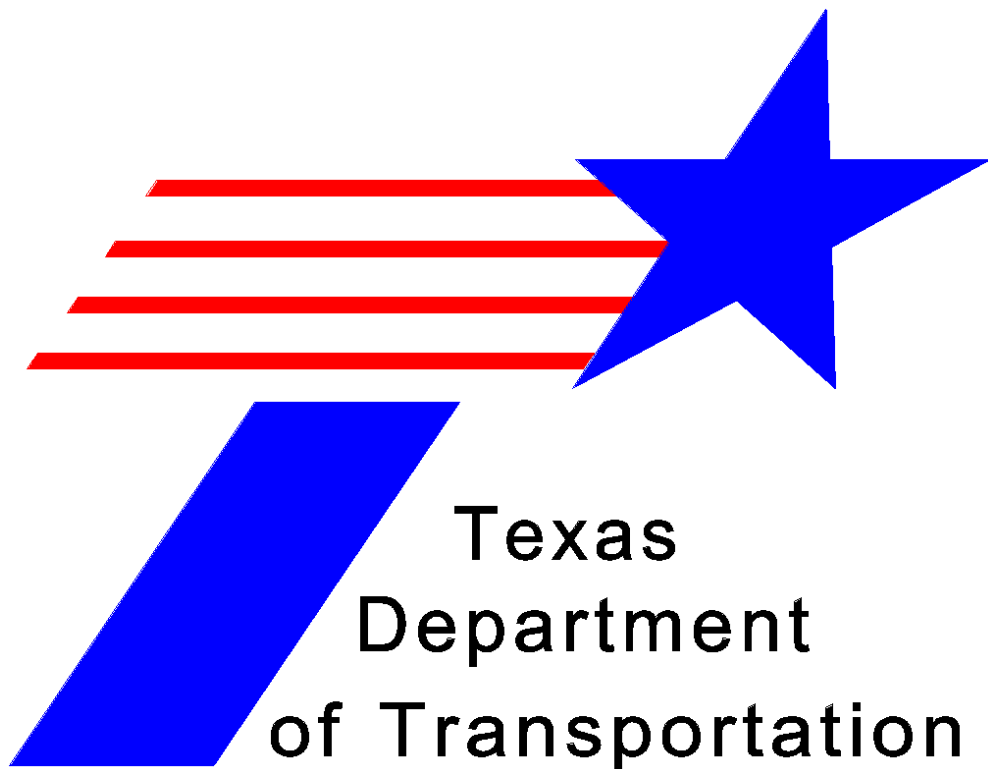


# **Transportation Planning Manual**



**September 2001**

**Transportation Planning Manual**  
September 2001  
**Manual Notices**

## **Manual Notice 2001-1**

**To:** Districts, Divisions and Offices  
**From:** Kirby W. Pickett, P.E.  
**Manual:** *Transportation Planning Manual*  
**Effective Date:** June 1, 2001

### **Purpose**

To issue the *Transportation Planning Manual*. This manual is contained in the Planning and Programming Collection of the TxDOT Online Manual System.

### **Contents**

The *Transportation Planning Manual* contains the following chapters:

- ◆ State Plans, Specialized Application and Approval Activities,
- ◆ Regional Alliances and Studies,
- ◆ Miscellaneous Programs,
- ◆ Metropolitan Transportation Planning, and
- ◆ Rural Transportation Planning.

### **Supersedes**

Portions of the *Transportation Planning Division Operations Manual* dated April 4, 1985.

### **Instructions**

Please remove and recycle the *Transportation Planning Division Operations Manual* dated April 4, 1985.

The *Transportation Planning Manual* will be distributed online only. Manual distributors may print and distribute a hardcopy from the PDF online version for employees not on the TxDOT wide-area-network or those preferring to retain a hardcopy. In this case, manual distributors must retain a distribution list and must also print and distribute all revisions.

### **Contact**

Refer questions or suggestions to the Special Projects and Policy Analysis Branch of the Administration Section of the Transportation Planning and Programming Division (TPP).

# Chapter 1

## State Plans

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## **Section 1**

### **Statewide Transportation Plan**

#### **Overview**

The Statewide Transportation Plan provides a framework for long-term planning, development, and preservation of the transportation system in the state of Texas. It encourages the safe and efficient management, operation, and development of surface transportation systems. Definitions and acronyms pertinent to this volume are included in the TxDOT Glossary at <http://manuals.dot.state.tx.us/dynaweb/colcomun/glo>.

#### **Federal Legislation**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) required that states, during the transportation decision-making process, consider all aspects of statewide multimodal planning. The 1998 Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), Section 1204, outlines the critical elements of statewide planning. These elements encourage and promote the safe and efficient management, operation, and development of surface transportation systems. Such emphases will serve the mobility needs of people and freight to foster economic growth and development within and through urbanized areas, while addressing the environmental issues of transportation.

#### **Texas Legislation**

In 1991, the Texas Legislature charged the Texas Department of Transportation (TxDOT) with the task of developing a multimodal plan. Transportation Code, Section 201.601 provided TxDOT guidance to include all modes of transportation in the statewide transportation plan and directed TxDOT to seek the opinions and assistance of other state agencies and political subdivisions during plan development.

## **Section 2**

### **1994 Texas Transportation Plan**

#### **Overview**

The Texas Transportation Plan is a statewide plan to coordinate the various modes of transportation for effectively linking every area of the state. The Texas Transportation Plan is a framework for long-term planning, developing, and preservation of the transportation system over a twenty-year time period.

#### **Public and Private Involvement**

The Texas Transportation Plan is a result of extensive coordination and input from various government agencies, organizations, private interest groups, and individuals. Key players identified in this effort were TxDOT, other state agencies, cities, counties, metropolitan planning organizations, representatives of airports and seaports, rail and freight industries, public transit systems, business and environmental communities, and the general public.

#### **Multimodal Plan**

The Texas Transportation Plan provides direction for developing and preserving all modes of transportation. By providing guidance for linking the various modes, the Texas Transportation Plan facilitates intermodalism throughout the state of Texas. Effective intermodal connectivity is essential between these modes:

- ◆ auto/trucks
- ◆ bus transit
- ◆ aviation
- ◆ freight and passenger rail
- ◆ marine transportation
- ◆ nonmotorized transportation
- ◆ pipelines
- ◆ telecommunications and information technology.

**Texas Transportation Plan Goals**

The Texas Transportation Plan goals address the current and future needs of Texas and provide recommendations for the transportation system as well as direction for the development of performance measurements. The goals address:

- ◆ mobility and accessibility
- ◆ effectiveness and efficiency
- ◆ choice and connectivity
- ◆ safety
- ◆ environmental and social sensitivity
- ◆ economic growth and international trade
- ◆ new technology.

**Texas Transportation Plan Update Process**

The Texas Transportation Plan is periodically revised to meet the continually changing transportation needs of the people and businesses of Texas.

## Section 3

### Strategic Planning Coordination

#### Texas Department of Transportation Strategic Plans

The TxDOT Strategic Plans are documents that provides a framework for TxDOT divisions, districts, and offices to achieve the agency's vision, mission, and philosophy in providing the best transportation system possible for citizens of the state. The plans are evolving documents that address the many facets of TxDOT: projects, trends, agency performance, funding, capital facilities, goals, and objectives. There are three major long-term plans used by TxDOT: Strategic Plan 1999-2003, the *Texas Transportation Plan: Partnership into the 21st Century*, and the *Unified Transportation Program*.

The Strategic Plan is a five-year, internal document covering TxDOT's plans for all of its people, services, and transportation-related activities. A strategic plan is mandated for all Texas agencies by the legislature as part of the state's overall performance-based planning and budgeting system. In addition to setting goals, objectives, and strategies, TxDOT's Strategic Plan sets targets for all outcome measures. These targets are based on a current-funding (i.e., no new revenue) scenario for the agency. The 1999-2003 Plan was developed by senior management and the Texas Transportation Commission. An abbreviated copy of the latest TxDOT Strategic Plan is located on the TxDOT web site at <ftp://ftp.dot.state.tx.us/pub/txdot-info/fin/strategic1.pdf>.

The Texas Transportation Plan is a twenty-year document mandated by state and federal legislatures. It covers items under TxDOT's umbrella as well as items that will have to be addressed by other entities, both public and private. Its expressed purpose is to set direction for developing and preserving all modes of transportation and for ensuring connectivity between these modes. The Texas Transportation Plan contains policies and strategies that have been adopted by the Texas Transportation Commission and so appear in TxDOT's Strategic Plan.

The Unified Transportation Program serves as TxDOT's internal mechanism for authorizing transportation project development. This program covers all transportation modes and all types of projects, from seal coats to new construction. It is a ten-year, fiscally constrained, annually updated plan with two classes of projects. Priority One projects are approved for construction within the next three years. Priority Two projects are those in the process of preliminary development/design, environmental clearance, major investment study, etc. Priority Two projects are slated for construction approval in Year 4 through Year 10 of the program.

## Section 4

### Statewide Transportation Improvement Program

#### Statewide Programs

In general, federal funds made available to TxDOT from FHWA and other sources, such as Congressional High Priority Projects, are divided into two basic types of funding categories. These basic types are “bank balance” and “project specific.” TxDOT, based on federal legislation and Texas Transportation Commission concurrence, has identified over 30 funding categories for both federal funds and state funds. Information on these funding categories is contained in the Texas Transportation Commission Unified Transportation Plan (UTP).

In order not to dilute the distribution of project specific funding categories, TxDOT has developed ranking systems using various factors and criteria. Ranking is done at the state level and the selected projects are then approved by the Texas Transportation Commission. The ranking and selection process is normally conducted during the annual UTP preparation process.

District offices and the MPOs will not normally know what specific projects are going to be selected in the project specific funding categories. When selected, the specific project lists are included in the Statewide Transportation Improvement Program (STIP), under a section called Statewide Programs. Examples of funding categories included in the Statewide Programs are:

- ◆ on-system and off-system bridges
- ◆ railroad crossing safety projects
- ◆ transportation enhancement projects

#### MPO TIP Inclusion

After approval by the MPO policy body, and based on recommendation by the TxDOT Executive Director, the Texas Transportation Commission may approve including an MPO Transportation Improvement Program (TIP) without modification in the STIP. In nonattainment and maintenance areas, the FHWA and the FTA must make a conformity finding before inclusion. The department will notify the MPO and appropriate federal agencies when a TIP has been included in the STIP. If an MPO TIP is submitted to TxDOT for inclusion in the STIP after the STIP has been initially approved by the Texas Transportation Commission, the Executive Director may approve its inclusion.

### **Rural TIP Inclusion**

After approval by the Executive Director, rural TIPs will be included in the STIP, except in nonattainment and maintenance areas outside metropolitan planning areas, where federal findings of conformity must be made prior to placing projects in the STIP.

### **Texas Administrative Code Rules**

The Texas Administrative Code provides more details concerning requirements for the STIP. Guidance in 43 TAC §15.8 covers the STIP development process, the approval process, and the project selection procedures.

# Chapter 2

## Specialized Application and Approval Activities

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## Section 1

### State International Bridge Application Process

#### Federal Permit

Federal laws pertaining to the construction, maintenance, and operation of international bridges can be found in 33 United States Code (USC) §535. Congressional consent is granted:

- ◆ for a state, subdivision, or instrumentality thereof to enter into agreements with the Government of Mexico, a Mexican state, or subdivision or instrumentality of either, for the construction of an international bridge between the United States and Mexico and
- ◆ for the collection of tolls for its bridge.

The effectiveness of such an agreement is conditioned on its approval by the U. S. Secretary of State.

Bridges may not be constructed, maintained, and operated unless the President of the United States grants approval. His approval will be supported with advice from the United States Section of the International Boundary and Water Commission, United States and Mexico, and any departments and agencies of the federal government that the President deems appropriate.

The approval of the U. S. Secretary of Transportation is required subsequent to Presidential authorization. Approval is void if construction of the bridge has not begun after two years from final approval or not completed after five years.

#### State Approval

Guidance given by 43 Texas Administrative Code (TAC), Chapter 15, Subchapter G and Section 201.612 of the Transportation Code determines the process by which an international bridge may be constructed in Texas. A political subdivision or private entity that desires to construct or finance the construction of a bridge over the Rio Grande must obtain approval from the Texas Transportation Commission for the construction of the bridge before requesting approval from the federal government under 33 USC §535. To obtain approval, the political subdivision or private entity must submit an application and comply with all requirements and conditions in the sections of the TAC noted above.

## **State Approval Process**

To secure approval of a project, an applicant must file an application and 20 copies with TxDOT Deputy Executive Director, or his or her designee, who shall serve as department liaison for the project. The application shall be in a prescribed form and must contain a description of the applicant, including its form of organization under the laws of the state, and a history of the applicant's operations and business. It must also include a definition of major financial, operating, and business policies of the applicant that will affect operations or the conduct of business, including key operating conditions and compliance with existing federal, state, and local laws and regulations. The application will also contain a preliminary study of the project in accordance with the guidelines in 43 TAC §15.73.

Finally, the application will contain any written commitments from the appropriate federal jurisdictions of the United Mexican States to provide adequate roadway connections to the bridge and similar commitments from state and municipal transportation agencies for any state highway or local street infrastructure necessary to make the bridge fully operational.

## **Section 2**

### **Binational Studies and Planning Activities**

#### **Border Transportation Planning Coordination**

The advent of the North American Free Trade Agreement (NAFTA) has greatly expanded the scope of international activities for TxDOT. The TxDOT International Relations Office (IRO) was created in TxDOT in anticipation of NAFTA. Over the past several years, the office's role in providing support and advice to TxDOT on international activities has increased along with TxDOT's role in transportation planning along the Texas-Mexico border.

#### **Latin American Trade and Transportation Study**

The two-year to three-year Latin American Trade and Transportation Study will cover transportation infrastructure in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the Commonwealth of Puerto Rico. These states and commonwealth contribute funds to determine needed transportation improvements for the expected growth in trade between Latin America and the United States through 2020.

In cooperation with the states, the commonwealth, and the Federal Highway Administration (FHWA), a consulting firm is leading the study to develop transportation investment strategies for each of the states individually and collectively as a combined region. The overall study goal is to develop a Strategic Transportation System with particular interest in existing and proposed water ports, airports, freight railroads, and major highway corridors.

#### **Binational Border Transportation Planning and Programming Study**

The goal of the Binational Border Transportation Planning and Programming Study was to develop a binational transportation planning and programming process. The study included an investigation into the current state and national transportation planning processes in both the United States and Mexico. Through review of the available data on border transportation infrastructure and goods movement, recommendations for an ongoing binational planning and programming process were developed. The study focused on the region along the U.S.–Mexico border and the six ports of entry, four of which are in Texas: El Paso-Ciudad Juarez, Eagle Pass-Piedras Negras, Laredo-Nuevo Laredo, and Brownsville-Matamoros.

### **Joint Working Committee**

The responsibility of the Joint Working Committee (JWC) as an organization focuses primarily on oversight of the binational study's funding, logistics, and research. The JWC is active in transportation planning and programming through facilitating communication among federal, state, and local groups in the U.S.-Mexico border area. The Director of the TxDOT Transportation Planning and Programming (TPP) Division represents Texas on the committee.

# Chapter 3

## Regional Alliances and Studies

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## Section 1

### Western Trade Transportation Network

#### Background

The Western Trade Transportation Network (WTTN) was established in 1993 during a conference of the Western Association of State Highway and Transportation Officials (WASHTO). Its purpose is to facilitate coordination between several western state departments of transportation (DOTs) and other interested parties for the implementation of a multimodal transportation and trade network. WTTN expects such coordination to promote economic growth and maximize regional trade opportunities among the U.S., Canada, and Mexico.

#### Role of TxDOT

Any north-south transportation and trade corridor developments can affect the flow of commerce. Since a significant portion of U.S.-Mexican commerce passes through Texas, TxDOT has a critical role in WTTN. Its involvement with binational commerce and corridor development in the region requires that TxDOT be actively involved in WTTN decision making. The Director of TPP is TxDOT's representative on WTTN.

**Phase I.** Phase I of the study has already been completed. The focus was to identify all of the transportation network deficiencies. (See the executive summary by clicking pln\_apb.)

**Phase II.** Phase II is underway to develop solutions to the network deficiencies identified in Phase I.

## **Section 2**

### **Statewide Analysis Model**

#### **Overview**

TxDOT builds and maintains travel-demand models for individual urban areas within the state. With the increased interest in international trade, TxDOT has received queries about the effect of that trade on the state as a whole. Therefore, TxDOT proposes expanded coverage of its travel-demand modeling to a statewide model which will include consideration of different passenger and freight modes and the interaction among those modes.

#### **Concept**

The Statewide Analysis Model (SAM) will be developed based on the Texas Trunk Highway System and a zone structure built from census tracts. The SAM will contain approximately 1400 Serial Zones or Traffic Analysis Zones (TAZs) inside Texas, approximately 57 buffer zones in the neighboring states, and approximately 81 external stations. The SAM will forecast accurate statewide traffic volumes by mode for passenger and freight and be capable of forecasting mode shifts for passenger and freight.

#### **Modeling**

Modeling of the various modes will be done by coordination between the Traffic Analysis Section and the Transportation Systems Planning Section of TPP.

## Section 3

### Multi-state/Statewide Corridor/Feasibility Studies

#### Federal/TxDOT Authority

ISTEA Section 1105 adds High Priority Corridors to the National Highway System (NHS) and allows the U. S. Secretary of Transportation to work cooperatively with the states to prepare long-range plans and feasibility studies for these corridors. That requirement was included in Title 23 United States Code (USC) Section 103(b)(5). TEA-21 Section 1118 adds the National Corridor Planning and Development Program. This program broadened corridor types that can be studied with feasibility studies.

#### TxDOT Studies

TxDOT performs feasibility studies to determine critical elements of engineering and the economic feasibility of a proposed facility/corridor. Typically, these studies focus on improvements to particular transportation facilities or corridors, including construction of a new highway route instead of adding capacity to an existing facility or adding a high-occupancy vehicle facility or express lanes to an existing roadway rather than adding main lanes.

Such studies establish design concepts, general right-of-way requirements, and associated project impacts. Cost estimates are developed from these elements to determine the project's overall financial feasibility in terms of a benefit/cost ratio. They are not intended to result in detailed design, environmental analysis, or cost estimates. The objective of completing a feasibility study is to determine if a project warrants further consideration and development. The typical elements of a feasibility study are as follows:

- ◆ study various alternatives
- ◆ analyze current and future traffic
- ◆ analyze potential environmental problems
- ◆ develop cost estimates
- ◆ determine feasibility.

#### FHWA Procedural Guidelines

In May of 1995, FHWA published "Procedural Guidelines for Highway Feasibility Studies." To see these guidelines, click [pln\\_apc](#).

## Section 4

### Long Range Project Planning

#### Long Range Project Status

Authority for advanced planning up to and through right-of-way determinations, which includes the proposed route and environmental studies followed by public hearings, occurs only after a project has been given Long Range Project (LRP) status. While a project is under LRP status, right-of-way maps can be completed and any required environmental permits, clearances, and coordination should be identified. Letting dates are not assigned while a project is in LRP status.

#### Programming Assessments

To obtain LRP status for a project, a Programming Assessment (PA) request must be forwarded to TPP. TTP reviews the PA. The recommended issues to be assessed or evaluated for each project are as follows:

- ◆ congruity with the Statewide Transportation Plan
- ◆ congruity with the Metropolitan Transportation Plan
- ◆ major environmental issues
- ◆ level of community support
- ◆ cost effectiveness
- ◆ safety issues
- ◆ existing traffic/projected traffic
- ◆ other areas of interest
- ◆ conclusion.

After TTP(S) has reviewed the PA for the issues shown above, the assessment is forwarded to the Programming and Scheduling Section. TPP reviews the PA for Design and Construction Information System (DCIS) database completeness and for programming consistency. If the PA involves a request for a Farm to Market (FM) road, TPP validates the actual/forecasted traffic for the project.

If agreement is reached, TTP prepares an approval letter for the Director of Transportation Planning and Programming Division to send to the district. If approved, the project remains in LRP status until it is ranked high enough during the normal Unified Transportation Plan (UTP) process to be moved to Priority 2 status or is otherwise advanced by local funding or Texas Transportation Commission action. The move from LRP status to Priority 2 status is coordinated by TPP.

## Section 5

### National Highway System

#### Federal/TxDOT Authority

ISTEA Section 1006 called for the creation of the National Highway System (NHS). The National Highway System Designation Act of 1995 was signed into law on November 28, 1995. The legislation designates that NHS be developed by the Secretary of Transportation in cooperation with states, local officials, and metropolitan planning organizations (MPOs).

#### Purpose of the NHS

The purpose of the NHS is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and major travel destinations; meet national defense requirements; and serve interstate and interregional travel.

The NHS consists of highways designated as:

- ◆ part of the Interstate System
- ◆ urban and rural principal arterials and highways (including toll facilities) which provide motor vehicle access to major ports, airports, and public and intermodal transportation facilities
- ◆ a strategic network of highways that provides defense access, continuity, and emergency capabilities for the movement of personnel, material, and equipment in both peacetime and wartime
- ◆ highway connectors which provide motor vehicle access between major military installations and highways that are part of the strategic highway network.

All designs for new construction, reconstruction, resurfacing, restoration, or rehabilitation of a highway on the NHS will provide for a facility that will adequately serve the existing and planned future traffic of the highway in a manner conducive to safety, durability, and economy of maintenance. The highway will also be designed and constructed in accordance with criteria best suited to accomplish the previously stated objectives and to conform to the particular needs of each locality.

Factors within each locality that will be taken into account include the constructed and natural environment of the area; the environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity; and access for other modes of transportation. Expansion on criteria components can be found in 23 USC §109(d) through 23 USC §109(i).

**Other Information**

The National Highway System is a dynamic system that can change in response to future travel and trade demands. The NHS legislation permits the Secretary of Transportation to approve most modifications to the system without congressional approval. States must cooperate with local and regional officials in proposing modifications to the system. In metropolitan areas, local and regional officials act through their MPOs. The main exceptions to the Secretary's discretion are connections to major intermodal terminals (ports, airports, rail terminals, etc.). These require a one-time congressional approval. Proposed changes to the NHS shall use the functional reclassification of roads and streets carried out under ISTEA Section 1006(c).

## **Section 6**

### **Texas Highway Trunk System**

#### **TxDOT Authority**

Authorization for developing the Texas Highway Trunk System by TxDOT is found in the 43 TAC Chapter 15, Subchapter D.

#### **Background**

The suffering Texas economy of the mid-1980s led some areas of the state to request improvements to their highway network. Highway improvements were thought to result in increased travel and commerce in the region. Communities requested that particular highways within their regions be upgraded to four-lane divided highways. During this same time period, federal legislation was pending for the development of a NHS of interconnected principal arterial routes, which would serve major population areas, international border crossings, and other modal transportation facilities. The department decided to develop a long-range highway plan that would address the needs of local communities and incorporate required elements of the anticipated legislation. In the fall of 1988, the department began to develop the Texas Highway Trunk System (the Trunk System).

## Description

The Trunk System is a network of rural divided highways that complements and includes elements of the Interstate Highway System. The minimal design criteria for this network specify that each highway should be at least a four-lane divided facility. The Trunk System will serve as a principal connector for all Texas cities with over 20,000 population as well as major ports and points of entry. The total mileage of the Trunk System, as stated in TxDOT Minute Order 910209, is limited to 11,500 miles. Copies of the Trunk System map may be obtained from TPP.

Originally a route had to meet one or more of the following criteria to be considered in or developed as part of the Texas Highway Trunk System:

- ◆ maximize the use of existing four-lane divided roadways
- ◆ minimize circuitous or indirect routing
- ◆ connect with principal roadways from adjacent states
- ◆ connect with principal deep-water ports with channel depths of 40 feet or more
- ◆ connect with principal Mexican ports of entry
- ◆ serve significant military or other national security installations
- ◆ serve tourism and/or recreational areas
- ◆ comprise major truck routes
- ◆ be located within 25 miles or less of cities of 10,000 population or greater.

## Mobility Features

Critical to the Trunk System development is overall system mobility with a lesser emphasis on access. System features that contribute to mobility include grade-separation at points of intersection between Trunk System routes and other trunk routes, other intersecting roadways, and railroad crossings. Trunk System routes are given traffic-flow priority over other intersecting roadways. Traffic control strategies for other intersecting roadways include traffic signals and appropriate signs.

In developed or developing areas, access may be controlled by deed restriction or design, which may include provisions for frontage roads and grade separations. Control of access may be provided in the intersection areas or continuously, depending on traffic volumes, the degree of roadside development, or availability of right of way. Where access is not controlled by design or deed restriction, access driveways from adjacent property will be in accordance with TxDOT regulations for access to state highways.

## **Prioritization**

The Trunk System program identifies and prioritizes specific projects for right-of-way acquisition and construction authority. The expansion of Trunk System facilities is limited to those sections with two-lane cross sections. Criteria were developed to compare and rank facilities that are not currently four-lane divided roadways. Factors for prioritizing facilities for inclusion into the Trunk System include the following:

- ◆ average daily traffic
- ◆ truck traffic
- ◆ user delay costs
- ◆ construction
- ◆ right-of-way and environmental mitigation costs
- ◆ system continuity
- ◆ role of international trade.

## **Project Selection**

Originally, projects were selected based on the Congestion Efficiency Index (CEI), but now most projects are selected based on “priority corridors.” TxDOT selects projects in the Trunk System Phase I Corridors on a statewide basis from candidate projects submitted by the districts. The department uses a Cost Efficiency Index to rank projects for selection. Major elements for the index are project cost and traffic volume. Additionally, TxDOT reserves 10 percent of the Trunk System funds to address projects not on the Phase I Corridors that require immediate attention due to safety, roadway condition, or other valid factors. Projects funded with this 10 percent will be selected using the ranking process.

## **Design Criteria**

The design features of Trunk System facilities adhere to guidelines set forth in TxDOT design manuals concerning facility type. The facility type may range from a completely access-controlled freeway to a partially access-controlled highway or a facility controlled only by TxDOT regulations regarding access to state highways.

**Relief Routes**

When feasible, the Trunk System calls for the incorporation of access-control measures into existing relief-route facilities (Transportation Code, Section 203.003). Relief-route projects are prioritized for right-of-way acquisition and construction authority based on certain criteria. Similarly, facilities not developed to a minimum four-lane divided facility are compared and ranked based on the following criteria:

- ◆ average traffic volume
- ◆ truck traffic
- ◆ user delay costs
- ◆ construction
- ◆ right of way
- ◆ environmental mitigation costs.

**Rights of Way**

Right of way should be initially purchased for the entire facility, although the facility will be developed in stages. The early acquisition of selected right of way, in certain instances, may be desirable along Trunk System routes. The priority of acquisition might not follow the approved project schedule in order to avoid delays and facilitate the economical considerations of acquisition.

## **Section 7**

### **Management and Monitoring Systems**

#### **Federal Requirements**

ISTEA established six management systems that the states and MPOs were required to implement in the metropolitan areas. These six management systems are:

- ◆ pavement management system (PMS)
- ◆ bridge management system (BMS)
- ◆ safety management system (SMS)
- ◆ congestion management system (CMS)
- ◆ public transportation management system (PTMS)
- ◆ intermodal management system (IMS).

In addition, ISTEA established the traffic monitoring system (TMS) to provide a means for systematically processing the collection, analysis, summary, and retention of highway and transit-related person and vehicular traffic data.

Due to overwhelming opposition to the management systems, the National Highway System Designation Act of 1995 made the management systems optional for each state, with two exceptions. A CMS is required for Transportation Management Areas (TMAs), and the state is responsible for the TMS.

#### **TxDOT Implementation**

TxDOT has chosen to implement the SMS, BMS, and the PMS on a statewide basis. Also, some MPOs have implemented some of the management systems, such as the PMS, in their areas. The implementation and continued practice of the management systems in the metropolitan areas are eligible for PL funding.

For more information on the following systems, consult the Design Division Project Development Process Manual:

- ◆ Pavement Management Information System
- ◆ Bridge Management Information System
- ◆ Safety Management System

### **Congestion Management System**

A CMS is required only in TMAs and is optional in all other areas. As stated in 23 CFR §500.109, an effective CMS is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs.

The CMS results in serious consideration of implementing strategies that provide the most efficient and effective use of existing and future transportation facilities. Consideration needs to be given to strategies that reduce single-occupancy vehicle (SOV) travel and improve existing transportation system efficiency. Where the addition of general purpose lanes is determined to be an appropriate strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management and operational improvement strategies that will maintain the functional integrity of those lanes.

In a TMA designated as nonattainment for carbon monoxide and/or ozone, the CMS shall provide an appropriate analysis of all reasonable (including multimodal) travel-demand reduction and operational management strategies for the corridor in which a project is proposed that will result in a significant increase in capacity for SOVs (e.g., adding general purpose lanes to an existing highway or constructing a new highway). If the analysis demonstrates that travel-demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, then the CMS shall identify all reasonable strategies to manage the SOV facility effectively (or to facilitate its future management).

Other travel-demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the CMS. All identified reasonable travel-demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the state and MPO for implementation.

### **Public Transportation Management Systems**

The Public Transportation Division of TxDOT shall be responsible for preparing and updating a statewide comprehensive master plan for public transportation. It shall provide financial assistance through appropriate communication and the establishment of procedures for the development and processing of applications. The division will assist local entities in securing federal financial aid for establishing or maintaining public transportation systems. It will administer the state public transportation fund and other monies appropriated by the Texas Legislature for public transportation purposes and established within the department budget, in accordance with all federal, state, and local laws, statutes, ordinances, rules, and regulations.

The Public Transportation Division will provide technical assistance through a core of technical expertise to district personnel and local jurisdictions. It will represent the state in public transportation matters with federal officials, transit organizations, and local communities. The division will sponsor and monitor research and development activities to enhance public transportation development and assist in developing policies by the commission, governor, and legislature.

### **Intermodal Management System**

To be added at a later date

### **Traffic Monitoring System**

To be added at a later date

# Chapter 4

## Miscellaneous Programs

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## Section 1

### Economically Disadvantaged Counties

#### Legislation

Transportation Code, Section 222.053 requires the Texas Transportation Commission, when evaluating a proposal for a highway improvement project in a local government that consists of all or a portion of an economically disadvantaged county, to adjust the minimum local matching funds requirement after evaluating the local government's effort and ability to meet the requirement.

Texas Administrative Code rules implementing the legislation became effective January 1, 1998. Wording of 43 TAC §15.50-15.56 describes federal, state, and local responsibilities for cost participation in highway improvement projects. The rules prescribe criteria the commission will consider in evaluating a request for an adjustment. Information in 43 TAC §15.55 prescribes cost participation ratios for local governments in those projects.

#### County Selection Procedures

The legislation defines an economically disadvantaged county as a county that has, in comparison to other counties in the state:

- ◆ below average per capita taxable property value
- ◆ below average per capita income
- ◆ above average unemployment

Economically disadvantaged counties are identified by TxDOT for each fiscal year based on data obtained from the Texas Comptroller of Public Accounts. After the determinations are made, TPP notifies each of TxDOT's local district offices that contain all or a portion of an economically disadvantaged county.

**Application Procedures**

To be eligible, an on-system project must be both commission-authorized and unlet. An off-system project is eligible if it is unlet and commission-authorized or approved within a district bank balance program.

The Texas Transportation Commission considers applications once a quarter. In order to prepare the necessary documents, applications must be received by TxDOT's Transportation Planning and Programming Division approximately one month prior to the Commission meeting.

More information is in the handbook "Relief from Local Match Requirements in Economically Disadvantaged Counties – Applicant Handbook." (To see a PDF file of it, click [pln\\_apd](#).)

## **Section 2**

### **State Infrastructure Bank**

#### **Overview**

In November 1995, the President of the United States signed Public Law 104-59, known as the 1995 National Highway System Designation Act. Section 350 of that law allowed the United States Secretary of Transportation to designate a maximum of ten states as pilot projects for the State Infrastructure Bank (SIB) program. Texas was selected as one of the initial pilot states.

An SIB operates chiefly as a revolving loan fund and may provide a wide range of financial assistance in addition to loans. The purposes of the pilot program are to attract new funding into transportation, to encourage innovative approaches to transportation problems, and to help build needed transportation infrastructure. The law provides that each designated state may transfer up to ten percent of certain federal dollars, match those funds with state funds, and deposit them into a SIB. The greatest benefit of this program may well be the creation of a self-sustaining, growing, revolving loan fund.

Transportation Code 222 Subchapter D states that the SIB is to be administered by the Texas Transportation Commission. In September 1997, the Texas Transportation Commission approved the administrative rules that govern the SIB.

## Background

Much like a private bank, the SIB offers eligible customers a range of loans and credit enhancement services. The SIB will offer its services to finance or financially enhance transportation projects that meet its selection criteria. As loans are repaid to the SIB, additional assistance will be granted for more transportation projects. The SIB, in effect, is a revolving loan fund.

Why would local entities want to borrow money from the SIB when historically they have not had to pay for local transportation projects? The answer is twofold: time and money. Currently, TxDOT expects to be able to fund only about one third of the needed transportation projects in Texas. TxDOT will continue to fund as many needed projects as possible. In many cases, however, a project considered very high priority by one community may not be ranked high enough on a statewide basis to receive funding for several years.

If the local community wants the project completed faster, it could borrow money from the SIB and advance the project by several years. Also, if the proposed transportation project would generate additional economic development, the local community may receive enough revenue from the increased tax base to easily pay for the financial assistance from the SIB. Thus, the community could get its project completed much sooner with little or no additional cost.

The SIB program arose out of the need to improve, rehabilitate, and renovate transportation facilities. Transportation needs are increasing while federal, state, and local financial resources are constant or declining. The SIB program is one of the ways that the federal government is utilizing innovative financial techniques to address growing transportation needs.

## Purposes

The purposes of the State Infrastructure Bank are to:

- ◆ encourage public and private investment in transportation facilities
- ◆ expand the availability of funding for transportation projects and reduce direct state costs
- ◆ improve the efficiency of the state transportation system.

The mission of the SIB is to provide loans and other financial assistance to improve transportation infrastructure in Texas. To accomplish this mission, TxDOT will operate the SIB as a self-sustaining, growth-oriented fund. TxDOT will also ensure projects satisfy all appropriate federal, state, and local planning and programming requirements.

TxDOT has designed the SIB to enhance borrower ability to access capital funds at lower-than-market interest rates. The success of the SIB program will depend on maintaining strong credit standards and successfully leveraging funds to increase the program's activity through a revolving loan fund structure. The quality and diversification of the SIB's financial assistance will have a direct impact on the interest rates paid by borrowers.

## Eligibility

Any public or private entity authorized by law to construct, maintain, or finance an eligible transportation project is eligible to apply for financial assistance from the SIB. For a project to be eligible for SIB financial assistance, it must qualify for federal aid under existing federal rules. This generally means the project must be on the state highway system and included in the Statewide Transportation Improvement Plan. In most cases, residential city streets and county-maintained rural roads will not be eligible. However, there are exceptions to this requirement, such as off-system bridges. For information about whether a specific project qualifies for assistance, please contact your local TxDOT district office.

## SIB Process

As an illustration, the following is a list of project phases that qualify for assistance from the SIB:

- ◆ planning and preliminary studies
- ◆ feasibility, economic, and environmental studies
- ◆ right-of-way acquisition
- ◆ survey, appraisal, and testing
- ◆ utility relocation
- ◆ engineering and design
- ◆ construction
- ◆ inspection and construction engineering.

Each project must stand on its own merits. Therefore, a detailed understanding of the project by TxDOT's local district office is the first step to determine if your project qualifies. Approval for financial assistance to a private entity shall be limited to an eligible project that provides transportation services or facilities that demonstrate public benefit or is constructed or operated in cooperation with a state agency or political subdivision in accordance with an agreement between that state agency or political subdivision and the private entity.

**SIB Administration**

TxDOT, through its Finance Division, conducts the activities necessary to manage and administer the SIB. The Texas Transportation Commission capitalized the SIB with available federal and state money designated for this purpose. The Commission will have final approval of any financial assistance from the SIB. The SIB may issue bonds in the future to generate additional capital for transportation projects. Interest earnings on fund balances and repayments for financial assistance will also contribute to the available capital.

The Budget and Finance Division has been designated as the department contact for the purpose of providing information and assistance to potential applicants. Assistance may include non-binding advice, counsel, and consultation regarding all aspects of a potentially eligible project. If TxDOT determines that the project is eligible for assistance and that TxDOT resources are available, TxDOT may provide engineering and other technical assistance to aid potential applicants in developing their application. (Any advice, assistance, or aid provided will not constitute a commitment or liability on the part of TxDOT or the Commission.)

The application process for SIB financial assistance is a collaborative effort between TxDOT headquarters, district staff, and the applicant. Potential applicants are encouraged to communicate with TxDOT at the earliest possible date. The Commission will be the final authority in approving all SIB applications.

The Budget and Finance Division will coordinate the efforts of other TxDOT organizations that review and comment on SIB applications.

## Section 3

### Functional Classification

#### Overview

Functional classification is the grouping of roads, streets, and highways into integrated systems, each ranked by its importance to the general welfare, the motorist, and the land-use structure. Functional classification is used to define the role any particular road should play in serving the principal functions of a road: mobility for through movements and access to adjoining land.

**Importance.** This functional grouping implies that roads have differing levels of importance based on their functions. Importance is based on economic and social values, which are measured in a variety of ways. However, the basic idea is the same regardless of the method of measurement: more important roads or more critical needs deserve the most attention. In the context of roads, that usually means more funding.

Without a classification system, it is difficult to compare roads fairly. For example, a high-volume through road has different needs than a dead-end street that serves a residential neighborhood. The neighborhood street is important mainly to the local residents, whereas the high-volume street is important to many people. If roads were ranked by importance to the most people, the local street would rarely get attention. With functional classification, the through road would be ranked with similar roads, and the local street would be ranked with other local streets. Both would then be considered for improvements, maintenance, etc. relative to competing projects on similar types of streets. In essence, functional classification allows for equal and equitable treatment where conditions are similar.

**Background.** Beginning with the passage of the Federal-aid Act of 1921, functional classification concepts and criteria were used in the selection of the original federal-aid highway system. This limited-mileage, interconnected system of highways, important to interstate and intrastate motor vehicle travel was later designated the Federal-aid Primary System (FAP). The selection in the early 1940s of the original Federal-aid Secondary System (FAS), an interconnected system of principal secondary and feeder roads, with unlimited mileage, was also based on functional concepts. The most significant event in the history of functional classification occurred in the later 1940s with the selection of the National Interstate Highway System. This system of interconnected routes, very limited mileage, and the highest design standards, was created to serve the economic, social, and defense needs of the nation.

In the Federal - aid Highway Act of 1973, Section 148, Congress specified that the classification of all streets and highways and the realignment of the federal-aid systems be based on anticipated functional usage in 1980. All surface transportation legislation passed since that time has included a mandate for use of a functional classification system.

**Concepts.** The entire concept of functional classification is based on certain key characteristics that can be used to differentiate between different kinds of highway facilities. First, urban and rural areas exhibit different characteristics — including the density and types of land uses, the density of street and highway networks, the nature of travel patterns, and the way that the highway network itself relates to these characteristics. Therefore, the functional classification scheme used throughout the nation provides separate classification systems for urban and rural facilities.

For clarity, urban areas are subdivided into two categories — urban and small urban. Urban areas are defined as population centers of 50,000 or more. Small urban areas begin at a population threshold of 5,000. This latter threshold was established based on observations that rural arterial and collector routes provide an adequate arterial street network in places of less than 5,000 population. Hence, rural classifications apply to roads in all areas of less than 5,000 population.

Second, functional classification differentiates between different types of highway service. The two most general types of highway service are mobility and land-use access. Arterials emphasize a high degree of mobility, high speeds for long trips, which means limited access. Local facilities emphasize the land-use function with low speeds and many access points. Collectors more-or-less serve both functions halfway.

## Policy

- ◆ Federal-aid Highway Act of 1973, Section 148
- ◆ Intermodal Surface Transportation Efficiency Act, 1991
- ◆ Transportation Efficiency Act for the 21ST Century, 1998
- ◆ Jack Foster Memo dated May 26, 1998
- ◆ Jack Foster Memo dated June 15, 1998.

## Uses of Functional Classification

Some functional classification uses are to:

- ◆ provide the framework of highways for creating mobility and connecting regions, cities, and ports within a state
- ◆ provide a basis for assigning jurisdictional responsibility according to overall importance of the road
- ◆ provide for minimum design standards according to function
- ◆ provide a basis for evaluation of present and future needs
- ◆ provide a basis for the apportionment of scarce fiscal resources.

## Characteristics of Different Functional Classes

Characteristics of different functional classes are given in detail in excerpts from “Highway Functional Classification Concepts, Criteria and Procedures.” To see the excerpts, click [pln\\_ape](#). The complete document was last published by the U.S. Department of Transportation, FHWA, as a revision dated March 1989. Credit is also given to the “Statewide Highway Planning Procedures” course (National Highway Institute course #15127).

## Administrative Responsibility and Procedures

TPP has primary responsibility for implementing functional classification responsibilities for the department. This is accomplished by TPP staff working with the district staff who in turn are responsible for coordination with local elected officials and other planning entities (MPO, etc.).

By memos from Jack Foster dated May 26, 1998, and June 15, 1998, TPP furnished Functional Classification Request Guidelines. Requirements included:

- ◆ memorandum from district describing changes
- ◆ specific information:
  - name of facility
  - limits of the change
  - mileage of the change
  - type of change
  - functional map requirements
- ◆ justification and documentation
- ◆ MPO approvals
- ◆ cooperation with local officials
- ◆ urban boundary changes
- ◆ mileages.

To see a PDF file of these Functional Classification Request Guidelines memos for reference and additional information, click [pln\\_apf](#).

# Chapter 5

## Metropolitan Transportation Planning

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## Section 1

### Policy Specific to the Transportation Planning Process

#### Policy/Guidance

The documents below that do not have links in this subsection are accessible from links on the TxDOT Internet at <http://www.dot.state.tx.us/insdtdot/orgchart/tpp/links.htm>:

- ◆ 23 CFR 450 – Statewide and Metropolitan Planning Regulations
- ◆ 23 CFR 420 – Planning and Research Program Administration: Subpart A-Administration of FHWA Planning and Research Funds
- ◆ 23 CFR 500 and 626 – Management and Monitoring Systems Regulations
- ◆ 49 CFR 613 and 614 – Statewide and Metropolitan Planning Regulations
- ◆ OMB Circular A-87 – Cost Principles for State, Local and Indian Tribal Governments
- ◆ Texas Administrative Code (accessible from <http://www.dot.state.tx.us/insdtdot/insdtdot.htm>.)
- ◆ FTA Program Guidance and Applications for Metropolitan Planning Program Grants (To see a PDF file of it , click [pln\\_apg](#).)
- ◆ Generic Planning Funding Contracts (To see a PDF file of it , click [pln\\_apb](#).)
- ◆ TxDOT Oversight Responsibilities for Attainment, Non-TMA MPOs (To see a PDF file of it , click [pln\\_api](#).)
- ◆ TxDOT Administrative Circular 17-89: Urban Transportation Planning Process Contract Procedures Manual (To see a PDF file of it , click [pln\\_apj](#).)
- ◆ TxDOT Memo on TIP Format and TAC Rules (To see a PDF file of it , click [pln\\_apk](#).)
- ◆ OMB Circular A-133 (To see a PDF file of it , click [pln\\_apl](#).)
- ◆ 49CFR 18
- ◆ TEA 21.

## Section 2

### Metropolitan Transportation Planning Process

#### Background

The basis for the metropolitan transportation planning process is federal legislation. The U.S. Congress passes transportation-related acts or public laws such as the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21). These acts or public laws amend or replace various sections of Title 23 of the United States Code (USC) for highway-related items or Title 49 USC that deal with transit-related items.

The various federal agencies, based on the changes to Title 23 USC and Title 49 USC, then write or rewrite their rules. The rules are included in the Code of Federal Regulations (CFR). The CFR matches the USC numbering. For example, rules created by the Federal Highway Administration (FHWA) based on changes to Title 23 USC would appear in 23 CFR. Rules created by the Federal Transit Administration (FTA) based on change to Title 49 USC would appear in 49 CFR.

## Objectives

The 1962 landmark federal surface transportation legislation (previously called highway act legislation) created the first mandate for transportation planning in the United States. Processes since that time have emphasized links between good planning and decision making. Strengthened planning practices and coordination among state departments of transportation (DOTs), metropolitan areas, transit agencies, and between public and the private sectors are expected to improve the linkages and connections between different forms of transportation.

Federal regulations require the designation of a Metropolitan Planning Organization (MPO) in each urbanized area with a population over 50,000. Regulations further require each metropolitan area have a continuing, cooperative, and comprehensive transportation planning process that results in plans and programs to consider all transportation modes and support community development and social goals. Transportation plans and programs must lead to the development and operation of an integrated, intermodal transportation system that facilitates the efficient and economic movement of people and goods.

Responsibility for statewide transportation planning and its coordination has been delegated by the Governor to the Texas Transportation Commission, which in turn has delegated these responsibilities to the Executive Director of the Texas Department of Transportation (TxDOT). TxDOT has developed minimum standards for metropolitan transportation planning which prescribe how the state and metropolitan planning organizations will develop transportation planning processes to ensure effective planning and program development. These processes will also assure eligibility of the state to continue to receive federal transportation funds.

## **Planning Factors**

In ISTEA, 15 factors were identified as part of the planning process for all metropolitan areas. These factors were to be considered in the development of the Metropolitan Transportation Plan (MTP). In the legislative process for TEA-21, these factors were reviewed and consolidated into seven elements:

- ◆ support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- ◆ increase the safety and security of the transportation system for motorized and nonmotorized users
- ◆ increase the accessibility and mobility options available to people and for freight
- ◆ protect and enhance the environment, promote energy conservation, and improve quality of life
- ◆ enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- ◆ promote efficient system management and operation
- ◆ emphasize the preservation of the existing transportation system.

It is important to note that TEA-21 included a statement indicating that failure to consider any of the above factors shall not be reviewable by any court under Title 23, Subchapter II of Chapter 5 of Title 5, or Chapter 7 of Title 5 in any matter affecting a transportation plan, a transportation improvement plan, a project or strategy, or the certification of a planning process.

## **Section 3**

### **MPO Coordination**

#### **Federal Requirements**

The MPO, in cooperation with the state and operators of publicly owned transit services, shall be responsible for carrying out the metropolitan transportation planning process. The MPO, the state, and transit operator(s) shall cooperatively determine their mutual responsibilities in the planning process. They shall cooperatively develop the Unified Planning Work Program (UPWP), MTP, and TIP. In addition, MTP and TIP development shall be coordinated with other providers of transportation, e.g., sponsors of regional airports, maritime port operators, rail freight operators, etc. In nonattainment or maintenance areas, the MPO shall coordinate MTP development with the State Implementation Plan (SIP) development process including the development of the transportation control measures.

The MPO shall develop or assist in developing transportation control measures (TCMs). As required by 23 CFR §500, the required management systems shall be developed cooperatively by the state, the MPOs, and transit operators for each metropolitan planning area. In TMAs, the congestion management system (CMS) will be developed as part of the metropolitan transportation planning process. The state shall cooperatively participate in MTP development.

#### **TxDOT Requirements**

As program manager for the metropolitan transportation planning process, TxDOT serves as both partner in the continuing, comprehensive, and cooperative planning process (also called the “3C” planning process) and as manager of the federal funds used in the process. This means TxDOT will provide the necessary support and information to assist the MPOs in the developing plans and programs. However, TxDOT also has the responsibility of ensuring the federal funds allocated to the MPOs are spent in an appropriate manner and in accordance with federal requirements.

### Oversight of Attainment, Non-TMA MPO Agreement

FHWA, acting on behalf of FTA and itself, developed an agreement with TxDOT to give TxDOT the responsibility of overseeing certain activities of the attainment, non-TMA MPOs. The following outlines the responsibilities of each agency:

- ◆ FHWA will continue to review and approve the initial UPWP. TxDOT will then review and approve all subsequent revisions. TxDOT will send copies of the approved revisions to FHWA.
- ◆ FHWA will provide a letter of authorization to TxDOT for the funds obligating the full unobligated balance for the MPOs. FHWA will also provide, as a contingency amount, those funds not programmed. TxDOT will manage and track the contingency amounts for each MPO.
- ◆ If an MPO revises its UPWP, TxDOT would review and approve/reject the revision. Copies of approved UPWPs would be transmitted to FHWA for their information. In the case of TMAs, no work order would be issued to the MPOs prior to receiving FHWA approval of their UPWP or revisions.
- ◆ Triennial reviews will not be conducted unless deemed necessary by individual circumstances. TPP will continue to be in constant contact with the TxDOT district personnel and MPO staff and will be able to identify potential issues and address them in a timely manner. TxDOT will provide necessary documentation to ensure FHWA that, for a Joint Record of Review for the STIP, planning procedures are being followed.
- ◆ TxDOT will submit to FHWA a copy of the annual performance report for each MPO.
- ◆ TxDOT will continue its review and approval of contracts for areas without approved procurement procedures only for contracts using public law funds. The only prior approval would come from TxDOT's General Services Division on the contract or from TxDOT's Transportation Planning and Programming Division on the scope of work. Field representatives will continue to recommend that MPOs develop approved procurement procedures.
- ◆ TxDOT would review and approve all equipment purchases over \$5,000 in accordance with OMB Circular A-87.
- ◆ FHWA and FTA will conduct process reviews as deemed necessary. Process reviews will be a coordinated team approach with representatives of TxDOT, FHWA, and FTA participating.
- ◆ TxDOT will implement whatever steps are necessary to effectively carry out its responsibility as the oversight agency.

### **Metropolitan Transportation Planning Contract**

The Metropolitan Transportation Planning Contract is used to identify the responsibilities of both the state and the MPO to carry out transportation planning in the metropolitan area. It also identifies the eligible expenditures by the MPO and the conditions for compensation. To see a PDF file of a generic, sample contract, click [pln\\_apb](#).

## Section 4

### Funding for the Metropolitan Transportation Planning Process

#### Authorizations

FHWA metropolitan planning funds, also known as Public Law (PL) funds, are a one-percent set-aside from certain funds authorized in 23 USC. The PL funds are to be used to support activities undertaken by the MPOs for developing long-range metropolitan transportation plans (MTP), transportation improvement programs (TIP), and the planning process in general as described in 23 USC §134. Examples of activities include, but are not limited to inventories of existing routes to:

- ◆ determine their physical condition and capacity
- ◆ determine types and volumes of vehicles using these routes
- ◆ predict the level and location of future population, employment and economic growth
- ◆ convert this information into the need to improve existing roads or to build new routes to meet the future demands.

“Authorizations” are made by multi-year surface transportation acts that authorize the U.S. Secretary of Transportation, acting through the FHWA and FTA, to obligate funding authorized by Congress. Authorized funds are apportioned to the states based on a ratio of urbanized population in individual states to the total nationwide urbanized-area population. Each state is required to allocate these funds to MPOs in accordance with a formula developed by the state and concurred by FHWA and FTA. Current authorizations are made under TEA-21. TEA-21 terminates on September 30, 2003.

#### Budget and Contract Authority

Most federal programs require two steps to implement budget authority. The first is passage by Congress of an authorization act that sets up the upper limit of program funding. The second is an appropriations act that usually sets the amount that can be used for the program. “Contract authority” is a form of budget authority where the sums authorized in the federal-aid highway acts are available for obligation without an appropriations action.

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## Deductions and Apportionments

Before federal authorizations are released (distributed to the states), deductions are made. In accordance with 23 USC 104(f), a deduction is made to finance the metropolitan transportation planning activities as mandated by 23 USC §134. The deduction is one percent of the National Highway System (NHS), Interstate Maintenance (IM), Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ) and Bridge Replacement and Repair (BRR) programs of work. This deduction becomes the FHWA metropolitan planning funds, PL funds.

The FHWA PL funds are distributed to each state by apportionment formula. After the deductions or "set-asides" are made, the federal agencies apportion the remaining sum authorized for the various programs among the states. This apportionment is based on formulas and procedures prescribed by law. Examples of formula criteria include Interstate mileage, vehicle miles of travel, urbanized population, etc.

## Obligations and Limitations

An "obligation" is a commitment of the federal government to pay, through reimbursement to the states, the federal share of a project's eligible cost. In the case of planning funds, this commitment is made when PL funds are authorized.

U.S. Congress in their apportionment bill routinely places a "limitation" on the apportionments. This "limitation" or "ceiling" is also known as obligation authority. The obligation authority is normally for a specific fiscal year. Unobligated balances of state apportionments at the end of any fiscal year are carried over to the next year. Unused obligation authority does *not* carry over to the next fiscal year.

## Reimbursable Program

The federal-aid highway program operates as a "reimbursable program." FHWA only reimburses states for costs actually incurred. Once a state has obligated or committed some part of its apportionment for a project or planning effort, it must provide the front-end financing to start the project. Then the state will receive reimbursement for the federal share when the project is completed.

## Federal Funds Distribution and Eligibility

Federal PL funds are apportioned to the states based on a ratio of urbanized population in individual states to the total nationwide urbanized area population. PL funds may be used to support transportation planning in accordance with 23 USC §134.

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## **TxDOT Funds Distribution Methods and Matching**

PL funds are the one-percent funds authorized under 23 USC §104(f) to carry out the provisions of 23 USC §134(a). The following subsection describes the TxDOT TPP allocation and administration process for these funds.

## **FHWA Metropolitan Planning Funds Allocation**

Upon apportionment of the FHWA metropolitan planning funds to the state, that amount is distributed or allocated to the MPOs. TxDOT Commission Minute Order 106921 delegates authority for allocation of these funds to the Executive Director. TPP is responsible for calculating allocations.

The allocation formula was developed in cooperation with the MPOs and has been approved by the Texas Transportation Commission, FHWA, and FTA. The formula is based on the urbanized area population of the individual MPO, with special consideration given to nonattainment areas and the Transportation Management Areas (TMAs) because of their additional responsibilities. The following narrative describes fund allocations:

- ◆ Two million dollars of the total apportionment is distributed among the nonattainment and TMAs
  - One million dollars is distributed to the nonattainment areas. Each receives a minimum of \$50,000 and the remaining amount is distributed based on their population relative to the total nonattainment area population.
  - One million dollars is distributed to the TMAs. Each receives a minimum of \$50,000 and the remaining amount is distributed based on population relative to the total TMA population.
- ◆ The remaining apportionment (total minus \$2 million) is allocated to all the MPOs. Each MPO receives a minimum of \$50,000 with the remaining distributed by population.

## **Co-mingling of FHWA and FTA Funds**

ISTEA changed the previous funding process of direct grants to MPOs by allowing FTA Section 5303 funds (formerly Section 8) to pass through TxDOT. Since two federal funding sources were to pass through TxDOT to the same recipient, a systematic approach to manage these funds was developed. The concept of “co-mingling” was the result of this effort. FHWA and FTA funds are treated as one source and referred to as Transportation Planning Funds (TPF).

### **General Transportation Planning Funds**

The General Transportation Planning Fund (GTPF) is a sub-category of FHWA PL funds. When an individual MPO's excess unobligated balance and new allocation exceed the maximum of two years' allocation, the excess balance is transferred to the GTPF. These funds are used for special planning studies selected by their uniqueness and potential benefit to the MPOs and the statewide transportation planning process. TxDOT Commission Minute Order 106921 delegates authority for allocating these funds to the Executive Director. TPP is responsible for recommending allocations.

### **Matching of Federal Funds Used for Planning Purposes**

The federal transportation planning funds require a 20 percent match. TxDOT, through its MPO agreement, has agreed to provide an in-kind match for both FHWA planning funds and FTA Section 5303 planning funds. The match comes from the district expenditures for monitoring and assisting the MPOs in their planning activities as well as TPP staff time and expenditures. The match is applied on a statewide basis and not for individual MPOs. If Congestion Mitigation and Air Quality (CMAQ) funds or Surface Transportation Program (STP) Metropolitan Mobility/Rehabilitation funds are used by an MPO for planning purposes, the 20 percent matching funds are *not* included in the state match. The match for CMAQ and STP funds is a local requirement.

### **Authorization Amount**

Upon approval of the MPO's Unified Planning Work Program (UPWP) and budget, when FHWA and FTA funds are available, TPP issues a work order which details the authorization amount and authorizes the MPO to begin work. The "authorization" is the actual amount the MPO is allowed to expend in the fiscal year. Later determination of unexpended amounts called "carryovers" require an amendment of the work order.

## Section 5

### The Metropolitan Transportation Plan

#### Overview

The purpose of the Metropolitan Transportation Plan (MTP) is to provide systematic, long-range planning for transportation projects and programs in the metropolitan areas. It requires the local decision-makers and the department to identify needs, financial resources, and priorities in a cooperative manner.

The metropolitan transportation planning process shall include the development of an MTP, which is required under 23 CFR §450.322. The MTP should address at least a 20-year planning horizon and include both long-range and short-range strategies or actions that lead to developing an integrated, intermodal transportation system to facilitate the efficient movement of people and goods. The MTP is cooperatively developed by the MPO, TxDOT, and operators of publicly owned transit services and is approved by the MPO policy board. The department is also responsible for reviewing plans and submitting new and revised plans to FHWA and FTA for their information. (43 TAC §15.6)

In all areas, proposed improvements shall be described in sufficient detail to develop cost estimates. Also, a unique project number shall be assigned to each project to provide a means of tracking the project movement from the MTP to the TIP.

#### Specific Requirements for Nonattainment and Maintenance Areas

Areas classified as nonattainment and maintenance have specific requirements in addition to the attainment-area MTP development process. First and foremost is the requirement to perform a conformity determination in accordance with the U.S. EPA conformity regulations in 40 CFR §51. Section 8 discusses air quality and conformity. As part of this conformity determination, the MTP shall include design concept and scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of the funding source, to permit the conformity determinations required.

For TMAs that are nonattainment areas for carbon monoxide and ozone, the MTP shall include the identification of SOV projects that result from a congestion management system meeting the requirements of 23 CFR §500. Also, these areas must provide an opportunity for at least one formal public meeting annually to review planning assumptions and the MTP development process with interested parties and the general public.

### **Review/Update Cycle**

Each metropolitan area must review and update their MTP on a regular basis. The purpose is to confirm the MTP's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period. For attainment areas, the cycle for reviewing and updating the MTP is every five years. The nonattainment areas must review and update the MTP every three years.

### **Intermodal/Multimodal Transportation Systems**

As stated earlier, the MTP shall identify an integrated intermodal transportation system that facilitates the efficient movement of people and goods. The MTP includes highway and public transportation improvements, pedestrian and bicycle facility improvements, the investigation of freight movements on the highway system, and rail and port facilities.

### **Project Development**

The transportation system developed through the MTP process will be the basis for the selection of projects for further development.

### **Travel Demand Model**

One tool to assist in the project development process is the travel demand model. The travel demand model identifies performance of the existing system and needs of the future system. These characteristics are based on projected growth in population and travel demand. The travel demand modeling process is discussed in the *Traffic Data and Analysis Manual*, Chapter 2, Urban Travel Demand Forecasting.

## Financial/Programming Data

The MTP development process must include a financial plan that demonstrates the consistency of the proposed transportation investments with already available and projected revenue. The sources of revenue for these transportation improvements include federal, state, county, city, and private entities. All these sources must be considered when developing the MTP.

TxDOT, through the Unified Transportation Program (UTP), projects the federal and state revenue amounts for highway and transit improvements. The UTP can be used as one funding source for the first ten years of the financial plan. The UTP is discussed in greater detail in the *Transportation Programming and Scheduling Manual*, Chapter 4, Elements of the Unified Transportation Program. Funding projections for transit projects that do not fall under the UTP will come from the local transit agencies, if applicable, based on direct federal funds, bond programs, and fare box revenues.

City and county revenue sources include bond programs and various types of road taxes. Funding for all local projects and repair and maintenance of local roads is important in the financial planning process.

In addition to capital improvement projects, the financial plan must consider operation and maintenance costs for existing and proposed facilities in the area. These type costs are usually developed from historical data for the various funding entities.

***Fiscal Constraint.*** Proposed transportation improvements, operations, and facility maintenance must be consistent with existing and proposed funding, both existing and proposed. This concept is known as fiscal constraint. Typically, proposed MTP projects exceed the amount of funding available; therefore, it is necessary to identify funding shortfalls and recommend additional funding strategies that can be used. This may include financing through toll roads, additional bond programs, and other such strategies.

When these shortfalls occur, it is tempting to modify the assumptions for the revenue projections to meet this shortfall. However, federal regulations stipulate the financial plan be based on future funding reasonably expected to be available for transportation uses. In addition, all revenue projections shall be based on data reflecting the existing situation and historical trends.

***Needs Plan (Illustrative Project List).*** Recognizing the fact that there is not enough funding available to meet many metropolitan areas needs, TxDOT has encouraged the MPOs to include a “needs plan” or an “illustrative list of projects” as part of the MTP. The needs plan allows interested parties to see the results of funding shortfalls. It also recognizes the fiscally constrained portion of the MTP is not all-inclusive of the area’s transportation demands.

TEA-21 also recognized the importance of identifying all area needs and included language in TEA-21 to address this issue. TEA-21 states the financial plan may include, for illustrative purposes, additional projects that would be included in the adopted MTP if reasonable additional financial resources beyond those identified in the financial plan were available.

## **Section 6**

### **Public Involvement Process**

#### **Overview**

The metropolitan planning process shall include a proactive public involvement process. This process provides complete information, timely public notice, and full public access to key decisions. It supports early and continuing public involvement in developing plans and TIPs. Each MPO shall develop a public involvement process in accordance with the federal requirements for the transportation planning process. The federal requirements are general enough to allow MPOs the ability to customize their public involvement process to meet individual community needs.

## Federal Requirements

The following requirements and criteria are specified in 23 CFR §450.316.

- ◆ Require a minimum public comment period of 45 days before the MPO's adopted public involvement process is revised or during the initial adoption of a public involvement policy.
- ◆ Provide timely information about transportation issues and processes to citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, other interested parties, and segments of the community affected by transportation plans, programs, and projects (including but not limited to central city and other local jurisdiction concerns).
- ◆ Provide reasonable public access to technical and policy information used in developing plans and TIPs and open public meetings where matters related to the federal-aid highway and transit programs are being considered.
- ◆ Require adequate public notice of public involvement activities and time for public review and comment at key decision points including, but not limited to, approval of plans and TIPs (in nonattainment areas, classified as serious and above, the comment period shall be at least 30 days for the plan, TIP, and major amendment(s)).
- ◆ Demonstrate explicit consideration and response to public input received during the planning and program development processes.
- ◆ Seek out and consider the needs of those traditionally underserved by existing transportation systems, including but not limited to low-income and minority households.
- ◆ When significant written and oral comments are received on the draft transportation plan or TIP (including the financial plan) as a result of the public involvement process or the interagency consultation process required under the U.S. EPA's conformity regulations, a summary, analysis, and report on the disposition of comments shall be made part of the final plan and TIP.
- ◆ If the final transportation plan or TIP differs significantly from the one which was made available for public comment by the MPO and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts, an additional opportunity for public comment on the revised plan or TIP shall be made available.
- ◆ Public involvement processes shall be periodically reviewed by the MPO in terms of their effectiveness in assuring that the process provides full and open access to all.
- ◆ These procedures will be reviewed by the FHWA and the FTA during certification reviews for TMAs, and as otherwise necessary for all MPOs, to assure that full and open access is provided to MPO decision-making processes.
- ◆ Metropolitan public involvement processes shall be coordinated with statewide public involvement processes wherever possible to enhance public consideration of the issues, plans, and programs and reduce redundancies and costs.



## Section 7

### Unified Planning Work Program

#### Federal Requirements

The metropolitan transportation planning process mandates the development of a UPWP, which is required by 23 CFR §450.314. In general, the purpose of the UPWP is to identify how federal funds made available to the MPO will be spent and to identify each of the agencies spending those funds as part of the transportation planning process.

#### TxDOT Responsibilities

TxDOT's responsibility is outlined in detail in the 43 TAC §15.4. In general, TxDOT will be responsible for reviewing and processing the UPWP through the federal agencies. Where federal laws or regulations require the monitoring of the MPO's activity performance and fund expenditures under the UPWP, TxDOT will be responsible for this monitoring. Where federal monitoring is not required, TxDOT will monitor, comment on, and make suggestions relating to the MPO's activities and expenditures. TxDOT will design a uniform format for UPWPs and reports to be submitted by MPOs. This format is developed in consultation with various MPOs in the state.

#### MPO Responsibilities

The MPO, in cooperation with the department and operators of publicly owned transit systems, must annually develop a UPWP that meets the requirements of 23 CFR §420 and 23 CFR §450.314. The MPO will be responsible for adhering to the UPWP development time frame and document format developed by TxDOT. Failure to adhere to these requirements may result in funding delays to the MPOs.

#### General Information

***Purpose and Overview.*** The UPWP reflects metropolitan transportation planning work tasks to be funded with federal, state, or local transportation funds. It also outlines the agency responsible for implementing various tasks included in the program.

***Content, Development, and Format.*** The UPWP contents reflect the priorities and wishes of the local officials represented on the policy board. As a minimum, the contents should reflect tasks addressing the transportation planning elements as outlined in the federal regulations. As previously mentioned, those tasks should be outlined in the document format approved by TxDOT.

***Task Eligibility.*** Tasks outlined in the UPWP are subject to funding eligibility. The use of federal metropolitan transportation planning funds shall be limited to transportation planning activities affecting the transportation system within the Metropolitan Area Boundary

(MAB). If an MPO determines that data collection and analysis activities relating to land use, demographics, or traffic/travel information, conducted outside the MAB, affect the transportation system within the MAB, then those activities may be undertaken using federal planning funds provided that the activities are specifically identified in an approved UPWP. Any other costs incurred for transportation planning activities outside the MAB will not be eligible for reimbursement.

**Fiscal Constraint.** The use of federal transportation planning funds is limited to corridor/subarea level planning or multimodal or systemwide transit planning studies. Major investment studies and environmental studies are considered corridor-level planning. The use of such funds beyond environmental document preparation or for specific project-level planning and engineering (efforts directly related to a specific project instead of a corridor) is not allowed.

**Program Management.** The MPO may not incur any costs for work outlined in the UPWP or any subsequent amendments (i.e., adding new work tasks or changing the scope of existing work tasks) prior to receiving approval from TxDOT. Any costs incurred prior to receiving department approval will not be eligible for reimbursement from federal transportation planning funds.

**Budgeting and Administration.** The MPO may not spend more funds than are authorized by the latest TPP Work Order. If the MPO UPWP budget is greater than the amount authorized in the work order, the MPO must obtain additional work order authorization to spend up to the budgeted amount. TPP will make available to the MPO all federal funds currently available to TxDOT up to the budgeted amount. Since federal funds become available at various times during the fiscal year, the initial work order will most probably be less than or, possibly, equal to the budgeted amount.

Costs incurred by the MPO may not exceed the total budgeted amount of the UPWP without prior approval of the MPO policy board and TxDOT. Costs incurred on individual work tasks may not exceed that task budget by 25 percent without prior approval of the MPO policy board and the TxDOT. If the costs exceed 25 percent of the task budget, the UPWP shall be revised, approved by the MPO policy board, and submitted to TxDOT for approval.

## Section 8

### Air Quality

#### Overview

The subject of air quality, conformity, nonattainment, and required corrections is complex, convoluted, and rapidly changing. It is extremely difficult to prepare a generalized description that covers all aspects of this subject. For detailed information and/or source documents, please contact TPP, ENV, TNRCC, or FHWA for additional information.

#### Background

**1969 -1980.** The National Environmental Policy Act (NEPA) of 1969 and the 1970 Federal-Aid Highway Act required TxDOT as the state transportation agency to consider the "...environmental impacts of federal projects." The 1970 Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for six pollutants. Of these six pollutants, three are closely associated with mobile sources. These three pollutants are ozone (smog), carbon monoxide (CO), and particulate matter (PM-10). The CAA also dealt with precursors of these pollutants. Those precursors are volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) in areas that are nonattainment for ozone; NO<sub>x</sub> in areas that are Nonattainment for NO<sub>2</sub>; and VOC and NO<sub>x</sub> in areas that are Nonattainment for PM-10.

The 1977 Clean Air Act Amendments (CAAA) strengthened the original CAA and established deadlines for reaching air quality attainment status. The CAAA also required the development and implementation of SIPs to bring air quality nonattainment areas into compliance with the NAAQS.

**1990-2000.** The 1990 CAAA established specific criteria that must be met for air quality nonattainment areas. The criteria are based on the severity of the air pollution problem and include:

1. specific timetables for implementing mobile source emission control strategies
2. requirement for meeting mobile source emission reduction goals
3. development and implementation of SIPs in order to meet the NAAQS
4. requirement for the EPA to sanction all or part of a state  
Sanctions are defined as stricter industrial controls and the withholding of federal highway funds. Sanctions may be levied against the state for:
  - a. failing to develop and submit SIPs
  - b. failing to implement all aspects of SIPs
  - c. failing to meet any of the air quality progress or attainment deadlines.

ISTEA of 1991 and associated federal planning regulations strengthened the role of the MPO in transportation planning and programming. Furthermore, ISTEA linked

transportation and environmental goals by providing funding flexibility and the Congestion Mitigation and Air Quality Improvement Program (CMAQ).

TEA-21 and associated federal planning regulations reaffirmed ISTEA's commitment to the continued protection of public health and the environment.

TNRCC is the state agency charged with preparing those documents and rules enacted by Congress and EPA. Prior to the formation of TNRCC in 1993, air quality issues were handled by the Texas Air Control Board. In 1993, the Texas Air Control Board (TACB) and the Texas Water Commission (TWC) merged into TNRCC, the overall environmental agency for Texas.

### **Monitoring**

As the responsible agency, TNRCC operates monitoring stations at various locations. At least one site is located in each urbanized area with a population of 200,000 or greater. Certain selected urbanized areas with populations less than 200,000 have received monitoring sites. There are three types of monitors. The monitors measure the level of ozone; ozone and carbon monoxide; or ozone, carbon monoxide, and VOCs.

## Nonattainment Designation

An urbanized area is declared as being in “nonattainment” when the readings at one or more monitoring sites show the urbanized area has persistently exceeded the current NAAQS for one or more pollutants. The CAAA established the “one-hour” standard for each pollutant. The “one-hour” standard for ozone is 12 parts per million (PPM) by volume; for carbon monoxide, the standard is 35 PPM; for nitrogen dioxide, the standard is 0.053 PPM; and for PM-10 the standard is 50 micrograms ( $\mu\text{g}/\text{m}^3$ ). These one-hour standards apply to nonattainment areas that were designated prior to July 1997. In Texas, the one-hour standard applies to the four current nonattainment areas in Texas (Dallas-Fort Worth, Houston, Beaumont-Port Arthur, and El Paso).

In 1997, EPA announced a new NAAQS for ozone. The new NAAQS was for an “eight-hour” standard of 85 parts per billion (PPB) or 0.08 parts per million (PPM). Under the old NAAQS for ozone, if an area exceeded the one-hour NAAQS four or more times within a three-year period, the area was declared in nonattainment. Under the new NAAQS for ozone, if the three-year average of the area’s fourth highest eight-hour reading exceeds 85 PPB the area is declared in nonattainment.

*Note:* As of December 1999, due to current ongoing lawsuits, the eight-hour standard for ozone is not being enforced.

When EPA declared areas as nonattainment under the CAAA of 1990, the boundaries of the areas were drawn along county lines. Whole counties were included in the nonattainment areas. For example, the Beaumont–Port Arthur nonattainment area included all of Jefferson, Orange, and Hardin counties. In general, federal rules required the MPO to expand its Metropolitan Area Boundary (MAB) or Metropolitan Planning Area Boundary (MPAB) to take in the entire nonattainment area. Under TEA-21, newly declared nonattainment areas (as under the eight-hour standard for ozone, if the courts allow) could petition the Governor, with EPA approval, not to expand their boundaries. Because the eight-hour standard is currently on hold due to lawsuits, no formal boundary changes have occurred, so it is uncertain if EPA will hold to the full-county boundary standard.

## Transportation Conformity

Once an area has been declared a nonattainment area for one or more pollutants, several actions must take place. Section 176(c) of the CAA requires a demonstration of “transportation conformity.” That is, the nonattainment area MPO(s) must demonstrate, through regional emissions analysis, that the estimated on-road motor vehicle emissions of projects included in the Metropolitan Transportation Plan (MTP) from which the three-year TIP is drawn will be less than the allowable estimated on-road motor vehicle emissions listed in the SIP. If an area cannot show that the planned projects in the MTP (and TIP) will allow the area to meet or be less than the emission levels required by the SIP, then the MPO must modify its TIP and MTP by removing projects or adding other controls/programs until the SIP emission requirements are met. Failure to comply with this requirement can result in the freezing of all federal funds (both FHWA and FTA) and possibly more severe restrictions.

## Conformity Demonstration

The MPO must demonstrate “transportation conformity” on its MTP and TIP every three years. Any revision to the TIP or MTP requires the MPO to resubmit transportation conformity documentation to EPA for review and approval. Several other conditions require the MPO to demonstrate transportation conformity. Conformity must be demonstrated:

- ◆ within 18 months of a state’s initial submission of a control strategy SIP or a maintenance plan that contains a Motor Vehicle Emissions Budget (MVEB);
- ◆ within 18 months of EPA approval of a control strategy SIP revision or maintenance plan that establishes or revises a MVEB or adds, deletes, or changes Transportation Control Measures (TCMs); or
- ◆ within 18 months of EPA promulgation of an implementation plan that establishes a MVEB or adds, deletes, or changes TCMs.

Transportation conformity is demonstrated for an area by using two computer models. The Travel Demand Model is a computer model for the nonattainment area that uses forecasted demographics and job information to estimate future vehicle miles traveled (VMT) over the proposed roadway network that included the project improvements in the MTP and TIP. The information from the Travel Demand Model is used as input information to the Emission Model. The Emission Model is currently “Mobile 5.” This model was developed and released by EPA. New upgraded computer model programs are approved and released periodically by EPA, such as “Mobile 5a,” etc. The total emissions predicted by the Emission Model for each required year must not exceed the limits established in the SIP.

## State Implementation Plan

Just as the STIP consists of the MPO TIPs and rural TIPs plus some statewide programs, the SIP consists of an individual part or plan for each nonattainment area plus some statewide initiatives to reduce pollutants. The CAA requires each state to develop a SIP that addresses each pollutant for which the state fails to meet the NAAQS and to describe how the state and the individual areas will meet the NAAQS on schedules prescribed in the CAA. Emissions are generally classified in one of three categories: stationary sources, area sources, and mobile sources. There are also natural emissions, called biogenic. The SIP assigns emission reduction targets to each source category. For the mobile source category, the emission reduction target is further refined into a regulatory limit on emissions, referred to as a Motor Vehicle Emissions Budget (MVEB). Emission reduction targets for mobile sources may be achieved through Transportation Control Measures (TCMs). TCMs are strategies designed to reduce vehicle emissions. Some examples of TCMs and the programs that result are:

- ◆ high occupancy vehicle (HOV) lanes
- ◆ flexible work hours for employees to shift peak travel hours
- ◆ improved public transit or rideshare programs
- ◆ and traffic flow improvement programs such as signal timing.

If adopted in the SIP, these strategies/programs have legal requirements. Failure to comply can result in federal sanctions against the area and/or the state.

## TIP/STIP Coordination

In order to demonstrate transportation conformity, the area must run the Travel Demand Model for each of the required years. Depending on the regulations, this process may require five to seven model years. Once a project timeframe is determined in the transportation conformity process, in order for the MPO or district to move a project (either accelerate it or delay it), the MPO *may* be required to demonstrate transportation conformity again. This process is an intensive computer modeling process. EPA approval of each transportation conformity demonstration may take up to six months. Therefore MPOs and districts must consider all proposed completion dates carefully.

## Section 9

### Major Investment Studies

#### Overview

The Major Investment Study (MIS) was envisioned as a tool for making better decisions at an earlier time than under previous methods, thus improving transportation planning in metropolitan areas. The MIS is an integral part of a metropolitan area's long-range planning process and is designed to provide decision makers with better and more complete information on the options available for addressing transportation problems before making investment decisions. The MIS provides a focused evaluation of needs and problems within a corridor or sub-region. The MIS may identify an appropriate set of multimodal investments and policy options to address needs and problems; develop measures of benefits, costs, and impacts; and specify financial requirements. The MIS process leads to a decision on the design concept and scope for a corridor/subarea's major investments.

The MIS process, along with the overall policies of ISTEA and TEA 21, provides a framework for informed decision making on major transportation investments for a metropolitan area. As an integral element of the metropolitan planning process, the MIS is a cooperative and collaborative process whose direction and conduct are generally decided locally. The specific scope, context, needs, and conditions of each MIS are usually defined locally. The MISs will vary in scope and scale so that "no one size fits all."

#### Federal Requirements

Major Investment Studies were called for in Section 450.318 of the joint FHWA/FTA Final Rule on Statewide and Metropolitan Planning issued in the *Federal Register* on October 28, 1993, which became effective on November 29, 1993.

A major investment is officially described as a "high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale."

TEA-21 replaces the stand-alone MIS requirement of FHWA/FTA's joint planning regulations with a directive that, for federally funded highway and transit projects, analyses under the planning provisions of the act and NEPA be integrated. This essentially eliminates the MIS as a separate requirement as set forth in the planning regulations and calls for an integration of the requirements into the planning and NEPA analyses, as appropriate. In outreach meetings across the nation, FHWA has found substantial support for integrating the MIS and the NEPA process.

**Texas MIS Process Guidelines**

In January of 1997, TxDOT, assisted by Texas Transportation Institute (TTI), published “The Texas MIS Process Guideline.” This document describes the Texas MIS process and includes a comprehensive flowchart. A separate flowchart of the NEPA process contains charts for each of the two options addressing this aspect of the MIS process. These flow charts are intended to guide the reader through the entire MIS process, providing references to specific detailed materials as needed. The flowcharts show the major steps in the MIS process, and each step is referenced to a section of the guidelines dealing with the details of the specific step.

**General Guidance**

Draft regulations which will address the expectations of TEA-21 in regard to the MIS process are currently under review by the U.S. Department of Transportation. Final rules are expected to be published early in the year 2001.

## **Section 10**

### **Transportation Improvement Program**

#### **Overview**

The TIP is the region's spending plan for transportation improvements. It is the investment program consisting of capital and operational improvements to the metropolitan transportation system. The TIP is the means of implementing the goals and objectives of the long-range regional transportation plan.

The scope of the TIP has been expanded over the last few years. Initially, it included only those projects that had an element of federal funding and those that required a federal action (Corp of Engineers permit, etc.). The TIP is now a more comprehensive transportation investment program than in previous years. The CAAA requires regions to include projects that affect air quality. The MPO must determine whether the package of proposed improvements in the area, regardless of how it is funded, results in better air quality.

#### **Federal Requirements**

Mandates of 23 CFR §450.324 require the metropolitan transportation planning process to include the development of a TIP for the metropolitan planning area that contains a list of projects approved for development in the near term. The TIP is required to be developed in cooperation with the department and public transit operators and must be approved by the MPO and the department. After approval and after any needed conformity findings, TIPs are included without modification in the STIP.

## **TxDOT Format and Requirements**

Guidance in 43 TAC §15.7 establishes the rules for TIP development in Texas. Each MPO is required to develop its TIP using the uniform format developed cooperatively by TxDOT and the MPOs. The TIP is to include (in general):

- ◆ a cover page
- ◆ an introduction
- ◆ the federally funded highway project listing
- ◆ the federally funded transit project listing
- ◆ the state funded highway project listing
- ◆ the locally funded regionally significant project listing
- ◆ the financial plan
- ◆ the annual self-certification.

Adherence to this format is necessary to be included in the STIP.

TxDOT will provide the MPO estimates of available federal and state funds to be used in developing the financial plan. The TIP covers the metropolitan planning area and must be updated and approved at least every two years by the MPO and the department.

## **Revision Information**

Content of 43 TAC §15.7(k) describes the conditions and requirements for a revision to the TIP. Because of the complexities of air quality and conformity issues, revision requirements are different in nonattainment areas versus attainment areas.

## **Fiscal Constraint**

The need to balance expected income with anticipated expenditures is part of running a household, business, or government. In the area of transportation planning, the TIP is the set of transportation investments (the anticipated expenditures), and the financial constraint is the budget limit (the expected income). A spending plan like the TIP is reasonable only to the degree that it is based on reasonable projections of available resources. A financial constraint means that a region cannot plan for more money than can reasonably be expected.

The TIP shall be financially constrained yearly and include a financial plan that demonstrates project implementation based on available revenues. The financial plan will be developed by the MPO in cooperation with TxDOT and the transit operator. TxDOT, through the UTP, will provide the MPO with estimates of available federal and state funds. In addition, area transit operator(s) must provide estimates as well. Only projects for which construction and operating funds can reasonably be expected to be available may be included. In the case of new funding sources, strategies for ensuring their availability shall be identified. In nonattainment and maintenance areas, projects included for the first two years of the current TIP shall be limited to those for which funds are available or committed.

Just as in the MTP, TEA-21 includes a provision that allows an illustrative list of projects. TEA-21 states that the financial plan may include, for illustrative purposes, additional projects that would be included in the adopted TIP if reasonable additional financial resources beyond those identified in the financial plan were available.

## Section 11

### Metropolitan Planning Area Boundary

#### Minimum Area

The metropolitan planning area boundary (MPAB) shall, at a minimum, cover the urbanized area(s) and the contiguous geographic area likely to become urbanized within the next 20-year or 25-year forecast period covered by the MTP and shall include the boundaries required by 23 CFR §450.308.

MPABs shall be limited to the boundaries approved by the TxDOT Executive Director. For geographical areas designated as nonattainment areas or maintenance areas for transportation-related pollutants under the Clean Air Act of 1970 (CAA) by the Environmental Protection Agency (EPA), the MPABs shall include at least the Metropolitan Planning Area (MPA), except as otherwise approved by the TxDOT Executive Director. Proposals to exclude a portion of the nonattainment area or maintenance area from the MPAB shall be coordinated with FHWA, FTA, EPA, and TNRCC before the final decision is made.

When there is no formal agreement between the TxDOT Executive Director and the MPO to reduce the MPAB to an area less than the boundaries of the nonattainment area or maintenance area, the entire nonattainment area or maintenance area is subject to the applicable provisions.

#### Boundary Establishment

The MPABs for existing MPOs have been reviewed and approved by TxDOT. The following guidelines should be followed if the MPAB of an MPO needs adjusting or establishing.

***Coordination with Other Transportation Modes.*** When modifying an existing MPAB or establishing a new MPAB, in accordance with 23 CFR §450.308(c), the proposed boundary should be reviewed:

- ◆ for connectivity between modes of transportation
- ◆ to reduce access disadvantages experienced by modal systems
- ◆ to promote efficient overall transportation investment strategies.

***Approval of Boundaries.*** Documentation for revisions to existing or new MPABs should include maps of the proposed boundary and supporting documentation and rationale for the proposed boundary. The maps and documentation should be forwarded to TPP through the TxDOT District Study Office. The maps and documentation will be reviewed and forwarded to the TxDOT Executive Director for approval. After TxDOT approval, copies of the MPAB maps will be forwarded to FHWA and FTA. The MPAB is effective on the date it is approved by the TxDOT Executive Director.

**Required Supporting Documentation.** The MPO shall submit (as indicated under Boundary Establishment in this chapter) a color map indicating the existing MPAB (if applicable) and the proposed MPAB. The existing MPAB shall be indicated by a solid red line and the proposed change or new MPAB shall be indicated by a dashed red line. The size and detail on the map should be coordinated with TPP and the District Study Office. The map should be submitted along with a letter indicating when the MPO policy board approved the new MPAB. The MPO should also provide information on the need or purpose for revising the existing MPAB. If necessary, the documentation should address how the newly incorporated area will be represented on the MPO policy board.

When all information is gathered, the District Study Office shall submit the map and documentation to TPP. TPP will review all required information and along with a recommendation submit the MPAB and documentation to the TxDOT Executive Director for approval.

The approval process may take four to six weeks. The MPO shall not incur any cost for work done in the area between the currently approved MPAB and the proposed MPAB prior to receiving approval from TxDOT, unless that work was specifically identified in the approved UPWP.

**Notification of Approval.** The following offices/agencies will be notified when a change to an existing MPAB or a new MPAB is approved:

- ◆ FHWA
- ◆ Public Transportation Division (PTN)
- ◆ TPP – Traffic Analysis Section
- ◆ TPP – Transportation Systems Planning Section
- ◆ TPP – Data Management Section.

# Chapter 6

## Rural Transportation Planning

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## Section 1

### Overview of Transportation Planning Process in Non-MPO Areas

#### Non-MPO Areas

The Texas Department of Transportation (TxDOT) Transportation Planning and Programming (TPP) Division works with the district offices to address the rural transportation planning process. TxDOT currently has only two districts (the Childress District and the Lufkin District) that do not also work with MPOs. In districts that do work with MPOs, TPP works with the District Study Office personnel to ensure that the rural transportation planning process is carried out. In the two districts without MPOs, the District Director of Transportation Planning and Development (TPD) has designated staff to perform this function. Guidance to the district staff and District Study Office personnel is provided through the Texas Administrative Code (TAC) Sections 15.1 through 15.8 and the applicable federal regulations.

#### District Responsibilities

The district responsibilities are generally less than those of the MPOs. The districts must prepare rural TIPs, which address area needs within the district boundaries that fall outside the Metropolitan Area Boundary (if applicable). The rural TIP is not defined in 23 CFR 450. However, it is required in order to comply with the requirements of 23 CFR 450 for a Statewide Transportation Improvement Program (STIP). In preparing Texas Administrative Code Sections 15.7(b)(2), TPP defined the rural TIP. TAC Section 15.7(m)(2) defines the requirement for a rural public involvement process policy.

#### TPP Responsibilities

TPP has been charged by the Texas Transportation Commission and the TxDOT Executive Director with ensuring that transportation planning activities required by the applicable portions of Title 23 United States Code (U. S. C.) 134 and 135, Title 49 U. S. C. 5303 through 5306, and other federal regulations, as applicable, are carried out. TPP is responsible for preparing and coordinating changes to TAC Section 15.1 through 15.8 that deal with transportation planning requirements.

#### Public Involvement

Content of 23 CFR 450 Subpart B addresses public involvement for STIP preparation and Subpart C addresses public involvement requirements for MPOs. Based on discussions with FHWA, TPP wrote into TAC Section 15.7(m)(2) the requirement that each district develop a rural public involvement policy. In addition to the rural TIP public involvement requirements and the MPO public involvement requirements TPP, in preparing the STIP, follows the public involvement process as written in TAC Section 15.8(d).

**Public Involvement Policy for Public Transportation**

Since projects that use either FHWA funds or FTA funds/grants must be listed in the TIP, the rural TIP public involvement process rules stated in TAC Section 15.7(m)(2) apply to public transportation projects. The districts normally coordinate with their designated Public Transportation Coordinator (PTC) to ensure that public transportation projects are presented during this process.

## **Section 2**

### **Transportation Improvement Program**

#### **Federal Requirement**

Guidance in 23 CFR 450 Subpart B addresses statewide transportation planning requirements. The requirements of this subpart fall on the Texas Department of Transportation as the state transportation authority. Since Subpart C addresses metropolitan transportation planning and programming requirements and Subpart B contains requirements that must be addressed statewide, it follows that those portions of the state that fall outside the metropolitan area boundaries are the responsibility of the Texas Department of Transportation. The department has chosen to depend on the districts to prepare the required documents and conduct required meetings. Portions of the district requirements are addressed in the Texas Administrative Code (TAC) Sections 15.7 and 15.8. Other portions are addressed through memos or letters to the districts.

#### **TxDOT Format and Information**

As indicated in TAC Section 15.7(f), a standardized format for the TIPs has been prepared. That format has been distributed to the district offices and district staff on several occasions. On December 12, 1997, TPP sent a memo to all District Study Offices, titled “Transportation Improvement Program (TIP) Format and Texas Administrative Code Rules.” Included in this memo was a November 12, 1996, memo, previously sent to all District Engineers, with information on preparing the TIP and a sample TIP format document. (To see a PDF file of the memos, click [pln\\_apk](#).)

#### **Revision Information**

The December 12, 1997, memo mentioned above also included information on the dates for revisions to the FY 1998 – 2000 STIP. As information on the revision dates for future STIPs is prepared it will be made available to the districts by memo.

TAC Section 15.8(f) provides background information for STIP revisions. In general, the districts are strongly encouraged to plan their projects in advance so that revisions can be made on the quarterly basis. Requests for exceptions to the quarterly revision requirement must meet requirements stated in Section 15.8(f) and should be directed to the Executive Director.

**Fiscal Constraint**

Mandates of 23 CFR Subpart B and Subpart C require the STIP and the MPO TIP (respectively) to be financially constrained. Since the rural TIP is a part of the STIP, it logically follows that the rural TIP must be financially constrained. District funding is normally handled through the Unified Transportation Program (UTP), which is annually prepared by the Programming and Scheduling Section of TPP. Since the UTP is financially constrained, it becomes the basis for the district to prepare its financially constrained TIP. Funding for public transportation projects is contained in the UTP.