



**AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009
TRANSPORTATION INVESTMENT GENERATING ECONOMIC RECOVERY
"TIGER"
DISCRETIONARY GRANT APPLICATION**

Tower 55 At-Grade Improvement Project

Project Type: Freight Rail Transportation Project

Project Location: City of Fort Worth
Tarrant County, Texas
12th and 26th Congressional Districts

Funds Requested: \$60,905,000 / \$30,905,000 if 100% of TxDOT
High-Speed Intercity Passenger Rail (HSIPR)
Track 1A Grant is Awarded

Designation: Urban

DUNS#: 10-246-2256

CAGE#: 3A0F8

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Executive Summary

Tower 55 is one of the busiest and most congested rail intersections in the United States, commonly handling more than 100 trains per day

- **The Tower 55 At-Grade Improvement Project is an implementable, cost-effective, and unobtrusive solution that would provide immediate jobs, benefit the community, and improve the flow of commerce in the south central United States.**
- **The Project would allow Tower 55 to accommodate at least 40 percent more rail volume than is moving today - and would do so with less delay and congestion than the region has experienced in recent years.**
- **Private sector funding match: 35%**

On behalf of the North Central Texas Council of Governments, this proposal outlines the Tower 55 At-Grade Improvement Project (“The Project”) to install new signaling, bridge upgrades, a third north/south main line, and improved street and pedestrian crossings at Tower 55, located in Fort Worth, Texas.

Tower 55 is near capacity, and the significant rail and vehicular delay and congestion that result generates transportation, economic, operational, and environmental impacts.

Due to its regional and national significance, the Tower 55 Project was recently rated by a Texas Department of Transportation (TxDOT) organized selection committee as the highest priority TIGER project in Texas- compared with more than 90 other projects in the second most populous state in the nation. Table 1 provides a snapshot of the Project’s performance versus TIGER outcomes and criteria and can be used as a reference during the review of this proposal.

Since the economic contraction began in December, 2007, the US has lost nearly seven million jobs. Effective government stimulus must both mitigate short-term GDP shortfalls and invest in projects that can deliver sustainable productivity impact on a regional and national scale. The Tower 55 Project would generate almost 2,000 job-years of employment, including over 680 construction jobs¹. Rail is the most cost-effective, fuel efficient, and environmentally friendly mode for moving the nation’s goods. Remedying legacy chokepoints such as Tower 55 can help the nation grow its economy, decrease its energy dependency and reduce its environmental impact. US businesses, consumers and citizens would gain measurable benefits when critical shipments are no longer forced to slow or stop when they reach Tower 55.

Figure 1: Tower 55 – Looking North



¹ Tower Economic Impact Analysis, HDR / HLB Decision Economics Inc., September 2009



With broad project endorsements from city, county and regional governments, area chambers of commerce, the Texas Department of Transportation, the Oklahoma Department of Transportation, Amtrak, members of the Texas Legislature, and members of Congress, Tower 55 stands as an example of how focused infrastructure investment can generate economic recovery and improve the environment well beyond the local or regional footprint of the Project itself. The total project cost is \$93,700,000 with a **Tiger Grant Request of \$60,905,000**. The TIGER grant would be reduced accordingly if TxDOT’s \$30,000,000 High Speed Rail Track 1A grant for Tower 55 is awarded.

Table 1: TIGER Outcome and Criteria – Tower 55 Project Summary

TIGER Outcome & Criteria	Tower 55 Project Summary	Rating
Preserve/Create Jobs	<ul style="list-style-type: none"> ▪ 1,942 job-years of direct, indirect and induced jobs ▪ 682 direct construction jobs / Economic Impact over \$138 million 	
Help Economically Distressed Areas (EDA)	<ul style="list-style-type: none"> ▪ Construction jobs for workers from 8 surrounding EDA counties ▪ Reduced impact of crossing delays on communities including the 34% of households in immediate vicinity of Tower 55 that are low-income 	
Long Term Economic Benefits	<ul style="list-style-type: none"> ▪ Public benefits of \$695 million (7% discount rate) / \$1.2 billion (3% discount rate) ▪ Between \$11.41 (7% discount rate) and \$19.95 (3% discount rate) of public benefits for every \$1.00 of ARRA investment 	
State of Good Repair	<ul style="list-style-type: none"> ▪ Project enhancements would alleviate Tower 55 congestion and support rail volume growth for 20 years per Global Insights projections 	
Economic Competitiveness	<ul style="list-style-type: none"> ▪ Remedies one of the most significant rail chokepoint in United States ▪ Improves transportation in the most rail dependent state in the US ▪ Avoids increased supply chain costs of \$608 million (7% discount rate) / \$1.07 billion (3% discount rate) over the life of the project 	
Livability	<ul style="list-style-type: none"> ▪ Avoids an average of 27,881 hours of vehicular crossing delay per day ▪ Reduces NOx by 13,955 tons for the 20-year life of the project ▪ Potential for double digit improvement of Amtrak on-time performance 	
Sustainability	<ul style="list-style-type: none"> ▪ Avoids 98,000 tons of CO₂ per year ▪ Reduces average fuel use by over 32,627 gallons per day 	
Safety	<ul style="list-style-type: none"> ▪ New pedestrian/vehicle grade separations near elementary school support two at-grade crossing closures ▪ Structural improvements to existing bridges and drainage structures ▪ Avoids regional grade crossing impacts due to lengthier rail diversions 	
Innovation	<ul style="list-style-type: none"> ▪ New Centralized Traffic Control (CTC) signaling system with Positive Train Control (PTC) compatibility 	
Partnership	<ul style="list-style-type: none"> ▪ 35% private funding ▪ Outcome of NCTCOG Rail Reliever Study – consortia including Amtrak, TxDOT, NCTCOG, the T, City of Fort Worth, UP, and BNSF ▪ Broad support from regional and state agencies and associations 	
Schedule	<ul style="list-style-type: none"> ▪ Construction Start – July 2010 ▪ Project Completion – February 2012 	
Environmental Approvals	<ul style="list-style-type: none"> ▪ Anticipate FRA NEPA review will confirm categorical exclusion eligibility 	
Technical and Financial Feasibility	<ul style="list-style-type: none"> ▪ Preliminary Engineering complete / UP and BNSF funding commitment 	



Project Description

Project Selection: As outlined in this proposal, the Tower 55 Project is an implementable, cost-effective, and unobtrusive solution that would provide benefits for the community and the flow of commerce in the south central region of the United States for an estimated 20 year period. Project outcomes meet or exceed the long-term outcome and criteria of the **Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant** program. The at-grade rail intersection or “interlocker” at Tower 55 is vital to the national rail network, providing connectivity for goods and passenger movements between the West Coast, Midwest, Gulf Coast, Southeast, Canada and Mexico. In order to support the nation’s supply chain, improve environmental performance, and reduce congestion impacts to communities, Tower 55 must be improved in the near term.

Figure 2: Tower 55 and National Transportation Network

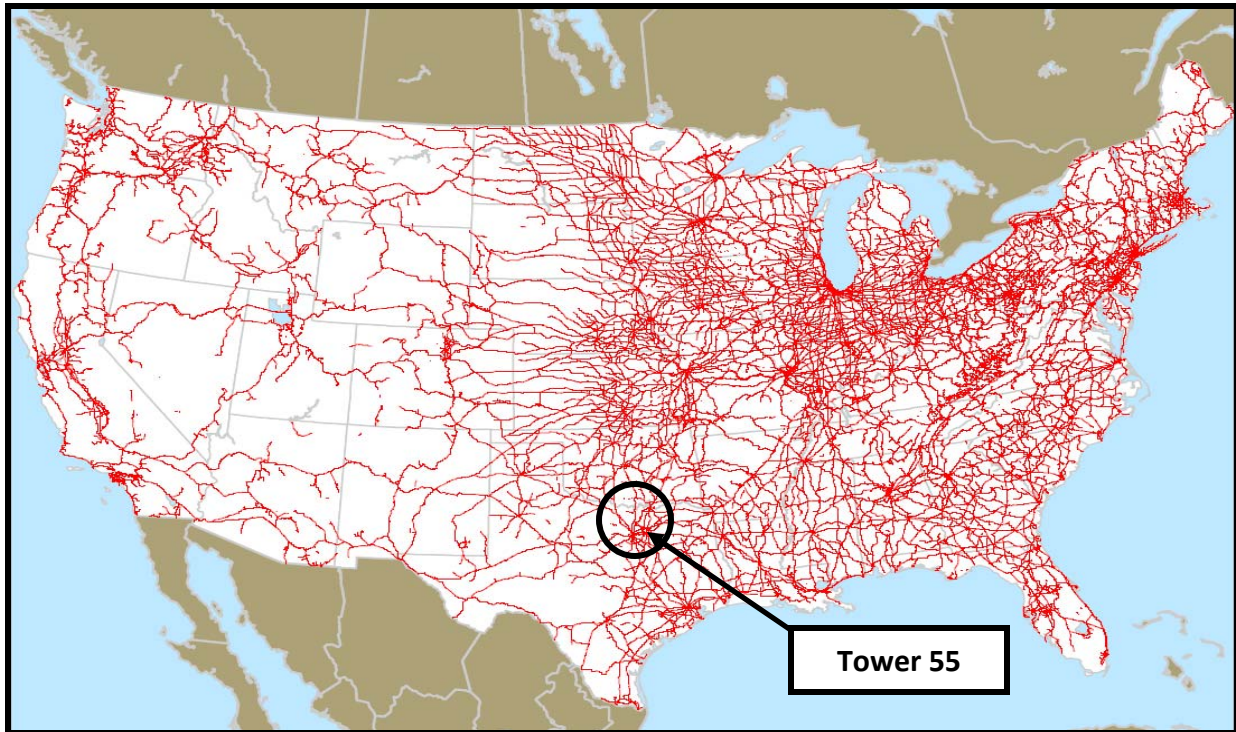
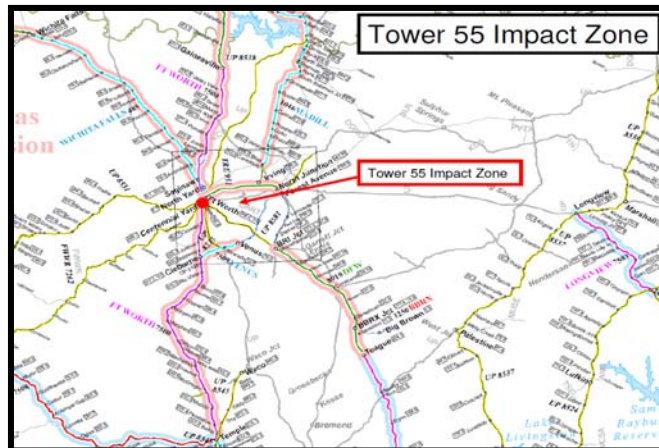


Figure 3: Tower 55 Local Impact Zone

Project Overview: The Tower 55 rail interlocker is one of the busiest and most congested rail intersections in the nation. Located just southeast of downtown Fort Worth, Texas, Tower 55 commonly handles more than 100 trains per day by way of a series of at-grade rail crossings that provide connectivity for rail movements running east, west, north, and south through the Dallas-Fort Worth Metroplex. Today, Tower 55 consists of an at-grade rail intersection of a shared double track main line north/south and Union Pacific Railroad (UP) double main

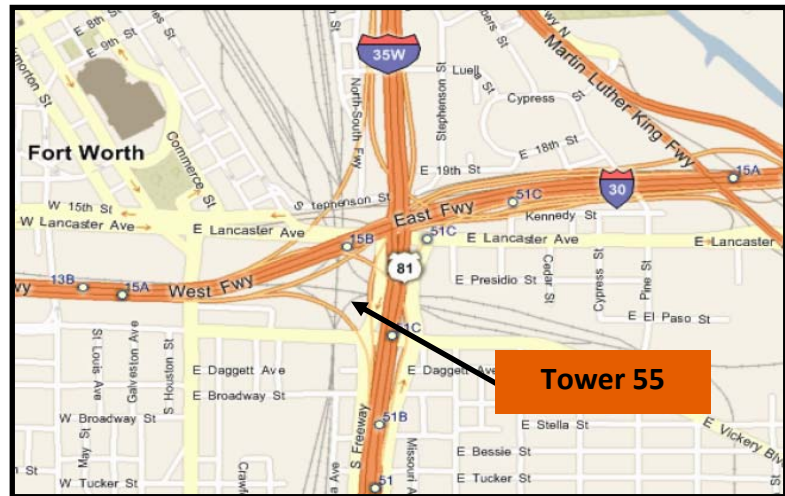




lines east/west. Tower 55 handles high priority intermodal (truck trailers or containers on railcars) goods moving across the nation, agricultural products destined to the Gulf Coast ports, industrial and manufactured goods reaching throughout North America, and low sulfur coal destined to power plants in Texas. Tower 55 also provides connectivity for existing passenger and commuter services throughout the North Texas region.

Figure 4: Tower 55 Aerial Map Today

Project Description: If no action is taken to improve Tower 55 traffic flow and capacity, rail congestion will become more severe in the near term. Today, the current track and signaling configuration does not allow trains to move efficiently through the facility. Instead, train speeds through the facility are restricted to as low as 10 MPH and trains are staged in sidings miles away from the interlocker as they approach and work their way through the junction. BNSF trains are regularly staged as far south as Temple, TX and as far north as Gainesville, TX, a distance of up to 120 miles from Tower 55. UP trains are regularly staged as far west as Abilene, TX, as far east as Big Sandy, TX, as far south as Waco, TX and as far north as Denison, TX, a distance of up to 150 miles from the tower.



To design the Tower 55 At-Grade Improvement Project, detailed rail capacity modeling, engineering, environmental review, cost benefit, and economic analysis was performed between 2007 and 2009. In addition, project improvements were reviewed by the Tower 55 Rail Reliever Study, staffed by representatives of the Texas Department of Transportation (TxDOT), North Central Texas Council of Government (NCTCOG), Amtrak, the City of Fort Worth, the Fort Worth Transportation Authority (The T), UP, and BNSF based on its ability to improve freight mobility, reduce regional congestion, and improve air quality. The Tower 55 Rail Reliever Study was funded by a SAFETEA-LU appropriation of \$1.6 million and a local funding match from the City of Fort Worth, the City of Arlington, Tarrant County, The T, UP and BNSF in the amount of \$400,000.

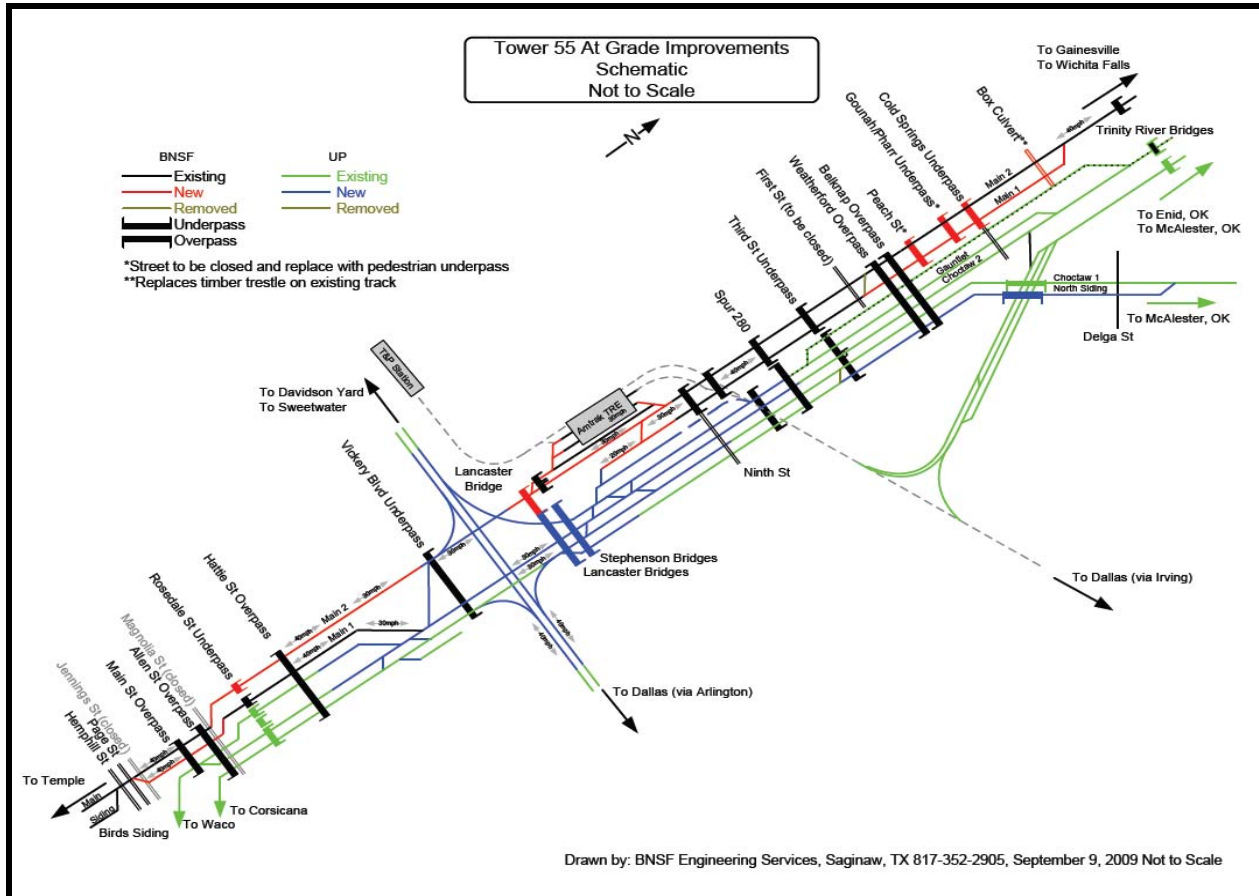
As a result of modeling/delay impact analysis noted below, a specified scope of at-grade improvements was generated to address the infrastructure needs at Tower 55. The Project totals \$93.7 million comprised of the scope of work listed below and as shown in Figure 5:

- Construction of additional trackage north, south, and through Tower 55 on the BNSF and UP adding an additional main line and improving interlocker capabilities
- Improvements to rail intersection quadrant connections to promote both through and connection movements at the interlocker and to better support concurrent rail operations
- Enhanced Centralized Traffic Control (CTC) signal and interlocker system to accommodate the additional trackage and connections through Tower 55 and to increase maximum rail operating speeds to 30 MPH north/south and 40 MPH east/west
- Structural improvements to existing bridges over Stephenson Street and Lancaster Avenue and additional improved bridges over Rosedale Avenue, Delga and Cold Springs Streets



- Improvements over the UP Duncan Subdivision and drainage infrastructure north of Tower 55
- City arterial street/intersection improvements supporting closure of First and Peach Streets on the northeast side of downtown Fort Worth
- Construction of pedestrian grade separations at Gounah and Peach Streets to promote crossing safety for elementary school children and other pedestrians

Figure 5: Tower 55 At-Grade Improvements



The enhancements this project offers would support freight and passenger train growth by increasing the throughput capacity of Tower 55 and increasing maximum track speed to 30 MPH north/south and to 40 MPH east/west. These velocity improvements are expected to enable Tower 55 to accommodate at least 40 percent more volume than is currently moving in 2009, and to do so with less congestion and delay than the region has experienced in recent years. The Project would also remedy a legacy chokepoint on the national rail system and would allow freight and passenger rail transportation to respond to the nation’s call to increase national economic output, improve livability and sustainability, and reduce reliance on imported oil.

Purpose and Need

Purpose: The purpose of the Tower 55 At-Grade Improvement Project is to enhance the capacity and productivity of a significant intersection in the national rail network by increasing throughput and average speeds of freight and passenger trains with routes intersecting at Tower 55 in Fort Worth, Texas. The Project objectives include:



- Generate economic stimulus through direct and indirect job generation in eight surrounding EDA counties
- Minimize the economic impact of rail delays to national and international goods movement on primary BNSF and UP rail routes that connect the West Coast, Midwest, Gulf Coast, Southeast, Canada, and Mexico
- Enhance supply chain efficiency for manufacturers, shippers, receivers, and consumers
- Avoid circuitous rail diversions caused by Tower 55 exceeding its saturation capacity (maximum train volume within allowable operating velocity metrics)
- Reduce rail emissions in and around a non-attainment air basin by limiting train delays
- Reduce at-grade crossing delays for vehicles and pedestrians
- Reduce passenger train delays and improve on-time performance of Amtrak’s Heartland Flyer and Texas Eagle services

Need: Tower 55 is a key infrastructure component to the nation’s economy and supports rail transportation service of high priority intermodal, agricultural products, industrial goods, low sulfur coal, and Amtrak. This traffic represented nearly 100 trains per day passing through Tower 55 in 2008. At current growth rates, saturation capacity of 102 trains per day would be reached again in the near term, which would trigger significant train staging and the need to begin diverting trains to lengthier routes to avoid Tower 55 even though the rail network’s overall highest capacity and shortest mileage routes are through Tower 55.

Diversion routes around Tower 55 that are available to BNSF and UP are highly inefficient; they are lengthier and encounter their own restrictions due to route geographic characteristics and conflicting rail traffic. Project implementation would avoid impacts of lengthy diversion routes, including higher transportation and inventory costs, fuel consumption, locomotive emissions, delays for motorists waiting at roadway/railway grade-crossings for trains to pass, and pedestrian crossing interference.

Figure 6: Tower 55 Congestion



To generate activity values as a basis for evaluating the impact of the at-grade improvements, UP and BNSF utilized Rail Traffic Controller (RTC) analysis performed by Willard Keeney and Associates to compare the “Build” and “No Build” scenarios as defined below:

1. No-build scenario:

- a. Continued growth in train delay at Tower 55
- b. Train volumes in excess of the current capacity of Tower 55 would be diverted to longer rail routes
- c. Increased air emissions in and around a non-attainment zone
- d. Vehicular at-grade crossings in the vicinity of Tower 55 not improved
- e. No improvement in roadway/pedestrian grade-crossing safety, delay, and vehicle operating costs



2. Build scenario:

- a. Ability for Tower 55 to accommodate more than a 40 percent increase in rail volume than 2009 traffic levels with increased network fluidity and operating speed
- b. Reduced train congestion delay and diversion associated with Tower 55
- c. Reduced air emissions in and around a non-attainment zone
- d. Construction of roadway and pedestrian grade-crossing improvements north of Tower 55

In order to model these two scenarios, the following assumptions were made:

- The maximum sustainable rail operating capacity of Tower 55 is 102 trains per day based on volume metrics collected during peak volumes that occurred in 2007
- 2008 annualized BNSF, UP, and Amtrak rail volumes were used as baseline rail volumes
- Rail traffic increase based on growth rates found in Table 2 below provided by IHS Global Insights (heavily used in the transportation industry as a third party expert and recognized as a global leader in comprehensive economic and financial analysis services)
- Train volume exceeding the maximum sustainable capacity under the no-build scenario would divert to other viable rail routes most aligned with commodity specific origin and destination pairs

RTC, made by Berkeley Simulation Software (BSS), is a sophisticated program designed to realistically simulate rail operations. The defining characteristic that sets RTC apart is its resolution of complex multi-train conflicts in realistic ways. It does not simply resolve conflicts between pairs of trains, but rather looks globally at multi-train conflicts in much the same way as a dispatcher in a control center would. As the model dispatches, each train’s performance is constantly recomputed to ensure that high-priority trains stay on schedule to the extent possible, for a given track configuration. It is the dynamic costing and multi-train view that enables RTC to replicate the performance of train dispatchers.

RTC is now the standard modeling software used among freight and passenger railroads. The majority of the Class I Railroads, including the UP, BNSF, CSX Corporation, Norfolk Sothern (NS), Amtrak, Kansas City Southern (KCS), Kansas City Southern de Mexico (KCSM), and others, have selected RTC for operations planning and capacity analysis. While robust, RTC is time-intensive to both set-up and run scenarios.

RTC was used to simulate the operating performance of all trains in and around Tower 55 to define performance when the “No Build” scenario approached its saturation point, at which time trains would have to be diverted from Tower 55 to alternative and lengthier routes. In addition, RTC was used to simulate train performance results from the “Build” Case, which is the basis for the Projects’ estimated 20 years of utility given today’s Global Insights growth rates stimulated in Table 2 below.

Table 2: Global Insights Commodity Growth Rates

Global Insights - Compound Annual Growth Rates (CAGR's)								
Commodity	2009	2010	2011	2012	2013	2014	2015	2016-Future
Industrial - Manifest	-12.0%	1.3%	5.5%	5.7%	4.0%	3.1%	2.5%	2.0%
Ag - Bulk	-9.2%	4.8%	7.4%	6.2%	4.7%	4.0%	3.5%	3.0%
Coal - Bulk	-4.9%	-1.1%	1.8%	2.2%	2.1%	2.0%	2.0%	1.1%
Domestic - Intermodal	-12.2%	1.8%	6.6%	7.1%	5.0%	4.0%	3.7%	3.3%
International - Intermodal	-0.5%	0.4%	1.0%	1.0%	0.6%	-0.3%	3.8%	0.7%



No-Build Modal Sensitivity: The no-build scenario analysis limited its consideration to train diversions only to allow a precise estimation of volumes, delays, and emission values. However; it is likely that freight volumes would also divert to highways as well, as both service reliability and transit times at Tower 55 and the required rail diversion routes deteriorate. If this were to occur, impacts would be even higher than under a 100% rail diversion analysis case.

Project Parties

North Central Texas Council of Governments (NCTCOG): NCTCOG is the Project sponsor. NCTCOG serves a 16-county region of North Central Texas, which is centered on the two urban centers of Dallas and Fort Worth. NCTCOG has over 230 member governments including 16 counties, numerous cities, school districts, and special districts. NCTCOG is a voluntary association of, by, and for local governments, established to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. NCTCOG's purpose is to strengthen both the individual and collective power of local governments and to help them recognize regional opportunities, eliminate unnecessary duplication, and make joint decisions. NCTCOG is the Dallas Fort Worth Areas designated Metropolitan Planning Organization (MPO), and is recognized nationally for its innovative transportation planning and air quality initiatives. NCTCOG staff also serves as the project manager and lead for the Tower 55 Rail Reliever Study¹.

BNSF Railway (BNSF): BNSF owns and operates two of the railroad subdivisions that flow through Tower 55. BNSF operates over 32,000 route miles of track in the western 28 states and two Canadian provinces and is headquartered in Fort Worth, Texas.

Union Pacific Railroad (UP): UP owns and operates four of the railroad subdivisions that flow through Tower 55 as well as the Tower 55 interlocker. UP operates over 32,400 route miles of track located in 23 western states and is headquartered in Omaha, Nebraska.

City of Fort Worth, TX, Tarrant County: The City of Fort Worth was established in 1849. It has just over 720,250 residents as of a 2009 estimate, and was the fastest growing city in the US from 2000-2006². Tower 55 is located within Fort Worth city limits, just southeast of downtown.

Texas Department of Transportation (TxDOT): TxDOT is a member of the Tower 55 Rail Reliever Study and contributed key staff, modeling and input into defining the Tower 55 At-Grade Improvement Project. In recognition of Tower 55's impact to existing and future passenger rail in the region, TxDOT also submitted a separate High Speed Intercity Passenger Rail (HSIPR) Track 1A grant application on August 24, 2009. TxDOT's purpose is to be a progressive state transportation agency recognized and respected by the citizens of Texas: providing comfortable, safe, durable, cost-effective, environmentally sensitive and aesthetically appealing transportation systems that work together.

Grant Funds

This application has been configured to describe the Tower 55 At-Grade Improvement Project and propose a partial TIGER funding investment in the Project. The completion of the TIGER grant would allow the railroads to fund the balance of the required capital during this time of economic uncertainty, 20% volume declines, and significant expansion capital, locomotive, and operating cut-backs.

¹ North Central Texas Council of Governments - <http://www.nctcog.dst.tx.us/>

² Fastest Growing US Cities – http://money.cnn.com/2007/06/27/real_estate/fastest_growing_cities/



TIGER funds requested are \$60.9 million. Public benefits between \$695 million (7% discount rate) and \$1.2 billion (3% discount rate) with economic impacts that exceed \$138.38 million and would produce an estimated 1,942 job-years. This results in public benefit to cost ratio between 11.41 to 1 (7% discount rate) and 19.95 to 1 (3% discount rate)¹.

In conjunction with this TIGER request, TxDOT submitted a Track 1a – Final Design (FD)/Construction application on August 24, 2009 to the FRA for \$30.0 million as part of the High-Speed Intercity Passenger Rail (HSIPR) Program. In the event TxDOT is awarded funding from the HSIPR program, the requested TIGER amount would be reduced proportionally. TxDOT and NCTCOG propose this funding structure to Federal Railroad Administration (FRA) and United States Department of Transportation (USDOT) as a means to evaluate and award American Recovery and Reinvestment (ARRA) funding specific to the public benefits that are generated from the Project.

BNSF Railway and Union Pacific Railroad are committed to fund the remaining cost of at-grade construction, which is estimated at an additional \$32.8 million, for an estimated total project cost of \$93.7 million (2010 dollars), subject to mutually agreeable funding terms and conditions. BNSF's and UP's joint match is based on improved operational efficiency and capacity of the at-grade improvements. Table 3 and Table 4 below provide further proposed funding details. In addition, BNSF and UP would absorb any cost over-runs for the Project and would fund all ongoing maintenance of rail improvements after project completion.

Table 3: Proposed Project Funding - 2010 Dollars – TIGER Award Only

Description	TIGER funds (requested)	Private funds (planned)	Total Funds
Project Approval/ Environmental Document	\$650,000	\$350,000	\$1,000,000
Plans, Specifications & Estimate	\$650,000	\$350,000	\$1,000,000
Right of Way (capital and support)	\$1,485,000	\$805,000	\$2,290,000
Construction (capital and support)	\$58,120,000	\$31,290,000	\$89,410,000
TOTALS:	\$60,905,000	\$32,795,000	\$93,700,000
Percentage	65%	35%	100%

Table 4: Proposed Project Funding - 2010 Dollars - HSR and TIGER Award

Description	TIGER funds (requested)	HSIPR funds (requested)	Private funds (planned)	Total Funds
Project Approval/ Environmental Document	\$330,000	\$320,000	\$350,000	\$1,000,000
Plans, Specifications & Estimate	\$330,000	\$320,000	\$350,000	\$1,000,000
Right of Way (capital and support)	\$745,000	\$740,000	\$805,000	\$2,290,000
Construction (capital and support)	\$29,500,000	\$28,620,000	\$31,290,000	\$89,410,000
TOTALS:	\$30,905,000	\$30,000,000	\$32,795,000	\$93,700,000
Percentage	33%	32%	35%	100%

¹ Tower 55 Cost Benefit Analysis, HDR Inc., September 2009



Primary Selection Criteria

To best weigh the merits of the proposed Tower 55 At-Grade Improvement Project, an independent and rigorous public cost benefit analysis (CBA) and economic impact analysis (EIA) was performed by HDR, Inc (see the Project website for CBA and EIA details) based on the RTC modeling results comparing the operational performance of the build and no-build infrastructure options outlined above. HDR is a broad-based consulting firm with particular expertise in economic and transportation analysis. HDR's HLB Decision Economics subsidiary, founded by Dr. David Lewis, former Principal Economist for the US Congressional Budget Office, was acquired in 2005.

The analysis compared the costs to the benefits for improvements to track, signaling, and railway/roadway at-grade crossings at Tower 55 in accordance with the guidelines of the Transportation Investment Generating Economic Recovery Act (TIGER Act) of 2009 and subsequent guidance issued by the USDOT relating to the TIGER Act. The analysis identified changes in operating and capacity conditions and the national transportation impacts that would be reasonably expected to occur as a result of the construction of the Project. Each of these changes was analyzed for both build and no-build scenarios, using a 20-year study period and both 7% and 3% discount rates. Identified as part of this effort, the Project derives two primary benefits:

1. The Project increases capacity and reduces train delay associated with Tower 55, enabling the crossing to accept more trains per time period and enabling those trains to transit more quickly through the network. In turn, the result is a decrease in negative effects such as emissions from standing trains waiting their turn at the crossing, effects on motorists of trains moving slowly through grade-crossings, and effects on shippers of their rail freight shipments moving on longer train diversion routes to bypass Tower 55 congestion that increase shipment transit time and supply-chain costs.
2. The Project proposes at-grade vehicle crossing closures immediately adjacent to the interlocker as well as grade separation improvements to several other vehicular and pedestrian crossings. This increases safety, decreases vehicle emissions, decreases delays to motorists, and improves the livability of neighborhoods adjacent to Tower 55 main lines.

Assuming TIGER funding obligation is obtained in early 2010, construction commencing in 2010 completion in early 2012; objective measurements that could be quantified with certainty were selected to evaluate both the no-build and build scenarios. All CBA and EIA metrics were measured with common and objective units of time (hours), length (miles), and weight (tons). The value of these changes (e.g., the value of a ton of CO₂) was monetized per TIGER guidance or by using standard, accepted values for each unit developed by US Government agencies or other peer-reviewed sources. Third party annual growth rates, changes in regulatory limits, and other time-values were applied to quantify the changes over time. The long term benefits of the Tower 55 At-Grade Improvement Project are described in Tables 5 and 6 below¹.

¹ Tower 55 Cost Benefit Analysis, HDR Inc., September 2009



Table 5: Tower 55 Benefits vs. Primary TIGER Outcomes

Cost Benefit Categories	State of Good Repair	Economic Competitiveness	Livability	Sustainability	Safety	Monetized (Thousands) 7% Discount Rate	Monetized (Thousands) 3% Discount Rate
Reduction in Inventory Costs		☑				\$1,728	\$3,019
Reduction in Vehicle Cost at Grade Crossings		☑	☑	☑	☑	\$6,846	\$8,826
Reduction in Transportation Costs		☑		☑		\$606,180	\$1,070,202
Reduction in Environmental Costs		☑	☑	☑		\$79,215	\$131,487
TOTAL BENEFITS	☑	☑	☑	☑	☑	\$695,144	\$1,215,052
ECONOMIC IMPACT (1,942 Job Years)		☑	☑			\$138,380	\$138,380

Table 6: Primary Selection Criteria Benefits

Primary Selection Criteria Benefits	
State of Good Repair	Local, State and Regional Priority Reduced Public Cost Impacts Project enhancements would alleviate Tower 55 congestion and support rail volume growth for 20 years per Global Insights projections Improves rail transportation system in the most rail dependent state in the US, based on tonnage
Economic Competitiveness	Remedies one of the most significant rail chokepoints in United States Avoids increased supply chain costs ¹ of \$608 million (7% discount rate) / \$1.1 billion (3% discount rate) over the life of the Project Improves productivity and long-term job creation – 1,942 job-years Immediate employment of 682 construction and 48 engineering high quality jobs Accommodates at least 40% increase in Tower 55 train volume vs. current traffic levels
Livability	Reduces NOx by 13,955 tons for the 20-year life of the Project Reduces motorist delay and costs attributed to at-grade crossings by \$6.8 million Greater safety for motorists and pedestrians Potential for double digit improvement of Amtrak on-time performance
Sustainability	Between \$11.41 (7% discount rate) and \$19.95 (3% discount rate) of public benefits for every \$1.00 of ARRA investment Reduces fuel consumption by an average of almost 32,627 gallons per day Reduces CO ₂ emissions 98,000 tons per year
Safety	New pedestrian and vehicle grade separation improvements near elementary school support two at-grade crossing closures Structural improvements to existing bridges and drainage structures Minimizes at-grade crossing impacts due to lengthier rail diversions

¹ Supply chain cost savings in this instance are the sum of inventory and transportation cost reductions



A. Long Term Outcomes

1. State of Good Repair

The Tower 55 At-Grade Improvement Project proposes infrastructure enhancements that would result in numerous long-term quantifiable public benefits when comparing the current condition and performance of the no-build scenario at Tower 55 versus that of the build scenario. These improvements to the interlocker's condition, performance, and/or long-term cost structure can be summarized as follows:

Local, State, and Regional Priority: Recognizing the impact of capacity constraints at Tower 55 on the state, region, and nation, much effort has been put forth by the local, state, regional, and private partners to develop an at-grade solution. Tower 55 is the subject of the comprehensive Tower 55 Rail Reliever Study described above. It is included in the Texas Rail Plan, the Regional Transportation Plan (RTP), and will be adopted into the State Transportation Improvement Plan (STIP)¹.

Tower 55 was also identified as a key infrastructure enhancement in a Blue Ribbon Panel's Texas 2030 Committee Report issued January 2009, which evaluated Texas' infrastructure requirements over the next 20 years on a multimodal/statewide basis². As identified in this study, the project improvements are necessary capacity improvements to the regional rail network in order to support future economic growth. Implementation of the Project will support improved supply chain efficiency for domestic and international goods and commodities across the US and between Mexico, the US, and Canada as well as increased operational efficiency for intercity passenger rail services operated by Amtrak.

Reduce Public Costs Impact: Although the public does not contribute directly to the significant annual costs of operating and maintaining Tower 55, the economic viability of the more than 3,000 freight and passenger trains that transit Tower 55 each month is threatened by deteriorating conditions at Tower 55. As noted above, the no-build scenario analysis limited its consideration to train diversions only. However; it is probable that a portion of Tower 55's freight volumes would also divert to the highway system, resulting in higher transportation costs, more trucks on regional freeways, additional highway maintenance expense, added emissions, and higher overall congestion in Texas and the South Central region of the United States.

Long-Term Operations and Maintenance: The future ongoing operation and maintenance of the new infrastructure as a result of the project would be privately maintained and funded by the railroads at no cost to the public sector. The Project would also eliminate potential public cost impacts due to rail congestion under the no-build case.

2. Economic Competitiveness

Long-Term Economic Competitiveness and Productivity Growth: Productivity is vital to the nation's long-term economic competitiveness. Several economists cite that in the last 50 years, over 80 percent of the nation's jobs growth resulted from productivity improvements³. Productivity growth increases

¹ Texas Department of Transportation - <http://www.txdot.gov/business/governments/stips.htm>

² North Central Texas Council of Governments - <http://www.nctcog.dst.tx.us/>

³ Jorgenson, Dale W., Mun Ho and Kevin J. Siroh, 2002. Information Technology, Education and the Source of Economic Growth Across US Industries.



real incomes, which allows demand for goods and services, and adds employment by new and expanding industries.

The Project would have an immediate, direct impact on construction employment, and for decades thereafter, the investment would:

- Avoid decline in goods movement productivity by reducing train delay and eliminating the need to re-route trains due to Tower 55 congestion over the life of the Project;
- Support continued productivity growth of manufacturers, exporters, distributors, and retailers whose goods move through Tower 55 by (a) avoiding the need to increase inventory associated with slower transit times and reduced rail reliability; (b) allowing shippers to continue to move their goods via rail versus highway; and (c) minimizing probability of a delay-caused production outage or stock-out.

Supply chain costs, as a percent of Gross Domestic Product (GDP), have risen 30 percent from 2003 to 2007¹. By remedying a major US supply chain chokepoint, the Project would improve supply chain efficiency by improving service reliability, further supporting just-in-time delivery and contributing to reduced shipper's inventory costs. Through implementation, the Project would avert the need for rail diversions along longer routes due to interlocker congestion. In doing so, supply chain efficiency can be better supported. An average of over 700,000 rail miles per year can be eliminated, avoiding additional costs passed on to shippers. See Table 9– Expected Project Benefits.

Impact to Transportation Costs: Train congestion delay and the need for lengthy train diversions relative to the capacity constraints at Tower 55 generates increased operating inefficiencies due to added rail miles and elevated future transportation costs to shippers. Considering the measurable operating efficiencies, reduced delays, and averted additional rail miles attributable to the project, **an estimated \$606.18 million in NPV 7% discounted transportation cost avoidance is projected over the 20-year study period as shown in Table 9².**

Reduction in Inventory Costs: The Project would significantly decrease future goods movement delays due to congestion at Tower 55 and resulting rail freight diversions to lengthier routes. The reduction in congestive delay and diversion route travel time decreases the overall transit time between shippers and receivers. This reduces inventory carrying costs for shippers, allowing them to best manage their inventory, thus creating potential savings for consumers. Considering the measurable delay savings attributable to the project, **an estimated \$1.73 million in NPV 7% discounted inventory cost savings is projected over the 20-year study period as shown in Table 9³.**

Increase in Employment: **The cumulative impact of constructing the Project is 1,942 job-years of employment**, including 730 direct jobs, 430 indirect jobs, and 782 induced jobs simulated with IMPLAN (IMpact analysis for PLANning – modeling software deriving projected economic impacts of investment plans, projects, and expenditures) using 2007 data for all of the US as shown in Table 7 below⁴.

¹ Council of Supply Chain Management Professionals (CMCMP), State of Logistics Annual Report, 2008

² Tower 55 Cost Benefit Analysis, HDR Inc., September 2009

³ Tower 55 Cost Benefit Analysis, HDR Inc., September 2009

⁴ Tower Economic Impact Analysis, HDR / HLB Decision Economics Inc., September 2009



Specifically, the Project is estimated to create (or preserve) 682.4 jobs in the construction industry to included 48 professional engineering jobs. The populations most likely to directly benefit from expanded business opportunity are local populations around the Project area including eight surrounding counties defined as economically distressed areas (EDA's¹) as construction workers are typically sourced locally².

Table 7: Estimated Employment Impact

Effect Type	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Total Job-Years	Avg. Numb. of Jobs/Year
Direct	16	49	49	49	132	132	132	132	35	730	324
Indirect	9	28	28	28	79	79	79	79	21	430	191
Induced	18	54	54	54	141	141	141	141	38	782	348
Total	44	132	132	132	352	352	352	352	94	1,942	863

Economic Impact: The estimated cumulative effect of the Project on GDP is estimated to be \$138.38 million, including \$40.57 million of direct GDP, \$38.40 million of indirect GDP, and \$59.41 million of induced GDP. The quarterly impact over the period of analysis fluctuates in a pattern that corresponds to the patterns of employment impact, resulting in the **total estimated economic impact of the Project of \$138.38 million** as listed in Table 9 above³.

3. Livability

Quality of Living: Tower 55 is located just southeast of downtown Fort Worth, Texas, named by Partners for Livable Communities as one of the nation’s most livable communities. Air quality is a paramount priority for local residents. By reducing train delay and improving Tower 55’s potential to efficiently move more freight without diversions, goals for improved air quality can be supported through this Project in the Dallas-Fort Worth non-attainment air basin. Related, greater safety through improvements to several existing vehicular/pedestrian crossings, reduced vehicle crossing dwell time, and almost ten percent less life-of-project vehicular emissions at affected crossing locations (as compared with the no-build alternative) are added multiple benefits of the Project.

Enhancement of Passenger Rail: The Project would benefit passenger connectivity throughout North Texas. It holds the potential of a double-digit improvement on Amtrak On-Time Performance. Both the Heartland Flyer and Texas Eagle services arrive at the recently constructed Intermodal Transportation Center (ITC); the hub for bus, taxi, and rail service in Fort Worth, allowing direct transfers to multiple modes of transportation. One such mode is the Trinity Railway Express, a commuter rail service connecting the cities of Fort Worth and Dallas.

Tower 55 improvements are essential to passenger operations running through Texas and the entire south central United States. With both passenger and freight trains demanding access to the capacity at Tower 55, delay times for passenger movements can be 30 minutes or more with averages approaching 90 minutes for freight movements through the interlocker.

¹ Wise, Jack, Palo Pinto, Erath, Bosque, Johnson, Hill, Kaufman Counties – <http://hepgis.fhwa.dot.gov>

² Tower Economic Impact Analysis, HDR / HLB Decision Economics Inc., September 2009

³ Tower Economic Impact Analysis, HDR / HLB Decision Economics Inc., September 2009



Figure 7: Amtrak Tower 55

Amtrak’s Heartland Flyer and Texas Eagle rely on an uncongested Tower 55 interlocker to access the ITC and for through movements along their respective routes. In 2008, on BNSF alone, Amtrak incurred over 225 delays due to congestion at Tower 55.



It is estimated the Project holds the potential to generate double-digit improvements to Amtrak on-time performance based on modeling results showing measurable delay reductions due to reduced freight interference at Tower 55. This reduction in passenger delay and Amtrak operating cost was the basis for the HSIPR Track 1a – FD/Construction grant application put forth by TxDOT on August 24, 2009.

4. Sustainability

Reductions in Air Emissions and Environmental Costs: The Project derives several environmental benefits including reduced key emissions factors such as carbon dioxide (CO₂), nitrogen oxide (NO_x), hydro carbons (HC), carbon monoxide (CO), and particulate matter (PM_x) as a result of improved traffic flow and reduced train run times. Many of these benefits would occur in the Dallas-Fort Worth, TX 8-hour ozone non-attainment area, supporting Environmental Protection Agency’s (EPA) goal of improved air quality in the North Texas area¹.

To generate activity values as a basis for emissions reduction calculations, RTC modeling was used to compare no-build and build operating scenarios relative to rail congestion and resulting environmental impact (see the Project website for analysis results). The build scenario resulted in several projected benefits: train delay savings, avoided rail traffic diversion, and reduced vehicular delays. RTC results for train delay savings were used to derive emission reductions from reduced locomotive braking, idling, and restarting due to better traffic flow. Avoided rail diversion compared average line-haul fuel consumption and emissions saved by not having to utilize the longer diversion routes.

Lastly, the build and no-build scenarios compared vehicle idling emissions attributable to at grade public crossings. This impact measured train speeds, run times, and train staging delays that caused vehicular roadway congestion and wait time at numerous at grade public crossings. To estimate the resulting vehicle delay, vehicle approach volumes, average delay period, and total daily delay due to congestion were combined.

Table 8 below describes the emissions benefits resulting in an **estimated NPV environmental cost savings of \$200.8 million, resulting in \$79.3 million discounted at 7% (the sum of benefits 8, 9 and 10 in Table 9)².**

¹ Texas Commission of Environmental Quality - <http://www.tceq.state.tx.us/implementation/air/sip/dfw.html>

² Tower 55 Cost Benefit Analysis, HDR Inc., September 2009



Table 8: Emissions Benefits

Public Benefit	20-Year Study Period	
	Total Tons Saved	Millions of Dollars Saved
CO2 emissions	1,961,493	\$ 88.0
VOC (ROG) emissions	547	\$1.0
NOx emissions	13,955	\$57.4
PM emissions	327	\$54.4
Emission Savings		\$200.8

Reduction in Fuel Use: Consistent with the national goal of energy conservation and reducing the nation’s reliance on foreign oil, the proposed at-grade improvements result in a direct reduction of diesel fuel use.

Considering the projected delay savings, averted rail diversion, and reduced vehicular delays, RTC simulation and train diversion analysis were used to calculate the reduced fuel consumption in gallons over the 20-year study period. The analysis estimates an **average diesel fuel savings of 11.9 million gallons per year can be realized by implementing the at-grade improvements or more than 238 million gallons for the 20-year study period¹.**

5. Safety

Reduced Roadway and Pedestrian Interface: The Project includes numerous safety enhancements intended to reduce rail/auto interface at grade crossings. In partnership with the City of Fort Worth, a strategic at-grade crossing closure plan has been developed, supporting closure of two existing high-use at-grade public crossings north of Tower 55.



Figure 8: First Street Crossing

One of the existing at-grade crossings is a principal pedestrian route for school children between a residential neighborhood on the east side of the main tracks, and the Nash Elementary School on the west side of the main track. Nash Elementary School currently has a “phone tree” established to call parents to pick up their children from school if a train is blocking the nearby at-grade crossing to prevent children from walking through a stopped train to get home. The Project’s scope of work includes the addition of a pedestrian underpass at this location to reduce the risk of children walking across the tracks at grade at any time or crawling between rail cars of stopped trains waiting to proceed through Tower 55. The closure of the at-grade crossings at these locations would be mitigated by enhancements to existing arterial routes through improved intersection signaling. Existing street and arterial route overpasses and underpasses are available for diverted vehicular traffic flows directly adjacent to the closed at-grade crossings.

¹ Tower 55 Cost Benefit Analysis, HDR Inc., September 2009



Figure 9: Cold Springs Road



In addition, several existing public street and arterial route underpass structures with restricted vertical and horizontal clearance limits would be replaced with new structures as part of the Project, increasing their current vertical clearances, and expanding the overall structure width to improve vehicular movement and sight distance at the approaches of the structures.

Minimized Rail Diversions: The Project would greatly improve rail fluidity and the capacity of Tower 55 by constructing additional track infrastructure and an enhanced signaling system through the City of Fort Worth. Implementation of the Project would eliminate the need for future train diversion on significantly lengthier regional rail routes to avoid Tower 55 congestion and delays. Avoiding this freight rail traffic diversion eliminates increased freight traffic over significantly longer routes and movements over additional at-grade public crossings as compared to the original route.

B. Evaluation of Expected Project Costs and Benefits

Table 9: Expected Project Benefits (Thousands)

Benefit Category	Ben #	PV Over 20 Years	
		7%	3%
Reduction in Shipper Transportation Costs Due to Avoidance of Future Rail Diversion to Longer Route	1	\$603,366.5	\$1,066,575.6
Reduction in Shipper Transportation Costs Due to Reduced Delay, Train	2	\$2,814.0	\$3,627.0
Reduction in Shipper Inventory Costs Due to Avoidance of Future Rail Diversion to Longer Route	3	\$1,653.5	\$2,922.8
Reduction in Shipper Inventory Costs Due to Reduced Delay, Train	4	\$75.2	\$96.9
Reduction in Vehicle Operating Costs Due to Reduced Vehicle Idling at Grade Crossings	6	\$170.5	\$221.3
Reduction in Vehicle Time Costs Due to Reduced Vehicle Idling at Grade Crossings	7	\$7,802.8	\$10,057.2
Reduction in Environmental Costs Due to Avoidance of Future Rail Diversion to Longer Route	8	\$68,146.4	\$117,330.2
Reduction in Environmental Costs Due to Reduced Delay, Train	9	\$11,069.0	\$14,157.5
Reduction in Environmental Costs Due to Reduced Vehicle Idling at Grade Crossings	10	\$46.3	\$63.9
Total		\$695,144.0	\$1,215,052.3
Economic Impact – Estimated Value Added Impact of Project Expenditures		\$138,380.0	1,942 Job-Years

C. Evaluation of Project Performance

The Project would result in operational improvements to both freight and passenger traffic. RTC modeling demonstrates that construction of the at-grade improvements would support efficient rail movements north/south and east/west through Tower 55 for 20 years into the future. This would



enable Tower 55 to accommodate more than a 40% increase in rail traffic volumes than 2009 levels. The proposed enhancements would greatly reduce regional rail congestion and are paramount towards effectively supporting passenger rail services along with other improvements in North Texas as well as reducing combined air emissions in the Dallas-Fort Worth, TX 8-hour ozone non-attainment area¹. The at-grade improvements would eliminate the need for rail diversions and would provide improved national connectivity for:

- Amtrak’s Heartland Flyer and Texas Eagle services
- Intermodal, auto, merchandise, and grain traffic between the Pacific Northwest, California, Midwest, Gulf Coast, Southeast, South, Mexico, and Canada
- Coal traffic from the Powder River Basin in Wyoming to electric utilities in South Texas

D. Job Creation & Economic Stimulus

As noted above, Tower 55 is one of the busiest at-grade rail intersections in the nation, and is critical in the transportation of goods and passengers across the United States. The Project would have an immediate impact on construction employment and would generate ongoing productivity benefits among shippers whose goods pass through the Tower 55 intersection by (i) reducing delivery delays and improving shipment velocity; and (ii) allowing shippers to reduce inventories by engaging in greater just-in-time supply chain logistics due to less transit variability and greater scheduling reliability. **The Estimated Employment Impact of Expenditures, Number of Jobs, through February 2012 is shown in Table 10 below. The Estimated Value Added Impact of Expenditures through February 2012 (\$ in thousands) is shown in Table 11 below².**

Table 10: Estimated Employment Impact

Effect Type	CUMULATIVE
Direct	730
Indirect	430
Induced	782
Total	1,942

Table 11: Estimated Economic Impact

Effect Type	CUMULATIVE
Direct	\$40,570
Indirect	\$38,400
Induced	\$59,410
Total	\$138,380

E. Quick Start Activities

1. Project Schedule

Preliminary Project engineering is complete and National Environmental Policy Act (NEPA) coordination with FRA concerning categorical exclusion is in process with final determination expected by year end 2009. Final Project design efforts leading to final permitting and construction-related activities are actionable immediately upon receipt of funding. Construction of the Project improvements can

¹ Texas Commission of Environmental Quality - <http://www.tceq.state.tx.us/implementation/air/sip/dfw.html>

² HDR Economic Impact Analysis of Tower 55, September, 2009



commence as soon as July 2010, considering a funding obligation date of early 2010. Based on current Project planning, the Tower 55 At-Grade Improvement Project is planned to progress on a concurrent phased BNSF and UP implementation program. Project phasing would implement all heavy civil and structural activities in 2010 and early 2011. Following these improvements, track work by both BNSF and UP would be performed in mid to late 2011 with signal and control systems work to follow. Assuming a funding obligation date of early 2010, the Project would be completed by February 2012. Table 12 below highlights the Project schedule progression and expected critical path milestones. See the Project website, noted on the cover of this application, for additional preliminary engineering and construction schedule details.

Table 12: Project Completion Schedule

Project Completion Schedule			
Tower 55 At-Grade Improvement Project - Milestone Task		Start Date	End Date
Preliminary Engineering		Complete	Complete
NEPA		In Process	Dec-2009
Funding Obligation		Dec-2009	Jan-2010
ROW Easements		2009	Jan-2010
Final Engineering/Planning		Jan-2010	Aug-2010
Construction Permitting		May-2010	Aug-2010
Contract Generation		May-2010	Jul-2010
Material Acquisition		May-2010	Jun-2010
Construction Start Date		Jul-2010	Feb-2012
Final Clean Up		Jan-2012	Feb-2012
Project Completion		Feb-2012	Feb-2012
Overall Project Duration			
Work Task	Start Date	End Date	Overall Project Duration
Final Engineering and Planning	Jan-2010	Aug-2010	8 Months
NEPA	In Process	Dec-2009	4 Months
Construction	Jul-2010	Feb-2012	20 Months
Testing and Project Completion	Jan-2012	Feb-2012	2 Months

2. Environmental Approvals

Considering the preliminary engineering and permitting due diligence efforts completed to date on the Project, much local, state, and federal agency coordination has already progressed towards receipt of environmental approval. It is fully anticipated that all agency coordination and approvals will be received within the timeline specified in the Project schedule with final permitting received by the end of December 2009.

The scope of work and location of the improvements indicates that the Project is eligible for a NEPA categorical exclusion. The proposed Project, including each individual component, is consistent with the FRA “Categorical Exclusions”, including minor rail line additions and for bridge replacements. In addition, the positive impacts to air quality are such that the Project also likely qualifies under the “Categorical Exclusion” for environmental remediation, including prevention of future air impacts. The



completed NEPA CATEX documentation previously submitted to the FRA can be found on the Project website as noted on the cover of this application.

3. Legislative Approvals

No legislative approvals are necessary for the Project to support final design or construction.

4. State and Local Planning and Support

As a necessary freight rail improvement project, the Project design has been extensively studied, planned and designed with collaboration between local, regional and state agencies, including the NCTCOG, City of Fort Worth, Tarrant County, The T, Amtrak, ODOT, and TxDOT. Both the BNSF and UP are integral supporters of the Project and have been actively engaged in the infrastructure design process.

The Project is included in both the State Rail Plan and the Regional Transportation Plan (RTP), the Project has the support of local and regional planning agencies as evidenced in letters of support, which can be viewed on the website noted on the application cover.

5. Technically Feasible

The Project is technically feasible and constructible. Through local, regional and state coordination, much effort has been expended toward developing a solidified design and implementation strategy that meets the volumetric capacity requirements, is constructible under rail traffic while also limiting (to the extent possible) adverse public and environmental impacts. The result is a comprehensive phased construction plan for the Project that meets and/or exceeds these goals.

Through optimized rail alignments, tactical bridge replacements, and strategic retaining wall installations, the current Project design requires minimal right of way acquisition consisting of narrow non-impactful linear takes along the current property boundaries of both the BNSF and UP. Only nine acres of additional right of way, with no adverse public impacts, are required to construct the Project. Land acquisitions due diligence efforts are in process and are expected to be completed pending funding award. In addition, the planned construction efforts associated with replacement of two restricted public road underpasses, installation of a new pedestrian underpass, and City of Fort Worth roadway enhancements to promote two at-grade crossing closures ensures the Project would meet operational and safety needs for the public, the railroads, and Amtrak.

Project engineering to date has proven all proposed vertical and horizontal alignments and structural improvements as viable based on current engineering standards and specifications. It is expected that project construction activities would have minimal impact on surrounding infrastructure and that current sub-grade conditions are structurally sufficient to support the improvements. All Project construction activities would be performed per local, regional and state requirements.

6. Financially Feasible

The Project is proposed to be financed with a strategic public private partnership through a combination of a proposed TIGER and HSIPR funding and a significant private match to cover all other costs.

The BNSF and UP, together, have agreed to and are prepared to provide a funding match of 35 percent of the total project cost estimated at \$93.7 million (2010 dollars), subject to mutually agreeable funding



terms and conditions. Absent the proposed public private partnership funding strategy, the Project is financially infeasible for the railroads to finance and undertake on a stand-alone basis.

The BNSF and UP have provided NCTCOG with all cost estimates for this project, including contingencies. In the event of funding award, BNSF and UP and its contractors would perform all work for this project and BNSF and UP would be responsible for cost overruns or financial shortfalls

Secondary Selection Criteria

F. Innovation

To enhance operational performance, the Project would utilize recent advancements in railroad technology. To improve interlocker safety and fluidity, the Project would incorporate an advanced Centralized Traffic Control (CTC) interlocker system. This proposed new control system includes improvements to the interlocker's existing CTC system to accommodate speed increases for north/south and east/west movements (30 MPH for north/south and 40 MPH for east/west), benefiting both passenger and freight rail movements. In addition, the signal and interlocking systems would be Positive Train Control (PTC) compatible to accommodate requirements of the Rail Safety Improvements Act of 2008 for installation of PTC.

Not only would the Project leverage innovative technologies, it also puts forth an innovative funding mechanism for an effective public private partnership. Tower 55 is on the South Central High Speed Rail Corridor, one of eleven designated high speed corridors in the United States¹. Based on benefits to intercity passenger services operating through Tower 55, TxDOT has submitted a HSIPR Track 1A grant application to FRA based on long-term benefits that could be provided to Amtrak's Heartland Flyer and Texas Eagle services. Complementary to the HSIPR request, this TIGER application is set forth based on considerable public benefits derived from reduced rail congestion in North Texas. Finally, in consideration of the operational benefits to both BNSF and UP, a joint private match has been committed by the railroads to complete the funding required to implement the project starting in 2010.

G. Partnership

Exemplary of a viable public private partnership, the Project has been discussed with and is supported by local, regional and state agencies, namely the NCTCOG, City of Fort Worth, Tarrant County, The T, Amtrak, ODOT, and TxDOT as well as the contributing private Class 1 railroads, the BNSF and UP.

Coordination throughout the Project scope development and preliminary engineering efforts has generated a plan that recognizes and is supportive of all parties' needs. With issuance of the grant requests and in consideration of the 35 percent private match, the Project is financially actionable by all parties enabling immediate economic impact upon funding award.

Support of the Project by local and regional planning agencies as well as by private parties, is evidenced in letters of support, which can be viewed on the project website noted on the application cover page.

Federal Wage Rate Certification

A signed Federal Wage Rate Certificate is attached to the grant application and can be viewed on the Project's website as noted on the application cover.

¹ FRA Website – <http://www.fra.dot.gov/us/content/203>



National Environmental Policy Act (NEPA) Requirement

It is anticipated that the FRA NEPA review will confirm the project's Categorical Exclusion eligibility. The Project is not environmentally controversial, is consistent with all applicable environmental laws, does not have significant adverse impact on natural environments, does not adversely affect historic properties beyond acceptable mitigation regulations, does not cause significant increase in traffic congestion, is not part of a broader action such that when taken together environmental review would be required, and environmental review is not required by other law. (64 FR 28548)

Categorical Exclusions under the Council on Environmental Quality are those actions that belong to "a category of actions which do not individually or cumulatively have a significant effect on the human environment ... and ... for which, therefore, neither an environmental assessment nor an environmental impact statement is required." (40 CFR 1508.4) In this case, each portion of the Project qualifies for a categorical exclusion, and the individual portions do not individually or cumulatively have a significant effect on the human environment. Specifically, the following categorical exclusions apply for these portions of the Project:

1. Construction of additional BNSF track through the interlocker and an additional 9,000 feet of capacity north and south of the interlocker: "Minor rail line additions...construction of...passing tracks, crossovers, short connections between existing rail lines...and new tracks within existing rail yards." (64 FR 28547)
2. Construction of an additional UP 9,000 foot siding north of the interlocker: "Minor rail line additions...construction of...passing tracks, crossovers, short connections between existing rail lines...and new tracks within existing rail yards." (64 FR 28547)
3. Upgrade the switches and track geometry to 30 MPH for all north-south moves, and 40 MPH for east-west moves: "Minor rail line additions...construction of...passing tracks, crossovers, short connections between existing rail lines...and new tracks within existing rail yards." (64 FR 28547)
4. Install new signaling and control systems: "Maintenance of: existing railroad facilities...security facilities...and other existing railroad-related facilities." (64 FR 28547)
5. Expand the bridge over Stephenson Avenue: "Replacement, reconstruction, or rehabilitation of an existing railroad bridge." (64 FR 28547)
6. Grade crossing work and pedestrian bridge required for the projects planned north of the tower: "Maintenance of: existing railroad facilities...security facilities...and other existing railroad-related facilities." (64 FR 28547)

In addition, construction of the entire Project would improve air quality in a non-attainment area. Therefore, the categorical exclusion for "Environmental remediation through improvements to existing and former railroad track, infrastructure, stations, and facilities, for the purpose of preventing or correcting environmental pollution of soil, air or water" (64 FR 28547) applies to the Project as a whole. See the project website noted on the cover of this application for NEPA Categorical Exclusion details.

Environmentally Related Federal, State and Local Actions

Extensive environmental review has already been completed and demonstrates the positive effects on the environment associated with the Tower 55 At-Grade Improvement Project. As part of the preliminary engineering efforts completed to date, all efforts have been taken to address and minimize to the extent possible all public and environmental impacts. No major environmental permitting is projected at this time and only minimal land acquisition is expected to support Project construction. Advanced due diligence permitting efforts are currently underway and a preliminary NEPA CatEx has



been submitted for FRA review and determination. It is fully expected that the Project is CatEx-eligible and that all permitting will be completed well in advance of the projected construction start date. Table 13 below describes the current required permitting efforts and status towards completion for this Project. See the Project website noted on the cover of this application for additional permitting due diligence support.

Table 13: Environmental Permitting

Permits & Approvals Status				
No.	Submittals	Agency	Notes	Status (2009)
1	Bridge Permit	USCG	No Sect. 10 or USCG Waters	Not Applicable
2	JD / WOTUS Delineation	USACE	No Waters of the US	Approved, 7/20/09
3	Section 404 Nationwide Permit 14	USACE	Not necessary	Not Applicable
4	Section 7 – T&E Species	USFWS	No suitable habitat	Not Applicable
5	NRHP Historic Bridges / SHPO	THC (SHPO)	Eligibility docs complete	Expected Approval 10/1/09
6	City of FTW – Engineering Approvals	City of FW Engineering	Coordination on-going	Expected Approval 10/1/09
8	Flood Plain Coordination	City of FTW Engineering	Coordination on going	Expected 10/1/09
9	Public Notice	FRA/TCEQ	Federal funding requirement	Pending NEPA
10	Stormwater Construction General Permit (TXR 150000)	TCEQ	SWPPP and NOI ready	48 hour pre-construction NOI

Appendix

- Appendix A Letters of Support and Endorsement
- Appendix B Project Management Plan
- Appendix C Cost-Benefit Analysis
- Appendix D Economic Impact Analysis

Project Support Documentation

All supporting documentation can be found on the Project website to include:

- Cost Benefit Analysis
- Economic Impact Analysis
- Environmental Support
- Preliminary Engineering
- Project Documentation
- Letters of Support

www.bnsf.com/communities/govtaffairs/tower55/intro.pdf