, which is included in **Appendix E: Pages from the El Paso/Santa Teresa-Chihuahua Border Master Plan**.

## *Assessment of Project Risks*

A key factor in the success of this proposed project is the identification, assessment, mitigation, and subsequent management of risks. The project partners recognize the need to take a proactive approach in the management of project risks and will develop a Risk Management Plan that follows a continuous risk management process. The risk management process consists of five phases which are to Identify, Analyze, Respond, Track, and Control project risks. The process allows the project partners to assess the identified risks, determine the probability and impacts of identified risks, develop mitigating strategies, develop contingency plans, implement strategies and plans, and monitor risk status. A risk list will be used for tracking risks throughout the project.

Risk-mitigation measures have been or are currently being undertaken to limit risk to scope, schedule, and budget on the project. These are:

- **Scope.** The project is well-defined for the infrastructure needs to reinstate international rail service (reconstruction of U.S.-Mexico bridge) and requirements to bring the existing track from the U.S.-Mexico border to Alpine up to FRA Class 2 track based on current bridge PS&E design and assessment of track needs.
- **Schedule.** There is low risk in the schedule items since the project is near the end of the project design. An obligation date for construction funds of September 2017 for the reconstruction and rehabilitation efforts exceeds the required obligation by two years.
- **Budget.** Project cost estimates are based on detailed plans for the bridge and estimated costs of the assessment need for track rehabilitation and utilize unit costs from previous projects. The estimates also contain an 8 percent contingency.

## **Federal Wage Certification**

TxDOT follows Federal wage rate requirements and the Federal wage rate certification is provided in **Appendix F: Federal Wage Certification**.