

## **3.0 Funding the Construction, Maintenance, and Operation of the System**

### **3.1 Who Owns, Builds, Maintains, and Operates the Transportation System?**

The multimodal transportation system—comprised of the modal networks—is owned, operated, and maintained by a number of public and private transportation entities and partnerships. Determining ownership of a specific modal facility can be complicated.

Public entities like TxDOT may own the real estate or rights-of-way on which a private network is operated and lease the rights-of-way to a private operator. Private operators may own the real estate on which their infrastructure and supporting structures are built, but require easements across local or state owned rights-of-way for continuity (e.g., pipelines or fiber-optic networks).

The transportation system is owned by local, state, and federal transportation entities, taxpayers that pay taxes to those entities, and private interests that build, maintain, and operate some modes for profit. TxDOT manages funds to build and maintain the roadways and highways, as well as funding for the maintenance of certain transit, airport, rail and marine facilities that it does not own or operate. The following subsections provide additional information for each transportation mode.

#### **3.1.1 Roadways and Highways**

The roadways and highways are constructed and maintained with federal, state, and local tax dollars; therefore taxpayers are the primary owners of the roadway and highway systems.

#### **3.1.2 Bicycle and Pedestrian**

These facilities are generally located along existing roadways or within municipal or state parks; therefore they are owned primarily by taxpayers and maintained by the government entity responsible for the surrounding or adjacent real estate on which the facility is located.

#### **3.1.3 Public Transportation**

The vast majority of urban transit trips are provided by the seven Metropolitan Transportation Authorities (MTAs) and one coordinated county transit authority located in Texas. There are an additional 30 urban systems operating in cities between 50,000 and 200,000 in population throughout Texas.



The majority of rural transportation is provided by local governments, public agencies, nonprofit organizations or rural transit districts that provide service within multi-county areas not served by an urban or MTA systems.

Financing the construction, operation, and maintenance of these transit systems comes from different sources, including federal and state grants, loans, bonds, local sales taxes, passenger fares, and advertising fees. For major capital improvements, transit agencies rely on federal grants, bond market investments in the urban areas and other innovative financing schemes.

### **3.1.4 Freight and Passenger Rail**

Class 1 rail infrastructure in Texas is owned, maintained, and operated by BNSF, UPRR, and KCS. Short-line rail is owned by a number of privately held freight rail companies.

TxDOT does own rail infrastructure, but leases it to a privately held company. In addition the state owns or has a security interest in the Bonham Subdivision between Paris and Bonham and the Northeast Texas Rural Rail Transportation District (NETEX) line between Greenville to Mount Pleasant. Other than TxDOT, there are several other entities within the state that have the authority to study, develop and implement freight rail projects. These include freight rail districts, Regional Mobility Authorities (RMAs), and rural rail transportation districts. Most have the powers of eminent domain but have minimal or no taxing authority.

The National Railroad Passenger Corporation, Inc. (Amtrak) is the sole provider of intercity passenger rail service in Texas. It serves most of the state's major urban areas, though not all major urban areas are directly connected. Amtrak's partnership with Greyhound serves other areas of the state by providing bus connections where possible. The two long-distance trains are fully funded by Amtrak and include the Texas Eagle (San Antonio to Chicago) and the Sunset Limited (Los Angeles to New Orleans). The Heartland Flyer provides a daily round trip between Oklahoma City, Oklahoma, and Fort Worth, Texas. This route is subsidized by TxDOT in equal partnership with the Oklahoma Department of Transportation.<sup>138</sup>

### **3.1.5 Airports**

Airports in Texas are owned by the cities or counties in which they operate—although many of the commercial airports are operated by financially independent authorities. At

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<sup>138</sup> TxDOT. Texas Rail Plan Executive Summary. [ftp://ftp.dot.state.tx.us/pub/txdot-info/rail/plan\\_exec\\_summary.pdf](ftp://ftp.dot.state.tx.us/pub/txdot-info/rail/plan_exec_summary.pdf)



some airports, airlines have developed complex contractual arrangements that determine the use of and payment for airfield and terminal facilities.

### **3.1.6 Waterways and Ports**

Public Ports in Texas are owned and operated by port authorities, which are subdivisions of the State of Texas, municipalities, and private entities. Most have a board that directs the policies of the port and answers to local area constituents in their respective navigation district/political subdivision.

The public port authorities generally own and operate their docks and often own other facilities such as terminals, freight handling equipment, cranes, warehouses, open storage facilities, bulk commodity handling facilities, and other facilities. Ports also generally have a wide variety of private operators on the property responsible for everything from rail and truck transportation, to warehousing, materials handling, storage, and other port related activities.

In addition, there are also a large number of private facilities built along the waterways. These facilities own and operate docks, terminals, freight handling equipment, cranes, warehouses, open storage facilities, bulk commodity handling facilities, and other facilities. They connect the waterway directly to their businesses and they are responsible for everything from rail and truck transportation, to warehousing, materials handling, storage, and other related activities.

Commercial waterways are created by the federal government and activities associated with the waterways are supervised and coordinated by the USACE. Local non-federal sponsors work with the USACE according to terms set during the Federal authorization of the channel.

TxDOT acts as the local non-federal sponsor of the main channel of the GIWW from the Sabine River to the Brownsville Ship Channel, The state is charged with providing the necessary lands, easements, relocations, and realignments required during construction and maintenance of the GIWW. In addition, the state has an agreement with the USACE to cost-share in GIWW beneficial use of dredged material projects.

### **3.1.7 Pipelines**

Natural gas and oil pipeline systems are owned, operated, and maintained by several different private companies. These systems are constructed in response to the evolving supply and demand dynamics of the market. The FERC regulates the construction, operation, and safety of interstate pipelines, where as intrastate gas and petroleum



pipelines are regulated by the RRC. USDOT's Pipeline Hazardous Materials Safety Administration (PHMSA) is responsible for pipeline safety.

### 3.1.8 Intelligent Transportation Systems

ITS are generally an integrated part of the state transportation system or a local transportation network, and can be used in conjunction with a variety of modes as discussed in Chapter 2. These systems are constructed, implemented, operated and maintained by TxDOT (e.g., traffic cameras), a local transportation authority (e.g., City of Dallas' Integrated Signal System), or the private sector (e.g., airline providing real time weather and flight information via radio or cellular phone).

## 3.2 Forecasted Financial Needs

### 3.2.1 Highway Needs

TxDOT manages expenditures to build, maintain, and operate the state highway network (80,067 centerline miles). While vital for the state's economic and social well being, the funds managed by TxDOT support only a portion of the state's total transportation network.

#### 3.2.1.1 Highway Travel Needs Analysis: Urban Areas

Travel needs in urban areas were estimated based on traffic forecasts of urban mobility needs from studies carried out by the TTI. TTI provided the analysis for the 2030 Committee's report on Texas transportation needs, and then updated the urban travel needs to 2035 for the SLRTP. The needs were estimated on a calculation of the amount of highway capacity needed to satisfy projected demand in 2035, or "lane mile equivalents." However, the actual solution to satisfy the need is decided at the local level in each metropolitan area and can be highways, public transportation, other modes, or a combination of modes. No specific projects or recommendations were made for the plan.

As stated in the 2030 Needs Report,

*"Neither the 2030 Committee nor the technical team from TTI is suggesting that constructing additional highway lane-miles is the only solution in any part of the state. This approach is simply a tool for approximating the level of investment needed, regardless of the form of the solution. The actual mix of solutions will vary across all of the urban regions."*



Traffic volumes were forecast to 2035 and the number of lane mile equivalents needed to avoid severe congestion was calculated.

These estimates focus on capacity needs in urban areas, using congestion as a metric to identify the amount of improvement needed. TTI worked with the MPOs throughout Texas to gather data for estimating needs in the metropolitan areas. Using the results from individual MPO travel demand models and demographic data for each MPO, TTI ran its own congestion reduction utility model. This model enabled TTI to estimate additional capacity needed for each MPO based on that MPOs forecasted population.

Once the forecasted amount of congestion in each metro and urban area was estimated, TTI calculated the cost of the additional capacity required for each scenario (in 2008 dollars) by multiplying with an average unit construction cost. Costs are categorized by functional classification and geographic classification (urban, suburban, etc.).

The Texas Highway Cost Index (HCI) provides a way to compare expenditures over time by taking into account inflation. Table 3-1 provides a comparison of the 2008 TTI values for the facilities and areas used for this rural analysis and proposed adjusted unit costs based on the 2010 Texas HCI (reduced from 2008 as a result of the recession).

**Table 3-1: Roadway Unit Cost Data**

Area Type	Arterial (2008)	Freeway (2008)	Arterial (2010)	Freeway (2010)
Highway Construction Cost Index	191.60	191.60	165.11	165.11
<b>\$ Million per Lane-Mile (2010 dollars)</b>				
Suburban	1.3	2.6	1.12	2.24
Rural	1.0	1.6	0.86	1.39

Source: 2030 Committee Texas Transportation Needs Report, 2009; URS

The cost estimates do not include any funds for additional right-of-way, utility adjustments, preliminary engineering, environmental, design engineering or construction engineering/inspection.

**3.2.1.2 Highway Travel Needs Analysis: Rural Areas**

The rural highway system provides connectivity between cities of all sizes and access to and between rural areas of the state. In general, the rural highway network can be described in three levels:



- ★ Interstate highways – a network of controlled-access highways providing four or more travel lanes.
- ★ Texas Trunk System – a network of highways identified in 1990 that includes and complements the interstate network, with the goal of providing a network of four-lane, divided roadways connecting cities, water ports, major Mexican ports of entry and other criteria established in Texas Administrative Code.<sup>139</sup>
- ★ Regional/local highways – the U.S., state highway, and farm-to-market/ranch-to-market highways not included in the Texas Trunk System.

As in the urban analysis, travel needs in rural areas were estimated on the same lane mile equivalent concept. Traffic volumes were forecast to 2035 and the number of lane mile equivalents needed to avoid severe congestion was calculated.

By 2035, congestion will not be limited to the urban areas of the state. A capacity analysis was performed on all rural on-system highways to identify locations where additional travel lanes are warranted to complement the 2030 Needs Report. It is important to note that the 2030 Needs Report defined urban areas as those counties within the 2008 MPO boundaries. As of 2010, several MPOs expanded their boundaries to include additional counties that were previously defined as rural based on the 2030 Needs Report. In keeping with this definition, the rural capacity analysis performed for the SLRTP used this same definition. Because the boundaries changed from 2008, the mileage that was previously rural but now in MPO boundaries has been separated out to adequately account for those new urban needs. This is shown in Table 3-2.

**Table 3-2: Investment Summary for Newly Added Urban Counties (not included in Urban Needs Analysis) – Capacity Needs**

Rural Highway Network Type	Estimated Lane-Miles Needed	Investment Required (\$ Millions, 2010)
<b>Small urban (5,000 to 50,000 population)</b>		
Interstate	0	0
Texas Trunk System (non-Interstate)	85	95
Regional/Local Highways	113	127
<b>Rural</b>		
Interstate	148	206
Texas Trunk System (non-Interstate)	407	350
Regional/Local Highways	313	269
<b>Total</b>	<b>1,067</b>	<b>1,047</b>

Source: URS, PBS&J

<sup>139</sup>43 Texas Administrative Code (TAC), Part 1, Subchapter D, § 15.42.



Table 3-3 provides the summary of the investment needed to satisfy anticipated rural, as defined by the 2010 MPO boundaries, capacity needs through 2035. Suburban unit costs were applied to projects in small urban areas, defined as cities/towns between 5,000 and 50,000 in total population. Rural costs were used for all other areas. It should be noted that Table 3-2 and Table 3-3 are independent.

**Table 3-3: Investment Summary for Rural Capacity Needs**

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

Source: URS, PBS&J

The cost estimates do not include any funds for additional rights-of-way, utility adjustments, preliminary engineering, environmental, design engineering or construction engineering/inspection.

In addition to highway capacity needs, Table 3-4 shows the routine and preventive maintenance costs for highways, and bridge replacement, maintenance, and inspection costs.

**Table 3-4: Summary of Highway Needs through 2035 (\$ Millions, 2010)**

Highway	2035 Needs (\$ Millions)
Metro/Urban needs from TTI	\$242,046
Urban needs based on new MPO boundaries	\$1,047
Routine Pavement Maintenance	\$7,540
Preventive / Rehabilitative Maintenance	\$83,244
Rural Capacity Needs	\$3,529
<b>Total Highways</b>	<b>\$337,406</b>



**Table 3-4: Summary of Highway Needs through 2035  
(\$ Millions, 2010)**

Highway	2035 Needs (\$ Millions)
<b>Bridges</b>	
Replacement Cost (On-System)	\$22,389
Replacement Cost (Off-System)	\$8,042
Maintenance Cost	\$1,162
Inspection Cost	\$548
<b>Total Bridges</b>	<b>\$32,141</b>
<b>Grand Total</b>	<b>\$369,547</b>

### 3.3 Other Modal Needs

#### 3.3.1 Bicycle and Pedestrian

Goals for optimal levels of bicycle and pedestrian mode share may be determined using data and methods developed from communities that made significant investment and have seen significant increases in bicycle and pedestrian mode share. This may allow a more detailed evaluation of future funding needs. Planned facilities will be included in an MPO's MTP, but may or may not have funding for implementation. Bicycle and pedestrian projects being funded in the next 4 years in MPOs and in the rural areas of the state can be found in the MPO TIPs and TxDOT's STIP (<http://www.txdot.gov/business/governments/stips.htm>).

#### 3.3.2 Public Transportation

The vast majority of transit service and funding in Texas is in urban areas with populations greater than 200,000, most of which have locally dedicated funding sources. According to the American Association of State Highway and Transportation Officials, the average state funding for transit in 2008 was \$42.50 per person, while state transit funding in Texas was \$1.18 per person. As shown in Table 3-5, the anticipated public transportation capital investment needed between 2006 and 2035 is \$40.2 billion, with 95 percent estimated for metropolitan areas and 5 percent for small urban and rural transit operators. The estimated operating funds need (state funds only) for small urban and rural operators is \$3.2 billion.



**Table 3-5: Summary of Public Transportation Needs through 2035  
(\$ Millions, 2010)<sup>140</sup>**

<b>Category of Expense</b>	<b>Total Funds Required 2006-2035 (\$ Millions)</b>	<b>Percent of Capital Funds Required</b>
Metropolitan Urban Capital Requirements	38,309	95.4
Small Urban Fleet Replacement/Expansion	333	0.8
Rural Fleet Replacement/Expansion	696	1.7
Small Urban/Rural Major Capital Facilities	769	1.9
Small Urban Passenger Facilities	27	0.1
Rural Passenger Facilities	35	0.1
<b>Total Capital Expense</b>	<b>40,169</b>	<b>100.0</b>
Small Urban and Rural Operating (State Funds)	3,174	-
<b>Total Funds Required</b>	<b>43,343</b>	-

### 3.3.3 Rail

Regional freight rail studies commissioned by TxDOT to assist the Rail Division in prioritizing projects, including costs and benefit information, have been completed in San Antonio, Houston, West Texas, East Texas, Corpus Christi/Yoakum, Dallas-Fort Worth, and Rio Grande Valley/Laredo. El Paso's regional freight system is currently being studied.

From the aforementioned studies, a number of needed improvements have been identified throughout much of the state and are summarized in Table 3-6. This list of projects is best considered as a plan in progress, as studies have yet to be completed for the San Angelo, Childress, Abilene, Wichita Falls, Waco, Beaumont, Bryan, and Brownwood districts.<sup>141</sup>

<sup>140</sup> Capital Expenses Forecasted by TTI, Operational Forecasts provided by TxDOT Public Transportation Division

<sup>141</sup>TxDOT. Texas Rail Plan Executive Summary.



**Table 3-6: Estimated Costs of Identified Rail Improvements in TxDOT Districts (\$ Millions)**

TxDOT District	Crossing Closure	Crossing Closure and Pedestrian Bridge	Grade Separation	New Rail Connections	Total
Houston	5.7	7.0	785.9	3,384.4	4,183.0
Austin	0.4	-	238.0		
San Antonio Bypass	-	-	-	1,369.6	1,608.0
San Antonio	6.6	-	923.8	236.3	1,166.7
Dallas	1.7	-	151.1	-	152.8
Fort Worth	2.2	-	191.4	165.2	358.8
Corpus Christi and Yoakum	-	-	71.8	72.2	144.0
Amarillo	0.4	-	46.5	-	46.9
Lubbock	0.4	-	32.2	-	32.6
Odessa	-	-	4.8	-	4.8
Atlanta	0.2	-	31.0	-	31.2
Lufkin	0.4	-	-	-	0.4
Paris	0.4	-	9.3	-	9.7
Tyler	0.2	-	20.8	-	21.0
Total	18.6	7.0	2,506.6	5,228.0	7,759.9

The increasing population density coupled with the forecasted increase in rail traffic present a number of issues which must be addresses to ensure economic growth, safety, mobility, and improved air quality. Upgrading the existing system and possibly relocating freight rail activity from highly urbanized areas is necessary to adequately address these issues. Estimated annual freight rail needs are \$637 million from 2005 to 2030:<sup>142</sup>

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

Texas also has 41 regional, local, and switching and terminal railroads. Because of constrained resources, railroads trackage for these railroads is generally not as well maintained as Class I trackage because of deferred maintenance, aging lighter weight rail than is standard for Class I track, and little ballast. The industry-wide adoption of the 286,000-pound rail car in particular poses a hardship for most short line railroads

<sup>142</sup> Cambridge Systematics, Texas Rail Plan Draft Rail Short and Long Range Investment Program, "Table 7.1 Estimated Texas rail freight needs, 2005-2030," p. 7-3.



because they do not have the capacity for the heavier cars and do not have the means to fund the \$250 million investment necessary to accommodate them.<sup>143</sup> Bringing the short line infrastructure up to current standards is necessary to maintain their viability and to enhance freight choices in Texas.

TxDOT’s Texas Rail Plan provides additional project-specific information regarding rail investment needs.

### 3.3.4 Commercial and General Aviation

Passenger travel demand at commercial airports is monitored continuously and airport development projects are initiated when demand drives the need for additional or expanded facilities. Table 3-7 depicts proposed projects that are planned at some of the larger commercial airports and the associated funding required for each.

**Table 3-7: Examples of Projects at Commercial Airports**

Airport	Proposed Projects	Funds required
Dallas Fort Worth International (DFW)	Upgrading Terminals A, B, C, rail service from DART and Fort Worth Transportation Authority.	\$1.5–2 billion
Dallas Love Field	2014 – Modernization Program	\$519 million (inflated)
George Bush Intercontinental Airport (IAH)	2025 – 2 new runways, terminal reconstruction	\$9.4 billion (inflated)
Houston Hobby	2023 – Ground transportation, access roads, upgrading Runways	\$1.4 billion (inflated)
San Antonio	2050 – new third terminal at the airport and a six store parking garage and increasing the length of runways	
	2015 Capital Improvement Program (CIP)– upgrading airfield infrastructure, terminal and parking facilities	\$640 million (inflated)
Austin	2020 Master Plan – Terminal expansion, Third Runway, Construct Taxiways, Expand Parking Garage	\$2.0 billion (2002 dollars)
	2014 CIP – apron expansion, passenger terminal expansion, new parking garage, cell phone waiting lot and a airport maintenance complex	\$486 million (inflated)

The 2010 Texas Airport System Plan provides implementation costs for development of general aviation airports over the next 5 years. Altogether, almost \$600 million in

<sup>143</sup> Texas Transportation Institute estimate cited by Cambridge Systematics in Texas Rail Plan Draft Rail Short and Long Range Investment Program, p. 7-30.



improvements have been identified for the reliever airports, while over \$500 million in improvements have been identified for business/corporate, community and basic service facilities.

Projects needed to meet airport design standards account for the largest share of the improvement costs at all airports, followed by costs associated with maintaining and preserving airport pavements. The community service airports projected costs includes expenses for construction of two new airports in the short term and one proposed airport in the long term. A summary of costs by type of improvement for different classes of airport is included in Table 3-8.

**Table 3-8: 2010–2015 General Aviation Development Costs (\$ Thousands)**

<b>Airport Type</b>	<b>Safety</b>	<b>Preservation</b>	<b>Standards</b>	<b>Capacity</b>	<b>Planning</b>	<b>Misc.</b>	<b>Total</b>
Reliever	7,600	96,245	432,747	43,124	2,554	12,456	594,726
Business/ Corporate	439	123,355	105,769	11,338	1,615	8,997	251,513
Community Service	45	75,268	75,812	13,352	1,350	5,669	171,497
Basic Service		27,963	47,390	686	390	2,892	79,322
<b>Total</b>	<b>8,084</b>	<b>322,831</b>	<b>661,719</b>	<b>68,501</b>	<b>5,909</b>	<b>30,014</b>	<b>1,097,057</b>

Source: 2010 Texas Airport System Plan

### 3.3.5 Waterways and Ports

Although Texas is home to several top 25 ports and one of the most heavily used inland waterways in the U.S.; the infrastructure has not kept pace with growth and will be greatly strained with the forecasted increases in freight traffic. Many of the channels have not been maintained at their authorized width and depth and locks are in need of repair. Many of Texas' ports are operating at less than their allowable drafts.

Maintenance of the authorized depth for the Houston Ship channel is lacking. In 2008 it was estimated that \$231 million in federal funding was needed to return the channel and its tributaries to their authorized depth. The loss of 6 inches of draft between Houston and Corpus Christi translates to \$30 million per year in extra transportation costs.

In addition to shipping channel issues, the port needs to continue to expand its support facilities. There is a major expansion underway for Houston that is scheduled to be completed in 2014 to coincide with the opening of the Panama Canal. The highway and rail connections from the port are often congested and need to be expanded.



TxDOT completed the replacement of the dual Interstate Highway 45 bridges over the Galveston Causeway in November 2008 and there is now over a 300-foot opening for barge traffic beneath the highway bridges. However, the adjacent Galveston Railroad Bridge only has an opening of 105 feet wide and this constriction remains the greatest hazard to navigation to the towing industry along the entire 1,300 miles of the GIWW.

In April 2009 United States Department of Homeland Security Secretary Janet Napolitano announced that the Galveston Bridge Alteration project was included in the projects identified to receive funding from the American Recovery and Reinvestment Act. Galveston County and the U.S. Coast Guard (USCG) proceeded to develop plans and specifications for the alteration project and on April 8, 2010 the \$80.1 million bid of Cianbro/Brasfield and Gorrie was accepted to widen the bridge from 109 to 300 feet, convert the draw bridge into a lift bridge system, as well as other improvements. Construction is estimated to take 3 years.<sup>144</sup>

Dredging needs for all Texas ports, waterways and channels in 2010 dollars are estimated to be \$100 million per year. Capital projects are estimated to be \$130 million per year, equating to \$3.25 billion by 2035. The grand total is \$5.75 billion for maintenance and capital projects for ports and waterways through 2035.

### 3.3.6 Pipelines

Demand for pipeline capacity is driven by market forces. Much of the data needed to quantify needs and forecast funding is proprietary and is not available.

### 3.3.7 Intelligent Transportation Systems

Over the next 24 years, congestion and travel delays are expected to increase, placing significant economic and safety demands on the existing transportation system. ITS will allow state and local transportation agencies—as well as nongovernmental transportation providers—to innovatively use technology to reduce congestion and increase mobility at a lower cost than the traditional method of constructing new infrastructure. With no reliable method for forecasting either needs or the costs of ever-advancing technologies, ITS projects are evaluated on a case-by-case basis, not statewide.

ITS projects being funded in the next 4 years in MPOs and in the rural areas of the state can be found in the MPO TIPs and TxDOT's STIP under grouped projects (<http://www.txdot.gov/business/governments/stips.htm>).

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<sup>144</sup> Department of Homeland Security, News Release, Available at: [http://www.dhs.gov/ynews/releases/pr\\_1240253287014.shtm](http://www.dhs.gov/ynews/releases/pr_1240253287014.shtm)



### 3.4 Urban and Rural Highway Funding Forecast

TxDOT periodically prepares an 11-year financial plan outlined in the UTP that describes financial forecasts of funds. This plan is financially constrained. The UTP funding over the 11-year plan period through 2020 is projected to total in excess of \$33 billion including the expected sale of bonds under Proposition 12 and Proposition 14, and toll revenue agreements, concession payments and contracted maintenance.

In November 2009, TxDOT released a long-range financial forecast approved by the Texas Transportation Commission. This forecast covers the period 2021 through 2035. Not counting new bonds that may be issued, the funds available for highways for 2010–2035 total over \$58 billion—net of payments for existing bonds. Table 3-9 presents the baseline allocation of these anticipated future funds for the years 2010–2020 and 2021–2035.

**Table 3-9: Future Funds for Highway Projects (\$ Millions)<sup>145</sup>**

Category	FY 2010–FY 2020	FY 2021–FY 2035
Preventive Maintenance and Rehabilitation	10,724	11,630
Metropolitan Area Corridor Projects	1,963	\$0
Urban Area Corridor Projects	282	\$0
Statewide Connectivity Corridor Projects	70	\$0
Congestion Mitigation and Air Quality Improvement	1,246	2,230
Structures	2,813	3,750
Metropolitan Mobility/Rehabilitation	2,106	3,140
Safety	1,444	1,950
Transportation Enhancements	676	900
Supplemental Transportation Projects	818	490
District Discretionary	728	940
Strategic Priority	178	0
<b>CATEGORY SUBTOTAL</b>	<b>23,048</b>	<b>25,030</b>
<b>Program</b>		
Prop 12 (voter approved \$5 Bn)	2,000	
Prop 14	818	
Prop 14 Safety Bond	423	
Concessions and Toll Revenue Agreements	2,431	
Federal Earmarks	625	
Pass through Finance	749	
ARRA	1,247	

<sup>145</sup> Texas 2010 UTP and Minute Orders 112048 and 112049 approved by TxDOT in November 2009

**Table 3-9: Future Funds for Highway Projects (\$ Millions)<sup>145</sup>**

Category	FY 2010–FY 2020	FY 2021–FY 2035
Contracted Routine Maintenance	2,054	
<b>PROGRAM SUBTOTAL</b>	<b>10,347</b>	
<b>GRAND TOTAL</b>	<b>58,425</b>	

### 3.5 Public Transportation Funding Forecast

Public transportation in Texas is a responsibility of local government. Funding for public transportation comes from federal, state, and local resources. The largest transit agencies are funded with a dedicated local sales tax. State transit funds are distributed to small urban and rural transit providers; the state does not fund transit programs in large metropolitan areas where most of the state's population resides. The source of local government funds for the smaller urbanized and rural providers is the general revenues of cities and counties served by these providers.

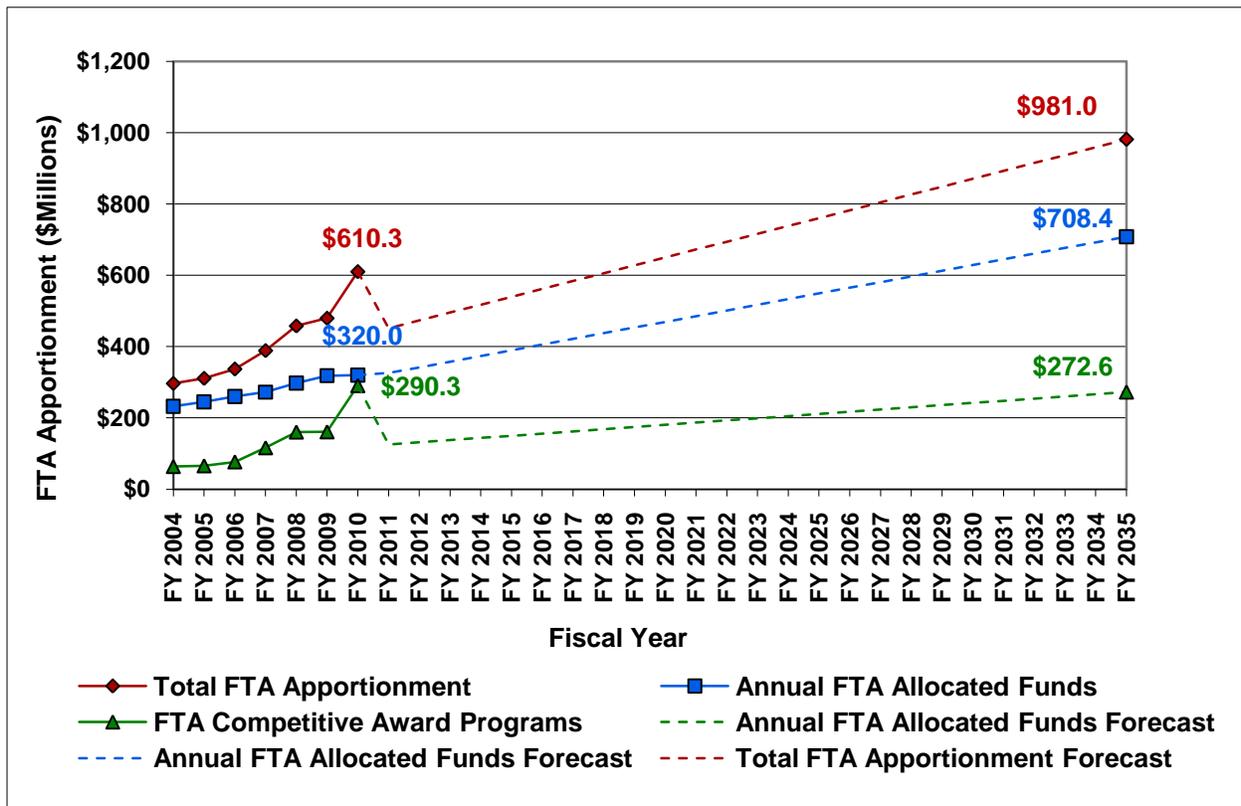
The FY 2010 total federal apportionment was \$610 million for all Texas public transportation. There are two types of federal transit programs: allocations and competitive awards. Allocations are provided annually based on formulas for distributing funds to each type of public transportation system. Competitive awards are competitively awarded based on applications for specific projects. Because competitive awards cannot be predicted future award amounts are difficult to forecast. For the SLRTP, a trend line forecast of the previous seven FY years (2004-2010) was used to develop anticipated 2035 Federal Transit Administration (FTA) allocated funds (Figure 3-1). Additionally, FTA competitive awards were also forecast. The forecast of FTA competitive awards is based on the average percentage of competitive awards to annual allocated funds from 2004 to 2009. This forecast of \$981 million does not represent a true need for public transportation. Transit providers program services based on annual allocations.

Most public transit agencies in Texas have plans to expand their operations, but are forced to delay those plans due to the current economy. Many are focusing instead on less costly, more efficient alternatives that incrementally increase ridership. The long-term needs of the metropolitan areas are outlined in the MPO MTPs, but many of the projects are only planned and do not yet have funding for implementation. The projects being funded in the next 4 years in MPOs and in the rural areas of the state can be found in the MPO TIPs and TxDOT's STIP at:

<http://www.txdot.gov/business/governments/stips.htm>



**Figure 3-1: Historical and Forecast FTA Apportionment<sup>146</sup>**



### 3.6 Funding and Revenue Sources

#### 3.6.1 Ongoing Major Transportation Related Revenues

The State of Texas receives revenues from some 40 different transportation taxes and fees, including federal funds. Motor fuel taxes, registration fees, and federal funds dominate the resources that are available to TxDOT for transportation (Table 3-10). TxDOT prepares 11-year forecasts in support of the UTP. These forecasts rely on trend analysis, rather than attempting to prepare independent forecasts of each of the major forces that influence total revenues.

TxDOT adjusts these trend forecasts for economic trends as well, relying most strongly on forecasts made by independent consultant firm IHS Global Insight for a variety of economic factors, including the rate of retail sales growth. Beyond the 11-year baseline forecast provided by TxDOT as part of the UTP, the analysis presented here uses the forecasts approved by the Texas Transportation Commission on November 19, 2009.<sup>147</sup>

<sup>146</sup> FTA, Grants and Funding, Annual Apportionments

<sup>147</sup> Independent forecasts were not carried out since competing forecasts risked creating confusion among the readers.



### 3.6.1.1 Motor Fuel Taxes

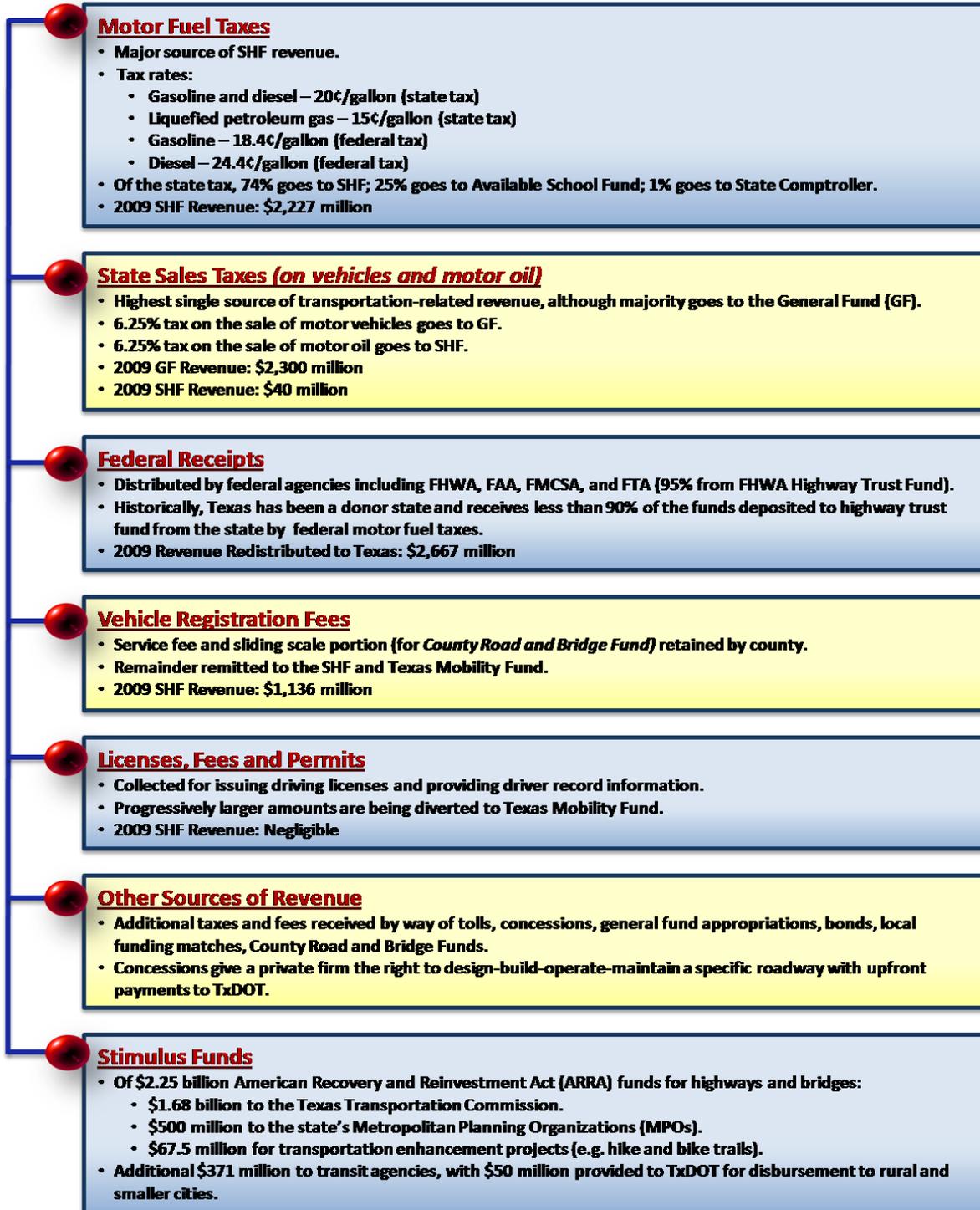
State motor fuel taxes are the largest source of state revenue to the SHF. The current state tax rate is 20¢ per gallon for gasoline and diesel and 15¢ per gallon for liquefied petroleum gas (LPG). In addition, the federal government collects taxes of 18.4¢ per gallon for gasoline and 24.4¢ per gallon of diesel fuel—making a total of 38.4¢ per gallon of gasoline and 44.5¢ per gallon of diesel fuel. The Texas Comptroller retains 1 percent of the total amount collected for administration and enforcement of the state tax. After providing refunds for nonhighway use collections, 25 percent goes to the state's Available School Fund. The remaining amount gets deposited to the SHF.

Gasoline taxes constitute nearly 74 percent of motor fuel tax revenues and the rest comes from diesel fuel taxes and LPG taxes. In 2009, state motor fuel tax revenues decreased by 2.17 percent, showing the impact of the economic recession (diesel tax receipts actually dropped by more than 10 percent in 2009) and from the impact of high gasoline prices in 2008. While diesel tax receipts grew by 39 percent between 2000 and 2009, gasoline taxes only increased by 9 percent. This reflects a historical trend toward slower growth in automobile VMT and the use of more fuel-efficient vehicles in recent years. The steady growth in diesel tax receipts (until 2009) reflects the increased growth in freight transportation and the greater market share generated by trucks relative to rail and other modes.



Table 3-10: Transportation Related Revenues

## TEXAS STATEWIDE LONG-RANGE TRANSPORTATION PLAN STATE HIGHWAY FUND (SHF) REVENUE SOURCES





### **3.6.1.2 State Sales Taxes**

Sales taxes (a 6.25 percent state rate) collected on sale of motor vehicles and the sale, storage, or use of lubricating and motor oils for motor vehicles constitute the highest single source of revenues related to transportation—although most of these funds are deposited in the state’s General Fund (GF) and are not used for transportation projects. Revenue from sale of motor vehicles (including seller financed vehicles and motor carrier vehicles) are deposited into the state GF and totaled more than \$2.3 billion in 2009—a significant decline from the \$3 billion received in 2007 and 2008 due to the economic recession. Sales tax revenues from lubricants (\$40 million in 2009) are deposited into the SHF.

### **3.6.1.3 Vehicle Registration Fees**

Vehicle registration fees vary by class of vehicle. The current registration rate for new cars is \$58 per car. Motor vehicle registration fees are collected by the county tax assessor-collector and remitted to either the SHF or the Texas Mobility Fund (TMF) after deducting service fees (\$1.90 for each receipt) and an apportionment to the County Road and Bridge Fund. The apportionment amounts are the first \$60,000 of collections, 100 percent of net collections equal to \$350 per mile of county-maintained roads up to 500 miles; 70 percent of the 5 percent of the tax and penalties collected on all sales of motor vehicles in the county during the preceding calendar year; and 50 percent of the next \$250,000 of net collections. The remainder of the fees are remitted to the SHF (with the exception of approximately \$3,000 going to the TMF for United We Stand plates). Revenue from special vehicle permits (for oversized and overweight vehicles) also goes into the state GF and SHF.

### **3.6.1.4 Licenses, Fees, and Permits**

The state collects fees for services offered through the Department of Motor Vehicles and the Department of Public Safety for issuing driver licenses and providing driver record information. Over time, larger fractions of these taxes have been paid into the TMF.

### **3.6.1.5 Federal Receipts**

TxDOT receives funds from several federal agencies: FHWA, FAA, Federal Motor Carrier Safety Administration (FMCSA), and FTA. FHWA funds (mainly from taxes on motor fuel, truck tires, new truck sales and a heavy vehicle tax paid into the federal Highway Trust Fund) constituted about 95 percent of total federal funds received by Texas in 2009. These funds are deposited into the SHF once the state invoices FHWA



for expenditures that are eligible for reimbursement with federal funds (primarily construction, rehabilitation work, preliminary engineering, and rights-of-way work).

Current funding allocations reflect apportionments set forth in the most recent multi-year federal surface transportation authorization bill: Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Texas is a donor state, meaning that it pays more into the federal Highway Trust Fund than it receives back in federal funds. Since the start of the modern federal highway program in 1956, the state has received about 80 percent of the federal highway fees paid by its residents. For example, in 2005, Texas paid over \$500 million more in federal user fees than it received in FHWA funds.<sup>148</sup> Of course, the federal program was enacted to support national goals, but Texas has provided the largest state subsidy to the national program of any state.<sup>149</sup> Over the past 2 years, Congress has appropriated more than \$60 billion in general fund monies for surface transportation (some for the stimulus program and some to shore up the federal Highway Trust Fund).

### **3.6.2 Nonrecurring Major Transportation Related Revenues**

Nonrecurring transportation related revenues are limited in their amounts and/or duration of funding. These revenues cannot be relied on to provide predictable, continuous funding to fulfill transportation needs of the state, but rather serve as short-term solutions. In many cases, however these sources of revenue allow transportation projects to move forward that would have otherwise been delayed for many years.

#### **3.6.2.1 Toll Road Revenue Bonds**

TxDOT is able to construct toll road infrastructure using proceeds from Toll Road Revenue Bonds. Toll collections are pledged for repayment of toll-revenue bonds that have been issued.

#### **3.6.2.2 Concession Agreements**

In recent years, TxDOT has delivered toll road infrastructure through long-term leases called concessions that give a private firm the right to design, build, operate, and maintain a specific roadway for a certain number of years. A competitive bidding process is used to select the entity to operate the concession or toll revenue agreement, occasionally, with upfront payments to TxDOT for this right.

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<sup>148</sup>Ronald Utt, Heritage Foundation Backgrounder, “Restoring Regional Equity to the Highway Trust Fund” (October 2007).

<sup>149</sup>See FHWA Highway Statistics 2008, “Comparison of Federal Highway Trust Fund Highway Account Receipts Attributable to the States and Federal-Aid Apportionments and Allocations from the Highway Account <http://www.fhwa.dot.gov/policyinformation/statistics/2008/fe221.cfm>



For the SH 130 concessions, a team led by Cintra and Zachry American Infrastructure paid \$25 million up front and a share of the gross project revenues over time for the right to build, operate, and maintain a toll road between Austin and San Antonio. In accordance with state law, the funds paid to TxDOT by the private sector will be used for transportation infrastructure projects in the region in which the toll road was built. The San Antonio and Austin regions have begun work and developed plans to use the funds from the SH 130 concession.

Some concession agreements require a contribution of public funds rather than a payment from the private sector. These concession agreements are only entered into if TxDOT estimates it will receive significantly more value in terms of roadway improvements, operations, and maintenance versus the public funds it is required to contribute to the project under the concession agreement. For example, for the North Tarrant Express (NTE) project, TxDOT provided \$572 million in public funds in order to receive approximately \$2.5 billion of roadway improvements and operations and maintenance for approximately 50 years.

TxDOT had a similar outcome on the I-635 project where it contributed \$490 million to receive approximately \$4 billion of roadway improvements and operations and maintenance for approximately 50 years. If it were not for these concession agreements, these major roadway projects would not be delivered for decades, if ever, due to their significant cost. It is also important to keep in mind that at the end of these long-term leases, the lessor is required to maintain the road such that it can be turned over to TxDOT in good condition.

In addition to concession agreements with the private sector, in 2008, the North Texas Tollway Authority (NTTA), a quasi-governmental toll road operator in the Dallas and Fort Worth area, paid \$3.2 billion for the right to build, operate, and maintain the SH 121 toll project located in Denton and Collin counties. These funds will also be used in the region in which the toll road was built, but within a smaller geographic area as required by the state law that applies to the receipt of this type of funds. In fiscal year 2008–2009, \$691 million went towards projects in the Dallas/Fort Worth area.

### **3.6.2.3 General Obligation Bond Proceeds**

Another source of revenue was authorized by voters in 2007 with Proposition 12, which with accompanying legislative appropriations, would allow for issuance of up to \$5 billion in general obligation bonds to provide funding for highway improvement projects. The first \$2 billion of Proposition 12 was appropriated to TxDOT in 2010–2011. These bonds are backed by state GF revenues, not transportation user fees from the SHF.



### 3.6.2.4 Stimulus Funds

The ARRA awarded \$2.25 billion to transportation projects in Texas as part of the economic stimulus package for highways and bridges. Of that, \$1.68 billion was allocated directly to TxDOT and \$500 million was allocated directly to the state's Metropolitan Planning Organizations (MPOs), while the remaining \$67.5 million was allocated for transportation enhancement projects (e.g., hike and bike trails). In addition, Texas received awards of \$371 million in stimulus funds for transit, with \$50 million provided to TxDOT for disbursement to rural and smaller cities.

## 3.7 Funding Mechanisms and Debt Programs

Funding mechanisms are utilized to determine how funds are used—for example, for direct expenditures, debt repayment, and/or loan programs, TxDOT relies on the SHF for most operating expenditures.

The SHF and TMF Bond programs allow TxDOT to leverage ongoing transportation revenues into up front debt issuance proceeds. Proposition 12 bonds will be funded by general revenues of the state. Bond programs are authorized through the legislature and are limited in scope by their authorization.

### 3.7.1 State Highway Fund

The SHF is restricted to expenditures for building, maintaining, and policing of state highways. Table 3-11 and Figure 3-2 provide details on revenue sources to the SHF—a portion of the total transportation-related revenues shown in Table 3-10.

**Table 3-11: State Highway Fund Revenues**

Fund Type	Revenue in Millions (current dollars – not adjusted for inflation)								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
State Motor Fuel Tax	2,022	2,078	2,087	2,130	2,148	2,194	2,238	2,276	2,227
Motor Vehicle Registration Fees	752	730	789	846	875	933	984	1,024	1,066
Special Vehicle Registration Fees	-	15	13	14	17	20	23	56	70
Sales Tax on Lubricants	29	30	31	32	33	35	37	39	40
Vehicle Certificate Fees	18	19	18	24	24	26	26	27	26
<b>Total Tax Receipts</b>	<b>2,821</b>	<b>2,872</b>	<b>2,938</b>	<b>3,046</b>	<b>3,097</b>	<b>3,208</b>	<b>3,308</b>	<b>3,422</b>	<b>3,429</b>
Federal Funds	1,809	2,320	2,604	2,776	3,250	3,091	1,974	2,690	2,667
SHF Bond Proceeds (Proposition 14)	-	-	-	-	-	628	1,001	1,473	-
Commercial Paper	-	-	-	-	-	300	170	270	445*



**Table 3-11: State Highway Fund Revenues**

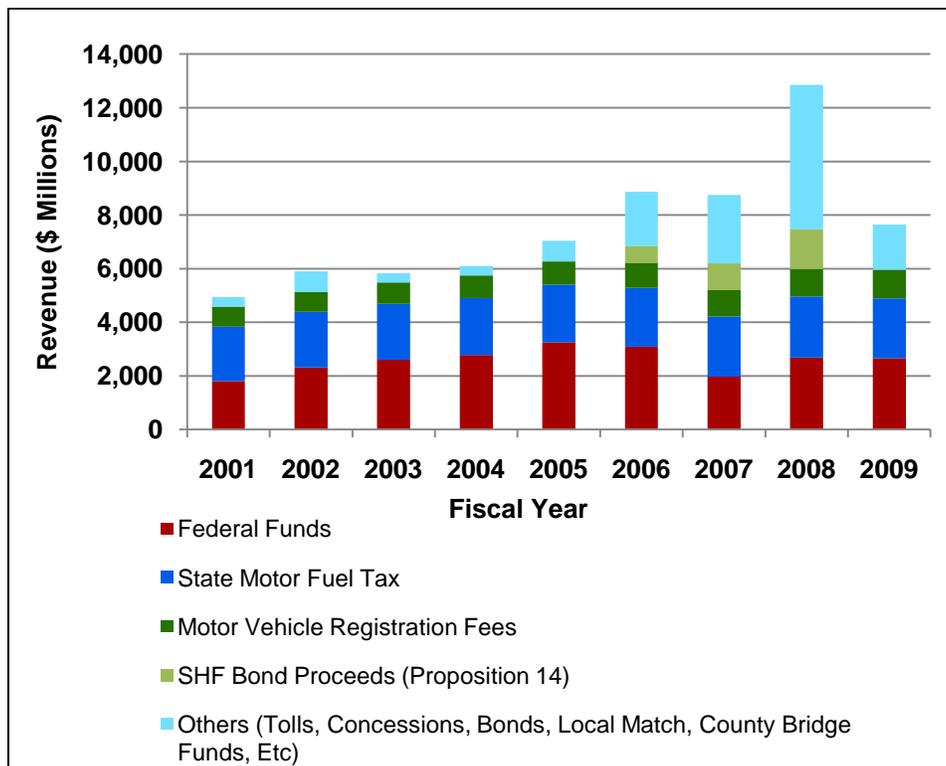
Fund Type	Revenue in Millions (current dollars – not adjusted for inflation)								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
Concession Agreements	-	-	-	-	-	-	-	3,197	-
Others**	311	713	292	281	690	1,642	2,292	1,804	1,100
Total	4,941	5,905	5,834	6,103	7,037	8,869	8,745	12,856	7,641

Source: Texas annual cash report at <http://www.window.state.tx.us/finances/pubs/cashrpt/>

\*Outstanding commercial paper totaled \$65 million as of June 2010.

\*\*Others fees includes cash transfers from other accounts, toll revenue, ARRA funds, and local participation funds.

**Figure 3-2: State Highway Fund Revenues (current dollars, not adjusted for inflation)**



Source: Texas Annual Cash Report

The three main categories of funds that are deposited in the SHF are (1) dedicated highway revenues, (2) federal reimbursements for eligible expenditures, and (3) bond proceeds (until authorized bond issuance is used up). Additional revenues include revenues from concession agreements or toll-road agreements, commercial paper, and other revenues such as interest on SHF balances.



The largest source of funds for the SHF is dedicated revenues. These revenues include motor fuel taxes, vehicle registration fees, sales tax on lubricants, and vehicle certificate of title fees. State motor fuel taxes are the largest single source of revenue for this fund. Revenues from this tax have shown slow growth (an increase of only about 10 percent total between 2001 and 2009—not enough to keep pace with inflation).

The second largest source of revenue for the fund is federal reimbursements for eligible expenditures. These reimbursements have seen fluctuation throughout the past decade. Looking ahead, long-term growth in federal funds is impossible without an increase in federal user fees or without long-term reliance on the federal GF. The U.S. Congress has used more than \$60 billion from the federal GF in fiscal years 2009 and 2010 to provide short-term support for the federal Highway Trust Fund and as part of the economic stimulus program. But continued reliance on federal general funding for highways would represent a dramatic change in policy and might be difficult given the current size of the federal budget deficit.

Another major source of funds in the SHF is bond proceeds. Proposition 14 allows TxDOT to issue up to \$6 billion in revenue bonds (with \$2.4 billion set aside for safety projects) and a maximum of \$1.5 billion of bond issuance in each fiscal year. Through FY 2009 TxDOT issued \$3.1 billion of Prop 14 bonds and expects to issue the remaining \$2.9 billion by the end of FY 2012. The bonds have a senior lien on revenues of the SHF and must mature within 20 years of issuance.

TxDOT uses commercial paper (short-term loans) to manage temporary cash flow shortfalls and manage operations more efficiently. TxDOT can issue a maximum of \$500 million in these short-term notes, which are repaid from future SHF revenue.

The largest expenditure from the SHF is for highway construction, followed by TxDOT employee wages (Table3-12). In 2009, construction made up 49 percent of all SHF expenditures. Construction includes new roads and bridges as well as major reconstruction work. Indeed, new capacity is a declining share of total state spending on roads and bridges.

**Table 3-12: Major Categories of State Highway Fund Expenditures (\$ Millions)**

	<b>Total Expenditures</b>	<b>Highway Construction</b>	<b>Salaries and Wages</b>	<b>Repairs and Maintenance</b>	<b>Professional Services</b>	<b>Others**</b>
2001	5,132.9	2,978.8*	947.1		278.1	928.9
2002	5,669.4	3,344.2	1,035.5	247.9	280.9	760.9
2003	5,599.4	3,287.7	1,062.6	308.6	240.5	700.0
2004	6,114.5	3,492.9	1,142.0	334.6	286.3	858.7
2005	7,521.7	4,630.4	1,152.9	334.1	383.7	1,020.6
2006	8,528.8	5,132.8	1,265.1	374.5	425.4	1,331.0
2007	8,845.5	5,359.4	1,314.2	357.8	478.8	1,335.3
2008	8,921.9	5,208.6	1,013.4	418.5	412.2	1,869.2
2009	8,549.2	4,204.2	1,025.8	462.1	284.8	2,572.3

Source: Highway Funding Primer, Legislative Budget Board Staff – February 2009

\*In 2001, highway construction and maintenance expenditures were combined as one category.

\*\* Others category includes – payments for debt services, expenditure on supplies and materials, public assistance and intergovernmental payments.

### 3.7.2 Texas Mobility Fund

The TMF was created in 2001 to allow certain transportation revenues to support revenue bonds. Bond proceeds are used to fund the acquisition, construction, maintenance, and expansion of highways and publicly owned toll roads and other public projects. This allows TxDOT to leverage certain revenues to attain more funding for projects sooner. This is in contrast to the earlier pay-as-you-go system where bonds were limited to those backed by toll revenues.

Tax revenues from different taxes are deposited into this fund. As shown in Table 3-13, revenue from certificate of title fees beginning in FY 2009, vehicle inspection fees beginning in FY 2006, driver license fees beginning in FY 2008, driver record information fees beginning in FY 2007, and vehicle inspection fees beginning in FY 2006 were all deposited into this fund. Proposition 15 allows TxDOT to issue up to \$6.4 billion in bonds backed by funds in the TMF. These bonds are also guaranteed by the state GF.

**Table 3-13: Texas Mobility Fund Revenues**

Revenue in \$ Millions (current dollars, not adjusted for inflation)					
Texas Mobility Fund	2005	2006	2007	2008	2009
Driver Record Information Fees			54	62	58
Driver License Fees				118	102
Motor Vehicle Inspection Fees		83	85	86	83
TMF Bond Proceeds	1,041	771	2,245	1,157	1,201
Vehicle Certificate of Title Fees					74
Others*	83	29	183	-106**	17
<b>Total</b>	<b>1,124</b>	<b>883</b>	<b>2,567</b>	<b>1,317</b>	<b>1,534</b>

Source: Texas annual cash report at <http://www.window.state.tx.us/finances/pubs/cashrpt/>

\* Others category includes Motor Carrier Act Penalties, Interest on State Deposits and Treasury Investments – General, Non-Program, Other Miscellaneous Governmental Revenue

\*\* In late fiscal year 2007, \$64 million in court fines and \$80 million from driving license surcharges revenue was erroneously deposited into the TMF by the Texas Department of Public Safety (DPS). It was transferred out of TMF in early fiscal year 2008 to correct the error.

### 3.7.3 Proposition 12 General Obligation Bonds

In November of 2007, under referendum Proposition 12, Texas voters authorized the Texas Transportation Commission to issue up to \$5 billion in general obligation bonds for the purpose of highway construction. Debt service on the General Obligation (GO) bonds is paid by state general revenue. In July 2009, the Texas Legislature, in House Bill 1, 81st Legislature, appropriated \$3 billion of the Prop 12 bonds, including \$1 billion to create a state-funded State Infrastructure Bank.

The remaining \$2 billion was appropriated for nontolled road construction. Currently, no Prop 12 debt is outstanding. Legislative Budget Board (LBB) approval is required for Prop 12 issuance and \$1 billion has been approved by the LBB. TxDOT plans to issue \$1 billion of Prop 12 bonds in September 2010 for nontolled highway construction projects. Funds may not be used for conversion of a nontolled road to a toll road.

### 3.7.4 Toll Road Bonds

The Texas Transportation Commission is authorized to issue Project Revenue Bonds (or Toll Road Bonds) where the bonds are secured by the toll revenue collected. To date, the Texas Transportation Commission has only issued such bonds for the Central Texas Turnpike System in Austin (\$1.29 billion). The bonds do not constitute an obligation of the state, the Texas Transportation Commission, TxDOT, nor any agency or political subdivision of the state. Toll road bonds enable future toll revenues to be leveraged to build current transportation assets.



### 3.7.5 Other Debt Strategies

Texas also has access to other sources of funds, including the federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loans and loan guarantees; loans issued by the Texas State Infrastructure Banks (SIB) and Grant Anticipation Revenue Vehicles (GARVEE) backed by future federal funds,

- ★ **TIFIA loans:** The TIFIA program provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and more favorable interest rates than can be found in private capital markets for similar instruments. TIFIA can help advance qualified, large-scale projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues.

TIFIA allows the U.S. Department of Transportation to provide direct credit assistance of up to 33 percent of project costs to sponsors of major transportation projects. Projects in Central Texas like the Central Texas Turnpike (\$900 million TIFIA loan), SH 130 (\$430 million TIFIA loan), U.S. Highway 183A (\$66 million TIFIA loan), and projects in the Dallas-Fort Worth metropolitan area, (North Tarrant Express (\$650 million TIFIA loan) and I-635 [\$800 million TIFIA loan]) have benefited significantly with loans from TIFIA. TIFIA loans have flexible repayment schedules, something of value during the early years of a new toll facility.

- ★ **State Infrastructure Bank (Federal):** Texas was chosen as 1 of the 10 states to test the SIB program in 1995. The Texas SIB was started in 1997 with federal funding and the state has since expanded the bank. The Texas SIB follows a formal application process and provides direct loans to Texas public agencies with attractive interest rates (lower than commercial market rates) and receives revenues from repayment of principal and interest. Additional capital can be, but has not been provided by the state, from a variety of revenue sources. The Texas SIB is a revolving loan fund, where the account balance grows through the monthly interest earned and repaid principal and interest. As of July 2010, TxDOT has approved 91 loans totaling more than \$417 million from the SIB, helping to leverage approximately \$4 billion in transportation projects in Texas.
- ★ **Proposition 12 funded State Infrastructure Bank (State):** In July 2009, the Texas Legislature, in House Bill 1, 81st Legislature, appropriated \$1 billion to a state funded SIB program. Funding will come from future Proposition 12 bond proceeds. As indicated above, Proposition 12 SIB bonds have not been approved by the LBB and have not been issued. Once funded and SIB loans are made, it is contemplated that revenues from the loans may be used to secure additional revenue bonds. A public entity may borrow from the fund in order to construct, maintain, or finance a tolled or nontolled transportation project.
- ★ **GARVEE bonds:** GARVEEs are bonds or notes whose principal and interest is to be repaid from future federal aid funds. Proceeds from GARVEE bonds must be used for FHWA-eligible expenditures. They do not require a public referendum or increased motor fuel taxes. However, bonds maturing over a long period face a reauthorization risk as Congress may alter total funding for surface



transportation, may change the allocation between highways and transit, and/or the allocations among states.

Between 1997 and 2008, 20 states issued GARVEE bonds, totaling \$9.3 billion. Texas has not issued any GARVEE bonds to date, though it has the authority. Transit agencies can use similar mechanisms to borrow against future federal-aid funding known as Grant Anticipation Notes (GANs). Given the current uncertainty over federal legislation, GARVEE bonds do not appear attractive since they depend on future federal authorizations and the Congress is currently 1 year behind the schedule called for under current practice.

- ★ **Private Activity Bonds:** SAFETEA-LU (Title XI, Section 11143) amended Section 142 of the Internal Revenue Code expanded the eligibility of Private Activity Bonds (PABs) to include highways and freight transfer facilities to the types of privately developed and operated projects. PABs provide private developers and operators of transportation facilities access to tax-exempt interest rates that lowers the cost of capital significantly, enhancing investment prospects. Increasing the involvement of private investors in highway and freight projects generates new sources of money, ideas, and efficiency.

SAFETEA-LU limits the amount PABs \$15 billion dollars with applications approved by the Secretary of Transportation. As of January 2010, seven projects have been approved for \$6.3 billion. Two projects in Texas – North Tarrant Express for \$400 million and LBJ Freeway for \$2,650 million – represent 48 percent of the approved financing.

[http://www.fhwa.dot.gov/ipd/how\\_business/fact\\_sheets/pabs.htm](http://www.fhwa.dot.gov/ipd/how_business/fact_sheets/pabs.htm)

- ★ **Buy America Bonds:** The Buy America Bonds (BAB) program was a component of the American Recovery and Reinvestment Act (ARRA) enacted in February 2009 to stimulate the economy, create jobs, and encourage investments in capital projects. The program provides a Federal subsidy of 35 percent of the interest payment for state and local governments as a trade-off for issuing taxable bonds instead of tax-exempt bonds for government purposes, including transportation. The subsidy reduces the cost of borrowing to below that of traditional tax-exempt bonds. There was no cap in volume of bonds eligible for this program, but BABs must be issued prior to January 1, 2011. The program is administered by the U.S. Treasury.

Nationally, local governments in 49 states, DC and two territories issued \$106 billion between April 3, 2009 and May 31, 2010. In Texas, 51 issuances totaled \$8.319 billion, of which \$3.057 billion was for transportation. The transportation bonds were issued by TxDOT (\$1,208 M), RMAs (\$61 M), MTAs (\$913 M) and NTTA (\$913 M).

[http://www.fhwa.dot.gov/ipd/how\\_business/fact\\_sheets/babs.htm](http://www.fhwa.dot.gov/ipd/how_business/fact_sheets/babs.htm)

- ★ **Transportation Reinvestment Zones:** A Transportation Reinvestment Zone (TRZ) provides a way to capture taxes from a portion of the increased value in real estate resulting from a highway improvement. In Texas, this mechanism is only available to municipalities and counties that are planning to execute a pass through finance agreement to fund a highway project. Municipalities and counties can keep one-half of the revenue to be used for any purpose with the TRZ and use the other one-half of the revenue for use on future pass-through projects. The first TRZ in Texas was established in the City of El Paso on nine separate but contiguous corridors in December 2008.



<http://texinfo.library.unt.edu/texasregister/html/2007/dec-28/adopted/43.TRANSPORTATION.html>

Table 3-14 shows the major bonding programs of TxDOT.

**Table 3-14: Major Bonding Programs (\$ Billions)**

	<b>SHF (Prop 14)</b>	<b>TMF</b>	<b>Prop 12 GO</b>
Revenue Source	State fees and taxes + federal reimbursements	State fees and taxes	General Fund of the State
Purpose/use	Highways	Highways	Highway Construction, State SIB
Amount Authorized	6.0	<b>Only limited by debt service requirements. Current estimated capacity 6.4</b>	5.0
Amount Appropriated	Restricted to 1.5 issuance per year		30, including 1.0 for SIB
Amount Approved by LBB			1.0 for HW Construction
2005		1.000	
2006	1.553	1.790	
2007	1.242	1.006	
2008	0.163	1.100	
2009		1.208	
2010	1.500		1.000
2011			
2012	1.400		

## 3.8 Nonhighway Funding and Revenue Sources

### 3.8.1 Public Transportation Finance

Financing the construction, operation, and maintenance of these transit systems involves funds from different types of sources, including federal and state grants, loans, bonds, local sales taxes, passenger fares, and advertising fees. For major capital improvements, transit agencies rely on federal grants, bond market investments and other innovative financing schemes, TIFIA loans or SIB grants.

#### 3.8.1.1 Federal Transit Funding

Every year the FTA distributes the annual appropriation from Congress to fund a variety of transit related activities. These grants require matching funds at state and local level depending on the type of expenditure. In 2008, Texas ranked sixth in the nation in the apportionment of federal funding for transit received from FTA under various grant programs. Table 3-15 shows the federal grants received between 2004 and 2010. More



than 50 percent of the federal funds received have been under the urbanized area program, to fund transit needs in metropolitan areas. Under the bus and bus related equipment and facilities program (administered as part of capital program) capital assistance for new and replacement buses, related equipment, and facilities is provided to supplement formula funding in both urbanized and rural areas.

**Table 3-15: FTA Transit Funding to Texas 2004–2010 (\$ Thousands)**

Program Number	Program	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
5307	Urbanized Area Formula Program - 1m and over	129,698	136,000	132,014	137,542	149,757	158,483	158,493
5307	Urbanized Area Formula Program - from 200k - 999,999	35,558	37,760	37,602	38,510	41,582	45,497	45,581
5307	Urbanized Area Formula Program - less than 200k	30,160	31,608	33,525	34,767	38,055	40,583	40,485
5309	Capital Investment Program - Fixed Guideway	9,982	12,211	14,925	16,781	19,966	22,859	24,493
5311	Nonurbanized Area Formula Program	16,113	16,866	28,096	29,711	32,047	33,830	33,801
5311(b)(3)	Rural Transit Assistant Program	191	190	280	334	350	373	380
5310	Special Needs for Elderly Individuals and Individuals with Disabilities	5,625	5,900	6,940	7,357	8,020	8,620	8,488
5303	Metropolitan Transportation Planning Program	4,511	4,451	5,682	6,047	6,477	6,873	6,875
5304	Statewide Transportation Planning Program	-	-	1,166	1,244	1,327	1,468	1,434
5313	Statewide Planning and Research Grant Program	956	956	-	-	-	-	-
<b>Total Annual Allocated Program</b>		<b>232,796</b>	<b>245,942</b>	<b>260,231</b>	<b>272,293</b>	<b>297,581</b>	<b>318,586</b>	<b>320,031</b>
5308	Clean Fuels Program	-	-	3,175	3,332	3,622	3,839	0
5309	Bus and Bus Facility Program	19,827	44,746	31,034	13,960	24,824	31,054	12,605
5309	New Starts Program	37,558	17,856	23,522	80,000	111,230	101,945	253,495
5316	Job Access and Reverse Commute Program	5,458	2,329	12,461	13,135	14,229	16,701	15,968
5317	New Freedom Program	-	-	5,616	5,917	6,392	7,368	7,232
5314	National Research Program	956	913	990	-	-	-	1,000
<b>Competitive Award Programs</b>		<b>63,799</b>	<b>65,845</b>	<b>76,799</b>	<b>116,344</b>	<b>160,297</b>	<b>160,907</b>	<b>290,300</b>
<b>Total Funding</b>		<b>296,595</b>	<b>310,831</b>	<b>337,030</b>	<b>388,637</b>	<b>457,879</b>	<b>479,493</b>	<b>610,331</b>

Source: Federal Transit Administration



### 3.8.1.2 Stimulus Funds for Transit

Approved in February 2009, the ARRA provided approximately \$371 million for public transit improvements in Texas. Texas' urban transit providers will receive funding through direct allocations in the amount of \$321 million. Rural areas have been allotted \$42 million for rural program operators and \$8 million intercity bus projects.

### 3.8.1.3 State and Local Transit Funds

States and other public agencies may appropriate funds for transit services from their GF. These funds may be made up of revenues from a number of sources including state sales taxes, property taxes, and income taxes. Table 3-16 and Table 3-17 show federal, state, and local funds received by transit agencies under the urbanized area program and nonurbanized area program.

**Table 3-16: Transit Providers Supported with State Funds through TxDOT**

District	Urbanized Area	FY 2010 Federal \$ (5307)	FY 2010 State \$	FY 2008 Local \$	Total \$
Abilene	Abilene	1,546,438	364,513	1,670,078	3,581,029
Amarillo	Amarillo	2,687,153	410,583	1,712,171	4,809,907
Fort Worth	Arlington	*	243,739	1,050,624	1,294,363
Beaumont	Beaumont	1,774,153	425,296	4,134,103	6,333,552
Pharr	Brownsville	3,037,022	569,719	4,847,885	8,454,626
Bryan	College Station-Bryan	2,101,108	373,278	1,485,005	3,959,391
Houston	Galveston	1,644,405	458,596	746,322	2,849,323
Dallas	Grand Prairie	*	159,579	150,197	309,776
Pharr	Harlingen-San Benito	1,467,617	152,917	11,969	1,632,503
Waco	Killeen, Copperas Cove, Harker Heights	2,624,272	404,769	1,284,406	4,313,447
Houston	Lake Jackson-Angleton	1,042,039	247,501	50,485	1,340,025
Laredo	Laredo	4,040,202	708,885	8,643,887	13,392,974
Tyler	Longview	952,721	238,830	367,045	1,558,596
Lubbock	Lubbock	2,824,406	634,681	7,066,614	10,525,701
Pharr	McAllen Urbanized Area (UZA)	3,566,400	468,850	2,369,888	6,405,138
Dallas	McKinney	746,087	245,404	802,434	1,793,925
Dallas	Mesquite	*	142,455	237,783	380,238
Odessa	Midland-Odessa	2,968,119	446,746	897,184	4,312,049
Fort Worth	North Richland Hills	*	116,134	63,654	179,788
Beaumont	Port Arthur	1,746,929	309,750	841,565	2,898,244



**Table 3-16: Transit Providers Supported with State Funds through TxDOT**

District	Urbanized Area	FY 2010 Federal \$ (5307)	FY 2010 State \$	FY 2008 Local \$	Total \$
San Angelo	San Angelo	1,486,406	266,188	511,706	2,264,300
Paris	Sherman-Denison	724,425	236,608	218,402	1,179,435
Waco	Temple	922,789	262,261	942,855	2,127,905
Atlanta	Texarkana (Federal also includes ArkTex)	532,087	250,284	400,902	1,183,273
Houston	Texas City	1,208,395	251,290	111,990	1,571,675
Houston	The Woodlands	1,720,087	417,689	1,656,914	3,794,690
Tyler	Tyler	1,310,301	274,861	490,382	2,075,544
Yoakum	Victoria	685,151	273,645	731,100	1,689,896
Waco	Waco	2,187,058	401,624	2,715,250	5,303,932
Wichita Falls	Wichita Falls	1,329,835	302,699	399,388	2,031,922
<b>Total</b>		<b>46,875,605</b>	<b>10,059,374</b>	<b>46,612,188</b>	<b>103,547,167</b>

Source: TxDOT, Public Transportation Division

\*Note: received 5307 funds through North Central Texas Council of Governments

**Table 3-17: Rural Transit<sup>150</sup>**

District	Rural Transit Agency	FY 10 Federal (5311)	FY 2010 State	FY 2008 Local	Total
San Antonio	Alamo Area Council of Governments	1,273,552	916,513	1,764,725	3,954,790
Atlanta	ArkTex Council of Governments	1,052,414	635,903	861,585	2,549,902
Abilene	Aspermont Small Business Development Center	394,554	264,927	282,432	941,913
Corpus Christi	Bee Community Action Agency	379,297	277,393	132,178	788,868
Bryan	Brazos Transit District	2,442,331	2,074,217	2,746,043	7,262,591
Austin	Capital Area Rural Transportation System	1,651,296	1,001,942	4,819,787	7,473,025
Brownwood	Central Texas Rural Transit District	1,089,160	650,266	3,328,244	5,067,670
Fort Worth	Cleburne, City of	387,497	303,337	324,871	1,015,705
Dallas	Collin County Committee on Aging	280,798	191,554	8,974	481,326
Yoakum	Colorado Valley Transit	536,726	397,383	758,430	1,692,539
Pharr	Community Action Council of South Texas	432,440	371,645	194,979	999,064
San Antonio	Community Council of Southwest Texas	849,130	489,227	1,733,648	3,072,005

<sup>150</sup>Rural numbers are provided for those MPOs or districts which desire to show them as information items. Actual programming is done by TxDOT-PTN.

**Table 3-17: Rural Transit<sup>150</sup>**

District	Rural Transit Agency	FY 10 Federal (5311)	FY 2010 State	FY 2008 Local	Total
Dallas	Community Services, Inc.	613,969	414,146	673,588	1,701,703
San Angelo	Concho Valley Rural Transit District	537,862	416,693	716,893	1,671,448
Laredo	Del Rio, City of	378,295	258,835	243,826	880,956
Tyler	East Texas Council of Governments	1,517,224	889,475	659,610	3,066,309
El Paso	El Paso, County of	362,381	245,617	458,557	1,066,555
Houston	Fort Bend County Rural Transit District	549,279	102,804	1,227,088	1,879,171
Yoakum	Golden Crescent Regional Planning Commission	868,158	518,507	1,025,319	2,411,984
Houston	Gulf Coast Center	329,367	257,486	61,733	648,586
Waco	Heart of Texas Council of Governments	669,282	453,137	197,885	1,320,304
Brownwood	Hill Country Transit District	781,501	532,108	1,133,164	2,446,773
Dallas	Kaufman Area Rural Transportation	536,233	319,011	745,750	1,600,994
Corpus Christi	Kleberg County Human Services	237,599	195,125	50,247	482,971
Pharr	Lower Rio Grande Valley Development Council	481,761	331,538	120,308	933,607
Amarillo	Panhandle Community Services	1,178,411	822,380	1,052,328	3,053,119
Fort Worth	Public Transit Services	647,414	390,003	541,328	1,578,745
Childress	Rolling Plains Management Corporation	559,499	381,821	541,650	1,482,970
Corpus Christi	Rural Economic Assistance League	549,724	366,650	286,905	1,203,279
Paris	Senior Center Resources and Public Transit, Inc.	419,259	281,544	383,197	1,084,000
Beaumont	South East Texas Regional Planning Commission	502,153	381,213	921,620	1,804,986
Pharr	South Padre Island, Town of	547,216	368,279	70,699	986,194
Lubbock	South Plains Community Action Association, Inc.	1,114,182	824,905	1,687,733	3,626,820
Dallas	SPAN, Inc.	421,922	257,878	634,613	1,314,413
Paris	Texoma Area Paratransit System	787,952	549,595	886,172	2,223,719
Fort Worth	The Transit System, Inc.	301,214	265,182	402,683	969,079
Laredo	Webb County Community Action Agency	353,809	272,859	291,781	918,449
Odessa	West Texas Opportunities, Inc	1,573,956	1,010,596	2,661,371	5,245,923
<b>Total</b>		<b>27,588,817</b>	<b>18,681,694</b>	<b>34,631,944</b>	<b>80,902,455</b>

Source: TxDOT, Public Transportation Division



### 3.8.1.4 Sales Tax for Public Transportation

Transportation authorities in Texas receive a portion of local sales tax revenue within their service area for operating and maintaining transit services. There are six MTAs, two city transit departments (CTDs), one county transit authority (CTA) and one advanced transportation district (ATD) in Texas that impose sales and use tax. These authorities, their tax rates, and the year from which the tax has been effective are shown in Table 3-18. Houston, Dallas, and Austin have 1 percent of local sales tax revenue diverted to transit agencies. These rates have been in effect for more than 20 years in some cities and have been a major source of revenue to cover operating expenses.

Sales tax revenues are the largest revenue source for transit agencies. In 2009, DART received nearly 50 percent of total revenues (\$378 million) from sales tax receipts.<sup>151</sup> In Houston, METRO sales taxes revenue comprised nearly 80 percent (\$571 million) of the revenue base for the same year.<sup>152</sup>

**Table 3-18: Transit Sales Tax 2009**

	Rate (%)	Effective From
Austin MTA	1	1985
Corpus Christi MTA	0.50	1986
Dallas MTA	1	1984
Denton County CTA	0.50	2004
El Paso CTD	0.50	1988
Fort Worth MTA	0.50	1984
Houston MTA	1	1978
Laredo CTD	0.25	1991
San Antonio ATD	0.25	2005
San Antonio MTA	0.5	1978

Source: Texas Comptroller of Public Account

### 3.8.1.5 New Starts Program

New Starts is an FTA program that provides federal funding for supporting locally planned, implemented, and operated transit capital investments. The North Corridor BRT and Southeast Corridor BRT projects in Houston—estimated to cost \$444 million

<sup>151</sup>Dallas Area Rapid Transit – Financial Statements, 2009.

<sup>152</sup>2009 Comprehensive Annual Financial Report – METRO, 2009.



are under consideration to receive New Starts funding. DART received \$101.19 million in 2007 to construct a 21-mile extension of LRT under this program.

### **3.8.2 Freight Rail Funding**

SAFETEA-LU and its reauthorizations include an array of programs that may have an impact on Texas passenger and freight rail projects. Currently federal tools for rail projects are available through a combination of:

- ★ Apportionments (i.e., funding programs via formula or through Congressional mandate);
- ★ Allocations (i.e., discretionary funds, earmarks); and
- ★ Financing sources (i.e., loans, credit enhancement).

Almost all federal funding for transportation projects is distributed through the USDOT. Within this agency, several different administrations, such as the FRA, the FTA, and the FHWA, have the potential to fund rail projects through various programs.

There are also a number of state and local funding programs and options that can be used for various types of rail projects. A comprehensive list of federal, state, and local funding programs and options can be found in the Texas Rail Plan.

### **3.8.3 Airport Funding**

Commercial and General Aviation airports have five major sources of revenue:

1. Federal Funds – Airport Improvement Program (AIP) Grants,
2. Airport Operating Revenue – airline landing fees, charges for terminal use, parking fees, and rental car facility charges,
3. Passenger Facility Charges (PFC) – fees added on to airplane tickets for passengers who land at that airport,
4. State and Local Grants, and
5. Tax-exempt Bonds (usually supported by airport operating revenues or PFCs).

Airports use different combinations of these sources depending on the individual airport's financial situation and the type of project being considered. The larger commercial airports are self-sufficient to support operating and maintenance costs and



capital improvement projects through revenue raised by taxes and fees charged for use of airport facilities. For major infrastructure projects, airports participate in the tax-exempt bond market pledging airport revenues. Small airports are more dependent on federal AIP grants for improvement projects than large or medium-sized airports.

### 3.8.3.1 Federal Aviation Funding

The FAA historically has had a major role in support of the national system of airports. Improvements to the airport and airway system are financed from the Airport and Airway Trust Fund through AIP grants to eligible public airports. The trust fund revenues come from an assortment of aviation user fees and taxes listed in Table 3-19. Nationally, the Century of Aviation Reauthorization Act (Vision 100) authorized grants for airports in Texas of \$40 million in FY 2004; FY 2005, \$41 million; FY 2006, \$42 million; and FY 2007.<sup>153</sup>

**Table 3-19: Federal Airway and Aviation Trust Fund Revenue Sources**

	Fee Charged	Rate
1	Passenger Tickets	7.50%
2	Freight Waybills	6.25%
3	Frequent Flyer Award Tax	7.50%
4	Passenger Flight Segment Fee	\$3.40
5	Passenger Ticket Tax for Rural Airports	7.5%
6	International Arrival and Departure Tax	\$15.10 per person
7	General Aviation Fuel Tax	19.3¢ per gallon aviation gas, 21.8¢ per gallon of jet fuel
8	Commercial Fuel Tax	4.3¢ per gallon

### 3.8.3.2 Airport Improvement Program (AIP)

The AIP provides grants for the planning and development of public-use airports. Funding is available only for projects that are related to nonrevenue producing items (this excludes parking facilities and the commercial portions of airport terminals). For large and medium primary hub airports, the grant covers 75 percent of eligible costs (or 80 percent for noise program implementation). For small primary, reliever, and general aviation airports, the grant covers up to 95 percent of eligible costs. Note: Texas

<sup>153</sup>TxDOT. 2010 Texas Airport System Plan (2010).



administers AIP funds on behalf of the FAA, and utilizes a 90 percent limit for federal grant matching funds.

The multi-year authorization of the AIP under Vision 100 Century of Aviation Reauthorization Act ended in 2007. Since then, a series of short-term extensions have been authorized and provided funding for AIP. Other federal programs funding airport improvements are the hangar program (75 to 80 percent funding for construction of hangars), fuel program (75 percent funding for building fuel facilities) and air traffic control towers program (90 percent grants up to a maximum of \$ 1.5 million).

General aviation airports and some smaller commercial airports may not be able to meet total operating costs or fund capital improvements. Development operations at these airports have largely been funded through airport bonds and federal funding sources. General aviation airports are not eligible for primary entitlement funding and receive AIP funds from the state's apportionment of trust fund revenues via the FAA's State Block Grant Program.

### **3.8.3.3 Airport Operating Revenues**

Airport revenues are typically generated through user fees charged by the airport for the facilities and services that are provided to airlines (landing, terminal, and parking fees), and concession contracts for off-airport facilities like rental car operations and parking garages.

### **3.8.3.4 Air Passenger Facility Charges**

Passenger Facility Charges (PFCs) were first authorized by Congress in 1990 and are tied directly to local airport-related projects. The PFC program allows the collection of PFC fees up to \$4.50 for every enplaned passenger at commercial airports controlled by public agencies. Airports use these fees to fund FAA approved projects that enhance safety, security, or capacity; reduce noise; or increase air carrier competition.

As of July 2010, most large and medium size commercial airports in Texas collect PFC at the maximum level (\$4.50)—DFW, Dallas Love Field, Austin-Bergstrom, San Antonio, and El Paso. Houston area airports, IAH and Hobby, have a PFC fee of \$3.00.

### **3.8.3.5 State and Local Airport Funding**

TxDOT administers the AIP grants for general aviation airports under the State Block Grant Program, which gives it greater discretion and flexibility in selecting, developing, and administering projects. Federal funding for general aviation is more limited than for commercial service airports; hence, these airports are more dependent on state and



local funding. 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.

### **3.8.3.6 Tax Exempt Bonds for Aviation**

Commercial airports finance major capital improvement projects, raising capital from the bond market, by pledging capital funds, PFC revenue, and federal grants. In certain situations, where strategic partnerships exist between airports and airlines, airlines support bonds and pay debt service.

### **3.8.3.7 Non-aeronautical Revenue**

Non-aeronautical revenue sources at airports have become an increasingly important source of cash to fund operations and capital expansion. Non-aeronautical revenues include funds generated by automobile parking, terminal retail and services, advertising, rental cars, duty free, and other commercial operations in and around airports. The revenue generated by these sources typically represents more than half of the total revenue generated at airports.

Because nonaeronautical revenue growth has out-stripped revenue generated from airline activity for many years, forward-thinking airports have come up with new and innovative sources of such revenue. “Airport City” or “Aerotropolis” concepts involve airports taking control of real estate in and around the airport so that the airport can control its use. While airports originally did this to ensure that land use around the airport was compatible with airport activity, (i.e., noise) airports and the communities they serve are now controlling land so that uses are actually complementary to airport activity.

Some examples of components of airport cities include hotels, office facilities, conference centers, logistics centers, multi-modal transit facilities, aircraft maintenance facilities, markets, and others. Ultimately, airport cities concepts allow the airport operator and surrounding communities to capture value generated by additional links in the transportation value chain.

Some airports also derive nonaeronautical revenue from other activities on airport property that may be unique to their location. An example of this is the case where Dallas-Fort Worth International Airport has several active oil wells on the property that serve as an important source of nonaeronautical revenue.



### **3.8.3.8 Private Sector Participation**

The benefits of Private Sector Participation (PSP) or Public Public Partnership (PPP) in the provision and/or management of public infrastructure such as airports include:

- ★ Implementation of private sector commercial development,
- ★ Efficient airport management, and
- ★ Design and construction cost savings and efficiency gains.

Furthermore, flexibility in private procurement allows for mitigation of risks associated with large design and construction projects—a mitigation that is often not possible under strict public procurement rules. The worldwide trend towards PSP demonstrates the political willingness to transfer operating responsibilities to the private sector while strengthening public competencies in the regulatory and inspection environment.

Numerous forms of PSPs have been experimented with—usually varying in terms of the level of participation of the private sector. In ascending order of level of PSP, airport options to structure PSPs include airport management contracts, concession contracts or a partial or full privatization (divesture/sale). Besides the level of participation and risk sharing, all PSP forms have their own characteristics and merits. Hybrid or overlapping structures exist as well. Each alternative reflects a certain allocation between risk and responsibility shared between the private and public sector.

Although PSP and PPP models are still relatively new concepts at U.S. airports, the models have been employed successfully at many non-U.S. airports. As airport financing and management becomes increasingly complex and as cities and airport authorities look to minimize their risks relative to airport operations, PSP and PPP options may become more commonplace at U.S. airports.

### **3.8.4 Waterways and Ports Funding**

The port authorities generally own and operate their docks and often own other facilities such as terminals, freight handling equipment, cranes, warehouses, open storage facilities, bulk commodity handling facilities, and other facilities. Ports also generally have a wide variety of private operators on the property responsible for everything from rail and truck transportation, to warehousing, materials handling, storage, and other port related activities.

Revenue for port operations and day-to-day maintenance are derived from a variety of fees charged for use of the port. These include dockage and wharfage fees such as loading, unloading and demurrage. They also receive revenue from leasing space on



the property they own for warehouses and other materials handling activities. Heavy maintenance, such as routine dredging to maintain the harbor depth to the dimensions authorized by Congress is coordinated through the USACE. Most of the funding for these activities comes from the Harbor Maintenance Trust Fund (HMTF).

Congress established a user fee for deep draft coastal ports and harbors—the Harbor Maintenance Tax (HMT) in 1986. The HMT was designed to provide 100 percent of the cost of operations and maintenance, primarily dredging, of the nation’s deep draft and coastal ports and harbors. The HMT is a 0.125 percent ad valorem tax (\$1.25 per \$1,000 in cargo value) levied on cargo imported or domestically moved through federally maintained channels and harbors. The tax is also levied on cruise ships, with the value of the ticket being the basis for taxation. Export waterborne cargo was exempted from the tax after a 1998 Supreme Court decision that found that it violates the export clause of the Constitution. Passengers aboard ferries and cargo moving to and from Alaska (except for crude oil), Hawaii, and other U.S. possessions are also not subject to the tax. Ports on inland rivers are subject to the inland waterways fuel tax, which is collected for the Inland Waterways Trust Fund (discussed in the next section). Since 1998, nearly all of the tax revenue is generated by importers—domestic cargo shippers generate only about 5 percent of the revenue and cruise ship passengers less than 1 percent.<sup>154</sup>

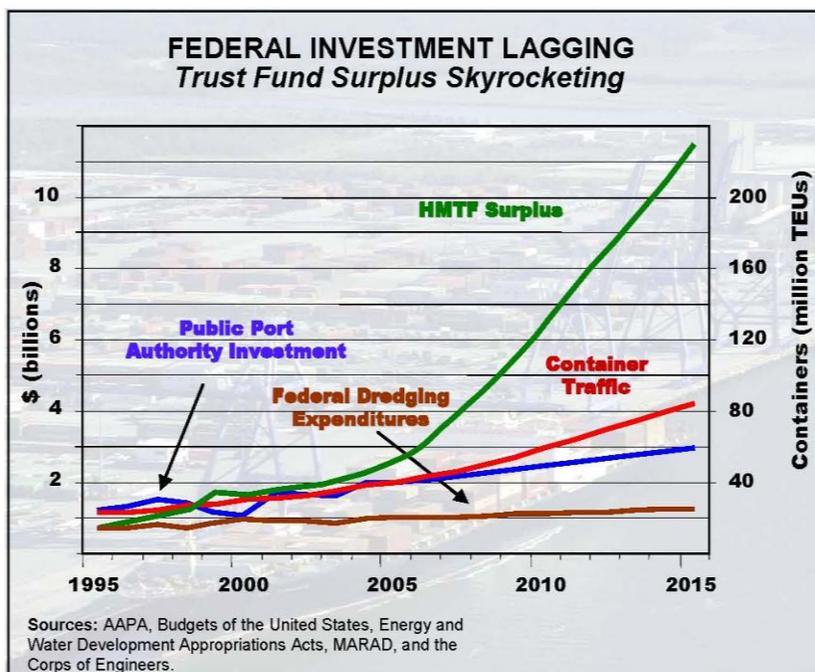
The tax is collected by the Bureau of Customs and Border Protection and directed to the Trust Fund. However, the monies are not immediately eligible for dredging activities. Those monies can only be spent if the funding is actually appropriated by Congress. The HMTF balance was almost \$5 billion at the end of FY 2009, as shown on Figure 3-3. The decrease in international trade reduced HMT collections by about \$375 million in FY 2009.

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<sup>154</sup>Congressional Research Service, John Frittelli. Harbor Maintenance Trust Fund Expenditures, January 25, 2010, 7-5700, 141042.



**Figure 3-3: Federal Investment Lagging**



As of July 2010, revenue deposited into the HMTF exceeds transfers out of the fund. HMTF expenditures fall under the discretionary spending budget ceilings. Congress appropriates funds for the USACE to perform navigation operation and maintenance at individual harbors. Because the HMTF is not a separate, or “off-budget,” account within the federal budget, the “surplus” in the HMTF has in effect already been spent on general government activities. According to a Congressional Research Service report, the current HMTF balance, in conjunction with the revenue stream from the remaining HMT collections and interest payments, is considered sufficient to cover expenditures for the foreseeable future.<sup>155</sup>

There are several issues with the HMT that need to be resolved. First, the HMT is placed on the value of foreign cargo transported between two U.S. coastal ports. This issue principally affects domestic (cabotage) shipments. In these cases, the cargo is being double taxed whereas a truck or rail movement would not be charged the tax. This is a federal issue that must be resolved by the U.S. Congress. Second is the inability to expend the funds placed in the HMTF because Congress has not allocated them.

HMT revenues are used for the benefit of noncargo harbor users who do not pay any fees for the use of the harbor. There are Congressional bills currently being considered

<sup>155</sup> Ibid.



calling for the use of HMT only for cargo related projects and to give the USACE more discretion over the use of the funds. Third, there are equity issues associated with HMT revenue distribution among the nation’s top commercial ports. Due to geological differences, ports vary greatly in the amount of dredging they require.

The amount of HMT revenue ports generate also varies significantly due to differences in the amount and characteristics of the cargoes they handle. Consequently, HMT revenues are redistributed from ports that are large import gateways with naturally deep channels to lower volume ports that require frequent dredging to maintain adequate channel depths and widths.

The HMTF is used to fund maintenance dredging, not new construction. To increase a channel’s authorized depth or width requires an act of Congress. Construction or “new work” is funded from the General Treasury not the HMTF. There are also different federal/local cost sharing requirements between construction and maintenance dredging as indicated in Table 3-20.

**Table 3-20: Cost-Share Requirements for USACE Harbor Projects<sup>156</sup>**

<b>Operation and Maintenance and Construction Federal Share and (Source of Funds)</b>		
<b>Harbor Depth</b>	<b>Operation</b>	<b>Maintenance</b>
<20 feet	100% (HMTF)	80% (General Treasury)
20–45 feet	100% (HMTF)	65% (General Treasury)
>45 feet	50% (HMTF)	40% (General Treasury)

The Port of Houston Authority (Authority) has an operating budget of \$200 million for 2010, an increase of 7 percent over 2009. The Authority has estimated that it will have a net income of \$3.3 million in 2010. The Port of Houston has suffered greatly during the recession—net income was \$34 million in 2008. Revenue that year also included some federal stimulus funds and some Federal Emergency Management Agency (FEMA) funds for Hurricane Ike recovery).

The Authority’s revenue comes primarily from harbor and docking fees paid by shippers—about 85 to 90 percent. It also receives revenue from rental of facilities and equipment, operation of a grain elevator and bulk materials handling facility. The port also receives a tax (1.6¢ per \$100 in assessed value) from Harris County property owners for improvement projects (not port operations). The Authority typically expends

<sup>156</sup> 33 United States Code (USC) 2211. The non-federal sponsor pays 10 percent of the cost over a period not to exceed 30 years. For example, of the 20 percent paid by a non-federal sponsor for the construction of a harbor of less than 20 feet, 10 percent of the total (half of the non-federal sponsor’s costs) is paid over 30 years.



55 to 60 percent of their budget on maintenance and operation of facilities. The rest is split between general and administrative expenses and depreciation and amortization expenses.

The Port of Houston generated 6.1 percent of the revenue for the HMTF in 2005, making it the fourth largest contributor. Although Houston is the leading import port in terms of tonnage, lower valued bulk commodities make up a large percentage of the imports. The HMT is levied against the value of the goods imported so Houston is not the leader in this statistic.

Table 3-21 shows the top 5 ranking ports and then the rank of each Texas port that falls in the top 25.

**Table 3-21: Ports by Value of Imported Cargo 2005 (\$ Millions)**

Rank	Port	Import Value (\$)	% of Total
1	Los Angeles, CA	116,489	13.7
2	New York, NY	104,366	12.2
3	Long Beach, CA	103,801	12.2
4	Houston, Texas	52,306	6.1
5	Charleston, SC	36,487	4.3
14	Beaumont, Texas	15,805	1.9
15	Corpus Christi, Texas	13,271	1.6
22	Texas City, Texas	9,218	1.1
24	Freeport, Texas	7,918	0.9

Source: Association of American Port Authorities

The Congressional Research Service estimated that the larger ports collect more revenue than is expended on their maintenance. The ports of Los Angeles, Long Beach, Seattle, and Tacoma, and to a lesser degree, Boston, New York, and Houston are large net generators of HMT revenue. For instance Houston receives less than a quarter of the tax revenues collected—thus, it is a significant donor. While a tax based on cargo value places higher costs on those who can afford to pay more, it has no correlation to the dredging needs of each port.

The USACE had total expenditures of \$528,914,950 for the State of Texas from FY 1999 through FY 2008. This represented about 7.7 percent of the total expended. Only Louisiana received more funds.<sup>157</sup> Texas had two of the channels with highest

<sup>157</sup>USACE, Waterborne Commerce Statistics.



expenditures in that 10-year period – Sabine-Neches Waterway (serving Port Arthur and Beaumont) at 2.0 percent of the total, and the Houston Ship Channel at 1.3 percent of the total.

The Inland Waterway Trust Fund (IWTF) was established in 1984 to help fund the cost of modernizing and building the nation’s waterways infrastructure. Revenues are raised from a tax on diesel fuel paid by commercial users of the waterways. Since its inception more than \$1.7 billion dollars has been contributed and another \$300 million more has been added through interest paid on the balance in the account.

The IWTF pays 50 percent of the cost of construction and major rehabilitation on the inland waterways system. The remainder of the funds comes from general revenues or from state or local governments.

### **3.8.5 Pipeline Funding**

Pipelines are privately owned and privately funded. As discussed in Chapter 2, oil and natural gas production and transportation are thriving in Texas. Because pipelines are privately owned and operated, growth and needs are determined based on market forces. Quantitative needs estimates were not prepared for the expansion of the pipeline network. During the development of this plan, representatives of pipeline companies expressed no concerns about needed capacity or the ability of the industry to address future capital investment needs.