

American Recovery and Reinvestment Act (ARRA)
2009 TRANSPORTATION INVESTMENT GENERATING ECONOMIC RECOVERY (TIGER)
DISCRETIONARY GRANT APPLICATION FROM:

OKLAHOMA

Freight Rail Improvements-Oklahoma City to Shawnee, Oklahoma

September 15, 2009



Applicant Information

Name of Applicant: Oklahoma Department of Transportation

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Project Summary

The 41.2 mile set of railroad improvements along the Union Pacific Railroad (UPRR) from Oklahoma City (OKC) southeast to Shawnee in Pottawatomie County, Oklahoma, and on the BNSF Railway (BNSF) extension north of Shawnee are critically important freight rail links and economic necessity for Shawnee, an Economically Distressed Area. An eroded track bed running along the North Canadian River, outmoded highway/rail crossing technologies, and poor track conditions combine to threaten freight rail service continuation between these two areas. Such a service embargo would endanger key manufacturing businesses in Shawnee that employ over 2,100 workers, in addition to 15 local railroad workers and would cause some \$75 to \$100 million in lost taxes, wages and buying power.

The poor state of the rail infrastructure causes a typical seven hour round trip between

Shawnee and OKC to become a 23 hour trip four months of the year because of a “heat curfew” from 10 am to 11 p.m. from May to September. The curfew guards against derailments resulting from heat-induced track deformation. Heavy flooding along the North Canadian River can cause complete service outages to Shawnee for weeks on end while maintenance crews make repairs. This project, when completed, would cut train travel time in half and eliminate this “heat curfew” and the threat of outages because of flooding. In addition, the 40

highway/railroad grade crossings and other crossing improvements will enhance motorist, bicyclist and pedestrian safety.

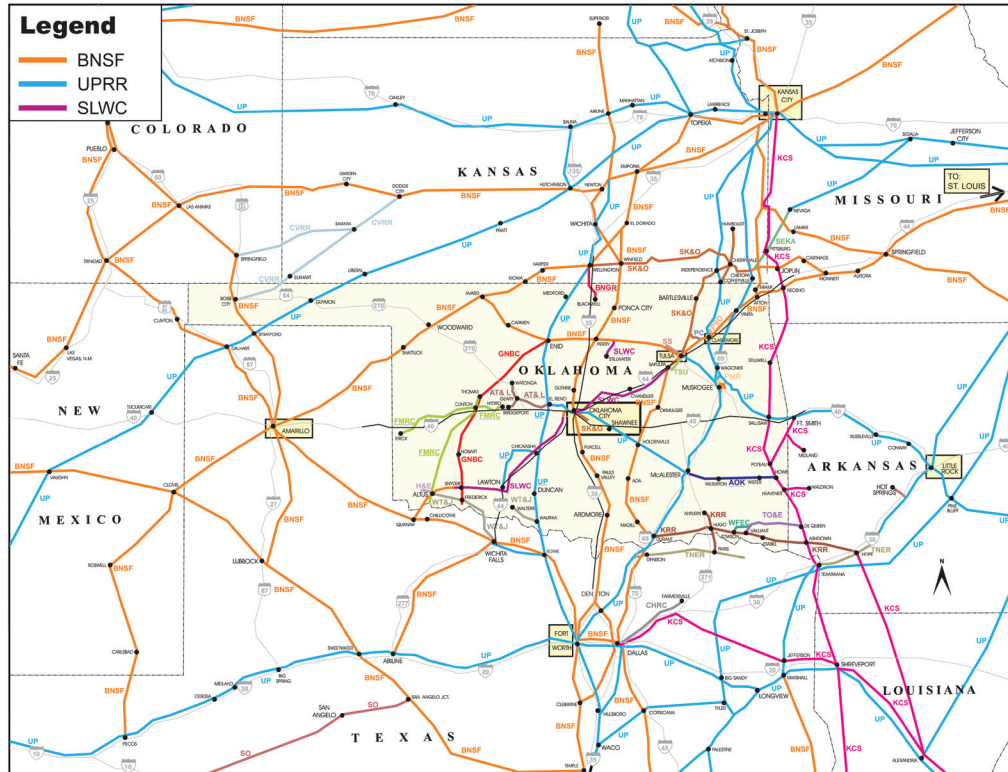
The proposed \$32 million project to address the poor state of repair is a cost effective investment serving both urban and rural needs. Its benefit over cost (B/C) ratio is 4.5 using a seven percent discount rate and 6.4 at a three percent rate. The project benefits will exceed its costs within six years.

Grant Funds and Uses of Project Funds

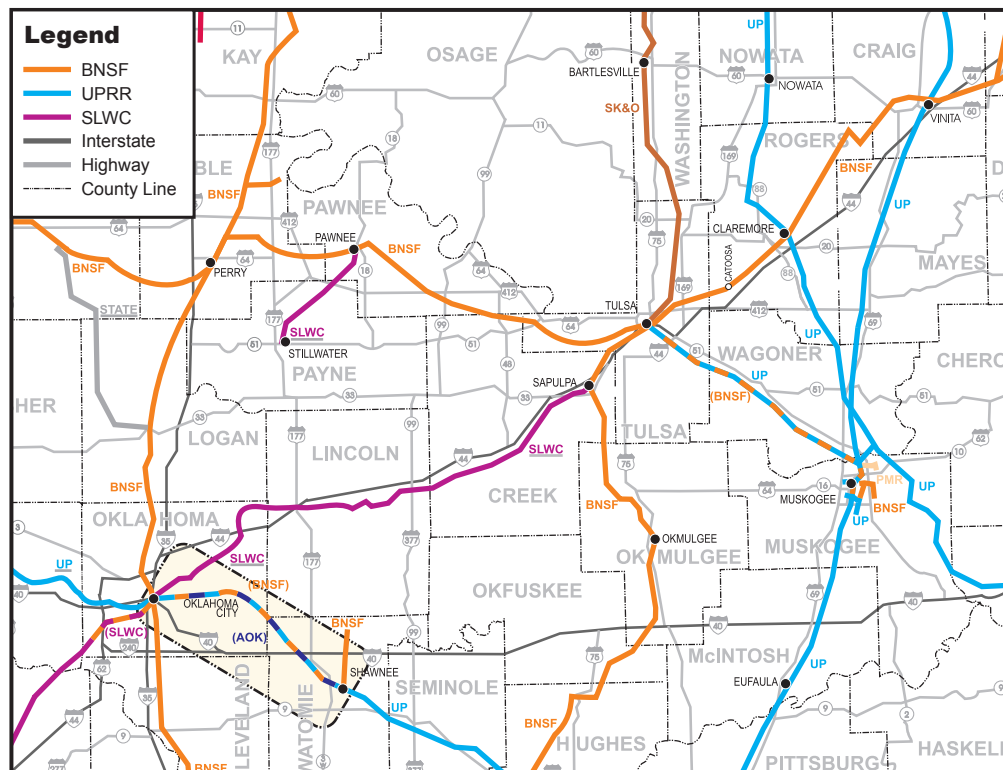
	Funds	Percent
Total Project Cost: <i>The total estimated project</i>	\$32,105,949	100%
Amount of Funds Secured <i>None</i>	\$0	0%
Amount of Funds Requested Under TIGER Discretionary Grant:	\$32,105,949	100%
Based on funding commitments in place as noted		

OKC to Shawnee Freight Rail Improvements

Type of Project:	Repair and stabilization of railroad (Union Pacific Railroad, operated by Arkansas-Oklahoma Railroad Company) from Shawnee area to Oklahoma City (OKC), and from Shawnee (BNSF) to northern Pottawatomie County, Oklahoma (approximately 41.2 miles of railroad line.)
Location of project:	State of Oklahoma Cities of Del City, Midwest City, Choctaw Harrah in Oklahoma County, City of Shawnee in Pottawatomie County, Oklahoma County portion in Association of Central Oklahoma Governments/OKC Transportation Metropolitan Planning Organization (MPO); Oklahoma Representatives Dan Boren; Mary Fallin; Congressional Districts 2 and 5 Oklahoma U.S. Senators James Inhofe and Thomas Coburn
Urban or Rural:	Urban and rural
Amount of funds requested by applicant:	\$32,105,949
DUNS Number:	824700074
Central Contractor Registration Number:	339V2
Project website:	http://www.okladot.state.ok.us/recovery/tiger/okc_shawnee/



Oklahoma and Surrounding States Rail Network



Oklahoma City - Shawnee Project Area Rail Network in Central Oklahoma

Source: ODOT Rail Division

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I. Overview of Needed Freight Rail Improvements from Oklahoma City to Shawnee Area

The proposed project to improve 41.2 miles of railroad along the Union Pacific Railroad Company (UPRR) and BNSF Railway (BNSF) line in eastern Oklahoma County and western Pottawatomie County will curtail current rail service disruptions and minimize the threat of freight rail service loss in the area. A lack of freight rail service would have significant negative effects on the manufacturing businesses that depend upon rail to secure raw materials for processing and transport goods to market. Interim or permanent use of trucks instead of rail is uneconomical for the rail dependent customers. Increased truck trips will increase traffic congestion, accidents, fuel use, greenhouse gas and air pollutant emissions, highway infrastructure degradation, and consumer costs for goods. Without rail service, some manufacturers will simply close or move because they are rail dependent and shipment of goods by truck is not an option. The result would be a serious economic dislocation for the City of Shawnee, as well as Oklahoma and Pottawatomie Counties. The UPRR owned line from Oklahoma City (OKC) to Shawnee is currently leased and operated by the Arkansas-Oklahoma Railroad Company and hereafter referred to as A-OK.

At the height of construction the project will generate over 800 jobs (second quarter 2010) and on an on-going sustained basis the project, when completed in 2011

will result in 226 jobs and another induced 232 jobs representing combined earnings of over \$19.5 million. A future one-mile eastwardly extension could link a new rail-anchored industrial park being developed by the Citizen Potawatomi Nation on Native American Trust Land generating more jobs. The following grant application provides more detailed information supporting this project.

The project covers some 41.2 miles of railroad improvements from OKC southeast to Shawnee. It entails the design and construction of capital improvements including river bank stabilization, track reconstruction, and rail-highway grade crossing improvements critical for continued freight rail service along this corridor and for key industrial businesses in Shawnee.

To return the railroad infrastructure to a state of good repair and preserve this freight rail service, the proposed project includes A-OK line from Homa Junction, three miles east of downtown OKC in Del City and extending approximately 32.3 miles to Shawnee, Oklahoma. The improvements also include an additional 8.9 miles of railroad owned by the BNSF serving businesses north of Shawnee. **Figure 1** shows the project's limits.

Pottawatomie County, in which Shawnee is located, is an Economically Distressed Area and about 18 percent of the area's residents fall below the poverty line. Shawnee's 2007 estimated population is 30,256. It has been growing from about 26,000 in 1990, to 28,700 in 2000. By 2030, the population is expected to reach about 35,000.

The infrastructure proposed for improvement is presently operated by the A-OK which submitted the initial cost estimates and is expected to coordinate the completion of the proposed improvements with assistance from the Oklahoma Department of Transportation (ODOT). Track reconstruction and rail-highway grade crossing improvements are included for both the A-OK and BNSF portions of the project.

II. Description of Current Situation and Proposed Project

The existing route presently experiences frequent delays because of its inadequate infrastructure. Operating restrictions and outages result from erosion problems near the North Canadian River. Deformation in track gauge beyond acceptable limits occurring during summer temperatures also causes restrictions. With a severe service outage occurring after a 2007 flood, freight rail service to Shawnee manufacturing businesses are threatened should another flood occur.

The dependence on freight rail transportation for many area customers is historical. Being a primary destination of the cattle drives headed for eastern food markets, Shawnee is steeped in railroad tradition. The West Shawnee cattle trail developed through the course of the 1870's and railroads soon extended into the Shawnee area. In 1895 the Choctaw Railroad developed service from OKC to Shawnee. Terminal facilities were built in Shawnee in 1896 followed by the decision to relocate Choctaw

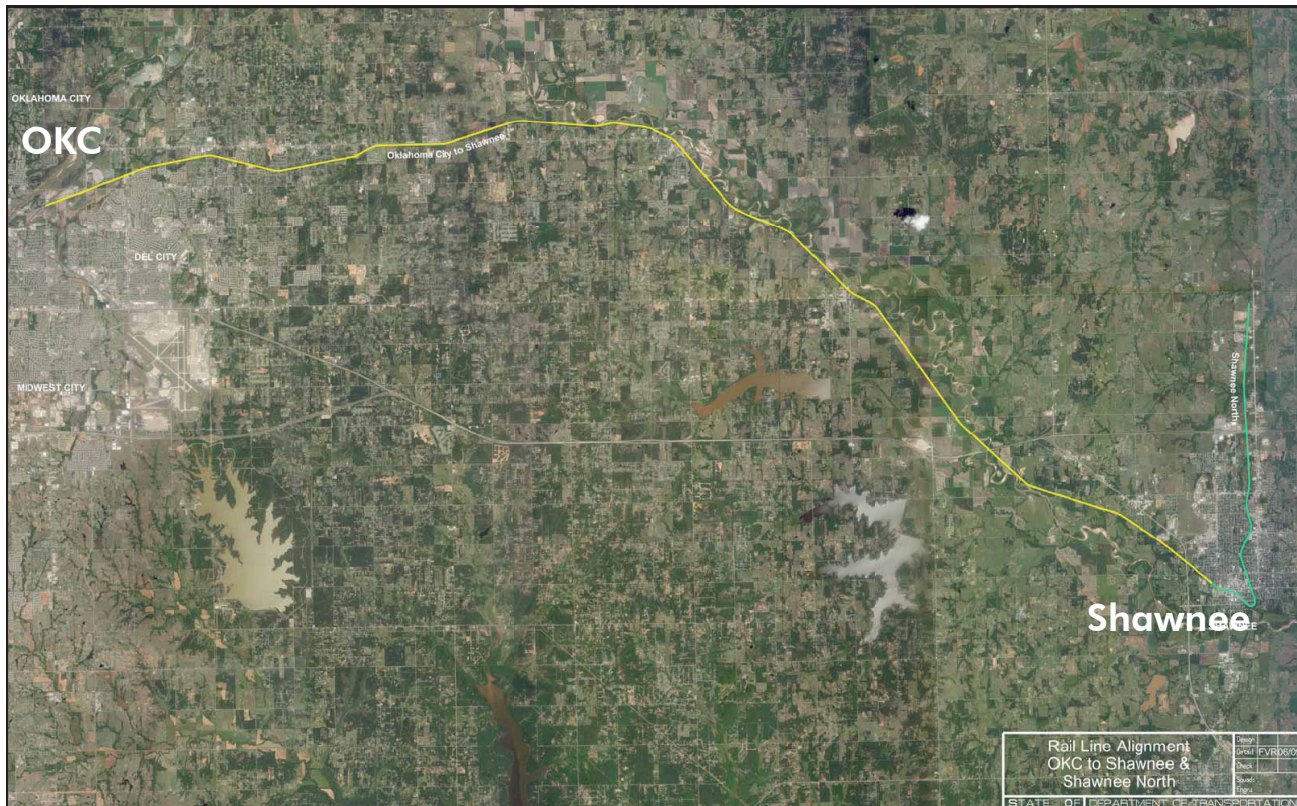


Figure 1: Project Limits

Railroad main repair shops from McAlester. These moves made rail a critical component of Shawnee's economic base that continues through the present day. Shawnee's growth was

“Without the railroad...we would have to switch...from rail to highway trucking and...increase our cost of production. This increase in cost of production would make us, and I'm sure many others in this area, noncompetitive in the sales of our products.”

*William Ford,
Shawnee Milling Company*

immediately fueled further with the Choctaw Railroad being absorbed by the much larger Rock Island railroad in 1902, the Santa Fe extending service via a route from Newkirk to Dennison, Texas, and the Missouri, Kansas, and Texas railroad extending service. The City of Shawnee thus became surrounded on three sides by railroad infrastructure, and its businesses developed to maximize advantages of competitive freight service. Consequently, the preservation of rail service currently threatened by the ageing rail infrastructure has a significant impact on current and future economic development.

A. Existing Challenges Addressed by the Improvements

The most critical improvement necessary to sustain freight operations on the OKC to Shawnee rail line is the roadbed stabilization adjacent to the North Canadian River. This area is susceptible to bank erosion during floods and high water. The river runs adjacent to the A-OK route for most of the 32.3 miles between Del City and Shawnee. Nine specific areas are of significant concern based on recent erosion. This erosion continues to result in reoccurring maintenance efforts. **Figures 2 and 3** show encroachment of the river on the railroad tracks. These areas have been responsible for the suspension of rail service to the

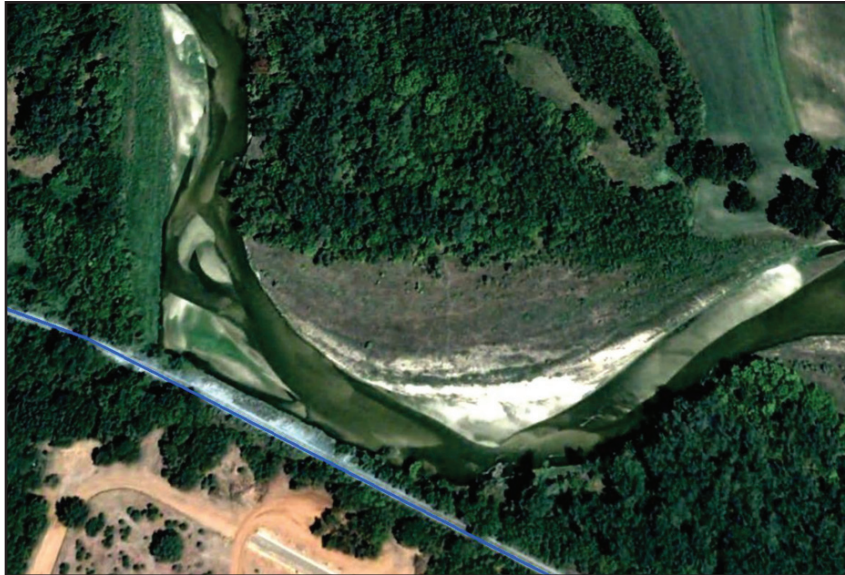


Figure 2: The Meandering North Canadian River Encroaching on the A-OK Line.



Figure 3: Tracks Along the North Canadian River

Shawnee area for periods of up to two weeks during intense flooding adding hundreds of thousands of dollars of additional freight cost to local industries hurting economic competitiveness.

The erosion along the North Canadian River bank must be stabilized or erosion likely to occur in the near future could be irreversible. The A-OK indicates

that railroad maintenance expenditures to mitigate erosion damage dating back to 2004 have been approximately \$750,000. Without these repairs, service would have been terminated. The A-OK also stated that local industries utilizing trucking as an alternative shipping option during outage periods in 2004 incurred an estimated additional \$1 million in shipping

charges. These suspensions in rail service significantly hinder the performance and production capability of local manufacturers which rely on rail service to remain competitive. The recurrence of the erosion-related rail service disruptions have created serious concern for prospective new manufacturing businesses considering locating in the Shawnee area, according to the Shawnee Economic Development Foundation.

Another need is improving existing track conditions to facilitate efficient operations. The route is currently operated with an “excepted track” classification, limiting operating speed to a maximum of 10 miles per hour (MPH). This status is the result of severely deteriorated cross ties and unstable ballast sections. Tie condition is also responsible for summertime track gauge instability. Improved tie conditions would allow an increase in operating speed as well as improved safety.

The A-OK estimates that to continue route operation without funding support will require the replacement of a minimum of 5,000 ties per year to maintain “excepted track” operations. A-OK expressed concern about its ability to continue maintaining area rail service given existing performance constraints and resulting poor service reliability. Over 40 grade crossing locations with antiquated active warning devices exist. They would require upgrading or replacement to safely facilitate higher operating speeds. New signal technology would be vitally important to provide consistent warnings to motorists, bicyclists and pedestrians.

Upgrading the existing route span structures will become a more important issue for future operations as it will with many of the nation's short line railroads. With national operating trends moving towards the use of 286K car loadings, structural improvements will need to be made. However, the present condition of the A-OK and BNSF roadbeds and the obvious susceptibility to flood-related erosion are the more pressing needs. Consequently, the focus of this application has been limited to the infrastructure improvements identified as absolutely necessary and critical to maintain safe operation of the existing freight rail service. This service provides for economically-competitive movement of bulk raw materials and manufactured products. Rail service plays a major role in sustaining the economic base of this area whose primary economic development has relied on rail-related businesses since the turn of the last century and prior to Statehood.

B. How the Project Will Address These Challenges

Track upgrades to obtain Federal Railroad Administration (FRA) Class II (25 MPH) operating status would allow the operator to move freight 2.5 times faster, enhancing economic competitiveness. To upgrade to a maintainable Class II classification, the entire 32.3 miles of the existing route between Oklahoma City and Shawnee would require replacing about 80 percent of existing ties, which have a life span of 20 to 25 years. The A-OK indicates that their current maintenance of way budget averages \$454,626 per year. The proposed improvements would reduce those costs by

an estimated 30 to 40 percent, annually.

A-OK also indicates that the tie improvements are expected to eliminate summer speed restrictions, the "heat curfew", which currently require rail operations be suspended between 10:00 am and 11:00 p.m. daily from May to September. The imposed heat curfew associated with the deformation of track gauge is very costly to the operator and rail freight customers. The Shawnee to OKC round trip typically takes seven hours plus one hour for set up and pick up delays. With track upgrades it could take half this time. Routing trains from the BNSF yard onto the A-OK can also be a lengthy process. If the BNSF trains are not at the A-OK by 7:30 am, they are required to hold the trains down until 11:00 p.m. This requires the BNSF to call in a relief crew or bring the regular crew back at their regular time the next day. This creates a domino effect delaying services for days. (source: A-OK). During the "heat curfew" it may take two days for this same trip. Train crews must be rescheduled when they are not able to complete train movements completely across the restricted limits.

Additional costs associated with these restrictions include calling another crew, rescheduling or adding additional dispatchers, paying crew for deadhead travel, and recurring transportation costs associated with shuttling crews between the locomotive and depot. This often results in two additional days to clear the limits of the heat restricted segment. The associated delays result in customer production and scheduling issues when they are left waiting for their commodities

to arrive or when the commodities arrive at inconvenient times. The costs to be avoided by making these improvements are estimated to be an additional \$5,000 to \$7,000 per month in railroad payroll expenditures.

Estimated manufacturing losses associated with the delayed commodities arrivals are \$2,000 to \$5,000 per month. An average number of four days is currently lost per month because of heat restrictions resulting in extended waiting periods for product arrival. In turn, this requires a corresponding rescheduling of employees to unload cars arriving late at night or early in the morning before the heat restrictions occur.

These manufacturing businesses play a critical role in the area's economic health. With nearly 18 percent of the area's residents having incomes at or below the poverty level, Shawnee cannot afford to lose its manufacturing base. This could result from business either relocating to areas with better and more reliable rail service or closing their doors altogether.

The third part of this project is improving at-grade railroad/roadway crossings at 40 locations. Installing current technology signals will reduce both maintenance costs, travel times, and accidents. Signal operations that consistently provide warnings are critical to build confidence in drivers of motorized and non-motorized vehicles to heed rail-highway grade-crossings. Lack of reliability results in drivers ignoring the gated crossings or signals, and accidents occur. Upgrading the warning systems will allow the

operator to reallocate some of the annual signal maintenance budget (\$120,910) to training and employee compensation. In turn, this could reduce turnover which strengthens maintenance knowledge that enhances public safety.

III. Project Parties

The primary grant recipient will be the Oklahoma Department of Transportation (ODOT). ODOT will administer the funding based on federal and state guidelines associated with the grant.

The project is consistent with the Association of Central Oklahoma's 2030 Long Range Plan (urbanized portion is Oklahoma County). The plan was adopted in August 2005.

Contracting for construction, and construction itself will be coordinated by the A-OK with assistance from ODOT. The railroad companies expected to benefit from the improvements include the A-OK, the current operator; the UPRR which owns the route between Oklahoma City and Shawnee; and the BNSF, the owner of the route north of Shawnee. Other supporting entities include the Citizen Potawatomi Nation, the city of Shawnee, Shawnee Economic Development Foundation, OGE Energy Corporation, Exxon Mobil, Shawnee Milling Company, Vanguard Stimulation Services, LLC, McCorkle Truck Line, and Norwesco, Incorporated. These entities include government agencies interested in the continued economic benefit provided by this critical rail service to the Shawnee area and industrial customers who presently rely on the service

for raw materials and goods movement.

Additional businesses are being sought by the Citizen Potawatomi Nation to locate in a rail-anchored industrial park proposed for placement on tribal lands. Improvements to support this development could potentially be included in the rail service network near Shawnee. Growth in annual carloads carried by improved rail service have been identified, including existing and new customers. Other project supporters include Congressional District Representative Mary Fallon and US Congressman Dan Boren.

IV. Grant Funds and Uses of Project Funds

A. Total Project Cost: The total estimated project cost is \$32,105,949

B. Amount of Funds Secured: None

C. Amount of Funds Requested Under TIGER Discretionary Grant: \$32,105,949

V. Primary Selection Criteria

A. Long Term Outcomes

1. Economic Competitiveness

Project's Role in the Economy

Improving rail service to the Shawnee area is critically important to a number of local industries. Among them are Shawnee Milling Co., Ball Pipe and Supply, Norwesco, TDK Ferrites, Exxon Mobil and Vanguard Stimulation Services. Vanguard presently has additional

facilities under construction requiring additional rail service. These industries rely on available access to rail shipping. All process and use raw materials from other US and International markets in their manufacturing operations. The Shawnee Economic Development Foundation estimates that 2,125 employees work in local manufacturing facilities dependent on these rail services.

Importance of these Freight Rail Lines to the Local/Regional/National Economy

Dependable freight rail service provides shippers with cost-effective transportation, especially for heavy and bulky commodities and is clearly preferable to trucking. Rail availability can be a critical factor in retaining and attracting industries central to state and regional economies. According to the American Association of State Highway and Transportation Officials (AASHTO), the freight-rail system carries 16 percent of the nation's freight by tonnage, accounting for 28 percent of total ton-miles, 40 percent of intercity ton-miles, and six percent of freight value. A shift of all freight-rail to trucks would add 92 billion truck vehicle-miles-of travel (VMT) to the highway system and cost federal, state, and local transportation agencies an additional \$64 billion for highway improvements over the next 20 years. This \$64 billion is a conservative figure that does not include the costs of improvements to bridges, interchanges, local roads, new roads or system enhancements nor the negative impacts on fuel consumption and greenhouse gases. If these were included, the estimate could easily double.

“As the largest employer in Pottawatomie County, Oklahoma, the Citizen Potawatomi Nation understands the critical role the railroad plays in the regional economy “

The Citizen Patawatomi Nation

(AASHTO Transportation Invest in America, Freight-Rail Bottom Line Report, accessed at www.aashto.org/kb_cases_freightrail.htm on July 31, 2009).

According to the Shawnee Economic Development Foundation, if all the existing freight shipped via rail in this area were shipped via truck, (see **Figure 4**) it would be a significant cost to the local rail customers. Such an impact would result in significant changes in existing business and consumer costs and negatively affect economic competitiveness.

The Shawnee Economic Development Foundation estimates an annual payroll of \$55,250,000 from the manufacturing industries relying on the A-OK services.

In the year 2000, rail moved 16 percent of total domestic freight tonnage, second to truck. Rail moves tended to be longer distance than truck moves and therefore, accounted for a proportionately higher share (28 percent) of ton-miles. Rail moved two billion tons valued at \$600 billion over 1.2 trillion ton-miles in 2000. (AASHTO, Transportation Invest in America, Freight-Rail Bottom Line Report, accessed at www.aashto.org/kb_cases_freightrail.htm on July 31, 2009).

The A-OK and BNSF lines of this project carry approximately 173,000 tons annually (1927 freight train cars).

Rail is also a preferred mode for hazardous materials shipments. The nation’s railroads handled 1.7 million carloads of hazardous materials in 2000. (AASHTO, Transportation Invest in America, Freight-Rail Bottom Line Report, accessed at www.aashto.org/kb_cases_freightrail.htm on July 31, 2009).

The improvements to the OKC to Shawnee A-OK line and the BNSF line would increase public safety because of track reliability and highway-rail crossing improvements.

According to the Shawnee Economic Development Foundation, based upon the last employment numbers secured in the fall of 2008, it was estimated that over 2,125 individuals were in local manufacturing facilities serviced by the rail lines. The sales tax on products purchased locally, the property taxes paid by the companies and their employees, along with the utilities currently consumed results in an estimated economic impact of

those businesses to the local and regional community of between \$75 to \$100 million. An embargo of the Shawnee railroad line as a result of failed components of the existing rail infrastructure could lead to the demise or severe contraction of several businesses no longer able to compete because of increased shipping costs.

Importance to Major Roadways in Eastern Oklahoma County and Western Pottawatomie County

Major roadways through the Shawnee area include I 40, US 177 and US 270, which also serve as major thoroughfares for local traffic. The majority of north/south traffic in the area utilizes US 177 and US 270 while major east/west movements utilize I 40.

As the train’s speed rise from 10 MPH under an “Excepted Track” classification to an operating speed up to 25 MPH under FRA Class II, associated motor vehicle delay at grade crossings would decrease. The improvements would also facilitate a reduction in the risk of derailment and eliminate the need for operating restrictions during the summer

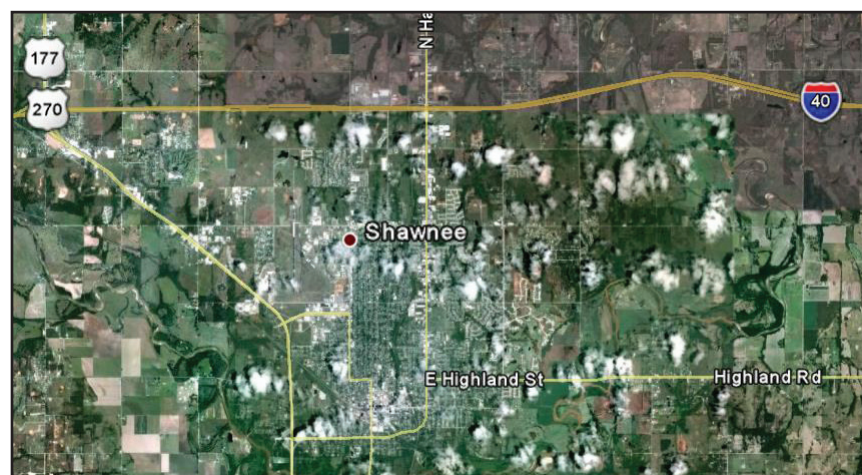


Figure 4: Major Roadways in Eastern Oklahoma County and Western Pottawatomie County. *image source: Google Earth Pro*

months by reducing existing track deformation. The result would be lower fuel, crew and delivery costs.

Benefits of Increased Reliability and Efficient, Cost Effective Goods Movement

The record heavy rains during the summer of 2007 had a significantly negative impact on several Shawnee businesses including; Shawnee Milling Company, Ball Pipe and Supply, Norwesco, TDK Ferrites, and Exxon Mobil. Flooding damage to the rail infrastructure resulted in unreliable rail service and outages. Shipping costs to maintain manufacturing operations during periods while rail service was suspended were in the thousands of dollars as local industries were forced to obtain adequate supplies of raw materials via trucking. Consequently, many of these industries are concerned that the existing rail service will not be reliable during periods of heavy rainfall.

The project improvements would cut the round trip (Shawnee to OKC) from seven hours to about three and one-half hours. They would also eliminate the 13 hour heat curfew in existence May to September. Reduced delay benefits for this project are summarized in **Table 1**.

Several business leaders and others knowledgeable about the benefits of area rail service have joined together to identify solutions that will help sustain reliable rail service to the area (The Shawnee News-Star, 2008). Although commuter trains may someday serve this area, the more immediate need is to ensure freight service is enhanced

because it affects present area employment. The Shawnee freight rail upgrade project directly addresses these concerns.

Benefits of Increased Reliability of Local Road Network

Many states are responding to increased pressure on their interstate and state highway systems by looking to rail system improvements since one standard rail freight car can carry the equivalent of four truck loads. The Shawnee freight rail improvement project would provide increased reliability of the rail service and facilitate keeping truck traffic off the highway/roadway network by assuring that raw materials would be reliably carried by rail.

Short line railroads take the equivalent of nearly 33 million truck loads off the highways. Diverting those truckloads from the highway saves the country over \$1.4 billion annually in highway repair costs. Freight moved by rail also improves highway safety and congestion.

Improvements to the Oklahoma City to Shawnee rail line would increase operating speeds and reliability, increase line capacity, eliminate seasonal 13 hour curfews and reduce grade-crossing safety issues. This would enhance shipping options and reliability and improve overall safety. The improvements are also expected to facilitate growth through corresponding service enhancements and associated reductions in shipping costs.

2. Livability

The present condition of the A-OK route is far from a state-of-good-repair. The degradation of the ties and subballast have resulted

in operating restrictions for five months during summer high temperature periods and have resulted in daily service delays. These lapses in rail service have been documented as current customers are required to ship significant quantities of the raw materials and finished products via truck. The preservation of this rail service hinges on the successful application and receipt of funding that will not only continue to provide economic competitiveness for the Shawnee area but continue to reduce the cost of maintenance and further degradation of current levels-of-service on the adjacent roadway and highway infrastructure. The proposed safety improvements will promote the efficient transport of bulk quantities via rail while enhancing motoring public, pedestrian and bicycle safety in the adjacent urban and rural areas.

The continuation of area rail service over the next 20 years will have a significant impact on the local economy. The project will maintain the economic competitiveness presently supporting a majority of the areas businesses and provide a transportation option whose benefit will continue to grow as fuel costs and the maintenance of an ageing highway infrastructure continue to increase. The anticipated benefit from area rail service is one of the primary attributes utilized to attract new or additional manufacturing facilities to an area rich in labor resources and community amenities that support high livability standards.

In the event that financial support for the existing service is not obtained in a timely manner the continuation of area rail service can only reasonably

Table 1: OKC to Shawnee Freight Rail Improvements - Reduced Delay Benefit

Year	Grade Crossing Motor Vehicle Delay Costs	A-OK Annual Derailment Delay Costs	A-OK Annual Heat Restriction Delay Costs	A-OK Annual Operating Delay Costs	BNSF Annual Derailment Delay Costs	BNSF Annual Heat Restriction Delay Costs	BNSF Annual Operating Delay Costs	Base Total of Project Benefit (\$)	Present Worth of Project Benefit (DR=3%) (\$)	Present Worth of Project Benefit (DR=7%) (\$)
2011	\$120	\$5,817	\$51,529	\$266,644	\$15,939	\$69,065	\$1,717,974	\$2,127,087	\$2,065,133	\$1,987,932
2012	\$127	\$5,934	\$52,559	\$266,644	\$16,257	\$70,446	\$1,717,974	\$2,129,941	\$2,007,674	\$1,860,373
2013	\$134	\$6,052	\$53,611	\$266,644	\$16,582	\$71,855	\$1,717,974	\$2,132,853	\$1,951,862	\$1,741,043
2014	\$142	\$6,174	\$54,683	\$266,644	\$16,914	\$73,292	\$1,717,974	\$2,135,823	\$1,897,651	\$1,629,409
2015	\$151	\$6,297	\$55,776	\$266,644	\$17,252	\$74,758	\$1,717,974	\$2,138,852	\$1,844,993	\$1,524,972
2016	\$160	\$6,423	\$56,892	\$266,644	\$17,597	\$76,253	\$1,717,974	\$2,141,943	\$1,793,844	\$1,427,267
2010	\$113	\$5,703	\$50,518	\$266,644	\$15,626	\$67,711	\$1,717,974	\$2,124,289	\$2,124,289	\$2,124,289
2017	\$169	\$6,551	\$58,030	\$266,644	\$17,949	\$77,778	\$1,717,974	\$2,145,096	\$1,744,159	\$1,335,858
2018	\$179	\$6,682	\$59,190	\$266,644	\$18,308	\$79,334	\$1,717,974	\$2,148,312	\$1,695,897	\$1,250,337
2019	\$190	\$6,816	\$60,374	\$266,644	\$18,675	\$80,921	\$1,717,974	\$2,151,593	\$1,649,017	\$1,170,324
2020	\$201	\$6,952	\$61,582	\$266,644	\$19,048	\$82,539	\$1,717,974	\$2,154,940	\$1,603,478	\$1,095,462
2021	\$213	\$7,091	\$62,813	\$266,644	\$19,429	\$84,190	\$1,717,974	\$2,158,354	\$1,559,241	\$1,025,419
2022	\$226	\$7,233	\$64,070	\$266,644	\$19,818	\$85,874	\$1,717,974	\$2,161,837	\$1,516,269	\$959,882
2023	\$239	\$7,378	\$65,351	\$266,644	\$20,214	\$87,591	\$1,717,974	\$2,165,391	\$1,474,526	\$898,560
2024	\$253	\$7,525	\$66,658	\$266,644	\$20,618	\$89,343	\$1,717,974	\$2,169,015	\$1,433,975	\$841,182
2025	\$268	\$7,676	\$67,991	\$266,644	\$21,031	\$91,130	\$1,717,974	\$2,172,713	\$1,394,582	\$787,491
2026	\$284	\$7,830	\$69,351	\$266,644	\$21,451	\$92,952	\$1,717,974	\$2,176,486	\$1,356,314	\$737,251
2027	\$301	\$7,986	\$70,738	\$266,644	\$21,880	\$94,811	\$1,717,974	\$2,180,334	\$1,319,138	\$690,238
2028	\$319	\$8,146	\$72,153	\$333,305	\$22,318	\$96,708	\$2,290,632	\$2,823,579	\$1,658,555	\$835,395
2029	\$338	\$8,309	\$73,596	\$333,305	\$22,764	\$98,642	\$2,290,632	\$2,827,585	\$1,612,532	\$781,851
2030	\$358	\$8,475	\$75,068	\$399,966	\$23,219	\$100,615	\$2,290,632	\$2,898,332	\$1,604,736	\$748,984
									\$35,307,866	\$25,453,520

be projected to extend until an erosion event that will affect the existing infrastructure beyond a level of reasonable repair in one of the nine areas of significant concern. The maintenance records of the current operator reflect a continued struggle to maintain an “excepted track” classification that presently facilitates operations that continue to offer diminishing reliability. The Shawnee Economic Development Foundation reports that the jobs affected by preserving rail service conservatively approach \$55 million in annual wages directly affected with an extended impact including supporting service industry economic contributions

resulting in a total of \$75 million to \$100 million total economic impact on the region.

Many opportunities for low income workers in the area continue to be largely in local service industry support services. These rely on demand from local employees and their family members of the manufacturing and travel industries. The primary method of travel through the Shawnee area is via the interstate system which provides Oklahoma with several regional as well as national travel options. A decrease in level of service or maintenance issues that diminish the desire of travelers to use any individual

interstate route in Oklahoma more readily results in the selection of alternative routes because of the number of alternatives available. Consequently, a significant increase in truck traffic originating and/or terminating in the Shawnee area is expected to have an above average impact on local service

“I respectfully submit that it is in the public interest to avoid loss of service on the line”

*Richard Clements,
OG&E Electric Services*

industry providers because of the relative ease in which alternative routes can be selected when travelling through Oklahoma. A reduction in service industry facilities would be expected, in turn, to influence enrollment in the local institutes of higher education. This would result in the further diminishment of opportunities presently available to lower income residents.

3. Sustainability

The long term management of the proposed investment would be the responsibility of the existing operator (A-OK) on behalf of the A-OK and the BNSF. The ability of these entities to maintain operations during the challenges presented by the record flood events occurring in 2007 illustrate a resilience that can reasonably be expected to foster a successful long term maintenance plan. Further, the project will stabilize operations and service reliability allowing the A-OK to have a more consistent maintenance approach. The project will also attract more customers to increase A-OK revenues. Based on the current trackage agreement, BNSF will continue to pay for 50 percent of maintenance costs. It would include the scheduled activities necessary to maintain Class II operations over the lifecycle.

A future construction issues is the potential need to upgrade the existing span structures to facilitate 286K car loadings. Shortline operations in Oklahoma as well as throughout the nation suffer very similar circumstances where the car loadings are normally limited to 263K. There are numerous problems associated with national trends to increase car loadings to 286K.

While an upgrade to facilitate 286k car loadings on the Oklahoma City to Shawnee route is an area of deserving further consideration, the preservation of rail service to the Shawnee in general is currently far more important. The complete loss of rail service to the Shawnee area would result in a major loss of an economic base structured around rail operations since the turn of the last century. Sustaining these operations has

“If action is not taken soon... the continual erosion (by the North Canadian River) could lead not only to the permanent loss of hundreds, if not thousands, of well-paying Pottawatomie County jobs.”

*Mayor Linda Peterson,
Mayor of Shawnee*

been documented as a primary concern of both the rail customers and governmental agency constituents throughout the region and State.

The suspension of rail service for a two week period in 2007 illustrated the significant impact rail service has on the economic well being of the Shawnee area. This recent incident resulted in a heightened awareness of how important sustaining reliable rail service continues to be to the Shawnee area.

The Shawnee to OKC project also provides environmental benefits. The U.S. Environmental Protection Agency estimates that

for every ton-mile, a typical truck emits roughly three times more nitrogen oxides and particulates than a locomotive. Related studies suggest that trucks emit six to 12 times more pollutants per ton-mile than do railroads, depending on the pollutant measured. According to the American Society of Mechanical Engineers, 2.5 million fewer tons of carbon dioxide would be emitted into the air annually if 10 percent of intercity freight now moving by highway were shifted to rail. Railroads also consume almost a third less fuel than trucks per ton mile moved. Rail can carry a ton of freight 436 miles on one gallon of fuel. (AASHTO, Transportation Invest in America, Freight-Rail Bottom Line Report, www.aashto.org/kb_cases_freightrail.htm on July 31, 2009).

4. Safety Improvements

The corresponding safety improvements included in the proposed project will help alleviate the increasing costs and diminishing reliability associated with the active warning devices. These are presently employed to provide warning to the motoring public of rail movements at grade level railroad /roadway crossings. Since railroad accident records have been recorded by ODOT (1973), the A-OK and BNSF portion of project in Pottawatomie County has experienced six collisions with eleven injuries reported and 15 property damage only accidents. No fatalities have occurred on the project portions of the BNSF or A-OK. On the A-OK portions of the project in Oklahoma County, there have been 17 injury collisions with 21 injuries reported and 15 property damage only accidents reported. Road/highway crossing

improvements will facilitate safer traveling conditions for both non motorized and motorized users.

The motoring public will experience fewer and shorter delays based on improved railroad operating speeds after project completion of the proposed project. The anticipated enhanced reliability of rail operations will not be limited strictly to motor vehicle movements but will include channelization and infrastructure improvements to facilitate safe pedestrian and bicycle operations.

Four lane roadway locations will be upgraded to cantilevered flashing lights with gates. Two-lane roadway locations will be upgraded to include pedestal flashing lights with gates. The age and corresponding warning technology presently deployed at locations along the route with active warning devices have been scheduled based on the proposed increase in railroad operating speeds. Warning devices located less than 0.5 miles apart, with multiple tracks or in close proximity to traffic signals operations requiring interconnection have been estimated with higher average costs. This reflects corresponding switching activity or traffic signal preemption requiring more complex signal circuit design and layout.

Locations anticipated to need additional geometric or channelization improvements to enhance the proposed warning devices' effectiveness were included in the surface estimates. The locations selected for additional geometric and/or channelization improvements were based on the evaluation of

the previous incident history for each location and focused on the mitigation of potential reoccurring incidents.

The surface improvements on the BNSF route include installations in primarily urban areas with traffic volumes in excess of 500 average annual daily traffic (AADT). These locations include the installation of concrete crossing surfaces. The estimated costs also include provisions for geometric or channelization improvements necessary to manage pedestrian and/or bicycle operations safely around train movements through each individual crossing. The geometric and/or channelization improvements will include but are not limited to the installation of raised medians, American with Disabilities Act (ADA) compliant sidewalk installations, channelization for restricting lane use and/or additional signal equipment to provide adequate warning to pedestrian and bicycle movements. Locations with concrete crossing surfaces deemed in good condition by the recently updated statewide grade crossing inventory were not scheduled for replacement.

The surface improvements at locations on the A-OK includes more crossings located on what are considered rural designated roadways. Consequently, locations with less than 500 ADT were scheduled for replacement with timber crossing surfaces. The proposed improvements for locations with 500 or more AADT are scheduled to include concrete crossing surfaces, and will include additional geometric or channelization improvements necessary to manage pedestrian and/or bicycle operations safely

“One hundred percent of our raw material is brought in on rail. Without rail service, we would have to bring our resin in by truck, increasing our shipping cost by thousands of dollars and adding heavy truck traffic to our roads and streets.”

*Coy Carpenter,
NORWESCO Inc.*

around train movements through each individual crossing.

The safety improvements proposed will utilize appropriate state-of-the-art equipment deployed utilizing current industry –acceptable standards as denoted by the Manual on Uniform Traffic Control Devices.

B. Economic Stimulus, Job Creation and Quality of Life

1. Impact of Local Job Creation, particularly in Economically Distressed Areas

Significant portions of Shawnee's population live in poverty. In 2008, in the United States, the poverty threshold for a single person under 65 was \$11,201; the threshold for a family group of four, including two children, was \$21,834. About 13.8 percent of families and 17.8 percent of the Shawnee region's population were below the poverty line. This includes 24.1 percent under age 18 and 11.2 percent over age 65.

Thus, this project is of critical importance in jobs retention, especially in Shawnee. An Economically Distressed Area

(EDA) is defined as a county with average 24 month unemployment one percent higher than the national average or a per capita income of less than 80 percent of the national average. Pottawatomie County, in which Shawnee is located, is listed as an EDA because the per capita income of the county over the previous two year period was \$27,997. This is below the national EDA threshold of \$30,892.

“When rail service is disrupted...trucking of raw material creates a \$5,000 transportation cost penalty per equivalent railcar.”

*Logistics Manager,
Shawnee Films Plant.*

This railroad service plays a critical and important role in the regional economy, and employs 15 people. Another 2,125 persons are employed by the manufacturing enterprise serviced by A-OK. Improvement of the Shawnee rail line would attract more business to the area and create more job opportunities. The Shawnee Economic Development Foundation either had to turn down or was unable to compete for several large projects because of a lack of adequate rail infrastructure. These projects could have spurred over \$110 million in new capital investment in the area and the creation of an additional \$153 million in new yearly payroll.

To optimize local workers’ project participation, ODOT will coordinate project-related

employment opportunities with the following workforce centers: East Central Oklahoma Workforce Center in Shawnee; The Career Connection in Oklahoma City; and Eastern Oklahoma County Tech Center in Choctaw.

2. Calculation of Construction-Induced Economic Impacts

The Shawnee freight rail project will create significant near-term economic benefits for the Oklahoma and Pottawatomie County areas and the State of Oklahoma, in addition to other regions of the United States. Oklahoma’s economic benefits would be driven by an increase in construction spending in the region. These project expenditures would generate a short term increase in demand for construction-related labor and material as well as engineering and technical services.

To quantify the near-term economic benefits of this project an analysis was conducted utilizing Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II) multipliers. RIMS II multipliers classify each capital cost category according to industrial sectors, using North American Industry Classification System (NAICS) industry codes, and can vary widely depending on the geographic region being analyzed. This particular analysis utilizes RIMS II data for the State of Oklahoma and Oklahoma County. RIMS II industry codes 7 (Construction), 16 (Other Transportation Equipment Manufacture) and 47 (Professional, Scientific, and Technical Services) were utilized in this analysis.

The multipliers were used to determine the quantity and industry composition of benefits generated by the project resulting in estimations of short-term job creation, earnings, and economic output as a result of the project. The multipliers estimate two types of impacts:

- Direct Impacts: Direct impacts represent new spending, hiring, and production by civil engineering construction companies to accommodate the demand for resources to complete the project.

“..it is imperative that there is no rail disruption and we get our rail cars on time.”

*Scott Manwell,
McCorkle Truck Line,*

- Indirect/Induced Impacts: Indirect impacts result from the quantity of inter-industry purchases necessary to support the increase in production from the construction industry experiencing new demand for its goods and services. All industries that produce goods and services consumed by the construction industry will also increase production and help preserve or create new jobs to meet the additional demand. The level of inter-industry trade within the area will determine the size of the indirect impact. Induced impacts stem from the re-spending of wages earned by workers benefitting from the direct and indirect activity within area. For example, if an increase in demand leads

to new employment and earnings in a set of industries, workers in these industries will spend some proportion of their increased earnings at local retail shops, restaurants, and other places of commerce, further stimulating economic activity.

In addition to measuring the effects of the project on the Oklahoma and Potawatonic Counties economy, the project's economic impacts that will be realized in other areas were also quantified. These impacts, referred to as "spillover" benefits, reflect the inter-county trade that occurs with supply industries.

The degree of these out-of-county "spillover" benefits depend on the size and composition of the local economy for a given county. Counties that have large, diverse workforces and a broad industry base often rely less on inter-county trade to support local production than smaller, less diverse county economies.

The results of the short term economic impacts are shown in **Table 2**.

Beginning in 2010, the Shawnee freight rail project is expected to generate significant regional economic benefits. An estimated average of 458 jobs will be created annually by the project, including an average of 226 direct jobs per year. **Figure 5** shows the profile of average annual full-time equivalent (FTE) employment generated annually by the project's expenditures. At the peak of spending, in the second quarter of 2010, approximately 815 FTE persons are employed as a result of the project, including 447 direct jobs.

Table 2: Summary of Near-Term Economic Impacts Resulting from the Project.

Direct Impacts	
Employment (Average Annual FTE Employment)	226
Earnings (2009 \$)	\$9,660,000
Output (2009 \$)	\$18,324,000
Indirect/Induced Impacts	
Employment (Average Annual FTE Employment)	232
Earnings (2009 \$)	\$9,902,000
Output (2009 \$)	\$44,531,000
Total Impacts	
Employment (Average Annual FTE Employment)	458
Earnings (2009 \$)	\$19,562,000
Output (2009 \$)	\$62,855,000

Source: analysis based on BEA statistics and RIMS II multipliers

In total, the project is projected to create 572 person years of employment, including 282 direct job person years. **Table 3** shows the number of persons employed on the project per quarter.

Table 3: Direct (On-Project) Jobs by Quarter by Calendar Year

2010		2011		
Q2	Q3	Q4	Q1	Q2
447	443	7	7	225

Source: ODOT

Figure 6 shows the breakdown of jobs created by industry and type of impact. As expected, the civil engineering construction

(257 person years) industry is estimated to receive the largest increase in jobs from the project, almost all of which are direct jobs created. The industries that will see the largest number of indirect jobs created include retail trade (56 person years), manufacturing (52 person years), health care (40 person years), professional services (25 person years), food services (25 person years), administration and waste management (19 person years), and other services (18 person years).

It is also important to consider the quality of the jobs that would be created by the project. This can

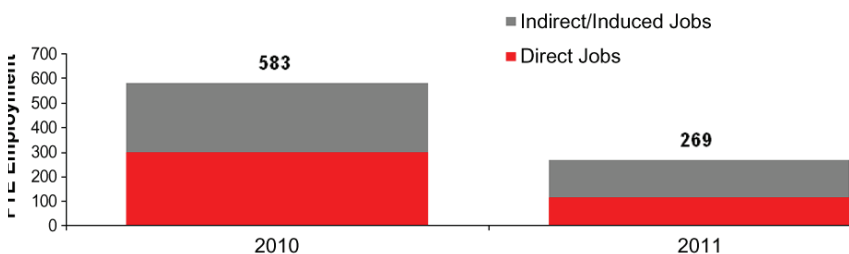


Figure 5: Average Annual Employment per Year during Construction

Source: Analysis based on BEA statistics and RIMS-II multipliers

be most easily measured by the number of jobs created at various levels of compensation. **Figure 7** shows that the majority of jobs generated by the project would receive compensation above \$20,000/year, indicating that the project would generate average paying jobs that would help stimulate the regional economy.

The amount of short-term economic activity generated by the project is shown in **Figure 8**. In total, the project would generate \$63 million in real economic output (measured in 2009 dollars), with over \$47 million dollars of economic output generated in 2010. Consistent with job creation, the majority of economic activity would be generated in 2010.

3. Project Schedule

In addition to the near term economic impacts, construction is able to start in the fall of 2009 (see **Figure 9**). There are no legislative hurdles to clear. The project is consistent with State, MPO, and local plans. Appropriate assurances from ODOT are included to support the technical feasibility of the project.

C. Benefit Cost Analysis

This section begins with a description of benefits the project will bring, followed by discussion of its costs. Quantified results are then presented as a benefit-cost result (Net Present Value and Benefit/Cost Ratio) for the project.

The formal benefit cost analysis has been conducted using best practices for benefit cost analysis in transportation planning, and reflects all TIGER grant application guidelines. It is important to note that a formal benefit cost analysis is not a

comprehensive measure of a project’s total economic impact, as many benefits cannot be readily quantified and occur under conditions of uncertainty. The broader set of economic benefits and impacts on local and regional economic well being and competitiveness are described in Section IV of the application.

To the maximum extent possible, and given available data, the formal benefit cost analysis

prepared in connection with this TIGER grant application reflects quantifiable economic benefits in the five major long term impact areas identified in the TIGER grant application guidelines. These include:

- State of Good Repair – accomplishment of the urgently-needed improvements to the track, track-bed, and eroded river banks will allow substantial

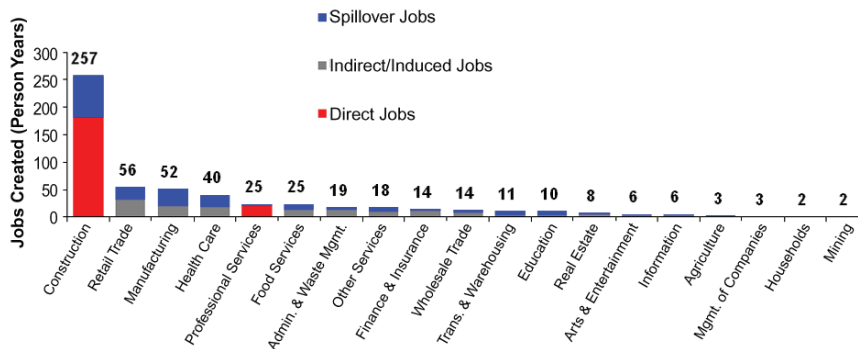


Figure 6: Breakdown of Job Creation by Industry and Type of Impact. Source: Analysis based on BEA statistics and RIMS-II multipliers

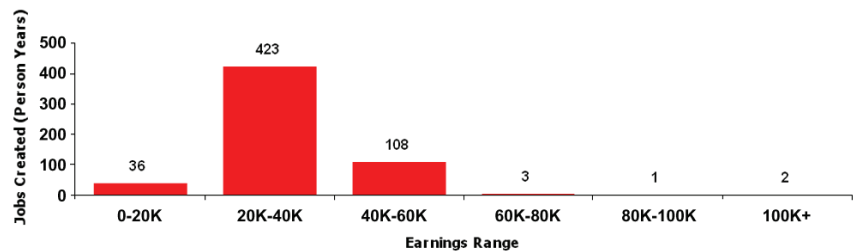


Figure 7: Breakdown of Job Creation by Earnings Range Source: Analysis based on BEA statistics and RIMS-II multipliers

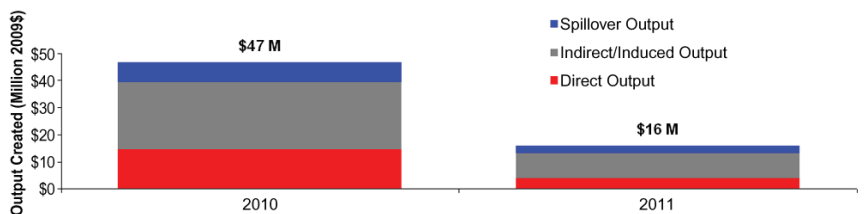


Figure 8: Breakdown of Statewide Economic Output Generated by Contract. Source: Analysis based on BEA statistics and RIMS-II multipliers

reductions in train hours, operating costs, and maintenance of track and right of way. Life-cycle costs will be reduced; these will include reduced delays, slow orders, derailments, and temporary closures for emergency repairs and during summer temperature conditions.

- Long Term Economic Competitiveness – reducing rail freight rail delays and the higher costs associated with diversion of freight from rail to trucks will allow industries and agricultural enterprises to reduce transportation costs, improve their logistics practices, and expand markets for both domestic and international shipments. This will help retain and create permanent jobs and improve the competitive position of domestic manufacturers and agricultural enterprises.
- Sustainability – reducing emissions by making rail more efficient and avoiding diversion of freight from rail to truck will enhance sustainability in the region, and reduce Greenhouse Gas Emissions.
- Livability – the corridor generally and the city of Shawnee in particular will benefit greatly from less delay-prone freight rail operation, and from the avoidance of noise, accident, and health effects of truck traffic that would result from rail closure.
- Safety – avoiding increased truck traffic in the Oklahoma City to Shawnee corridor, which will result from freight

rail discontinuation if the project is not carried out, will yield measurable safety benefits in terms of reduced fatalities and other accidents. Highway-rail crossing improvements will improve the warnings provided to motorists and increase compliance, thus enhancing safety at 40 locations.

Given these caveats, the computed benefit-cost ratio for the Shawnee freight rail project, described in detail at the conclusion of this section is 4.5, calculated using a discount rate of 7 percent. Benefit/cost is 6.4 using a discount rate of 3 percent.

1. The Project and the Alternative (No Build)

The project (the Build alternative) consists of rehabilitating the track, adding active warning devices at rail-highway grade crossings, improving the subgrade and repairing bridges of A-OK Shawnee line, including river bank erosion mitigation. Also included are track and crossing improvements to the BNSF line north of Shawnee. These improvements will support an increase in operating speeds from 10 to 25 miles per hour.

The deteriorated condition of cross ties and the erosion by the North Canadian River at several locations indicate that the significant amount of capital required for maintenance has not been available. Poor track conditions lead to higher operating costs and slimmer margins of net revenue available to correct the situation. One flood event could easily undermine the roadbed at more than one location and render reconstruction

beyond the financial means of the operator. In this case, the line would be embargoed and rail service to A-OK and BNSF customers in Shawnee, and between Oklahoma City and Shawnee would cease.

Consequently this analysis considers benefits and costs that withdrawal of freight rail service would cause as imminent. In the “No Build” scenario (absence of the project), freight service by the current rail operations is assumed to cease within two years, to be replaced by truck freight service during the remaining years of the 20-year analysis period. The products shipped by the A-OK and BNSF customers are commodities requiring single-mode origin-to-destination service. As a result, the change from rail to truck would apply to the entire origin-to-destination length of shipments. Based on information provided by specific Shawnee-area customers, the national average trip length for car-load freight is adopted as applicable to this analysis.

2. Rationale for the Use of Origin-to-Destination Rail Versus Truck Costs as the Measure of Economic Benefit of the Project.

The BCA basis is a comparison of the cost of shipper-to-customer rail versus truck transportation. The commodities being shipped are bulk carloads that cannot be trans-shipped using a combination of rail and truck, and consequently their shipping costs can only be compared on the basis of single-mode shipment from origin to destination. This approach is taken as the most direct way to demonstrate the economic cost that would result from loss of freight rail service to the A-OK

Shawnee short line customers including those on the BNSF line extending to the north from Shawnee. There are two elements in the rationale for this approach:

- Loss of freight rail service on this A-OK short line is inevitable if the project is not undertaken, as discussed elsewhere in this application. Consequently it is not appropriate to compare the costs via the current railroad conditions versus costs via the improved railroad conditions.
- In the absence of freight rail service, the customers served by the A-OK and BNSF would be forced either to go out of business or to move to a location that has rail freight service. This is because their products could not be competitively priced if the higher cost of shipment by truck instead of rail had to be absorbed. The cost of relocation or going out of business, and the adverse effects of loss of employment within the corridor would be severe for the community at large as well as for the individual businesses affected. That economic impact is judged to be at least as great as the cost of shipping goods by truck instead of by rail.

Cessation of service is assumed not to affect the automotive train service provided by A-OK. This service occurs within the western portion of the A-OK and would not be affected by a flood event closing the line. This service can be maintained with or without the rehabilitation project

Table 4: Freight Movement, Oklahoma City to Shawnee Area

Annual Data	2012	2015	2029
Freight Cars per Year	1,927	2,892	3,816
Typical Freight Tons per Car	90	90	90
Freight Tons Carried per Year	173,430	260,280	343,434
Typical Miles Hauled	538	538	538
Freight Ton Miles per Year	93,305,340	140,030,640	184,767,456
Typical Freight Tons per Truck	21	21	21
Truck Trips Required if No Rail	8,259	12,394	16,354
Truck Miles (VMT) if No Rail	4,443,111	6,668,126	8,798,450

Source: A-OK and BNSF Customer Data and AASHTO statistics

3. Project Benefits

The primary direct project benefits result from avoiding the loss of freight rail service currently provided by the A-OK in the Oklahoma City to Shawnee corridor, including the access it provides to the 8.9 mile BNSF line extending northward from Shawnee. BNSF access to their line is dependent on trackage rights over the A-OK from Oklahoma City. In the absence of freight rail service, customers in and near Shawnee would be forced to discontinue or relocate their businesses, or rely instead on freight movement by truck. This transfer from rail to truck would have a number of quantifiable economic costs, affecting freight customers and the area population at large. Based upon currently available data, the initial magnitude this freight movement transfer from rail to truck would be as described in **Table 1**. The A-OK has identified market growth over the next five years for specific customers, raising total annual freight cars per year from the current level, 1,927 to 2,892 (both excluding the automotive business close to Oklahoma City).

Although the project is compared with replacement of rail freight service with truck freight in the analysis of benefits and costs, the project will in fact bring immediate benefits to rail freight operations and customers. Railroad operating costs will benefit from reduced train hours as a result of higher operating speeds and no “heat curfew.” Rail freight customers will benefit from improved predictability of rail car deliveries, which at present are subject to significant delay. This is a problem especially during summer months, when high temperatures cause track deformation with consequent slow orders and line closings.

Economic benefits of the project have been estimated at year 2009 price levels.

Fuel savings, quantified: Failure to implement the project is assumed to result in withdrawal of rail service after two years. The No Build scenario would result in all freight otherwise shipped by rail having to be shipped by truck. The consequent increase in trucking will result in greater use of motor fuels, because of the relative inefficiency of diesel or gasoline-

fueled trucks compared with diesel-electric rail locomotives. Assuming all trucks would be diesel-fueled, the excess fuel use if the current level of rail freight service were to be withdrawn would be 653 thousand gallons in 2012, growing to 1.293 million gallons in the year 2029. The value associated with these fuel cost savings has been accounted for in the corresponding shipping cost estimates.

Travel time savings, quantified

In the No Build scenario, the withdrawal of rail service would have minor time-savings benefits to the road traffic that uses the numerous at-grade crossings. Time savings would be minor because of the small number of trains operated, and low road traffic volumes at most crossings. In the Build scenario, the project would reduce road traffic crossing delays to a degree, as discussed elsewhere in this grant application. Higher operating speeds will allow trains to clear crossings more quickly but train lengths are not sufficient to result in large changes in traffic stopped times at crossings. There would be small travel time benefits gained by Oklahoma City to Shawnee corridor road traffic generally, because of avoiding added heavy truck traffic in No Build compared with freight being carried by rail if the project is implemented.

“industry will die if you don’t have rail . . .”

Bill Ford, president of Shawnee Milling Company

Customer (Shipper) cost savings, quantified

The project will result in small reductions in rail operating and maintenance (O&M) costs, which are not assumed to be passed on to customers. Because failure to implement the project will result in withdrawal of rail service, the No Build alternative would result in freight otherwise shipped by rail having to be shipped by truck. Trucking is more expensive than shipping by rail. The project, by preserving and improving rail freight service, would save customers an estimated value of \$9.7 million in 2012, compared with the cost of shipping by truck. This amount is projected to grow to \$14.5 million annually by 2015 and to \$18.9 million annually by 2029.

Greenhouse gas emissions (reduced), quantified

The increase in trucking in the No Build alternative will result in increased emissions of greenhouse gases. Diesel or gasoline-fueled trucks are relatively inefficient compared with diesel-electric locomotives and the lower energy per ton-mile required when moving freight via rail. Greenhouse gas reductions are projected to be 26.7 thousand tons in 2012, rising to 52.8 thousand tons by 2029. The benefit at \$7.00 per metric ton grows from \$187 thousand to \$370 thousand per year.

Water quality impacts

River bank erosion is an on-going problem that continues to encroach within the railroad right of way, degrading track quality and threatening rail service continuation. The project would include stabilization of river bank

areas proximate to the railroad right of way. Stabilization would have an ancillary benefit in reducing intrusion into the river not only of silt and plant material, but also of potential contaminants resulting from rail operations or possible derailment because of weakened roadbed conditions.

Public health benefits:

As discussed, the No Build alternative would result in freight otherwise shipped by rail having to be shipped by truck. The consequent increase in trucking will have an adverse effect on air quality within the corridor, and may also result in localized noise increases. The air quality economic benefit of the project gradually declines from \$174 thousand in 2012 to \$12 thousand in 2029, as more stringent regulations result in cleaner diesel exhaust.

Other costs and benefits related to vehicle miles of travel

The project will result in road traffic vehicle-miles-of travel (VMT) reductions as compared to the No Build alternative. Consequent savings in road maintenance and operating costs would occur resulting from avoided road deterioration. Also, there would be improved traffic safety, thus likely reducing accident costs. Road maintenance expenditures anticipated to be eliminated by the project amount to \$1.2 million in 2012 and \$2.3 million by 2029. Accident costs are projected to be reduced by \$2.9 million in 2012 and \$5.8 million in 2029, assuming no changes in accident rates over this period.

Effects of transportation investments on land use

By demonstrating the commitment to retain and improve rail freight service, project implementation would provide assurance to rail freight customers. This would have a generally positive effect on land use, stabilizing traditional uses proximate to the rail corridor, encouraging rail freight customers to continue building their respective businesses, and attracting new freight-dependent business to the corridor.

Effects of transportation investments on household budgets:

No adverse effects on household budgets would result from the project. During the construction period, temporary gains in construction worker employment would have a positive effect on employees' household budgets. Over the long range, the continuation and improvement of rail freight service should have a positive effect on business growth, strengthening the local economy. By estimating economic benefits of the project as transportation cost differences if land use and business activity were the same in both the No Build and Build alternatives, the potential land use benefits of the project are included in the analyses.

4. Project Costs

The project entails the design and construction of capital improvements including river bank stabilization, track reconstruction, and rail-highway grade crossing improvements. Track reconstruction and rail-highway grade crossing improvements are included for both the A-OK and BNSF portions of the project.

These capital costs include not only construction costs, but also design and project management costs. The estimated cost of the first project phase, including design and construction, is \$32,105,949. Phase One would be initiated in the second quarter of 2010 and would be completed in 2011, with approximately \$20.8 million expended in 2010, and \$11.3 million in 2011.

A second phase has been proposed to upgrade the span type structures along the route to facilitate 286,000 pound car loadings. These improvements are anticipated to cost approximately \$20 Million and are deferred to be considered for implementation as a separate project.

5. Benefit-Cost Results

The analysis of benefits and costs finds that the present value of the project benefits is:

\$130.5 million at a seven percent discount rate

\$198.5 million at a three percent discount rate.

These benefits compare with present values of the project cost, which are:

\$29.3 million at a seven percent discount rate

\$30.9 million at a three percent discount rates

The project's resulting Net Present Value is \$101.2 million at a seven percent discount rate, and \$167.2 million at a three percent discount rate. The project's Benefit/Cost (B/C) ratio is 4.5 at the seven percent discount rate, and 6.4 at three percent. In either case, benefits will exceed costs within six years.

Table 5 summarizes the benefit results of the analysis for three years: these being 2012 immediately after completion of construction; 2015 when specifically identified growth in freight cars carried has fully taken place; and 2029, the last year included in the evaluation.

D. Plan for Evaluation of Project Performance

The proposed project can be evaluated with respect to achievement of short term economic recovery goals by utilizing information from Oklahoma DOT's periodic Maintenance of Effort (MOE) reports to gauge performance on

Table 5: Estimated Annual Benefits of the Project, Oklahoma City to Shawnee Area

Annual Benefit (2009 dollars)	2012	2015	2029
Shipper Cost Avoided	\$5,225,099	\$7,841,716	\$10,346,978
Value of Greenhouse Gas Reductions	\$186,797	\$280,341	\$369,904
Value of Air Pollutant Reductions	\$173,913	\$166,463	\$11,735
Accident Cost Reductions	\$2,939,896	\$4,412,132	\$5,821,715
Highway Maintenance Cost Avoided	\$1,177,425	\$1,767,053	\$2,331,589
Total Evaluated Economic Benefits	\$9,703,129	\$14,467,706	\$18,881,921

Source: ODOT Rail Division

a number of items, including but not limited to: obligation of funds, number of direct and indirect jobs created sustained, opportunities for low income and minority workers, and opportunities for Disadvantaged Business Enterprises (DBEs).

With respect to long term outcomes, it may be difficult to ascertain benefits directly and solely attributable to this project. Also, in some cases, benefits may be evident several years after completion of construction. Nevertheless, the following actions are proposed in relation to the long term outcomes:

(1) State of good repair:

Information on maintenance of the new facility in a state of good repair can be measured by rail inspection information submitted to FRA.

(2) Economic Competitiveness:

The project's contribution to improved economic activity can be measured by employment growth at businesses along the route, tons of freight moved over time, attraction of new businesses along the corridor, and reduction in heat curfews

VI. Secondary Selection Criteria

Not Applicable

VII. Program Specific Criteria

Not Applicable

VIII. Federal Wage Rate Certification and Other Certifications and Assurances

As the applicant for TIGER funds, the Oklahoma Department of Transportation will comply with federal wage rate requirements, as per Subchapter IV of Chapter 31, USC Title 40. A certification statement regarding compliance with federal wage rates, as well as additional documentation about the Department's ability and pledge to comply with other requirements is included as an attachment. The documentation speaks to issues including, but not limited to: worker safety, civil rights, ability to proceed quickly with the project, submittal of periodic Maintenance of Effort (MOE) reports.

IX. National Environmental Policy Act (NEPA) Requirements

The environmental clearance process in accordance with NEPA is underway. It will comply with federal and state laws and policies to ensure eligibility for federal funding requirement and other environmentally related actions.

X. Environmentally Related Federal, State & Local Actions

The NEPA document will need to be approved by the Federal Highway Administration (FHWA). Section 4(f) issues will be reviewed. Section 106 coordination will be done with the State Historic Preservation Office (SHPO) as part of NEPA studies. U.S. Army Corps of Engineers coordination will be conducted as needed. Section 7 consultation with US Fish and Wildlife Service will be conducted as part of NEPA studies.