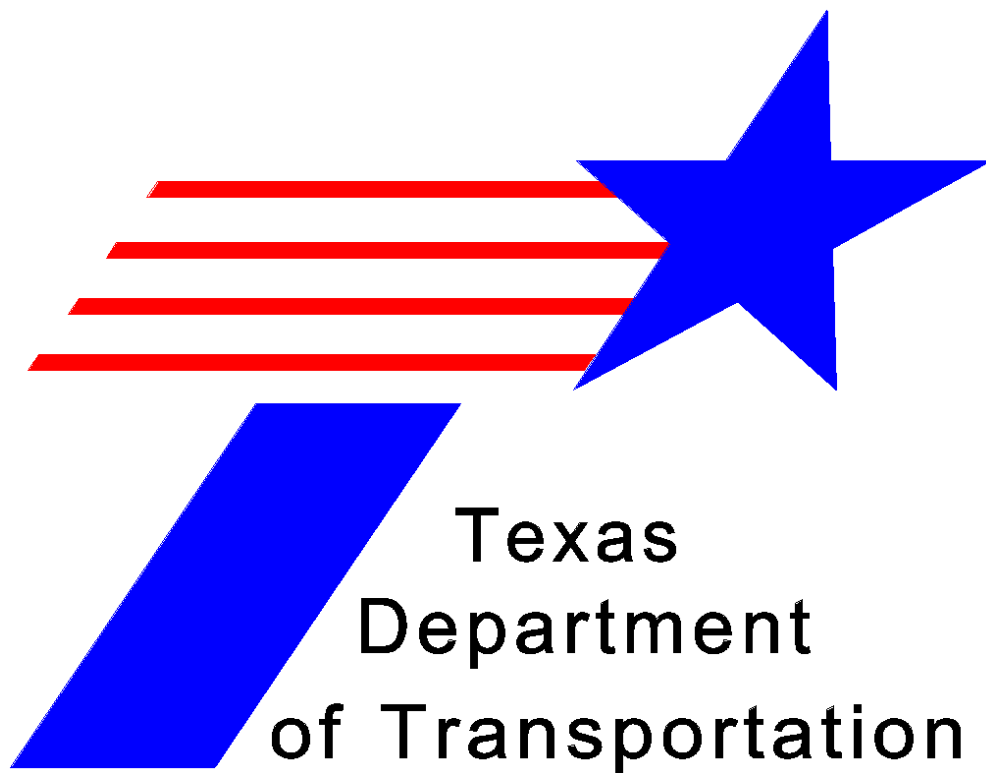


Transportation Multimodal Systems Manual



Texas
Department
of Transportation

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Manual Notice 2001-1

From: Kirby W. Pickett, P.E.

Manual: *Transportation Multimodal Systems Manual*

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Purpose

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

Changes

This manual replaces the *Transportation Planning Division Operations Manual* dated April 4, 1985.

Supersedes

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

Contents

The *Transportation Multimodal Systems Manual* contains the following chapters:

- ◆ Waterways
- ◆ Ports
- ◆ Bicycle
- ◆ Pedestrian
- ◆ Rail Coordination.

Instructions

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

The *Transportation Multimodal Systems 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).

Archives

Past manual notices are available in a [pdf archive](#).

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Chapter 1

Waterways

Contents:

Section 1 — Gulf Intracoastal Waterway

Section 2 — Other Waterways

Section 1

Gulf Intracoastal Waterway

Overview

The Gulf Intracoastal Waterway (GIWW) is a 1,300 mile man-made canal that runs along the Gulf of Mexico coastline from the southernmost tip of Texas at Brownsville to St. Marks, Florida. The GIWW was originally constructed to provide a connection between gulf ports. The impetus for creating such a link was the discovery of oil in East Texas as well as the growing need to transport steel and other manufacturing materials. Ultimately, the GIWW enabled the gulf ports to be linked with the entire country via the inland waterway system.

This section covers:

- ◆ [Texas portion of the GIWW](#)
- ◆ [coordination](#)
- ◆ [technical assistance.](#)

Texas Portion of GIWW

The Texas portion of the waterway is 423 miles long. Because it is less than 25 feet deep, it is defined as a shallow-draft channel. The U.S. Army Corps of Engineers maintains the waterway at an authorized width of 125 feet and depth of 12 feet. The waterway is directly linked with Texas' 12 deep-draft port channels and 15 shallow-draft ports. The GIWW also connects to the interstate marine thoroughfare of the Mississippi and Ohio Rivers, two of the busiest waterways in the country.

The GIWW is the third busiest canal in the United States. It largely accommodates barge traffic, the most effective use of the waterway. According to the Waterborne Commerce Statistics Center, the GIWW carries an estimated 110 to 125 million tons of goods per year. Average annual tonnage moved on the Texas portion of the waterway is 60 to 90 million tons of goods each year. Because the GIWW is a shallow-draft facility, almost all traffic on the canal is domestic. However, in recent years, some volumes of international cargo have been moved on the waterway.

Texas relies heavily on water transportation to provide safe and efficient movement of cargo by barge. The steady increases in waterway commerce along the GIWW are attributed to its accessibility to the ports of the Gulf of Mexico and the Midwest through the Mississippi River.

Texas Legislation. The State of Texas acts as the local nonfederal sponsor of the main channel of the GIWW from the Sabine River to the Brownsville Ship Channel. State responsibility for the GIWW began with the passage of the Texas Coastal Waterway Act of 1975 by the 64th Texas Legislature. This legislation is now [Chapter 51](#) of the Transportation Code of the Texas Statutes. The

act instructed the State Highway and Public Transportation Commission, now the Texas Transportation Commission (TTC), to act as a representative of the state in fulfilling the duties of the nonfederal sponsor, as determined by federal law, consistent with the policy of the State of Texas. This act, amended by the 74th Texas legislature, authorized TTC to enter into agreement with the Corps of Engineers in the cost-sharing of developing beneficial use projects for GIWW dredged materials.

Policy. It is a policy of the State of Texas to support the marine commerce and economy of this state by providing for the shallow-draft navigation of the coastal waters in an environmentally sound fashion. The state will prevent waste of both publicly and privately owned natural resources, prevent or minimize adverse impacts on the environment, and maintain, preserve, and enhance wildlife and fisheries. To accomplish this, the State of Texas, through TTC, acts as the nonfederal sponsor of the main channel of the GIWW from the Sabine River to the Brownsville Ship Channel.

The department's policy is to maximize preservation of existing transportation infrastructure and services for all modes of transportation. Consistent with preserving the existing infrastructure, the department's policy is to preserve the Gulf Intracoastal Waterway. TxDOT's Transportation Planning and Programming Division (TPP) is responsible for representing the department in preserving the GIWW.

Coordination

The State of Texas, as the nonfederal sponsor of the GIWW, works to provide coordination and cooperation to the federal sponsor, the Corps of Engineers. The state is charged with providing the necessary lands, easements, relocations, and realignments required during construction and maintenance of the GIWW. The GIWW and other navigation channels must be regularly dredged to provide ample clearance for both commercial and recreational maritime traffic wishing to successfully navigate the facility.

Environmental Affairs Division. The [Environmental Affairs Division](#) (ENV) acts in an advisory capacity to the Multimodal Section for development and review of environmental documents for waterway activities.

Right of Way Division. Representatives from the [Right of Way Division](#) (ROW) aid in coordinating with owners of prospective dredged material placement sites. Coordination includes the identification of landowners, preparing right of entry request, and informing landowners of methods used in acquiring land for dredged material placement.

GIWW Advisory Committee. The **GIWW Advisory Committee** (GIWAC) was formed by TxDOT to act as an interagency advisory committee. Its primary responsibility is to assist in identifying and developing environmentally sound and economically feasible dredged material placement sites by providing coordination, comments, recommendations, and concurrence of proposed sites for TxDOT acquisition. The committee is comprised of representatives from the:

- ◆ Texas Parks and Wildlife Department
- ◆ Texas General Land Office
- ◆ Texas Historical Commission
- ◆ Texas Natural Resource Conservation Commission
- ◆ Texas Economic Development Commission
- ◆ Texas Governor’s Office.

At the request of TxDOT, a GIWAC Task Force may be formed. The task force typically provides assistance to the Multimodal Section during site evaluations by visually inspecting the sites with the understanding of their critical elements and providing recommendations on sites for TxDOT acquisition.

Technical Assistance

Technical Assistance to the Corps of Engineers. The development of various plans for GIWW dredged material placement may require the evaluation of placement designs, environmental documents, or other technical documents. The Corps of Engineers typically prepares these documents and provides them to the Multimodal Section. The Multimodal Section forwards the environmental documents to the Environmental Affairs Division for review. The Multimodal Section performs the final reviews of the environmental documents, placement designs, or other technical documents.

Texas Coastal Management Program (CMP) and Coastal Coordination Council. The [Texas Coastal Management Program](#) manages Texas coastal resources. Developed in the early 1990s, the CMP is responsible for coordinating federal, state, and local programs regarding the coastal natural resource areas which include the GIWW. The Multimodal Section ensures that all work regarding the waterways is consistent with the CMP.

The creation of the CMP established the [Coastal Coordination Council](#) as a forum for the coordination of federal, state, and local programs as well as activities along the coast. The Coastal Coordination Council, of which the Texas Transportation Commission is a member, administers or oversees the plan for the Texas Coastal Management Program. The department advises the commission on CMP technical issues.

Bi-annual Report to Legislature. By statute, TxDOT is required to submit a bi-annual report to the legislature outlining the general status of the GIWW and evaluating current aspects of the GIWW. The evaluation shall include an assessment of the direct and indirect beneficiaries, identification of problems and possible solutions, the need for significant modifications to the GIWW, and specific recommendations for legislative actions.

Section 2

Other Waterways

Ship Channels Intersecting the GIWW

There are currently 27 ports with associated ship channels of varying size that intersect the GIWW. The Multimodal Section may assist these ports by providing technical assistance on their ship channels' dredged material placement plans. The Multimodal Section also monitors ship channel activities for developments that may affect the GIWW, including coordinating ship channel dredged material placement plans.

Chapter 2

Ports

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Section 1 — Port Authority Advisory Committee

Section 2 — Coordination with Stakeholders

Section 1

Port Authority Advisory Committee

Overview

Texas has 27 ports along the Gulf Coast (12 deep-draft and 15 shallow-draft). Texas has 423 miles of intracoastal waterway on which more than 70 million tons of cargo are transported each year.

Texas Legislation. During the 75th Texas Legislative session, a bill was passed resulting in the creation of the Port Authority Advisory Committee (PAAC) to advise TTC and TxDOT on matters relating to port authorities.

Policy. Additional policy for working with ports to improve landside access is found in the Texas Transportation Plan (1994).

- ◆ Policy 3. Maximize the efficiency and effectiveness of freight transportation.
- ◆ Policy 7. Maximize preservation of existing infrastructure and services for all modes of transportation.

PAAC Membership. The Multimodal Section coordinates meetings and provides staff support for PAAC. The Port Authority Advisory Committee comprises five members:

- ◆ one representative from the Port of Houston Authority of Harris County
- ◆ two representatives from ports located north of the Matagorda/Calhoun County line, excluding the Port of Houston Authority
- ◆ two members from ports located south of the Matagorda/Calhoun County line

PAAC Responsibilities. PACC responsibilities are to:

- ◆ advise TTC and TxDOT of issues concerning port authorities
- ◆ advise TTC and TxDOT on intermodal and multimodal issues relating to Texas waterways and ports
- ◆ advise TTC and TxDOT in identification, development, and implementation of potential funding mechanisms, including the state infrastructure bank
- ◆ advise TTC and TxDOT on port infrastructure needs

Metropolitan Planning Organizations

Metropolitan planning organizations (MPOs) address all modes of transportation in their transportation plans. The Multimodal Section encourages port authorities to work closely with their MPOs in addressing improved access and landside needs of ports.

Section 2

Coordination with Stakeholders

Texas Ports and Waterways Conference

Starting in 1996, TxDOT, in cooperation with the Center for Ports and Waterways (http://tti.tamu.edu/groups/program.htm?p_org_code=RPW) has sponsored an annual Texas Ports and Waterways Conference. The conference aims to bring together people involved in waterborne transportation as well as those involved in moving people and goods beyond the ports to landside destinations. This will be a continuing effort and future conferences will stress cooperation among those involved.

Chapter 3

Bicycle

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Section 1 — State Bicycle Program

Section 2 — Other Elements of Accommodating Bicycles within the Transportation System

Section 1

State Bicycle Program

Overview

The Texas State Bicycle Program recognizes the increased use of bicycles as a mode of transportation. Issues of safety and ample bicycle access on Texas roads are of high priority to the department.

Federal Legislation. With the passage of the Intermodal Surface Transportation Efficiency Act in December 1991, all states are required to include bicycles as a viable transportation mode in all transportation project planning. The [Transportation Equity Act for the 21st Century \(TEA-21\)](#) continues this requirement for inclusion of bicycles in transportation planning.

Texas Legislation. Transportation Code, Section 201.902 directs TxDOT to enhance the state highway system for use by bicyclists.

Policy. Accommodation of bicycle traffic shall be considered in all TxDOT transportation projects.

State Bicycle Program Coordinator

The Statewide Transportation Plan stresses the importance of considering the inclusion of bicycle facilities in all TxDOT projects. TxDOT has charged the State Bicycle Program Coordinator with the responsibility of raising awareness of the need to consider bicycles in all stages of planning, design, and construction of roadway and enhancement projects.

The State Bicycle Program Coordinator routinely acts in the capacity of an “internal resource” for the department. The coordinator focuses on leading, teaching, and educating department employees and citizens outside the department on various aspects of bicycles and their presence on Texas roads. The coordinator is active behind the scenes monitoring developments in the department that may in some way impact bicycles and the bicycling community. During project planning and development, the coordinator may inquire about who is involved (i.e. planner, consultant, designer) and their level of knowledge and experience in developing bicycle facilities.

General Responsibilities of the State Bicycle Program Coordinator

- ◆ Coordinate the integration of bicycling into the operational policies, plans, and programs of the department, MPOs, and local government entities by providing encouragement, supplying expertise, and promoting training
- ◆ determine the needs and concerns of bicyclists
- ◆ represent the department at the state and national levels

- ◆ respond to letters, telephone calls, electronic mail, requests, inquiries, and visits from citizens concerning a wide variety of bicycle related issues
- ◆ conduct site visits to make project recommendations
- ◆ coordinate with District Bicycle Coordinators.

District Bicycle Coordinators

Each TxDOT district has appointed a district bicycle coordinator to provide input and direction during the planning and development of roadways. This ensures that bicycles are acknowledged as a viable mode of transportation on roadway facilities where use by bicyclists is feasible.

General Responsibilities of the District Bicycle Coordinator

- ◆ Coordinate with the State Bicycle Program Coordinator
- ◆ respond to telephone calls and letters concerning local bicycle matters
- ◆ act as department representative in meetings with local bicycle groups and coordinate organized bicycle events on state roads
- ◆ coordinate with other district and division staff concerning possible improvements to increase safety and access for bicyclists (i.e., design, maintenance, and construction of transportation facilities)
- ◆ work with Public Affairs Officer and Traffic Safety Specialist to promote bicycle safety education and district safety improvements.

Section 2

Other Elements of Accommodating Bicycles within the Transportation System

Funding

During the planning, design, and construction of typical roadway sections, the cost of including bicycle and pedestrian facilities is not addressed as a separate funding category. The same is true for both new construction and rehabilitation projects. The cost of including bicycle and pedestrian accommodation is usually included in the overall cost of the project.

Some bicycle and pedestrian facilities, usually those off the state highway system, may be eligible to be funded as enhancement projects. Development of bicycle or pedestrian facilities as enhancement projects does involve a separate funding category.

Statewide Route Map

A pilot project is being planned to determine a methodology for developing a comprehensive Statewide Route Map. The project will include use of a suitability index for including particular roadways within a computer database. The project is to produce a district map that will provide roadway information for a bicyclist to use in selecting a route.

Chapter 4

Pedestrian

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Section 1 — Pedestrian Transportation

Section 2 — State Pedestrian Coordinator

Section 1

Pedestrian Transportation

Overview

The Texas Department of Transportation recognizes the importance of providing pedestrian facilities, with emphasis on urban areas. Safety is a high priority with TxDOT. The department also strives to provide adequate access as outlined by the American with Disabilities Act (ADA) and modified by the Texas Accessibility Standard (TAS).

Federal Legislation. In December 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) was signed requiring the department to include pedestrians in all transportation project planning activities. The current federal transportation legislation, the [Transportation Equity Act for the 21st Century](#), continues the requirement for inclusion of pedestrians in transportation planning.

The ADA requires the department to make pedestrian facilities usable and accessible to individuals with disabilities, including those who use wheelchairs.

Policy. Accommodation of pedestrian traffic shall be considered for all TxDOT transportation projects.

Section 2

State Pedestrian Coordinator

Responsibilities

General responsibilities of the State Pedestrian Coordinator:

- ◆ acts in the capacity of an internal resource for TxDOT
- ◆ advocates the integration of pedestrian facilities into the operational policies, plans, and programs of the department, metropolitan planning organizations, and local government entities by providing coordination and promotion of training
- ◆ responds to letters, telephone calls, electronic mail, requests, inquiries, and visits from citizens concerning a wide variety of pedestrian related issues.

Chapter 5

Railroad

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Section 1 — Railroad Planning

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Section 3 — Abandoned Railroad Corridors as a Resource for Transportation Projects

Section 4 — Rail Studies

Section 1

Railroad Planning

Overview

Since the formation of TxDOT in 1991 by the 72nd Legislature, the department has become increasingly involved in monitoring and evaluating rail transportation within the state. The legislation which formed the department required that it incorporate “rail and high-speed rail” as part of statewide transportation planning.

Texas Legislation. The Texas Transportation Plan documents the mandate given to TxDOT by the 72nd Legislature concerning the inclusion of all modes of transportation in statewide planning [Texas Transportation Code, \(Section 201.601\)](#). The legislation specifically addresses rail transportation as one of the essential modes.

At various times, the Texas Legislature has directed the department to administer grants or loans to specific rail transportation providers. The legislature appropriates funds from general revenue for that purpose.

Policy. Policy for railroad planning is found in the *Texas Transportation Plan* (1994). Railroad planning supports many of the established policies, with special emphases on the following:

- ◆ Policy Number 3. Maximize the efficiency and effectiveness of freight transportation.
- ◆ Policy Number 7. Maximize preservation of existing infrastructure and services for all modes of transportation.

Section 2

Rail Service Assistance

National Passenger Railroad Corporation (Amtrak)

Amtrak was created by the Rail Passenger Service Act of 1970 to operate and revitalize intercity passenger rail service. Prior to Amtrak's creation, intercity passenger rail service was provided by private railroads, which had lost money, especially after World War II. The act, as amended, gave Amtrak a number of goals, including:

- ◆ providing modern, efficient intercity passenger rail service
- ◆ giving Americans an alternative to automobiles and airplanes to meet their transportation needs
- ◆ minimizing federal subsidies.

Through fiscal year 1998, the federal government has provided Amtrak with over \$20 billion in operating and capital subsidies.

Amtrak provides intercity passenger rail service to 44 states and the District of Columbia. In addition, Amtrak operates commuter rail service under contract. TxDOT, through the Multimodal Section, is the liaison for Amtrak in Texas.

Currently, Amtrak provides service in Texas through three passenger rail routes: Texas Eagle, Sunset Limited, and Heartland Flyer.

Texas Eagle. The Texas Eagle is Amtrak's service from Chicago to Los Angeles via Texarkana, Marshall, Mineola, Dallas, Ft. Worth, Austin, San Antonio, Del Rio, Sanderson, Alpine, and El Paso in Texas. The Texas Eagle operates four trains per week in each direction. It connects with the Sunset Limited in San Antonio three times per week.

Until 1994, the Eagle operated on a daily basis and until 1995 there was service from Dallas to Houston as well. In 1996, the composition of the Eagle (equipment operated) was reduced to one coach car, one lounge car, and one dormitory car for passenger sleeping accommodations.

Sunset Limited. The Sunset Limited is the transcontinental service operated by Amtrak between Orlando, Florida, and Los Angeles. It operates three times per week in each direction, and serves Beaumont, Houston, San Antonio, Del Rio, Sanderson, Alpine, and El Paso in Texas. The Sunset Limited and Texas Eagle share a single train set west of San Antonio on the three days the services coincide.

Heartland Flyer. The Heartland Flyer is Amtrak's newest route in Texas. It is a daily service operated between Ft. Worth and Oklahoma City. It is subsidized by the State of Oklahoma using funds provided by Congress to states that had no Amtrak service in 1997.

Funding of Texas Eagle Service by TxDOT

In the summer of 1996, Amtrak announced that it would discontinue several trains, including the Texas Eagle. At that time, the Texas Eagle ran from Chicago to Los Angeles, three trips per week in each direction, through Texarkana, Marshall, Dallas, Fort Worth, McGregor, Temple, Austin, San Antonio, Del Rio, and El Paso.

Many groups, both public and private, voiced their concerns about the potential loss of rail service. They argued that the absence of the Texas Eagle train would significantly impact accessibility of interstate rail travel to Texas residents. Amtrak serves many communities that do not have scheduled passenger air service and is therefore an important resource for travelers.

The 75th Texas Legislature instructed TxDOT to loan Amtrak \$5.6 million from the general revenue fund. TxDOT provided these funds to Amtrak with the provision that they continue the Texas Eagle train for a specified period of time. The Multimodal Section monitored the use of these funds through the loan period. The loan was repaid with interest in May 1999.

Amtrak noted increased profit due to continuation of the Texas Eagle service during the loan period. The strategy of carrying express freight via the Texas Eagle contributed substantially to the increased profit level. As a result, the number of Texas Eagle trains has been increased to four trains each way per week, with further increases proposed for the future.

Rural Rail Transportation Districts

State legislation passed in 1981 and amended in 1997 allows for the creation of Rural Rail Transportation Districts (RRTD) by a single county or multiple counties acting together. The initial legislation was adopted in response to concerns over the negative economic impacts of railroad abandonment on rural portions of the state. The laws authorized one or more eligible counties to form a district.

A district may be established based on approval of the county or the county's commissioners court. The legislation grants RRTDs relatively broad powers to purchase existing railroads, to develop new rail systems, and to finance, maintain, and operate these services. Districts may acquire needed property through eminent domain, may enter into agreements with other public and private entities, and may perform a variety of other functions. Districts do not have taxing authority. A board appointed by the county commissioners is responsible for overseeing the activities of the district.

With the intent of providing continued rail service, TxDOT has entered into grant funding agreements with selected rural rail districts. Funds have been made available by the legislature through appropriation bill riders expressly for the purpose of funding these rail transportation districts. The Multimodal Section monitors the activities of rural rail districts and acts as the department's liaison.

South Orient Rural Rail Transportation District. The South Orient Rural Rail Transportation District (SORRTD) received a secured grant in 1991 after prior approval by TTC (Minute Order

No. 100061) and the Public Transportation Division of TxDOT. TxDOT continues to monitor the SORRTD.

Northeast Texas Rural Rail District. The Northeast Texas Rural Rail District (NETEX) received a secured grant in 1995 after prior approval by TTC (Minute Order No. 106154). TxDOT continues to monitor NETEX and receives status reports from the district on a regular basis.

Section 3

Abandoned Railroad Corridors as a Resource for Transportation Projects

Notification

The [Surface Transportation Board](#) (STB), an independent agency of the United States Department of Transportation, or the railroad itself notifies the department when a railroad operator intends to abandon a rail segment within the state. The Multimodal Section then takes action to notify the affected TxDOT district in which the segment is located to discuss the appropriate course of action by the department.

Potential Use by TxDOT or Other Parties

The district evaluates the rail corridor to determine the possibility of future use by the department. An evaluation report, along with any supporting documents, is submitted to the Systems Planning Section outlining potential future uses and providing recommendations for the corridor. TPP evaluates the report and makes recommendations to the appropriate district and divisions on pursuing the rail corridor for alternative uses.

Prospective alternative use corridors are not limited to one mode of transportation. For example, abandoned rail corridors may include trestles (railroad bridges) that could serve as adequate pedestrian and/or bicycle bridges. TxDOT may determine that filing for public use conditions to prohibit railroad companies from removing the trestle would best serve the public interest. Other public or private agencies may also file for public use conditions.

Section 4

Rail Studies

Intercity Passenger Rail Studies

The Multimodal Section participates in managing feasibility studies for potential new or enhanced intercity passenger rail service. Such participation could be in a lead or supporting role, depending upon the circumstances.

The proposed service could include the traditional service on a daily or less-frequent basis, such as provided by Amtrak. It also includes studies of commuter rail service, which would be passenger rail service on a several-times-per-day basis, usually provided on rail tracks shared with freight operations. Note that this is different from light-rail transit service, which would be provided by a Metropolitan Transit Authority (MTA) on track not shared by a freight railroad. Studies of light-rail transit service would be coordinated through the [Public Transportation Division](#).

Procedure. In order for a planner, agency, or organization to conduct a comprehensive intercity passenger rail feasibility study, the following items should be completed:

- ◆ Identify and select stakeholders to oversee the study process. In addition to the TxDOT districts involved and the appropriate TxDOT divisions, typical stakeholders may include: urban, rural, and specialized transit providers; council(s) of governments (COGs), MPOs, major employers, colleges, universities, and trade schools; and cities, towns, and counties. These stakeholders could provide staff to form a Steering Committee to oversee the conduct of the feasibility study.
- ◆ Define the corridor.
- ◆ Review and distill existing, appropriate findings that might apply to the feasibility study, as found in prior or on-going studies.
- ◆ Prepare a public involvement plan.
- ◆ Determine the administrative, operational, and financial feasibility of an intercity passenger rail operation within the study corridor.
- ◆ Estimate the potential demand for passenger rail service in the corridor and develop preliminary ridership estimates/forecasts from opening day and extending through the design year, at different fare and service levels.
- ◆ Describe natural and socioeconomic characteristics within the corridor, including employment, educational, population, land use, and residential patterns and future trends.
- ◆ Prepare preliminary passenger rail operating plans, costs, and revenues for a range of levels of service.
- ◆ Estimate rolling stock alternatives and costs.

- ◆ Determine relationship to local airports, Amtrak, and transit systems. Include rural transit systems and ascertain approximate station locations.
- ◆ Estimate corridor track and signal requirements with approximate resulting costs; relate those costs to levels of service.
- ◆ Determine grade crossing and grade separation locations and estimate order-of-magnitude costs for upgrades or closures.
- ◆ Ascertain compatibility with freight train movements in existing corridor.
- ◆ Prepare possible financing scenarios. Estimate operating revenues, capital costs, and operating and maintenance costs. Estimate annual operating shortfalls, and the appropriate subsidy, if necessary. Estimate insurance needs.
- ◆ Prepare a start-up budget and schedule for initial implementation.
- ◆ Outline administrative and training needs for start-up.
- ◆ Develop an outline of possible operating scenarios including, but not limited to, a possible operating agreement with corridor owner (typically a freight railroad).
- ◆ Identify and describe the potential social, economic, and environmental impacts of intercity passenger rail in the corridor. (Typically a “fatal flaw” analysis only. If the project is determined to be feasible, detailed environmental impact analysis could be conducted at a later stage in the project development process.) Factors to be considered include: air quality; hydrology/water quality; soils and unique geological features; floodplains; hazardous waste; noise, vibration, light, and turbulence; wildlife habitat and vegetation; archaeological and historic sites; land use; governmental plans and policies; socio-economic factors; land use compatibility; neighborhood impacts and displacements; and economic development.
- ◆ Prepare and present interim and final reports to the Steering Committee for concurrence.
- ◆ Steering Committee presents final report and recommendations to TxDOT for further consideration in the project planning process.

Examples. Two examples are:

- ◆ Austin-San Antonio Corridor Commuter Rail Feasibility Study
- ◆ Gulf Coast Rail Corridor

TTC directed TxDOT to conduct a study to determine the feasibility of commuter passenger rail service between Austin and San Antonio (Minute Order No. 106920). Elected officials, corridor agencies, and other entities from the cities of Austin and San Antonio requested the study. Funding for the study was provided by TxDOT, Capital Area MPO, San Antonio-Bexar County MPO, Capital Metro, and VIA Metropolitan Transit.

TxDOT contracted the consulting firm of Carter & Burgess to conduct the feasibility study. Three series of public involvement meetings were held to receive input on the various aspects of the

potential commuter rail service. The feasibility study was completed in August 1999 with publication of a final report that summarized the purpose of the study, various options for the service, evaluation criteria, and recommendations. The final report, feasibility study, public information newsletters, and corridor maps are available for review on the TxDOT web page at <http://www.dot.state.tx.us/mis/aus-sat/study.htm>.

TxDOT contributed to a feasibility study regarding an incremental increase in speed along the Amtrak Sunset Limited route between Houston and Lake Charles, Louisiana. The U.S. Department of Transportation included this rail line in late 1998 as part of the larger Gulf Coast High Speed Rail Corridor.

The overall project is coordinated by the Southern Rapid Rail Transit Commission, and includes state government and transportation officials from Louisiana, Mississippi, and Alabama. TxDOT's primary role is to monitor the project to ensure that grade crossing safety is maintained in Texas and that federal money for grade crossing improvements is obtained.

TxDOT has filed an application for hazard elimination funds in high-speed railroad corridors under Section 1103(c) of the Transportation Equity Act for the 21st Century. These funds are to be used to identify and create plans to eliminate hazards that could impact higher-speed rail service in identified corridors. These hazards include railroad-highway grade crossings, substandard track conditions, and signal system deficiencies.

The Multimodal Section is coordinating this effort in cooperation with the Federal Highway Administration, the Traffic Operations Division, the Houston District, the Beaumont District, the Houston-Galveston Area Council, the Jefferson-Orange Metropolitan Planning Organization, and the Southern Rapid Rail Transit Commission.

Freight Rail Studies

As directed, the Multimodal Section organizes studies for potential new or enhanced freight rail service. The Multimodal Section will also provide freight rail planning assistance to district and division offices when requested. Such studies may vary greatly in scope.

Procedure. The following procedure is an example of how various agencies and organizations might conduct a comprehensive freight rail study. An abbreviated version of this process may be conducted when an existing freight line is proposed for abandonment or discontinuance before STB.

- ◆ Identify stakeholders to refine the study process. Typical stakeholders may include: shippers of bulky or high-volume cargoes, such as farmers, ranchers, building material suppliers, utility companies using coal; freight carriers, such as trucking firms, steamship firms, barge operators and railroads; and residents of the proposed corridor as well as the TxDOT districts involved and the appropriate TxDOT divisions. These stakeholders could provide input during the conduct of the feasibility study.

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- ◆ Define the origins and destinations of the commodities being studied.
 - ◆ Define the corridor.
 - ◆ Review and distill existing, appropriate findings that might apply to the study, as found in prior or on-going studies.
 - ◆ Determine the costs and benefits of freight rail operation within the study corridor.
 - ◆ Prepare preliminary freight rail operating plans, costs, and revenues for a range of levels of service.
 - ◆ Estimate rolling stock alternatives and costs.
 - ◆ Determine relationship to local airports, seaports, and intermodal facilities.
 - ◆ Estimate corridor track and signal requirements with approximate resulting costs. Relate those costs to levels of service.
 - ◆ Determine grade crossing and grade separation locations and estimate order-of-magnitude costs for upgrades or closures.
 - ◆ Ascertain connectivity with Class I freight lines near the corridor.
 - ◆ Prepare possible financing scenarios. Estimate operating revenues, capital costs, and operating and maintenance costs. Estimate annual operating shortfalls, and the appropriate subsidy, if necessary. Estimate insurance needs.
 - ◆ Prepare a start-up budget and schedule for initial implementation.
 - ◆ Outline administrative and training needs for start-up.
 - ◆ Develop an outline of possible operating scenarios including, but not limited to, a possible operating agreement with nearby Class I freight railroads and major shippers in the corridor.
 - ◆ Identify and describe the potential social, economic, and environmental impacts of freight rail in the corridor. (Typically a “fatal flaw” analysis only. If the project is determined to be feasible, detailed environmental impact analysis could be conducted at a later stage in the project development process.) Factors to be considered include: air quality; hydrology/water quality; soils and unique geological features; floodplains; hazardous waste; noise, vibration, light, and turbulence; wildlife habitat and vegetation; archaeological and historic sites; land use; governmental plans and policies; socio-economic factors; land use compatibility; neighborhood impacts and displacements; and economic development.
 - ◆ Prepare and present interim and final reports to the Steering Committee for concurrence.
 - ◆ Steering Committee presents final report and recommendations to TxDOT for further consideration in the project planning process.

Rail Research Studies

Various research projects that examine the role of railroads in the Texas transportation system have been completed, are underway, or have been proposed for future consideration. These studies have examined rail programs, policies, and plans in other states and offered suggestions for how TxDOT might develop its rail planning function. Other studies include the role of Texas rural rail districts and the impact of Mexican railroad privatization. These studies may be initiated through the department's research program, mandated by the legislature, or developed in cooperation with other agencies.

Example. An example is HB 2809, passed by the 76th Texas Legislature and signed into law by the governor, directed TxDOT (in cooperation with the Texas Department of Agriculture and Texas Railroad Commission) to conduct a study of the cost and benefits of grain transportation by truck and by railroad.