

The Texas Rural Transportation Plan

Component of the Statewide Long-Range Transportation Plan

Volume 1

Adopted by Texas Transportation Commission Action June 28, 2012



Texas Department of Transportation
Transportation Planning and Programming Division

The preparation of this report has been financed in part through grant(s) from the Federal Highway Administration and the U.S. Department of Transportation, under the State Planning and Research (SPR) Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official view or policy of the U.S. Department of Transportation.

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Contents

	Page
List of Figures.....	v
List of Tables.....	vi
Acronyms and Abbreviations	vii
Executive Summary	ES-1
1.0 INTRODUCTION	1
1.1 WHAT IS THE TEXAS RURAL TRANSPORTATION PLAN?.....	1
1.2 WHY WAS THE TEXAS RURAL TRANSPORTATION PLAN DEVELOPED?	1
1.3 THE RELATIONSHIP BETWEEN THE TRTP AND SLRTP GOALS.....	4
1.4 HOW WAS THE TRTP DEVELOPED?.....	6
1.5 HOW WILL THE TRTP BE USED?	7
1.6 WHEN WILL THE TRTP BE UPDATED?	8
1.7 RURAL TRANSPORTATION FUNDING SOURCES	8
2.0 CURRENT CONDITIONS, NEEDS AND PLANNED IMPROVEMENTS	11
2.1 INTRODUCTION	11
2.2 NOTABLE TRENDS IN RURAL TRANSPORTATION.....	11
2.2.1 Aging Population.....	11
2.2.2 Gas and Oil Production.....	13
2.2.3 Challenges Facing Rural Public Transportation	13
2.3 NEEDS – HIGHWAYS.....	15
2.4 PLANNED IMPROVEMENTS – HIGHWAYS	19
2.5 NEEDS – NON-HIGHWAY MODES	23
2.5.1 Bicycles and Pedestrians.....	23
2.5.2 General Aviation.....	25
2.5.3 Inland Waterways.....	30
2.5.4 Freight Rail	30
2.5.5 Passenger Rail.....	32
2.5.6 Rural Transit.....	32
2.5.7 Intercity Bus.....	37
2.6 PLANNED IMPROVEMENTS – NON-HIGHWAY MODES.....	40
2.6.1 Bicycles and Pedestrians	40
2.6.2 General Aviation.....	40
2.6.3 Inland Waterways.....	42
2.6.4 Rural Freight Rail Development.....	42
2.6.5 Passenger Rail Planning.....	42
2.6.6 Rural Transit Capital Projects	43
2.6.7 Intercity Bus Projects.....	43



Contents, cont'd.

	Page
3.0 ECONOMIC IMPACT	45
3.1 INTRODUCTION	45
3.2 ECONOMIC IMPACT DURING CONSTRUCTION	45
3.3 ECONOMIC IMPACT FOLLOWING CONSTRUCTION.....	46
3.4 CALCULATION OF ECONOMIC IMPACTS	46
3.5 TRADITIONAL BENEFIT-COST ANALYSIS	47
4.0 STAKEHOLDER AND PUBLIC OUTREACH	49
4.1 PURPOSE	49
4.2 THE PUBLIC OUTREACH PLAN.....	49
4.3 PUBLIC OUTREACH TOOLS	50
4.3.1 Newsletters.....	50
4.3.2 TRTP Webpage	51
4.3.3 Visualization Tools	51
4.3.4 Social Networking Tools.....	51
4.3.5 Toll Free Telephone Line	51
4.4 TRTP PUBLIC OUTREACH ACTIVITY SCHEDULE	52
4.5 STAKEHOLDER MEETINGS.....	52
4.5.1 Stakeholder Meetings - Round 1	52
4.5.2 Stakeholder Meetings - Round 2	58
4.5.3 Stakeholder Event – Round 3.....	59
4.6 PUBLIC MEETINGS	59
4.7 PUBLIC HEARING	61
4.8 COMMENTS.....	61
5.0 CONCLUSIONS	67
5.1 SLRTP STRATEGIES AND RECOMMENDATIONS	67
5.2 FUNDING OUTLOOK.....	68
5.3 NEXT UPDATE.....	68



Contents, cont'd.

Figures

	Page
Figure 1-1: TRTP Study Area	2
Figure 1-2: Freight Supply Chain	3
Figure 2-1: Percent of Population 65 Years and Older.....	12
Figure 2-2: Oil and Gas Wells-Eagle Ford Shale.....	14
Figure 2-3: Rural Highway Deficiency Assessment.....	17
Figure 2-4: Ranked Projects	21
Figure 2-5: Texas Business/Corporate Airports.....	26
Figure 2-6: Texas Community Service Airports	27
Figure 2-7: Texas Basic Service Airports and Heliports	29
Figure 2-8: Intercity Bus Service in 2010	39
Figure 4-1: Public Outreach Activities and Dates	52
Figure 4-2: Round 1 Stakeholder Meeting.....	53
Figure 4-3: Questionnaire	54
Figure 4-4: Results.....	55
Figure 4-5: Red River: Navigable (left) and Non-navigable (right).....	59
Figure 4-6: Public Meeting Photo.....	60
Figure 4-7: Comments Received During Public Outreach Activities (% by Source)	62
Figure 4-8: Stakeholder Comments (% by Generalized Topic).....	62
Figure 4-9: Public Comments (% by Generalized Topic)	63



Contents, cont'd.

Tables

	Page
Table 2-1: Investment Summary for Rural Capacity Needs	15
Table 2-2: Proposed New Community Service Airports	29
Table 2-3: Statewide Rural Transit Operating Characteristics and Funding Needs 2012 to 2035.....	34
Table 2-4: Statewide Rural Transit Capital Funding Needs 2012 to 2035	34
Table 2-5: Rural Transit Funding Needs 2012 to 2035 by TxDOT District.....	35
Table 2-6: Texas Intercity Bus Service	40
Table 4-1: Round 1 Stakeholder Meeting Dates and Attendance	53
Table 4-2: Stakeholder Webinar Dates.....	59
Table 4-3: Public Meeting Attendance	60

Appendices:

- A Summary of Project Ranking Method
- B Stakeholder and Public Outreach – Volume 2
- C Public Transportation Methodology and Results
- D Public Transportation Results by TxDOT District
- E Ranked Projects by TxDOT District



Acronyms and Abbreviations

AIP	Airport Improvement Program
ARRA	American Recovery and Reinvestment Act of 2009
BNSF	Burlington Northern Santa Fe Railway
CIP	Capital Improvement Program
EDCP	Economically Disadvantaged County Program
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTE	full-time equivalent
GC&SS	Gulf Colorado & San Saba Railway
HER	Hurricane Evacuation Route
I-45	Interstate 45
ICB	Intercity bus
IRP	Intermediary Relending Program
IRR	Indian Reservation Roads/Bridges Program
ITS	Intelligent Transportation Systems
LOS	Level of Service
mph	miles per hour
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
NCHRP	National Cooperative Highway Research Program
NETEX	Northeast Texas Rural Rail Transportation District rail line
NPIAS	National Plan of Integrated Airport Systems
PCE	Passenger Car Equivalent
PTN	Public Transportation Division
RBEG	Rural Business Enterprise Grant
RPO	Regional Planning Organization
RTD	Rural Transit District
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
SLRTP	Statewide Long Range Transportation Plan



SORR	South Orient Rail Road (aka South Orient rail line)
TASP	Texas Airport System Plan
TBA	Texas Bus Association
TIGER	Transportation Investment Generating Economic Recovery
TIGGER	Transit Investments for Greenhouse Gas and Energy Reduction
TRTP	Texas Rural Transportation Plan
TTA	Texas Transit Association
TTC	Texas Transportation Commission
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
UP	Union Pacific Corp.
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
UTP	Unified Transportation Program

Executive Summary

What is the Texas Rural Transportation Plan?

The Texas Rural Transportation Plan (TRTP) is the rural component of the Statewide Long Range Transportation Plan (SLRTP) 2035.¹ As part of the SLRTP, the TRTP is a blueprint for the planning process in the rural areas that will guide the collaborative efforts between the Texas Department of Transportation (TxDOT), local and regional decision-makers, and all transportation stakeholders to reach a consensus on needed transportation projects and services through 2035. It is a standalone document, fully consistent with the SLRTP.

The TRTP is a multi-modal transportation plan that includes the following modes:

- ★ Highways;
- ★ Non-Automobile/Non-highway modes;
 - Bicycles and Pedestrians;
 - General Aviation;
 - Inland Waterways;
 - Rail (freight and passenger); and
 - Public Transportation.

Why was the TRTP Developed?

Unlike urbanized areas where Metropolitan Planning Organizations (MPOs) are required by law to develop Metropolitan Transportation Plans (MTPs) that identify and prioritize future transportation projects within funding constraints, there is no equivalent requirement for rural areas. While the SLRTP included an overall assessment of rural transportation needs and a prioritization of Trunk System corridors (Chapter 5 of the SLRTP 2035), added capacity highway specific projects were not identified or ranked.

Rural transportation needs tend to be different than the transportation needs encountered in urbanized areas. As such, for the TRTP, “rural” is defined as any area outside of MPO boundaries. While the SLRTP identified capacity needs for many rural highways, capacity is usually not the primary issue as compared with urban areas. However, the impact of traffic growth in rural areas can create safety concerns. Stakeholders have overwhelmingly indicated that safe passing on rural highways is one of their top concerns, particularly given the intermittent high volume of truck traffic.

¹ See TxDOT website: https://www.txdot.gov/public_involvement/transportation_plan/report.htm



In addition to rural highway needs, the TRTP includes an analysis of rural transportation needs for non-automobile/non-highway modes. This provides for a more consistent approach to statewide multi-modal planning, and presents a more complete analysis of rural transportation for Texans.

The Relationship between the TRTP and SLRTP Goals

Goal-setting is an important early step in transportation planning. Goals help guide an organization in investing resources that are consistent with the entity's vision and mission. The SLRTP addressed six goals that were based on TxDOT's 2011–2015 Strategic Plan:²

1. Develop an organizational structure and strategies designed to address the future multi-modal transportation needs of all Texans;
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; and
6. Facilitate the development and exchange of comprehensive multi-modal transportation funding strategies with transportation program and project partners.

While all goals were considered, those related to mobility and connectivity (Goals 4 and 5) were used to analyze long-term added capacity highway projects in an objective manner in the TRTP.³

The TxDOT goals were recently updated as part of the new 2013–2017 Strategic Plan. These new goals are listed below, together with the SLRTP goals with which they are associated:

- ★ Maintain a safe system (SLRTP Goals 2 and 3);
- ★ Address congestion (SLRTP Goal 4);
- ★ Connect Texas communities (SLRTP Goal 5); and
- ★ Best in class state agency (SLRTP Goals 1 and 6).

² See TxDOT website: http://www.txdot.gov/about_us/strategic_plan.htm

³ Criteria associated with goals 4 and 5 were used to assess added capacity highway projects only. These criteria were not used to assess projects associated with non-highway modes. The TRTP only identified rural transportation needs associated with non-highway modes.



Goals 4 and 5 from the SLRTP are similar to the 2013–2017 Strategic Plan goals to address congestion and connect Texas communities. The TRTP highway analysis therefore remains consistent with the revised 2013–2017 Strategic Plan goals.

How was the TRTP Developed?

TxDOT has adopted a proactive approach to developing the TRTP. There are two inter-related components used to develop the TRTP:

- ★ Stakeholder/public participation; and
- ★ Technical approach.

A summary of how stakeholders and the public participated in the development of the TRTP can be found in Chapter 4 of the TRTP.

The TRTP objectively ranks all identified added capacity highway projects.⁴ The rankings are presented in the TRTP in two ways:

- ★ Statewide comparison of all projects; and
- ★ Highest ranked projects in each district.

TxDOT recognizes the long-term importance of multi-modal transportation planning and the need to coordinate all modes of transportation. To this end, TxDOT has identified the non-highway needs in the TRTP through coordination with the appropriate public and private sector partners for the various non-highway modes. It should be noted that specific projects for non-highway modes were not analyzed in the same level of detail as those for highways.

How will the TRTP be Used?

Prior to adoption by the Texas Transportation Commission (TTC), stakeholders and citizens had the opportunity to review and comment on the draft TRTP, its approach, and findings.

For highways, stakeholders and citizens were invited to highlight any relevant data or factors that were not incorporated into the added capacity highway project ranking process. Where justified, projects were added and re-ranked based on any relevant new data or factors not previously considered. Public comments provided 64 additional project that were added to the analysis.

⁴ A tool was developed to rank 650 rural added capacity highway projects against a consistent set of criteria that were reviewed with stakeholders. The criteria were then weighted based on stakeholder inputs.



For non-highway modes, stakeholders and citizens were also invited to highlight any relevant data or factors that were not incorporated into the TRTP, especially information that might enable TxDOT to enhance its approach to multi-modal transportation system planning.

The TRTP will provide an objective basis for the TxDOT Districts to begin project planning when planning funds become available. In addition, the TRTP presents needs for rural non-highway transportation across the state. This will enable a more consistent approach to statewide multi-modal planning by presenting a more complete analysis of rural transportation. Future transportation funding can be invested to secure the greatest benefits for all citizens.

When will TRTP be Updated?

As the rural component of the SLRTP, the TRTP content will be updated with the SLRTP. It is envisioned that the SLRTP will be updated every 4 years. The next update to the SLRTP is anticipated in 2014. Transportation planning is a continuous process and transportation needs evolve thereby necessitating continual reevaluation of transportation priorities.

What does the TRTP Include?

Approximately 650 added capacity rural highway projects were evaluated and ranked. The three highest ranked projects in each TxDOT District are shown on **Figure 2-4**. Detailed maps of projects in each TxDOT District can be found in Appendix E.

The project rankings do not indicate the priority in which projects will be funded or constructed. Prioritization will be determined by TxDOT, taking into account knowledge of any additional local factors that did not lend themselves to inclusion into the statewide ranking process.

Identifying needs for non-highway modes is more complex than for highway modes and harder to quantify. An overview for each mode is as follows:

- ★ **Bicycles and Pedestrians** – In addition to the safety concerns related to surface treatment and positioning of rumble strips, the TRTP identifies the broader approach to planning and designing the street environment in small cities known as “Complete Streets.” This approach considers the respective needs of bicyclists, pedestrians, transit users, and drivers. The TRTP also emphasizes the potential economic impact of biking events and tourism.



- ★ **General Aviation** – TxDOT’s 5-year Texas Airport System Plan is the primary planning tool. The TRTP emphasizes the potential economic impact of General Aviation, especially enhancing design standards to allow corporate jets.
- ★ **Inland Waterways** – Texas has a significant marine transportation system that supports commerce, recreation, and tourism. TxDOT has developed a capital program for Texas ports for 2011–2012. The primary focus is on deepening channels, landside facilities, and intermodal interchanges. Most ports are within MPO boundaries and the U.S. Army Corps of Engineers is responsible for maintaining the channels.
- ★ **Rail (freight and passenger)** – TxDOT has developed the Texas Rail Plan. Freight rail is provided through a combination of local short-line railroads, which connect with Class I railroads. Passenger rail improvements were identified in four corridors.
- ★ **Public Transportation** – TxDOT has worked closely with regional planning organizations to support the development of rural transit coordination plans in each region. Initial plans were developed in 2006, and updated in 2011. For the TRTP, TxDOT has additionally developed a long-range plan to identify rural public transportation capital and operations needs. The TRTP also highlighted recent declines in the level and availability of intercity bus services.

While the TRTP identifies known projects for non-highway modes, these projects are not ranked.

Conclusions

The following strategies identified in the TRTP are driven by the competing challenges of limited funding, growing demand, and very large transportation needs:

- ★ Focus available transportation funds on the most cost-effective investments;
- ★ Manage our transportation system in ways that encourage cost-effective shifts in how we travel; and
- ★ Develop partnerships for providing transportation improvements.

This approach is valid for the TRTP and, for the most part, the SLRTP strategies and recommendations apply equally to the TRTP. The TRTP lists some minor modifications to the SLRTP strategies and recommendations to address rural transportation needs. The TRTP also recommends some minor enhancements to the added capacity highway project ranking process in the next SLRTP update.

Overall, the emphasis on “cost-effective” strategies specifically addressed in two of the three SLRTP goals is heightened for the TRTP and likely for the next SLRTP update also. Availability of funding for projects and needs identified in the TRTP will continue to



be limited in the foreseeable future and may even worsen. It is more important than ever that TxDOT's limited transportation funds are spent wisely.

1.0 Introduction

1.1 What is the Texas Rural Transportation Plan?

The Texas Rural Transportation Plan (TRTP) is the rural component of the Statewide Long Range Transportation Plan (SLRTP) 2035.⁵ As part of the SLRTP, the TRTP is a blueprint for the planning process in the rural areas that will guide the collaborative efforts between the Texas Department of Transportation (TxDOT), local and regional decision-makers, and all transportation stakeholders to reach a consensus on needed transportation projects and services through 2035. It is a standalone document, fully consistent with the SLRTP.

The TRTP is a multi-modal transportation plan that includes the following modes:

- ★ Highways;
- ★ Non-Automobile/Non-highway modes;
 - Bicycles and Pedestrians;
 - General Aviation;
 - Inland Waterways;
 - Rail (freight and passenger); and
 - Public Transportation.

1.2 Why was the Texas Rural Transportation Plan Developed?

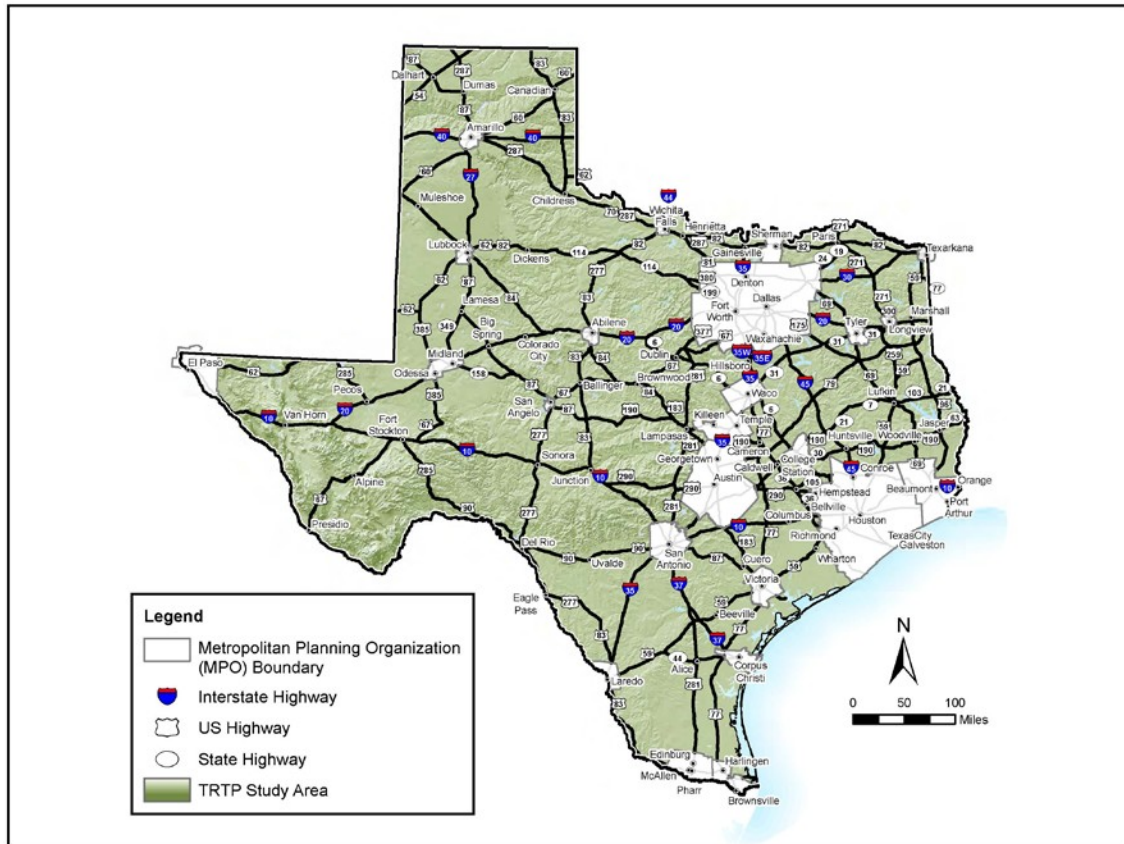
Unlike urbanized areas where Metropolitan Planning Organizations (MPOs) are required by law to develop Metropolitan Transportation Plans (MTPs) that identify and prioritize future transportation projects within funding constraints, there is no equivalent requirement for rural areas. While the SLRTP included an overall assessment of rural transportation needs and a prioritization of Trunk System corridors, specific added capacity highway projects were not identified or ranked. For a complete description of the Texas Trunk System, please see chapter 5 of the Statewide Long-Range Transportation Plan 2035 (SLRTP).

For the TRTP, “rural” is defined as any area outside of MPO boundaries. This area is shown in green in following map:

⁵ See TxDOT website: https://www.txdot.gov/public_involvement/transportation_plan/report.htm



Figure 1-1: TRTP Study Area

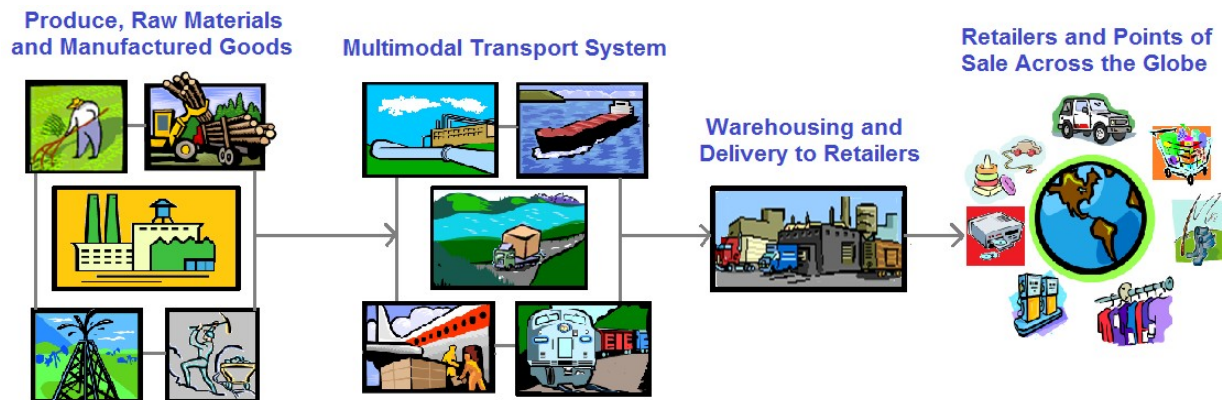


Rural transportation needs tend to be different than the transportation needs encountered in urbanized areas. While the SLRTP identified capacity needs for many rural highways, capacity is usually not the primary issue as compared with urban areas. However, the impact of traffic growth in rural areas can create safety concerns. Stakeholders have overwhelmingly indicated that safe passing on rural highways is one of their top concerns, particularly given the intermittent high volume of truck traffic.

Another aspect of rural transportation that is different is the extent of economic activity associated with farming, ranching, timber and logging, mineral extraction, and energy production.



Figure 1-2: Freight Supply Chain



The Texas economy is dependent on the rural transportation system to bring goods to market for in-state, national, and international consumption. This economic activity generates secondary business for other firms that provide support activities, such as delivering supplies and equipment, which in turn generates business for restaurants, lodging, etc.

The size of the state and remoteness of some rural communities also sets rural areas apart from urbanized areas. The time and/or distances involved for rural Texans to reach services, such as healthcare, education, retailers, and other destinations that affect quality of life, can be significant. This is especially true for those with limited access to personal vehicles, where transit options may be infrequent, and for those who rely on a single highway to connect with the rest of the transportation system.

Specific project needs in urbanized areas are addressed by the MPOs in their long-range MTPs. Specific projects for both rural and urbanized areas that are within the current 10-year planning horizon and have identified funding sources are identified in the TxDOT 10-year Unified Transportation Program (UTP). However, no document specifically examines the long-term project needs in rural areas beyond the 10-year time frame of the UTP. The TRTP addresses this need by identifying and ranking approximately 600 long-term, rural, added capacity highway projects.⁶ These projects are not funded and not currently programmed in the 10-year UTP.

In addition to rural highway needs, the TRTP includes an analysis of rural transportation needs for non-automobile/non-highway modes. This provides for a more consistent

⁶ These projects were identified by a combination of reviewing existing project databases and lists, and requesting inputs from TxDOT Districts and local stakeholders.



approach to statewide multi-modal planning, and presents a more complete analysis of rural transportation for Texans.

1.3 The Relationship between the TRTP and SLRTP Goals

Goal-setting is an important early step in transportation planning. Goals help guide an organization in investing resources that are consistent with the entity's vision and mission. The SLRTP addressed six goals that were based on TxDOT's 2011–2015 Strategic Plan:⁷

1. Develop an organizational structure and strategies designed to address the future multi-modal transportation needs of all Texans;
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; and
6. Facilitate the development and exchange of comprehensive multi-modal transportation funding strategies with transportation program and project partners.

While all goals were considered, those related to mobility and connectivity (Goals 4 and 5) were used to analyze long-term highway projects in an objective manner in the TRTP.⁸

Goal 4 was refocused on mobility. The criteria developed to assess the extent to which a highway project addressed mobility included:

- ★ Population buffer
How many people live within 5 miles of the project?
- ★ Cost effectiveness
What is the project cost for each vehicle mile traveled?
- ★ Volume to capacity (Level of Service [LOS])
Existing traffic LOS on existing facility;
Future traffic LOS on existing facility; and

⁷ See TxDOT website: http://www.txdot.gov/about_us/strategic_plan.htm

⁸ Criteria associated with goals 4 and 5 were used to assess added capacity highway projects only. These criteria were not used to assess projects associated with non-highway modes. The TRTP only identified needs associated with non-highway modes in rural areas.



- Change in LOS if the project is built.
- ★ Truck traffic
 - Existing truck percentage of total traffic;
 - Existing truck traffic; and
 - Projected truck traffic.
- ★ Total traffic
 - Existing traffic; and
 - Forecasted traffic.
- ★ Safe Passing Needs
 - Scored on safe passing opportunities based on existing facility type and terrain.

Goal 5 remained focused on connectivity. The criteria used to assess the extent to which a project addressed connectivity included:

- ★ Completing the Texas Trunk System
 - Is it on the Trunk System or a Phase 1 Corridor?
- ★ Filling gaps in the system
 - Does the project fill an existing gap?
- ★ Truck freight movement
 - Indirect measure of economic output; and
 - Measured in dollars and tonnage into and out of county.
- ★ Accessibility to population centers (for employment, healthcare services, etc.)
 - How does the project connect population and employment centers?
- ★ Hurricane Evacuation Route (HER)
 - Is the project on a designated HER or is it on a connector to an HER?

The TxDOT goals were recently updated as part of the new 2013–2017 Strategic Plan. These new goals are listed below, together with the SLRTP goals with which they are associated:

- ★ Maintain a safe system (SLRTP Goals 2 and 3);
- ★ Address congestion (SLRTP Goal 4);
- ★ Connect Texas communities (SLRTP Goal 5); and
- ★ Best in class state agency (SLRTP Goals 1 and 6).



Goals 4 and 5 from the SLRTP are similar to the 2013–2017 Strategic Plan goals to address congestion and connect Texas communities. The TRTP highway analysis therefore remains consistent with the revised 2013–2017 Strategic Plan goals.

1.4 How was the TRTP Developed?

TxDOT has adopted a proactive approach to developing the TRTP. There are two inter-related components used to develop the TRTP:

- ★ Stakeholder and public outreach; and
- ★ Technical approach.

A summary of how stakeholders and the public participated in the development of the TRTP can be found in Chapter 4 of the TRTP.

The technical approach for ranking the rural highway added capacity projects is described in detail in Appendix A. In summary, the TRTP identified approximately 600 currently unfunded, long-term rural added capacity highway projects from two primary sources:

- ★ TxDOT District project lists; and
- ★ Stakeholder, public, and TxDOT District input.

These projects were ranked on a statewide basis and on a District basis. The ranking process featured four major steps:

- ★ **Project Attributes** – for each of the projects analyzed a consistent set of characteristics traffic conditions was developed, e.g., length, cost, etc.
- ★ **Scoring** – criteria were developed for the mobility and connectivity goals to assess each project. The criteria were reviewed by a cross-section of stakeholders. Each project was scored from 1 to 10 for each criterion, based on the extent to which it met each criterion. The more a project met a criterion, the higher the score.
- ★ **Weighting** – each criterion was assessed for relative importance by stakeholders who attended eight different meetings across the state. This relative importance, on a scale of 1 to 10, was used to weight the score a project received for a given criterion. The criterion that received the highest weighting among the stakeholders was safe passing needs.
- ★ **Ranking** – projects were ranked based on the sum of the weighted criteria scores. Stakeholders reviewed the rankings and provided further feedback. The initial ranked list of projects was displayed at a series of open-house public



meetings, and the public was solicited for their input and comments. New added capacity highway projects were suggested and were reviewed and, if appropriate, added to a revised list of ranked projects.

The TRTP objectively ranks all identified highway projects.⁹ The rankings are presented in the TRTP in two ways:

- ★ Statewide comparison of all projects; and
- ★ Highest ranked projects in each district.

It is emphasized that the project rankings do not indicate the priority in which projects will be funded or constructed. Prioritization will be determined in conjunction with TxDOT Districts, taking into account their knowledge of any additional local factors that did not lend themselves to inclusion into the statewide ranking process.

TxDOT recognizes the long-term importance of multi-modal transportation planning and the need to coordinate all modes of transportation. To this end, TxDOT has identified the non-highway needs in the TRTP through coordination with the appropriate public and private sector partners for the various non-highway modes. It should be noted that specific projects for non-highway modes were not analyzed in the same level of detail as those for highways.

1.5 How will the TRTP be used?

Prior to adoption by the TTC, stakeholders and citizens had the opportunity to review and comment upon the draft TRTP, its approach, and findings.

For highways, stakeholders and citizens were invited to highlight any relevant data or factors that were not incorporated into the highway project ranking process. Where justified, projects were re-ranked based on any relevant new data or other factors, including 64 additional projects not previously considered.

For non-highway modes, stakeholders and citizens were also invited to highlight any relevant data or factors that were not incorporated into the TRTP, especially information that might enable TxDOT to enhance its approach to multi-modal transportation system planning.

When adopted, the TRTP will provide an objective basis for the TxDOT Districts to begin project planning when planning funds become available. In addition, the TRTP presents needs for rural non-highway transportation across the state. This will enable a

⁹ A tool was developed to rank 650 rural added capacity highway projects against a consistent set of criteria that were reviewed with stakeholders. The criteria were then weighted based on stakeholder inputs.



more consistent approach to statewide multi-modal planning by presenting a more complete analysis of rural transportation. Future transportation funding can be invested to secure the greatest benefits for all citizens.

1.6 When will the TRTP be updated?

As the rural component of the SLRTP, the TRTP content will be updated with the SLRTP. It is envisioned that the SLRTP will be updated every 4 years. The next update to the SLRTP is anticipated in 2014. Transportation planning is a continuous process and transportation needs evolve thereby necessitating continual reevaluation of transportation priorities.

1.7 Rural Transportation Funding Sources

State roadways are generally funded by two different types of programs. The first type is the State Highway Fund comprised of revenue from transportation user fees and tax revenue. These are detailed in Table 3-10 in Chapter 3 of the SLRTP and in the UTP. The second type is debt programs, such as the Texas Mobility Fund, through which bonds are issued and secured by toll revenue, or other federal loan programs. These are discussed in detail in Chapter 3, Sections 6 and 7 in the SLRTP.

Rail funding sources are discussed briefly in the SLRTP in Chapter 3, Section 8 and a detailed analysis in the Texas Rail Plan, Chapter 6 Financial Options. Sources of funding for freight railroads are available from the Federal Railroad Administration (FRA) and U.S. Department of Transportation (USDOT), the U.S. Department of Agriculture (USDA), U.S. Department of Commerce, and various Texas state programs. Intercity rail is provided by Amtrak, with two of the lines being funded by them, and a third route supported with funding from the states of Texas and Oklahoma.

Transit funding sources from the Federal Transit Administration and TxDOT are shown in Chapter 3, Section 5 of the SLRTP.

There are several other federal agencies that fund transportation projects that provide health and human services. These include:

- ★ Department of Education Office of Special Education & Rehabilitative Services
- ★ Administration on Aging
- ★ Centers for Medicare and Medicaid Services
- ★ Department of Labor Employment and Training Administration
- ★ Department of Labor Office of Disability Employment Policy
- ★ Department of Transportation Federal Highway Administration
- ★ Social Security Administration Disability Programs



General Aviation funding is administered primarily through TxDOT regardless of the source of the funding. As detailed in the SLRTP and the Texas Airport System Plan (TASP), TxDOT administers the Airport Improvement Program (AIP) grants for general aviation airports under the State Block Grant Program. TxDOT Aviation Division also administers its own funding programs to address improvement needs at general aviation airports. Local governments, including cities, are typically owners of airports and provide the mandatory local share of project costs—typically 10 percent for projects funded by federal and state grants.



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2.0 Current Conditions, Needs and Planned Improvements

2.1 Introduction

This chapter provides an overview of current conditions, future needs and planned improvements as they relate to rural transportation—both highway and non-highway modes. Approximately 600 rural added capacity highway projects were identified and ranked. For non-highway modes, the emphasis is on gaining a better understanding the rural transportation needs, rather than identifying and ranking non-highway mode projects.

Conditions and trends affecting economics and demographics, as they relate to the multi-modal transportation system are well documented in Chapter 2 of the SLRTP. Planned improvements to the statewide multi-modal transportation system and priority corridors are documented in chapters 4 and 5, respectively, of the SLRTP.

2.2 Notable Trends in Rural Transportation

2.2.1 Aging Population

The SLRTP documented growth in urban and rural areas of the state. Many counties are expanding rapidly in population, particularly those near and on the fringes of large metropolitan areas. Many development patterns in these quickly growing “exurban” counties are being established that will influence transportation development.

Some important demographic findings in the SLRTP specific to rural counties that are include:

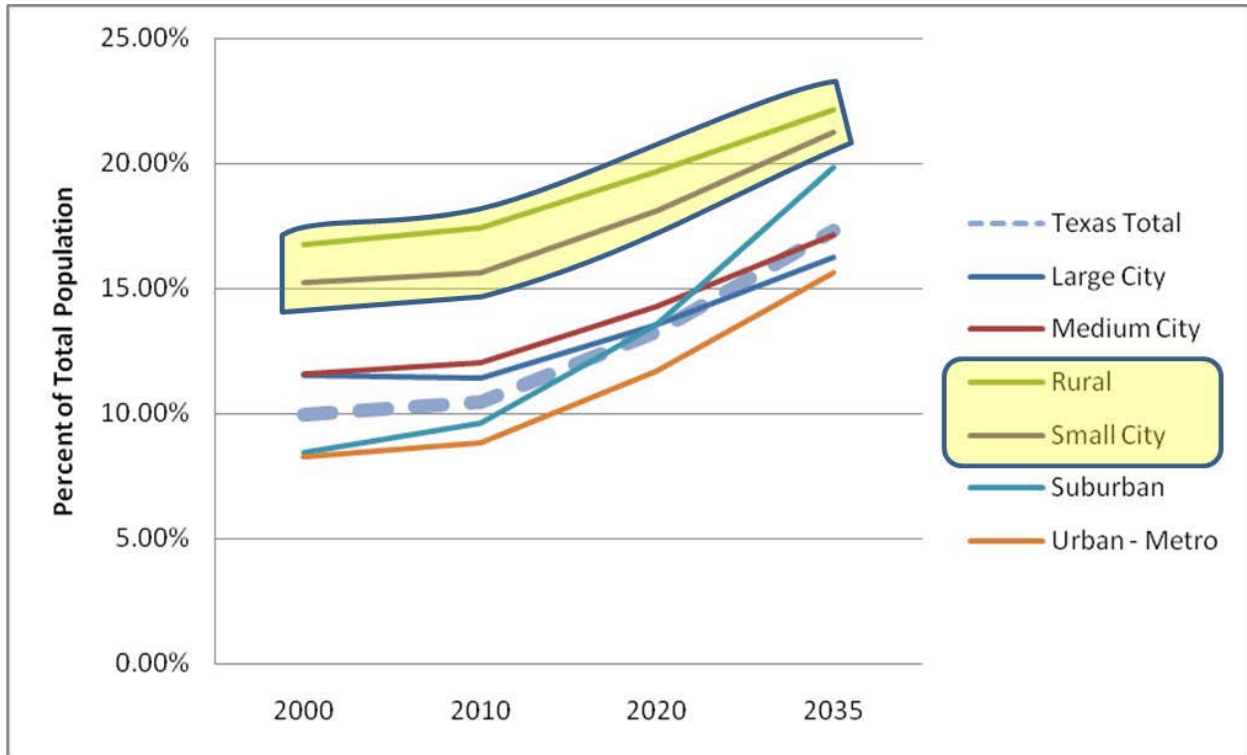
- ★ While statewide population is forecast to grow between 2008 and 2035 by 43.1 percent, the statewide growth in the 65 years and older category is forecast to grow by more than 3.4 million persons, a 144.0 percent increase.¹⁰
- ★ By 2035, the trend towards more elderly people living in Texas will be most significant in rural counties (22 percent aged 65 years and older, compared to 17 percent in 2008), and small counties (21 percent aged 65 years and older, compared to 15 percent in 2008) (**Figure 2.1**).¹¹

¹⁰ See SLRTP Tables 2-2 and 2-3

¹¹ See SLRTP Table 2-4. A rural county is defined as having a 2008 population of less than 20,000. A small county is defined as having a population greater than 20,000 but less than 50,000.



Figure 2-1: Percent of Population 65 Years and Older



The impact of this trend towards an aging population will develop slowly but steadily over the planning horizon for the SLRTP and the TRTP, and its effects will likely become a factor that increasingly influences rural transportation, for highways and for non-highway modes. The reason that a majority of rural counties have a larger share of older population is due to a number of factors: 1) the aging of the existing population in rural areas; 2) the propensity of older populations to retire to rural settings (especially around scenic landscapes and recreational areas); and 3) the outmigration of rural youth.

This trend is supported by results from the 2010 Census. Seventy nine of the total 254 counties in Texas lost population between the Census 2000 and Census 2010 periods. Of the 79 counties that lost population, only 3 (Orange, San Patricio, and Wichita) had some urbanized area population—the remainder are rural. The percentage of elderly is growing—even in counties that are losing total population.

Rural counties will likely see a trend towards increased public transportation as more rural residents depend on it as a mode of transportation. Rural transit providers commonly serve persons age 65 and over for various accessibility reasons including access to distant medical services.



For aging rural residents who do not have access to public transportation, the options are limited and many will continue to drive to meet their transportation needs. This presents challenges that may need to be addressed to allow improved driving conditions for the aging population by modifying roadways, signage, striping, lighting, and vehicles.

2.2.2 Gas and Oil Production

Changing energy sources will influence transportation. Texas and a number of other oil and gas producing regions across the nation are using an enhanced oil recovery technique known as hydraulic fracturing¹² a method which has become an economically viable, domestic option as the prices of oil and gas have steadily risen.

This has led to a resurgence in oil and gas exploration and production in some parts of Texas, resulting in an increase of truck activity for moving sand and other chemicals, which are used for hydraulic fracturing including waste liquids that are transported away from production sites for disposal. Much of the new activity is in the Eagle Ford Shale Play – (**Figure 2-2**).¹³ According to industry reports,¹⁴ oil production in the Eagle Ford increased almost sevenfold in 2011 to surpass 30 million barrels. This year daily oil production in the Eagle Ford is forecast to expand by 200,000 barrels.

In March 2012, the Texas Transportation Commission formed a work group with representative from the Department of Public Safety, the Department of Motor Vehicles, the Railroad Commission, counties and the energy sector to find ways to address the impacts of traffic from energy production activities on the state highway system.

2.2.3 Challenges Facing Rural Public Transportation

In May 2011, the Texas Transportation Institute (TTI) published the results of research conducted on behalf of TxDOT entitled *Peer Grouping and Performance Measurement to Improve Rural and Urban Transit in Texas*.¹⁵ This research indicated the following challenges facing rural public transportation in Texas:

- ★ **Increasing demand.** Economic and demographic projections indicate that demand for transit services will grow even stronger in the future. Aging Baby Boomers are entering the period of life when they are more likely to need mobility

¹² While hydraulic fracturing is not a new technique, its use is expanding and domestic oil production has risen to levels not seen since 2003, although considerably lower than 1970 peak levels. See US Energy Information Administration website: http://www.txdot.gov/about_us/strategic_plan.htm

¹³ <http://www.rrc.state.tx.us/eagleford/index.php>

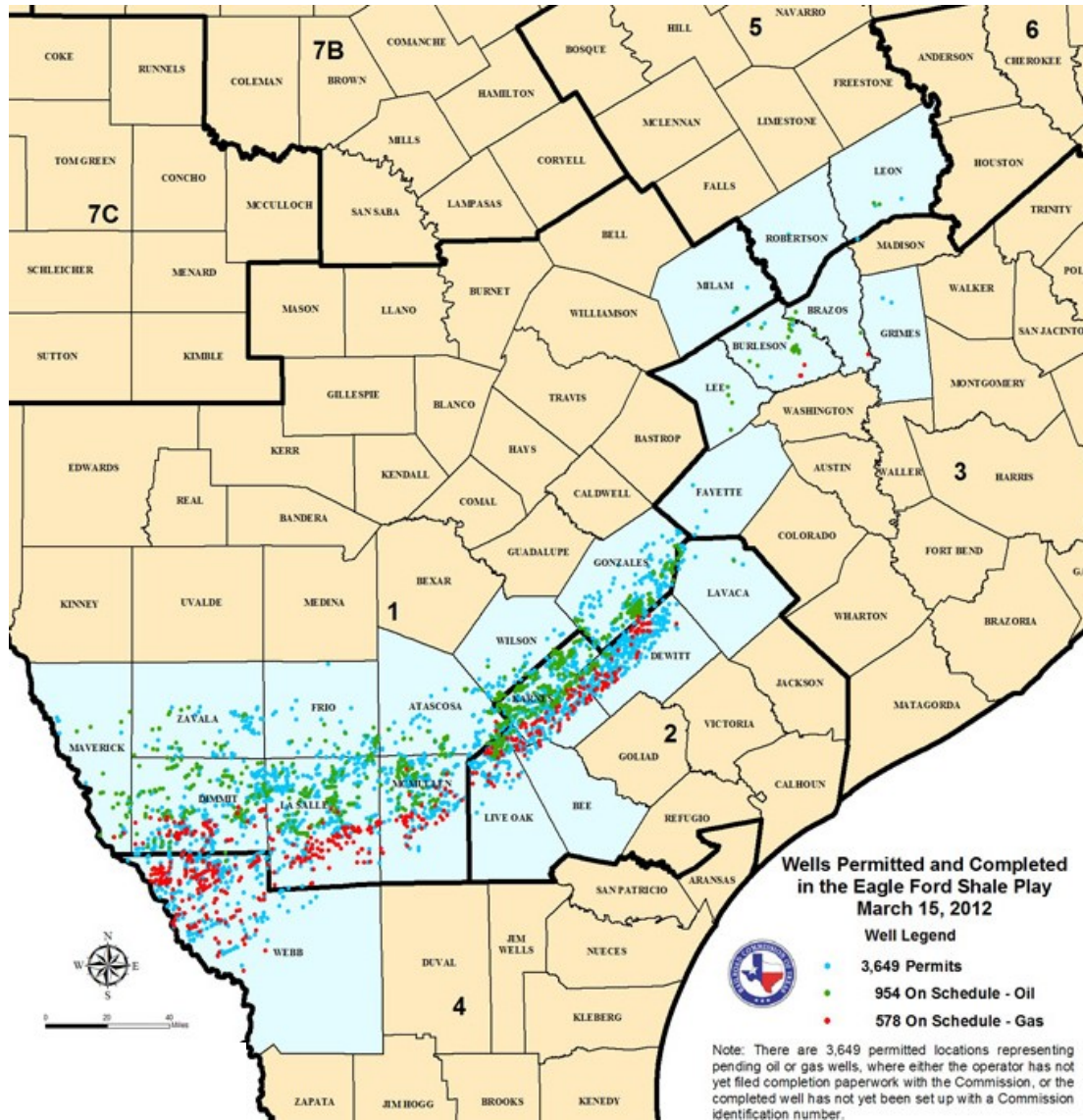
¹⁴ <http://www.businessweek.com/news/2012-03-22/texas-tops-finds-from-brazil-to-bakken-as-best-prospect-energy#p2>

¹⁵ <http://tti.tamu.edu/documents/0-6205-1.pdf>



assistance. Further, the Texas State Demographer's Office projects that retirees will settle in rural areas, which will increase the demand placed on rural transit systems. The rising cost of fuel has led to a nationwide increased demand for alternative options to driving a personal vehicle.

Figure 2-2: Oil and Gas Wells-Eagle Ford Shale



Source: Railroad Commission of Texas, Eagle Ford Information

- ★ **Limited funding options.** In Texas, the traditional source of local funding for transit is the local option sales tax. However, it is constitutionally limited to not more than 2 percent (in addition to the 6.25 percent state sales tax). The local sales tax can be used for a variety of purposes in addition to transit. In most cities that are not part of a transit authority or municipal transit department, the



local sales tax is already committed to other purposes, leaving little or no room to authorize funding for transit.

- ★ **Regional perspective.** There is a clear need for regions to coordinate the use of financial and operational resources to find new ways to plan and deliver services throughout the region. Rural operators, in particular, are challenged to move beyond the traditional demand response model and examine ways to integrate the services with both intercity bus providers and nearby urban systems.
- ★ **Integration with health and human services.** Public transportation system-based operations focus on optimizing service efficiency, while human services organizations focus on client flexibility. Coordinating services requires integration of these two very different perspectives into a joint transportation program.

2.3 Needs – Highways

Consistent with the mobility and connectivity goals described in Chapter 1, the starting point for highway needs is captured in the SLRTP and shown below in Table 2-1.

**Table 2-1: Investment Summary for Rural Capacity Needs
(Table 3-3 from the SLRTP)**

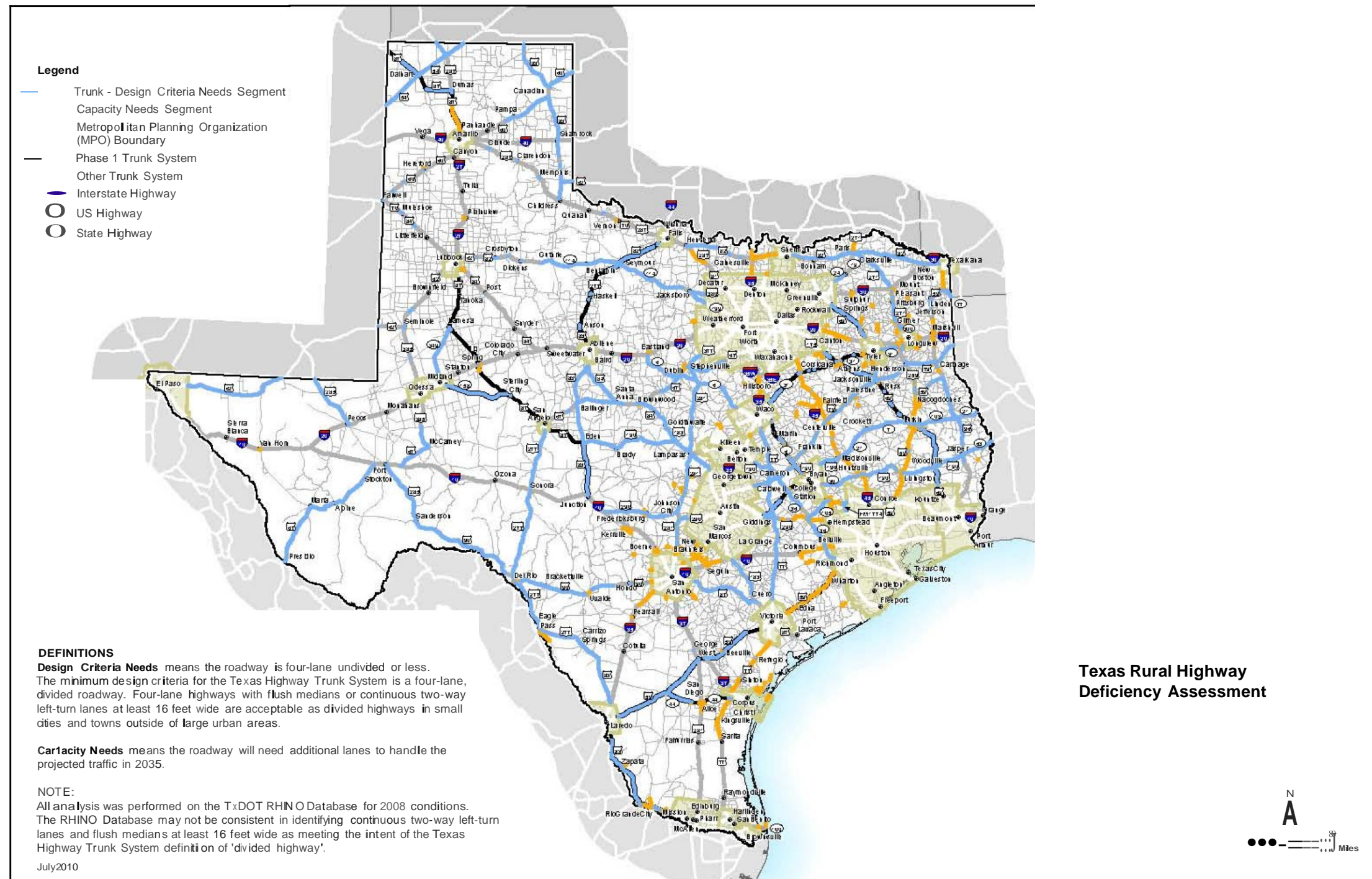
	Estimated Lane-Miles Needed	Investment Required (\$ Millions, 2010)
Small urban (5,000 to 50,000 population)		
Interstate	41	92
Texas Trunk System (non-Interstate)	346	388
Regional/Local Highways	362	105
Rural		
Interstate	507	664
Texas Trunk System (non-Interstate)	1,831	1,469
Regional/Local Highways	594	511
Total	3,681	3,529

This table provides an investment summary – funding that is projected to be needed to satisfy anticipated rural (and small urban) capacity needs through 2035. This is based on the estimated lane-miles needed to provide a consistent level of design and meet capacity requirements on interstate highways, non-interstate highways on the Texas Trunk System, and regional/local highways. The SLRTP estimates that 3,681 new lane-miles are needed. These needs are mapped as shown on **Figure 2-3**. On this map, the gray lines show either a Trunk System design deficiency (less than four lanes divided) or a capacity deficiency based on traffic volumes.



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Figure 2-3: Rural Highway Deficiency Assessment



Source: Atkins|URS



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These needs were overlaid with the locations of the approximately 600 projects planned in the distant future and analyzed as a part of the TRTP. With overlaying these two data sets, it was possible to cross-check how well the rural added capacity highway projects analyzed for the TRTP corresponded with the identified capacity needs. The resulting map highlighted several issues:

- ★ There were a few locations when needs were identified but there were no matching projects to address those needs. The best example of the unmet needs is along the Interstate 45 (I-45) corridor.
- ★ A number of rural added capacity projects were identified where there was no identified need based on the capacity deficiency criteria used in the SLRTP analysis.

2.4 Planned Improvements – Highways

Planned improvements for highways are focused on rural added capacity highway projects that address the mobility and connectivity goals of the TRTP. The SLRTP addressed other goals on a statewide basis that apply to both rural and urban areas.

The process for identifying and ranking the rural (including small urban) added capacity highway projects beyond the time horizon of the UTP was comprehensive and included inputs from rural stakeholders. Input was solicited for both the identification of projects and the project ranking process itself. All identified projects were ranked,¹⁶ including 64 projects recommended by the public and stakeholders. The overall technical approach is summarized in Chapter 1 and described in detail in Appendix A – Highway Ranking Methodology and Results. Stakeholder and public participation is described in Chapter 4.

The three highest ranked projects in each TxDOT District are shown statewide on **Figure 2-4**. Detailed maps of each TxDOT District can be found in Appendix E.

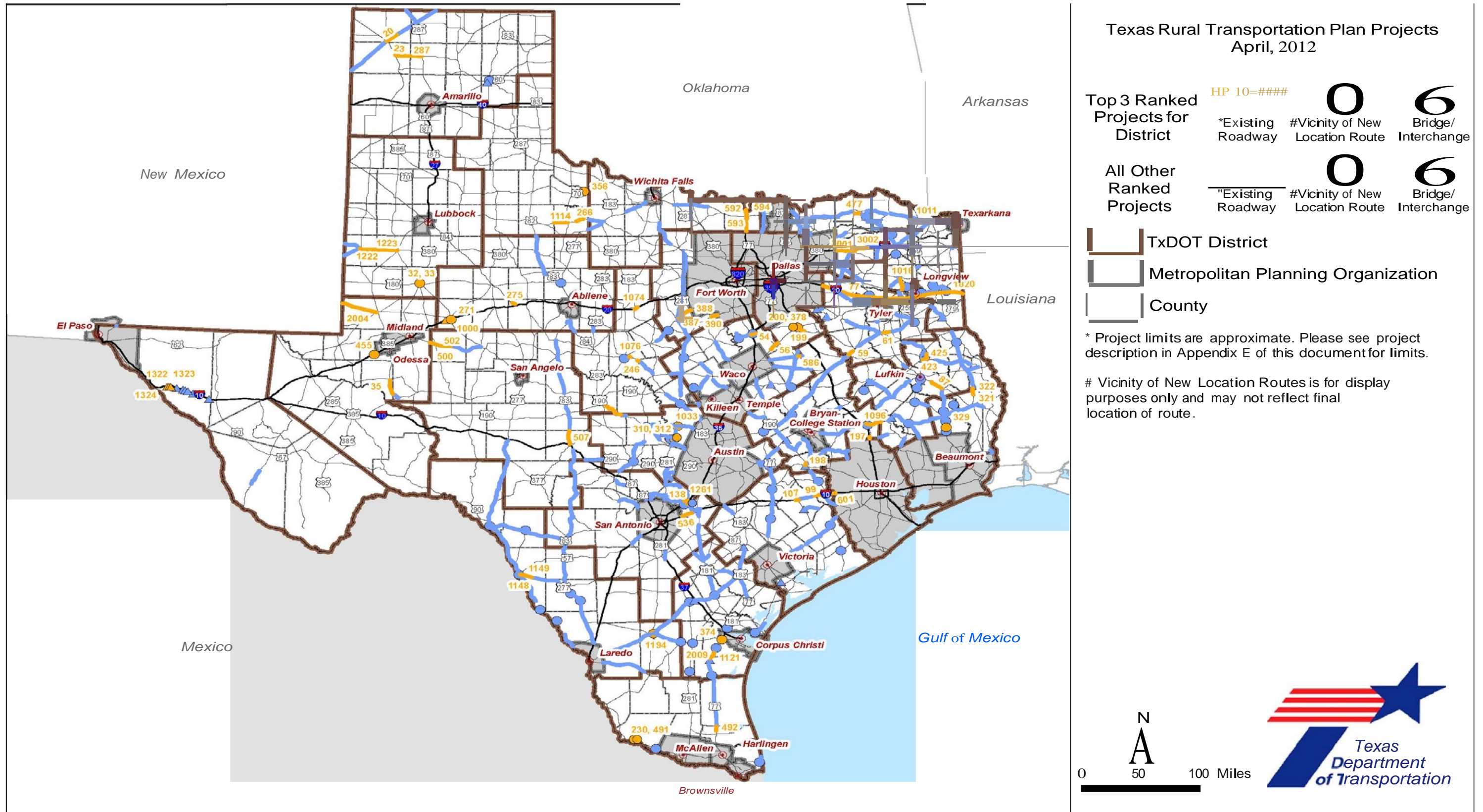
The project rankings do not indicate the priority in which projects will be funded or constructed. Prioritization will be determined by TxDOT, taking into account knowledge of any additional local factors that did not lend themselves to inclusion into the statewide ranking process.

¹⁶ A tool was developed to rank 650 rural added capacity highway projects against a consistent set of criteria that were reviewed with stakeholders. The criteria were then weighted based on stakeholder inputs.



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Figure 2-4: Ranked Projects



Source: Atkins/URS



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2.5 Needs – Non-Highway Modes

Identifying needs for non-highway modes is a more complex process than that of highway modes, and the results harder to quantify. Chapter 3 of the SLRTP discusses ownership and responsibilities for maintenance and operations of each component of the multi-modal transportation system, and how this varies between urban and rural areas. In addition to TxDOT, there are varying degrees of involvement by federal, regional, and local agencies, authorities, non-profit organizations, and private corporations. Other federal and state agencies are responsible for overseeing different parts of the system, including the privately owned components.

This complex institutional environment results in an equally complex blend of funding opportunities (discussed in Chapter 1 of the TRTP and Chapter 3 of the SLRTP) and approaches to short- and/or long-range planning. Among the non-highway modes, only rural public transportation takes a long range approach spanning several decades and this TRTP presents the results of that effort. That said, each modal agency or entity does what it considers to be appropriate to its circumstances and realistic within available resources, while remaining compliant with any legislative and/or other requirements.

2.5.1 Bicycles and Pedestrians

While bicyclists and pedestrians are included as non-highway modes, bicycles can be operated on roadways, sidewalks, bike lanes, shoulders, and trails, while pedestrians use crosswalks, sidewalks, shoulders, and trails. Consequently, the needs of the rural biking community and rural pedestrians will be addressed in part through the planning, design and construction of highways.

In some cases, transit users may walk or bike as part of their overall trips. The needs of rural transit users will consequently overlap with those of the rural bike/pedestrian modes. It is also important to recognize that the individuals using bike/pedestrian (and transit) modes may include people with a wide range of ages and abilities.

The concept of “Complete Streets¹⁷” was raised during the stakeholder meetings as an example of best practice for addressing the needs of bikes and pedestrians, as well as other road users. The National Complete Streets Coalition is an organization that seeks to fundamentally transform the look, feel, and function of the roads and streets in communities, by changing the way most roads are planned, designed, and constructed. While Complete Streets mostly address urban and suburban environments at the

¹⁷ Website for Complete Streets: <http://www.completestreets.org>



present time, the organization’s website provides examples for rural communities and small towns.¹⁸

A major benefit of an effective Complete Streets policy is the potential to create bicycle and pedestrian infrastructure during roadway construction projects at a small fraction of the cost required to build such infrastructure through standalone projects. This practice, over time, will produce a cost-effective, functionally complete and connected bicycle/pedestrian network that will provide economic and other value to residents of rural and urban communities across Texas. “Opt-out” provisions are typically provided in Complete Street Policies to give project managers the flexibility to consider factors including, but not limited to, federal and state regulations and requirements, probability of use over time, and exorbitant additional cost. These “opt-out” provisions typically outline reasonable and straightforward documentation requirements.

The Texas biking community, specifically BikeTexas¹⁹, provided consistent input to the stakeholder meetings regarding the rural transportation needs of the biking community. The biking community is not homogenous, but instead comprises individuals with different motivations: necessity, recreation, exercise, sport, quality of life, preferred mode of travel, or part of a tourist activity.²⁰ It was also noted that cycling events, such as the annual *Hotter N Hell Hundred* in Wichita Falls, attract large numbers of participants and visitors to an area and can provide a significant boost to local economies. Strategies that may encourage cycling include:

- ★ Complete Streets – see earlier discussion;
- ★ Provide off-road parallel bike paths/trails;
- ★ Investigate whether railroad right-of-way could be used by bicyclists;
- ★ Consider national bicycle routes across Texas;
- ★ Address the safety of bicyclists through a combination of physical separation, striping and signage;
- ★ Continuous shoulders provide safer connectivity for those bikers that wish to ride longer distances;
- ★ Wider shoulders;
- ★ Ensure that shoulder surfaces are bike friendly; and
- ★ Ensure that rumble strips are close to the edge of lane marking and not in the center of the shoulder.

¹⁸ Rural examples of Complete Streets: <http://completestreets.org/webdocs/factsheets/cs-rural-2.pdf>

¹⁹ Website for Bike Texas: <http://www.biketexas.org>

²⁰ Examples of historic bicycle tourism trails: <http://www.biketexas.org/en/infrastructure/texas-tourism-trails>



2.5.2 General Aviation

In cooperation with local airport sponsors and the Federal Aviation Administration (FAA), TxDOT has developed a statewide airport system plan—the TASP.²¹ The TASP, updated in March 2010, includes airports in the FAA National Plan of Integrated Airport Systems (NPIAS), plus other airports deemed necessary for the system. The goal of the plan is to develop a statewide system of airports providing air access to the population and economic centers of Texas. Aviation industry stakeholders have stressed the potential economic impact of general aviation airports in rural areas of the state. Airports with long runways and other facilities that can accommodate corporate jets facilitate long-distance travel for companies based in one part of the state but with business interests across the state, e.g., oil and gas production/refining.

The TASP development process results in the collection of important aviation-related information, including:

- ★ An inventory of existing airport facilities, services, and traffic volumes;
- ★ Analysis of the existing capacity of airports and forecast activity levels;
- ★ An airport classification system with appropriate facility standards;
- ★ A general estimate of needed improvements and their costs at each airport;
- ★ Alternatives for implementation of airport improvements; and
- ★ Recommended state legislation and funding for airport improvements.

The current TASP system includes 289 existing and 12 proposed airports. The objective of the state airport system is to provide adequate access to the population and economic centers of Texas. Adequate access is expressed in terms of the driving time between activity centers and appropriate airport facilities:

- ★ *Scheduled air carrier service* should be within a 60-minute drive for virtually all Texas residents.
- ★ *Business jet aircraft access* should be with a 30-minute drive of significant population and mineral resource centers.
- ★ *Light piston-engine aircraft access* should be within a 30-minute drive of agricultural centers.

Needs associated with the four types of General Aviation airports generally found in the rural areas of Texas are described below. The needs are defined in the 5-year TASP.

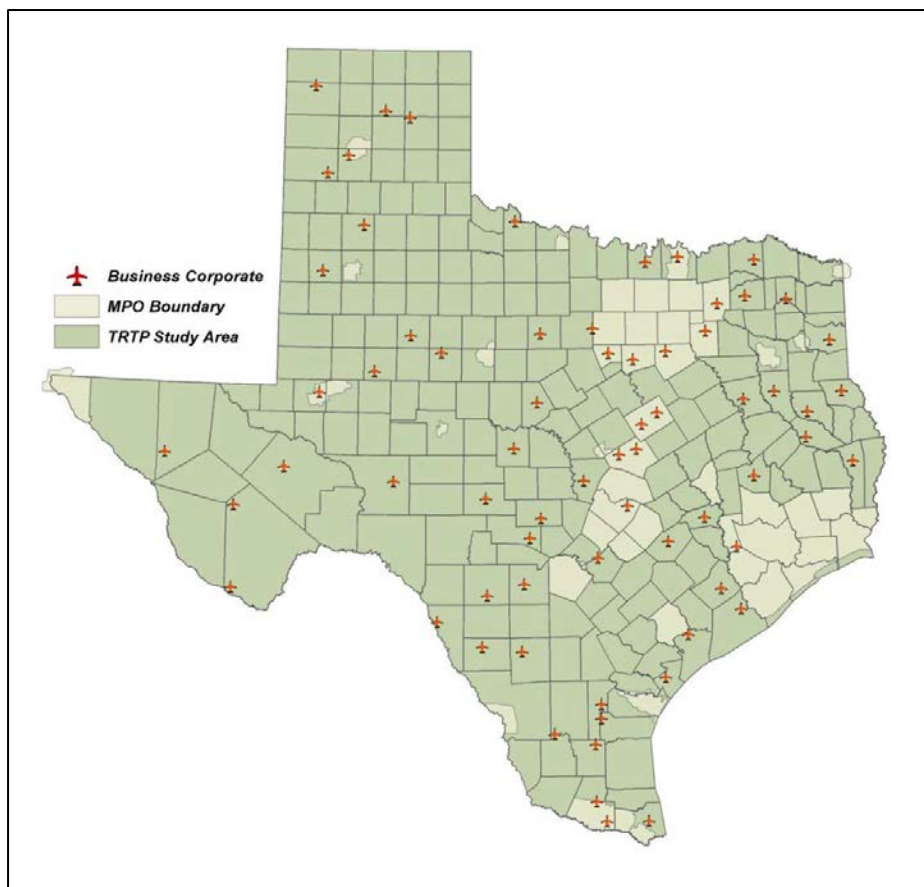
²¹ See TxDOT website: http://www.txdot.gov/business/aviation/system_plan.htm



Business/Corporate Airports

The 67 business/corporate airports in the TASP are mapped in **Figure 2-5**. They provide access to turboprop and turbojet business aircraft and serve communities located more than 30 minutes from the nearest commercial service or reliever airport. These airports are generally located 25 miles from other business/corporate airports and serve an area of concentrated population, purchasing power, or mineral production. Each has or is forecasted to have 500 or more annual business/corporate aircraft operations within 5 years, or have two permanently based jets. Some of these airports may be located within 25 miles of a significant national recreation or preservation area.²²

Figure 2-5: Texas Business/Corporate Airports



An estimated \$251 million over the next 5 years will be required for the 67 business/corporate airports related to meeting design standards that accommodate business jet traffic.

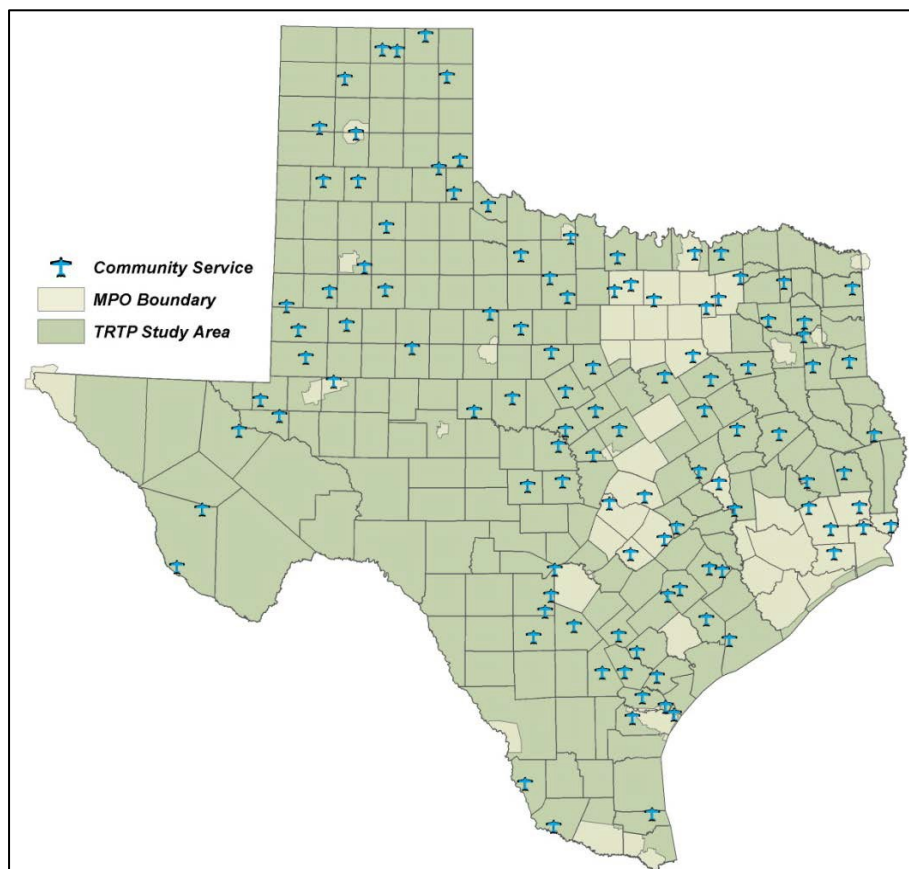
²² Texas Airport System Plan



Community Service Airports

The 106 community service airports included in the TASP are mapped in **Figure 2-6**. These airports provide primary business access to smaller communities throughout the state, add capacity in many of the metropolitan areas, and provide access to agricultural and mineral production areas. Community service airports are generally located within a 30-minute drive from a business/corporate, reliever, or commercial service airport. All community service airports will accommodate single and light twin piston-engine aircraft. Sufficient activity exists at many of these locations to justify maintenance or upgrading to standards for turboprop and business jet use.²³

Figure 2-6: Texas Community Service Airports



An estimated \$171 million for the next five years will be required to bring existing community service airports up to design standards and to preserve the existing infrastructure. Also planned are upgrades to accommodate larger, more demanding aircraft. Included in this amount are costs for construction of two new airports in the

²³ Texas Air System Plan



short term and one proposed airport in the long term. These new airports will provide new access to communities or expand capacity and are planned for construction within the next 0-5 or 6-10 years.



Table 2-2: Proposed New Community Service Airports

Location	Period	Purpose
Randall County	0 - 5	New Access
Mills County	under construction	New Access
Leon County	0 - 5	New Access

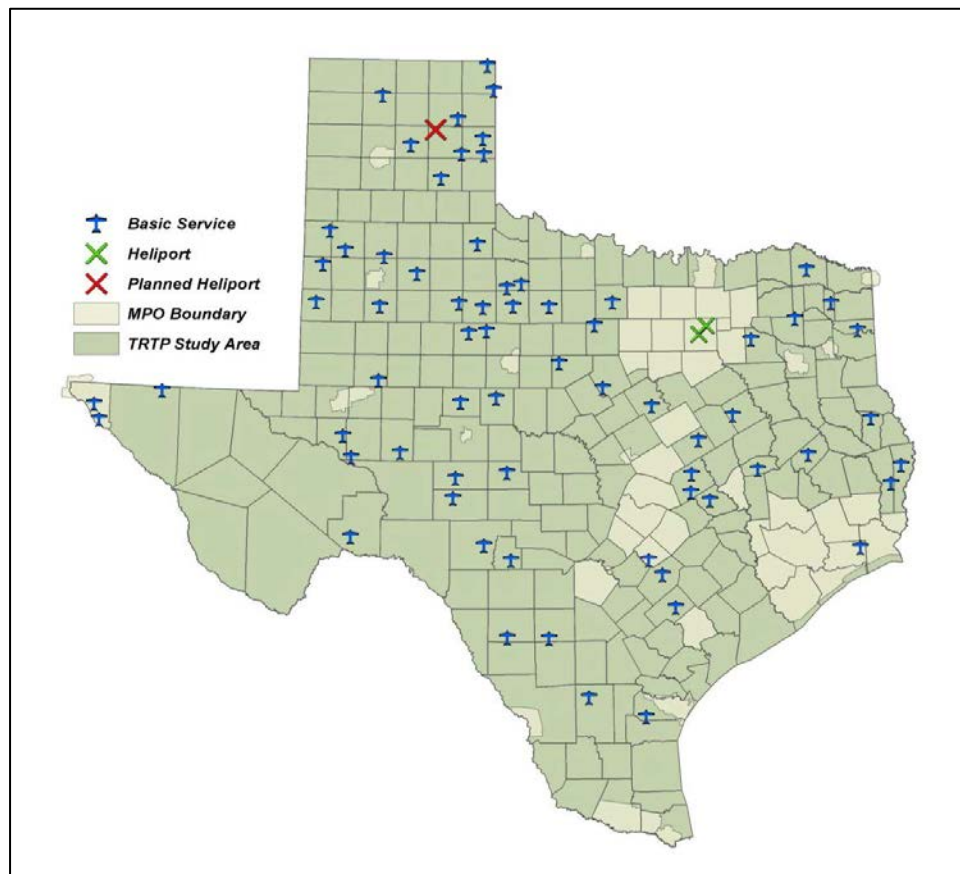
Note: Bexar County is adding additional capacity

Source: Texas Department of Transportation, Aviation Division, 2010.

Basic Service Airports

The 68 basic service airports included the TASP are mapped in **Figure 2-7**. These airports are located within the service area of commercial service, reliever, business/corporate or community service airports or may be located in remote areas of the state. These airports typically have very low usage, and provide additional convenience for clear-weather flying and training operations. Many basic service airports cannot expand to meet the size and instrument approach standards to support business access, and may represent the only public landing site for many miles.

Figure 2-7: Texas Basic Service Airports and Heliports





Basic service airports will require \$79 million for the next 5 years to bring existing facilities up to standards and reconstructing deteriorating pavement.

Heliports

There are two heliports included in the TASP. Heliports accommodate helicopters used by individuals, corporations, and helicopter taxi and medical services. One heliport is planned for future development, which will be a public use helipad in Gray County.

2.5.3 Inland Waterways

The SLRTP provides a comprehensive description of Texas ports and waterways, the services they provide, and the factors that influence operations. Regardless of whether a facility is considered urban or rural, common needs include:

- ★ Maintenance of drafts (U.S. Army Corps of Engineers [USACE]);
- ★ Deepening drafts; and
- ★ Landside facilities and intermodal interchanges

2.5.4 Freight Rail

Freight rail needs in rural Texas are met by both short-line and Class I railroads. The most critical need for short-line railroads is funding for rehabilitation projects. Most of the short-lines were created from marginally profitable lines that were spun off Class I railroads over the three decades since the rail industry was deregulated. In many instances the lines could be run profitably with a different cost structure. The tracks and other infrastructure were often not the most modern or in the best shape from maintenance point of view and have even deteriorated over time. Railcars have increased in weight and much of the short-line track did not keep up with changes necessary to handle the cars efficiently. Short-lines are often characterized by lighter weight rail, slow speeds, deferred maintenance and older equipment. In some cases there are industries located on the rail line that might use rail if better service was available. A public grant funding program is needed to meet those needs or the freight may eventually be added to the roadway system. Otherwise the short-lines might have to be acquired by the state in order to preserve rail service along those corridors.

A related need voiced by some short-line railroads is to increase cooperation from Class I railroads to schedule stops to pick up their carloads. The Class I railroads' business model is based on high volume and high-speed corridors to maintain their profitability. Making stops to pick up cars from short-lines involves a time-consuming, switching-intensive operation, and in some cases does not generate enough carloads to make the stop profitable. The inability of short-lines to fund multi-million dollar repair and upgrade



projects limits the types and amount of commodities they can carry, thus leading to the uneconomical car loadings and reluctance on the part of Class I railroads to schedule frequent stops.

A TTI study completed in 2005²⁴ (still applicable today) showed that short-line railroads have not been able to keep up with changing industry standards. For instance, the rail industry is now using 286,000-pound railcars to improve overall system efficiency, especially for transporting heavy bulk materials, like coal, grain, and lumber. Improvements include:

- ★ The amount of cars that are needed to transport the same volume of cargo is smaller, thus reducing the amount of trains and consequently the number of locomotives and railcars providing a savings in ownership, maintenance, and crew costs;
- ★ A reduction of the number of trains can produce an increase in the capacity of the system; and
- ★ A reduction in fuel consumption per ton of cargo moved.

Many of the short-line rail tracks were built decades ago when the maximum loads were significantly smaller. The heavier rail cars in use today will require railroads to upgrade their entire infrastructure including:

- ★ Rail and joints;
- ★ Ties and fastenings;
- ★ Ballast and surfacing;
- ★ Turnouts; and
- ★ Bridge structures.

Bringing the short-line infrastructure up to current standards is necessary to maintain their viability and to enhance rail freight choices in Texas. In the Texas Rail Plan it was estimated that Texas' annual freight rail needs of \$637 million from 2005 to 2030:

- ★ Short-line Infrastructure – \$27 million;
- ★ Class I Infrastructure – \$396 million;
- ★ Class I Non-Infrastructure – \$159 million; and
- ★ Safety – \$55 million.

²⁴ Warner, J. and Solari Terra, M, Assessment of Texas Short Line Railroads, Texas Transportation Institute, November 15, 2005. Pp 4-5.



As previously mentioned, the shale gas has recently become an economic generator for Texas requiring increased freight rail services. Additionally, the hydraulic fracturing (fracking) process requires other materials to be shipped to each well, both by rail and truck.

2.5.5 Passenger Rail

There are a limited number of Amtrak stations and passenger rail routes in rural areas of the state, predominately in west and northeast Texas. With limited stops along Amtrak's routes, most communities do not have access to passenger rail service. No commuter rail lines are located in rural areas. Amtrak does not have plans to expand service into more areas of Texas. During the outreach portion of this project there were no requests to extend Amtrak's route into more rural areas.

2.5.6 Rural Transit

Statewide rural transit ridership in 2011 was 5.8 million passenger trips. This represents an increase of greater than 18 percent over the 2008 ridership level reported in the SLRTP. Increased funding levels resulted in both capital and operations investment. Transit providers increased the overall number of vehicles in the fleet and increased the amount of service miles provided. Both investments resulted in an increase in passengers. Miles grew faster than passengers as a result of efforts by transit providers to increase accessibility and mobility in terms of increased span of service, serving more remote areas, an increase in longer distance trips and frequency of service.

TxDOT, in conjunction with the TTI and the 38 Rural Transit Districts (RTDs) that provide rural public transportation in Texas, undertook an analysis of the long term rural transit funding needs through 2035, and documented the results in Regional Coordination Plans. The Regional Coordination Plans developed in 2006 represent TxDOT's first attempt to produce a long-range forecast of rural transit needs. The 24 regional planning organizations that coordinate the RTDs updated the Regional Coordination Plans during the latter part of 2011/early 2012. The coordination plans have been synthesized by TTI on behalf of TxDOT. The long-range rural transit needs analysis and the synthesis of the Regional Coordination Plans are two new sources of rural public transportation data. They provide timely, comprehensive, and detailed information for the development of the TRTP.

Long-Range Rural Transit Needs Analysis – TxDOT - with technical assistance from TTI and in coordination with the RTDs - developed projections of funding needs for rural public transportation in Texas. Initial projections of operating and capital needs from 2012 to 2035 were based on available state data for public transportation and population change. The initial projections assumed each of the 38 Rural Transit Districts



(RTDs) would provide similar service levels as the ratio of transit revenue miles to population in 2011. The initial projections were completed by TTI in December 2011 based on forecasts of population growth in each rural transit district to project revenue miles (miles traveled with passengers on board) and associated vehicle and facility needs through the year 2035. Full details of the methodology for developing the projections of the operating and capital needs can be found in **Appendix C**.

A majority of RTDs responded with approximate facility and technology capital visions for the future as follows:

- ★ Increase in fleet size for operations
- ★ Interest in research and implementation of alternate “green” fuels technologies
- ★ Increase in in-house vehicle maintenance capacity
- ★ Interest in cooperative fleet maintenance with other transit agencies
- ★ Addition of passenger facilities such as transit centers, park & rides, and shelters to reflect new and expanded transit services
- ★ Emphasis on technology, including implementation, upgrading, and replacing on a regular basis (TTI, 2012)

In general, the primary types of services in 2035 are expected to remain either demand response or medical transportation program. A majority of RTDs envisioned at least some change in service operational levels in the next 23 years. The most common change anticipated was an increase in either flexible bus routes or fixed local bus routes. **Table 2-3** contains the statewide findings for operating characteristics and funding needs from 2012 to 2035. Operating needs for each RTD are summarized in tables by TxDOT District in **Appendix D**.

The projected annual revenue miles increase at a faster pace than population due to increased days of service and daily span of service by 2035. The rural public transportation fleet was 1,609 in 2011 and will increase to approximately 3,000 by 2035. The statewide annual operating expenses will likely increase from \$86.5 million in 2011 to \$410.5 million in 2035 due to population growth, service changes, and monetary inflation. The total amount of operating funding needed to 2035 is approximately \$5.1 billion.



Table 2-3: Statewide Rural Transit Operating Characteristics and Funding Needs 2012 to 2035

STATEWIDE RURAL TRANSIT OPERATING FUNDING NEEDS 2012 to 2035									
	Base Year	Annual Snapshot					2012-2035		Compound Annual Rate
		2015	2020	2025	2030	2035	Total	Change	
Population in service area	2010	<i>Millions of persons</i>							
Rural	6.9	7.5	8.1	8.7	9.4	10.1	na	3.3	1.57%
Annual revenue miles	2011	<i>Millions of miles</i>							
	31.1	34.1	39.5	45.7	53.0	61.5	1,073	30.4	2.76%
Vehicle fleet size	2011	<i>Projected statewide fleet</i>							
	1,609	1,751	2,001	2,282	2,602	2,971	na	1,362	2.48%
Operating expenses	2011	<i>Inflation adjusted millions of dollars</i>							
	\$86.5	\$109.1	\$152.0	\$211.5	\$294.4	\$410.5	\$5,095	\$323.9	6.43%

Source: TxDOT/TTI

Table 2-4 contains the statewide findings for capital funding needs throughout the planning period to 2035. Detailed summaries of capital needs for each RTD are summarized in tables by TxDOT District in **Appendix D**.

Table 2-4: Statewide Rural Transit Capital Funding Needs 2012 to 2035

STATEWIDE RURAL TRANSIT CAPITAL FUNDING NEEDS 2012 to 2035						
<i>(all values are inflation adjusted millions of dollars)</i>	2012-15	2016-20	2021-25	2026-30	2031-35	Total
Vehicle replacement	\$14.4	\$84.9	\$130.2	\$176.5	\$239.5	\$645.5
O&M facilities	\$14.6	\$25.0	\$35.2	\$49.7	\$70.2	\$194.8
Passenger facilities	\$2.5	\$20.8	\$42.1	\$69.7	\$115.2	\$250.2
Technology and other	\$9.1	\$13.5	\$16.4	\$19.9	\$24.2	\$83.1
TOTAL	\$40.6	\$144.1	\$224.0	\$315.8	\$449.1	\$1,173.7

Source: TxDOT/TTI

As stated previously, the rural public transportation fleet is expected to increase from 1,600 in 2011 to about 3,000 by 2035; the capital required to replace vehicles and increase fleet size is \$645.5 million over the period. Every RTD has some varying amount of operations or maintenance facility capital needs from 2012 to 2035; \$194.8 million capital funding is needed to support increasing fleet sizes and service change over the period. Approximately \$250.2 million is needed for passenger facilities, which include transit centers, park and rides, terminals/garages, and various types of bus stop facilities. The last category of projected capital funding needs is “technology and other” and includes projected funding needs for the following items: mobile data computers, automatic vehicle location equipment, software and hardware, communications equipment, and online presence (i.e., web development costs for a trip planner application). The technology-related capital needs from 2012 to 2035 total \$83.1 million. The total amount of capital funding needed to 2035 is \$1.17 billion.

Table 2-5 summarizes the funding needs for RTDs based on data provided by the TxDOT District office associated with the RTD. Detailed documentation of operating and



capital needs for rural public transportation operators in Texas is provided in Appendix D.

Table 2-5: Rural Transit Funding Needs 2012 to 2035 by TxDOT District

Rural Transit Funding Needs 2012 to 2035 by TxDOT District												
TxDOT District	CAPITAL (millions, inflation adjusted dollars)									OPERATING (millions, inflation adjusted dollars)		
	Vehicles New & Replacement Vehicles		O&M Facilities # of New & Renov. Facilities		Large Pax Facilities # of New & Renov. Facilities		Small Pax Facilities # of New & Renov. Facilities		Other (technology capital)	Total Capital	Total Revenue Miles	Total Operating
	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Capital	Total Revenue Miles	Total Operating
Abilene	70	\$4.8	4	\$3.1	4	\$3.3	39	\$1.1	\$0.6	\$12.8	10.2	\$35.9
Amarillo	160	\$15.5	4	\$3.1	4	\$3.3	39	\$1.1	\$3.5	\$26.5	33.2	\$149.5
Atlanta	155	\$13.4	6	\$6.0	2	\$1.5	5	\$0.3	\$3.5	\$24.8	34.2	\$137.4
Austin	585	\$67.0	5	\$3.9	6	\$3.1	75	\$4.2	\$8.0	\$86.2	104.4	\$672.8
Beaumont	70	\$8.1	11	\$9.0	1	\$1.4	175	\$2.4	\$1.4	\$22.2	11.9	\$67.0
Brownwood	427	\$41.5	27	\$11.8	4	\$3.3	32	\$1.7	\$6.6	\$64.8	77.4	\$396.3
Bryan	471	\$101.6	7	\$5.7	8	\$49.5	270	\$3.4	\$3.4	\$163.6	82.0	\$524.5
Childress	83	\$8.2	4	\$3.1	4	\$3.3	39	\$1.0	\$2.8	\$18.3	18.1	\$79.0
Corpus Christi	141	\$12.8	12	\$9.3	8	\$7.9	94	\$2.1	\$4.3	\$36.5	28.5	\$115.2
Dallas	987	\$99.1	23	\$24.0	16	\$11.5	59	\$1.3	\$8.2	\$144.2	137.5	\$571.8
El Paso	182	\$19.8	3	\$4.1	4	\$2.8	100	\$5.4	\$1.5	\$33.6	37.6	\$80.1
Fort Worth	314	\$29.6	13	\$12.5	8	\$7.0	105	\$2.0	\$4.6	\$55.6	60.5	\$259.8
Houston	138	\$13.1	12	\$12.4	19	\$17.3	160	\$2.6	\$1.5	\$47.1	25.1	\$156.9
Laredo	120	\$12.9	8	\$7.4	9	\$7.7	26	\$0.5	\$2.2	\$30.7	23.2	\$96.1
Lubbock	148	\$13.9	26	\$19.9	10	\$6.7	0	\$0.0	\$2.2	\$42.7	26.7	\$145.6
Lufkin	-	-	-	-	-	-	-	-	-	-	-	-
Odessa	305	\$21.0	4	\$2.0	0	\$0.0	0	\$0.0	\$5.2	\$28.2	67.8	\$263.6
Paris	228	\$23.1	13	\$15.7	6	\$5.7	70	\$2.1	\$2.8	\$49.6	48.9	\$173.3
Pharr	137	\$14.5	12	\$7.8	10	\$17.6	251	\$4.7	\$3.1	\$47.7	29.8	\$165.6
San Angelo	60	\$5.5	4	\$3.1	4	\$3.3	39	\$1.1	\$1.7	\$14.5	11.0	\$75.7
San Antonio	523	\$52.3	10	\$8.7	7	\$4.7	43	\$1.1	\$7.1	\$74.0	87.3	\$431.3
Tyler	286	\$28.2	4	\$3.6	15	\$9.1	150	\$2.6	\$3.1	\$46.6	48.3	\$206.1
Waco	100	\$9.8	3	\$2.4	0	\$0.0	10	\$0.3	\$2.2	\$14.8	20.7	\$96.2
Wichita Falls	-	-	-	-	-	-	-	-	-	-	-	-
Yoakum	348	\$29.8	15	\$16.0	15	\$18.1	819	\$21.3	\$3.5	\$88.7	48.3	\$195.2
STATEWIDE	6,039	\$645.5	229	\$194.8	162	\$188.0	2,600	\$62.1	\$83.1	\$1,173.6	1,072.5	\$5,094.9

Source: TxDOT/TTI

Synthesis of Regional Public Transportation Coordination Plans – In 2005, public transportation coordination was enhanced by the passage of legislation at the federal level with the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which required locally developed, coordinated public transit and human services plans for many federal-aid transit programs. As a result, each of the 24 planning regions across Texas worked to develop regional coordinated plans. The initial planning efforts were submitted to the TTC in December 2006 and have served as a guide for the majority of the coordinated efforts throughout the state.

In 2010, the original coordination plans were updated, building on the initial work that began in 2005. In addition to implementing many of the objectives outlined in the first



series of plans, many of the Texas regions experienced population growth, which was recently documented through the 2010 U.S. Census.

TxDOT asked TTI to review the updated coordinated plans and document findings, including common themes, best practices, and innovations. Presented here is a summary of the initial overview of the submitted plans. At the time the initial review was conducted (March 2012), 20 of the 24 regions had submitted updated plans, and the remaining plans were to be submitted upon stakeholder approval later in 2012. The full plans can be found under the Texas Regions tab of the Regional Service Planning website.²⁵

An initial review of the plans shows that the majority have some, if not all, of the components outlined in TxDOT's supplied table of contents. Additionally, many of the plans contained a discussion of unmet needs and/or previous barriers and constraints to providing transportation, and how the region addressed them. For example, South Plains Region created a useful table listing the previous barriers and constraints from the 2006 plan and how the region worked to address/overcome them.

Many of the plans have also broached the subject of mobility management, whether by hiring a regional mobility manager, or through planning to hire a mobility manager in the future. The Heart of Texas region has established a mobility management program that has been successful in connecting the public with rides in the region.

Other regions worked to create vision and mission statements for the plan update, and established new goals and objectives. Updating the regional goals and objectives is a clear way of demonstrating the iterative process of regional transportation coordination. For example, Golden Crescent region established basic, attainable goals for the 2006 plan, which involved improved service delivery and enhancing the customer experience. For the 2011 update, the region established clear descriptive goals that were tied to objectives and performance measures, allowing the stakeholders to determine whether or not the objectives have been attained.

Several of the regions incorporated performance measures into the updated plans to gauge the achievement of goals and objectives. Some regions, such as Central Texas, went so far as to include process and outcome measures in order to evaluate the overall effectiveness of the plan to coordinate transportation activities in the region.

The Regions continue to work on developing and growing their plans to fit their individual needs. The regions continue to become better organized, with clearly established visions, missions, goals, and objectives. Ultimately, the regions see value in

²⁵ <http://www.regionalserviceplanning.org>



coordinating resources and are striving to improve service delivery. As stated in the Brazos Valley plan,

“One thing that never seems to change is that demand for all agency resources keeps increasing while funding is decreasing. Our population is aging. Health care demands are soaring. Urban sprawl is resulting in greater distances between home and employment, medical, or recreation destinations. Gas prices keep rising, and wages and income are not keeping up. Transportation is the common link between all these needs, and yet the funding available for transportation is not keeping up with the demand.”

While the quote depicts the day-to-day realities many transportation providers face, regional coordination seeks to mitigate the negative impacts of the challenges posed by these realities.

2.5.7 Intercity Bus

Intercity bus transportation is a crucial component of the surface transportation network, particularly in smaller communities and rural areas. This type of service connects communities to each other within a region, as well as to larger urban centers offering services such as healthcare not found locally.

In 2000, TxDOT and the Texas Bus Association (TBA) - an organization that represents some of the companies that operate intercity bus services in Texas - assessed intercity bus facility needs in Texas to develop a more comprehensive and systematic investment approach. TxDOT and TBA identified the need for facility improvements in rural areas as a major priority for federal funding.

In areas where air service and passenger rail are not available, intercity bus transportation fills an important void. Even when these other modes are available, intercity bus transportation is a more affordable option, for many.²⁶ In 2010, intercity bus transportation provided the greatest coverage across rural America.²⁷ Given the economic downturn in 2008, it is not surprising to find that every year, for the past 4 years, intercity bus service has increased nationally. In large part, this is due to the rapid expansion of intercity bus services along the east coast, successfully competing for market share against both the airlines and Amtrak. Daily bus operations grew by 7.1

²⁶ Fravel, Frederick D. *Rural Passenger Transportation*. KFH Group, Bethesda, Maryland. TRNEWS 225 March-April 2003: http://web1.ctaa.org/webmodules/webarticles/articlefiles/trnews225_Moving.pdf

²⁷ U.S. Bureau of Transportation Statistics, February 2011: http://www.bts.gov/publications/scheduled_intercity_transportation_and_the_us_rural_population/2010/pdf/entire.pdf



percent in the year 2011 alone.²⁸ “The intercity bus system was the only intercity transportation system to appreciably grow in 2011, making it the fastest growing mode of intercity transit for the fourth year in a row”.

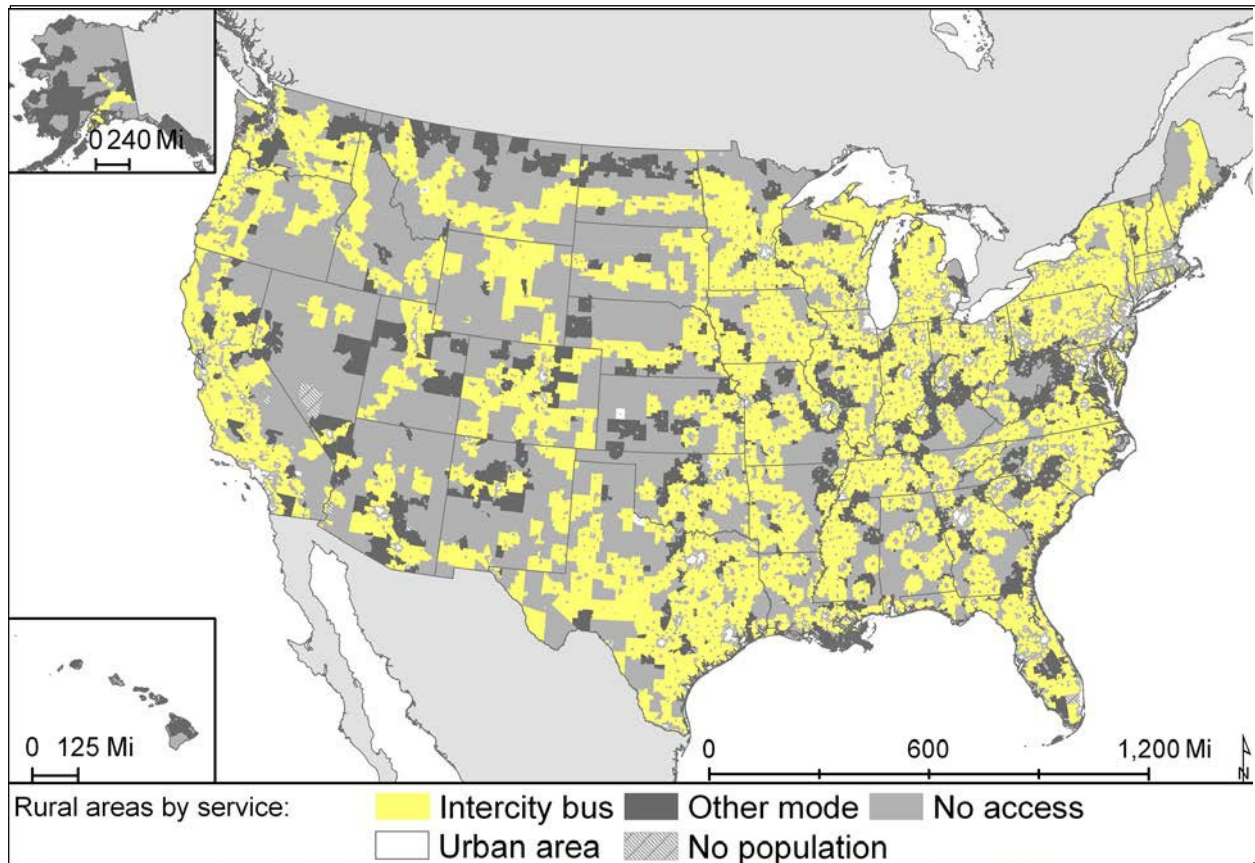
However, in rural areas across the nation, intercity bus service decreased. While 89 percent of rural areas had access to intercity bus services in 2005, only 78 percent had access in 2010. The number of intercity bus stations providing rural coverage decreased over the 5-year span from 3,169 to 2,423 stations. This decrease can mainly be attributed to the network reductions made by Greyhound lines shortly after 2005. This ultimately led to 3.1 million rural residents losing access to intercity bus transportation between 2005 and 2010.

While intercity bus service provides the most coverage in rural areas throughout the country, **Figure 2-9** illustrates that there are still service gaps. As of 2010, there are large rural areas in Texas particularly in the northern, western, and southwestern parts of the state that do not have access to intercity bus service.

²⁸ Schwieterman, Joseph P. et al. *The Intercity Bus Rolls to Record Expansion: 2011 Update on Scheduled Motorcoach Service in the United States*. Chaddick Institute for Metropolitan Development, DePaul University: December 2011: <http://www.buses.org/files/BISC/The%20Intercity%20Bus%20Rolls%20to%20Record%20Expansion%20-%202011%20Update%20on%20Scheduled%20Motor%20Coach%20Service.pdf>



Figure 2-8: Intercity Bus Service in 2010



Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics.

NOTE: A rural area is a Census block group with its centroid outside of the area defined by the United States Census Bureau as an urbanized area or urban cluster in 2000.

Table 2-6 shows the decline in rural access to intercity bus services in Texas. The left half of Table 2-6 shows the number and percent of residents in rural areas of Texas in 2005 and 2010 with access to intercity service, including intercity bus service.

The right side of the table shows the number and percent of residents in rural areas of Texas in 2005 and 2010 for whom intercity bus service is the only intercity mode, i.e., no access to intercity air, ferry, and rail.

**Table 2-6: Texas Intercity Bus Service**

Texas Intercity Bus Service							
2005		2010		2005		2010	
Rural residents in service area (intercity bus, air, ferry, and rail)				Rural residents in intercity bus service area ONLY (not in air, ferry, or rail areas)			
Number	%	Number	%	Number	%	Number	%
5,215,524	96.1	4,760,055	87.7	1,003,516	18.5	747,759	13.8

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics.

Table 2-6 indicates the percent of rural residents in areas served by intercity bus fell from 96.1 to 87.7 percent. The percentage of rural residents in service areas where intercity bus is the only service option fell from 18.5 to 13.8 percent. For comparison, access to intercity rail service was unchanged over this period, while access to intercity air service slightly increased.

2.6 Planned Improvements – Non-Highway Modes

This section identifies known projects for non-highway modes. These projects are not ranked in any way.

2.6.1 Bicycles and Pedestrians

Although no specific projects were identified for rural areas, TxDOT considers the incorporation of pedestrian and bicycles accommodations in its roadway planning, design, and maintenance activities.

2.6.2 General Aviation

In cooperation with local airport sponsors and the FAA, TxDOT has developed a statewide airport system plan—the TASP.²⁹ The TASP, updated in March 2010, includes airports in the FAA NPIAS, plus other airports deemed necessary for the system. The goal of the plan is to develop a statewide system of airports providing air access to the population and economic centers of Texas.

TxDOT's Aviation Capital Improvement Program (CIP) is a financial program for general aviation airport development in Texas. It is a detailed listing of potential projects based on the anticipated funding levels of the FAA AIP and the Texas Aviation Facilities Development Program. Through multi-year programming, the FAA, TxDOT, and airport

²⁹ See TxDOT website: http://www.txdot.gov/business/aviation/system_plan.htm



sponsors are able to anticipate airport needs and accommodate changes in project scope, cost, and schedule more easily.

The Aviation CIP is a tentative schedule of federal and state airport development projects for the years 2012–2014. Airport needs are categorized as either present or anticipated needs for enhanced safety and facility preservation.

Approximately 59 percent of the funds programmed in this plan are allocated for the safety and preservation of system airports, primarily air traffic control towers, security enhancements, and pavement preservation. Forty-one percent of the CIP is currently programmed to enhance the system in the form of new or extended runways, expanded aircraft parking aprons, and aircraft hangar developments—all based on local demand for increased capacity. This program provides a balance between preserving system assets while enhancing safety, capacity, and function, and includes about \$229 million in general aviation airport improvement projects.

The current TASP includes improvements to 289 existing airports and 12 proposed airports that are identified in three time frames, based on expected aviation activity:

- ★ Short term: 0–5 years
- ★ Intermediate term: 6–10 years
- ★ Long term: 11–20 years

The TTC has established a priority system that allows the TxDOT Aviation Division to identify projects that meet present system needs and use limited state and federal airport development funds most efficiently. Current priorities are:

- ★ *Safety* – Projects needed to make the facility safe for aircraft operations.
- ★ *Preservation* – Projects to preserve the functional or structural integrity of the airport.
- ★ *Standards* – Improvements required to upgrade the airport to design standards for current user aircraft.
- ★ *Upgrade* – Improvements required for the airport to accommodate larger aircraft or longer stage lengths.
- ★ *Capacity* – Expansion required for the airport to accommodate more aircraft or higher activity levels.
- ★ *New Access* – A new airport providing new air access to a previously unserved area.
- ★ *New Capacity* – A new airport needed to add capacity or relieve congestion at other area airports.



2.6.3 Inland Waterways

Although no specific projects were identified, one opportunity was suggested during the stakeholder meetings to investigate the feasibility of making the Red River navigable up to Bowie County to reduce truck traffic. This is discussed in Chapter 4.

2.6.4 Rural Freight Rail Development

Short term rail funding requests are outlined in Section 7 of the Texas Rail Plan.

In response to concerns about the loss of rail service in rural parts of Texas, the Texas Legislature passed legislation allowing the formation of Rural Rail Transportation Districts (RRTD) in 1981. RRTDs were given the power of eminent domain as well as the authority to issue bonds to assist in their efforts to preserve rail infrastructure and promote economic development in the state. As of June 2007, 38 RRTDs had been formed in the state. The purpose of RRTDs and the facilities they acquire is to help develop, maintain, and diversify the economy of the state. The intent is to reduce unemployment and foster economic growth within the district. More information is available in Chapter 3 of the Texas Rail Plan.

2.6.5 Passenger Rail Planning

TxDOT is currently studying passenger rail improvements in four corridors:

- ★ High-speed rail from Dallas-Fort Worth to Houston.³⁰ The FRA has awarded \$15 million to TxDOT from its High-Speed Intercity Passenger Rail Program³¹ for the preliminary engineering and project-level environmental analysis necessary to develop a new Core Express³² corridor from Dallas-Fort Worth to Houston, two of the largest metropolitan areas in the country. The project proposes to implement at least 150 miles per hour (mph) high-speed intercity passenger rail service in a corridor that is not currently served.
- ★ Oklahoma City to south Texas, i.e., south of San Antonio.³³ FRA has awarded \$5.6 million to TxDOT from its High-Speed Intercity Passenger Rail Program for completion of feasibility studies, a service development plan, and environmental work the corridor between Oklahoma and South Texas.

³⁰ See TxDOT website: http://www.txdot.gov/business/rail/hsipr/april_11.htm

³¹ See FRA website: <http://www.fra.dot.gov/rpd/passenger/2243.shtml>

³² Core Express corridors will form the backbone of the national high-speed rail system, with electrified trains traveling on dedicated tracks at speeds of 125-250 mph or higher.

³³ See TxDOT website: http://www.txdot.gov/business/rail/hsipr/may_10.htm



- ★ Austin to Houston.³⁴ TxDOT has applied for funding from FRA's High-Speed Intercity Passenger Rail Program to study the potential for new passenger rail service in this corridor.
- ★ I-20 Corridor. TxDOT and Amtrak are conducting a feasibility study for new Amtrak service between the Bossier City-Shreveport area in Northwest Louisiana and along the Interstate 20 (I-20) corridor to Dallas and Fort-Worth. TxDOT received \$265,000 in federal funds for the study through the East Texas Corridor Council, which represents the communities and government agencies at the local and regional level in Texas and Louisiana. The proposed new 200-mile route will provide better connectivity between the Dallas Fort Worth Airport and Shreveport. Currently Shreveport and Bossier City are served by Amtrak with Thruway Motor coach Service connecting to or from the Amtrak Texas Eagle at Longview. Potential new Amtrak stops include Centre Port/DFW Airport (along the Trinity Railway Express commuter route), Mesquite, Forney, Terrell, and Wills Point.

2.6.6 Rural Transit Capital Projects

Public transportation projects in rural areas include capital projects such as an on-going need to replace transit fleet vehicles that exceed their useful life standards. Additionally, life-cycle replacement of facilities, including maintenance and passenger facilities, intermodal terminals, and other facilities need periodic improvements. These capital projects are driven by growth in rural population.

2.6.7 Intercity Bus Projects

Although intercity bus services are operated on a for profit basis, on April 30, 2009, the TTC awarded federal stimulus funds from the American Recovery and Reinvestment Act of 2009 (ARRA) to eight intercity bus companies to fund capital improvements for vehicle fleets and facilities.³⁵ Eight companies shared a total of nearly \$7.6 million, comprising \$7 million for facilities and \$0.6 million to purchase additional vehicles. The facilities funding included projects to enhance and upgrade intercity bus facilities in 15 locations around the state.³⁶ The majority of the funding (\$5.7 million) went to two companies: Greyhound Lines, Inc. and Kerrville Bus Company, Inc.

³⁴ See TxDOT website: http://www.txdot.gov/business/rail/hsipr/may_10.htm

³⁵ See TxDOT website http://www.txdot.gov/business/rail/hsipr/may_10.htm

³⁶ See TxDOT website: http://www.txdot.gov/about_us/commission/2009_meetings/transcripts/apr30.htm



Through its intercity bus (ICB) program,³⁷ TxDOT has funded a range of projects, such as feasibility and facility studies, rehabilitation, and construction of intermodal facilities, and work related to the Americans with Disabilities Act.³⁸

³⁷ See TxDOT website: <http://www.txdot.gov/business/governments/grants/programs.htm>

³⁸ See TxDOT website: <http://www.dot.state.tx.us/PTN/geninfo.htm?pg=icbview>

3.0 Economic Impact

3.1 Introduction

The implementation of projects in the TRTP is expected to have a positive economic impact in Texas. Transportation infrastructure spending can have two distinct economic impacts—during construction and subsequently when the infrastructure construction is complete and becomes an operational part of the multi-modal transportation system.³⁹

The economic analysis of transportation investments can be done on an individual project basis or by analyzing a program of investments. Most studies take the project-by-project approach, in part since the analytic and data requirements are more straightforward. Caution must be exercised to address interactions between projects when analyzing a program or groups of projects. For example, the combined impact of two projects on competing parallel corridors may be lower than their respective standalone impacts. Alternatively, the combined impact of multiple projects along the same corridor may be greater than the sum of their respective standalone impacts.

Economic impact is different to traditional benefit/cost analysis, which is also described below.

The TRTP does not use a project-specific economic impact or benefit/cost analysis as a basis for assessing any highway or non-highway projects.

3.2 Economic Impact during Construction

Economic impacts related to the construction of transportation infrastructure projects are generally mode neutral—regardless of the type of project. During construction there will be short-term impacts for the construction industry, including construction jobs, and the industries that supply equipment and materials. The larger and longer term the construction activities, the greater the economic impact. Not only does construction provide employment for construction workers, there is a ripple effect on local communities, as construction workers spend their income on lodging, groceries, and leisure activities. State and local agencies will benefit through increased sales tax revenues. However, this short-term economic boost will end when construction work is complete. Construction activity may be disruptive to some businesses located adjacent to the project, which may in turn experience a reduction in economic activity.

³⁹ <http://www.fhwa.dot.gov/infrastructure/asstmgmt/primer08.cfm>



The research on the impact of transportation investments in the public sector is extensive. Recently, the Congressional Budget Office has estimated that for each \$1 spent on ARRA transportation infrastructure, the cumulative multiplier effect on Gross Domestic Product (GDP) is between 1 and 2.5.⁴⁰ A Government Accountability Office report estimated that nearly \$20 billion of ARRA highway expenditures (not obligations) had resulted in between 17,000 and 47,000 new direct full-time equivalent (FTE) jobs per quarter over an 18-month period, excluding indirect and induced jobs.⁴¹ Various organizations have published their own research on jobs created by construction activity, ranging from 12.4⁴² to 28.5⁴³ jobs per \$1 million of construction expenditure.

3.3 Economic Impact following Construction

Following completion of infrastructure construction (or for non-infrastructure operational improvements), operational improvements may have lasting effects on the local, regional, or national economy. In addition to direct travel benefits for individual travelers and freight movement, enhancements to the transportation system improve access to job opportunities for individuals, and access to labor markets for businesses. Similarly, businesses benefit from improved travel time and reliability of shipments to and from their suppliers and vendors. Under appropriate circumstances, new transportation infrastructure can open up new markets for businesses.

3.4 Calculation of Economic Impacts

Economic impact analysis studies measure the consequences that an infrastructure project will have on local or regional employment patterns, wage levels, business activity, tourism, housing, and even migration patterns. In rural Texas, some of the key economic impacts may include increased economic activity or reduced transportation costs for the agriculture, natural resource extraction, renewable energy generation, and tourism sectors.

A more detailed explanation of methods used in economic impact analysis can be found in National Cooperative Highway Research Program (NCHRP) Synthesis Report 290, "Current Practices for Assessing Economic Development Impacts from Transportation Investments: A Synthesis of Highway Practice," 2000.⁴⁴

⁴⁰ <http://www.cbo.gov/ftpdocs/123xx/doc12385/08-24-ARRA.pdf>

⁴¹ <http://www.gao.gov/new.items/d11600.pdf>

⁴² <http://www.strategiceconomicresearch.org/AboutUs/StimCalcTool.pdf>

⁴³ <http://www.agc.org/galleries/econ/National%20Fact%20Sheet.pdf>

⁴⁴ <http://trid.trb.org/view.aspx?id=670616>



There are many different levels of sophistication for calculating economic impact—the most appropriate method and level of effort for any given project depends on the scale and complexity of the project. Most calculations build on a regional input-output model to estimate indirect and induced impacts once the direct impacts have been identified.

Market studies consider demand and supply for business activity and then attempt to quantify the effects on the market of a change in transportation costs caused by a project. Comparable case studies are most often used to evaluate the localized economic impacts of a project on neighborhoods, downtowns, or small towns. This approach is applied to projects such as bypasses of small towns, where comparable projects and situations elsewhere in the region or state can be readily identified and studied.

TTI is currently working on a research project *Refining a Methodology for Determining the Economic Impacts of Transportation Improvements* that can be used to determine the economic effects of specific projects as well as educate the general public on the impacts that transportation improvements or lack of improvements will have on their community. The resulting economic impact model will allow decision-makers to see the effects transportation improvements have on the local market and enable them to make more informed choices.⁴⁵

3.5 Traditional Benefit-Cost Analysis

Benefit-cost analysis typically considers only direct benefits and costs of transportation improvement projects.⁴⁶ The approach is generally well understood; however, it is important that all assumptions be documented. There are three main factors in traditional calculation of benefit-cost ratios: time savings, vehicle operating savings, and accident reduction.⁴⁷

In rural Texas, where traffic volumes can be low and traffic congestion infrequent, travel speeds may not be significantly improved by the future facility. An exception may be for travel time and vehicle operating cost savings associated with local bypasses, which involve higher speed limits and fewer intersections on the future facility. However, the improvement in travel speed may be offset by increased travel distance. Consequently, the quality of the estimate of travel time and vehicle operating cost savings associated with the future facility may be low, and very sensitive to the assumptions made.

⁴⁵ <http://rip.trb.org/browse/dproject.asp?n=28069>

⁴⁶ <http://www.fhwa.dot.gov/infrastructure/asstmgmt/primer05.cfm>

⁴⁷ <http://www.fhwa.dot.gov/planning/rural/planningfortrans/ruralgui>



Similarly for safety benefits, these are typically calculated for accident rates per hundred million vehicle miles traveled. Light traffic volumes (and short distance future facilities) may result in statistically unreliable savings.

For these reasons, benefit-costs analysis may be more appropriate for future study on each project as it is further developed and more detailed information is available regarding both benefits and costs.

4.0 Stakeholder and Public Outreach

4.1 Purpose

Promoting communication and transparency with the public is a fundamental tenet of TxDOT's vision. Well-informed members of the public and stakeholders can provide valuable input to the transportation planning and decision-making process. During the development of the TRTP, TxDOT:

- ★ Provided a clearly defined purpose and objective for initiating public dialogue and soliciting input throughout the transportation planning process.
- ★ Provided adequate and timely notices of opportunities for the public to participate in cooperative dialogue, to allow sufficient time for stakeholders and interested parties to prepare their written or oral comments.
- ★ Provided venues (e.g., forums, meetings and hearings) open to all members of the public that allowed public/stakeholders to be heard and to present evidence supporting their views and positions.
- ★ Engaged in a transportation planning process that is transparent and provided stakeholders with access to educational materials and all information used (e.g., documents, exhibits, maps, photographs, etc.) in the decision-making process.
- ★ Engaged stakeholders and listened thoughtfully to comments and input during meetings held around the state.

4.2 The Public Outreach Plan

A Public Outreach Plan was created for the specific public involvement activities carried out during the development of the TRTP. TxDOT's outreach effort:

- ★ Established early and continuous public involvement opportunities that provided timely information about transportation issues and decision-making processes to all interested parties.
- ★ Provided reasonable public access to technical and policy information used in the development of the TRTP.
- ★ Provided adequate and timely notice of public involvement activities and time for public review and comment at key decision points, including but not limited to a reasonable opportunity to comment on the draft TRTP.
- ★ To the maximum extent practicable, ensured that public meetings were held at convenient and accessible locations and times.
- ★ To the maximum extent practicable, used visualization techniques to describe the proposed TRTP.



- ★ To the maximum extent practicable, made public information available in electronically accessible format such as the World Wide Web to afford interested parties reasonable opportunity to review information and provide comments.
- ★ Demonstrated explicit consideration and response to public input during the development of the TRTP, including but not limited to ample commenting periods and a variety of ways to comment and deliver input including mail-in forms, email, online/web, toll-free phone line, and in-person at one of the public or stakeholder meetings. All comments received are public record and are documented in **Appendix B.**
- ★ Included a process for seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, disabled individuals, and non-English speakers who may face challenges accessing employment and other services.
- ★ Provided translation of all project materials into Spanish, as well as provision of hearing impaired services at public meetings upon request.
- ★ Provided for the periodic review of the effectiveness of the public involvement process to ensure that the process provided full- and open-access to all interested parties and revised the process as appropriate.

4.3 Public Outreach Tools

4.3.1 Newsletters

TxDOT compiled a comprehensive mailing list for the TRTP using the SLRTP mailing list as the foundation. All contacts from the SLRTP mailing list were transferred to the TRTP mailing list including planning organizations, councils of government, regional mobility authorities, rail districts, federal, state, and local elected officials (and chiefs of staff), federal transportation staff members, congressional district directors, state district directors, community leaders, organized state transportation groups and advisory committees, Indian tribal government representatives, civic, business and economic interest groups, and industry representatives from modal groups including highways, bicycle/pedestrian, general aviation, inland waterway, freight and passenger rail, and public transportation. Also included on the TRTP mailing list were rural contacts and individuals who requested updates, attended meetings, called the toll-free information line, or expressed interest in the TRTP. Throughout the public outreach process, interested parties were added to the mailing list upon request, allowing for follow-up and continued involvement in the process.



TxDOT distributed three TRTP newsletters by mail and e-mail to contacts on the mailing list. The newsletters were also posted on the TRTP webpage and provided as handouts at stakeholder and public meetings.

The first newsletter (August/September 2011) described the purpose and goals of the TRTP, the proposed schedule, and public/stakeholder outreach opportunities. The second newsletter (February 2012) provided a status update and announced the public meeting dates and locations. The final newsletter (April 2012) announced the results of the study and the public hearing date and location.

4.3.2 TRTP Webpage

TxDOT created a TRTP webpage (http://www.txdot.gov/public_involvement/rural_2035) with information about the TRTP goals and objectives, development process, schedule, answers to frequently asked questions, public involvement opportunities, meeting presentations, meeting materials, and newsletters. The website included social media links, the project mailing address, e-mail address, toll-free telephone number, and an electronic comment box accessible 24 hours a day, 7 days a week.

4.3.3 Visualization Tools

TxDOT developed visual materials for the webpage, public meetings, and stakeholder meetings to effectively communicate the issues and processes involved in the development of the TRTP. The materials included electronic presentations, maps, informational display boards, and other visual content.

4.3.4 Social Networking Tools

TxDOT used a variety of tools to communicate with and inform the public including social media such as Facebook, Twitter, and YouTube.

4.3.5 Toll Free Telephone Line

A toll free telephone information line, designed to provide public information, answer questions, and record comments, was operational from August 2011 to July 2012. Public information specialists answered the line during business hours, and a voice mailbox was accessible 24 hours a day, 7 days a week. The toll-free number for the project (1-855-TX-RURAL or 1-855-897-8725) was published in all newsletters, news releases, newspaper advertisements, meeting materials, and the TRTP webpage.



4.4 TRTP Public Outreach Activity Schedule

Figure 4-1 shows the timeline for the TRTP public outreach activities including TRTP newsletters, stakeholder meetings, public meetings, and the public hearing.

Figure 4-1: Public Outreach Activities and Dates



4.5 Stakeholder Meetings

TxDOT invited over 600 rural stakeholders to participate in three rounds of stakeholder meetings/events. A stakeholder was defined as someone who, in some capacity, owns, manages operates, and/or maintains an element of the transportation system. Each district provided a cross-sectional list of several county judges, mayors, city managers, transportation/public works directors, chamber of commerce officials, economic development officials, educators, law enforcement officials, individuals with an interest in transportation, and modal representatives (aviation, public transportation, ports, passenger rail, freight rail, bicycle/pedestrian, and construction/design).

4.5.1 Stakeholder Meetings - Round 1

The first round of stakeholder meetings was conducted in August 2011 as shown in Table 4-1. Identical material was presented at eight different locations around the state: San Angelo, Alpine, Lubbock, Wichita Falls, Alice, Lufkin, Atlanta, and Belton. A total of 120 stakeholders participated in the first round of meetings.



Table 4-1: Round 1 Stakeholder Meeting Dates and Attendance

City	Meeting Date	Attendance
San Angelo	August 22, 2011	20
Alpine	August 23, 2011	6
Lubbock	August 24, 2011	8
Wichita Falls	August 25, 2011	13
Alice	August 29, 2011	14
Lufkin	August 30, 2011	26
Atlanta	August 31, 2011	20
Belton	September 1, 2011	13

Figure 4-2: Round 1 Stakeholder Meeting



An optional, informal, criteria questionnaire (**Figure 4.3**) was made available to stakeholders during the initial round of meetings. The questionnaire was simple and straightforward with a rating system from 1 to 10 for weighting the importance of each proposed criteria measure for prioritizing rural added capacity highway projects. Approximately 100 completed questionnaires were received. The results of the questionnaire are shown in **Figure 4.4** and were ultimately used to weight each of the criteria measures.

Figure 4-3: Questionnaire



CRITERIA QUESTIONNAIRE

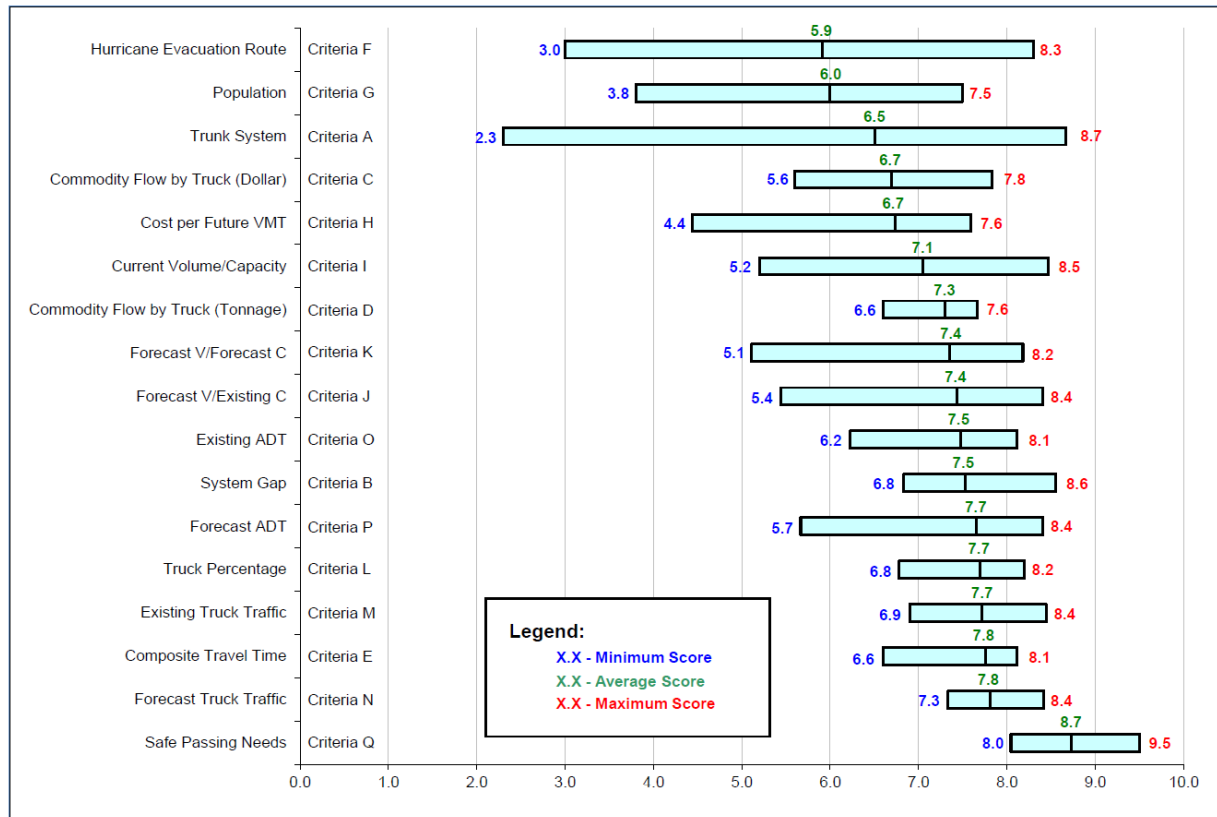
Stakeholder Meeting #1: 2011
[Location/Date]

Please rate the overall importance of each of the following criteria for prioritization of rural highway projects:

CRITERIA	Criteria Questions	How important is this criteria? (Circle One)									
		Less Important	>								More Important
Trunk System	Is project on the Texas Trunk System?	1	2	3	4	5	6	7	8	9	10
System Gap	Is there a difference in the number of lanes on either end of the project that the proposed project will address either completely or partially?	1	2	3	4	5	6	7	8	9	10
Truck Freight Movement: Tonnage	How much TONNAGE of freight is generated in or shipped to the county	1	2	3	4	5	6	7	8	9	10
Truck Freight Movement: Dollars	How many DOLLARS of freight are generated in or shipped to the county	1	2	3	4	5	6	7	8	9	10
Accessibility	Compared to the other projects, how well does project connect people and jobs?	1	2	3	4	5	6	7	8	9	10
Hurricane Evacuation Route	Is the project on Hurricane Evacuation Route or intersect one?	1	2	3	4	5	6	7	8	9	10
Population	Compared to other projects, how many people live within X miles of the project?	1	2	3	4	5	6	7	8	9	10
Cost Effectiveness (Cost per future VMT)	How does the construction cost compare to the forecasted usage?	1	2	3	4	5	6	7	8	9	10
Existing Volume on Existing Capacity (V/C Ratio)	Is there an existing congestion problem?	1	2	3	4	5	6	7	8	9	10
Forecast Volume on Existing Capacity (V/C Ratio)	Will there be a congestion problem in the future if the project isn't built?	1	2	3	4	5	6	7	8	9	10
Forecast Volume on Future Capacity (V/C Ratio)	How well does the project address the congestion problem?	1	2	3	4	5	6	7	8	9	10
Truck Percentage	Is there a large percentage of current truck traffic on the facility that could affect travel? (% trucks)	1	2	3	4	5	6	7	8	9	10
Existing Truck Traffic (trucks per day)	How much current truck traffic travels within the project limits that could affect travel? (# of trucks)	1	2	3	4	5	6	7	8	9	10
Forecast Truck Traffic (trucks per day)	How many trucks are forecast to be traveling within the project limits that could affect travel?	1	2	3	4	5	6	7	8	9	10
Existing Total Traffic (vehicles per day)	What is the current traffic volume within the project limits that could affect travel?	1	2	3	4	5	6	7	8	9	10
Forecast Total Traffic (vehicles per day)	What is the forecast traffic volume within the project limits that could affect travel?	1	2	3	4	5	6	7	8	9	10
Safe Passing Needs	Can you pass safely on the current highway?	1	2	3	4	5	6	7	8	9	10



Figure 4-4: Results



Following is a brief summary of the discussion and questionnaire highlights for each of the eight stakeholder meetings. Complete meeting minutes and questionnaire results are located in Appendix B.

San Angelo: Discussion focused on the drivers of rural growth including Target, Wal-Mart, and HEB distribution centers, oil and gas industry, hydraulic fracturing (fracking) operations, and the wind tower industry. Several comments focused on upgrading short-line rail and transferring truck traffic to rail. The need for connectivity was discussed, especially with Mexican highways and border crossings. The highest weighted criteria measures in San Angelo were the trunk system, future volume/existing capacity, truck percentage, and safe passing needs. The lowest rated criteria measures were hurricane evacuation, population, and cost effectiveness.

Alpine: Comments generally expressed support for a more formalized rural transportation planning process. Concerns included safety issues on US 67, system gap on US 285, vehicle congestion on highways, transporting hazardous materials, and bike/pedestrian issues such as seals, joints, rumble strips, surface quality, and the lack of continuous shoulders. Heavy truck traffic is increasing because of silver mining,



copper mining, strip mining, and the spaceport. The highest rated criteria measure in Alpine was safe passing needs. The lowest was hurricane evacuation.

Lubbock: Comments focused on connectivity issues, poor lighting and signage at highway exits, overweight trucks carrying wind turbines causing road damage, lack of alternate routes, and bicycle/pedestrian issues. Suggestions were made to give overweight permit fees back to the counties to fund highway maintenance and to improve recognition of rural planning organizations. The highest rated criteria measure in Lubbock was safe passing needs. The lowest was hurricane evacuation. Concerns were expressed that the criteria favored east Texas due to denser population.

Wichita Falls: Discussion focused on safety issues and the needs of bicycle riders and pedestrians, as well as the need for more lanes on the I-35 corridor and the need for accelerator lanes on FM roads and highways. The highest ranked criterion was the trunk system and the lowest was hurricane evacuation.

Alice: Several comments focused on the lack of connectivity and system gaps on rural roadways such as Highways 181 and 97, US 281, FM 665, and the Bee County-Karnes County road. Activity is increasing due to Eagle Ford Shale and anticipated to increase due to the Panama Canal widening. Also mentioned was the importance of prioritizing non-roadway projects and the design considerations for bicycle and pedestrian projects/enhancements. The highest rated criteria measures were the system gap, accessibility, hurricane evacuation route, and safe passing needs. The lowest rated criteria measure was the trunk system.

Lufkin: Comments focused on recently formed rural planning organizations, the completion of I-69, improvement of roads in Nacogdoches County, routes to and from Stephen F. Austin University, an overpass at FM 819 and US 59, better directional signage for roads in Cherokee County, and the importance of connecting rural population to needed services like hospitals, grocery stores, etc., need more truck drivers, short-haul railroads, greenways, railways converted into bike lanes, and sidewalks from houses to schools. The highest rated criteria measures in Lufkin were safe passing needs, future volume/planned capacity, forecast total traffic, and hurricane evacuation route. The lowest rated criteria measures were system gap and forecast truck traffic.

Atlanta: Several stakeholders stated an interest in alternative transportation, such as public transit, passenger rail, freight shuttle services, and making the Red River navigable up to Bowie County to reduce truck traffic. Law enforcement officials expressed a need for breaks in the cable and concrete barriers every 1–2 miles for emergency vehicles. Also mentioned was the importance of continuous shoulders for



cyclists and rails to trails. The strongest rated criteria measure in Atlanta was safe passing needs. The lowest was truck freight dollars.

Belton: Comments included a request for a higher capacity load design, the need for alternative modes of transportation, elimination of four-lane to two-lane transitions that create bottlenecks, improved communication between MPOs and RPOs, improved cross-state infrastructure for cyclists, and the inclusion of safety as part of the criteria for development of highway project lists. A transit district expressed concerns about narrow shoulders creating safety issues for 18-passenger vehicles pulling over for emergencies. A major supplier mentioned that trucks have been taken off the interstates and put on rural roads to shorten the distance in miles, minimizing wear and tear. The highest ranked criteria measures in Belton were safe passing needs, accessibility, and forecast total traffic. The lowest ranked criteria measures were the trunk system and hurricane evacuation.

Specific Stakeholder Comments: Stakeholders suggested specific opportunities related to non-highway modes:

- ★ Stakeholders suggested that if investments are made in the Gulf Colorado & San Saba Railway (GC&SS – part of American Railroads Corporation), operating speeds (currently 10–15 mph) could be increased that may make this short-line railroad more attractive to move sand from quarries in McCulloch County.⁴⁸The GC&SS operates 67.5 miles between Brady and Lometa. Currently an estimated 450 to 600 trucks, equivalent to 110 to 150 railcars, are transporting this sand each day. A stakeholder suggested that infrastructure grants awarded to regional railroads (like GC&SS) would provide positive economic impacts for local businesses, increased employment opportunities, and would encourage greater business investment in the state. For TxDOT, the primary benefit arising from regional railroad grants for railroad infrastructure upgrade/expansion projects would be the potential reduction in heavy truck traffic on Texas' highways. Each railcar can transport four to five truckloads of the same commodity. If truck freight can be transferred to rail, it will result in a reduction in consumption of diesel fuel, and a corresponding reduction in emissions. GC&SS is seeking funding to upgrade the railroad between Brady and Lometa to carry more trains at higher speeds and with increased train lengths in the years ahead. GC&SS anticipates a potential increase of 450 percent in train traffic totals in 2012, and more in

⁴⁸ The Gulf Colorado & San Saba Railroad (GC&SS) in central Texas, a former Santa Fe Railway branch line, is expected to handle 15,000 loads in 2012 and 25,000 loads the following year. There are ten sand companies along the GC&SS that ship sand used in fracking. The GC&SS has put significant investment into upgrading the rail line since purchasing it in 1992 according to information prepared for their federal grant application.



2013. This is based on expected growth in local extraction of industrial sand to support energy development initiatives elsewhere in Texas.⁴⁹

- ★ Stakeholders indicated a local initiative is to extend the GC&SS 17 miles from the center of Brady to Voca, where 90 percent of the sand plants are located. Sand is currently transported to Brady by truck, before transloading to rail. The empty trucks then return to Voca. A stakeholder estimated that extension of the railroad to Voca would eliminate approximately 200,000 truck miles per month from State Highway 71, greatly reducing TxDOT's likely maintenance costs.
- ★ One stakeholder suggested TxDOT should investigate whether making the Red River navigable up to Bowie County would reduce truck traffic.⁵⁰ The consultant team determined that surveys undertaken for the Texarkana Region Freight Transportation Study⁵¹ indicate more than half of the respondents were interested in using waterborne transportation if it were available in the area to move agricultural products, wood products, scrap metals, steel, stone, sand, and cement. The Port of Shreveport-Bossier in Louisiana provides waterborne transportation to the region by way of the Red River (see **Figure 4-5.**) The USACE is studying the possibility of extending navigation on the Red River closer to Texarkana, but only into Arkansas. The feasibility study to continue navigation from Shreveport-Bossier City, Louisiana, into the State of Arkansas will be completed in 2012. There were no appropriations to continue the evaluation in either fiscal year 2012 or 2013. No plan has been proposed for consideration of an extension into the Bowie County area of Texas. The Red River would have to be made navigable through Arkansas first.

4.5.2 Stakeholder Meetings - Round 2

TxDOT hosted eight identical stakeholder webinars each morning and afternoon on February 7–9 and 13, 2012, to provide an update of TRTP findings and progress to date and to discuss the draft added capacity highway project lists and rankings. A total of 29 stakeholders and 55 TxDOT representatives participated in the webinars, as shown in Table 4-2.

⁴⁹ Short lines and pure dumb luck: The next Powder River Basin (Part II), <http://cs.trains.com/TRCCS/blogs/fred-frailey/archive/2011/11/15/short-lines-and-pure-dumb-luck-the-next-powder-river-basin-part-ii.aspx>



Figure 4-5: Red River: Navigable (left) and Non-navigable (right)



Source: Texarkana Region Freight Transportation Study (Shippers' Survey), September 2008

Table 4-2: Stakeholder Webinar Dates

Webinar Date	Webinar Time	Stakeholder Participants
February 7, 2012	9:00 AM–Noon	7
February 7, 2012	1:00 PM–:00 PM	2
February 8, 2012	9:00 AM–4Noon	4
February 8, 2012	1:00 PM–4:00 PM	2
February 9, 2012	9:00 AM–Noon	4
February 9, 2012	1:30 PM–4:00 PM	2
February 13, 2012	9:00 AM–Noon	4
February 13, 2012	1:30 PM–4:00 PM	4

4.5.3 Stakeholder Event – Round 3

The final stakeholder event for the TRTP was an electronic submission of the draft final list of projects. TxDOT requested that stakeholders review the list and reply with comments.

4.6 Public Meetings

Open-house style public meetings were hosted by 24 of TxDOT’s 25 districts in March 2012 to present the draft findings and projects in the TRTP. A public meeting was not required in the Houston District because the entire district is within MPO boundaries.



A total of 205 persons signed in at the open-house style public meetings held throughout the state on the TRTP. Table 4-3 shows the attendance numbers at the public meetings.

Figure 4-6: Public Meeting Photo



Table 4-3: Public Meeting Attendance

TxDOT District	Meeting Location	Date	Attendance
Abilene	TxDOT, Nolan County Maintenance Office, Sweetwater, TX	March 8, 2012	2
Amarillo	TxDOT District Office, Amarillo, TX	March 8, 2012	2
Atlanta	TxDOT District Office, Atlanta, TX	March 8, 2012	8
Austin	TxDOT District Office, Austin, TX	March 6, 2012	8
Beaumont	First National Bank, Jasper, TX	March 7, 2012	2
Brownwood	TxDOT District Office, Brownwood, TX	March 6, 2012	0
Bryan	Larry J. Ringer Public Library, College Station, TX	March 8, 2012	17
Childress	City Auditorium, Childress, TX	March 6, 2012	11
Corpus Christi	Coastal Bend College, Beeville, TX	March 6, 2012	8
Corpus Christi	TxDOT Area Office, Alice, TX	March 8, 2012	11
Dallas	Corsicana Public Library, Corsicana, TX	March 6, 2012	11
El Paso	TxDOT Maintenance Office, Sierra Blanca, TX	March 7, 2012	5
Fort Worth	Mineral Wells High School, Mineral Wells, TX	March 8, 2012	4
Laredo	International Center for Trade, Eagle Pass, TX	March 6, 2012	2
Lubbock	TxDOT District Training Center, Lubbock, TX	March 5, 2012	4
Lufkin	TxDOT District Office, Lufkin, TX	March 8, 2012	19



TxDOT District	Meeting Location	Date	Attendance
Odessa	TxDOT District Office, Odessa, TX	March 8, 2012	7
Odessa	TxDOT District Office, Odessa, TX	March 21, 2012	2
Paris	Paris Junior College, Paris, TX	March 5, 2012	22
Pharr	TxDOT District Conference Center, Pharr, TX	March 8, 2012	5
San Angelo	TxDOT District Office, San Angelo, TX	March 6, 2012	22
San Antonio	TxDOT, Bexar Metro Office, San Antonio, TX	March 8, 2012	7
Tyler	TxDOT District Office, Tyler, TX	March 6, 2012	7
Waco	Waco Transit System, Waco, TX	March 6, 2012	4
Wichita Falls	TxDOT District Training Center, Wichita Falls, TX	March 6, 2012	9
Yoakum	TxDOT District Office, Yoakum, TX	March 6, 2012	4
		Total	203

The total number of comments received by TxDOT prior to the public hearing was 92 oral and 144 written comments as of April 25, 2012. Comments received after April 25, 2012 were included as part of the public hearing comments.

4.7 Public Hearing

One formal public hearing was held on May 21, 2012, at 200 Riverside Drive in Austin, Texas to solicit public input on the TRTP draft final plan before presenting it to the TxDOT Commission for consideration on June 28, 2012. TxDOT posted notice of this meeting in the Texas Register and on the TxDOT website on May 4, 2012. Three comments were provided at the public hearing. Twenty-seven written comments were received between April 26, 2012 and June 4, 2012, the end of the comment period.

4.8 Comments

TxDOT received a total of 266 TRTP comments. **Figure 4-7** represents the percentage of comments received by source. **Figure 4-8** represents the percentage of comments received at the stakeholder meetings and from stakeholders through the end of February by generalized topic. **Figure 4-9** represents the percentage of public comments received prior to the public hearing by generalized topic. **Figure 4-10** represents the percentage of all comments received at or after the public hearing by generalized topic. **Figure 4-11** shows the results of all comments by generalized topic.



Figure 4-7: Comments Received During Public Outreach Activities (% by Source)

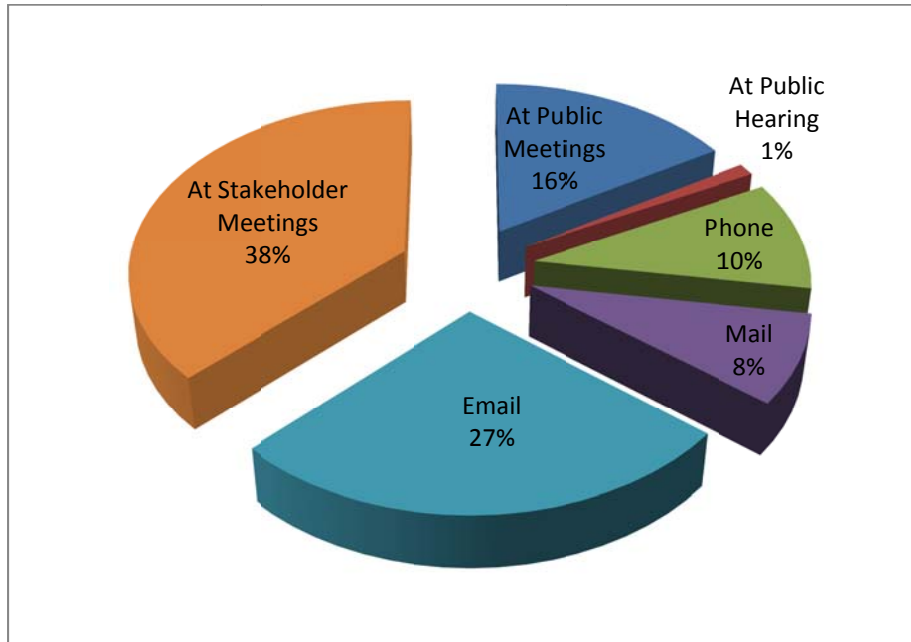


Figure 4-8: Stakeholder Comments (% by Generalized Topic)

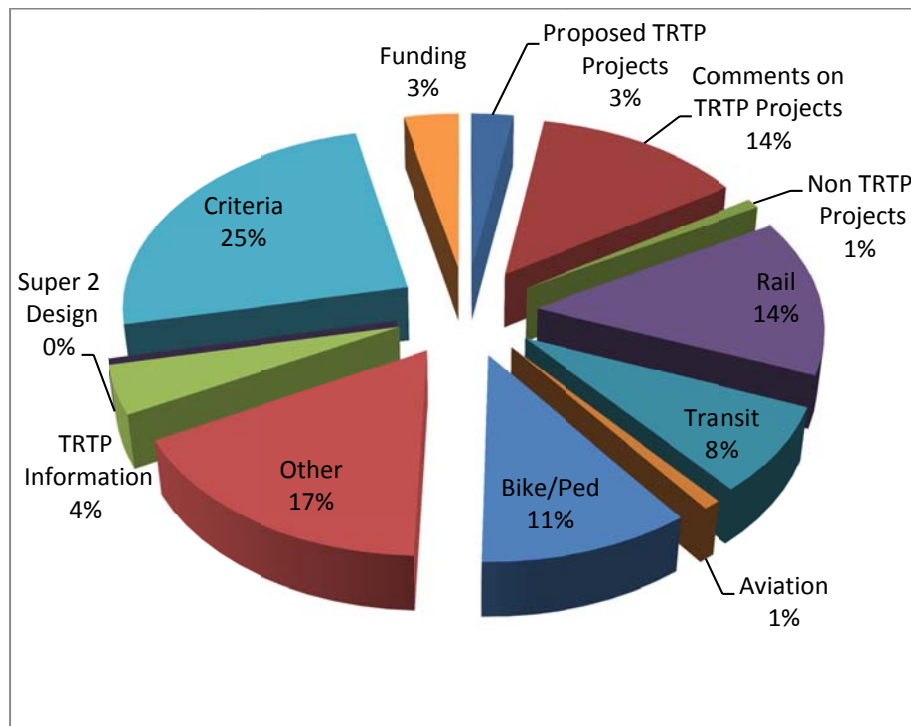




Figure 4-9: Public Comments (% by Generalized Topic)

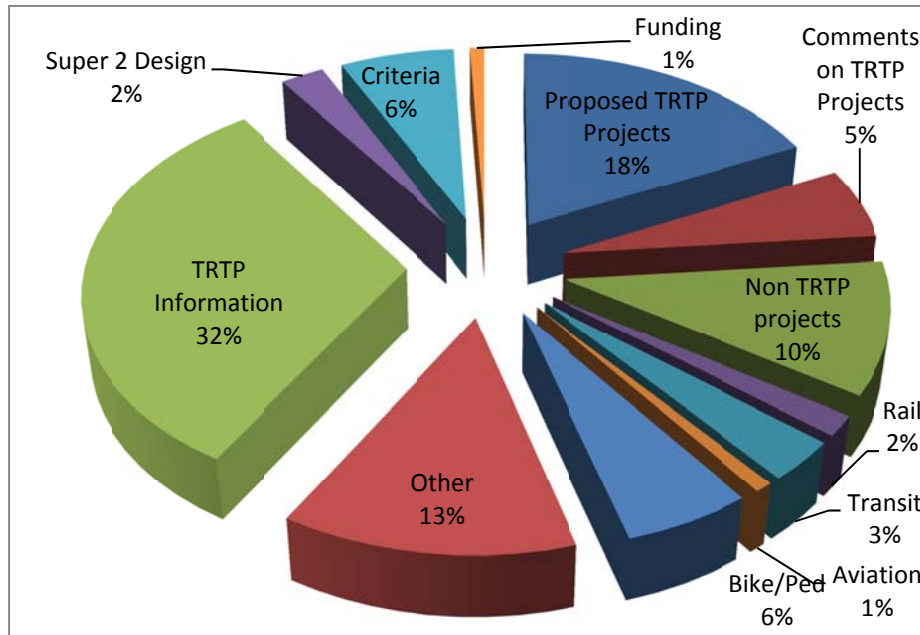


Figure 4-10: Public Hearing Comments (% by Generalized Topic)

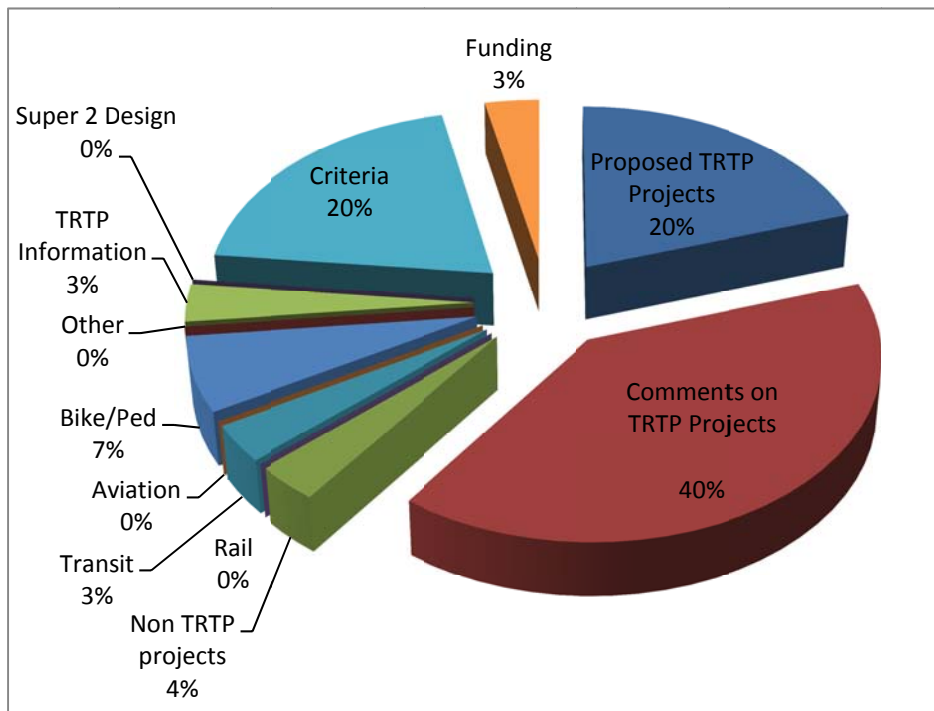
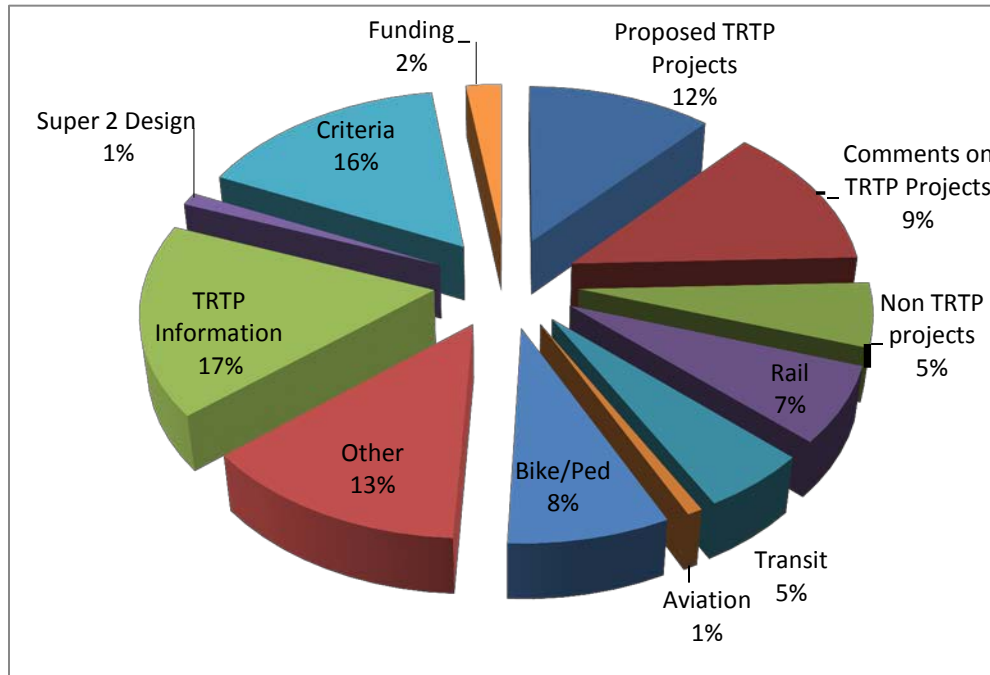




Figure 4-11: All Comments (% by Generalized Topic)



All outreach materials including newsletters, meeting notifications, sign-in sheets, meeting photographs, questionnaire results, meeting summaries, and summaries of public comments/responses are included in a public outreach electronic notebook.

Comments that were received during the official public review period of the Draft TRTP and at the public hearing were addressed separately as a function of the process by which the TTC considers the adoption of the TRTP. Those letters, electronic comments, and comment forms, and TxDOT responses are included in **Appendix B** provided in **Volume 2** of the TRTP report.

Due to the number and content of the hundreds of comments received by TxDOT related to the TRTP, not all of them could be included specifically in this chapter. However, every comment (regardless of source) and all proceedings related to the public outreach efforts for the TRTP will be included in an electronic notebook, the contents of which are available for viewing via request to the Transportation Planning and Programming Division of TxDOT. Public meetings and hearings are not archived, but a copy of the public hearing transcript is available upon request.

Video of the Texas Transportation Commission June 28th meeting at which the TRTP will be presented for adoption will be archived on TxDOT's website at <http://www.txdot.gov/>.



4.8.1 Resolutions

Eight resolutions were received from 6 entities to request and/or support projects in the TRTP.

- Austin – San Antonio Corridor Council
- City of Brenham
- City of New Braunfels
- Comal County (2)
- Far West Texas/El Paso Regional Transportation Coordination Committee
- Washington County (2)

4.8.2 Letters/Comments from Organizations

Organizations submitted letters related to both evaluation criteria and projects. Most of these organizations, such as the regional planning organizations, represent several counties. The organizations that participated in the development of the TRTP are listed below:

- Ark-Tex Council of Governments
- BikeTexas
- Capital Area Regional Transportation Planning Organization
- Cross Plains Rural Transportation Council
- East Texas Corridor Council
- East Texas Council of Governments
- Gulf Coast Strategic Highway Coalition
- Lubbock Chamber of Commerce
- Northeast Texas Regional Mobility Authority
- Panhandle Rural Transportation Planning Organization
- Rolling Plains Organization for Rural Transportation
- South Plains Association of Governments
- St. Lawrence Cotton Growers Association
- Texas State Independent Living Council
- Texas Trails Network
- The Alliance for I-69 Texas
- Washington County Chamber of Commerce (2)



4.8.3 Letters/Comments from Cities and Counties

Eight letters were submitted by rural cities and counties regarding the need for additional projects and/or the ranking of projects within their respective jurisdictions. Two letters were received from small cities located within the boundaries of MPOs.

- City of Del Rio
- City of Ivanhoe
- City of Presidio
- City of South Padre Island (2)
- City of Wentworth Village
- City of Wharton
- McCulloch County
- Starr County
- Titus County

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5.0 Conclusions

5.1 SLRTP Strategies and Recommendations

Chapter 9 of the SLRTP identified three strategies and associated recommendations. These strategies are driven by the competing challenges of limited funding, growing demand, and very large transportation needs. The three SLRTP strategies were conceived as a complementary, multi-pronged approach to:

- ★ Focus available transportation funds on the most cost-effective investments;
- ★ Manage our transportation system in ways that encourage cost-effective shifts in how we travel; and
- ★ Develop partnerships for providing transportation improvements.

This approach is equally valid for the TRTP; however, some modifications are worthy of consideration, based on the TRTP findings:

- ★ The use of Intelligent Transportation Systems (ITS) technologies was not directly considered in the TRTP project listing, even though there appear to be potentially relevant applications. It may be appropriate to consider expanding existing TxDOT traffic management centers in the fringe area around the major urban areas, such as San Antonio, Houston, Dallas-Fort Worth, and Austin. Given that some ITS technologies offer efficiency improvements and enhanced system management tools for highways (and transit), it is appropriate to evaluate them alongside longer term added capacity highway projects.
- ★ Investigate the potential for securing additional rural transportation funding from non-traditional/non-transportation agencies (federal and state) related to agriculture, veteran's affairs, health and human services. This will most likely benefit rural transit.
- ★ Adopt a systematic approach to providing safe passing opportunities – this is a suggested new strategy. Safe passing was the most heavily weighted criteria among rural stakeholders. While safe passing may also be a concern in urban areas, the focus of this strategy should be on rural areas. Currently, highways that only offer occasional or short-passing opportunities may lead to driver frustration, resulting in unsafe driving behaviors such as overtaking in a no passing zone. In addition to any resulting crashes that may occur, emergency service response times in isolated areas may be high. TxDOT has evaluated certain two lane highways that have previously been identified for widening to four lane divided highways (Trunk system design deficiencies) that will not have

funding available for the foreseeable future. To provide safe passing on these facilities, they are planning interim improvements to “Super 2” design standards which will improve safe passing opportunities.

5.2 Funding Outlook

Since the SLRTP was adopted nearly 1½ years ago, the availability of transportation funds continues to be a challenge for all levels of government. Reauthorization of federal surface transportation legislation continues to make slow progress, but it remains uncertain as to when this legislation will be enacted, what its contents will include or exclude, what level of funding will be available, and how long until the legislation expires. This is a source of great uncertainty for statewide transportation planning, affecting all modes.

Also making slow progress is the recovery from the 2008 national financial crisis and subsequent economic recession. The Texas economy has been strengthened by the growing energy sector, driven in part by the current level of gas prices that enables previously hard-to-reach oil and gas deposits to be economically produced. The flipside to this is that most Texans, and especially rural Texans, continue to pay more for transportation. Higher transportation costs also affect the price of goods that we purchase.

Consequently, the emphasis on “cost-effective” strategies specifically addressed in two of the three SLRTP goals is heightened for the TRTP. Availability of funding for projects and needs identified in the TRTP will continue to be limited in the foreseeable future, underscoring the need to make the best use of the limited funding available.

5.3 Next Update

It is recommended that the next SLRTP update address the following enhancements to the added capacity highway project ranking process:

- ★ Develop a more integrated multi-modal approach for inter-urban corridors;
- ★ Review how well multi-District needs are addressed;
- ★ Develop an approach with neighboring states for multi-state needs;
- ★ Revisit design requirements for low traffic volume areas;
- ★ Address some shorter term needs such as ITS technologies, that may reduce or defer other long-term needs; and
- ★ Review and update selection criteria and weightings if appropriate.

