

Chapter 7 - Short- and Long-Term Rail Program

Rail service in Texas faces capacity constraints from expected demand growth in rail. Rail infrastructure enhancements required to handle the current and future demands require railroads to undertake improvements that maximize return on investment given their extensive capital costs. In addition to the private need for return on investment, there is pressure on public budgets to provide essential transportation alternatives and improvements that demonstrate a clear associated public benefit. Thus, measuring and comparing the costs and benefits to both the private industry and the public of various rail projects provides a logical method of prioritizing projects which achieve the goals of both the public and private sectors.

A number of investments are necessary as Texas continues to develop a comprehensive, multimodal transportation network geared toward providing the efficient movement of goods, services, and people. Many of these investments, some of which have already been analyzed by TxDOT, are highlighted in this chapter along with details about essential corridors and requirements for identifying and funding new corridor development. The overall goal is to identify those potential improvements which lend themselves to the overall vision of a rail system in Texas which is capable of handling both the current and future freight and passenger rail demands for long-term sustainability and to identify from those improvements short-term projects that have funding and are ready for further development or implementation.

VISION: The Texas Rail System will provide cost-effective, energy-efficient, sustainable personal mobility and goods movement that connects Texas communities and links Texas businesses with domestic and international markets, minimizing environmental impacts, reducing road congestion, improving air quality, and promoting economic growth.

7.1 – Improvement Prioritization (Freight and Passenger)

Research Project 0-6467, conducted by The Texas Transportation Institute (TTI) under contract with TxDOT, has developed a system of evaluative tools to allow TxDOT to prioritize its investments in rail-related projects on a statewide basis. The goal of the project is to recommend a transparent methodology for evaluating proposed rail projects and establish a process through which the methodology can be applied periodically to re-evaluate rail-related investments and compare them against one another in order to determine the most appropriate manner in which to utilize available public funds for freight and passenger rail projects.

It is important to note that the project evaluation process developed is both transparent and linked to the TxDOT Strategic Plan goals, as emphasized by TxDOT. The goals under the newly adopted 2011–2015 TxDOT Strategic Plan are:

1. Develop an organizational structure and strategies designed to address the future multimodal transportation needs of all of Texas
2. Enhance safety for all Texas transportation system users
3. Maintain the existing Texas transportation system
4. Promote congestion relief strategies
5. Enhance system connectivity
6. Facilitate the development and exchange of comprehensive multimodal funding strategies with transportation program and project partners

Taking into account the results of the literature review, the research team created a list of eleven evaluation criteria that should be considered when evaluating rail projects. The criteria are based on an extensive review of other states’ rail and/or multimodal planning methodologies, international rail project prioritization and funding activities, and recent federal initiatives. These criteria are divided into the three broad categories of sustainability, transportation, and implementation as listed in Table 7-1.

Table 7-1: Proposed Project Evaluation System

Sustainability	Transportation	Implementation
Economic Impact	Safety and Security	Cost Effectiveness
Environmental/Social Impact	Connectivity	Project Development
Asset Preservation	Congestion Relief	Partnerships
	System Capacity	Innovation

Each criterion (and any associated sub-criteria) is assigned a weight according to importance to the overall type of project being evaluated, entered as a percentage of overall evaluation (i.e., the total of all weights is 100%). A rating is assigned to each criterion based on a user-defined scale common to all criteria, which is then multiplied by the weight, providing a total score for each criterion. The sum of these total scores provides a final overall composite score, for which the maximum is equal to the chosen rating scale multiplied by 100. Weighting of criteria may be adjusted to reflect certain priorities. For the proposed evaluation matrix using the measures identified above, the research team considered three possible rating systems. In addition to these systems, the research team notes that several of the sub-criteria are directly quantifiable and further refinement of those methods will allow for more precise rating scales.

Criteria Descriptions

As indicated in Table 7-1, the evaluation criteria fall into three broad areas: sustainability, transportation, and implementation. The “sustainability” category includes those criteria that weigh the economic and social benefits of a project and its long-term ability to preserve existing transportation assets. The “transportation” category examines safety, connectivity, mobility, and capacity issues traditionally accounted for in transportation project evaluation. The “implementation” category encompasses those criteria that are related to the financial and/or technical features of a project that improves its ability to be realized more quickly. Table 7-2 contains a short description of each of the individual criteria.

Table 7-2: Criteria Descriptions

Sustainability	
Economic Impact	The economic impact criterion examines the economic value of the project. A variety of factors to consider include direct and indirect benefits, short- and long-term job creation, shipper savings, tax revenues that could be potentially generated, and long-term economic growth that could be attributed to the project by attracting new businesses and generating redevelopment.
Environmental/ Social Impact	The environmental and social impact criterion evaluates the economic and social impacts that are likely to accrue from the project. Examples of factors include air quality, energy use, natural resources and noise and vibration. Social Impacts also include livability and access to multiple modes of transportation for nearby communities.
Asset Preservation	The asset preservation criterion evaluates the ability of the project to assist in preserving existing TxDOT or state assets with a particular emphasis on existing public sector transportation infrastructure (e.g., highways and associated rights of way) and/or privately-held transportation infrastructure (e.g., freight railroad infrastructure and rights of way). Also included is the preservation of exiting rail lines that might be abandoned. These lines in many cases can provide shipping alternatives to local industries and reduce shipping by truck. Also to be considered is the preservation of buildings that could be used for passenger rail stations and future transit oriented development.

Transportation	
Safety and Security	The safety and security criterion evaluates the safety benefits and security enhancements that will accrue by implementation of the project. This takes into account crashes, fatalities, and injuries that may be prevented; property damage averted; and physical and operational security measures featured in the project. It may also give specific credit for projects that address the ability to handle transportation emergencies, such as those caused by natural disasters, or projects that address specific needs such hazardous materials transportation safety and security.
Connectivity	The connectivity criterion allows for project evaluation based upon its characteristics that relate to the ability to connect to other modes of transportation. Examples of a project attribute include the way in which a proposed intercity or commuter rail service connects with the urban transit services in urban areas or the way in which a proposed new freight rail line or urban bypass route serves existing freight distribution activity centers. Also included is how freight and passenger rail connect to the highway network. Interoperability between rail networks is also an important criterion to consider. Connectivity between rural and urban networks also needs to be considered in the evaluation.
Congestion Relief	The congestion relief criterion accounts for travel time improvements, relief or removal of rail traffic and/or highway bottlenecks, and for alleviation of non-recurring congestion as the result of special events. Example projects include those making rail line improvements to allow improved freight/passenger rail travel times, rail grade separation projects addressing rail congestion, or highway-rail grade separations that remove the delay caused by train activity. Other examples include implementation of new passenger services which reduce roadway congestion by providing an alternative mode of travel.
System Capacity	The system capacity criterion evaluates the project as it relates to overall transportation system capacity needs. Examples of such a project might be rail infrastructure capacity improvement projects, such as adding sidings, double-tracking, or improving signaling in order to increase the daily throughput along a corridor.



Implementation	
Cost Effectiveness	The cost effectiveness criterion looks at the overall benefit derived for the investment applied to the project. It could encompass several methods of calculation (benefit-cost analysis, etc.) or be subjectively scored based on expected costs and outcomes depending on the level of project development at the time the projects are ranked.
Project Development	The project development criterion evaluates the stage of project development in relation to whether detailed engineering plans and environmental compliance documents are completed or in the process of being completed. Projects with major planning studies already completed would score higher than conceptualized projects.
Partnerships	The partnership criterion allows for credit to be given to a project for maximizing the partnership features to produce a more readily implementable project. The partnerships may consist of public-private partnerships, partnerships between multiple government agencies, or other types of partnerships.
Innovation	The innovation criterion provides an additional scoring opportunity for projects that exhibit technological and/or institutional innovation. This could refer to the technology proposed for implementation of a certain service or operation, or innovation related to creative funding methods from a variety of public and private sources.

Weighting of Criteria with Respect to Objectives

In evaluating each criterion’s importance to the overall score of a proposed project a weight value must be assigned. The weighting is entered into the evaluation matrix as a percentage of the overall project evaluation—therefore, the total of the weighting column must sum equal to 100. The recommended weighting scale shown in Table 7-3 will be applied to all projects that could be funded through the Texas Rail Relocation and Improvement fund, if it is capitalized. This will set the priorities for state funding of rail. As federal funding opportunities become available, the priorities of the state as established through the weighting of the base criteria will be evaluated and compared to the evaluation criteria of that funding source and a new weighting will be developed and approved by the Commission for the specific funding source. Examples of these are the recent TIGER and TIGER II grants as well as the HSIPR grants. Other examples are programs that allow for rail projects such as CMAQ funds.



Table 7-3: Proposed State Priorities

Categories	Criteria	Weights
Sustainability	Economic Impacts	10
	Environmental/Social Impact	10
	<i>Asset Preservation</i>	15
Transportation	<i>Safety & Security</i>	10
	<i>Connectivity</i>	10
	<i>Congestion Relief</i>	10
	<i>System Capacity</i>	15
Implementation	Cost Effectiveness	5
	Project Development	5
	Partnerships	5
	Innovation	5
Note: Italicized criteria are mostly closely related to TxDOT goals		100

Rating of Project with Respect to Each Criterion

For each project that is evaluated, a rating score using a scale from 1 to 10 will be assigned according to a qualitative assessment or objective analysis of the project’s expected performance towards each criterion. Use of quantitative methods for determining a project’s rating is possible on several of the criteria, but some do not lend themselves to direct quantification. In those cases the evaluation rating score will be determined by TxDOT staff and/or an advisory panel made up of citizens and industry experts. Table 7-4 shows the potential for how such a determination could be made by those evaluating each project.



Table 7-4: Project Criteria and Measures

Category: Sustainability		
Criterion	Description	Measure
Economic Impact	Does the project provide for positive economic impacts on the community and/or state?	<p>Provides jobs, shipper savings, driver time savings, fuel savings, etc.</p> <p>10 = Exceptional positive levels of economic impacts</p> <p>7 = Significant levels of economic impacts</p> <p>5 = Moderate levels of economic impacts</p> <p>3 = Minor levels economic impacts</p> <p>0 = No positive economic impacts</p>
Environmental/ Social Impact	<p>Does the project minimize/address environmental and social impacts?</p> <p>Does the project address community impacts, such as noise, visual, and neighborhood cohesiveness?</p> <p>Does the project provide access to the community and provide for potential redevelopment?</p>	<p>Reduces negative impacts on air quality and natural areas; Positively addresses community impacts</p> <p>10 = Exceptionally reduces negative environmental and social impacts; addresses community impacts</p> <p>7 = Significantly reduces negative environmental and social impacts; addresses community impacts</p> <p>5 = Moderately reduces impacts; addresses community impacts</p> <p>3 = Slightly reduces impacts; addresses community impacts</p> <p>0 = No reduction in impacts; address of community impacts</p>

Asset Preservation	<p>Does the project address the long-term preservation of the rail system?</p> <p>Does the project provide for a reduction in highway maintenance costs?</p>	<p>Positively addresses long-term conditions of project and/or positively effects the whole system long-term conditions</p> <p>10 = Exceptional long-term preservation consideration/system conditions</p> <p>7 = Significant consideration/improvement</p> <p>5 = Important consideration/improvement</p> <p>3 = Minor consideration/improvement</p> <p>0 = No consideration/improvement</p>
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Category: Transportation		
Criteria	Description	Measure
Safety and Security	Does the project improve safety and security?	<p>Completely removes safety and/or security risk or improves crash levels</p> <p>10 = Complete removal of risk</p> <p>7 = Greatly improves safety/security</p> <p>5 = Moderately improves safety/security</p> <p>3 = Slightly improves safety/security</p> <p>0 = No or negligible safety/security improvement levels</p>
Connectivity	<p>Does the project improve/complete network linkages or connections?</p> <p>Does the project improve rail to rail connections and connections to highways, local transit and airports?</p>	<p>Providing multimodal connectivity along major networks</p> <p>10 = Major link</p> <p>7 = Significant link</p> <p>5 = Important link</p> <p>3 = Minor link</p> <p>0 = No connectivity</p>

Congestion Relief	Does the project improve system operations?	Improves traffic flow (travel times/speed); reduces dwell times 10 = Exceptional levels of improvement 7 = Significant levels of improvement 5 = Important levels of improvement 3 = Minor levels of improvement 0 = No or negligible levels of improvement
System Capacity	Does the project address needed capacity for existing and future freight volumes? Does the project address capacity needed in addition to freight needs for passenger rail?	Creates additional capacity 10 = Greatly improves capacity 7 = Significantly improves capacity 5 = Slightly improves capacity 3 = Little capacity improvement 0 = No capacity improvement

Category: Implementation		
Criteria	Description	Measure
Cost Effectiveness	Does the project have a reasonable Cost/benefit ratio? Does the project have an identified funding source?	Measure of project product and benefits compared to project cost 10 = Exceptional cost effectiveness 7 = Significant cost effectiveness 5 = Moderate cost effectiveness 3 = Minor cost effectiveness 0 = No evidence of positive outcome
Project Development	How developed is the project? Is the project part of an existing local or regional transportation plan?	Stage of development 10 = Fully developed (design/environmental) 7 = Some design/environmental accomplishments 5 = Studied 3 = Conceptualized 0 = Proposed



Partnerships	Does the project have committed partnerships?	Level of support from local/regional and private entities 10 = Exceptional levels of support/partnerships 7 = Significant levels of support/partnerships 5 = Important levels of support 3 = Minor levels of support 0 = Lacks necessary support
Innovation	Does the project involve innovative planning processes, technology, and/or financing?	Involves innovative financing, funding, and/or partnerships or is part of a larger innovative project 10 = Exceptional levels of innovation 7 = Significant levels of innovation 5 = Important levels of innovation 3 = Minor levels innovations 0 = No notable innovations

Determining the Project Composite Score

When the rating and weight are multiplied, a score for each criterion is calculated. These scores are totaled to provide a composite score for each project that is evaluated. The maximum composite score for any project would be 1,000 points. The output (total score) from each project’s matrix evaluation is used to populate a table which would allow for direct comparison of the projects to one another. Individual projects could also be compared on the basis of their score in individual criteria if a more specific objective such as connectivity was of primary importance. The development of more discrete rating scales (for example, seven rating levels instead of five for each criterion) could also refine the precision of the evaluation.

Once all projects are evaluated using the methodology described, a list of scored projects from which subsets of projects meeting the criteria of specific funding programs or projects addressing specific future TxDOT priorities can be selected. The use of this should allow the flexibility to respond quickly to emerging funding opportunities and, at the same time, the stability provided by a transparent, well-defined process for prioritizing rail project decisions. Further development of the evaluation criteria will provide for more quantitative analysis, rather than qualitative and subjective analysis, of projects. Final guidance in the form of a guidebook will outline the process more fully at the completion of the project and in future updates to the Texas Rail Plan. As additional



improvements are identified, they will be able to be rated and incorporated into the overall list of priorities.

Steering Committee Recommendations

After reviewing the evaluation criteria descriptions above, the TxDOT Steering Committee recommended the following considerations for the improvement prioritization process:

Economic/Environmental/Social Impact

- Freight rail access acts an economic development tool for communities to attract certain businesses
- Passenger rail access also acts as an economic development tool as it fosters transit-oriented development and enables commuting options

Asset Preservation

- Rail property and associated amenities should be included in asset preservation efforts
- The state should assist with identification of funding for local acquisition of abandoned rail right-of-way

Connectivity

- TxDOT should focus on intercity rail connections throughout the state and local agencies should determine local access to passenger rail
- There should be research and guidance from TxDOT on passenger rail interoperability issues such as local siting of intermodal terminals/transit connections and ticketing, as well as criteria for local governments to consider when determining the appropriate entity to address such issues as they may be beyond the scope of MPOs

Additionally, the steering committee recommended that the project evaluation matrix also include a column that describes local support and Class I railroad support for project proposals.

7.2 – Further Considerations for Prioritization

Many of the considerations for the prioritization criteria have been discussed in previous chapters and are referenced below with the applicable criteria. Many of the criteria warrant additional discussion as they relate to prioritization within a statewide program.

Economic Impacts

The economic drivers of the rail system are fully discussed in Chapter 1 Section 1. Further study is needed regarding the actual economic impacts of rail projects. These need to be accomplished at the national, state and local levels.

Environmental/Social Impacts

Additional considerations are described and evaluated through the NEPA process and projects are developed. Chapter 1 discusses this process in more detail.

Asset Preservation

Rail abandonment affects passenger rail service as both freight and passenger trains must increasingly share common infrastructure, resulting in a greater risk for conflicts and delay. One way to combat the abandonment of railroad rights-of-way is to find agencies that are willing to purchase rights-of-way in order to keep them intact for future service. In the case of the TRE (shown in Figure 7-1), a freight right-of-way marked for abandonment in the Dallas/Ft. Worth area was purchased with Federal Transit Administration assistance. In the Austin area, there is interest by the city and Capital Metropolitan Transportation Authority in preserving the Bergstrom Industrial Lead that runs east-west on the south side of the city towards Austin-Bergstrom International Airport. The limited amount of passenger rail service in Texas has limited the conversion of abandoned freight rail corridors into passenger rail service lines to date. However, with the state continuing to grow, acquisition of abandoned freight rail rights-of-way is one of the most effective ways to preserve rail options into the future, especially for lines that are in and nearby growing urbanized areas.



Figure 7-1: TRE Commuter Train Operating in Morning Rush Hour After Ice Storm (2003)

Safety and Security

Highway-Rail Grade Crossings

Traffic conflicts between trains and automobiles at highway-rail grade crossings also slow passenger and freight trains throughout Texas. The heavily-used rail line between San Antonio and Austin that is designated as a higher speed intercity passenger rail corridor is an example of this problem. There are more than two dozen grade crossings in the City of San Marcos alone. These grade crossings require trains and vehicular traffic to stop or slow down, increasing train travel times and creating automobile congestion, as well as creating the potential for highway/rail conflicts and accidents. Although not required to do so by law, train crews or rail company policies may direct slower operations in such locations due to heightened concern about crashes. Additional information on highway-rail grade crossings is included in Chapter 5 – Rail Safety and Security.

Positive Train Control

One other cost element associated with intercity passenger rail service on existing freight rail corridors is the issue of Positive Train Control, discussed in more detail in Chapter 5. One of the triggers for the federal PTC requirement is the presence of passenger rail service on the rail line. If passenger rail is added to a rail line that already has been identified in a railroad's PTC implementation plan, then PTC should not be considered as an incremental cost of passenger service. On the other hand, if passenger rail is added to a low-volume line that was not otherwise slated for PTC, then the public sector will be held responsible for the costs of PTC implementation on that line, including capital costs for locomotives and wayside PTC implementation, and on-going maintenance costs.

Connectivity

Issues related to connectivity are discussed in Chapter 4.

Congestion Relief

Current Service Reliability

An Amtrak train that has encountered delays en route to Texas, such as the Texas Eagle coming from Chicago, may keep passengers waiting for several hours at stations such as Fort Worth, before they can proceed to Austin or San Antonio. Once a passenger train is off-schedule, other delays become more likely. A USDOT Office of

General Inspector (OIG) audit¹ prepared in September 2008 identified the nationwide causes of Amtrak delays, revealing the poor and questionable rail traffic management and physical infrastructure.

Table 7-5 shows the unfortunate, on-time performance of Amtrak's services prompting the audit of the root causes of delay. A previous report by the Office of Inspector General in March 2008 found that improving OTP to 85% in FY 2006 would have reduced Amtrak's operating loss by 30%. OTP is measured by endpoint performance from the first station of the route to the last station of the route.

Table 7-5: Amtrak's On-Time Performance (FY 2005–2007)

Service Type	FY 2005	FY 2006	FY 2007
All Amtrak Trains	70%	68%	69%
NEC Acela	75	85	88
NEC	78	80	80
Other Corridors	71	67	65
Long Distance	43	30	42

The report acknowledges that Amtrak's conductor delay data provides source of delay causes, but offers only a limited perspective. The OIG found and concluded that addressing the following four root causes of delay identified in the report would improve Amtrak's OTP and financial viability.

- Host railroad dispatching practices, some of which violate Amtrak preference requirements stated in Title 49 of the US Code, Section 24308c that states passenger trains receive "preference over freight transportation in using a rail line, junction, or crossing" (approved in 1973 by Congress);
- Track defects and maintenance practices resulting in "slow orders" limiting speeds to as low as 10 mph;
- Insufficient track capacity—caused by a 92.8% increase in Class I rail ton-miles between 1980 and 2006 and a coincident reduction of 42.2% in physical track, rail bottlenecks, longer freight trains and speed differentials between the scheduled, shorter, lighter and faster passenger trains and the unscheduled, heavier and slower freight trains;
- External factors beyond the host railroad's control (weather, unused recovery time, trespassers, and customs).

All three Amtrak routes in Texas made the list of segments in the OIG report where existing track capacity cannot handle the volume of traffic due to bottlenecks. The

¹ Federal Railroad Administration, "Root Causes of Amtrak Train Delays," Report Number CR-2008-076, issued September 8, 2008.

bottleneck at Tower 55 in the Fort Worth area impacts the Heartland Flyer and the Texas Eagle. In San Antonio, delays are caused by the routing and track configuration at the Amtrak station. This results in difficulties when switching passenger cars from the southbound Texas Eagle to the westbound Sunset Limited. Heavy demand on UP lines along the I-35 Corridor, which handle both passenger trains and steadily increasing freight traffic, can also cause dispatching difficulty leading to passenger rail delays.

System Capacity

The rapid growth in overall rail freight volumes will have a dramatic effect on the Texas rail system. Figure 7-2 illustrates the level-of-service (LOS), based on volume-to-capacity ratios (V/C) at which the rail system operates. Green lines indicate relative free-flow through much of the state at a V/C of 0.7 or less, although some capacity issues exist on rail lines parallel to the I-20 corridor, the I-10 corridor, the I-35 corridor, and the US-59 corridor near the Gulf Coast. These corridors are operating near capacity, with V/C between 0.7 and 0.8.

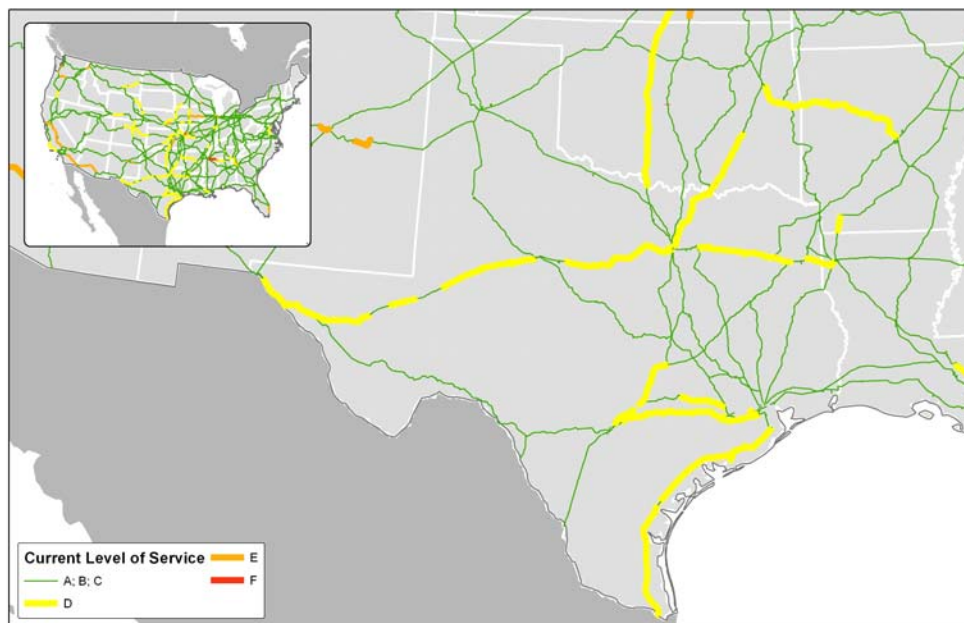


Figure 7-2: Freight Rail Level-of-Service (2007)

Source: Association of American Railroads, National Rail Freight Infrastructure Capacity and Investment Study, 2007

Figure 7-3 looks ahead to 2030, and assumes no dramatic improvement or expansion to the rail system. This also assumes no additional passenger rail beyond what currently exists. As a result, the statewide rail LOS drops significantly. Though there are still

projected segments of the rail system operating at a fairly free-flowing LOS A, B, or C, a majority of rail miles will operate in congested conditions, particularly along the currently constrained corridors identified above. LOS E represents at- or near-capacity conditions of V/C of 0.8 to 1.0. LOS F indicates conditions with volume exceeding capacity.

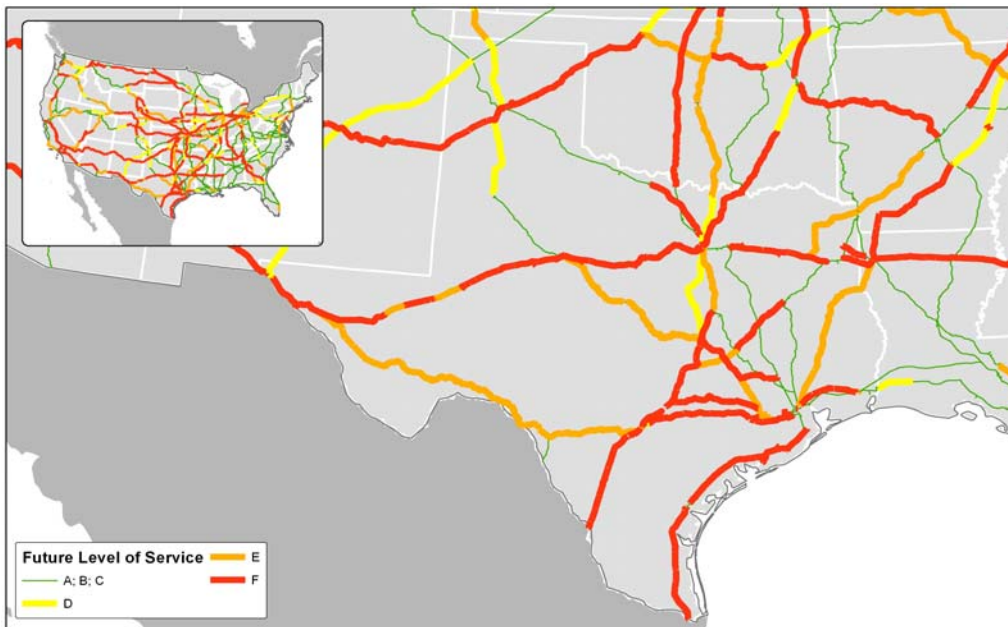


Figure 7-3: Freight Rail Level-of-Service in 2030, No Improvements

Source: Association of American Railroads, National Rail Freight Infrastructure Capacity and Investment Study, 2007

Table 7-6 summarizes the estimated cost of rail freight capital needs in Texas. Freight rail needs were extrapolated from national studies as a percentage of needs, as estimated for the nation. While these numbers are not specifically calculated for Texas, they nevertheless indicate the extent of the needs for rail improvements in the state.

Table 7-6: Estimated Texas freight rail needs, 2005 to 2030

Freight Needs	Estimated Annual Needs in Texas
Short line Infrastructure	\$27,000,000
Class I Infrastructure	\$396,000,000
Class I Non-Infrastructure	\$159,000,000
Safety	\$55,000,000
Total	\$637,000,000

Source: Cambridge Systematics

Railroad Relocation Benefits

Within the next 15 to 20 years, demands on the rail network will continue to increase due to international trade growth, rising fuel costs (which may produce a truck-to-rail modal shift), longer and heavier trains, and interest in new commuter and intercity passenger rail service. Already lengthy intermodal trains are expected to only continue to lengthen. Many Texas cities face the issue of having busier railroad operations and major truck routes pass directly through their central business districts. With high population density in the central areas of many Texas cities, the proximity to rail operations and truck routes presents a number of issues, including reductions in vehicular mobility due to at-grade crossing conflicts and the potential for exposure to hazardous materials transportation. Upgrades to the existing system and/or the relocation of through-freight rail activity from urban areas to more rural areas can bring with them improved at-grade crossing safety, a reduction in hazardous material movement exposure, and improved air quality within urban areas. The relocation of through-freight rail operations may create opportunities for other transportation modes such as transit or commuter rail, as well as utility placement along existing corridors.

Track Speeds

Because of Amtrak's dual mandate to provide both a national rail system and limit its operational losses, the congressionally appropriated funding, along with the additional funding received by the states through which Amtrak operates, does not typically supply the funding necessary to adequately upgrade tracks and signal systems (which freight rail lines own). Because of this, it is difficult to realize long-distance route trip-time reductions, including reductions for those routes in Texas that would raise performance standards, thereby increasing ridership at a cost that remains competitive with the airline industry. Primarily due to its federal charter for providing intercity passenger, Amtrak schedules and long travel times make it difficult for intercity passenger rail to serve as a viable option for business travelers in Texas. For example, the Sunset Limited has an average operating speed of less than 40 mph, covering more than 800 miles between Houston to El Paso. This route takes more than 21 hours to traverse. At this pace, Amtrak customers are drawn from leisure travelers and those either not owning cars or averse to flying rather than those looking for a viable travel alternative. Upgrading the condition of Texas rail infrastructure could improve the track speeds and capacity, which might make intercity rail transportation a more attractive and competitive transportation mode.

Existing rail infrastructure, in particular the rail line alignment and profile, is a contributing factor to limiting the maximum authorized speed of trains, both freight and passenger, in Texas. The Federal Railroad Administration also places a top speed limit on both freight and passenger trains of 80 mph where a redundant signal system or method of train control are not in place, such as the case on the lines between Dallas and San Antonio, as well as El Paso through San Antonio to Houston and Beaumont. Implementing

positive train control (PTC) would help to increase speeds and capacity of the track; in locations where the track geometry permits this increase; however, the cost of implementing a PTC overlay of the signal network, even though mandated by the FRA to be in place by December 2015, will be significant.

Additional Capacity Needs Related to Passenger Service

Conflicts between passenger and freight rail in recent years, as a result of increased freight rail demand, pose a significant concern to both service providers. Statewide statistics indicate that while total rail line mileage has decreased from previous decades, freight traffic and total tonnage are increasing. Increases in freight traffic on existing routes will also limit the potential to improve speeds and reliability of existing passenger rail service. Specifically, increases in freight rail traffic on lines paralleling the I-35 corridor, bolstered by NAFTA-related trade, have affected Amtrak's Texas Eagle between San Antonio and Fort Worth. Improving speeds in this corridor would require substantial investment to alleviate potential conflicts.

In other parts of the state, additional freight demands in certain corridors have taken precedence at times and have resulted in a deterioration of some passenger rail service. Public-private partnership arrangements between the State of Texas and the railroads could eventually lead to improvements in the statewide rail freight system, which could maximize the safety of citizens, provide increased capacities for freight, and provide the opportunity to open corridors for new passenger rail development and improvements to existing passenger rail services.

Cost Effectiveness

Cost effectiveness would be addressed through detailed project level analysis of the costs and benefits of a project. Maintenance and operating costs would also need to be considered in those analyses.

Project Development

It is important for Texas to develop identified improvements through a preliminary engineering and environmental process so that as funding becomes available for the final design and construction, these projects will be eligible for funding.

Partnerships

Understanding Perspectives of Both Freight and Passenger

Freight perspective:

UP and BNSF, in conjunction with AAR, have adopted principles addressing use of their freight network for passenger rail purposes. The following are some of the key points:

- Safety should not be compromised.
- Capacity must be provided for current and future freight operations.
- Compensation must be made to the railroads for any additional costs of expanded passenger rail service, such as new infrastructure, increased maintenance costs, and any other related operational costs.
- Liability should be capped.

First, both BNSF and UP have expressed the desire for additional capacity on their lines in order to accommodate passenger operations to prevent the degradation of existing freight performance. Additionally, the railroads have stated their opposition to schedule restrictions, such as running freight trains at night outside of the daytime passenger train operating windows, as such restrictions may impact available times to perform maintenance operations. In the past, the freight railroads have had mixed results when cooperating with passenger operations, some of which included negative impacts to their freight operations. Freight railroad capacity is currently constrained by right-of-way in some locations, such as single track rail lines located in narrow rights-of-way. As a result, UP stated that sharing of right-of-way would not be feasible unless additional right-of-way was purchased and rail lines were separated by 50 feet.

Second, freight bottlenecks make even existing service difficult to move. For instance, Fort Worth's Tower 55 is a bottleneck for freight and passenger rail service.

Lastly, both UP and BNSF have a major concern about the liability of passenger trains sharing track with freight trains. Currently, Amtrak shares track with freight trains as mandated by the federal 1970 Railroad Passenger Service Act creating Amtrak and establishing Amtrak as the sole entity with statutory authority to operate passenger rail services throughout the country. Title 49 of the US Code, Section 24308c requires freight railroad operators to allow and prioritize Amtrak trains on their freight tracks.

UP and BNSF have made the following requests intended to limit additional liability risks to the freight railroads associated with sharing freight tracks with passenger trains.

- A minimum of a 50-foot separation between tracks must be provided (requested by UP),
- Passenger trains operating on freight lines must be FRA compliant (Amtrak trains already meet FRA crashworthiness standards), and
- There must be a cap on liability.

An additional concern from freight rail operators expressed during planning of high-speed intercity passenger rail (HSIPR) projects in the U.S. is the restricted access associated with high-speed rail service because of the barriers required. At-grade

passenger tracks with fencing prevent freight operators from accessing customers on the other side of the HSIPR tracks.

Passenger Perspective:

Amtrak passengers in Texas have little flexibility in choosing their departure and arrival times due to inconvenient schedules and the lack of choice. For example, the timing of the Heartland Flyer works well for business travelers coming from Oklahoma City to Fort Worth, as they can make the round trip on the same day. This timing is missing for travelers from Texas who need to stay a minimum of two nights in Oklahoma to make the round trip by train conveniently.

Scheduled trip times are also not advantageous for people wishing to take Amtrak between Houston and San Antonio. Passengers on the Sunset Limited leave and arrive at San Antonio in the wee hours of the morning and only three days per week. These schedule times are the result of the Sunset Limited being a national transcontinental service that is not optimized to meet the inter-city regional transportation needs of Texans. For Amtrak services to meet the needs of Texans, schedules need to be developed with passenger utility in mind, providing them with greater convenience and flexibility in departure and arrival times.

On-time performance (OTP) is a primary indicator of service reliability. Section 207 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) charged the Federal Railroad Administration (FRA) and Amtrak jointly and in consultation with other parties, with developing new or improving existing metrics and minimum standards for measuring the performance and service quality of intercity passenger train operations. In compliance with the statute, the FRA and Amtrak jointly drafted performance metrics and standards for intercity passenger rail service. The FRA solicited comments on the proposed metrics and standards from the Surface Transportation Board, rail carriers over whose rail lines Amtrak trains operate, states, Amtrak employees, nonprofit employee organizations representing Amtrak employees, and groups representing Amtrak passengers. The final set of metrics was adopted May 12, 2010.

FRA issued the following regarding OTP metrics for Amtrak: “OTP under the final standard is [discerned] on the basis of three tests (only two tests until FY 2012): 1) change in effective speed, 2) percent on-time at the endpoint (endpoint OTP), and 3) percent on-time at all stations served (all-stations OTP) (effective as of FY 2012). The final standard makes clear that the effective speed [is] calculated on a rolling four-quarter basis and compared with a fixed FY 2008 baseline.” The standard for percent on-time was to vary by route type and by year, as presented in Table 7-7.

Table 7-7: On-Time Performance Metrics under PRIIA for Amtrak

Route	Percent on time first year	Percent on time final year
Acela	90%	95%
Other Northeast Corridor routes	85%	90%
All other corridors	80%	90%
Long-distance routes	80%	85%

Amtrak OTP metrics face continued discussion and legal action with railroads, with other metrics matrices still under consideration and potentially facing future modifications.

Innovation

PRIIA RFEI and SNCF Response

Section 502 of PRIIA required the Secretary of Transportation to “issue a request for proposals for projects for the financing, design, construction, operation, and maintenance of a high-speed intercity passenger rail system operating within” either the Northeast Corridor or a Federally designated high-speed rail corridor. To satisfy this requirement, the FRA solicited and encouraged submission of Expressions of Interest for potential projects to finance, design, construct, operate, and maintain an improved HSIPR intercity passenger system in the Northeast Corridor or in one of ten federally-designated corridors. FRA envisioned this as the first phase of a qualification process that Congress may follow with more specific actions regarding particular proposals in one or more corridors. Expressions of Interest were filed in September 2009 with the FRA.

Société Nationale des Chemins de Fers Français (SNCF), which operates France’s national railway system, including the popular and well-noted TGV service, submitted the primary response related to Texas. The proposal envisioned 220 mph service connecting those cities between San Antonio and the Dallas/Ft. Worth area (inclusive) along Interstate Highway 35. Initial ridership estimates for such a system were estimated at about 12 million annually in 2025, with the construction of the system costing approximately \$14 billion in 2009 dollars.



7.3 – Short-Term Program (e.g., short line program, passenger rail program, freight bottleneck program)

Texas’ short-term program focuses on improvements to passenger corridors and freight rail improvements in Texas over the next five years, which are already funded or have been prioritized and included in a funding request. For passenger rail, this will include key planning studies to identify and prioritize corridor development in the state as well as construction improvements to existing passenger rail service. In freight rail, funding has been identified for grade crossing improvements, grade separations, and rehabilitation on the state-owned South Orient Rail Line. In addition, funding was recently secured for one of the most congested at grade rail intersections in the country, Tower 55. The short-term program will be supplemented with improvements already identified once they are prioritized using the methodology discussed in Section 7.1 and funding becomes available.

The short term program will be coordinated with other entities, especially local planning organizations and MPOs for inclusion in short-term transportation plans such as the Transportation Improvement Program (TIP) and the TxDOT Statewide Transportation Improvement Program.

The short-term program can be summarized for the next three years in part by Tables 7-8 and 7-9, which show the funded studies for FY 2011 and the requests for funding for FY 2012-2013. RRD has received its budget for studies for FY 2011. The studies to be funded include the following:

Table 7-8: Funded Studies for FY 2011

Project Title	Funding Source	Amount
Rio Grande Valley/Laredo Freight Study (Ph 1)	SPR	\$4,000*
Rio Grande Valley/Laredo Freight Study (Ph 2)	SPR	\$241,019
El Paso Freight Study (Ph 1)	SPR	\$463,675
Additional Freight Studies	SPR	\$1,500,000
Statewide Analysis Model and Rail Plan Support	SPR	\$48,417
Neches River Bridge Additional Capacity Feasibility Study	SPR	\$500,000
Truck Diversion Study	SPR	\$370,000
Statewide HSIPR Studies	SPR	\$1,650,000
Austin to Houston Passenger Rail Study (existing infrastructure analysis only)	SPR	\$23,048*
East Texas Passenger Rail Study (existing infrastructure analysis only)	Federal Earmark	\$350,000**

* Partial amounts required for FY 2011 to complete the studies.

** Additional studies to be performed once grant agreement is finalized.

Through preparations for the 82nd Texas Legislative Session, TxDOT has prepared its Legislative Appropriations Request (LAR) for funding levels in FY 2012-2013. As part of the LAR, there is a baseline amount being requested to advance the rail vision within the state. This request includes the following items:

Table 7-9: Study Funding Requests for FY 2012-2013

Project Title	Funding Source	Amount
Neches River Bridge Additional Capacity Feasibility Study	SPR	\$253,549
HSIPR Studies	SPR	\$2,000,000
Freight Rail Studies	SPR	\$2,000,000
Interagency Contract Assistance	State Highway Fund	\$200,000
Lone Star Rail District	State Highway Fund	\$464,678
Austin to Houston Passenger Rail Study	State Highway Fund	\$600,000
Rail Construction Management	General Revenue	\$455,143
OKC to South Tx Passenger Rail Study	General Revenue	\$4,700,000
DFW to Houston Passenger Rail Study	General Revenue	\$1,500,000

In addition to the baseline amounts, TxDOT has also submitted rail funding requests as exceptional items. Both the baseline and exceptional item requests are subject to action by the 82nd Legislature. Exceptional items include the information found in Table 7-10.

Table 7-10: Rail Funding Requests (Exceptional Items)

Name	Method of Financing	FY 2012	FY 2013
Austin-San Antonio Passenger Rail (Lone Star Rail)	General Revenue	\$30,000,000	\$42,000,000
Houston Region Freight Rail Improvements	General Revenue	\$6,862,000	\$5,000,000
South Orient and Shortline Rail Improvements	General Revenue	\$16,645,000	\$16,645,000
Heartland Flyer Passenger Rail	General Revenue	\$11,095,000	\$19,120,000
State Owned Rail	General Revenue	\$2,500,000	\$2,500,000
Neches River Rail Study	General Revenue	\$2,000,000	\$3,000,000
East Texas Passenger Rail Study	General Revenue	\$1,500,000	\$1,500,000
Rail Construction Management Consultant	General Revenue	\$1,000,000	\$0
Houston-Brownsville Rail Improvements	General Revenue	\$0	\$10,200,000
Fort Worth Subgrade	General Revenue	\$0	\$3,400,000
Tower 105 Improvements	General Revenue	\$0	\$9,200,000
Rail Relocation And Improvement Fund	General Revenue	\$100,000,000	\$100,000,000
Restore Rail Safety GR Fee Revenue	General Revenue	\$124,210	\$105,375
Rail Construction and Improvements	General Revenue	\$14,500,000	\$26,000,000

Passenger Rail

Discussion of new passenger and high-speed rail corridors, in many different forms, has been in and out of the state transportation spotlight for approximately 30 years. The latest developments in passenger corridors for Texas have come from the federal level, with the introduction of plans by the Obama administration for a national HSIPR network, in which Texas is included. In addition to these corridors, a variety of private and public proposals have been introduced over the years that suggest connecting Texas cities via high-speed rail. These have been proposed by a number of public officials and private corporations. National interest in high-speed rail continues to gain momentum and many of these corridors may prove their value in the advancement of high-speed rail in Texas should the state actively pursue high-speed rail implementation.

Stakeholder-Developed Passenger Rail Vision

A variety of reliable passenger rail services will be offered to a broad section of the Texas population—regional and intercity, express and local. Passenger rail will be a viable transportation alternative which is cost and time competitive and connected to transit and other modes in city center stations—a product of market-driven studies of most promising corridors, offering the most appropriate service designs for those corridors. Passenger rail services and facilities will complement municipalities creating more livable, sustainable urban activity centers. Incremental expansion of frequency and reliability of passenger rail services on freight rail corridors will reduce environmental impacts of new service, will not inhibit current and future freight volumes, and will not place unmanageable risks on rail owners. As passenger rail traffic increases, new, higher speed rail services will be launched on separated, dedicated rights-of-way.

TxDOT's short-term goals for a passenger rail program are centered on three major items:

1. Establish a unified vision for passenger rail service within the state.
2. Establishing priority passenger rail corridors within the state by performing city-pair ridership studies, evaluations of existing passenger operations to determine improvements which could reduce travel times along the existing routes currently operated by Amtrak, and determinations of requirements for new passenger rail corridors including those with intended operations able to accommodate 220 mph speeds.
3. Prepare Service Development Plans (SDP) and Service Level NEPA evaluations for priority passenger rail corridors so that these corridors would be eligible to receive future federal funds, if available.

TxDOT prepared and submitted planning fund applications for three corridors as identified through a study completed by TTI. Those studies are detailed in Chapter 4. TxDOT received funding for the following corridor.

Oklahoma City to South Texas (request \$14 million; funded \$5.6 m)

The planning activities to be funded under the HSIPR Program and related deliverables include conducting a feasibility study, developing a Service Level NEPA document, and finalizing the Service Development Plan for the passenger rail corridor from Oklahoma City to Dallas/Ft. Worth, with a potential extension to Austin and San Antonio. TxDOT intends to use these funds along with other funds to study the entire corridor.

Significant studies have been completed or are currently ongoing on the portion of this corridor between Georgetown and San Antonio. These studies, developed by both TxDOT and Lone Star Rail District, could help expedite the completion of the studies needed for the overall corridor and reduce the amount of funding needed. It is TxDOT's intent to incorporate as much of the alternatives analysis and schedule envisioned and developed by Lone Star Rail District as possible into the overall corridor study.

This and other studies would not only cover the three corridors that link many of Texas's most populous cities, but would also provide further information helping TxDOT, public officials, and citizens make informed decisions about passenger rail. TxDOT will initiate a contract with a consultant in 2010 to evaluate passenger rail corridors within the state for improved service and/or new passenger rail service, including high speed passenger service up to 220 mph and development of service development plans. Some of the tasks associated with this contract can include the following.

- Evaluate ridership, develop train schedules, determine station locations, evaluate existing infrastructure, determine infrastructure improvements needed on existing corridors for higher speed service, and route studies for new high speed 220 mph service.
- Evaluate infrastructure requirements and costs and equipment costs, including maintenance facilities and rolling stock. Develop revenue estimates and perform cost/benefit analysis.
- Evaluate existing freight lines and their operations to determine current and future infrastructure needs, as well as operational changes needed to improve or add intercity passenger service, considering impacts of proposed service to the freight network.
- Analyze and evaluate possible new corridors for passenger service using the existing freight rail network or new alignments for passenger service up to 220 mph. The evaluation will include connectivity to existing passenger rail service, major airports, and downtown business districts. The evaluation should also

consider landscape level environmental impacts up to and including the development of a Tier 1, Service Level NEPA document.

With all of this information in hand, Texans could be more clearly informed about the trade-offs among passenger rail alternatives, and make decisions about passenger rail investments. This kind of deliberate study has distinguished states that have received more funding from the FRA for HSIPR projects, and such studies would be required if Texas is to seek project funding from the federal government for passenger rail improvements.

As previously discussed, TxDOT also received funding for signal timing improvements to the Heartland Flyer and for additional track and bridge improvements on the TRE.

Freight Rail

TxDOT's short-term goal for a freight rail program is centered on one major item, which simply stated, is to assist the freight rail carriers, and the regions through which they traverse, in eliminating freight rail bottlenecks on existing rail corridors, while concurrently enhancing freight rail fluidity and public safety.

Stakeholder-Developed Freight Rail Vision

Texas' freight rail network will provide safe, reliable movements to and from Texas shippers and receivers, intermodal facilities, and ports of entry on international borders and along the Gulf Coast. Productive use of existing infrastructure will be maximized through the railroads' use of sophisticated train control systems, wayside technologies, and maintenance planning. Public and private sector resources will resolve bottlenecks and congestion points to improve system fluidity. Investments in freight capacity to keep pace with demand can reduce adverse community impacts. Grade separations, grade crossing improvements, and closures will improve highway/rail safety and enhance quality of life for communities bisected by increasingly busy rail lines.

The short-term freight rail program for Texas also foresees a 5-year window, and is composed of projects such as grade crossing closures and separations, adding second mainline tracks or sidings to strategic locations of existing rail lines, implementing new connections between existing rail lines, rehabilitating existing lines, and reconfiguring sections of a regional rail network to increase a rail terminal's capacity and train movement fluidity.

Projects (funded improvements for rehabilitation of state-owned lines, and funded grade separations) are identified in Appendix 7B and 7C. In addition to these projects, the FY 2011 allocations for signal programs are as follows:

Federal Railroad Signal Program (FSP):	\$18,699,175
State-funded Crossing Surface Replacement Program (CRX):	\$ 3,500,000
State-funded Signal Maintenance Program (SMP): \$1.5 million	\$ 1,500,000

The program call has not yet taken place for this year; therefore, the projects are yet to be identified. Funded FSP projects are funded through FHWA and are included in the current STIP. These projects are not listed separately in this plan.

There are also Railroad Grade Separations that have been funded between years 2010-2016. These are included in Appendix 7C. As with FSP projects, all of the currently funded grade separations are also listed in the current STIP and are not listed separately in this plan.

Tower 55 Multimodal Improvement Project (Total cost \$93 million, TIGER II funds \$34 million)

This proposed project comprises a broad set of improvements to transportation infrastructure in Fort Worth, Texas, focused on the centrally-located rail intersection known as “Tower 55.” Through various evolutions of planning input and funding support from both public and private sources (including approximately \$4.5 million within the last five years), the project now enjoys a strong level of support from stakeholders. Benefits from this project substantially outweigh investment, and are widely cast, as economic, environmental, livability, and safety costs of delay continue to grow.

The Tower 55 project improves the competitive nature of the region’s economy, addressing the primary transportation challenge of inadequate rail capacity for future growth. This particular location sees the convergence of eleven major North American freight and passenger rail routes into a single intersection where two north-south lines cross two east-west lines. One hundred trains per day utilize this intersection, operating above 90% capacity, making it one of the most congested rail intersections in the United States.

In an attempt to resolve some of these transportation challenges, this project will implement a third north-south rail line across the intersection, improve approach trackage (including alignment, switches, bridges, roadway-bridge protection, and culverts), improve signals and the interlocker that controls movements, and close grade crossings along with the introduction of bicycle and pedestrian underpasses and enhanced emergency vehicle access to nearby neighborhoods. TxDOT has committed \$1 million with availability in 2011, as has the City of Fort Worth. The requested funding was \$38 million, which will comprise about 42% of the \$91.2 million remaining cost of the

project—\$34 million was awarded. The final \$51.2 million will be provided under a joint commitment from BNSF and UP, available per construction plan. It is important to note that the \$38 million requested was significantly lower than the amount requested in the previous TIGER application for this project. This is a result of new commitments from TxDOT and the City of Fort Worth, plus an increase in the commitment from BNSF and UP, largely as a result of an improved economic outlook, as well as a slight reduction in project cost due to the receipt of \$2.5 million in funding from NCTCOG and The T, which is currently funding engineering design and environmental clearance to enable the project to achieve ready for construction status.

TxDOT also identified various other improvements to freight rail lines that would qualify for TIGER II (Transportation Infrastructure Generating Economic Recovery) program grants. Most recently, the USDOT has announced that \$600 million in TIGER II grants were available to states. TIGER II grants are for capital investments in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant impact on the nation, a metropolitan area, or a region. Texas applied for TIGER II grants for the following projects that did not receive funding (applications are available on the TxDOT website at <http://www.txdot.gov/business/rail/tiger.htm>), which are summarized below.

El Paso Rail Relocation Planning Grant

This grant will fund planning and design activities to relocate the BNSF rail yard located in El Paso’s economically disadvantaged Chihuahuita community in the southwest section of the city. A proposed central location site for the rail yard will replace existing operations and could improve existing and future rail operations in El Paso. The current rail yard occupies 44 acres bounded on the north and west by US 85, on the south by the Rio Grande (U.S.–Mexico border), and on the east by Park Street. It also lies within the proposed Border Highway West corridor that extends approximately 15.7 miles from SH 20 (N Mesa Street) to Fonseca Drive. Currently the rail yard acts as a landlocked barrier for the Chihuahuita community; its removal would enhance neighborhood access. TxDOT has applied for \$1,680,000 in funds for this project, with the state matching \$420,000 (20%) of the overall cost, for a total of \$2,000,000.

NETEX Rail Line Rehabilitation

Funds for this project will be used to rehabilitate the Northeast Texas Rural Rail Transportation District rail line (NETEX) from railroad milepost 489.4 at the Franklin/Titus County line (near Winfield, TX) to milepost 555 (just west of Greenville, TX) in Hunt County. The major project activities will include replacement of cross ties with associated ballast and surfacing work necessary to enable 25 mph track speeds. Some railroad bridge repairs are also planned.

These proposed rehabilitation activities would be funded by a \$14,303,813 grant. Costs for plan development, specifications, estimates, and environmental clearance would be minimized as all work would be performed by TxDOT at cost. Thus, a majority of funds will be used for construction of the project and construction management activities.

South Orient Rail Line Rehabilitation

The project will rehabilitate a segment of the state-owned South Orient rail line (SORR) from milepost 721.52 in Tom Green County (near San Angelo, TX) to milepost 882.84 (near US 385 west of Fort Stockton, TX) in Pecos County. This project is split in two sections. The first section is in need of rehabilitation to address existing slow order locations, address “excepted track” conditions, and to achieve and maintain a Class 2 status. This section of the rail line will consist of installation of crossties and ballast, surfacing and alignment of track, re-planking of highway-rail grade crossings, and repair of bridges. The second section consists of the final 13 miles of track, which will require additional work. In addition to the previous items, this final section will also see the replacement of existing 70-lb. rail with 112-lb. rail along the main lines as well as at four turnouts. TxDOT has requested \$19,310,000 in grant funding for these projects in an effort to improve economic viability in a disadvantaged region of the state that exhibits much potential for energy resources and rail freight movement.

South Texas Region Rail Capacity Expansion

The Port of Corpus Christi Authority and the Brownsville Navigation District submitted a joint application for funds aimed to complete rural rail capacity infrastructure improvements in South Texas. Current freight rail operations face weight restrictions due to the condition of structures along 91 miles of rural rail track between Angleton and Placedo. These restrictions subsequently negatively affect freight movement in the lower Rio Grande Valley and along the middle and south Texas coast. This project would upgrade capacity on the Angleton Subdivision track section, and in order to comply with 286,000-lb. rail car standards, require reconstruction of two large bridges and improvements to 31 smaller structures at a cost of approximately \$16.5 million, the requested grant amount. Benefits from the project include job creation, carbon dioxide and carbon monoxide emission reductions, reduction of truck miles traveled, logistics cost savings for shippers as well as both new and existing rail customers, and promotion of NAAQS attainment.

Sun Belt Regional Short Line Rail Project

This project consists of infrastructure improvements to an often neglected part of the Sun Belt region (particularly rural northeastern Texas, southwestern Arkansas, and southeastern Oklahoma). Specifically, the Dallas, Garland, and Northeastern Railroad, the Texas Northeastern Railroad, and the Kiamichi Railroad (the “short lines”) require upgrades to infrastructure including strategic side tracks and industrial leads to accommodate traffic growth and allow for the use of heavier industry standard 286,000-

pound railcars. The proposed project will eliminate rail joints, replace crossties and bridge components, add new ballast, and resurface track. Additional improvements include the upgrade of rail in curves to 115-lb. rail, meeting industry minimums for 286,000-lb. railcars, upgrading of key interchanges connecting short lines to Class I railroads, and bringing 286 passive public rural highway rail grade crossing to meet current Federal standards and provide additional safety protections. TxDOT has requested a total of \$17,265,920 from the FRA for the completion of these upgrades.

Steering Committee Recommendations

After reviewing the evaluation criteria descriptions above, the TxDOT Steering Committee recommended the following considerations for the short-term program:

- A defined percentage of state funds be dedicated to planning activities so projects can be competitive for federal funding or advanced to construction through additional state funding
- In initial funding years, TxDOT should provide higher levels of planning funds to accelerate project development
- Projects proposed in future freight rail studies should be evaluated using the same state criteria and process

7.4 – Long-Term Program

The goals of the long-term program are to further develop the passenger corridors identified in the short term program and complete freight studies for the state. As the studies are completed, improvements will be prioritized and added to the list of unfunded improvements identified in Appendix 7A. As funding allows, these improvements will be progressed to the short-term program.

The long term program will be coordinated with other entities, especially local planning organizations and MPOs, for inclusion in long range plans and TxDOT's Unified Transportation Plan.

It is important to note that at the state level, the Rail Relocation and Improvement Fund (RRIF) plays an integral role in achieving both short- and long-term rail plan goals. The funding and building of the RRIF will establish Texas' ability to address the rail plan goals for which no federal funding is available and will act as a match for any federal funds that are available.

Passenger Rail

Those corridors identified through the statewide ridership analysis and not prioritized as short term program studies will be studied as part of the long-term program. The corridor studies as described above in the Section 7.5 will develop proposed alternatives

and types of service within the corridors as well as identify logical segments to be further developed through final design and construction as funding becomes available.

TxDOT, in coordination with other local or regional entities is further investigating the potential to develop additional high-speed intercity passenger services within the state and possibly into adjoining states. As TxDOT considers additional passenger rail corridor development in the future, it will solicit input from I-35 and I-69 corridor advisory committees to guide and inform particular corridor development processes.

Freight Rail

For the long-term, TxDOT plans to continue to perform freight studies in those areas not yet studied. These improvements will be prioritized with the others already identified, and as funding is identified, selected based on criteria of the identified funding sources. Many sources have stipulations because of the goals of particular programs, which will guide the use of that money for certain projects. Once selected and funded, those improvements will be moved into the short-term program to be further developed through final design and construction.

Table 7-11 briefly summarizes potential improvements already identified through the completed freight studies more completely described in Chapter 3. In addition, several planning cases are identified in the Houston, Austin, and San Antonio districts for rail improvements (Table 7-12); these costs are in addition to the costs seen in Table 7-11. All the unfunded improvements are addressed in detail in Appendix 7A at the end of this chapter.

Table 7-11: Estimated Costs of Identified Freight Rail Improvements in TxDOT Districts (in millions of dollars, no right-of-way costs)

TxDOT District	Crossing Closure	Crossing Closure and Pedestrian Bridge	Grade Separation	New Rail Connections	TOTAL
Houston	\$5.7	\$7.5	\$605.3	\$1,338.5	\$1,957.0
Austin	0.4	-	205.6	-	206.0
San Antonio	6.6	-	829.7	149.5	985.8
Dallas	1.7	-	147.1	-	148.8
Fort Worth	2.2	-	181.1	168.6	351.9
Corpus Christi and Yoakum	-	-	72.1	73.74	145.74
Amarillo	0.4	-	41.8	-	42.2
Lubbock	0.7	-	31.1	-	31.8
Odessa	-	-	4.8	-	4.8
Atlanta	0.2	-	28.3	-	28.5
Lufkin	0.4	-	-	-	0.4
Paris	0.4	-	6.5	-	6.9
Tyler	0.2	-	19.0	-	19.2
TOTAL	\$18.9	\$7.5	\$2,172.4	\$1,730.34	\$3,929.04

Note: Totals do not include the alternatives for the different planning cases in the Houston, San Antonio, and Austin Districts. Figures should be adjusted appropriately when considering these.

Table 7-12: Estimated Costs of Identified Freight Rail Improvement Planning Cases

Planning Case	Estimated Cost (millions of dollars, no right-of-way)
Houston	
Houston 1	96.9
Houston 2	351.2
Houston 3	1,147.6
Houston 4	643.6
Austin	
San Antonio Bypass	1,398.1
Austin Bypass (1)	1,629.1
Austin Bypass (2)	1,708.1
Austin and San Antonio Bypass	2,473.9
San Antonio	
San Antonio 1	9.5
San Antonio 2	21.2
San Antonio 3	25.92
San Antonio 4	35.02

Emerging Technologies

Throughout the course of the stakeholder workshops and public meetings, a number of new and exciting technologies for the movement of people and/or freight, which currently exist at various levels of development, were discussed. These include, but are not limited to:

- Freight Shuttle
- Global Transportation Systems
- Innov8 Transport Skyway
- MegaRail Transportation Systems
- Tubular Rail

In some cases, “rail” in the name is a misnomer, because the technology has little in common with traditional rail transportation systems. Some of these technologies are conceptual, while others have evolved to the development of limited prototypes for vehicle or guideway systems. None of the systems listed above, however, have been placed into revenue service in order to demonstrate proven results.

While this should not be a limiting criterion, funding for the development of yet unproven technologies is generally obtained at the national level, thus state funding for the development of these technologies is not typically budgeted. The first step toward developing new transportation technologies, therefore, is to determine the appropriate federal agency to oversee the further development of the technology. That agency will then determine the subsequent requirements for further research and the policies regarding development and implementation.

Appendix 7A: Unfunded Improvements (sorted by district, estimated costs as of Q1 2010, not including state-owned lines)

Amarillo

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment	
15th St	Grade Separation	BNSF Hereford	\$9,000,000	\$2,900,000		0.32					
Eastern Ave	Grade Separation	BNSF Panhandle	\$6,200,000	\$2,600,000		0.42					
FM 2943	Grade Separation	BNSF Hereford	\$10,000,000	\$920,000		0.09					
Grand St	Grade Separation	BNSF Red River	\$5,400,000	\$2,700,000		0.50					
U.S. 287/U.S. 54	Grade Separation	UP Pratt / BNSF Boise City	\$11,200,000								
4th St	Crossing Closure	BNSF Boise City	\$100,000	\$1,457,000		0.13					
Main St	Crossing Closure	UP Pratt	\$100,000								
Wall St	Crossing Closure	UP Pratt	\$100,000								
U.S. 87	Grade Separation	BNSF Boise City	\$4,000,000	\$1,300,000		0.33					
Elsie Ave	Crossing Closure	BNSF Panhandle	\$100,000	\$660,000		6.60					

Atlanta

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
FM 249	Grade Separation	UP Little Rock	\$6,000,000	\$2,700,000		0.45				
FM 450	Grade Separation	UP Little Rock	\$6,200,000	\$2,500,000		0.40				
FM 74	Grade Separation	UP Little Rock	\$5,600,000	\$2,020,000		0.35				
1st St	Crossing Closure	UP Little Rock	\$100,000							
SH 11	Grade Separation	UP Pine Bluff	\$4,300,000	\$1,200,000		0.28				
SH 49	Grade Separation	UP Little Rock	\$6,100,000	\$2,600,000		0.43				
Clarksville St	Crossing Closure	KCS Greenville	\$100,000	\$24,500		0.25				

Austin

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Aquarena Springs/Loop 82 and Post Road	Grade Separation	Austin Subdivision	\$13,900,000	\$14,500,000		1.04		X	X	
Banister Lane	Grade Separation	Austin Subdivision	\$5,100,000	\$2,800,000		0.55		X	X	
Bugg Lane	Grade Separation	Austin Subdivision	\$5,500,000	\$9,000,000		1.64		X	X	
Burnet Street	Grade Separation	Austin Subdivision	\$6,600,000	\$5,600,000		0.85		X	X	
Center Street/ FM 150	Grade Separation	Austin Subdivision	\$4,500,000	\$3,400,000		0.76		X	X	
CM Allen Pkwy and SH 12	Grade Separation	Austin Subdivision	\$20,600,000	\$42,500,000		2.06		X	X	
Dittmar Road	Grade Separation	Austin Subdivision	\$3,300,000	\$21,400,000		6.48		X	X	

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-	attainment
								X	X	Rail	
Duval Road	Grade Separation	Austin Subdivision	\$8,600,000	\$12,800,000		1.49		X	X		
FM 1626	Grade Separation	Austin Subdivision	\$5,400,000	\$12,700,000		2.35		X	X		
FM 1660	Grade Separation	Austin Subdivision	\$10,100,000	\$5,640,000		0.55		X	X		
Jim Cage Rd/FM 1660	Crossing Closure	Austin Subdivision	\$100,000					X	X		
FM 685	Grade Separation	Austin Subdivision	\$13,700,000	\$10,400,000		0.76		X	X		
Guadalupe Street/ Loop 82	Grade Separation	Austin Subdivision	\$6,400,000	\$25,700,000		4.02		X	X		
IH 35 NB and SB Frontage Roads	Grade Separation	Austin Subdivision	\$21,100,000	\$52,900,000		2.51		X	X		
Kohlers Crossing/ CR 171	Grade Separation	Austin Subdivision	\$4,300,000	\$5,300,000		1.23		X	X		
LBJ Drive	Grade Separation	Austin Subdivision	\$6,700,000	\$22,500,000		3.36		X	X		
Matthews Lane	Grade Separation	Austin Subdivision	\$8,100,000	\$4,600,000		0.57		X	X		
N Main Street/ Loop 4	Grade Separation	Austin Subdivision	\$5,400,000	\$11,270,000		2.05		X	X		
Peach Street	Crossing Closure	Austin Subdivision	\$100,000					X	X		
Oltorf Street	Grade Separation	Austin Subdivision	\$6,300,000	\$14,600,000		2.28		X	X		
Mary Street	Crossing Closure	Austin Subdivision	\$100,000					X	X		
Quick Hill Road (CR 172)	Grade Separation	Austin Subdivision	\$14,400,000	\$9,500,000		0.66		X	X		
Red Bud Lane	Grade Separation	Austin Subdivision	\$14,300,000	\$4,800,000		0.34		X	X		
S Main Street/ Loop 4	Grade Separation	Austin Subdivision	\$4,500,000	\$11,100,000		2.47		X	X		
Stassney Lane	Grade Separation	Austin Subdivision	\$8,100,000	\$20,000,000		2.47		X	X		
Wonder World Drive	Grade Separation	Austin Subdivision	\$8,400,000	\$17,700,000		2.11		X	X		
Sloan Street	Crossing Closure	Austin Subdivision	\$100,000	\$280,000		2.80		X	X		
Upgrades to Existing Track - Marion (Glidden MP 187) to Glidden MP 170	Rail	San Antonio Bypass	\$169,700,000								
North Seguin Bypass - Glidden MP 170 to Glidden MP 175	Rail	San Antonio Bypass	\$101,700,000								
San Antonio Bypass - Glidden MP 175 to Macdona (Del Rio MP 223)	Rail	San Antonio Bypass	\$740,800,000								
Grade Separations (14 Roadway and 2 Rail) on Bypass Route - Seguin (Glidden MP 170) to Macdona (Del Rio MP 223)	Rail	San Antonio Bypass	\$166,400,000			0.25					
Macdona Yard w/ Fueling Facility	Rail	San Antonio Bypass	\$204,200,000				Intermodal yard built				
Marion Yard - Glidden MP 187	Rail	San Antonio Bypass	\$15,300,000								
Upgrades to Existing Track - Seguin (Glidden MP 170) to East Yard (Del Rio MP 207)	Rail	Austin Bypass (B1)	\$409,100,000				2nd ML East Yd to Kirby in progress				
Upgrades to Existing Track - Tower 112 (Del Rio MP 211) to Tower 105 (Del Rio MP 213)	Rail	Austin Bypass (B1)	\$48,800,000								
Upgrades to Existing Track - Tower 105 (Laredo MP 260) to SoSan Yard (Laredo MP 264)	Rail	Austin Bypass (B1)	\$95,400,000								
Taylor to Lockhart Bypass - Taylor (ASML MP 144) to Lockhart	Rail	Austin Bypass (B1)	\$670,600,000								
Lockhart to Seguin Bypass via SH 130 Seg. 6 - Lockhart to Seguin (North end of North Seguin Bypass at Glidden MP 170)	Rail	Austin Bypass (B1)	\$335,800,000				Lockhart to Seguin needs re-evaluation				
8 Roadway Grade Separations on Bypass Route - Taylor to Seguin (Glidden MP 170)	Rail	Austin Bypass (B1)	\$69,400,000								

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								Rail	Rail	attainment
Upgrades to Existing Track - Seguin (Glidden MP 170) to Wye (Del Rio MP 206)	Rail	Austin Bypass (B2)	\$409,100,000	\$861,000,000	\$161,200,000	0.58				
Upgrades to Existing Track - Wye to Tower 112 via ASML 2	Rail	Austin Bypass (B2)	\$129,800,000							
Upgrades to Existing Track - Tower 112 (Del Rio MP 211) to Tower 105 (Del Rio MP 213)	Rail	Austin Bypass (B2)	\$48,800,000							
Upgrades to Existing Track - Tower 105 (Laredo MP 260) to SoSan Yard (Laredo MP 264)	Rail	Austin Bypass (B2)	\$95,400,000							
Taylor to Lockhart Bypass - Taylor (ASML MP 144) to Lockhart	Rail	Austin Bypass (B2)	\$670,600,000							
Lockhart to Seguin Bypass via SH 130 Seg. 6 - Lockhart to Seguin (North end of North Seguin Bypass at Glidden MP 170)	Rail	Austin Bypass (B2)	\$335,800,000							
8 Roadway Grade Separations on Bypass Route - Taylor to Seguin (Glidden MP 170)	Rail	Austin Bypass (B2)	\$69,400,000							
2 Grade Separations and 1 Crossing Closure on ASML 2	Rail	Austin Bypass (B2)	\$18,600,000							
Upgrades to Existing Track - Marion (Glidden MP 187) to Seguin (Glidden MP 170)	Rail	Austin & San Antonio Bypass	\$169,700,000	\$1,454,600,000	\$97,500,000	0.63				
Taylor to Lockhart Bypass - Taylor (ASML MP 144) to Lockhart	Rail	Austin & San Antonio Bypass	\$670,600,000							
Lockhart to Seguin Bypass via SH 130 Seg. 6 - Lockhart to Seguin (North end of North Seguin Bypass at Glidden MP 170)	Rail	Austin & San Antonio Bypass	\$335,800,000							
North Seguin Bypass - Glidden MP 170 to Glidden MP 175	Rail	Austin & San Antonio Bypass	\$101,700,000							
San Antonio Bypass - Glidden MP 175 to Macdona (Del Rio MP 223)	Rail	Austin & San Antonio Bypass	\$740,800,000							
Grade Separations (22 Roadway and 2 Rail) on Bypass Route - Taylor to Macdona (Del Rio MP 223)	Rail	Austin & San Antonio Bypass	\$235,800,000							
Macdona Yard w/ Fueling Facility	Rail	Austin & San Antonio Bypass	\$204,200,000							
Marion Yard - Glidden MP 187	Rail	Austin & San Antonio Bypass	\$15,300,000							

Corpus Christi and Yoakum

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								Rail	Rail	attainment
NW Ingelside Drive, Gregory TX	Grade Separation		\$9,000,000	\$5,040,000	\$430,000	0.60				
Sinton Street, Sinton TX	Grade Separation		\$5,700,000	\$2,080,000	\$390,000	0.43				
Park Avenue (US77), Odem TX	Grade Separation		\$7,300,000	\$1,340,000	\$740,000	0.28				
Park Street (SH 44), Alice TX	Grade Separation		\$6,700,000	\$270,000	\$670,000	0.14				
Avenue F (SH 60), Bay City TX	Grade Separation		\$8,570,000	\$2,260,000	\$450,000	0.32				
Rio Grande Street (US 59), Victoria TX	Grade Separation		\$7,350,000	\$340,000	\$600,000	0.13				

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Rail	Non-
											attainment
Meayers Street (SH 36), Sealy TX	Grade Separation		\$8,470,000	\$270,000	\$370,000	0.08					
Esplanade Street (US 183), Cuero TX	Grade Separation		\$7,040,000	\$95,000	\$350,000	0.07					
Wye connection in Sinton - New wye at existing rail intersection	Rail		\$3,240,000								
New siding - Brownsville Subd, milepost 171 - New siding	Rail		\$6,700,000								
Woodsboro Siding Improvements - Upgrade existing siding w/ power turnouts & CTC	Rail		\$2,720,000								
Greta Siding Improvements - Upgrade existing siding w/ power turnouts & CTC	Rail		\$2,720,000								
Extend yard lead, Bloomington Yard	Rail		\$6,380,000				UPRR planned				
Add 2nd main track, Bloomington Yard - New track	Rail		\$16,860,000				UPRR planned				
Connection track at Bay City - New track	Rail		\$8,480,000								
New siding between Placedo and Victoria - New track	Rail		\$7,330,000								
New siding milepost 111 - New track	Rail	Glidden Subdivision	\$8,450,000								
New siding milepost 85 - New track	Rail	Smithville Subdivision	\$8,770,000								

Dallas

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Rail	Non-
											attainment
Florence St	Crossing Closures	UPRR Dallas	\$100,000	\$2,400,000		24.00		X	X	X	
Mariposa Dr	Crossing Closures	KCS Dallas	\$100,000	\$370,000		3.70					X
Prairie St	Crossing Closures	UPRR Choctaw	\$100,000	\$550,000		5.50					X
Rogers St	Crossing Closures	BNSF DFW	\$100,000	\$800,000		8.00					X
Sunday St	Crossing Closures	UPRR Dallas	\$100,000	\$1,300,000		13.00		X	X	X	
Vilbig Rd	Crossing Closures	UPRR Dallas	\$100,000	\$1,600,000		16.00		X	X	X	
Wilson St	Crossing Closures	UPRR Duncan	\$100,000	\$2,400,000		24.00					X
Avenue B/Avenue D	Grade Separation	KCS Dallas	\$9,500,000			2.49					X
Avenue F	Crossing Closures	KCS Dallas	\$100,000	\$23,910,000		2.49					X
Belt Line Rd	Grade Separation	TRE	\$6,700,000	\$14,300,000		2.11		X	X	X	
Big Town Blvd/ Prairie Creek Rd	Grade Separation	UPRR Dallas	\$9,400,000	\$26,100,000		2.56		X	X	X	
Buckner Blvd	Grade Separation	UPRR Ennis	\$6,800,000	\$20,800,000		3.00					X
Denton Tap Rd	Grade Separation	FWWR Fort Worth	\$6,900,000	\$27,100,000		3.75		X	X	X	
FM 148	Grade Separation	UPRR Dallas	\$12,400,000	\$21,300,000		1.71		X	X	X	
Galloway Ave	Grade Separation	UPRR Dallas	\$7,600,000	\$44,000,000		5.41		X	X	X	
Great Southwest Pkwy	Grade Separation	UPRR Dallas	\$6,200,000	\$22,400,000		3.56		X	X	X	
Jim Miller Rd	Grade Separation	UPRR Dallas	\$7,800,000			5.85		X	X	X	
Urban Ave	Crossing Closures	UPRR Dallas	\$100,000	\$46,200,000		5.85		X	X	X	
MacArthur Ln	Grade Separation	FWWR Fort Worth	\$8,000,000	\$21,400,000		2.59		X	X	X	

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								High-speed	Rail	attainment
McKinney St	Grade Separation	UPRR Choctaw	\$4,900,000							X
Frame St	Crossing Closures	UPRR Choctaw	\$100,000	\$14,170,000		2.73				X
Hickory St	Crossing Closures	UPRR Choctaw	\$100,000							
Sycamore St	Crossing Closures	UPRR Choctaw	\$100,000							
Bush Turnpike EB/WB Frtg Rd	Grade Separation	BNSF Madill	\$7,600,000							
SH 114	Grade Separation	UPRR Duncan	\$5,400,000	\$57,000,000		10.18				X
Allen St	Crossing Closures	UPRR Duncan	\$100,000							
Hitt St	Crossing Closures	UPRR Duncan	\$100,000							
SH 31	Grade Separation	UPRR Ennis	\$4,800,000	\$16,600,000		3.34				X
SH 34	Grade Separation	UPRR Dallas	\$7,600,000	\$29,900,000		3.83		X	X	X
Delphine St	Crossing Closures	UPRR Dallas	\$100,000							
Gardner	Crossing Closures	UPRR Dallas	\$100,000							
SH 352	Grade Separation	UPRR Dallas	\$8,000,000	\$29,400,000		3.58		X	X	X
Shiloh Rd	Grade Separation	KCS Dallas	\$6,000,000	\$10,100,000		1.56				X
Story Rd	Grade Separation	TRE	\$5,600,000	\$9,500,000		1.49		X	X	X
Westmoreland Rd	Grade Separation	UPRR Dallas	\$15,900,000	\$49,900,000		3.12		X	X	X
Manila Rd	Crossing Closures	UPRR Dallas	\$100,000							

Fort Worth

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								High-speed	Rail	attainment
1st St	Crossing Closures	BNSF Fort Worth	\$100,000	\$350,000		3.50		X	X	X
1st St	Crossing Closures	UPRR Choctaw & BNSF Wichita Falls	\$100,000	\$460,000		4.60				X
Baugh St	Crossing Closures	BNSF Venus	\$100,000	\$100,000		1.00				X
Capps St	Crossing Closures	BNSF Fort Worth	\$100,000	n/a		n/a		X	X	X
Chambers St	Crossing Closures	BNSF Fort Worth	\$100,000	\$430,000		4.30		X	X	X
Hines Rd	Crossing Closures	BNSF Fort Worth	\$100,000	\$1,440,000		14.40		X	X	X
Magnolia Ave	Crossing Closures	BNSF Fort Worth & UPRR Ney Bypass	\$100,000	\$460,000		4.60	CFW QZ project	X	X	X
Magnolia Ave	Crossing Closures	UPRR Fort Worth	\$100,000	\$270,000		2.70	CFW QZ project	X	X	X
N.E. 29th St	Crossing Closures	FWWR Fort Worth	\$100,000	\$850,000		8.50				X
N.E. 29th St	Crossing Closures	UPRR Duncan	\$100,000	\$4,200,000		42.00				X
Peach St	Crossing Closures	BNSF Fort Worth	\$100,000	\$4,000,000		40.00	to be closed by CFW with Live Oak connector project	X	X	X
Peach St	Crossing Closures	UPRR Choctaw & BNSF Wichita Falls	\$100,000	\$710,000		7.10	to be closed by CFW with Live Oak connector project			X
Ramsey St	Crossing Closures	UPRR Fort Worth	\$100,000	n/a		n/a				X
Spears St	Crossing Closures	BNSF Venus	\$100,000	\$133,000		1.33				X
W Bowie St	Crossing Closures	UPRR Fort Worth	\$100,000	\$620,000		6.20				X

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								Rail	Rail	attainment
W Kellis St	Crossing Closures	UPRR Fort Worth	\$100,000	\$2,600,000		26.00				X
W Mustang St	Crossing Closures	BNSF Fort Worth	\$100,000	\$1,100,000		11.00				X
Winnie St	Crossing Closures	UPRR Dallas	\$100,000	\$3,300,000		33.00	X	X		X
7th St	Grade Separation	FWWR Fort Worth	\$6,200,000	\$16,700,000		2.71				X
Ball St	Grade Separation	FWWR Fort Worth	\$6,300,000	\$50,100,000		7.92				X
Basswood Blvd/ Hightower Dr	Grade Separation	UPRR Choctaw	\$9,500,000	\$15,400,000		1.63				X
Beach St	Grade Separation	FWWR Fort Worth and UPRR Choctaw	\$12,100,000	\$19,500,000		1.61				X
Berry St	Grade Separation	FWWR Fort Worth	\$14,900,000							X
Bowie St	Crossing Closures	FWWR Fort Worth	\$100,000	\$31,430,000		2.08				X
Stanley Ave	Crossing Closures	FWWR Fort Worth	\$100,000							X
Blue Mound Rd	Grade Separation	BNSF Wichita Falls	\$4,700,000	\$26,600,000		5.63				X
Bowen Rd	Grade Separation	UPRR Dallas	\$6,600,000	\$38,500,000		4.13	X	X		X
Center St	Grade Separation	UPRR Dallas	\$5,200,000	\$21,200,000		4.09	X	X		X
Cooper St	Grade Separation	UPRR Dallas	\$7,800,000	\$50,900,000		6.42	X	X		X
Davis Blvd	Grade Separation	FWWR Fort Worth	\$8,100,000	\$22,300,000		2.41				X
Davis Dr	Grade Separation	UPRR Dallas	\$8,500,000	\$23,300,000		2.40	X	X		X
FM 157/ Collins St	Grade Separation	UPRR Dallas	\$8,200,000	\$55,100,000		6.56	X	X		X
Hemphill St	Grade Separation	BNSF Fort Worth	\$8,700,000	\$44,940,000		5.11	current plan - CFW QZ	X	X	X
Page Ave	Crossing Closures	BNSF Fort Worth	\$100,000					X	X	X
Main St	Grade Separation	FWWR Fort Worth	\$5,400,000	\$9,300,000		1.71				X
Main St (FM 1187)	Grade Separation	BNSF Fort Worth	\$5,700,000	\$57,000,000		9.78		X	X	X
Miller Ave/Oakland Blvd	Grade Separation	UPRR Dallas	\$6,400,000	\$21,300,000		3.28		X	X	X
Hughes Ave	Crossing Closures	UPRR Dallas	\$100,000					X	X	X
Northside Dr	Grade Separation	FWWR Fort Worth	\$7,100,000	\$19,900,000		2.78				X
Renfro St	Grade Separation	UPRR Fort Worth	\$5,800,000	\$26,900,000		4.24	X	X		X
Rufe Snow Rd	Grade Separation	FWWR Fort Worth	\$8,500,000	\$31,000,000		3.67				X
Seminary Dr	Grade Separation	BNSF Fort Worth	\$5,900,000	\$37,500,000		6.39	X	X		X
SH 199/Jacksboro Hwy	Grade Separation	FWWR Fort Worth	\$8,700,000	\$22,800,000		2.61				X
Stadium Dr	Grade Separation	UPRR Dallas	\$5,800,000	\$20,000,000		3.43		X	X	X
Sycamore School Rd	Grade Separation	BNSF Fort Worth	\$6,500,000	\$72,200,000		11.09	CFW QZ project	X	X	X
Sycamore School Rd	Grade Separation	UPRR Fort Worth	\$7,200,000	\$36,800,000		5.10	CFW QZ project			X
Watauga Rd	Grade Separation	UPRR Choctaw	\$9,100,000	\$10,100,000		1.11				X
Relocate Amtrak to operate on the TRE line; Includes Power turnout and signal from Amtrak station track into TRE track at Fort Worth ITC (Planning Case 1)	Rail	TRE	\$3,100,000	\$71,820,000	\$5,400,000	25.39	\$8M HSIPR funds allocated	X	X	X
UP and BNSF at-grade Tower 55 improvements (Planning Case 2)	Rail	Various	\$95,600,000	\$364,000,000	\$55,800,000	4.47	BNSF track plans - 30%, UPRR bridge plans - 90%, CFW coordination in progress	X	X	X
Upgrade TRE from Class 2 to Class 5 Track and Add Second Mainline (not a planning case)	Rail	TRE	\$69,900,000					X	X	X

Houston

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								Rail	Rail	attainment
Canal	Grade Separation	East Belt	\$6,400,000							X
Harrisburg	Grade Separation	East Belt	\$7,100,000							X
Sherman	Crossing Closure and Pedestrian Bridge	East Belt	\$1,500,000	\$15,790,000		1.05				X
Brady	Crossing Closure	East Belt	\$100,000							X
Hirsch	Grade Separation	East Belt	\$5,300,000	\$4,800,000		0.91				X
Lyons	Grade Separation	East Belt	\$5,900,000							X
Market	Crossing Closure and Pedestrian Bridge	East Belt	\$1,500,000	\$5,200,000		0.70				X
Wallisville	Grade Separation	East Belt	\$8,700,000	\$8,200,000		0.94				X
Bell	Crossing Closure	East Belt	\$100,000							X
Jefferson	Crossing Closure	East Belt	\$100,000							X
Kirkpatrick	Crossing Closure	East Belt	\$100,000							X
Leeland	Crossing Closure	East Belt	\$100,000							X
Pease	Crossing Closure	East Belt	\$100,000							X
FM 1640	Grade Separation	Galveston (BNSF)	\$12,200,000	\$5,300,000		0.43				X
FM 2759/ Crabb River	Grade Separation	Galveston (BNSF)	\$12,300,000	\$1,700,000		0.14				X
FM 521	Grade Separation	Galveston (BNSF)	\$6,800,000	\$2,000,000		0.29				X
Benton	Crossing Closure	Galveston (BNSF)	\$100,000	\$350,000		3.50				X
FM 2977	Crossing Closure	Galveston (BNSF)	\$100,000	\$3,800,000		38.00				X
Lamar	Crossing Closure	Galveston (BNSF)	\$100,000							X
Bay Area Blvd	Grade Separation	Galveston (UPRR)	\$17,200,000	\$27,600,000		1.60				X
Broadway	Grade Separation	Galveston (UPRR)	\$10,500,000	\$4,800,000		0.46				X
Lawndale	Grade Separation	Galveston (UPRR)	\$16,200,000	\$9,170,000		0.60				X
Bowie	Crossing Closure	Galveston (UPRR)	\$100,000							X
Lockwood	Grade Separation	Galveston (UPRR)	\$6,900,000	\$3,100,000		0.45				X
Edgewood	Crossing Closure	Galveston (UPRR)	\$100,000							X
7th-8th	Grade Separation	Glidden	\$3,500,000	Proposed Road		14.00		X	X	X
Third	Crossing Closure	Glidden	\$100,000	\$1,400,000				X	X	X
Buffalo Speedway	Grade Separation	Glidden	\$14,400,000	Proposed Road		NA				X
Chimney Rock	Grade Separation	Glidden	\$16,300,000	\$8,600,000		0.53		X	X	X
Collins	Grade Separation	Glidden	\$11,900,000							X
Douglas/Morton	Crossing Closure	Glidden	\$100,000	\$8,200,000		0.68				X
Dairy Ashford	Grade Separation	Glidden	\$14,600,000	\$24,900,000		1.71		X	X	X
Eldridge	Grade Separation	Glidden	\$20,200,000	\$12,600,000		0.62		X	X	X
Fannin	Grade Separation	Glidden	\$16,600,000	\$170,000		0.01				X
FM 359	Grade Separation	Glidden	\$10,600,000	\$11,000,000		1.04		X	X	X
Fondren	Grade Separation	Glidden	\$15,800,000	\$39,700,000		2.51		X	X	X
Gessner	Grade Separation	Glidden	\$16,000,000					X	X	X
Cravens	Crossing Closure	Glidden	\$100,000	\$82,100,000		5.10				X
Griggs/ Long/ Mykawa	Grade Separation	Glidden	\$20,500,000	\$15,700,000		0.77				X
Harlem	Grade Separation	Glidden	\$8,500,000	\$8,600,000		1.01		X	X	X
Hillicroft	Grade Separation	Glidden	\$16,500,000					X	X	X
Haviland	Crossing Closure	Glidden	\$100,000	\$9,420,000		0.57		X	X	X
Kirby	Grade Separation	Glidden	\$13,600,000	\$400,000		0.03				X
Kirkwood	Grade Separation	Glidden	\$15,400,000	\$45,600,000		2.96		X	X	X
S Wayside	Grade Separation	Glidden	\$14,600,000	\$2,400,000		0.16				X
Telephone	Grade Separation	Glidden	\$16,600,000	\$1,300,000		0.08				X

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								X	X	attainment
Fourth	Crossing Closure	Glidden	\$100,000					X	X	X
Fifth	Crossing Closure	Glidden	\$100,000					X	X	X
Sixth	Crossing Closure	Glidden	\$100,000					X	X	X
Eighth	Crossing Closure	Glidden	\$100,000					X	X	X
Evergreen	Crossing Closure	Glidden	\$100,000							X
Richwood	Crossing Closure	Glidden	\$100,000							X
FM 1960	Grade Separation	Houston (BNSF)	\$10,000,000	\$1,200,000		0.12				X
Heather Row	Crossing Closure	Lafayette	\$100,000					X	X	X
FM 2978	Grade Separation	Navasota	\$11,600,000	\$14,550,000		1.24	-----			X
Stanolind	Crossing Closure	Navasota	\$100,000							X
Kuykendahl	Grade Separation	Navasota	\$14,400,000	\$29,700,000		2.06				X
Steubner/ Airline	Grade Separation	Navasota	\$ 5,400,000	\$670,000		0.13				X
Richey	Grade Separation	Palestine	\$17,900,000	\$9,600,000		0.54				X
Caroline	Crossing Closure	Palestine	\$100,000							X
E Noble	Crossing Closure	Palestine	\$100,000							X
Main	Crossing Closure	Palestine	\$100,000							X
W Hardy	Crossing Closure	Palestine	\$100,000							X
Federal	Grade Separation	PTRA	\$7,200,000	\$6,500,000		0.90				X
Lyons	Grade Separation	Strang	\$5,600,000	\$510,000		0.09				X
Market	Grade Separation	Strang	\$5,200,000	\$1,500,000		0.29				X
Wallisville	Grade Separation	Strang	\$7,700,000	\$1,100,000		0.14				X
Fennell	Crossing Closure	Strang	\$100,000							X
Frio	Crossing Closure	Strang	\$100,000							X
Ivy	Crossing Closure	Strang	\$100,000							X
Medina	Crossing Closure	Strang	\$100,000							X
Old Underwood	Crossing Closure	Strang	\$100,000	\$6,400,000		64.00				X
Shabbona	Crossing Closure	Strang	\$100,000							X
Bellaire	Grade Separation	Terminal	\$9,300,000	\$14,800,000		1.59	QZ	X		X
Houston	Grade Separation	Terminal	\$9,100,000	\$28,600,000		3.14	QZ	X		X
Richmond	Grade Separation	Terminal	\$9,300,000	\$20,100,000		2.16	QZ	X		X
San Jacinto Street	Grade Separation	Terminal	\$36,900,000	Proposed Road		Proposed Road	schematic complete	X	X	X
San Felipe	Grade Separation	Terminal	\$7,200,000	\$23,300,000		3.24	QZ	X		X
Shepherd/ Durham	Grade Separation	Terminal	\$15,200,000	\$76,300,000		5.02		X		X
TC Jester	Grade Separation	Terminal	\$6,400,000	\$6,300,000		0.98	QZ	X		X
Westheimer	Grade Separation	Terminal	\$8,200,000	\$19,100,000		2.33	QZ	X		X
Bonner	Crossing Closure	Terminal	\$100,000					X		X
Parker	Crossing Closure	Terminal	\$100,000					X		X
Roy	Crossing Closure	Terminal	\$100,000					X		X
Thompson	Crossing Closure	Terminal	\$100,000					X		X
Bringhurst	Crossing Closure and Pedestrian Bridge	Terminal	\$1,500,000	\$1,000,000		0.67		X	X	X
Burnett	Crossing Closure	Terminal	\$100,000					X		X
Colorado	Crossing Closure	Terminal	\$100,000	\$400,000		4.00		X		X
Henderson	Crossing Closure	Terminal	\$100,000					X		X
Johnson	Crossing Closure	Terminal	\$100,000	\$180,000		1.80		X		X
Sabine	Crossing Closure	Terminal	\$100,000					X		X
Liberty	Crossing Closure	Terminal	\$100,000	\$400,000		4.00		X	X	X
Gregg	Crossing Closure	Terminal	\$100,000	\$18,000,000		180.00		X	X	X

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								X	Rail	attainment
Hailey	Crossing Closure	Terminal	\$100,000	\$1,000,000		10.00		X		X
Sherwin	Crossing Closure	Terminal	\$100,000	\$360,000		3.60		X		X
West	Crossing Closure and Pedestrian Bridge	Terminal	\$1,500,000				Hardy Toll Road	X	X	X
Collingsworth	Grade Separation	West Belt	\$3,700,000				Hardy Toll Road			X
Quitman	Grade Separation	West Belt	\$5,700,000		\$71,400,000	6.32	Part of Hardy Toll Road extension project - overpass planned for after project			X
Brooks	Crossing Closure	West Belt	\$100,000				With Quitman/ Lorraine			X
Lee	Crossing Closure	West Belt	\$100,000				With Quitman/ Lorraine			X
Lorraine	Grade Separation	West Belt	\$100,000				Design complete - part of Hardy Toll Road project with Quitman/ Lorraine			X
Semmes	Crossing Closure	West Belt	\$100,000							X
Leeland	Grade Separation	West Belt	\$7,100,000	\$17,100,000		2.38	-----			X
Cullen	Crossing Closure	West Belt	\$100,000							X
Lyons	Grade Separation	West Belt	\$6,800,000	\$330,000		0.05				X
Navigation/ Commerce Canal	Grade Separation Crossing Closure	West Belt	\$25,200,000 \$100,000							X
Hutchins	Crossing Closure	West Belt	\$100,000	\$75,300,000		2.80	-----			X
Runnels	Crossing Closure and Pedestrian Bridge	West Belt	\$1,500,000							X
Scott - York	Grade Separation	West Belt	\$9,100,000	\$55,100,000		6.05				X
Opelousas	Crossing Closure	West Belt	\$100,000							X
Caplin	Crossing Closure	West Belt	\$100,000	\$1,300,000		13.00				X
McKinney	Crossing Closure	West Belt	\$100,000							X
Milby	Crossing Closure	West Belt	\$100,000	\$9,600,000		96.00				X
Nance	Crossing Closure	West Belt	\$100,000	\$1,700,000		17.00				X
Second Main, Bridge 16	Rail	East Belt	\$10,200,000				schematic complete			X
Expand Settegast Yard	Rail	East Belt	\$6,700,000	\$77,400,000	\$51,900,000	1.33	30% design complete			X
Second Main, Galena Jct to Manchester Jct	Rail	PTRA	\$41,300,000							X
Second Main, Sinco Jct to Deer Park Jct	Rail	PTRA	\$29,700,000				completed			X
Extend Switching Lead through North Shore Jct	Rail	PTRA	\$9,000,000							X

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-			
								Rail	Rail	attainment			
Second Main, Bridge 16	Rail	East Belt	\$10,200,000	\$103,900,000	\$77,400,000	0.50				X			
Expand Settegast Yard	Rail	East Belt	\$6,700,000							X			
Second Main, Galena Jct to Manchester Jct	Rail	PTRA	\$41,300,000							X			
Second Main, Sinco Jct to Deer Park Jct	Rail	PTRA	\$29,700,000							X			
Extend Switching Lead through North Shore Jct	Rail	PTRA	\$9,000,000							X			
Second Main, Rosenberg to West Jct	Rail	Glidden	\$145,200,000					X	X	X			
Second Main, Dawes to Sheldon	Rail	Lafayette	\$42,705,000					X	X	X			
Expand Englewood Yard	Rail	Terminal	\$10,700,000					X	X	X			
Extend two main tracks through Belt jct	Rail	West Belt	\$11,700,000							X			
Remove Hold Restrictions (Twr 26 to Cullen Blvd)	Rail	West Belt	\$53,000,000							X			
Second Main, Bridge 16	Rail	East Belt	\$10,200,000	\$671,900,000	-\$66,800,000	0.53	schematic complete			X			
Expand Settegast Yard	Rail	East Belt	\$6,700,000							X			
Second Main, Galena Jct to Manchester Jct	Rail	PTRA	\$41,300,000							X			
Second Main, Sinco Jct to Deer Park Jct	Rail	PTRA	\$29,700,000							X			
Extend Switching Lead through North Shore Jct	Rail	PTRA	\$9,000,000							X			
Second Main, Dawes to Sheldon	Rail	Lafayette	\$42,700,000					X	X	X			
Expand Englewood Yard	Rail	Terminal	\$10,700,000					X	X	X			
Extend two main tracks through Belt jct	Rail	West Belt	\$11,700,000							X			
Remove Hold Restrictions (Twr 26 to Cullen Blvd)	Rail	West Belt	\$53,000,000							X			
Fort Bend Bypass Route	Rail	Fort Bend (New)	\$932,600,000							under re-investigation			X
Second Main, Bridge 16	Rail	East Belt	\$10,200,000	\$138,800,000	\$80,500,000	0.34				X			
Expand Settegast Yard	Rail	East Belt	\$6,700,000							X			
Second Main, Galena Jct to Manchester Jct	Rail	PTRA	\$41,300,000							X			
Second Main, Sinco Jct to Deer Park Jct	Rail	PTRA	\$29,700,000							X			
Extend Switching Lead through North Shore Jct	Rail	PTRA	\$9,000,000							X			
Second Main, Rosenberg to West Jct	Rail	Glidden	\$145,200,000					X	X	X			
Second Main, Dawes to Sheldon	Rail	Lafayette	\$42,700,000					X	X	X			
Expand Englewood Yard	Rail	Terminal	\$10,700,000					X	X	X			
Extend two main tracks through Belt jct	Rail	West Belt	\$11,700,000							X			
Remove Hold Restrictions (Twr 26 to Cullen Blvd)	Rail	West Belt	\$53,000,000							X			
Single Main, Dayton to Cleveland (Including 4 Grade Separations)	Rail	New	\$283,400,000							preliminary env in process			X
Second Main, Baytown to Dayton	Rail	Baytown	\$145,200,000										X
Second Main, Gulf Coast Jct to Settegast Jct	Rail	Beaumont	\$21,200,000								X	X	X
SE Wye at Tower 76	Rail	East Belt	\$3,000,000										X
Lengthen tracks at Pierce Yard	Rail	East Belt	\$15,900,000										X
Upgrade existing swingspan bridge	Rail	Freeport	\$15,900,000						X				
Add dedicated sidings for DOW Chemical	Rail	Freeport	\$9,500,000						X				
Add passing siding (10,000' length)	Rail	Freeport	\$9,100,000						X				
Upgrade track GH&H Jct to Twr30 & Wye at Tower 85	Rail	Galveston (UPRR)	\$5,300,000						X				

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Second Main, Rosenberg to Arcola	Rail	Galveston (BNSF)	\$184,400,000							X
Second Main, Sheldon to Dayton Jct	Rail	Lafayette	\$124,000,000					X	X	X
Second Main, Alvin to Tower 81	Rail	Mykawa	\$106,000,000							X
Replace Automotive Operations - Pearland Yd	Rail	Mykawa	\$21,200,000							X
Replace Intermodal Operations - Pearland Yd	Rail	Mykawa	\$79,500,000							X
Replace Carload switching facility - New South Yard	Rail	Mykawa	\$106,000,000							X
Second Main, Spring Jct to MP 14.20	Rail	Navasota	\$83,700,000							X
Siding Extensions at Lloyd Yard	Rail	Palestine	\$4,200,000							X
Third Main, Belt Jct to Spring Jct	Rail	Palestine	\$110,200,000							X
NE & NW Wyes at Arcola	Rail	Popp	\$4,200,000							X
Second Main, Arcola to Pierce Jct	Rail	Popp	\$89,000,000							X
Expand Pasadena Yard	Rail	PTRA	\$9,100,000							X
Wye at Tower 86	Rail	Strang	\$4,200,000							X
Seabrook Industrial Lead, Second Main	Rail	Strang	\$13,800,000				on POHA CIP			X
Second Main, Tower 30 to Sinco Jct	Rail	Strang	\$26,500,000							X
Second Main, Chaney Jct to Tower 26	Rail	Terminal	\$22,300,000					X	X	X
Replace intermodal operations at Settegast and Englewood	Rail	Terminal	\$106,000,000				land acquisition in progress			X
Third Main, Tower 81 to MP 235.01	Rail	West Belt	\$19,100,000							X

Lubbock

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
U.S. 70	Grade Separation	BNSF Hereford	\$6,000,000	\$4,100,000		0.68				
U.S. 70	Grade Separation	BNSF Slaton	\$9,300,000	\$1,800,000		0.19				
W 5th St	Crossing Closure	BNSF Slaton	\$100,000							
University Ave	Grade Separation	BNSF Slaton	\$15,800,000	\$2,600,000		0.16				
Ave M	Crossing Closure	BNSF Slaton	\$100,000	\$320,000		3.20				
Avenue P	Crossing Closure	BNSF Slaton	\$100,000	\$530,000		5.30				
E 3rd St	Crossing Closure	BNSF Plainview	\$100,000	\$16,300		0.16				
E 4th St	Crossing Closure	BNSF Plainview	\$100,000	\$144,000		1.44				
E 6th St	Crossing Closure	BNSF Plainview	\$100,000	\$310,000		3.10				
E 7th St	Crossing Closure	BNSF Plainview	\$100,000	\$15,300		0.15				

Lufkin

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Cox St	Crossing Closure	UP Lufkin	\$100,000	\$113,000		1.13				
Craven St	Crossing Closure	UP Lufkin	\$100,000	\$210,000		2.10				
Logansport St	Crossing Closure	BNSF Longview	\$100,000	\$110,000		1.10				
Railroad St	Crossing Closure	BNSF Longview	\$100,000	\$42,000		0.42				

Odessa

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Midkiff Rd	Grade Separation	UP Toyah	\$4,800,000	\$7,000,000		1.46				

Paris

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Gilmer St/ Oak Ave	Grade Separation	KCS Greenville	\$6,500,000	\$2,110,000		0.32	-----			
Jackson St	Crossing Closure	KCS Greenville	\$100,000							
S Broadway St	Crossing Closure	TNER	\$100,000	\$20,000		0.20				
S Main St	Crossing Closure	DGNO Dallas	\$100,000	\$54,000		0.54				
W Texas Street	Crossing Closure	BNSF Madill	\$100,000	\$50,000		0.50				

San Antonio

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed Rail	Non-attainment
Ashby	Grade Separation	Austin ML -1	\$5,500,000					X	X	
Culebra/ Fredericksburg	Grade Separation	Austin ML -1	\$13,500,000					X	X	
Hickman St	Crossing Closure	Austin ML-1	\$100,000	\$29,810,000		1.54		X	X	
Laurel St	Crossing Closure	Austin ML-1	\$100,000					X	X	
Lombrano St	Crossing Closure	Austin ML-1	\$100,000					X	X	
Basse Rd	Grade Separation	Austin ML -1	\$7,200,000	\$21,400,000		2.97		X	X	
Broadway & Bitters	Grade Separation	Austin ML -1	\$24,900,000	\$28,600,000		1.15		X	X	
Classen Rd	Grade Separation	Austin ML -1	\$6,200,000	\$10,300,000		1.66		X	X	
FM 2252	Grade Separation	Austin ML -1	\$5,700,000	\$14,400,000		2.53		X	X	
FM 3009	Grade Separation	Austin ML -1 & 2	\$14,100,000	\$1,450,000		0.10	TxDOT TIP	X	X	
FM 306	Grade Separation	Austin ML -1	\$6,700,000	\$17,700,000		2.64	TxDOT TIP	X	X	

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non- attainment
								Rail	Rail	
Hildebrand Ave	Grade Separation	Austin ML -1	\$9,900,000	\$24,800,000		2.51		X	X	
Jones Maltsberger	Grade Separation	Austin ML -1	\$12,000,000	\$18,400,000		1.53		X	X	
Judson Rd	Grade Separation	Austin ML -1	\$4,400,000	\$10,200,000		2.32		X	X	
Laredo St.	Grade Separation	Austin ML -1	\$8,100,000	\$8,800,000		1.09		X	X	
Martin St	Grade Separation	Austin ML -1	\$18,800,000	\$11,400,000		0.61		X	X	
McCullough Ave	Grade Separation	Austin ML -1	\$6,700,000					X	X	
Main Ave (Zilla)	Crossing Closure	Austin ML-1	\$100,000	\$12,210,000		1.80		X	X	
Oconnor Rd	Grade Separation	Austin ML -1	\$6,700,000	\$23,500,000		3.51		X	X	
Poplar St	Grade Separation	Austin ML -1	\$6,800,000					X	X	
Ruiz St	Grade Separation	Austin ML -1	\$21,200,000					X	X	
Arbor	Crossing Closure	Austin ML-1	\$100,000	\$12,470,000		0.44		X	X	
Delgado St	Crossing Closure	Austin ML-1	\$100,000					X	X	
Rivas St	Crossing Closure	Austin ML-1	\$100,000					X	X	
San Antonio St	Grade Separation	Austin ML -1	\$12,900,000	\$7,800,000		0.60		X	X	
Sunset Rd	Grade Separation	Austin ML -1	\$8,800,000	\$13,000,000		1.48		X	X	
Thousand Oaks Dr	Grade Separation	Austin ML -1	\$13,200,000	\$26,400,000		2.00		X	X	
Woodlawn	Grade Separation	Austin ML -1	\$5,000,000					X	X	
Craig	Crossing Closure	Austin ML-1	\$100,000					X	X	
Magnolia	Crossing Closure	Austin ML-1	\$100,000	\$8,760,000		1.62		X	X	
Mistletoe	Crossing Closure	Austin ML-1	\$100,000					X	X	
Russell	Crossing Closure	Austin ML-1	\$100,000					X	X	
Binz Engleman Rd	Grade Separation	Austin ML -2	\$5,200,000	\$2,800,000		0.54		X	X	
Eisenhauer	Grade Separation	Austin ML -2	\$31,500,000					X	X	
Rittiman	Grade Separation	Austin ML -2	\$35,700,000					X	X	
Fairdale	Crossing Closure	Austin ML - 2	\$100,000	\$20,120,000		0.30		X	X	
Lanark	Crossing Closure	Austin ML - 2	\$100,000					X	X	
FM 306	Grade Separation	Austin ML -2	\$6,700,000	\$14,300,000		2.13	TxDOT TIP	X	X	
Houston St	Grade Separation	Austin ML -2	\$10,600,000	\$3,900,000		0.37		X	X	
I-35 Frontage Rd	Grade Separation	Austin ML -2	\$29,000,000	\$19,700,000		0.68		X	X	
Leonhardt Rd	Grade Separation	Austin ML -2	\$6,000,000	\$2,200,000		0.37		X	X	
S. Presa St	Grade Separation	Austin ML -2	\$8,400,000	\$3,200,000		0.38		X	X	
Toepperwein Rd	Grade Separation	Austin ML -2	\$9,700,000	\$2,300,000		0.24		X	X	
Walzem Rd	Grade Separation	Austin ML -2	\$33,000,000					X	X	
Fratt Rd	Crossing Closure	Austin ML - 2	\$100,000	\$13,000,000		0.39		X	X	
2nd Street	Grade Separation	Corpus Christi	\$8,700,000	\$5,700,000		0.66				
Bensdale Dr	Grade Separation	Corpus Christi	\$5,200,000	\$3,000,000		0.58				
Gillette	Grade Separation	Corpus Christi	\$5,800,000							
Petaluma	Crossing Closure	Corpus Christi	\$100,000	\$2,770,000		0.47				
W Malone	Grade Separation	Corpus Christi & Laredo	\$10,400,000	\$9,800,000		0.94				
Nogalitos	Grade Separation	Corpus Christi	\$9,000,000	\$3,000,000		0.33				
1604	Grade Separation	Corpus Christi	\$5,200,000	\$2,000,000		0.38				
Somerset/ Southcross	Grade Separation	Corpus Christi	\$16,400,000	\$6,000,000		0.37				
SW Military	Grade Separation	Corpus Christi	\$9,500,000	\$7,800,000						
Mayfield Ave	Crossing Closure	Corpus Christi	\$100,000	NA		0.82				
Villaret	Grade Separation	Corpus Christi	\$5,700,000	\$1,950,000		0.34				
Avenue M	Grade Separation	Del Rio	\$7,800,000	\$4,400,000				X		
Avenue I	Crossing Closure	Del Rio	\$100,000	NA				X		
Avenue K	Crossing Closure	Del Rio	\$100,000	\$430,000		0.67		X		
Avenue P	Crossing Closure	Del Rio	\$100,000	\$630,000				X		

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-	attainment
								X	Rail		
Avenue U	Grade Separation	Del Rio	\$7,700,000	\$2,700,000				X			
Avenue Y	Crossing Closure	Del Rio	\$100,000	NA		0.35		X			
Ceralvo/Zarzamora	Grade Separation	Del Rio	\$18,100,000					X			
Brady Blvd	Crossing Closure	Del Rio	\$100,000	\$12,820,000		0.70		X			
Merida St	Crossing Closure	Del Rio	\$100,000					X			
E. Commerce St	Grade Separation	Del Rio	\$12,600,000					X			
E. Houston St	Grade Separation	Del Rio	\$7,000,000	\$104,530,000		5.28		X			
Center St	Crossing Closure	Del Rio	\$100,000					X			
Crockett St	Crossing Closure	Del Rio	\$100,000					X			
Flores St	Grade Separation	Del Rio	\$8,000,000	\$31,880,000		3.94		X			
Ellis Bean St	Crossing Closure	Del Rio	\$100,000					X			
Florida St	Grade Separation	Del Rio	\$11,000,000					X			
Delaware St	Crossing Closure	Del Rio	\$100,000	\$8,540,000		0.76		X			
Indiana St	Crossing Closure	Del Rio	\$100,000					X			
FM 1343	Grade Separation	Del Rio	\$5,200,000	\$2,500,000		0.48		X			
FM 536/Probant	Grade Separation	Del Rio	\$7,900,000	\$23,300,000		2.95		X			
N. Pine St	Grade Separation	Del Rio	\$3,400,000	\$7,400,000		2.18		X			
Burleson St	Crossing Closure	Del Rio	\$100,000	NA				X			
Hackberry St	Crossing Closure	Del Rio	\$100,000	\$2,600,000		8.67		X			
Sherman St	Crossing Closure	Del Rio	\$100,000	NA				X			
S Presa St	Grade Separation	Del Rio	\$7,600,000	\$34,000,000		4.36		X			
Austin St	Grade Separation	Glidden	\$5,400,000	\$9,950,000		1.81		X	X		
Guadalupe St	Crossing Closure	Glidden	\$100,000					X	X		
FM 1103	Grade Separation	Glidden	\$11,500,000	\$6,100,000		0.53		X	X		
FM 3009	Grade Separation	Glidden	\$12,900,000	\$20,500,000		1.59		X	X		
Hwy 218/ Pat Booker	Grade Separation	Glidden	\$91,300,000	\$19,700,000		0.22		X	X		
Rittiman Rd	Grade Separation	Glidden	\$9,400,000	\$18,500,000		1.97		X	X		
Schertz Pkwy	Grade Separation	Glidden	\$10,800,000	\$5,000,000		0.46		X	X		
Toepperwein Rd	Grade Separation	Glidden	\$18,200,000	\$7,700,000		0.42		X	X		
Walzem Rd	Grade Separation	Glidden	\$9,100,000	\$18,200,000		2.00		X	X		
Brazos St	Grade Separation	Laredo	\$16,500,000	\$9,800,000		0.59					
Comal St	Grade Separation	Laredo	\$9,600,000								
Frio St	Crossing Closure	Laredo	\$100,000	\$4,530,000		0.46					
Medina St	Crossing Closure	Laredo	\$100,000								
CR 4201	Grade Separation	Laredo	\$20,900,000	\$4,800,000		0.23					
FM 2790/Lytle	Grade Separation	Laredo	\$10,400,000	\$1,400,000		0.13					
FM 471	Grade Separation	Laredo	\$7,900,000	\$1,020,000		0.13					
SH 173	Grade Separation	Laredo	\$13,600,000	\$3,000,000		0.22					
Zarzamora St	Grade Separation	Laredo	\$15,700,000	\$46,800,000		2.96					
Harriman Pl	Crossing Closure	Laredo	\$100,000								
Bridge St	Crossing Closure	Austin ML-1	\$100,000	NA		NA		X	X		
Castell St	Crossing Closure	Austin ML-1	\$100,000	\$370,000		3.70		X	X		
Coll St	Crossing Closure	Austin ML-1	\$100,000	NA		NA		X	X		
Comal Ave	Crossing Closure	Austin ML-1	\$100,000	\$370,000		3.70		X	X		
Commerce St	Crossing Closure	Austin ML-1	\$100,000	\$9,900,000		99.00		X	X		
Dora St	Crossing Closure	Austin ML-1	\$100,000	NA		NA		X	X		
Elm St	Crossing Closure	Austin ML-1	\$100,000	\$370,000		3.70		X	X		
Elsmere	Crossing Closure	Austin ML-1	\$100,000	\$300,000		3.00		X	X		
Hollywood Ave.	Crossing Closure	Austin ML-1	\$100,000	\$480,000		4.80		X	X		

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non- attainment
								Rail	Rail	
Jahn St	Crossing Closure	Austin ML-1	\$100,000	\$520,000		5.20		X	X	
Kings Hwy	Crossing Closure	Austin ML-1	\$100,000	\$480,000		4.80		X	X	
Mill St	Crossing Closure	Austin ML-1	\$100,000	NA		NA		X	X	
Perez St	Crossing Closure	Austin ML-1	\$100,000	NA		NA		X	X	
Russell	Crossing Closure	Austin ML-1	\$100,000	\$340,000		3.40		X	X	
Summit Ave	Crossing Closure	Austin ML-1	\$100,000	\$340,000		3.40		X	X	
Tampico St	Crossing Closure	Austin ML-1	\$100,000	\$340,000		3.40		X	X	
Hoefgen Ave	Crossing Closure	Austin ML - 2	\$100,000	\$510,000		5.10		X	X	
Hutchins	Crossing Closure	Corpus Christi	\$100,000	NA		NA				
Burnet St	Crossing Closure	Del Rio	\$100,000	\$2,800,000		28.00		X	X	
Carolina St	Crossing Closure	Del Rio	\$100,000	\$11,100,000		111.00		X	X	
Dawson St	Crossing Closure	Del Rio	\$100,000	\$1,300,000		13.00		X	X	
Hoefgen Ave	Crossing Closure	Del Rio	\$100,000	\$2,600,000		26.00		X	X	
Iowa St	Crossing Closure	Del Rio	\$100,000	\$1,100,000		11.00		X	X	
Roosevelt Ave	Crossing Closure	Del Rio	\$100,000	\$22,600,000		226.00		X	X	
Virginia Blvd	Crossing Closure	Del Rio	\$100,000	\$1,100,000		11.00		X	X	
Randolphe Rd	Crossing Closure	Glidden	\$100,000	NA		NA		X	X	
Benton St	Crossing Closure	Laredo	\$100,000	NA		NA				
Coker	Crossing Closure	Laredo	\$100,000	NA		NA				
College	Crossing Closure	Laredo	\$100,000	NA		NA				
Drake Ave	Crossing Closure	Laredo	\$100,000	NA		NA				
Galbreath	Crossing Closure	Laredo	\$100,000	NA		NA				
Somers St	Crossing Closure	Laredo	\$100,000	NA		NA				
Construct second mainline Alamo Jct. to Withers Jct.	Rail	Del Rio	\$6,700,000					X	X	
Construct new Laredo Subdivision mainline track approximately 1.0 miles from SoSan Yard west to Heafer Junction	Rail	Laredo	\$2,800,000		\$700,000	0.07				
Construct second mainline Alamo Jct. to Withers Jct.	Rail	Del Rio	\$6,700,000					X	X	
Construct new Laredo Subdivision mainline track approximately 1.0 miles from SoSan Yard west to Heafer Junction	Rail	Laredo	\$2,800,000							
Construct a second mainline and switches on the Del Rio Subdivision between East Yard and Kirby Yard milepost 203.5 to 201.4	Rail	Del Rio	\$6,600,000		\$15,100,000	0.71		X	X	
Construct a 9000' siding track and switches next to the Corpus Christi Subdivision near the lead track to the Toyota Facility	Rail	Corpus Christi	\$5,100,000							

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-	
								Rail	Rail	attainment	
Construct second mainline Alamo Jct. to Withers Jct.	Rail	Del Rio	\$6,700,000		\$16,800,000	0.65		X	X		
Construct new Laredo Subdivision mainline track approximately 1.0 miles from SoSan Yard west to Heafer Junction	Rail	Laredo	\$2,800,000								
Construct a second mainline and switches on the Del Rio Subdivision between East Yard and Kirby Yard milepost 203.5 to 201.4	Rail	Del Rio	\$6,600,000					X	X		
Construct a 9000' siding and switches adjacent to the Corpus Christi Subdivision near the lead track to the Toyota Facility	Rail	Corpus Christi	\$5,100,000								
Extend the new second mainline of the Del Rio Subdivision at milepost 201.40 approximately 1.0 miles north to "Seven States Corporate Park"	Rail	Del Rio to Glidden	\$3,400,000					X	X		
Construct new switches on the Del Rio Subdivision in the vicinity of Quintana Road for a proposed connection into the north end of SoSan Yard	Rail	Del Rio	\$1,320,000					X	X		
Construct second mainline Alamo Jct. to Withers Jct.	Rail	Del Rio	\$6,700,000		\$15,600,000	0.45		X	X		
Construct new Laredo Subdivision mainline track approximately 1.0 miles from SoSan Yard west to Heafer Junction	Rail	Laredo	\$2,800,000								
Construct a second mainline and switches on the Del Rio Subdivision between East Yard and Kirby Yard milepost 203.5 to 201.4	Rail	Del Rio	\$6,600,000					X	X		
Construct a 9000' siding and switches adjacent to the Corpus Christi Subdivision near the lead track to the Toyota Facility	Rail	Corpus Christi	\$5,100,000								
Extend the new second mainline of the Del Rio Subdivision at milepost 201.40 approximately 1.0 miles north to "Seven States Corporate Park"	Rail	Del Rio to Glidden	\$3,400,000					X	X		
Construct new switches on the Del Rio Subdivision in the vicinity of Quintana Road for a proposed connection into the north end of SoSan Yard	Rail	Del Rio	\$1,320,000					X	X		
Extend and connect both North Loop and Adams sidings (Austin ML-1) to create a 3.74 mile long passing siding	Rail	Austin ML-1	\$4,100,000					X	X		
Upgrade and extend Converse storage track East of Kirby Yard) to a 2 mile long siding	Rail	Glidden	\$5,000,000					X	X		
Construct one new connection track between Austin ML1 and Lockhart Subdivisions in San Marcos.	Rail	Lockhart to Austin ML-1	\$900,000				X	X			
Extend the new Mauermann Siding north and south as a second mainline to SoSan Yard	Rail	Corpus Christi	\$25,700,000								

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20- year Public Benefit	Estimated 20- year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Rail	Non-
								X	X		attainment
Construct new connections in the northeast and northwest quadrants of the Austin ML-1 and Del Rio Subdivision diamond south of San Fernando Yard and Apache Jct.	Rail	Austin ML-1 to Del Rio	\$3,100,000					X	X		
Extend and connect Fratt and Remount Auto Facility sidings to join Austin ML-2	Rail	Austin ML-2	\$6,300,000					X	X		
Extend Hestes and Hutto sidings (Austin ML 1, south of Taylor) to just over 2 miles in length	Rail	Austin ML-1	\$5,100,000					X	X		
Extend Landas Park siding (Austin ML-1) to a length of 2.9 miles	Rail	Austin ML-1	\$6,200,000					X	X		
Upgrade/extend Pearsall storage track (Laredo Sub.) to a 2.9 mile siding	Rail	Laredo	\$6,100,000								
Install full CTC between Taylor, Smithville, and San Marcos	Rail	Lockhart to Waco	\$22,100,000								
Siding upgrades between Round Rock and San Antonio to provide sufficient locations for train meets (7 locations)	Rail	Austin ML-1	\$8,800,000					X	X		
Upgrade Austin ML-1 sidings to CTC at Adams, Landas Park, Texas Lehigh, Buda, Austin, McNeil and White Lime	Rail	Austin ML-1	\$900,000				McNeil extension scheduled	X	X		
Construct an additional Del Rio Sub-division main track west and adjacent to the Del Rio Subdivision to Macdona	Rail	Del Rio	\$6,200,000					X	X		
Construct one new siding west of Lockhart	Rail	Lockhart	\$5,100,000								
Upgrades to Lockhart (curve modifications and line swings)	Rail	Lockhart	\$10,300,000								
Construct 3 new sidings between Lockhart and Smithville	Rail	Lockhart	\$15,400,000								
Construct 2 new sidings between Smithville and Phelan	Rail	Waco	\$9,800,000								
Upgrades to Phelan (curve modifications and line swings)	Rail	Waco	\$4,300,000								
Construct one new siding between Phelan and Elgin	Rail	Waco	\$5,100,000								
Upgrades to Elgin by Extending Siding (consider 12.3 mile line change)	Rail	Waco	\$1,600,000								
Construct one new siding between Elgin and Taylor	Rail	Waco	\$5,100,000								
Construct a new connection at Taylor between the between the Waco and Austin Subdivisions (consider bypass route)	Rail	Waco to Austin ML-1	\$1,400,000					X	X		

Tyler

Improvement/ Description	Improvement Type	Railroad Subdivision	Estimated Cost (no right-of-way)	Estimated 20-year Public Benefit	Estimated 20-year Private Benefit	Ratio: Benefit/Cost	Comments/ Status	Passenger	High-speed	Non-
								Rail	Rail	attainment
4th St	Grade Separation	UP Dallas	\$5,100,000	\$3,000,000		0.59				
N Palace Ave	Grade Separation	UP Corsicana	\$4,200,000	\$1,100,000		0.26				
U.S. 69	Grade Separation	UP Dallas	\$9,700,000	\$5,900,000		0.60				
S Longview St	Crossing Closure	UP Palestine	\$100,000							
Stone St	Crossing Closure	UP Dallas	\$100,000	\$200,000		2.00				

Note: Cost estimates are subject to change and have not been verified by freight railroads.

Appendix 7B: Funded Improvements

Proposed Letting	District	County	CSJ	Amount	Funding	PSE	ENV	STIP?	Project Description	Comments
April 2011	Brownwood, San Angelo	Coleman, Runnels, Tom Green	7107-09-003, etc	\$6,040,000	State, Local	August 2010	September 2009	Yes	Rehabilitation and/or repairs to other bridge and drainage structures on the South Orient rail line	Project under development. Bridges & structures being inspected for defects in February/March 2010. PSE will be developed to make any necessary repairs; TxDOT facility.
July 2011	Brownwood	Coleman, Runnels, Tom Green	7123-11-005	\$2,000,000	Unfunded	4 months	3 months	No	Extend siding at San Angelo Junction (near Coleman) and construct additional interchange track at San Angelo Junction	Reduces congestion at interchange point on TxDOT owned facility
August 2011	San Angelo, Odessa	Tom Green, Irion, Reagan, Upton, Crane, Crockett, Pecos	7107-09-002, etc.	\$25,500,000	See comments	95%	March 2009	Yes	Replace 171,181 crossties; Replace 171,856 linear feet of defective rail; Replace 12 track turnouts; Install 101,000 tons of ballast; Surface (set alignment & profile) to specifications 167 miles; Rehabilitate 20 at-grade roadway-rail crossings	Project currently has \$190,000 in local funds, and \$1,000,000 federal appropriation in 2010 Omnibus Act pending clearance by FRA; TxDOT facility, Will let a reduced project (approx 1.5 million) in August 2011
	Fort Worth	Tarrant	TBD	\$91,200,000	Federal, Railroads, State, Local	90%	4 months	No	Tower 55 Multimodal Improvement Project to implement a third north-south rail line, improve trackage, improve signals, and close grade crossings.	\$51.2 million will be provided by railroads under a joint commitment of BNSF and UP.
Total				\$124,740,000						

Appendix 7C: Approved Rail Grade Separation (through FY 2016)

Let Year	County	District	Railroad	DOT Number	Exact CSJ	Cost (millions of dollars)	Let Date	Project Type	Highway
FY 2010	Cameron	21	UP	Various	0921-06-073 0921-06-233	13.0	Oct 10	Track Relocation	Brownsville West Rail Relocation
FY 2010	Cass	19	UP	924170X	3195-01-010	3.9	Feb 10	New Overpass	FM 3129
FY 2010	Bell	9	BNSF	023182D	0320-06-004	7.99	Jun 10	New Overpass	NW LP 363
FY 2011	Liberty	20	UP	922571R	1685-04-017	6.62	Sept 10	New Overpass	FM 1960
FY 2011	Gregg	10	UP	924346F	1763-03-029	13.3	Aug 11	New Overpass	Loop 281
FY 2012	Angelina	11	UP	755826A	2553-01-094	3.2	June 12	Underpass mod.	North Loop 287
FY 2012	Angelina	11	UP	755827G	0176-02-090	7.33	June 12	Replace Underpass w/ Overpass	US 59 @ Railroad Ave
FY 2012	Comal	15	UP	447703P	1728-02-050	10.8 (Total 15.0)	Aug 12	New Overpass	FM 306 near Common Road
FY 2012	Comal	15	UP	415536E	1728-02-049	7.2 (Total 10.0)	Aug 12	New Overpass	FM 306 near Hunter Road
FY 2013	Hays	14	UP	447677C	0016-09-033	25.0 (Total 32.54)	Jan 13	New Overpass	Loop 82 in San Marcus
FY 2014	Maverick	22	UP	924238J	1229-01-042	8.26	May 12	New Overpass	FM 1021 in Eagle Pass
FY 2014	Hall	25	BNSF	TBA	0844-05-008	4.79	Oct 13	New Overpass	FM 1547 @ US 287
FY 2014	Angelina	11	ANR	847117A	0176-02-094	5.32	July 14	Underpass	BU 59-G @ A&NR RR
FY 2015	Fort Bend	12	UP	743717M	0543-02-055	25.0 (Total 31.7)	Sept 14	Overpass	FM 359 @ US 90A in Richmond
FY 2015	Denton	18	UP	795342V	0353-02-053	2.58	June 60	Underpass	BS 114-K
FY 2015	Montague	3	UP	598431V	0044-04-044	7.02	April 15	Underpass	US 82
FY 2016	Tarrant	2	UP	789545L	0094-01-033	6.13	June 60	Underpass	SH 183
FY 2016	Tarrant	2	UP	275248W	0094-01-032	6.38	June 60	Underpass	SH 183
FY 2016	Anderson	10	UP	426588C	0206-09-005	3.95	Mar 60	Underpass	FM 2574
FY 2016	Burleson	17	UP	765346R	0713-01-027	5.5	June 60	Underpass	FM 60 in Deanville