

Narrative Application Form – Individual PE/NEPA Part I



High-Speed Intercity Passenger Rail (HSIPR) Program

Applicants interested in applying for funding under the March 2011 Notice of Funding Availability (NOFA) are required to submit the narrative application forms, parts I and II, and other required documents according to the checklist contained in Section 4.2 of the NOFA and the Application Package Instructions available on FRA’s website. All supporting documentation submitted for these PE/NEPA activities should be listed and described in Section G of this form. Questions about the HSIPR program or this application should be directed to the Federal Railroad Administration (FRA) at HSIPR@dot.gov.

Applicants must enter the required information in the gray narrative fields, check boxes, or drop-down menus of this form. Submit this completed form, along with all supporting documentation, electronically by uploading them to www.GrantSolutions.gov by 8:00 p.m. EDT on April 4, 2011.

A. Point of Contact and Applicant Information

Applicant should ensure that the information provided in this section matches the information provided on the SF-424 forms.

(1) Name the submitting agency: Texas Department of Transportation		Provide the submitting agency Authorized Representative name and title: Jennifer Moczygemba, Rail System Section Director		
Address 1: 125 E. 11 th Street	City: Austin	State: TX	Zip Code: 78701-	Authorized Representative telephone: (512)486-5125 ext.
Address 2:				Authorized Representative email: jennifer.moczygemba@txdot.gov
Provide the submitting agency Point of Contact (POC) name and title (if different from Authorized Representative): Name, Title		Submitting agency POC telephone: () - ext. Submitting agency POC email:		
(2) List out the name(s) of additional State(s) applying (if applicable): Not applicable				

B. Eligibility Information

Complete the following section to demonstrate satisfaction of application’s eligibility requirements.

(1) Select the appropriate box from the list below to identify applicant type. Eligible applicants are listed in Section 3.1 of the NOFA.

- State
- Group of States
- Amtrak
- Amtrak in cooperation with one or more States

If selecting one of the applicant types below, additional documentation is required to establish applicant eligibility. Please select the appropriate box and submit supporting documentation to demonstrate applicant eligibility, as described in Section 3.2 of the NOFA, to GrantSolutions.gov and list the supporting documentation under “Additional Information” in Section G.2 of this application.

- Interstate Compact
- Public Agency established by one or more States

(2) Indicate the planning processes used to identify the underlying project.¹ As defined in Section 3.5.1 of the NOFA, the process should analyze the investment needs and service objectives that the underlying project is intended to benefit. Refer to the PE/NEPA Application Package Instructions for more information. The appropriate planning document must be submitted with the application package and listed in Section G.2 of this application.

- State Rail Plan
- Service Development Plan (SDP)
- Service Improvement Plan (SIP)
- Statewide Transportation Improvement Plan (STIP)
- Other, please list this document in Section G.2 with “Other Appropriate Planning Document” as the title
- The underlying project is not included in a relevant and documented planning process

(3) Select and describe the operational independence of the underlying project.² Refer to Sections 3.4.4 and 3.5.2 of the NOFA for more information about operational independence and applications related to previously-selected projects.

- This project is operationally independent.
- This project is operationally independent when considered in conjunction with previously selected or awarded HSIPR program project(s) (identify previously selected or awarded projects below).
- This project is not operationally independent.

Briefly clarify the response:

The Dallas/Fort Worth to Houston Core Express Service project does not rely on passenger rail service connectivity to other current routes operating in the State of Texas for sustainability. It is intended to be independently operated, and if shared service on the route exists with freight rail traffic, temporal separation will be utilized.

¹ PE/NEPA activities include the specific tasks necessary to complete PE/NEPA documentation and other tasks applied for in this application that relate to this phase of the underlying project’s development. The underlying project is the larger area and/or infrastructure that will become the Final Design (FD)/Construction project following completion of the PE/NEPA activities.

² A project is considered to have operational independence if, upon being implemented, it will provide tangible and measurable benefits, either independently of other investments or cumulatively with projects selected to receive awards under previous HSIPR program solicitations.

C. PE/NEPA Activities Summary

Identify the title, location, and other information of the proposed PE/NEPA work by completing this section.

(1) Provide a clear, concise, and descriptive project name. Use identifiers such as State abbreviations, major cities, infrastructure, and tasks of the underlying project (e.g., “DC-Capital City to Dry Lake Track Improvements”). Please limit the response to 100 characters.

New Core Express Service from Dallas/Fort Worth to Houston: PE/NEPA

(2) Indicate the activity(ies) proposed in this application. Check all that apply.

Preliminary Engineering Project NEPA³

(3) If the applicant submitted an application for this project, or a project within the scope, that was not selected, indicate the solicitation under which that application was submitted. Check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> ARRA – Track 1 | <input type="checkbox"/> FY 2010 Service Development Program |
| <input type="checkbox"/> ARRA – Track 2 | <input type="checkbox"/> FY 2010 Individual Project – PE/NEPA |
| <input type="checkbox"/> FY 2009 – Track 4 | <input type="checkbox"/> FY 2010 Individual Project – FD/Construction |
| <input type="checkbox"/> FY 2009 Residual | <input checked="" type="checkbox"/> N/A |

(4) Indicate the anticipated duration, in months, for the proposed PE/NEPA activities. Consider that American Recovery and Reinvestment Act funding must be obligated by September 30, 2017.

Number of Months: 36

(5) Specify the anticipated HSIPR funding level for the proposed PE/NEPA activities. This information must match the SF-424 documents, and dollar figures must be rounded to the nearest whole dollar. All applicants are encouraged to contribute non-Federal matching funds. FRA will consider matching funds in evaluating the merit of the application. See Section 3.3 of the NOFA for further information regarding cost sharing.

HSIPR Federal Funding Request	Non-Federal Match Amount	Total Project Cost	Non-Federal Match Percentage of Total
\$18,051,250	\$0	\$18,051,250	0 %

³ Project NEPA documentation is required for the specific design alternative identified through Preliminary Engineering and related activities. Project NEPA documentation may also be referred to as site-specific NEPA or Tier II NEPA documentation.



(6) Indicate the source, amount, and percentage of matching funds for the proposed PE/NEPA activities. The sum of the figures below should equal the amount provided in Section C.5. Click on the gray boxes to select the appropriate response from the lists provided in type of source, status of funding, and type of funds. Dollar figures must be rounded to the nearest whole dollar. Also, list the percentage of the total project cost represented by each non-Federal funding source. Provide supporting documentation that will allow FRA to verify each funding source, any documentation not available online should be submitted with the application package and listed in Section G.2 of this application.

Non-Federal Match Funding Sources	Type of Source	Status of Funding ⁴	Type of Funds	Dollar Amount	% of Total Project Cost	Describe Any Supporting Documentation to Help FRA Verify Funding Source
None				\$ 0	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
				\$	%	
Sum of Non-Federal Funding Sources				\$ 0	0 %	N/A

(7) Indicate whether the proposed activities in this application are also included as a component project or phase in a Service Development Program application submitted concurrently.

Yes, all of the activities in this application have also been submitted as a component project or phase of a Service Development Program application.
 Yes, some of the activities within this application have also been submitted as a component project or phase of a Service Development Program application.
 No, this application and its proposed activities have not been submitted as a component project or phase of a Service Development Program application.

(8) Indicate the name of the corridor where the underlying project is located and identify the start and end points as well as major integral cities along the route.

⁴ The following categories and definitions are applied to funding sources:

Committed: Committed sources are programmed capital funds that have all the necessary approvals (e.g., statutory authority) to be used to fund the proposed project without any additional action. These capital funds have been formally programmed in the State Rail Plan and/or any related local, regional, or state capital investment program or appropriation guidance. Examples include dedicated or approved tax revenues, state capital grants that have been approved by all required legislative bodies, cash reserves that have been dedicated to the proposed project, and additional debt capacity that requires no further approvals and has been dedicated by the sponsoring agency to the proposed project.

Budgeted: This category is for funds that have been budgeted and/or programmed for use on the proposed project but remain uncommitted (i.e., the funds have not yet received statutory approval). Examples include debt financing in an agency-adopted capital investment program that has yet to be committed in the near future. Funds will be classified as budgeted when available funding cannot be committed until the grant is executed or due to the local practices outside of the project sponsors’ control (e.g., the project development schedule extends beyond the State Rail Program period).

Planned: This category is for funds that are identified and have a reasonable chance of being committed, but are neither committed nor budgeted. Examples include proposed sources that require a scheduled referendum, requests for state/local capital grants, and proposed debt financing that has not yet been adopted in the agency’s capital investment program.



Project funding will be used to complete necessary preliminary engineering and NEPA documentation for new core express service along an approximate 250 mile corridor between Dallas/Fort Worth and Houston.

(9) Describe the underlying project location, using municipal names, mileposts, control points, or other identifiable features such as longitude and latitude coordinates. If available, please provide a project GIS shapefile (.shp) as supporting documentation. This document must be listed in Section G.2 of this application.

The Dallas/Fort Worth to Houston Core Express high speed rail service project could utilize one of three routes analyzed, including a BNSF route, a UPRR route, and a green field route.

The BNSF route consists of the UPRR West Belt Subdivision between Tower 26 and the BNSF Houston Subdivision, the BNSF Houston Subdivision from Houston to Teague and the BNSF DFW Subdivision from Teague to Dallas. The route passes through the cities of Dobbin, Teague, Corsicana, and Waxahachie in between Houston and Dallas.

The UPRR route consists of the Eureka Subdivision from Houston to Navasota, the Navasota Subdivision from Navasota to Corsicana, and the Ennis Subdivision from Corsicana to Dallas. The route passes through the cities of Houston, Hempstead, Navasota, Bryan/ College Station, Corsicana, Waxahachie, and Dallas.

The green field route parallels I-45 and also includes segments of the UPRR Ennis and Palestine Subdivisions. The route passes through the cities of Houston, Spring, Conroe, Richland, Corsicana, Waxahachie, and Dallas.

Each of the routes would include a connection to the existing passenger rail station (Union Station) in Dallas along the UPRR Dallas Subdivision as well as a connection to the existing Amtrak station in Houston along the Terminal Subdivision. See the attached file in Section G.2.

(10) Provide an abstract outlining the proposed PE/NEPA activities. Briefly summarize the project narrative provided in the Statement of Work in 4-6 sentences. Capture the major milestones, outcomes, and anticipated benefits that will result from the completion of the underlying project.

The purpose of performing the preliminary engineering and NEPA documentation for the Dallas/Fort Worth to Houston Core Express Service is to evaluate the potential alternative routes and their potential impacts on the human and natural environment to determine a preferred route that meets the required service levels. Preliminary engineering will build on the previously-completed conceptual design and result in schematic level plans of the preferred alignment including track geometry, at-grade roadway-rail crossings, stations and maintenance and yard facilities. Preliminary engineering will also include probable cost estimates, project schedule, and construction phasing. The NEPA process will include an extensive public outreach effort, which will include identification of stakeholders, one-on-one meetings with affected railroads and property owners, and public meetings along the corridor. The NEPA documentation will establish the purpose and need for the Dallas/Fort Worth to Houston Core Express Service and evaluate potential social, economic and environmental impacts of various alternative routes. The analysis of impacts will follow FRA guidelines and regulations and include project level evaluations of each of the alternatives. It is TxDOT's intent to select a preferred alignment through the preliminary engineering and NEPA process in preparation for submittal of a future Final Design and Construction application(s) contemplating a public-private partnership.

(11) Indicate the type of expected capital investments included in the underlying project. ⁵ Check all that apply.

- | | |
|---|---|
| <input checked="" type="checkbox"/> Communication, signaling, and control | <input type="checkbox"/> Rolling stock refurbishments |
| <input checked="" type="checkbox"/> Electric traction | <input checked="" type="checkbox"/> Station(s) |
| <input checked="" type="checkbox"/> Grade crossing improvements | <input checked="" type="checkbox"/> Structures (bridges, tunnels, etc.) |
| <input checked="" type="checkbox"/> Major interlocking | <input checked="" type="checkbox"/> Support facilities (yards, shops, administrative buildings) |
| <input checked="" type="checkbox"/> Positive Train Control | <input checked="" type="checkbox"/> Track rehabilitation and construction |
| <input checked="" type="checkbox"/> Rolling stock acquisition | <input type="checkbox"/> Other (please describe) |

(12) Indicate the anticipated service outcomes of the underlying project. Check all that apply.

⁵ The underlying project is the larger area and/or infrastructure that will become the FD/Construction project following completion of the PE/NEPA activities.

- | | |
|--|--|
| <input type="checkbox"/> Additional service frequencies | <input type="checkbox"/> Improved operational reliability on existing route |
| <input type="checkbox"/> Service quality improvements | <input type="checkbox"/> Improved on-time performance on existing route |
| <input type="checkbox"/> Increased average speeds/shorter trip times | <input checked="" type="checkbox"/> Other (please describe) New core express service |

Briefly clarify the response(s), if needed:

The Dallas/Fort Worth to Houston high-speed passenger rail line would provide new core express passenger rail service between Dallas/Fort Worth and Houston.

(13) Provide the following information about job creation through the life of the PE/NEPA development activities.

Anticipated number of <u>annual</u> onsite and other direct jobs created (on a 2080 work-hour per year, full-time equivalent basis)	PE/NEPA Period
	25

(14) Quantify the applicable service outcomes of the underlying project. Provide the current conditions and anticipated service outcomes. Future state information is required only for the service outcomes identified in Section C.12.

	Frequencies ⁶	Scheduled Trip Time (round-trips, in minutes)	Average Speed (mph)	Top Speed (mph)	Reliability – Provide Either On-Time Performance Percentage or Delay Minutes
Current	0	0	0	60	n/a
Future	2	389	77	150	90%

⁶ Frequency is measured in daily round-trip train operations. One daily round-trip operation should be counted as one frequency.

(15) Indicate if any PE or NEPA activities that are part of this application are underway or completed. Check all that apply.

- Preliminary Engineering activities are complete. NEPA activities are complete.
 Preliminary Engineering activities are in progress. NEPA activities are in progress.
 No Preliminary Engineering activities are in progress or completed. No NEPA activities are in progress or completed.

Describe any activities that are underway or completed in the table below. If more space is necessary, please provide the same information for additional activities underway or completed in a supporting document and list in Section G.2 of this application.

Activity	Description	Completed? (If yes, check box)	Start Date (mm/yyyy)	Actual or Anticipated Completion Date (mm/yyyy)
Track chart analysis	Analysis of existing speed limits and trip times compared with potential maximum 150 mph high speed rail trip times along each route	<input checked="" type="checkbox"/>	3/2011	3/2011
Conceptual engineering	Determination of improvements necessary to implement maximum 150 mph high speed rail and associated order of magnitude costs for each route	<input checked="" type="checkbox"/>	3/2011	4/2011
		<input type="checkbox"/>	/	/
		<input type="checkbox"/>	/	/

D. Infrastructure Owner(s) and Operator(s)

Address the section below with information regarding railroad infrastructure owners and operators of the underlying project for the proposed PE/NEPA development activities. Applicants that own and/or control the infrastructure to be improved by the project or have a service outcomes agreement in place with the infrastructure owning railroad for the proposed project, or an executed agreement that could be amended with the infrastructure owning railroad for a project(s) located on the same corridor as the proposed project, will be looked upon favorably during the application review and selection process.

(1) Provide information regarding Right-of-Way Owner(s). Where railroads currently share ownership, identify the primary owner. Click on the gray boxes to select the appropriate response from the lists of railroad type, right-of-way owner and status of agreement. If the Right-of-Way Owner is not included on the prepopulated list, select “Other” and type the name in the adjacent text box within that field. Should the application have more than five owners please provide the same information for additional owners in a separate supporting document and list it in Section G.2 of this application.

Type of Railroad	Right-of-Way Owner	Route-Miles	Track-Miles	Status of Agreement to Implement
	See Table D.1 attached as listed in section G.2			

(2) Name the Intercity Passenger Rail Operator and provide the status of the agreement. If applicable, provide the status of the agreement with the partner that will operate the planned passenger rail service (e.g., Amtrak). Click on the gray box to select the appropriate response from the status of agreement list. Should the proposed service have more than three operators, please provide the same information for additional operators in a separate supporting document and list it in Section G.2 of this application.

Name of Rail Service Operator	Status of Agreement
	Operations being competitively bid

(3) Identify the types of services affected by the underlying project and provide information about the existing rail services within the underlying project boundaries (e.g., freight, commuter, and intercity passenger). Click on the gray boxes to select the appropriate response from the list of types of service. If the Name of Operator is not included in the prepopulated list, select “Other” and type the name in the adjacent text box within that field.

Type of Service	Name of Operator	Top Existing Speeds Within Underlying Project Boundaries (mph)		Number of Route-Miles Within Underlying Project Boundaries (miles)	Average Number of Daily One-Way Train Operations ⁷ Within Underlying Project Boundaries
		Passenger	Freight		
	See Table D.3 attached as listed in section G.2				

⁷ One daily round-trip operation should be counted as two daily one-way train operations.



(4) Estimate the share of benefits that will be realized by non-intercity passenger rail service and select the approximate cost share to be paid by the beneficiary.⁸ Click on the gray boxes to select the appropriate response from the lists of type of beneficiary, expected share of benefits, and approximate cost share. If more than three types of non-intercity passenger rail are beneficiaries, please provide additional information in a separate supporting document, and list in Section G.2 of this application.

Type of Non-Intercity Passenger Rail	Expected Share of Benefits	Approximate Cost Share
Freight	Less than 50%	1-25%

⁸ Benefits include service improvements such as increased speed or on-time performance, improved reliability, and other service quality improvements.

E. Additional Response to Evaluation Criteria

Respond to each of the following evaluation criteria in the gray text boxes provided to demonstrate how the proposed PE/NEPA activities and underlying project will achieve these benefits.⁹

(1) Project Readiness

Describe the feasibility of the proposed PE/NEPA project to proceed promptly to award, including addressing:

- The applicant’s progress, at the time of application, in reaching final service outcomes agreements (where necessary) with key project partners. Applicants that own and/or control the infrastructure to be improved by the project or have an executed service outcomes agreement that could be amended with the infrastructure owning railroad for a project(s) located on the same corridor as the proposed project, will be looked upon favorably during the application review and selection process; and
- The quality and completeness of the project’s Statement of Work (included in the HSIPR Narrative Application Form), including whether the Statement of Work provides a sufficient level of detail regarding scope, schedule, and budget to immediately advance the project to award.

TxDOT was required by state law to coordinate a short term and long term statewide passenger rail plan as part of the Texas Rail Plan. This included coordination with other governmental entities as well as private entities. TxDOT has a history of good working relationships with various rail districts, cities, counties, and economic development corporations that may be key project partners. The Dallas/Fort Worth to Houston Core Express High-Speed Passenger Service was included in the Texas Rail Plan.

TxDOT has not yet executed service agreements with key stakeholders, including BNSF, UPRR, and HB&T as owning and operating railroads or Amtrak, DART and TRE as additional operating railroads along the HSIPR route. However, BNSF was consulted and indicated their support of the project. The BNSF continues to support this project as indicated in the Railroad and Project Sponsor Agreement included in Project Delivery portion of this application. Operations and additional station improvement/expansion requirements will need to be coordinated at Dallas Union Station, where TRE, Amtrak, and DART currently operate. Operations will also need to be coordinated with Metro and GCRD at the Houston Amtrak station.

The Statement of Work included in this application provides the necessary level of detail regarding scope, schedule, and budget to immediately advance the project to award. The Statement of Work was developed based on preliminary engineering experience on previous high speed intercity passenger rail projects awarded grants. The scope of services provided includes sufficient detail for a contract of the work to be executed expeditiously once the project funds are awarded.

(2a) Transportation Benefits

Describe the transportation benefits that will result from the underlying project of the proposed PE/NEPA activities and how they will be achieved in a cost-effective manner, including addressing:

- Generating improvements to existing high-speed and intercity passenger rail service, as reflected by estimated increases in ridership, increases in operational reliability, reductions in trip times, additional service frequencies to meet anticipated or existing demand, and other related factors;
- Generating cross-modal benefits, including anticipated favorable impacts on air or highway traffic congestion, capacity, or safety, and cost avoidance or deferral of planned investments in aviation and highway systems;
- Creating an integrated high-speed and intercity passenger rail network;
- Encouragement of intermodal connectivity and integration, including a focus on convenient connection to local transit and street networks, as well as coordination with local land use and station area development;
- Ensuring a state of good repair of key intercity passenger rail assets;
- Promoting standardized rolling stock, signaling, communications, and power equipment;
- Improved freight or commuter rail operations, in relation to proportional cost-sharing (including donated property) by those

⁹ PE/NEPA activities include the specific tasks necessary to complete PE/NEPA documentation and other tasks applied for in this application that relate to this phase of the underlying project. The underlying project is the larger area and/or infrastructure that will become the FD/Construction project following completion of the PE/NEPA activities.

other benefiting rail users;

- Equitable financial participation from benefiting entities in the project's financing;
- Encouragement of the implementation of positive train control (PTC) technologies (with the understanding that 49 U.S.C. 20147 requires all Class I railroads and entities that provide regularly scheduled intercity or commuter rail passenger services to fully institute interoperable PTC systems by December 31, 2015); and
- Incorporating private investment in the financing of capital projects or service operations.

Travel between Dallas-Fort Worth and Houston, one of the most travelled city pairs in Texas, is completely fueled by gasoline and jet fuel, exposing the connectivity of the state's two largest commercial centers to the economic consequences of rising fuel prices. The Department of Energy has determined that, in the absence of a major shift in the use of alternative energy, world demand for oil will increase 25 percent by 2030 during a unique and defining period in world history when the rate of world oil production levels off, as described in its report, *Peaking of World Oil Production: Impacts, Mitigation and Risk Management*. The consequence of this imbalance between the rise in oil demand and plateau in oil supply will be to push fuel prices higher, an inevitability which has airline officials questioning the long-term viability of the aviation industry and foreseeing as many as 1,000 planes grounded and 80,000 employees released in the event that oil prices are sustained at \$135 per barrel. The development of a Core Express Service between Dallas-Fort Worth and Houston provides a mode of travel that does not need to rely on oil-based fuels, providing a long-term remedy to both environmental and energy problems while promoting the continued economic growth and interaction of these two immense commercial areas. Attempts to develop a high speed rail network in Texas during the early 1990s were met with considerable resistance by the airline industry at that time. However, energy prices throughout most of this period were approximately one-fifth of 2011 oil prices, and the amount of short-haul (400 miles or less) airline passenger travel between Houston and Dallas has diminished by 36% since 1990. The loss in short-haul airline business in Texas, as well as nationally, is attributable to the cost of fares and growth in airport inconveniences, as well as periodic downturns in the economy. For example, the Dallas-to-Houston route provided by Southwest Airlines is one of the company's original short-haul routes, yet passenger travel has decreased on this route by 33 percent since 1990 even though its long-haul service has increased. During this time, Southwest's average passenger trip length has increased by 72 percent, reflecting the fact that the airline industry now tends to cater more toward long-haul travel than business dominated short-haul trips.

Houston and Dallas-Fort Worth businesses will remain in need of passenger transportation between these commercial centers in order to support economic growth within the state, and the development of the high speed rail line itself will provide economic opportunities for investors that stand to gain from an unmet need for reliable, affordable, and efficient intercity travel. Also, as the long-term cost of jet fuel continues to grow and the economic viability of airline companies becomes even more fragile, high speed rail systems may offer companies active within the aviation industry a suitable investment alternative and means of diversification.

Cross Modal Benefits: Airport infrastructure is funded through airline revenues, revenue and general obligation bonds, public (federal, state, and local) grants, and passenger facility charges. Less than 20 percent of annual infrastructure costs are covered by airline users and the airlines themselves, whereas up to 65 percent are paid through taxes and fees. The public cost of airport infrastructure is evident in the funding of Runway 8L-26R at George Bush Intercontinental Airport in Houston, of which 60 percent of the \$300 million cost was funded through the Federal Aviation Administration. As the environmental and energy costs of operating airlines continues to grow, the continued allocation of resources to this mode of transportation should become directed toward the most necessary forms of air travel (i.e., longer distances) while alternative energy-based transportation systems, such as the Dallas-Fort Worth to Houston core express high speed rail service, are allowed to develop to accommodate shorter distance travel. Through this optimization of infrastructure development there will come an increase in airport capacity and decrease in congestion at airports and the supporting roadways.

Intermodal Connectivity: The Dallas Area Rapid Transit light rail system has been a rapidly expanding passenger rail network connecting Union Station, the downtown Convention Center, the Medical Center, and the Central Business District with the suburbs of Dallas, and connects with the Trinity Railway Express commuter line to Fort Worth. Houston is in the preliminary stages of developing commuter rail lines that will extend 30 miles to the northwest and 45 miles south to Galveston, which will both connect to a multimodal center that serves a growing METRO light rail system, which is planned to include an additional 30 miles of track in the future. These local and regional systems will provide the infrastructure necessary to integrate the Dallas-Fort Worth to Houston core

express high speed rail service with feeder rail lines that extend to residential and commercial areas. The Dallas-Fort Worth to Houston core express high speed rail service will also be integrated with plans for the high speed rail corridors connecting the metropolitan areas of Austin, Houston, Dallas-Fort Worth, and San Antonio. Connectivity with these rail corridors and other transit systems will increase potential ridership for the Dallas-Fort Worth to Houston core express high speed rail service.

Cost sharing: The state of Texas has Memorandum's of Understanding in place with both potential Class 1 carriers for this project under which they agree to pay for a portion of a project which relates to benefits they receive.

PTC: This project contemplates the installation of PTC throughout its length.

Private Investment Opportunities: Houston and Dallas-Fort Worth businesses will remain in need of passenger transportation between these commercial centers in order to support economic growth within the state, and the development of the high speed rail line itself will provide economic opportunities for investors that stand to gain from an unmet need for reliable, affordable, and efficient intercity travel. Also, as the long-term cost of jet fuel continues to grow and the economic viability of airline companies becomes even more fragile, high speed rail systems may offer companies active within the aviation industry a suitable investment alternative and means of diversification. TxDOT plans to prepare the PE/NEPA documentation for this service through a transparent public process. The results will be used to structure a potential public-private partnership for the financing, final design, construction, maintenance and operations along the preferred alternative. Any agreement will ensure interoperability with other Texas corridors and ensure the state of good repair of the facility.

(2b) Other Public Benefits

Describe the other public benefits that will result from the underlying project and how they will be achieved in a cost-effective manner, including addressing:

- The extent to which the project is expected to create and preserve jobs and stimulate increases in economic activity;
- Promoting environmental quality, energy efficiency, and reduction in dependence on oil, including the use of renewable energy sources, energy savings from traffic diversions from other modes, employment of green building and manufacturing methods, reductions in key emissions types, and the purchase and use of environmentally sensitive, fuel-efficient, and cost-effective passenger rail equipment; and
- Promoting coordination between the planning and investment in transportation, housing, economic development, and other infrastructure decisions along the corridor, as identified in the six livability principles developed by DOT with the Department of Housing and Urban Development and the Environmental Protection Agency as part of the Partnership for Sustainable Communities, which are listed fully at <http://www.dot.gov/affairs/2009/dot8009.htm>.

Job Creation/Economic Growth: Performing preliminary engineering and NEPA tasks are intermediate steps to creating large numbers of jobs in the construction and manufacturing industries. Additionally, the preliminary engineering and NEPA documentation tasks are expected to require up to 25 jobs annually over the 36 month duration of the project. Based on the level of effort for engineering design, environmental clearance, and construction, the following table depicts the number of jobs which may be created to sustain this project:

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Preliminary Engineering & NEPA Documentation	10	20	25	20					
Construction					2,000	3,500	6,000	3,500	2,000

Concurrently, recent redevelopment of Washington D.C's Union Station has demonstrated that train terminals can become the focal point for commercial redevelopment and promote substantial new development in the surrounding area. Recently, a study for the City of Chicago estimated that revitalizing Chicago's Union Station along with High Speed Rail would bring \$8 – 10 billion of new economic activity to Chicago. For the City of Chicago, a high speed



rail hub will have the equivalent economic impact of a medium-sized airport located in the heart of the central business district – without having to displace a single office.

The same is applicable for both Houston and Dallas, at the sites of the current or previous train stations. Houston's Amtrak station is within close proximity to Houston METRO's light rail line, the University of Houston, and the downtown CBD. It is also a potential focal point for commuter rail trains that would enter the CBD from either the northwest, or southeast. Houston's METRO Solutions also is investigating connectivity to George Bush Intercontinental Airport from the Downtown CBD via a light rail line as well.

Revitalization of this area, currently populated with many abandoned warehouses, with Transit Oriented Development could create Class A office spaces, densely populated livable centers, and retail facilities. A September, 2009 analysis performed by the City of Houston indicated that in this economically disadvantaged area of Houston, revitalization of the existing train station locale would create a Brownfield site, and create 2,500 new jobs, and an estimated 20 NPV public benefit of nearly \$30 million.

Environmental and Energy Benefits: Approximately 3.3 million airline passengers and 4.0 million passenger automobiles travel between Houston and Dallas-Fort Worth each year. At a modest 14 percent growth in this travel by 2035 and diversion rates to high speed rail of 70 percent from airline and 20 percent automobile travel, respectively, would save approximately 1.0 million barrels of oil annually.

Assuming the same correlation for the reductions in CO2 emissions (580,000 gallons of fossil fuel with 5,100 metric tons in reduction of CO2 emissions for the first year) based on gallons of oil saved annually (1.0 million barrels as mentioned) and assuming 1 barrel of oil is 42 US gallons (42 million gallons for the corridor), this project could assume a reduction of CO2 emissions of 369,310 metric tons. Reduction in fuel use also results in reduction of other pollutants. Based on output from the Mobile 6.2 model and projected changes in travel by mode as described in that application, the reductions are shown to be 3,250 metric tons for VOC, 47,000 metric tons for CO, and 4,200 metric tons for NOX annually.

Livable Communities: The benefits of urban commuter and light rail networks in Houston and Dallas will be more fully realized following construction of the high speed rail line connecting these metropolitan areas. No longer will the high volume of business travelers dispersed throughout these cities be faced with the inconveniences of airport screenings, delays, and processing that might be more tolerable for less frequent long-distance flights. Since most flights are currently accompanied by a commute to the airport by automobile, the interconnectedness of high speed rail and the local rail systems that link the urban core to the suburbs will greatly enhance transportation options in the two metropolitan areas that by far lead Texas in measures of gross domestic product.

The linkages provided to suburbs by planned and constructed light rail lines of Houston's METRO and Dallas' DART systems, as well as commuter rail for these cities, provide access between lower cost homes in the suburbs and job opportunities at commercial centers within the urban core. Connection of these lines to the Houston-DFW high speed rail line will enhance mobility between regions of affordable housing and intercity travel options, providing residents of modest wealth the same opportunities to form business alliances and achieve personal growth as those who are more economically advantaged. In complement to this alternative mode of transportation comes a localized reduction in highway use that improves the livability of communities affected by highway infrastructure and increases the lifespan of public works investments. These reductions in highway use not only ease congestion and create a safer environment within local communities, but generate economic benefits through reductions in gasoline consumption as well.

Revitalization of the property around Houston's Amtrak Station, according to a September, 2009 City of Houston analysis, will also leverage nearly \$400 million in private investment to create a Livable Community adjacent to the CBD with light rail access to the Texas Medical Center.

Incidentally, studies for the Chicagoland area, which may be comparable to Dallas/Fort Worth and Houston in terms of highway congestion and airport size/operations, have also shown that high speed rail will provide \$1.3 billion in highway congestion relief and \$700 million in airport congestion relief.

(3) Project Delivery Approach

Describe the risk associated with the delivery of the PE/NEPA development activities within budget, on time, and as designed, including addressing:

- The timeliness of project completion and the realization of the project's benefits;
- The applicant's financial, legal, and technical capacity to implement the project;
- The applicant's experience in administering similar grants and projects;
- The soundness and thoroughness of the cost methodologies, assumptions, and estimates;
- The thoroughness and quality of the project management documentation; and
- The timing and amount of the project's future noncommitted investments.

The preliminary engineering scope of services, schedule, and budget are based on the preliminary planning efforts that have been completed for the Dallas/Fort Worth to Houston Core Express Service project. Preliminary planning efforts did not include public involvement and stakeholder outreach or the development of a NEPA document.

Public involvement and stakeholder outreach will be key to the development of this study. The development of required NEPA documentation will include public outreach and comment so that the alternatives selected will have support of the public for further advancement. In addition, TxDOT has a good working relationship with both UP and BNSF and will be able to coordinate needed modeling efforts with them. TxDOT has a good understanding of the passenger rail policies of the railroads as well and will work within these parameters while developing preliminary engineering plans. Operations and additional station circulation/expansion/modification will need to be coordinated at Dallas Union Station, where TRE, Amtrak, and DART currently operate as well at the Houston Amtrak station, and will be included in the NEPA process.

TxDOT has the financial, legal, and technical capacity to administer and implement this project. An organizational chart for TxDOT and also for the TxDOT Rail Division is included and listed in Section G.2 of this application.

TxDOT has been awarded a \$5.6 million grant to administer the development of an SDP for the Oklahoma to South Texas Corridor. TxDOT has secured non-federal matching funds for the Oklahoma to South Texas project and has also found innovative ways to maximize the use of the awarded funds through the use of work completed under existing contracts. TxDOT is also currently administering a contract for a passenger rail study that includes an infrastructure assessment of an existing corridor for high speed passenger rail implementation, the development of an evaluation methodology to compare various potential high speed intercity passenger rail corridors in the state, and also a ridership analysis for high speed intercity passenger rail.

The cost methodologies, assumptions and estimates were created based on preliminary planning efforts that have been completed for the Dallas/Fort Worth to Houston Corridor Express Service route, which included in depth analysis of the existing freight operations on the routes. Freight studies of the Houston and Dallas-Fort Worth regions analyzed existing freight operations in detail on the BNSF Houston and DFW Subdivisions; the UPRR Ennis, Navasota, Palestine, and Eureka Subdivisions in the Dallas-Fort Worth to Houston project; as well as the HBT West Belt and UPRR Dallas and Terminal Subdivisions that would be used to bring the high speed intercity passenger rail service into the existing passenger stations in downtown Houston and Dallas. These analyses were used to determine the improvements necessary to implement high speed intercity passenger rail service for this project.

The thoroughness and quality of the project management documentation included in the Statement of Work can be proven based on similarly developed Statements of Work for projects which were successful in receiving Grant Funding. The scope of services, schedule, and budget were developed using examples of other successful high speed intercity passenger rail project applications.

Texas has created a Rail Relocation and Improvement Fund that can be used to improve both freight and passenger service in the state. Money was conditionally appropriated to the fund last session. Opportunities exist for further funding to be available after the current legislative session which is from January to June 2011.

(4) Sustainability of Benefits

Identify the likelihood of realizing the benefits of the underlying project for the proposed PE/NEPA development activities, including addressing:

- The applicant's financial contribution to the project;
- The quality of a financial planning documentation that analyzes the financial viability of the HSIPR service that will benefit from the project;
- The availability of any required operating financial support, preferably from dedicated funding sources;
- The quality and adequacy of project identification and planning; and
- The reasonableness of estimates for user and non-user benefits for the project.

The Dallas/Fort Worth to Houston Core Express Service project is identified in the Texas Rail Plan, and when implemented will reduce congestion and emissions between the city pairs, improving the ability of passenger and freight movement and improving air quality. Recent travel statistics compiled by the Texas Transportation Institute indicate approximately 3.3 million airline passengers and 4.0 million passenger automobiles travel between Dallas-Fort Worth and Houston each year. Based on an assumption of diversion rates to high speed rail of 70 percent from airline and 20 percent automobile travel, a potential annual ridership for the Dallas-Fort Worth to Houston core express high speed rail service may be approximately 3.1 million riders.

Based on similar studies conducted, in particular for the Orlando to Tampa HSR project, savings in highway congestion and emissions, based on a ratio of population densities, could amount to over \$2B annually. In addition, thousands of additional jobs would be created and sustained over the project life horizon, which translates into increased household income and higher property values around the rail line and stations.

A Core Express High Speed Service route between Dallas-Fort Worth and Houston could potentially result in higher productivity and efficiency with less emissions translating into increased competitiveness, economic activity, employment and other longer-term economic benefits.

Similarly to the Florida HSR program, the Dallas/Fort Worth to Houston Core Express Service project's economic benefit and cost impact analysis can be generally concluded, according to Dr. Tim Lyncy of Florida State University, as the "benefits from implementing a version of high speed ground transportation across the most highly populated urbanized areas, ...will, over time generate benefits that are considerably in excess of system costs."

TxDOT intends to pursue a long term Public Private Partnership for operation of the Dallas-Fort Worth to Houston Core Express High Speed Rail project, which will require a standard of operating service in excess of 90% reliability. The US-Japan HSR Corporation is a potential candidate for this P3, having recently announced its interest, via discussions with the region's business leaders, in building a HSR route between Houston and Dallas. The company is a subsidiary of JR Central, the operator of the highest passenger volume HSR in the world.

The Project Planning Documentation attached with this application contains information from BNSF Railway and The Texas Transportation Institute. As well as information compiled and analyzed by HNTB Corporation as a passenger rail consultant to TxDOT.

F. Statement of Work

The Statement of Work (SOW) is a required document. This must be submitted using the Narrative Application Form Part II. Statement of Work available on FRA's website to provide the required information. The quality and completeness of this document will be measured as a Project Readiness evaluation criterion, as outlined in Section 5.2.1 of the NOFA.

Please provide the SOW as a separate document and list it in Section G.2 of this application.

The SOW is a description of the work that will be completed under the grant agreement and must address the background, scope, and schedule, and include a high-level budget of the proposed project.

- (1) The SOW is required for a complete application package.
- (2) The SOW should contain sufficient detail so that both FRA and the applicant can:
 - a. Understand the expected outcomes of the work to be performed by the applicant, and
 - b. Track applicant progress toward completing key project tasks and deliverables during the period of performance.
- (3) The SOW should clearly describe project objectives, but allow for a reasonable amount of flexibility regarding how the objectives will be accomplished. It is important to describe the overall approach to and expectations for project/activity completion.
- (4) If the SOW describes work for phases and/or groups of component projects, the larger program should be explained in the background section of the SOW. The remainder of the SOW should be limited to describing the activities that directly contribute to the combined FRA and applicant effort which is funded under the grant agreement.

G. Optional Supporting Information

Provide a response to the following questions, as necessary, for the proposed PE/NEPA activities.

(1) Please provide any additional information, comments, or clarifications and indicate the section and question number that being addressed (e.g., Section E.3). Completing this question is optional.

(2) Please provide a document title, filename, and description for all optional supporting documents. Ensure that these documents are uploaded to GrantSolutions.gov with the narrative application form and use a logical naming convention.

Document Title	Filename	Description and Purpose
Dallas to Houston Corridor Map	Map TxDOT HSIPR Dallas to Houston.pdf	Map showing study area for preliminary planning used to identify selected corridor for preliminary engineering of Dallas to Houston high speed intercity passenger rail line.
Project Location	study_routes.zip	GIS shapefile showing project route locations.
Houston Terminal Map	Houston_Terminal_Map.pdf	Map showing rail subdivision names in downtown Houston.
TxDOT Organizational Chart	TxDOT Organizational Chart.pdf	Organizational chart to show capacity to implement project.
TxDOT Rail Division Organizational Chart	TxDOT RRD Org Chart.pdf	TxDOT Rail Division organizational chart.
Narrative Application Form – Individual PE/NEPA, Part II Statement of Work	PENEPA_Narrative_Application_Form_PartII_SOW.pdf	Statement of Work in including scope of services, schedule and budget.
Route Alternatives Map	Route_Alternatives.pdf	Conceptual drawing of HSR route alternatives between Dallas and Houston.
Typical Sections	Typical_Sections.pdf	Conceptual typical sections with high speed rail line and existing BNSF tracks along BNSF route.
Table D.1	Table_D1.pdf	Information regarding right-of-way owners and agreements.
Table D.3	Table_D3.pdf	Information regarding existing rail services affected by the project.
Section 4: FRA Assurances	FRA Assurances.pdf	FRA Assurances
Section 5: Planning Documentation	Section5_Project_Planning_Documentation.pdf	Information regarding project planning and conceptual engineering efforts.
Section 6: Project Delivery	Section 6_Project_Delivery.pdf	Information regarding statement of work and project delivery
Harris County Letter of Support	Letter of Support Emmett.pdf	Letter of Support from Harris County Judge Ed Emmett

NCTCOG Letter of Support	Letter of Support NCTCOG.pdf	Letter of support from the North Central Texas Council of Governments-Regional Transportation Council
BNSF Letter of Support	Letter of Support BNSF.pdf	Letter of support from the BNSF Railway Company
City of Houston Letter of Support	Letter of Support City of Houston.pdf	City of Houston Letter of Support
DART Letter of Support	Letter of Support DART.pdf	DART Letter of Support
Gulf Coast Rail District Letter of Support	Letter of Support GCRD.pdf	Gulf Coast Rail District Letter of Support
METRO Letter of Support	Letter of Support METRO.pdf	METRO Letter of Support
TxDOT Annual Financial Report 2010	Annual Financial Report 2010.pdf	Support for Financial Planning
TxDOT January 2011 - Financial Forecast	January 2011 - Financial Forecast.pdf	Support for Financial Planning