

# **NCHRP**

## **REPORT 594**

**NATIONAL  
COOPERATIVE  
HIGHWAY  
RESEARCH  
PROGRAM**

### **Guidebook for Integrating Freight into Transportation Planning and Project Selection Processes**

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*OF THE NATIONAL ACADEMIES*

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**Guidebook for Integrating Freight  
into Transportation Planning and  
Project Selection Processes**

**Cambridge Systematics, Inc.**  
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AND

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*Subject Areas*

Planning, Administration, and Environment • Operations and Safety • Freight Transportation • Marine Transportation

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Research sponsored by the American Association of State Highway and Transportation Officials  
in cooperation with the Federal Highway Administration

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**TRANSPORTATION RESEARCH BOARD**

WASHINGTON, D.C.

2007

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# FOREWORD

By **Kim Fisher**

Staff Officer

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Over the last decade, the incorporation of freight issues into the transportation planning activities of state departments of transportation and metropolitan planning organizations has received significant focus. Much of this focus has been on integrating freight into the planning portion of the project delivery process. Although most states and MPOs have successfully incorporated freight issues into long-range planning activities, fewer have fully integrated freight throughout the entire transportation planning, programming, and project development process. This Guidebook contains information on freight planning, but also significantly extends the transportation profession's knowledge of incorporating freight throughout the program development and implementation stages, from needs identification to project delivery. This Guidebook will be useful to both advanced and novice freight practitioners.

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Even with only moderate economic growth—about 3 percent a year—freight movements across all modes are expected to increase significantly.<sup>1</sup> Although this rate of growth is not extraordinary (it is about the same as we have seen in the last 20 years and roughly tracks growth in GDP), it does mean that freight movements may become a larger component of the traffic mix in many regions of the country. With ongoing growth in travel demand on virtually every system of transportation in the United States, transportation capacity is seriously inadequate. Congestion, reliability, safety, and system preservation will be major problems for the foreseeable future, despite improved operational efficiencies.

Federal surface transportation acts emphasize the need for state and metropolitan multi-modal and intermodal transportation planning and programming activities to include freight along with passenger transportation. The traditional planning and project selection processes have not adequately accounted for freight movement and freight needs. Some states and metropolitan areas have made significant progress in integrating freight considerations into their planning processes and in developing solutions to facilitate freight movements. Others need more guidance on how to better incorporate the needs of freight into their planning and project selection processes. Improvements are needed in procedures, methods, processes, and cooperative mechanisms for freight planning and programming at both the state and MPO levels.

The objective of this project was to develop a framework for incorporating freight needs for all modes into transportation planning and priority programming by state, regional, metropolitan, local, and special transportation agencies. Beginning with 23 case studies,

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<sup>1</sup>FHWA Freight Analysis Framework (FAF2)

Cambridge Systematics, with Prime Focus, and Kevin Heanue, identified practices, processes, and procedures to guide freight planning and programming. The resulting Guidebook begins with a general description of freight issues and then leads practitioners through each step in the process: starting with needs identification and ending with project development strategies. Examples from the case studies are used to illustrate each step in the process. The Guidebook covers technical issues, organizational suggestions, and communication requirements of freight planning and programming. A project final report (which describes the case studies and other resources used in the Guidebook) will be published as *NCHRP Web-Only Document 112*.

This Guidebook should be of significant use to freight planners, project programmers, transportation agency leadership, and other freight stakeholders. These transportation professionals strive to accommodate the increased freight demand on an already congested transportation system—this Guidebook will provide methods and tools to improve the integration of freight into the transportation planning and project selection process.

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# Introduction

## 1.1 Overview

Over the last decade, the incorporation of freight issues into the transportation planning activities of state departments of transportation (DOTs) and metropolitan planning organizations (MPOs) has received significant focus from federal transportation agencies and entities, business and industry leaders, and other key stakeholders. This enhanced focus on integrating freight issues within existing statewide and metropolitan transportation planning processes has been driven by several factors, including

- Federal surface transportation legislation, beginning with the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, which first emphasized freight as a factor to consider in the transportation planning process. The importance of incorporating freight issues within metropolitan and statewide planning efforts was further emphasized in the Transportation Equity Act of the 21st Century (TEA-21) and again most recently with the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).
- Recognition by business and community leaders that efficient freight transportation is a key factor in statewide and metropolitan economic competitiveness and vitality and an important consideration in business attraction and retention decisions.
- Continued globalization and an increasing reliance on international trade, which has heightened the importance of a safe, reliable, and secure transportation system and placed increased pressure on already strained infrastructure.
- Acknowledgment from private industry that public investments will be considered—and in many cases required—to meet increasing freight demands.

In response to these and other influences, federal, state, and local transportation planning agencies have begun to focus attention and resources on developing and refining freight planning programs and on more effectively incorporating freight into existing transportation planning activities. Federal agencies and other entities, including the Federal Highway Administration (FHWA), the Transportation Research Board (TRB), the National Cooperative Highway Research Program (NCHRP), and the American Association of State Highway and Transportation Officials (AASHTO) have designed, developed, and delivered a range of resources designed to help freight planning practitioners and transportation decisionmakers better understand the issues and trends affecting freight movements; how those trends affect statewide and local transportation systems and economic development efforts; and how freight interests can be better integrated into existing transportation planning programs. Programs such as the “Talking Freight” Seminar Series, National Highway Institute (NHI) training courses, the FHWA Freight Professional Development Program, and other efforts have helped advance the level of freight knowledge among state DOT and MPO

technical staff and provide them with the resources to better incorporate freight issues in the planning process.

Many states and MPOs have taken advantage of these resources and have begun to conduct successful planning activities and incorporate freight into traditional transportation planning programs and processes, particularly long-range plans. Many MPOs have embraced freight planning by looking at local freight flow patterns and trends and reaching out to the freight community for advice and guidance on developing freight transportation improvements. Incorporation of freight issues into state DOT long-range plans also is common, as many states have begun to build statewide pictures of freight movement and link freight policy and transportation investments more closely to state economic development goals.

But while the inclusion of freight in long-range planning activities has helped raise the profile of freight and emphasize the importance of incorporating freight in statewide and metropolitan transportation planning programs, many state DOTs and MPOs still find it difficult to program, develop, and implement projects that benefit freight movements. A recent survey conducted with small- and medium-sized MPOs showed that while 90 percent of MPO respondents included freight issues in their long-range plan, very few actually reported having a specific process in place to evaluate freight projects for inclusion in their Transportation Improvement Program (TIP).<sup>1</sup> Although some states and MPOs have been successful at developing and implementing freight-specific investment programs, many are simply stand-alone initiatives that have not been fully integrated into traditional transportation programs.

The inability of many agencies to fully integrate freight in existing planning and programming processes makes it difficult for freight issues to receive equal consideration in the establishment of priorities and the programming of funds. And while several resources are available to states and MPOs to help them incorporate freight issues into their planning activities generally, there is little specific guidance to assist states and MPOs in effectively translating the general discussions of freight in long-range plans or stand-alone freight studies into actual freight programs and projects that can be programmed, developed, and implemented. Providing guidance on programming, developing, and implementing freight improvement projects within the traditional transportation planning process allows freight issues to become mainstreamed within that process, thereby allowing states and MPOs to address transportation needs more comprehensively.

## 1.2 Purpose

This Freight Planning and Programming Guidebook has been developed to provide states and MPOs with techniques to more fully incorporate freight throughout the entire transportation planning and programming process and more effectively plan, develop, program, and implement freight improvement projects. This Guidebook enhances and complements much of the work already sponsored by NCHRP, FHWA, and others. As part of the Guidebook development, best practices have been identified and used to provide specific examples of key activities required to identify, program, develop, and implement freight improvement projects. This Guidebook is one element in a broad approach to assist states and MPOs in integrating freight into transportation planning and programming processes. It also functions as a gateway to available freight data and resources and is designed to be used in conjunction with existing freight planning resources previously developed by FHWA, NCHRP, and others.

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<sup>1</sup> NCHRP Project 8-47, *Guidebook for Freight Policy, Planning, and Programming in Small- and Mid-Sized Metropolitan Areas, Interim Report*, TRB, October 2005.

### 1.3 Approach

The approach used to develop this Guidebook focused on several fundamental characteristics. Focusing on these characteristics (described below) helped to ensure that this Guidebook is a practical resource for state DOT and MPO freight planning practitioners.

- **Integrate freight issues into established planning and programming processes.** State DOT and MPO planning staff work within established processes designed to identify, prioritize, and program public investments in the transportation system. Integrating freight issues within these existing processes is the only way to ensure that freight issues can be routinely considered during the setting of statewide or regional<sup>2</sup> priorities and the programming of funds.
- **Build on and support the existing body of freight planning guidance.** A significant amount of work has been completed over the last decade to better quantify and integrate freight concerns into public-sector transportation planning programs. Much of this work has focused on addressing freight within transportation policy and planning activities and has often provided guidance on how to undertake freight-specific planning activities. In addition, FHWA, NCHRP, and others have sponsored the development of freight data resources, freight training courses and workshops, guidebooks, and best practices to strengthen the incorporation of freight issues within the statewide and metropolitan transportation planning process. This Guidebook complements and builds on these resources, focusing in more depth on how to effectively integrate freight issues throughout the entire transportation planning and programming process.
- **Provide flexibility.** Every state DOT and MPO has a unique set of freight needs and issues. Although a core set of standardized guidelines should be incorporated by all states and MPOs to more effectively address freight issues, this Guidebook was developed to be flexible enough to allow users to pick and choose activities to meet their specific freight planning needs, experience levels, and available budgets.
- **Effectively use “best practices.”** Whether starting a freight planning program from scratch, enhancing an existing freight planning program, or looking for guidance on how to conduct a specific freight planning activity, state DOT and MPO freight planning practitioners can benefit tremendously from understanding lessons learned and critical success factors from other agencies that already have undertaken such activities. Case study examples or best practices are effective ways to demonstrate how freight planning and programming concepts are being used in the field and are provided, where appropriate, within this Guidebook.
- **Provide dynamic guidelines.** Freight planning and programming is a new and dynamic activity for many states and MPOs. Political and legislative agendas, combined with industry participation, technical leadership, and new and improved “best practices” all feed a program that changes and grows over time. This Guidebook was developed to provide guidelines that can grow and evolve with the freight planning community as mainstreaming of freight continues to become more widespread.

Use of this Guidebook will enable users to more fully integrate freight into existing statewide and metropolitan transportation planning programs, allowing them to more effectively plan for and invest in the transportation system in a way that meets the needs of all stakeholders.

### 1.4 Organization

The Guidebook is organized as follows:

- **Section 2, Basic Principles and General Guidance,** discusses the major elements of the transportation planning process, describes the development of a framework for incorporating

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<sup>2</sup> The term “regional” throughout this Guidebook refers to an MPO region.

freight issues into that process, and highlights the seven key elements of freight planning and programming integration.

- **Section 3, Getting Started**, takes Guidebook users through a “self-assessment” of how well their organization has incorporated the seven key elements of freight planning and programming integration.
- **Section 4, Techniques for Integrating Freight within the Transportation Planning and Programming Process**, provides a mix of strategies that can help the practitioner more effectively integrate freight into transportation planning and programming processes.
- **Section 5, Freight Resource Tool Box**, identifies key freight data, training, and other resources available to state DOT and MPO staff to support freight planning and programming activities. This section also includes “best practice” case studies of state DOT and MPO freight planning and programming activities.

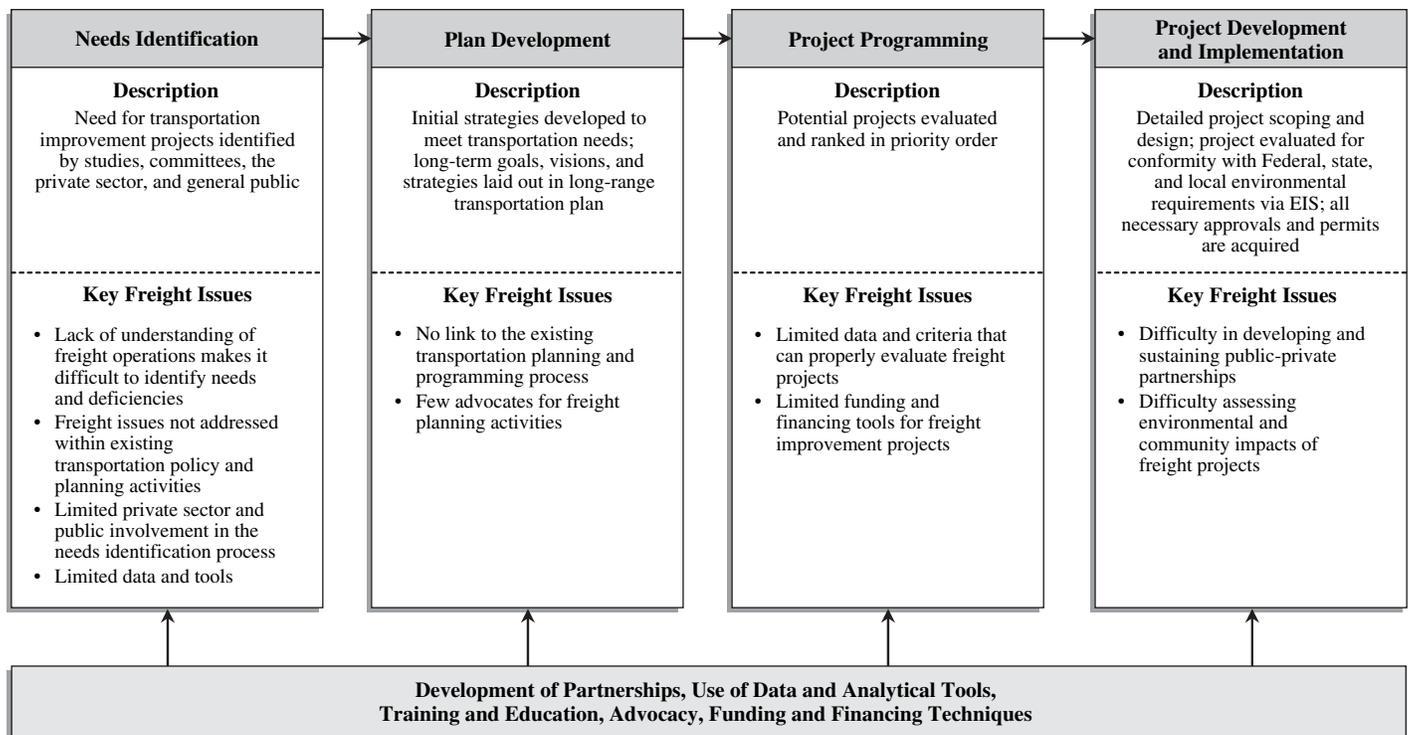
# Basic Principles and General Guidance

## 2.1 Framework for Mainstreaming Freight Issues in the Transportation Planning and Programming Process

Although the specific planning and programming process used by states and MPOs can vary slightly, it normally consists of four major elements: needs identification, plan development, project programming, and project development and implementation. The activities that occur in these four elements are supported by a number of functions, including input from key stakeholders, to discuss issues and build consensus for solutions; data and analytical tools, to identify needs and assess effects; and funding and financing techniques, to equitably allocate available resources. This process, along with its supporting functions, has proven effective in helping states and MPOs identify transportation needs, develop long-range mobility strategies, and target transportation investments.

However, many potential freight improvement projects have a difficult time entering, navigating, and surviving this process. Even in states and MPOs where freight is addressed within long-range planning documents, specific freight issues are not often integrated within other elements of the transportation planning and programming process. As a result, freight issues are not often translated into actual improvement projects that can be programmed, developed, and implemented. Lack of freight-specific data and tools, limited outreach to the private-sector freight industry, and institutional resistance to planning and implementing freight-specific solutions also make it difficult for freight improvement projects to be included in discussions of statewide or regional transportation priorities or to effectively compete for funds and planning resources. The following section describes the typical transportation planning process, along with some of these key issues that hinder the ability of states and MPOs to fully incorporate freight into the process (see Figure 2-1).

- **Needs Identification.** In this phase, a region's transportation needs and deficiencies are identified and described. Once these needs are identified, initial strategies for dealing with those needs can be fleshed out and potential freight improvement projects can enter the transportation planning process. Needs identification often occurs in conjunction with a long-range plan update.
- **Plan Development.** The plan development phase occurs after the transportation needs of an area are identified. The plan development process lays the groundwork for how a state or MPO incorporates freight interests and issues into its planning program. At the conclusion of the plan development stage, the area's transportation vision and goals are described in a long-range transportation plan.
- **Project Programming.** The project programming phase occurs after long-range plan development and is the phase in which states and MPOs begin actually implementing transportation improvement projects through the development of TIPs.



**Figure 2-1. Key issues with incorporating freight within the transportation planning process.**

- **Project Development.** The project development stage of the transportation planning process includes a more detailed scoping and design of the potential project, along with a more formal assessment of the necessary permitting and approval activities.

To develop a successful, continuous freight planning program, freight issues must be integrated and brought into the mainstream of the transportation planning and programming process used by states and MPOs. Mainstreaming freight into each of the elements of the transportation planning and programming process can help ensure that potential freight projects are identified and receive equal consideration in the establishment of priorities and the allocation of funds. In addition, mainstreaming can help ensure that the process by which states and MPOs make transportation improvement decisions is responsive to the full array of transportation and mobility needs.

Subsequent sections of this Guidebook will guide readers through a “self-assessment” of how well an organization incorporates freight within the transportation planning and programming process (Section 3); describe specific tools and techniques to assist in more effectively integrating freight issues throughout that process (Section 4); and point to sources of freight-related data, training, and other resources (Section 5). First, however, it is important to understand the seven key elements of successful freight planning and programming, which are the hallmarks of those states and MPOs that have successfully mainstreamed freight issues in their transportation planning and programming processes. Understanding these key elements and thinking about how to employ this guidance within an organization can help readers to more effectively implement some of the tools, techniques, and strategies described later in this Guidebook.

## 2.2 Seven Key Elements of Freight Planning and Programming Integration

Seven elements are critical to the successful integration of freight issues in the statewide and metropolitan transportation planning process:

1. Freight point-of-contact/technical lead;
2. Understanding the statewide or regional freight system;
3. Link between freight planning activities and the transportation planning and programming process;
4. Freight data needs assessment and collection;
5. Effective outreach;
6. Taking advantage of training and education opportunities; and
7. Advocacy.

These seven elements, identified from interviews with freight planning practitioners and identified best practices, are described in more detail below.

### **Key Element 1: Freight Point-of-Contact/Technical Lead**

A freight point-of-contact/technical lead is a key element of successful integration of freight issues in statewide or metropolitan transportation planning processes. This point-of-contact often acts as the liaison between various transportation initiatives and between the MPO/DOT and other agencies and stakeholders, ensuring that freight issues are addressed within multiple transportation planning and programming activities.

DOTs and MPOs have taken different approaches to designating freight points-of-contact. In some cases, the freight point-of-contact is dedicated full time to address freight issues. This is often the case in states and MPOs that have readily observable freight deficiencies or in areas where freight is a recognized component of the statewide or regional transportation and industry mix. Many of the states and MPOs that fall into this category are located close to major freight gateways or along key highway or rail corridors or are affected by the local air quality and congestion impacts of national and international freight movements. In other areas, particularly those not near major freight facilities or with limited resources to devote to freight planning and programming activities, freight is one of many “hats” worn by the freight point-of-contact. Regardless, the formal designation of a freight point-of-contact allows that person to spend at least part of his or her time understanding freight issues, taking advantage of freight training opportunities, and talking to the private-sector freight industry.

A freight point-of-contact is critically important when dealing with the private sector, because that person often can become the “face” of the DOT or MPO. In addition, designation of a point-of-contact helps to demonstrate a commitment to freight planning in an organization and allows the DOT/MPO to build and sustain relationships with key members of the private-sector freight community. These relationships are critical during the needs identification phase of the transportation planning process, because significant private-sector outreach is typically required to fully identify and understand freight needs. Finally, a designated freight point-of-contact understands the MPO or DOT transportation planning process and can facilitate moving potential freight projects forward within the planning and programming pipeline.

#### **Freight Points-of-Contact**

States and MPOs take different approaches to designating a freight point-of-contact. Maine DOT’s Office of Freight Transportation (OFT) consists of several staff responsible for freight issues. The Delaware Valley Regional Planning Commission (DVRPC) includes a full-time goods movement staff person. Other states and MPOs, including Vermont, have designated freight leads within their planning or policy divisions. In many cases, freight is one of many responsibilities of these staff

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members. The identification of freight points-of-contact in these agencies, however, has made it easier for them to identify freight needs and deficiencies, interact with the private-sector freight and business community, and develop and implement freight improvement projects.

## **Key Element 2: Understanding the Statewide or Regional Freight System**

States and MPOs that have successfully mainstreamed freight within the transportation planning and programming processes typically have a solid understanding of their freight system and how inefficiencies on that system affect statewide or regional mobility, economic competitiveness, and quality of life. Understanding the freight system allows these DOTs and MPOs to more successfully identify and consider freight improvement projects within the transportation planning and programming process, because they have a better understanding of how freight movements fit within (and affect) the statewide or regional system. States and MPOs have taken various approaches to understand how freight movements affect their systems. Some develop freight profiles or conduct freight studies, others identify key freight hotspots, and some simply talk to the private-sector freight community to better understand its needs.

No matter how the understanding of the freight system is developed, it is important to identify the key elements of the statewide or regional freight transportation and how they relate to one another. These key elements include economic structure (i.e., the type and number of businesses and households and their location), trade and industry logistics patterns, freight transportation infrastructure (i.e., highways, rail lines, airports, and intermodal connectors), commodity and vehicle traffic flows, and organization and public policy (i.e., the degree to which freight issues are addressed in transportation planning and investment activities). Because freight flow patterns (and their associated effects) often cross jurisdictional boundaries, practitioners should look beyond their states or MPO regions to identify and describe the key freight elements in neighboring regions that might affect their own systems. Specific guidance for understanding the statewide or regional freight system is described in Section 4.

### **Toledo Metropolitan Area Council of Governments (TMACOG)**

Many states and MPOs have developed stand-alone freight plans, studies, or profiles to develop a “snapshot” of freight issues in their regions. However, TMACOG has developed a continuing process that allows it to identify freight transportation issues of the region and provide that input to their Freight Committee through freight transportation listening sessions. These sessions, which focus on identifying freight-specific issues, are programmed annually into the MPO’s work program. The MPO uses these sessions to develop a more comprehensive understanding of the freight system and the issues that affect it. In fact, these sessions have yielded several improvement projects, including the rehabilitation of an access road to a major chemical manufacturer, that have been included in the TMACOG TIP.

## **Key Element 3: Link Between Freight Planning Activities and the Transportation Planning and Programming Process**

As discussed earlier, successful, continuous freight planning programs are most often those in which freight issues have been mainstreamed into the traditional transportation planning and

programming process. While many states and MPOs have undertaken freight-specific studies—and many have even identified and deployed freight-specific projects—few have done so within the traditional transportation planning and programming process. Instead, freight planning efforts often are undertaken in parallel with the existing transportation planning process or on an ad hoc basis. That is, the identification, prioritization, development, and implementation of freight improvement projects in many areas is separate from the process used to plan, develop, and implement more “traditional” highway, transit, pedestrian, and bicycle projects. As a result, freight often is not viewed as a normal component of a state or MPO transportation planning program, making it more difficult for potential freight improvement projects to be included in discussions of statewide or regional transportation priorities or to compete for funds and planning resources.

Those states and MPOs that have developed successful freight planning programs are often those that have developed specific, tangible links between freight planning activities and the traditional transportation planning and programming process. Some states and MPOs have developed implementation strategies for their long-range transportation plan to define the key actions, strategies, activities, or projects necessary in the short term to meet the freight-related goals and objectives defined for the long term. Others have defined specific freight projects within their long-range planning documents as a way to keep freight issues in the mainstream and show how freight improvements support overall mobility, safety, and efficiency goals. Still others have identified key freight corridors and facilities that contribute most to statewide or regional economic competitiveness, mobility, or quality of life, helping emphasize freight’s importance to regional economies and regional mobility and encourage its active consideration throughout the planning and programming process. Section 4 includes guidance for effectively linking freight planning activities with “traditional” transportation planning and programming processes.

### **East-West Gateway Coordinating Council (EWGCC)**

To more effectively link freight planning activities with existing transportation planning and programming processes, the EWGCC (MPO for the St. Louis area) developed a framework to describe how freight planning activities fit within existing transportation planning activities, particularly the development of long- and short-range plans and the development of the TIP. This has helped raise the profile of freight issues throughout the planning and programming pipeline, making it more likely for freight transportation projects to receive equal consideration during the regional prioritization and funds allocation process.

### **Delaware Valley Regional Planning Commission**

DVRPC’s Goods Movement Task Force helps identify port and rail freight needs that staff can then integrate in the long-range plan update activities. For the DVRPC 2030 Transportation Plan, 42 projects were identified as critical for the region’s freight system. The Goods Movement Task Force plays two important roles in this process. First, it helps identify and justify freight improvement projects for inclusion in the TIP during the project evaluation process; and second, it lets the larger freight community know that there are freight projects in the TIP. This second item is critical, because it can help the private-sector freight industry better understand the role of the MPO as well as encourage the private sector to continue to participate in the planning and programming process.

## Key Element 4: Freight Data Needs Assessment and Collection

Many states and MPOs are frustrated with the adequacy of freight-related data: publicly available data are often not provided at a sufficient level of detail to support statewide or metropolitan freight planning; and privately maintained freight databases are often costly to acquire and difficult to analyze and also provide limited detail at the local level. That the private-sector freight industry is often hesitant to share their data, particularly when it is unclear how it will be used by public agencies, compounds the challenge.

However, good freight planning and programming often starts with good freight data and it is important to collect and analyze freight-related data in support of the identification of needs and deficiencies. Before undertaking data collection activities, states and MPOs should assess their freight data needs. Some states and MPOs may find that existing data from federal sources (e.g., Commodity Flow Survey, STB Carload Waybill Sample, and Army Corps of Engineers Ports and Waterways data); or state sources (e.g., truck counts, land use data, and agricultural shipment data) are sufficient to meet their needs. Others may determine that a more detailed data collection program is required.

A critical first step for all states and MPOs in developing a data collection program is to identify their data needs and match those needs against available data to identify data gaps and potential data collection opportunities to guide future freight planning activities. Once data needs are understood, an ongoing data collection program should be developed. Data collection activities take many forms. Some states and MPOs collect and synthesize data from public sources and supplement it with data taken from surveys or interviews with private-sector freight stakeholders. Others routinely purchase commodity, vehicle flow, or econometric data from private sources. Still others use origin/destination intercept surveys, mail-out surveys, or truck trip diaries. No matter the type of data used to support the identification of needs and deficiencies, a routine freight data collection program should be based on the available data as well as new opportunities identified through a data needs analysis. Section 5 provides a list of publicly available data and analytical tools available to support freight planning activities as well as sample interview guides to collect information directly from shippers, carriers, and other freight stakeholders.

### Oregon DOT

The Oregon DOT (ODOT) developed a statewide commodity flow database to support its freight planning activities. The database was built from TRANSEARCH, a privately maintained commodity flow database. The data were purchased for a 1997 base year in order to be consistent with existing Commodity Flow Survey (CFS) data. The TRANSEARCH data were “checked” against other sources, such as the CFS, the U.S. Census of Manufactures, and the U.S. Census of Wholesale Trade, to ensure the accuracy of overall flow volumes. Finally, ODOT used local sources to supplement flows of nonmanufactured products (primarily agriculture, mining, and solid waste flows). These data came from state and county agriculture departments, state geology and mining data resources, county waste management agencies, and other sources. Local and statewide industry associations also were a valuable resource for obtaining production and consumption patterns and statistics that were used to establish control totals for different commodities at different levels of geographic detail. These data have proven useful to ODOT in developing an understanding of statewide freight demand and how that demand affects existing freight transportation infrastructure.

## Key Element 5: Effective Outreach

Effective public outreach strategies are critical to the success of all transportation planning and programming efforts and all states and MPOs have a process by which to collect and synthesize public input on proposed transportation improvements. However, outreach for freight planning is often different and more difficult than the kind of outreach many states and MPOs are used to, primarily because the stakeholders are different and more challenging to engage. Because most “traditional” outreach activities used by state DOTs and MPOs do not specifically target or reach the private-sector freight industry, representatives from the private-sector freight industry, the business community, economic development organizations, or other groups, often have not been fully involved in DOT or MPO activities. Some of these stakeholders do not fully understand the roles and responsibilities of DOTs or MPOs while others do not have the time or resources to commit themselves to a process they perceive to be overly long and bureaucratic. Those states and MPOs that have developed successful freight planning programs are often those that have developed and employ outreach strategies that meet the unique needs and characteristics of freight stakeholders, allowing DOT and MPO staff to more effectively identify freight needs and deficiencies and offer potential freight improvement projects, and allowing the private-sector freight industry to have meaningful input about the establishment of statewide or regional transportation priorities and the allocation of funds.

Outreach also is important among various public-sector agencies. Chamber of commerce organizations, economic development agencies, and other “partner” entities can often make important contributions to statewide or metropolitan freight planning activities. Many of these organizations have existing relationships with key members of the business/industry community and have a solid understanding of how freight transportation efficiency affects their ability to attract or retain industries. Engaging these organizations within the transportation planning and programming process is often critical to identifying freight-specific needs and deficiencies.

In addition, various activities occur once a freight improvement project moves into the project development and implementation stage, including more detailed scoping and design, a more formal assessment of potential environmental impacts, activities associated with the acquisition of required permits and approvals, and the conduct of public meetings/hearings. Given the number of agencies that can become involved in these processes, coordinating the activities during the project development and implementation process is a challenge often faced by state DOTs and MPOs. States and MPOs coordinating these activities should first identify the agencies and entities involved and then identify a primary and a secondary point-of-contact for project-related matters. This can help ensure close coordination and regular exchange of information that can facilitate the design, environmental studies and compliance, and permitting activities associated with the project.

### Florida DOT Strategic Intermodal System (SIS)

As part of its Strategic Intermodal System (SIS) designation and implementation, the Florida DOT engaged its partners, including other public-sector agencies, local and regional governments, interest groups, and key freight stakeholders from the earliest stages of the process. Through monthly meetings, this group helped develop guiding principles and strategies to help ensure that the resulting SIS designation and implementation met the needs of the DOT as well as its key customers.

### Michiana Area Council of Governments

The Michiana COG conducted outreach on a much smaller scale as part of its recent freight study. A steering committee of major regional warehouse, motor

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carriers, county representatives, the regional airport authority, the Indiana DOT District office; and the Chicago South Shore Railroad was assembled. This group met in person only once. The rest of the MPO's interaction with the group was via teleconference and e-mail (to review documents, and data). The MPO believes that this was a key component in the group's ability to stay together. Participation was not a "time-drain" and led to continued interaction and constructive and well thought-out comments on work products. The MPO now considers this group as a "Freight Advisory Committee" and plans to hold annual meetings.

### **Key Element 6: Taking Advantage of Training and Education Opportunities**

Some DOT and MPO staff are hesitant to fully undertake freight planning and programming activities because they may not have the appropriate training and expertise in freight planning and freight issues. However in recent years, freight training and education has become a significant focus area for MPOs and state DOTs as these staff continue to expand and develop their freight transportation programs. Those DOTs and MPOs with successful freight planning programs are often those that take advantage of the full array of formal and informal training and education opportunities offered by FHWA and others.

There are many opportunities for states and MPOs to learn about freight transportation; its effects on local transportation systems; and how other agencies have identified and addressed freight issues. In addition to the formal freight planning and modeling courses available from the National Highway Institute (NHI), several programs are available from FHWA to assist states and MPOs in incorporating freight in their planning programs. These include the FHWA's Freight Peer to Peer program; the FHWA "Talking Freight" seminar series; and technical assistance available from the FHWA Resource Center. Guidebooks and other freight planning resources are available from NCHRP, TRB, and others. Finally, there are many industry publications and events that state and MPO staff can take advantage of to learn about industry trends and how they may affect local transportation systems. Section 5 provides a list of available freight training and education opportunities as well as links to other transportation planning guidebooks.

#### **FHWA Freight Professional Development (FPD) Program**

FHWA's Freight Professional Development (FPD) Program assists DOTs and MPOs in developing the skills and knowledge needed to meet the challenge of growing freight flows on the nation's transportation system. The goal of the FPD Program is to integrate freight infrastructure and operational improvements in the transportation development process to improve mobility, economic growth, and global connectivity. The FPD Program consists of four different elements:

1. **Training**—The FPD Program develops and delivers short courses, seminars, and workshops on a broad range of freight topics;
2. **Education**—The FPD Program works with the academic community to promote needed changes in transportation planning and logistics degree programs critical to ensuring the future availability of appropriately trained freight professionals;

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3. **Technical Assistance**—The FPD Program provides assistance to States and MPOs engaged in transportation and freight planning. The ongoing “Talking Freight” Seminar Series offers a no-cost way for freight transportation professionals to broaden their knowledge and develop new skills.
4. **Resource Library**—The FPD Program offers a web-based one-stop shop for current information and state-of-the-art practices pertaining to freight.

## Key Element 7: Advocacy

In many DOTs and MPOs, there remains some institutional resistance to spend time and resources on conducting freight planning activities and/or implementing freight improvement projects. One of the keys to mainstreaming freight throughout the transportation planning and programming process is to build advocacy for freight planning activities among key regional decisionmakers, including DOT/MPO management, industry and business leaders, local citizens, and statewide or local elected officials. This is similar to what was done over the last few decades to integrate bicycle and pedestrian programs. Though there are exceptions, many advocates for freight planning and programming activities are made, not born. DOTs and MPOs that have developed successful freight programs have often developed advocates for freight planning activities within and outside their organizations by linking freight improvements to broader mobility and economic development goals and helping key decisionmakers better understand how freight improvements can benefit overall safety, mobility, and economic competitiveness in an area.

Building advocacy among key transportation decisionmakers—more so than project evaluation criteria/guidance, innovative funding/financing techniques, and prioritization processes—is critical to moving freight-specific projects forward. If key decisionmakers understand the potential public benefits of a project and buy-in to those benefits, it will be easier moving from planning to programming to implementation. In addition, being able to effectively describe benefits and how they would accrue to different groups can help open the door to discussing how costs could be shared.

### Reno Transportation Rail Access Corridor (ReTRAC)

ReTRAC is a below-grade railroad transportation corridor through downtown Reno, Nevada. One of the keys to the successful implementation of the ReTRAC project was the identification of the key regional stakeholders and the ability of the City of Reno to describe potential benefits of the project to those stakeholders. A wide array of stakeholders, including the Union Pacific railroad (UP), downtown businesses, and city residents all stood to benefit from this project, although in different areas (e.g., congestion, air quality, economic growth). The ability of the City of Reno to understand the types of benefits that the different stakeholders were interested in allowed city staff to engage and build advocacy among many different groups: citizens/legislators, businesses/industry, and the private-sector freight transportation industry. By understanding the players involved and their interests, the City was better able to describe how the ReTRAC project benefits could accrue to each of these individual stakeholders.



## SECTION 3

# Getting Started

### 3.1 Introduction

The previous section described the seven key elements of freight planning and programming:

1. Freight point-of-contact/technical lead;
2. Understanding the statewide or regional freight system;
3. Link to the transportation planning and programming process;
4. Freight data needs assessment and collection;
5. Effective outreach;
6. Taking advantage of training and education opportunities; and
7. Advocacy.

This section walks you through a “self-assessment” of how well your organization has incorporated these seven elements within your own transportation planning and programming process. The purpose of the freight planning and programming self-assessment is twofold. First, it will help you understand the degree to which freight issues are addressed within your existing planning and programming process, allowing you to pinpoint key focus areas to focus on in Section 4. Additionally, it provides an opportunity to engage a wide range of stakeholders within your organization to help build advocacy for freight planning.

The results of the self-assessment should be used to identify specific activities, tools, or techniques to focus on in Section 4. Depending on the results of the self-assessment, you may want to become familiar with all of Section 4 (from the Needs Identification phase to the Project Development/Implementation phase) to help you understand how freight can be integrated throughout the entire transportation planning and programming process; or, if your organization has a more developed freight planning program, you may wish to pick and choose the individual modules within Section 4 that meet your needs and allow you to enhance your existing programs.

Before getting started, you should complete the following preliminary tasks:

1. Collect and review information describing your transportation planning program and freight planning activities;
2. Identify and assemble key staff; and
3. Develop a process/schedule for regularly updating the freight planning and programming self-assessment.

The following describes each of these tasks in more detail.

## 1. Collect and review information describing your transportation planning program and freight planning activities

The first step in the freight planning and programming self-assessment is to gather and review all information and documentation that describe your organization's planning process, long-range plans and policies, and short- and long-range TIPs. Key documents to gather include

- **Long-range planning and policy documents**, such as long-range transportation plans, strategic plans, statewide or metropolitan transportation policy statements, or similar documents;
- **Transportation improvement programs**, i.e., your most recent TIP or STIP;
- **Planning and corridor studies**, including freight plans or studies or profiles, corridor studies, or similar efforts;
- **Freight-specific plans or studies**, including statewide or regional freight plans, freight/industry profiles, commodity flow analyses, or other efforts;
- **Environmental impact statements or major investment studies** that may have included a freight analysis component; and
- **Descriptions of your planning process**, such as flow charts, planning rules or regulations, or other documents that describe or guide transportation planning in your state or region.

### Key Points to Remember

- **Transportation planning or freight-related information may be available from other agencies or entities.** Other agencies or entities often conduct freight-related studies that could be useful to a DOT or MPO. Chambers of commerce and economic development agencies, for instance, often conduct freight-related studies.
- **Do not forget your partner agencies and divisions.** MPOs may have conducted freight planning activities that could be useful to DOTs and vice versa. In addition, DOT districts or other divisions may have conducted their own planning studies that could be useful to you.
- **Universities are often good resources for freight-related information.** Many colleges and universities conduct freight, logistics, and supply chain research and publish their results.

## 2. Identify and assemble key staff

Working through this self-assessment and Guidebook is something that can be done in isolation; however, expertise and responsibility for freight planning activities often rests with multiple divisions or groups within a DOT or MPO. Furthermore, in many organizations, different divisions and/or staff are responsible for different elements of the transportation planning and programming process. To truly integrate freight issues throughout this process, the appropriate freight, planning, program development, and other staff must be engaged early in this process.

Assembling key staff and working collaboratively through the freight planning and programming self-assessment can help build advocacy for integrating freight issues throughout the transportation planning and programming process. In fact, engaging this group of stakeholders, in and of itself, can improve freight planning within a DOT or MPO, as it can open the lines of communication among different divisions and staff members, help develop advocacy for freight planning across the organization, and highlight process improvements that can improve the integration of freight and other issues.

### Key Points to Remember

- **Freight Advisory Committees should be engaged in the process.** If your organization has a freight advisory committee or other such group, the group should be active participants in the freight planning and programming self-assessment. Engaging these kinds of groups can have two key benefits. First, the private-sector freight community can provide critical insight into how the existing transportation planning process addresses or falls short of their needs, helping DOT or MPO staff to pinpoint areas of improvement. Second, it helps the private-sector freight community understand the process by which public-sector investments are made, helping them work more effectively within that process.
- **Existing technical advisory committees and policy boards also should be engaged in the process.** In many instances, there will be no freight advisory committee to engage in the process. In other cases, the freight advisory committee may be informal (without direct reporting authority) or exist as a subcommittee. In such instances, you should engage the technical advisory committee, policy committee, or other existing committees to educate and build support for integrating freight within the planning and programming process.
- **Do not forget partner agencies and other groups.** FHWA Division Offices typically have staff that support freight initiatives and MPO technical advisory committees and policy boards may include members with industry, freight, or business backgrounds. These individuals can and should contribute to the freight planning and programming self-assessment process.

### 3. Develop a process/schedule for regularly updating the freight planning and programming self-assessment

The freight planning and programming self-assessment should be undertaken on a regular basis to ensure that freight issues are becoming integrated within the transportation planning and programming process and to ensure that the process evolves in response to the changing statewide or metropolitan freight needs. Working with the group of key stakeholders identified above, you should determine how and when the freight planning and programming self-assessment will be updated. You may wish to update the freight planning and programming self-assessment in conjunction with your long-range plan or TIP updates. If you have a freight advisory committee or similar group, you may wish to engage them in a freight planning and programming self-assessment update on an annual or biennial basis.

### Key Points to Remember

- **Success in freight planning and programming is not necessarily related to the number of freight projects being constructed.** A successful freight planning program is not always the one that implements the greatest number of freight improvement projects. Success also can be evaluated by how many freight-specific needs are identified; how many private-sector freight representatives participate in the planning process; or how well freight policy statements, strategies, and performance measures line up with overall mobility, safety, security, and reliability goals. It is important to define what constitutes freight

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planning success in your own organization. By some standards, the true measure of success is “getting to the table and being fed” the same as all other program elements. If freight can become integrated and provided the same planning, programming, and funding opportunities as nonfreight projects, the program can be considered a success.

### 3.2 The Freight Planning and Programming Self-Assessment

The freight self-assessment is designed to help you

- **Know Your Organization**, by helping you identify and understand the types of freight planning activities you already have undertaken or are undertaking; determine available staff resources for freight planning in terms of time, interest, and expertise; and evaluate the level of support provided by your leadership regarding freight transportation.
- **Know Your Process**, by helping you understand how freight issues currently are incorporated in your transportation planning and programming activities and pinpointing how your existing process facilitates or hinders effective freight planning.
- **Know Your Freight Stakeholders**, both internal and external and from both the public and private sectors. Understanding these freight stakeholders and their perspectives can help facilitate freight planning efforts as well as groom potential advocates for freight planning activities.

Tables 3-1 through 3-3 provide a series of questions to guide you through these three components of the self-assessment.

**Table 3-1. Freight self-assessment—your organization.**

- What divisions within our agency are involved in freight planning? What are their roles and responsibilities?
- How often do these divisions communicate or coordinate their activities? Are there established committees that meet regularly?
- Do we have a freight point-of-contact/technical lead? If so, who is it? If not, who within the organization has the authority to appoint one? How would he/she relate to multiple departments or divisions?
- What other freight planning efforts have you already conducted? What resources were used to support these efforts?
- What investments have you made in freight-related facilities in recent years? How significant and/or successful have they been? How were they funded?
- How closely do you work with your FHWA Division Office on freight issues? Your DOT? Your MPOs? Regional coalitions or other groups?
- What kind of freight-related data do you use or have access to?
- Are you an air quality nonattainment or maintenance area?
- What direction do you receive from your leadership regarding freight planning and programming? Are they supportive?

**Table 3-2. Freight self-assessment—your process.**

- How are transportation needs and deficiencies identified? Are they categorized? Is freight/goods movement a category?
- Who is eligible to submit project ideas? DOT/MPO staff? Private-sector freight community? General public?
- How does a project idea develop into a project that can be evaluated for inclusion in the TIP?
- Are freight issues included in your long-range transportation plan? In what sections? Are individual projects or strategies identified?
- How do you determine what projects to include in the TIP? Are there criteria? What are they? Do they address freight or economic impacts? Is there a TIP evaluation committee? Who's on it? Are there any freight or industry representatives?
- How many freight improvement projects are included in your most recent TIP?
- For MPOs: how much of a say does your Policy Board (or equivalent) have over what projects are included in the TIP? How often do they move projects on and off?
- When do your environmental staff or resource agency staff weigh in on potential projects and their effects?
- Have you had freight improvement projects that have stumbled during planning, programming, or project development? What happened and why?
- What is the attitude of your management toward conducting freight planning activities and investing in freight transportation improvements?
- What state-specific funding programs do you have access to? Are there any freight- or mode-specific funding sources?
- Do you have access to Congestion, Mitigation, and Air Quality (CMAQ) funds? How are CMAQ projects identified and funded?

**Table 3-3. Freight self-assessment—your stakeholders.**

- What other agencies are involved in regional/state transportation policy, planning, and programming activities? How well are your efforts coordinated?
- What are your key industries? Do they move a lot of freight? What are they moving? What mode of transportation do they use?
- Are there railroads, ports, or transportation authorities in the region/state? How are they involved in your transportation planning and programming process?
- What privately funded freight improvements are planned for your state/region? What is the schedule? How will these improvements affect traffic or economic development patterns?
- What is the attitude of the legislature toward conducting freight planning activities and investing in freight transportation improvements? Is freight recognized as an issue in the state/region?
- Has the private sector participated in policy, planning, or programming activities to date? How? Is there a formal freight advisory committee or other group? Is there a separate outreach process for the freight community?

There is no answer key for interpreting the results of the freight planning and programming self-assessment. Rather, answering the questions provided in Tables 3.1 through 3.3 should have given you a better understanding of what you know in regards to freight, how well freight issues are incorporated in your existing transportation planning and programming process, and how well you engage key freight stakeholders within and outside your organization. The freight planning and programming self-assessment should have given you a better sense of

- **How well you know your organization.** Were you aware of freight-specific initiatives? Were staff or other partners identified that have freight expertise? What freight resources were identified? Has your agency conducted any freight-specific elements? The answers to these questions will help you determine the level of freight expertise that exists within your agency, as well as the potential resources available.
- **How well you know your process.** How well do you understand how transportation projects move from an idea to an actual project that can be developed and implemented? How strong are the links among the various elements of the planning and programming process? Have you had success in navigating freight projects through this process? The answers to these questions will help you determine the strengths and weaknesses of your transportation planning and programming process as it relates to freight.
- **How you know your freight stakeholders.** Were you able to identify major carriers and shippers? Did you identify their key issues? Why they move goods the way they do? What effect they have on your region's economy and transportation system? The answers to these questions will help you identify data collection and outreach areas that need specific attention.

The results of the freight planning and programming self-assessment will allow you to determine whether your freight planning program is basic, intermediate, or advanced, as described in Table 3-4. This, in turn, will help you make better use of the Guidebook as well as identify other resources that may facilitate the enhancement and ongoing development of your freight program.

**Table 3-4. Freight planning program characteristics and how to use the guidebook.**

Freight Planning Program	Characteristics	How to Use This Guidebook
<p><b>Basic</b></p> <p><i>Freight system not well-understood; limited advocacy for incorporating freight issues within the transportation planning and programming process...</i></p>	<ul style="list-style-type: none"> <li>• Few or no freight-specific planning activities have been undertaken.</li> <li>• Little or no interaction with the private-sector freight community.</li> <li>• Limited knowledge of economic base, industry, or specific freight needs.</li> <li>• Freight mentioned in long-range plan, but no specific freight strategies identified; no freight projects in TIP.</li> </ul>	<ul style="list-style-type: none"> <li>• Read all of Section 4, paying attention to tools, techniques, and processes that you could apply in each stage of the transportation planning and programming process to better identify freight needs.</li> <li>• Pay particular attention to the freight training and outreach resources provided in Section 5.</li> <li>• Obtain and use other freight planning resources, particularly Best Practices in Statewide Freight Planning [NCHRP 8-36 (33)], and Guidebook for Freight Policy, Planning, and Programming in Small- and Medium-Sized MPOs (NCHRP 8-47).</li> </ul>

(continued on next page)

**Table 3-4. (Continued).**

Freight Planning Program	Characteristics	How to Use This Guidebook
<p><b>Intermediate</b></p> <p><i>Freight system needs have begun to receive some attention; however, they have not been fully integrated into the transportation program activities...</i></p>	<ul style="list-style-type: none"> <li>• Basic understanding of freight system and its statewide/ regional importance.</li> <li>• Some freight-specific planning activities have been conducted, but efforts are ad hoc and not coordinated with the “traditional” transportation planning and programming process.</li> <li>• Some interaction with private-sector stakeholders as part of a specific project or planning activity, but no consistent engagement with freight stakeholders.</li> <li>• Some staff time available to conduct freight planning activities, but requires self-direction and initiative.</li> </ul>	<ul style="list-style-type: none"> <li>• Use the freight planning and programming self-assessment to pinpoint specific areas of your planning and programming process in which freight issues are not fully considered. Focus on those areas in Section 4.</li> <li>• Pay particular attention to how states and MPOs have effectively linked the different elements of the transportation planning and programming process for freight, allowing them to translate freight needs, goals, and objectives into projects that can be planned, programmed, and implemented.</li> </ul>
<p><b>Advanced</b></p> <p><i>Freight planning activities actively and effectively incorporated within the transportation planning and programming process; freight needs part of the discussion when developing solutions, setting priorities...</i></p>	<ul style="list-style-type: none"> <li>• Good understanding of freight system and how issues on the system affect statewide or regional mobility.</li> <li>• Regular process to update freight planning activities.</li> <li>• Consistent, meaningful interaction with the private-sector freight industry.</li> <li>• Process to identify freight-related needs and incorporate them into the planning and programming process.</li> <li>• High-level advocates for freight planning within the organization; staff and resources available to address freight needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Use Section 4 to refine your existing approach to freight planning and get new ideas to improve your process.</li> <li>• Offer your expertise to others, such as neighboring MPOs or DOTs or participate in the Freight Peer-to-Peer exchange or other information-sharing programs.</li> </ul>

# Techniques for Integrating Freight within the Transportation Planning and Programming Process

## 4.1 Introduction

Although no single set of guidelines can meet the unique freight planning and programming needs of each state and MPO, several practices, processes, and procedures are hallmarks of comprehensive and continuous freight planning programs. This section provides a mix of strategies that can help effectively integrate freight into existing transportation planning and programming processes.

The activities described in this section are organized around the four individual phases of the transportation planning process (described in Section 2). Specific guidance is provided for 11 freight planning, programming, and project development activities, which correspond to one of the four planning process phases. These activities are listed below and described in detail later in this section.

- **Needs Identification Strategies**
  - Developing a Freight and Industry Profile
  - Engaging the Private Sector in the Needs Identification Process
  - Conducting a Hotspot or Bottleneck Analysis
- **Plan Development Strategies**
  - Identifying Corridors and Facilities of Statewide or Regional Significance
  - Developing Freight Performance Measures
  - Linking Freight and Land Use Planning
- **Programming Strategies**
  - Developing Freight-Specific Evaluation Criteria
  - Evaluating Economic and Other Public Benefits of Freight Improvement Projects
  - Using Alternative Funding and Financing Approaches
- **Project Development Strategies**
  - Addressing NEPA Requirements within Freight Projects
  - Incorporating Context-Sensitive Solutions (CSS) into Freight Projects

Each activity or technique is organized around five elements:

1. **Overview.** This section provides a brief description of the strategy and its importance.
2. **Key Steps.** This section describes specific steps necessary to accomplish the activity.
3. **Data Needs and Other Supporting Resources.** This section will refer you to the types of freight data needed to conduct the activity. In addition, other supporting resources, such as training opportunities or other guidebooks, will be listed. Specific details and availability of these data and supporting resources are described in Section 5 (Freight Resource Tool Box).
4. **Case Study Example.** The guidance provided in this section is supported with case study vignettes from actual practices of states and MPOs. These case study examples are effective

ways to demonstrate how freight planning and programming concepts are being used in the field. Fully developed best practice case studies are provided in Section 5 (Freight Resource Tool Box).

5. **Strategies to Link to the “Traditional” Process.** One of the keys to a successful, continuous freight planning program is to link it to the existing transportation planning and programming process. This section provides specific strategies to link the freight planning activity described with the “traditional” transportation planning, and programming process. Consistently employing these strategies will allow a traditional transportation planning and programming process to evolve into one that fully incorporates freight issues, allowing DOTs and MPOs to plan, program, and implement transportation improvements more comprehensively.

### Common Stumbling Points

Prior to describing specific guidelines, it is helpful to review the four common stumbling points that often affect the ability of states and MPOs to implement the strategies described in this section. Individually or collectively, these stumbling points can prevent freight from being fully implemented within the traditional transportation planning and programming process, making it difficult for freight projects to compete in the setting of statewide or regional priorities and in the allocation of transportation resources. These common stumbling points are described below:

- **Limited Freight Data.** Obtaining and analyzing freight-related data often presents a stumbling point for freight planning and programming. Publicly available datasets, when used in isolation, often do not provide sufficient detail to conduct meaningful freight planning activities at the state or metropolitan levels; privately maintained freight databases are often costly to acquire and analyze. Unlike other transportation program elements, freight-related data often have not been fully integrated into ongoing data collection programs. Limited data can make it difficult for states and MPOs to fully understand freight trends and issues as well as the potential costs and benefits of freight improvement projects. In addition, although some agencies collect truck counts or conduct freight surveys, combining these sources to support transportation planning activities effectively can be challenging.
- **Limited Private-Sector Participation.** Establishing and maintaining relationships with the private sector, while critical to the success of a statewide or metropolitan freight planning program, can be difficult. Many elements make up the “private-sector freight industry,” including shippers/receivers, carriers, logistics providers, and others, and it can be challenging to effectively engage this diverse group. The private sector plans over a much shorter time horizon than the public sector and can quickly grow impatient with the public process. In addition, the private sector may be concerned about potential release of proprietary information if it participates in public processes.
- **Limited Freight Expertise within an Organization.** While most state and metropolitan transportation planners hold advanced degrees in transportation or planning, few have formal training in freight planning, and few transportation decisionmakers fully appreciate the complexity of national and international freight movements and their associated statewide or local effects. This is compounded by an agile private-sector freight community that reacts and responds to market and logistics trends and innovations quickly. The limited freight expertise that exists within many transportation planning organizations can make it difficult to engage the private-sector freight community, identify freight needs and deficiencies, and plan and implement solutions.
- **Limited Institutional Support for Freight Planning.** In some DOTs and MPOs, there remains some institutional resistance to spend time and resources on conducting freight planning activities and/or implementing freight improvement projects. There are very few

examples of funding resources that are expressly dedicated to conducting freight planning activities. Rather, freight-related activities must fit within existing programs and responsibilities. Because this often involves the reallocation of existing staff and funding resources, building support among key transportation decisionmakers is critical to moving freight-specific projects forward. Limited funding resources are also a stumbling point to private-sector participation: it can be difficult to keep the private-sector freight community engaged if funds to implement improvement projects do not exist.

To better understand how these common stumbling points affect the freight planning and programming activities described below, a summary table is provided at the beginning of each section. This table provides a brief snapshot of the relative importance of data, private-sector involvement, freight expertise, and institutional support to the development and implementation of the strategy described. This information, combined with the results of the freight planning and programming self-assessment included in Section 3, will allow you to select the mix of freight planning and programming strategies that best meets your needs. Data, training opportunities, and other resources to address these common stumbling points are provided in Section 5.

## 4.2 Needs Identification Strategies

The identification of freight needs and deficiencies identifies gaps between existing freight system conditions and capabilities and the projected freight transportation needs for an area. This is a critical element of a statewide or metropolitan transportation planning program, because it feeds the identification, development, and implementation of improvement projects. Several strategies have proven effective in identifying freight-related needs and deficiencies, as described in Table 4-1 and below.

### Overview

Freight and industry profiles are good ways to develop a better understanding of the industry, transportation, and socioeconomic characteristics of a state or region and are often effective first

**Table 4-1. Relative importance of common stumbling points to needs identification strategies.**

Needs Identification Strategies	Data	Private Sector	Freight Expertise	Institutional Support
Developing a Freight/Industry Profile	●	●	◐	◐
Engaging the Private Sector in the Needs Identification Process	○	●	○	●
Conducting a Hotspot or Bottleneck Analysis	●	●	◐	◐

Key: Less Important ○ → ◐ → ● More Important

### Developing a freight and industry profile.

Data	Private Sector	Freight Expertise	Institutional Support
●	●	◐	◐

steps in assessing freight transportation needs and deficiencies. Many states and MPOs around the country have completed stand-alone multimodal freight profiles or studies, the objectives of which are to define the significance of goods movement to the statewide or regional economies; identify existing and emerging industries that are most significantly affecting the freight transportation system; describe how industry logistics patterns affect the freight transportation system; and identify the key economic, trade, and supply chain trends that are influencing freight demand and freight movements.

States and MPOs should conduct these profiles and studies in order to develop a more detailed understanding of the regional freight system, the type and volume of freight movements moving along that system, and the key issues affecting freight efficiency. Most important, states and MPOs should link the results of these efforts to the existing transportation planning and programming process by identifying specific freight-related projects or activities that can enter the project planning and programming pipeline, helping to mainstream freight issues within the process. The profile should be used to establish the foundation of an ongoing freight data collection and analysis program that supports the planning and programming processes. The following sections provide key steps, data sources and other resources, and related outreach activities for developing a freight and industry profile.

### *Key Steps*

1. **Develop modal profiles.** Summarize each of the freight modes operating within your region, focusing on physical extent and key capacity issues. As part of these modal profiles, key facilities (i.e., ports, rail yards, airports, distribution centers, and pipeline facilities) should also be identified. Supplement existing data with interviews with the owners, operators, and users of the system to develop an understanding of system performance. These modal profiles will allow you to develop an initial understanding of the location and severity of key network bottlenecks as they are perceived by system users.
2. **Develop commodity flow summaries.** Understanding commodity flows is critical to developing a freight profile—such understanding provides insight into the characteristics of the freight that is moving along the system. Commodity flow data are available from several public and private sources and should be analyzed to identify the following characteristics:
  - Overall volume and value of freight moving into, out of, within, and through the region;
  - Major domestic trade partners;
  - Key commodities moving into, out of, within, and through the region (by weight, trade lane, and value), including the flows of hazardous materials; and
  - Modal shares for freight moving into, out of, within, and through the region.
3. **Identify Major and Emerging Industries.** Review data from existing state, regional, and federal sources describing the economic sectors of the state or regional economy, including historic trends and forecasts by industry sector. These kinds of data are also available from several public and private sources. This step will help you identify the existing and emerging industries that are driving your state or regional economy and its future growth. Involving local and regional economic development agencies and chamber of commerce organizations is also helpful to identify emerging interests and activities.
4. **Describe the Importance of Transportation to These Key Industries.** In addition to identifying major and emerging industries, it is crucial to understand how these industries currently use the transportation system and the factors that will influence that use in the future. More precisely understanding how your existing transportation system facilitates or hinders freight movements associated with these industries will help you identify needs and deficiencies and appropriately respond to changing freight movements in the future. Conduct interviews with key shippers, manufacturers, and logistics

professionals to understand system performance needs (e.g., importance of cost, velocity, and reliability); modal usage patterns; growth prospects; and changing national/international trade patterns.

### *Data Needs and Other Supporting Resources*

- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Socioeconomic and Industry data (see Table 5-5)
- Freight Stakeholder input (see Section 5)
- Guidebook for Freight Policy, Planning, and Programming in Small- and Medium-Sized MPOs (NCHRP 8-47) (see Table 5-6)

### **Case Study—Maine DOT**

The Maine DOT developed and regularly updates an Integrated Freight Plan (IFP) in coordination with the State's 20-year, 6-year, and 2-year transportation plans. The DOT's 20-year plan establishes goals, objectives, and strategies for the department; the 6-year plan is used in the State's capital improvement planning and programming efforts and links the 20-year plan, which is policy-based, and the 2-year plan, which is project-based. As in many states, Maine's 20-year, 6-year, and 2-year transportation plans have a heavy emphasis on traditional highway transportation, with freight issues and concerns receiving little attention. Completion of the IFP has allowed the Maine DOT to focus on critical freight policy and programming issues that affected the movement of freight statewide and provided strategic guidance to the Office of Freight Transportation in building their freight planning program.

The IFP includes a freight and industry profile, which summarizes the State's commodity flows, key industries, freight transportation system and modes, and critical supply chains. Development of the IFP included both data analysis and outreach to the State's freight transportation industry, business leaders, local governments, and other freight stakeholders. Outreach efforts were often the primary data collection tool used to develop and update the IFP. Data were collected from personal interviews with key public and private stakeholders and mail-in surveys sent to the State's 340 largest manufacturers, Regional Transportation Advisory Committees, and government officials of municipalities with major transportation routes or facilities. These interviews and surveys allowed the State to collect important information while simultaneously building support for a statewide freight planning program among these stakeholders.

Quantitative data were also used to supplement the information collected via the survey and interview process in order to develop a more comprehensive freight profile of the State. Commodity flow data for Maine were obtained from such sources as the Bureau of Transportation Statistics, the American Association of Port Authorities, the Association of American Railroads, the Vehicle Inventory and Use Survey, and other private sources.

The result of the Maine IFP was a set of short-, medium-, and long-term recommendations for specific freight improvement projects and enhancements to Maine's freight planning program. These recommendations were fed directly into the State's existing 20-, 6-, and 2-year transportation plans.

*Strategies to Link to the Traditional Process*

- **Use the profile to help identify freight needs and deficiencies.** The freight/industry profile will not be a needs and deficiencies analysis in and of itself. However, it is critical for feeding existing needs and deficiencies analyses already being developed by states and MPOs. Using the information included in the freight/industry profile to feed existing needs and deficiencies analyses can be an important way to incorporate freight issues into existing processes.
- **Develop a freight/industry profile in conjunction with long-range plans, modal plans, work programs, or similar activities.** One way to effectively integrate freight issues into the transportation planning process is to conduct freight planning activities in conjunction with existing planning activities. As discussed in the case study example, the Maine DOT developed its IFP in conjunction with long-range plan updates. This ensured that needs and deficiencies identified as part of the IFP could feed directly into traditional transportation planning activities and documents. Other strategies include linking the freight/industry profile with a transportation needs and deficiencies statement, including the freight/industry profile as a chapter within a long-range transportation plan, including specific freight/industry profiles within existing modal plans, or using the freight/industry profile as an input to the annual work program development process. Explicitly including freight-related activities, such as a freight/industry profile, as part of regularly conducted transportation planning activities will allow your process to evolve into one that fully incorporates freight issues as a matter of course.
- **Modify existing data collection program(s) to incorporate freight data.** Completion of a freight/industry profile will provide an excellent starting point for the collection of freight-related data. To ensure that freight data are routinely collected, updated, and incorporated into existing planning processes, existing data collection programs should be modified to explicitly include freight data.

**Engaging the private sector in the needs identification process.**

Data	Private Sector	Freight Expertise	Institutional Support
○	●	○	●

*Overview*

An effective way to better understand freight needs and deficiencies and to begin to build relationships with the private-sector freight community is to engage such stakeholders in the needs identification process. Many states and MPOs accomplish this by conducting in-person interviews or listening sessions with key freight stakeholders. In other areas, state DOT or MPO staff have become involved in chamber of commerce activities. Because chambers of commerce represent the interests of local or statewide businesses and have strong relationships with the business and industry community, they typically have a deep understanding of how a local or statewide transportation system meets the needs of their members. Engaging chamber of commerce staff in needs identification has also proven to be an effective way to understand the transportation needs of the business community and translate those needs into potential projects for consideration in the statewide or metropolitan transportation planning process.

States and MPOs should set aside staff time and budget within their annual work programs to ensure that these sessions occur regularly and can feed directly into other statewide and metropolitan transportation planning and programming activities. These sessions, which should focus on identifying specific issues that affect freight operations, are useful ways to identify freight-specific improvements that otherwise would not have been considered in the transportation planning

pipeline. Even if projects identified in these sessions never make it to the programming or project development stages, these listening sessions are useful to states and MPOs because they allow technical staff to better understand the transportation needs of key industries in their region and are effective ways to begin to develop a rapport with the private-sector freight community.

Although the public sector is making a strong effort to learn the language and the logistics concepts that drive supply chain planning, the private sector may not understand the public transportation planning process and activities. As access and infrastructure issues begin to surface as key regional private-sector concerns it is important to help these stakeholders understand how to contribute to the process.

### *Key Steps*

- **Identify key freight stakeholders.** Freight transportation stakeholders are a varied group that includes freight service providers (i.e., trucking companies, railroads, and logistics providers); businesses and industries that ship freight; freight, border, or gateway security agencies; and others. Identifying these freight stakeholders will be easier if a freight profile has been developed. Other sources include chambers of commerce, statewide or local trucking or railroad associations, and even traffic clubs or similar public interest groups.
- **Attend freight industry events.** Participating in industry events, such as trucking association meetings, chamber of commerce meetings, and other gatherings, can be an excellent way to meet freight transportation stakeholders and better understand their needs and issues. It can also be an excellent way to describe the public-sector transportation planning process and ways in which the private sector can participate. The private sector, in many areas, does not fully understand the process used by DOTs and MPOs to make transportation investment decisions. Participating in industry events—formally or informally—can often provide a two-way educational process.
- **Establish ongoing stakeholder outreach.** An effective way to better understand freight needs and deficiencies and to begin to build relationships with the private-sector freight community is to conduct in-person interviews or listening sessions with key freight stakeholders. As described earlier, states and MPOs should set aside staff time and budget in their annual work programs to ensure that these sessions occur regularly and can feed directly into other statewide and metropolitan transportation planning and programming activities. These sessions can be useful in helping to understand the factors that will influence freight transportation and logistics patterns in the future.

### *Data Needs and Other Supporting Resources*

- Freight stakeholder input (see Section 5)
- Engaging the Private Sector in Freight Planning Workshop (see Table 5.7)

### **Case Study—Toledo Metropolitan Area Council of Governments**

TMACOG, the MPO for the Toledo, Ohio, region, has developed a continuing process that allows it to identify freight transportation issues of the region through freight transportation listening sessions. These sessions are programmed annually into the MPO's UPWP. Typically, the MPO tries to conduct four to five of these listening sessions per year (about one per quarter). The MPO has one staff member that sets up and conducts these sessions. The interviews focus on identifying freight-specific issues that affect the operations of the interviewee.

*(Continued)*

TMACOG prefers speaking with dispatchers because they tend to be more aware of the specific mobility issues affecting their day-to-day operations. While large issues are important, TMACOG finds out through these meetings if there are smaller problems they can easily address (“low-hanging fruit” such as signage, signal, access, turning radii, and surface rideability). By taking care of these types of issues quickly, TMACOG earns the respect of the shippers/carriers and is better able to maintain long-term relationships that benefit future information gathering and planning.

The MPO has successfully identified several projects as a result of these sessions, including the rehabilitation of an access road to a major chemical manufacturer. It is unlikely that this (or other improvements) would have been included in the TIP had it not been identified as part of these sessions.

### *Strategies to Link to the Traditional Process*

- **Offer to make presentations to industry groups during long-range plan or TIP updates.** As described earlier, the private-sector freight industry often does not fully understand the process used by DOTs and MPOs to make transportation investment decisions. Offering to make presentations to freight industry groups or associations during the long-range planning or TIP development process can help them understand the process while simultaneously participating in it. In fact, making presentations as part of regularly scheduled long-range transportation plan and TIP updates can itself be an effective, continuous private-sector outreach strategy.
- **Create a freight advisory committee.** A full-fledged freight advisory committee is not always necessary, particularly if a state or MPO has already developed an effective private-sector freight outreach strategy and engages the private-sector community during the development of transportation plans, programs, and improvement projects. However, some DOTs and MPOs have found that creating a formal freight advisory committee makes it easier to engage the private-sector in the needs identification process (and other phases of the transportation planning and programming process). In addition, MPOs that have existing advisory committees (e.g., bike/pedestrian, transit) should create a freight advisory committee with the same authority and input to the MPO Board as other committees enjoy. This will not only allow the MPO to receive freight-specific input on transportation plans, programs, and projects, but also to demonstrate commitment to freight planning by the organization.
- **Modify your existing public involvement process to include freight-specific outreach activities.** Each state DOT and MPO has a specific public outreach process through which to collect comments and feedback on proposed transportation plans, programs, and improvements. In many cases, these existing strategies do not meet the unique needs of the freight and business community. Developing freight-specific outreach activities, such as site visits to key industries, holding meetings at convenient times/locations for private-sector participants, and participating in industry events can have several important benefits. First, it allows states and MPOs to comply with SAFETEA-LU Sections 6001 and 6002, which require early engagement and coordination with freight and economic development agencies within the transportation planning process. Second, it allows states and MPOs to collect more comprehensive input on proposed transportation plans, programs, and improvements. Finally—and most importantly—it allows states and MPOs to develop relationships with the private-sector freight and business community and engage them more completely in the setting of statewide and metropolitan transportation priorities and investment strategies.

### Conducting a hotspot or bottleneck analysis.

Data	Private Sector	Freight Expertise	Institutional Support
●	●	◐	◐

#### Overview

An effective way that states and MPOs can get a better sense of freight needs and deficiencies is to conduct a freight “hotspot” analysis. The purpose of a hotspot analysis is to identify locations, intersections, or grade crossings that may need safety or operational improvements. In many cases, hotspot analyses can be conducted using data already collected by state, metropolitan, or local agencies. Crash data, for example, can be mapped against the freight transportation system in order to identify high-crash intersections for trucks. Intersection studies can then be conducted at these locations to determine how well these intersections meet the needs of freight movements and to identify potential solutions (e.g., turning radii improvements and signal re-timings) that would improve the safety and efficiency of these areas. Similarly, grade crossing or highway level-of-service information can be used to identify areas that may have other safety, congestion, or operational concerns. Finally, interviews with railroads and rail shippers can help identify key rail bottlenecks. Conducting a freight hotspot analysis provides a low-cost way to identify potential freight needs and deficiencies for consideration in the transportation planning and programming process.

#### Key Steps

- **Identify and collect data.** As discussed above, various data sources can be used as part of a freight hotspot or bottleneck analysis. Much of the data needed to describe your freight system, such as transportation infrastructure, modal profiles, and commodity flows, may have already been collected and analyzed as part of a freight/industry profile. These data can be supplemented with other data, including
  - **Safety data.** Crash data are often available from the state or local police, State Motor Vehicle Divisions, or Divisions of Public Safety. These data can be useful in identifying high-crash locations for commercial vehicles or dangerous at-grade crossings.
  - **Land use data.** Land use data can be useful to identify current and future locations of freight facilities, such as rail yards, industrial parks, or distribution centers.
  - **Incident data.** Some states and MPOs have developed programs to track highway incidents, looking at incident duration time, incident response time, and incident clearance time. Data available from these programs can help identify high-incident locations for commercial vehicles.
  - **Travel time data.** Truck volumes and roadway level-of-service data are useful to identify congested corridors for truck movements and to identify peak periods for commercial vehicle traffic.
- **Supplement data collection efforts with interviews.** It is also important to supplement the data collection and analysis with interviews of key freight stakeholders in both the public and private sectors. Private-sector freight and industry leaders should be interviewed to get their perspectives on key chokepoints and hotspots and it is important to interview stakeholders who have a broad perspective (i.e., strategic planning staff) as well as an operational perspective (i.e., staff at railroad yards or distribution centers). Collecting information from both types of groups can help planning practitioners understand local as well as statewide and regional operations and bottlenecks. In addition, state and local “implementing agencies” should also be engaged in the process, because they often have a better understanding of local travel patterns, operational strategies (e.g., truck routes), and the specific locations and implications of freight hotspots in

their regions. For example, state DOTs should interview lead engineers or planners at their district offices (or equivalent). MPOs should engage local public works officials or county-level engineers or planners. Engaging these public-sector stakeholders has two key benefits. First, it allows for a deeper understanding of the specific locations and implications of freight hotspots and bottlenecks and can help in identifying solutions or mitigation strategies to improve freight mobility. Second, it helps these local/district agencies better incorporate freight issues into their own processes, which can help improve freight mobility regionwide.

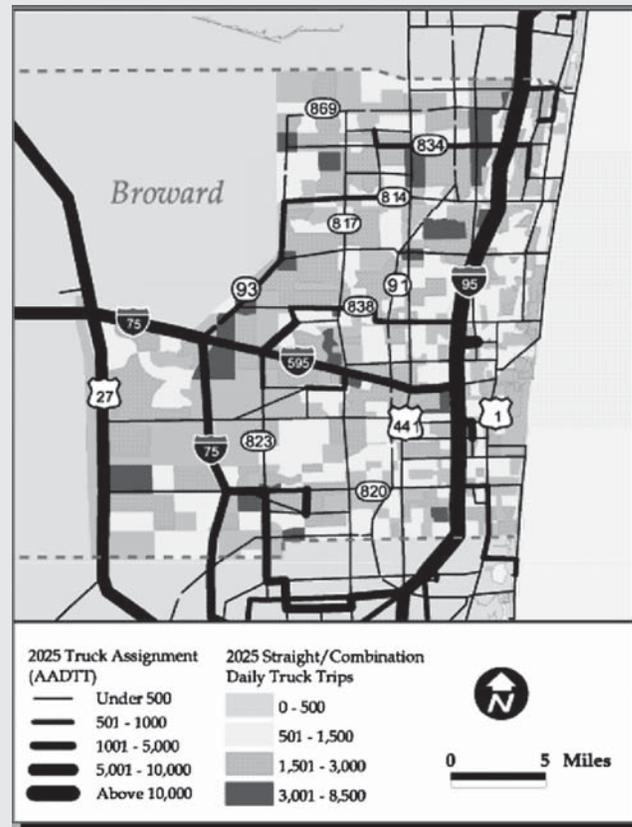
- **Map results using a Geographic Information System (GIS).** GIS maps provide an effective way to show the location of freight hotspots and bottlenecks, how they relate to key land uses in a region, and how they may be affecting freight and passenger mobility. GIS maps can also be useful when engaging public- and private-sector stakeholders, because they can help target discussions on key issues and problem locations.

#### *Data Needs and Other Supporting Resources*

- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Freight Stakeholder input (see Section 5)
- Freight Data Made Simple Workshop (see Table 5-7)

#### **Case Study—Broward County MPO**

As part of its Freight and Goods Movement Study in 2002, the Broward County MPO used existing data and tools to better understand land use and development patterns, safety issues, and key freight-related hotspots and bottlenecks. Using



(Continued)

GIS, the MPO mapped freight-related data sources, including population (taken from the U.S. Census), land use patterns (taken from county and city sources), locations of high-crash locations for commercial vehicles (taken from the Department of Highway Safety and Motor Vehicles), and truck volumes and delay (taken from traffic counts). A series of maps were developed to highlight critical bottlenecks for freight-related traffic, both current and future. The below figure shows truck volumes plotted over truck trips generated at the traffic analysis zone (TAZ) level.

The use of existing data and the MPO's existing GIS helped MPO staff understand the effects of freight movements on populations, land use, and safety, and were critical in identifying freight needs and deficiencies.

### *Strategies to Link to the Traditional Process*

- **Use the hotspot/bottleneck analysis to help identify freight needs and deficiencies.** Like the freight/industry profile discussed earlier, the hotspot/bottleneck analysis can be used for feeding existing needs and deficiencies analyses already being developed by states and MPOs. Using the information included within the hotspot/bottleneck analysis to feed existing needs and deficiencies analyses can be an important way to incorporate freight issues into existing processes.
- **Link hotspot/bottleneck data collection efforts to existing data collection activities.** Most states and MPOs have an ongoing data collection program, even if that program consists only of the collection of classification counts on area roadways. Before undertaking a hotspot/bottleneck analysis, states and MPOs should identify their data needs and match those needs against available data to identify data gaps and potential data collection opportunities. Some states and MPOs may find that existing data from federal sources (e.g., CFS, STB Carload Waybill Sample, and Army Corps of Engineers Ports and Waterways data); or state sources (e.g., truck counts, agricultural shipment data, and safety data) are sufficient to meet their needs. Others may determine that a more detailed data collection program is required. In any case, the data collected as part of a hotspot/bottleneck analysis should be linked to existing data collection programs and collected and analyzed regularly.
- **Link hotspots and bottlenecks to specific industries and to statewide or regional mobility and economic development goals.** Many states and MPOs have included freight- and economic development-related goals in their long-range transportation plans. By identifying key hotspots and bottlenecks on the transportation system and understanding how they relate to specific industries, a hotspot/bottleneck analysis can be an effective way to help determine how the transportation system is facilitating or hindering freight and passenger mobility and/or economic development efforts. Showing how freight movements are affecting the safety, efficiency, and mobility of passengers and goods can also be an effective way to build support for identifying freight needs and deficiencies as well as solutions.

## **4.3 Plan Development Strategies**

The plan development phase occurs after the transportation needs of an area are identified. The plan development process lays the groundwork for how a state or MPO incorporates freight interests and issues in its planning program. At the conclusion of the plan development stage, the area's transportation vision and goals are described in a long-range transportation plan, as well as a list of funded and unfunded improvement projects that illustrate the agency's future

build out plans. Several strategies have proven effective in integrating freight issues in long-range planning activities, as described in Table 4-2 and below.

**Overview**

One way to more effectively link long-range goals with nearer term actions is to define key freight corridors and facilities that contribute to statewide or regional economic competitiveness, mobility, or quality of life. Identifying key freight corridors and facilities within a long-range planning document can have several important benefits. First, it can provide structure and focus to a freight planning program, particularly at a statewide level, by allowing states and MPOs to focus potential investments on those corridors and facilities that have the greatest effect on economic competitiveness, mobility, or quality of life. While specific projects need not be identified, defining key freight corridors and outlining specific objectives for those corridors (e.g., improve access to port/intermodal facilities, implement ITS technologies to improve flow, and improve access to highway facilities to spur economic development) can improve the ability of states and MPOs to identify freight-specific projects and help ensure that those projects are consistent with statewide or regional goals.

In addition, identifying key freight corridors and facilities can help emphasize freight’s importance to regional economies and regional mobility, both within a state and among different states and jurisdictions. This information, in turn, can be used to develop advocates or champions for freight planning and project development within agencies and among other constituencies, helping to propel statewide or metropolitan freight planning efforts.

**Key Steps**

- **Gather freight stakeholders.** Freight and industry stakeholders, as the primary users of the freight transportation system, should be heavily involved in identifying key freight facilities and corridors. This is an excellent exercise for a freight advisory committee (or similar group),

**Table 4-2. Relative importance of common stumbling points to plan development strategies.**

Needs Identification Strategies	Data	Private Sector	Freight Expertise	Institutional Support
Identifying Corridors and Facilities of Statewide or Regional Significance	●	◐	◐	●
Developing Freight Performance Measures	●	◐	●	●
Linking Freight and Land Use Planning	◐	●	◐	●

Key: Less Important ○ → ◐ → ● More Important

**Identifying corridors and facilities of statewide or regional significance.**

Data	Private Sector	Freight Expertise	Institutional Support
●	◐	◐	●

if one exists within the organization. Some states and MPOs without formal freight advisory committees have created ad hoc freight committees to guide the process.

- **Define criteria for freight facilities and corridors.** The freight stakeholders group should assist in developing quantifiable, flexible criteria to guide the identification of key freight corridors and facilities. Criteria should be defined to be consistent with an existing data collection plan. In addition, these criteria would have the following characteristics:
  - **Criteria should be quantifiable.** Data such as tons of freight carried, passenger trips made, or total airport/seaport cargo throughput are useful for determining the contribution of specific transportation facilities to overall statewide or metropolitan freight mobility or economic vitality. Quantifiable data are also useful in supporting objective, performance-based planning processes.
  - **Multiple types of criteria should be used.** No single measure can be used to completely describe the strategic importance of an individual transportation mode, network, or facility, as many facilities and networks fill critical niches in an overall statewide or metropolitan transportation system. There are several elements that, taken together, can describe a transportation system, including: facilities, services, and centers. Transportation facilities describe the physical features and extent of the freight transportation system. Services describe the degree to which segments of the transportation system serve freight mobility needs. These include the operational characteristics of a transportation system and can be measured in terms of level of service, accessibility, and intermodal connectivity. Finally, centers describe the location and activity at major trip generation sites along the transportation system. These sites, such as manufacturing plants, distribution centers, ports, or intermodal freight terminals, are points at which significant freight traffic originates or terminates. To ensure that the full strategic importance of each segment of the transportation system can be accurately assessed, different sets of criteria, which evaluate each element of a statewide or metropolitan transportation system, should be combined. The complexity of this task will vary based on the size and scope of activities within a given region or state. Relationships in urban areas are often complex and intertwined, but rural bulk freight needs should not be overlooked from a systems perspective.
  - **Criteria should be flexible.** Individual transportation network segments and facilities may have borderline significance to a state or metropolitan area as a whole, but may be vitally important to an individual city or region within the state. An example of this type of facility is a regional airport or seaport that does not handle significant volumes of freight or passenger traffic when compared with other facilities across the state, but provides the only available intermodal connection for shippers and passengers in the region. Assessing the strategic importance of a transportation mode, network, or facility based solely on strictly defined criteria may not recognize the overall importance of such smaller facilities. It is important to develop a process through which a limited number of borderline strategic facilities can be designated.
- **Define critical freight facilities and key strategies.** Using the criteria developed above, define multimodal freight corridors and facilities, and map using GIS. These facilities should be updated regularly.

#### *Data Needs and Other Supporting Resources*

- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Freight Industry data (see Table 5-3)
- Socioeconomic and Industry data (see Table 5-5)
- Freight Stakeholder input (see Section 5)

### Case Study—Pennsylvania Long-Range Transportation Plan— Statewide Corridors

As part of its long-range transportation plan, PennPlan, the Pennsylvania DOT (PennDOT) identified 28 corridors of statewide significance, which consisted of interconnected and interacting transportation facilities that move people and goods between regions of the Commonwealth and between the Commonwealth and other states. Because long-range corridor planning in Pennsylvania is carried out by MPOs, local development districts, and other planning partners, their plans formed the foundation for the corridor analyses and objectives outlined in PennPlan.

The resulting corridors are multimodal. For example, the corridors that connect Pittsburgh and Philadelphia consist of not just the Pennsylvania Turnpike, but also key U.S. routes, Norfolk Southern’s rail freight mainline, three international airports, and other facilities, all working together to move goods east and west throughout the State. In addition to identifying these key multimodal corridors, PennDOT and its partners also developed specific objectives for each of the corridors that were consistent with overall statewide and regional goals. For example, the objectives of the Delaware River Intermodal Corridor include

- Improve intermodal connection and access to the Port of Philadelphia and Camden and the Philadelphia International Airport;
- Invest in the Port of Philadelphia and Camden in order to compete in the global economy;
- Maintain the depth of the Delaware River shipping channel at a minimum of 45 feet; and
- Implement safety and capacity improvements to U.S. 1 and U.S. 202.

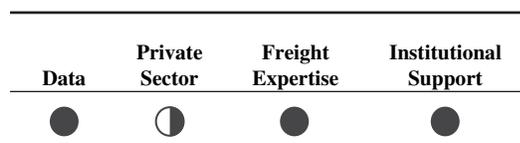
While the identification of these 28 corridors was not designed as a roster of specific transportation improvement projects, it helps ensure that projects that ultimately are proposed and funded are consistent with statewide and regional objectives.

#### *Strategies to Link to the Traditional Process*

- **Include key corridors and facilities in the long-range plan and link to goals and objectives.** It is important to include the critical freight corridors and facilities in a long-range plan and describe how these facilities relate to key mobility, safety, security, economic, and quality of life goals. Identifying key freight corridors and linking them to long-range goals and objectives can help focus potential investments on those corridors and facilities that have the greatest effect on economic competitiveness, mobility, or quality of life while ensuring that these investments are consistent with existing statewide or metropolitan priorities.
- **Develop a process for updates that is consistent with existing long-range planning activities.** It is critical that key freight corridors be updated on a routine basis to reflect current market trends and issues, commodity flow patterns, and logistics strategies. To ensure consistency with other long-range planning efforts and so that freight planning activities are considered as a “normal” part of these activities, these updates should occur on the same cycle as existing long-range plan updates.

- **Ensure criteria fit within existing long-range planning processes.** Many states and MPOs have adopted a performance-based planning approach and use their long-range plans to provide a framework for developing and analyzing performance measures using key factors such as mobility, reliability, economic competitiveness, and safety. It is crucial that criteria developed as part of a key freight corridor/facility designation are integrated into existing measures within these factor areas or developed into new, complementary measures. This will help integrate freight issues into existing statewide and metropolitan processes and avoid freight planning from being perceived as a separate, parallel process.

### Developing freight performance measures.



### Overview

Development of freight performance measures can help state DOTs and MPOs evaluate how well they are meeting transportation goals and objectives. Freight performance measures can also be used to more effectively target investments to address identified freight performance issues by helping DOTs and MPOs monitor the performance of the statewide and metropolitan transportation systems to identify key problem areas.

These freight performance measures should be integrated into existing transportation planning and programming processes. Linking freight data collection and performance measurement to existing processes can help ensure that freight issues become mainstreamed within an MPO or DOT and can allow freight projects to compete more effectively in the regional prioritization and funding processes. States and MPOs have developed various techniques to effectively link freight performance measurement with existing processes. Some states and MPOs develop freight “report cards” that help measure progress toward key freight-related goals and objectives included in the long-range plan. Others specifically link freight performance measures with policy statements, goals, and strategies outlined in long-range transportation plans. Linking freight performance measures to existing planning activities and documents helps to more fully integrate freight into statewide and metropolitan transportation planning and programming processes.

### Key Steps

- **Review existing plans and policies to identify potential freight performance measures.** The freight planning and programming self-assessment should have given you a good sense of your existing planning process and any existing performance measures used to guide it. In some cases, performance measures are already included in existing plans that may be relevant to freight movements. Examples include travel-time reliability on key highway corridors or the number of weight-restricted bridges.
- **Modify existing or identify new freight-specific performance measures.** When modifying existing or developing new freight performance measures, it is critical to keep two key principles in mind. First, measures should be supported by data and information that are relatively easy to collect, analyze, and update. This is important because performance measures that come with overwhelming data collection and analysis requirements will quickly be abandoned. Second, measures should be statewide or regionally significant (i.e., they should measure the overall performance of the statewide or regional freight transportation system) and not be solely a reflection of the performance of individual elements of that system.

- **Engage the private-sector freight community.** The involvement of the private-sector freight industry is particularly important in the development of freight performance measures. Statewide and regional freight stakeholders work in the field every day and their perspectives on the most important aspects of the goods movement system help provide focus. By including the private-sector freight community, such as shippers, carriers, and key industry leaders, in the development of freight performance measures, states and MPOs can develop meaningful performance indicators that accurately reflect the operations of the private sector while providing targeted information to staff and decisionmakers.
- **Set performance targets and develop a process for evaluating performance.** Once freight-specific performance measures are identified, it is important to set performance targets and develop a process for evaluating and reporting performance. The private-sector freight community can be a key resource to help evaluate the validity of performance targets.

#### *Data Needs and Other Supporting Resources*

- Commodity flow/Volume data (see Table 5-2)
- Freight Stakeholder input (see Section 5)
- Guidebook for Performance-Based Planning (see Table 5-6)
- Methods for Forecasting Statewide Freight Movements and Related Performance Measures (see Table 5-6)

#### **Case Study—East-West Gateway Coordinating Council**

The East-West Gateway Coordinating Council (EWGCC) is the MPO for the St. Louis region. Although the EWGCC has been exploring the use of performance measures for transportation planning since the early 1990s, two key initiatives contributed directly to the development and adoption of freight performance measures. The first initiative was the explicit development and implementation of a performance-based planning strategy for the MPO's transportation planning activities. The second was the development of a regional freight planning study guided by a freight advisory committee consisting of officials from all levels of government and freight representatives from the trucking, rail, air cargo, barge, warehousing, and shipping industries.

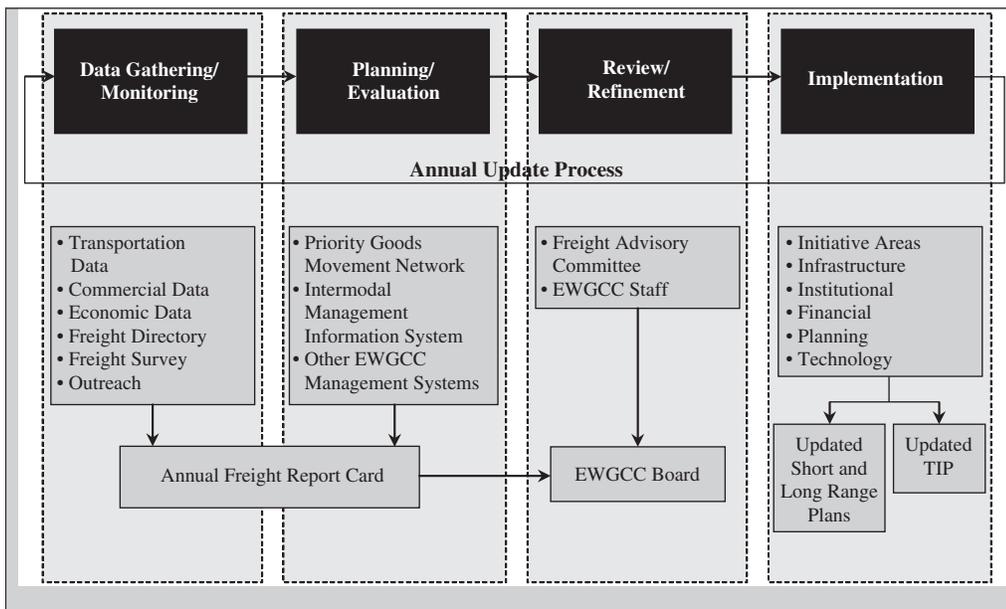
A key role of the freight advisory committee was to lead in the development of freight performance measures and then determine how to incorporate these performance measures into the MPO's existing transportation planning and programming process. Twenty-eight specific performance measures were developed and classified into five specific categories that balance the need for meaningful indicators with the ease of data collection. These measures include

- **Connectivity/congestion**, measured by average speed on key roadways;
- **Safety**, measured by high-crash locations and number of turn-restricted intersections for 53-foot trailers;
- **Reliability**, measured by level of service on key roadways;
- **Intermodal**, measured by throughput at key freight facilities; and
- **Economic**, measured by job growth and available warehouse space in the region.

It was critical that these performance measures be mainstreamed into existing transportation planning and programming processes. The EWGCC linked freight

*(Continued)*

performance measures to the overall transportation planning and programming process in two ways. First, they developed a freight “report card” that helps measure progress toward key freight-related goals and objectives included in the long-range plan. Second, the EWGCC developed a framework, shown below, to map how freight planning activities, including the freight report card and related performance measures, fit within existing transportation planning activities, particularly the development of long- and short-range plans and the development of the TIP.



### Strategies to Link to the Traditional Process

- Relate freight performance measures to existing goals and objectives.** It is critical to specifically relate freight performance measures to existing goals and objectives included within a long-range plan. Explicitly linking freight performance measures with overall mobility, safety, security, and reliability goals helps underline how freight-specific activities can be used to support “traditional” transportation planning and programming, helping to integrate freight into existing processes. Understanding the value of improved performance for the private sector can be an important exercise in helping improve project understanding.
- Link data collection and analysis efforts to existing activities.** Ease of data collection should be an important consideration in the development and implementation of freight performance measures, as even the best indicators are meaningless if they cannot be measured routinely. When selecting the final set of performance measures, it is important to be mindful of your organization’s capacity for data collection to support them. While it may be tempting to expand the number of overall indicators to more comprehensively understand the performance of the freight transportation system, some prospective measures may be too peripheral to offer value and actually reduce the overall effectiveness of performance measurement. In any case, it is critical that the data collection activities associated with freight performance measures be linked to existing data collection programs and collected and analyzed on a regular basis.

- **Use performance measures to identify freight needs and deficiencies.** An active freight performance measurement program can, in itself, be an excellent way to routinely identify freight needs and deficiencies, which can then be fed back into the transportation planning and programming pipeline. Routinely assessing freight performance and using the process to identify potential needs and deficiencies in this way will eventually result in freight issues becoming an accepted, integrated component of a transportation planning and programming process.

### Linking freight and land use planning.

Data	Private Sector	Freight Expertise	Institutional Support
			

### Overview

Despite the close relationship between transportation and land use, many DOTs, MPOs, and local agencies find it difficult to coordinate freight transportation and land use planning activities to ensure that transportation facilities are compatible with adjacent land uses or that land use decisions are consistent with freight mobility and operational needs. Because freight movements can have important land use, economic development, and community and environmental impacts, the integration of freight and land use into transportation planning at all levels—including project, corridor, and system-level plans—is critical.

Although DOTs and MPOs are rarely the lead agencies for land use planning, they can and should work with partner agencies to develop strategies to better link freight transportation and land use planning activities. These strategies would start by developing a better understanding of freight operations and the local, regional, and corridor effects of freight movements and how local and regional land use decisions can affect freight operations and development patterns. Working together, DOTs, MPOs, and their local partners can then identify strategies that allow various types of land uses to co-exist and contribute to overall passenger and freight mobility, economic, and safety goals and identify ways in which state and regional transportation agencies can work with local jurisdictions and the private sector to implement land use strategies that support freight movement and economic development while minimizing environmental and community impacts.

### Key Steps

- **Identify land use stakeholders and collect and review land use policies and strategies that affect freight (and vice versa).** Responsibilities for land use planning and policy-making vary among states and metropolitan areas. It is important to understand what agencies/entities have responsibilities for land use planning in your region and how their actions fit within your transportation planning and programming activities. It is also important to understand how freight transportation investment decisions made by your organization may affect land use strategies. Some urban areas are concerned with redevelopment and industrial corridor preservation. Some rural areas are fiercely competitive for new business enterprises and freight logistics centers. Balancing local and regional interest is important given the economic impact freight may have at the site level. The freight planning and programming self-assessment in Section 3 should have given you a good sense of how land use policies may affect freight planning activities in your region.
- **Combine freight and land use data and information within a GIS.** Many agencies that have responsibility for land use planning have developed maps of current and future land use patterns within a GIS. At the same time, many transportation planning agencies, particularly those that have developed freight and industry profiles (see above) have developed maps of freight facilities, movements, and key industries. Combining these maps can provide both

transportation and land use planners with a better understanding of how freight transportation and land use strategies interact. It can also help these transportation and land use stakeholders better address land use issues within existing transportation plans (and vice versa).

- **Work with stakeholders to address land use issues within existing transportation plans.** Many state DOTs and MPOs do not have jurisdiction over land use issues. However, engaging transportation and land use stakeholders as part of a long-range planning process can help ensure that freight issues are included as part of a coordinated transportation and land use strategy. Land use issues should be addressed at three levels:
  - **Regional strategies** could include designating brownfield sites and other industrial areas as desirable locations for industrial and warehousing development.
  - **Local strategies** could include ensuring adequate intermodal access to local freight facilities or industries and zoning strategies which recognize the importance of neighborhood quality of life issues and the need for separation and/or integration with appropriate levels of industrial activity.
  - **Site-specific strategies** could include developing curb space management plans to manage curbside loading zones and operations, encouraging building designs that have adequate off-street loading bays/zones and dock height requirements, developing facility-specific guidance for freight facilities and other businesses, and orienting and screening loading facilities to minimize aesthetic, noise, and pollution impacts.

#### *Data Needs and Other Supporting Resources*

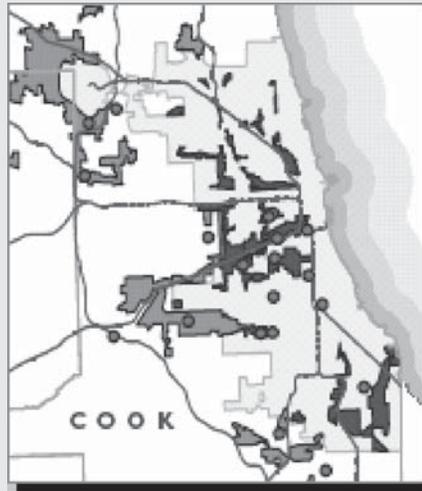
- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Freight Industry data (see Table 5-3)
- Socioeconomic and Industry data (see Table 5-5)
- Freight Stakeholder input (see Section 5)
- Transportation and Land Use course (see Table 5-7)
- Freight Planning and Environmental Considerations course (see Table 5-7)

#### **Case Study—Chicago 2040 Regional Framework Plan**

The Northeast Illinois Planning Commission (NIPC) provides regional growth management and comprehensive land use planning for the metropolitan Chicago area. Until 2006,<sup>1</sup> NIPC operated under an inter-agency agreement with the Illinois DOT and the Chicago Area Transportation Study (CATS, the Chicago area MPO). As part of this agreement, NIPC plans and data were used as the basis of the Regional Transportation Plan, allowing these agencies to effectively coordinate land use and transportation planning.

An example of this coordination is provided by the development of NIPC's 2040 Regional Framework Plan, which was developed in response to several land use trends, particularly the conversion of prime industrial sites in Chicago into expensive residential lofts and condominiums. The Regional Framework Plan engaged key transportation, industry, and land use stakeholders in visioning and planning techniques to develop specific strategies to guide future growth while ensuring that freight and passenger mobility needs are met. The Plan designated future industrial locations and included several maps showing the locations of key freight corridors and facilities layered on top of current and future industrial parcels, as shown below.

*(Continued)*



The Regional Framework Plan included several regional and local strategies, such as

- **Planned Manufacturing Districts**, which are special zoning designations for a defined geographic area that limit the types of development that may occur in the area to industrial activity and other compatible land uses; and
- **Industrial tax increment finance districts**, which support transportation improvements, financed by tax revenues from development.

<sup>1</sup>In 2006, CATS and NIPC merged.

### *Strategies to Link to the Traditional Process*

- **Incorporate freight and land use goals and objectives and identify industrial sites and corridors in the long-range transportation plan.** Incorporating freight and land use specific goals and objectives in a long-range plan can help ensure that land use and freight-specific strategies are coordinated at the regional and metropolitan levels. In addition, it can help demonstrate the link between transportation and land use, helping to develop advocates for coordinated planning within both transportation and land use agencies. It is also important to identify key industrial sites and corridors within the long-range plan, as this can help MPOs and local agencies more effectively steer freight-related development into areas that are better equipped to support it.
- **Modify project evaluation criteria to encourage brownfield redevelopment.** One way to effectively coordinate transportation and land use planning is to modify evaluation criteria to encourage the use of brownfields or other defined industrial sites. Modifying TIP/STIP evaluation criteria to provide extra “points” or consideration for those projects that utilize these areas will further help MPOs and local agencies ensure that freight transportation investments are consistent with land use policies.
- **Add land use agencies to a freight advisory committee or similar group.** States and MPOs should include appropriate land use and other environmental agencies to existing freight advisory committee or similar groups to ensure that land use issues are effectively incorporated within freight and other transportation planning activities. Engaging these groups early in the planning and programming process has the added benefit of building advocacy and consensus for freight-related projects that might be developed, programmed, and implemented later on.

## 4.4 Programming Strategies

The project programming phase occurs after long-range plan development and is the phase in which states and MPOs begin actually implementing transportation improvement projects through the development of TIPs and STIPs. Several strategies have proven effective in integrating freight issues in programming activities, as described in Table 4-3 and below.

### Overview

Although most states and MPOs use criteria to evaluate and rank projects for inclusion on a TIP or STIP, these criteria rarely reflect potential economic and business development benefits of freight improvement projects. Instead, these criteria typically consider how a proposed project will improve highway volume-to-capacity ratios, highway level-of-service ratings, and safety. Some freight improvement projects receive decent scores for these criteria, but most fail because, for example, a freight connector improvement project typically serves fewer total vehicles than a competing suburban intersection improvement. Missing are evaluation criteria that reflect the other economic and business development benefits of freight improvement projects, such as how they may improve shipping-time reliability or the extent to which they may attract or retain businesses and jobs in an area. As a result, many freight projects never appear on a TIP/STIP or are ranked very low. Project evaluation criteria that give more recognition of and emphasis to freight projects should be developed so that freight projects can be given fair consideration in the project evaluation process.

Some states have developed quantifiable criteria in categories such as mobility, economic development effects, safety/security, and other “freight-friendly” areas. Guidance should also be provided to assist in the application of those criteria. Developing concrete guidance to assist project evaluators in assessing and ranking of projects can help eliminate bias and ensure that all potential projects are treated equally within the evaluation process.

### Key Steps

- **Review your existing programming evaluation process for “freight friendliness” and identify gaps.** The freight planning and programming self-assessment in Section 3 should

**Table 4-3. Relative importance of common stumbling points to programming strategies.**

Needs Identification Strategies	Data	Private Sector	Freight Expertise	Institutional Support
Developing Freight-Specific Evaluation Criteria	●	◐	◐	●
Evaluating Economic and other Public Benefits of Freight Improvement Projects	●	○	◐	◐
Using Alternative Funding and Financing Approaches	○	◐	○	●

Key: Less Important ○ → ◐ → ● More Important

### Developing freight-specific evaluation criteria.

Data	Private Sector	Freight Expertise	Institutional Support
●	◐	◐	●

have given you a good sense of how your existing programming process and evaluation criteria treat freight issues. When evaluating your existing evaluation criteria for “freight friendliness,” consider the following questions:

- Are the evaluation criteria multimodal in nature?
  - Are economic benefits (e.g., increased jobs, access, and improved market economics) included?
  - Are specific measures for truck movements identified?
  - How do the evaluation criteria relate to overall DOT or MPO goals and objectives?
  - Do the criteria include scoring guidance?
- **Develop criteria that reflect potential freight, economic, and security benefits of freight projects.** It may be necessary to modify existing criteria or develop new criteria that better reflect the potential freight, economic, and security benefits of freight improvement projects. The private-sector freight community is an excellent resource that can help determine which measures to focus on. It is important to ensure that the final set of freight criteria can be supported by data and information that are relatively easy to collect, analyze, and update. Evaluation criteria that come with overwhelming data collection and analysis requirements will quickly be abandoned.
  - **Develop scoring guidance.** Guidance should be provided to project evaluators to assist them in applying the criteria to different types of projects. Scoring guidance is particularly useful for evaluators who may not fully understand the potential effects or benefits of a proposed freight improvement project. Providing guidance on how to evaluate projects can help these evaluators make more informed decisions about transportation investments while giving freight improvement projects a “fighting chance” to compete for funding with other proposed transportation improvements.

#### *Data Needs and Other Supporting Resources*

- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Freight Industry data (see Table 5-3)
- Socioeconomic and Industry data (see Table 5-5)
- Freight Stakeholder input (see Section 5)

#### **Case Study—Rhode Island Project Evaluation Process**

Rhode Island, because of its size, is unique in its organizational structure for transportation planning. Planning activities are carried out on a statewide basis, rather than occurring at both the statewide and metropolitan levels, as in most other states. Rhode Island’s Statewide Planning Program (RISPP) is responsible for transportation planning within the State and also is the designated MPO for Rhode Island (the MPO region covers the entire State).

Project proposals are reviewed by a Technical Advisory Committee (TAC) within four regional subcommittees (Northwest Region, Metro Providence Region, East Bay, and South County) using criteria adopted by the State Planning Council. The scoring system evaluates projects in six major categories: Mobility Benefits, Cost-Effectiveness, Economic Development, Environmental Impact, Degree of Support to Local and State Goals and Plans, and Safety/Security/Technology. Specific qualitative and quantitative measures were developed for each category and proposals are scored on a scale from –5 to 5 (negative values being assigned to indicate negative effects) within each of the six areas.

*(Continued)*

Following scoring by the TAC subcommittees, a prioritized list of recommendations is presented to the full TAC. The full TAC, using information on anticipated funding and scheduling, assembles its recommended fiscally constrained program into a draft TIP. The draft TIP is reviewed by the State Planning Council and made available for public comments before it is approved.

Development of quantifiable criteria with which to evaluate potential improvement projects for inclusion in the TIP gives freight improvement projects a “fighting chance” to compete for funding with other proposed transportation improvements. In fact, many freight improvement projects would score highly in several of the criteria areas, particularly those criteria included in the Mobility, Economic Development, and Safety/Security/Technology categories. In the most recent TIP, a freight rail track improvement project and several grade crossing separation projects were approved for funding.

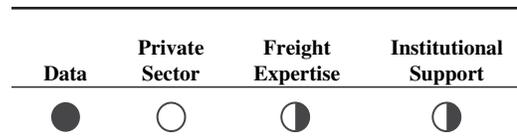
### *Strategies to Link to the Traditional Process*

- **Modify your project evaluation process to include freight representation on project evaluation committees.** Private-sector participation is important in all phases of the transportation planning process and is particularly important in the programming process where potential projects are evaluated for inclusion in a TIP or STIP. States and MPOs should include private-sector freight representation, such as industry associations, economic development corporations, or shippers and carriers on project evaluation committees because these stakeholders are often able to more effectively articulate the potential public benefits of freight transportation investments, such as how freight-specific projects could improve economic development and competitiveness, safety and security, and overall mobility. In addition, engaging the private sector in this way promotes a sense of fairness and openness to the TIP/STIP development process and can encourage the private-sector freight community to stay engaged in the transportation planning process for the long haul.
- **Refocus approach to setting transportation priorities.** Many of the processes and procedures used by states and MPOs were developed to evaluate and prioritize highway improvements. This is one reason why freight improvement projects—particularly non-highway improvements—often have a difficult time successfully navigating the planning and programming process and appearing in TIPs and STIPs. Setting priorities for non-highway improvement projects often involves making modal tradeoffs, e.g., justifying why investing in a freight rail project may be a better use of public resources than improving highway capacity. Some states and MPOs have begun to refocus their approach to setting transportation priorities in order to more effectively evaluate modal tradeoffs. Table 4-4 describes how Florida DOT’s approach has evolved. Other states and MPOs should also refocus their approach to setting transportation priorities—this would allow them to better assess multi-modal tradeoffs and understand how freight improvements can link directly to existing mobility, environmental, and economic goals.
- **Review the existing TIP/STIP to identify freight projects.** In many cases, states and MPOs are already addressing freight movements within their transportation planning programs, albeit indirectly. States and MPOs should review their existing transportation planning documents, particularly their most recent TIPs and STIPs, to evaluate their “freight friendliness” and highlight projects that promote goods movement and economic development efforts. Some states and MPOs, particularly those affected by a high level of truck movements, may find that their existing improvement programs are already benefiting freight movements.

**Table 4-4. Evolution of Florida DOT approach to setting transportation priorities.**

From...	To...
Individual modes and facilities	Complete end-to-end trip
Individual jurisdictions	Economic regions and trade corridors
Capacity and throughput	Reliability and bottlenecks
Travel time and vehicle operating costs	Business logistics and economic competitiveness
Reacting to economic growth and community/environmental impacts	Proactive planning for economic, environmental, and community goals

**Evaluating economic and other public benefits of freight improvement projects.**



States and MPOs should also consider adding a freight section to the TIP/STIP to specifically identify and highlight those projects that have freight benefits. Understanding how an existing transportation improvement program benefits freight movements can help build credibility with the private-sector freight industry and encourage industry representatives to identify other, more freight-focused improvement projects for consideration in the future.

**Overview**

State DOT and MPO staff are an important resource in identifying freight needs and deficiencies, proposing potential improvement projects, and moving those projects through the transportation planning and programming process. However, few have formal training in freight planning, and even fewer have experience in quantifying the public benefits of proposed freight improvement projects. Compounding the issue is the fact that freight-specific data and analytical tools are limited in their availability and their effectiveness in describing costs and benefits of freight improvements. As a result, many state DOTs and MPOs find it difficult to adequately describe the costs and benefits of freight improvement projects and how they might accrue to different public and private stakeholders.

Although public investment in the freight system might have the joint benefit of improving mobility for freight and passenger movements while reducing the need for additional highway capacity expansions, most DOT and MPO staff lack the analytical tools to make that argument adequately. As a result, freight-related needs, issues, and potential solutions are often not fully mainstreamed in the transportation planning and programming process, making such solutions unlikely to be included in the setting of statewide or regional priorities or in the allocation of funds.

**Key Steps**

- **Identify the transportation purpose** of the project in terms of its intended effect on improving freight and non-freight travel conditions. This is needed to ensure that those transportation effects and their consequences are properly evaluated. Key elements include

- **Facility Location**—Local entry/access point, regional corridor, and facility;
- **Modes Involved**—Air, water, rail, truck, and combinations of modes;
- **Transport Change**—Capacity, access, speed/flow, and cost; and
- **Investment**—Expand existing facility or build new or alternative facility.
- **Identify the expected economic impacts** in terms of the elements of the economy that might have significant stakeholder benefit. This is needed to ensure that those economic effects and their consequences are also properly evaluated. One of the keys to allowing freight improvement projects to more effectively compete with other transportation improvements is to identify key regional stakeholders and describe potential benefits of the project to those stakeholders. Most freight improvement projects have a wide range of potential beneficiaries, including businesses and industry, public agencies, freight service providers, and the general public. A critical first step is to develop a general understanding of the types of benefits that different stakeholders are interested in. Key effects to focus on include
  - National- and international-scale freight network capacity and level-of-service needs;
  - Economic competitiveness, growth, productivity, and trade;
  - Benefits to specific regions, modes, or industries; and
  - Allocation of costs and benefits among affected parties, to assess equitable funding.
- **Apply transportation effect evaluation tools** to assess the magnitude and nature of transportation system performance effects actually projected to affect shippers/receivers and carriers. Types of transportation effect evaluation tools include
  - **Network analysis tools** that identify and measure transportation links, nodes, capacity, and performance of rail and highway systems. Examples include travel demand or truck freight models (maintained by most DOTs and many MPOs) and rail system models (available from several private-sector software vendors).
  - **Facility handling analysis tools** that measure capacity/cost for ports, terminals, bridges, and tunnels. Several publicly and privately available models measure capacity and costs of airports, marine ports, and rail terminals.
  - **Logistics analysis tools** that estimate cost implications of mode/facility choices. One example is the Intermodal Transportation and Inventory Cost Model (ITIC), a freight mode choice model from FHWA’s Office of Freight Management and the Federal Railroad Administration. This model attempts to calculate the logistics cost and decision tradeoffs seen by shipper logistics managers and then assigns the truck/rail diversion to alternatives that minimize total logistics cost.
- **Apply economic impact evaluation tools** to assess the magnitude and nature of economic effects actually projected to occur for elements of the economy that are either directly or indirectly affected by freight system costs and performance. Key elements to focus on include
  - **Form of economic impact**—How the proposed project will reduce costs, improve productivity, or generate additional income or jobs;
  - **Geography of affected markets**—How the effects will accrue at the local, regional, national, and international levels;
  - **Distribution of economic impacts**—How the effects will be distributed among key commodities and economic sectors; and
  - **Use of economic impact models**—What existing economic impact models (e.g., supply chain models, regional economic simulation models, national productivity models, international trade models, or input/output models) will be necessary.
- **Apply decision support methods** to identify the substantial positive and negative effects of the project for the economy (at the local/state or national level). Key decision support methods include
  - **Benefit/cost analysis**, a comparison of all of the positive and negative effects of a project expressed on a consistent basis in terms of net present values;

- **Cost-effectiveness analysis**, a comparison of the effectiveness of project alternatives in achieving various individual indicators of desired benefits (such as reducing congestion and improving air quality and freight flow); and
- **Multiple criteria analysis**, which is most popular in Europe as a more comprehensive alternative to the use of traditional benefit/cost analyses. It provides a means of considering the wider issues of qualitative and quantitative benefits and costs, as well as distribution and equity of their incidence, in a unified framework based on rating criteria.

### *Data Needs and Other Supporting Resources*

- Modal Network data (see Table 5-1)
- Commodity flow/Volume data (see Table 5-2)
- Freight Industry data (see Table 5-3)
- Socioeconomic and Industry data (see Table 5-5)
- Financing Freight Improvements (see Table 5-6)

### **Case Study—CREATE**

The Chicago Regional Environmental and Transportation Efficiency (CREATE) program is a \$1.5 billion plan to improve rail efficiency and grade separation at critical crossings in Chicago. Stakeholders include the Illinois and Chicago DOTs, the Chicago Area Transportation Study (CATS, MPO for the region), local transit operators, and four Class I railroads. The following paragraphs briefly describe how these stakeholders applied the five-step approach to assessing economic impacts.

#### **Step 1—Identify the Transportation Purpose**

CREATE is classified as an operational improvement (for freight rail) and a capacity improvement for passenger rail.

#### **Step 2—Identify the Expected Economic Impacts**

The public benefits analysis of the CREATE proposal evaluated three key issues: national growth/productivity, savings to rail operators, and the allocation of costs and benefits to the mix of beneficiaries. Key benefits that were defined included

- Inventory reduction savings;
- Highway investment averted and congestion mitigation on future highway passenger traffic growth;
- Rail commuter's time savings/Motorists time savings at crossings;
- Savings tied to accident reduction at crossings;
- Savings tied to accident reduction on less congested highways;
- Project Construction Economic Stimulus; and
- Value of emission reductions due to reduced train and motor vehicle idling.

#### **Step 3—Select and Apply the Analysis Tools to Estimate Transportation Effects**

The public benefits analysis relied on transportation modeling resources of ILDOT and CATS and some additional methods. Accident reductions from improved

*(Continued)*

crossings as well as less congested highways (achieved by modal shift into passenger rail) were drawn from these agency resources. The railroads relied on the Berkeley Simulation model to estimate rail network performance changes for both freight and passenger rail activity.

#### **Step 4—Select and Apply Analysis Tools to Estimate Economic Impacts**

**Inventory reductions** were calculated by multiplying the time saved on freight movement by value of delay, all at the commodity-specific level. The value of delay was based on the direct cost savings that would result from not holding shipments in inventory.

**Averted highway construction and maintenance costs** were derived from the FHWA Highway Economic Requirement System (HERS) model and from an analysis tied to AASHTO's *Freight-Rail Bottom Line Report* (2003).

**Emission reductions** were estimated using reductions in rail-fleet idling time as well as the automobile/truck delay improvements at the improved (grade separated) crossings. EPA estimates for locomotive emissions were used along with data from CATS' recent CMAQ analysis for approved NOx projects. Automobile/truck emission reductions were identified in part from a rail simulation model and from CATS data for existing and future highway traffic.

#### **Step 5—Apply Relevant Decision Methods**

A benefit/cost analysis was conducted to develop a cost-sharing agreement among the parties. At minimum, the operational improvements would be worth \$0.2 billion of rail industry funding toward the overall cost of CREATE. Public entity funding will involve METRA, CDOT, ILDOT, and Federal funding.

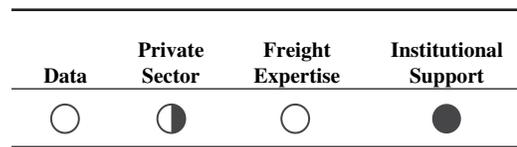
### *Strategies to Link to the Traditional Process*

- **Build advocacy for freight planning among key decisionmakers by focusing on benefits.** One of the keys to getting freight projects from the planning stage to the programming and implementation stages is to build advocacy for freight-specific projects among key regional decisionmakers, including DOT/MPO management, industry and business leaders, local citizens, and statewide or local elected officials. One of the most effective ways to build advocacy among these groups is to effectively describe potential benefits of proposed projects. A critical first step in describing benefits is to understand who the potential advocates for a project are and how they would share in the benefits of the proposed improvement. Clearly, different stakeholders have different focus areas: business and industry tend to be primarily concerned with how a proposed improvement would affect economic competitiveness and growth; local citizens and elected officials tend to be more concerned with the traffic, air quality, noise, and public safety effects; and DOT and MPO management are often most concerned with maximizing scarce resources and ensuring that regional or statewide mobility goals are met. By understanding the players involved and their interests, states and MPOs can more effectively describe how the benefits of potential freight improvements could accrue to each of these individual stakeholders. Building advocacy among these key constituencies is critical to moving freight-specific projects forward. If decisionmakers understand the potential public benefits of a project and buy-in to those benefits, moving from planning to programming to implementation will be

much easier. Additionally, being able to effectively describe benefits and how they would accrue to different groups can help open the door to discussing how costs could be shared.

- **Modify the project evaluation process to include identification of public benefits as a criterion.** Although many states and MPOs evaluate costs and benefits of potential transportation improvements prior to including them in a TIP or STIP, few specifically link transportation improvements to economic growth and vitality, often a primary benefit of freight improvement projects. States and MPOs should modify their project evaluation process to assess not only the costs of projects, but their anticipated effects on congestion, access to key freight and other facilities, and economic vitality (e.g., jobs and income). This will help ensure that all transportation projects are evaluated on the same basis and allow project evaluators to better understand the potential costs and benefits of transportation improvements.

**Using alternative funding and financing approaches.**



**Overview**

Successfully reaching the project development and implementation stage is where many of the most successful freight planning programs have built their credibility and created the momentum to move forward. However, many states and MPOs have a hard time funding freight improvement projects within the traditional planning and programming process, because deserving and necessary freight improvements have to compete with other deserving and necessary non-freight transportation improvements for limited funding.

Several states and MPOs have recognized alternative funding approaches work for freight improvements and can be used to implement freight improvements outside of or in concert with the traditional process. Examples include the Congestion Mitigation and Air Quality (CMAQ) program, which has been used successfully in non-attainment areas to make freight improvements; small capital improvement programs, which link the maintenance and operations budgets of local governments (in the case of an MPO) or district offices (in the case of a state DOT) to make short-term improvements, such as traffic signal retimings, pothole repairs, or installation of directional signage to improve freight flows; and state-specific funding programs, such as rail access programs, harbor improvement programs, or multimodal improvement programs that target investments in specific types of freight projects or facilities. States have also been investigating the use of public/private partnerships to fund and finance freight improvement projects that have clear public and private benefits. Developing and using these kinds of innovative programs together with traditional ones is one way to move freight improvement projects forward and maintain momentum for a freight planning program.

**Key Steps**

- **Investigate grants from transportation programs.** Grants from transportation programs, which give states and the Federal government the best control over the use of transportation funds, can be targeted to specific projects that solve freight transportation needs and deficiencies. Several funding programs can be used for freight improvements:
  - **Funding programs in SAFETEA-LU**, which include traditional funding programs, such as the Surface Transportation Program (STP), typically used to fund highway improvements; mode-specific or special programs, such as the Congestion Mitigation and Air Quality (CMAQ) program, which funds transportation improvements that improve air quality;

and new programs, such as the Truck Parking Facilities grant program, which can be used to improve truck parking areas along NHS highways.

- **Non-SAFETEA-LU funding programs**, which include grant programs funded by other Federal agencies, such as the FTA Rail Modernization program, which can be used for projects that often have freight benefits, or the Department of Commerce Economic Development Administration grants, which can be used to fund freight improvement projects that attract or retain industry.
- **State-specific funding programs**, which are used by states to target investments on freight infrastructure or operational improvements. These programs are often coupled with economic development incentives to attract employers.
- **Investigate loan and credit enhancement programs.** These programs enable states to use Federal resources and stimulate capital investment in transportation infrastructure by providing loans or credit support (rather than grants) for transportation projects. Examples include
  - **Transportation Infrastructure Finance and Innovation Act (TIFIA)**, which provides loans and credit assistance for major transportation investments of national or regional significance;
  - **Rail Rehabilitation and Improvement Financing (RRIF)**, which provides loans and credit assistance to both public and private sponsors of rail and intermodal projects; and
  - **State Infrastructure Banks (SIB)**, which allow states to establish infrastructure revolving funds that can be capitalized with Federal transportation funds.
- **Investigate tax-expenditure financing programs.** These programs can be used to provide targeted income tax benefits for investments made to improve the efficiency or increase the capacity of the freight transportation system by reducing or eliminating tax burdens on some interest paid by investors. Examples of tax-expenditure financing programs include
  - **Private Activity Bonds**, which allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities; and
  - **Grant Anticipation Revenue Vehicle (GARVEE) Bonds**, which allow states to issue tax-exempt debt, backed by future Federal-aid highway revenues.
- **Investigate direct user fees to fund freight improvements.** Direct user fees are typically applied at the point and time of use, such as tolls. Examples of user fees that have been implemented to support freight investments or reduce congestion at freight facilities and the feasibility of truck-only toll lanes, VMT-charges for commercial vehicles, and other strategies have been assessed by some state DOTs and other entities. Direct user fees, described below, could be applied to freight operations, although only a handful are being used to generate revenue to support freight-specific infrastructure improvements:
  - **Container fees**, which levy a fee on import and export container movements at U.S. gateways (i.e., seaports, airports, and border crossings). These fees are sometimes used by states to pay for freight infrastructure improvements related to gateways.
  - **Tolls**, whose use is gaining momentum across the country as a way to accelerate transportation investments and more directly link fees and payments with the use of transportation infrastructure. The tolling concept is broad and includes specialized tolled facilities such as turnpikes, tunnels, bridges, and high-occupancy toll (HOT) or managed-lane facilities. The primary tolling application for freight involves truck-only toll lanes, which are the subject of feasibility studies along SR 60 and I-710 in the Los Angeles/Long Beach region, throughout the entire State of Georgia, and in many other locations. The use of tolls on such facilities could accelerate the delivery of freight-specific improvement projects while minimizing public-sector risk. In addition, surplus toll revenue could be used to support additional freight improvements.
- **Congestion pricing**, which involves offering incentives to use transportation facilities in off-peak hours or charging extra to use them during peak hours. Prices can vary based on

a fixed schedule, or they can be dynamic, meaning that rates change depending on the level of congestion that exists at a particular time. This strategy is being used as a CMAQ improvement strategy as part of the PierPass program implemented at the Ports of Los Angeles and Long Beach. This program has effectively shifted approximately one-third of the port movements to off-peak delivery times. Though most commonly used as a congestion mitigation tool, surplus revenue from congestion pricing programs could be used to support other freight improvements.

- **Investigate the use of public-private partnerships (PPPs) for freight investments.** PPPs are contractual agreements formed between a public agency and private-sector entity that allow for greater private-sector participation in the delivery of transportation projects. The three principal aspects of private-sector participation are Project Delivery (development phase through design and construction); Project Management (long-term operational and maintenance responsibilities); and Project Financing (raising the capital necessary to fund the project). Some PPP approaches involve just one of these services (such as design-build contracting for a public-sponsored project, such as highway construction), whereas others may involve all three (e.g., user-charge project financings under long-term private concessions). Traditionally, private-sector participation in surface transportation projects was limited to planning, design, or construction contracts. PPPs, however, provide for expanded participation and responsibility from the private-sector in traditionally public investments on transportation. Typical PPP options include
  - **Design-Bid-Build.** This is the traditional project delivery approach for public works. The design-bid-build model separates design and construction responsibilities by awarding them to an independent private design engineer and a separate private contractor. The design engineering firm is responsible for completing the final project design. During the bidding phase, contractors submit competitive bids, which are reviewed by the public entity. Once a contractor is selected (based on the lowest bid), the project moves into the construction phase.
  - **Private Contract Fee Services.** In this strategy, the public sector transfers the responsibility for services that would be typically performed in house to the private sector. Typically these include operations and maintenance of publicly owned facilities and program and financial management.
  - **Design-Build.** The design-build method combines two typically separate services into one single contract. The public sector owns the facility under construction, and retains responsibility for financing, operating, and maintaining the project.
  - **Build-Operate-Transfer/Design-Build-Operate-Maintain.** This model (also known as “turnkey” procurement) combines design-build with operations and maintenance. A single contract is awarded to a private entity that is responsible for the design, construction, and operation/maintenance of the project. Once the contract expires, the facility is turned over to the public owner.
  - **Design-Build-Finance-Operate.** With this approach, the responsibilities for designing, building, financing, and operating are bundled together and transferred to private-sector partners. Arrangements can vary greatly, especially concerning the degree of financial responsibilities actually transferred to the private sector. For this model, a project could be entirely financed by either the public sector or the private sector or a combination of both. A common trait across all Design-Build-Finance-Operate projects is that they are either partly or wholly financed by debt backed by revenue sources dedicated to the project. Direct user fees are the most common revenue source.
  - **Build-Own-Operate.** With this model, a private company is granted the right to develop, finance, design, build, own, operate, and maintain a transportation project for a specified concession period. Public-sector involvement is limited to ensuring performance of the concession provisions.

**Data Needs**

- Commodity flow/Volume data (see Table 5-2)
- Guidebook for Financing Freight Investments (see Table 5-6)
- CMAQ: Program and Purpose Course (see Table 5-7)
- Multimodal Freight Financing Seminar (see Table 5-7)

**Case Studies—Use of Alternative Funding and Financing Approaches****Use of “Traditional” Grants—North Carolina DOT Rail Improvement Program**

Working with the North Carolina Railroad (NCRR), Norfolk Southern (NS), and CSX Railroads, NCDOT is upgrading existing rail corridors to improve safety, efficiency, and capacity for freight and passenger train services. The first phase of improvements is occurring along the North Carolina Railroad, a 317-mile, state-owned corridor that links Charlotte, Greensboro, and Raleigh and extends to the Port of Morehead City for both passengers and freight. Specific infrastructure and signal improvements, such as double-tracking some portions, extending sidings, and straightening curves, have helped reduce the travel time between Raleigh and Charlotte by 30 minutes since the work began in 2001. In addition to reducing the travel time, these projects will increase efficiency and reliability for both freight and passenger trains in the corridor. Almost \$7 million in STP and NHS funds have been used to date to fund this program.

**Use of Mode-Specific Programs—DVRPC Competitive CMAQ Program**

Every 2 to 3 years, the DVRPC sets aside a specific amount of CMAQ funding in its TIP to fund projects through a competitive program. Projects may be submitted by any public agency or public-private partnership, including members of DVRPC’s Goods Movement Task Force. For FY 2003/2004, the DVRPC Board selected 24 projects to receive funding under the Competitive CMAQ Program. The Board awarded a total of \$11.7 million of Federal CMAQ funds, including \$2.3 million for 7 projects in New Jersey and \$9.3 million for 17 projects in Pennsylvania. Among the approved projects were five freight projects, which encourage reduced truck emissions and promote rail freight as an alternative to long-haul trucks.

**Use of Non-DOT Funding Programs—Indiana Burns Harbor**

The Indiana Burns Harbor links Indiana, the eastern United States, and global markets via the St. Lawrence Seaway and the Inland Waterway System. In addition to water access, the Burns Harbor provides freight access via rail (i.e., Indiana Harbor Belt Railroad, Norfolk Southern, CSX, and South Shore Railroad), highway, and air (i.e., O’Hare International Airport, Meigs Field, and Midway Airport). The port construction and associated access projects, such as a rail overpass, highway and roadway improvements, and dredging and breakwater construction were funded by the Economic Development Administration and the United States Army Corps of Engineers Harbor Maintenance program.

*(Continued)*

**Use of Loan and Credit Enhancements—ReTRAC Project**

The ReTRAC project involves creating a below-grade trench for the Union Pacific (UP) railroad's mainline through downtown Reno. Infrastructure improvements include the construction of two mainline tracks, constructed to standards permitting maximum train speeds of 60 miles per hour, an access road adjacent to and on the south side of the tracks within the below-grade corridor, and the reconstruction of 11 street crossings built as street "bridges" across the top of the depressed trench. The project was financed with several sources: a \$73.5 million TIFIA direct loan that will be repaid through local revenue sources, including a one-eighth-cent sales tax; a 1-percent hotel occupancy tax; lease income from UP properties donated to the City; and tax assessments from downtown businesses. The TIFIA loan was used to leverage other state and local funding sources, including a project earmark within TEA-21.

**Use of Tax Expenditure Financing—Freight Rail Improvement Project (FRIP)**

The FRIP is a 22-mile-long project in Amtrak's Northeast Corridor in Rhode Island. This project entails constructing a freight-dedicated track along Amtrak's mainline tracks, linking Quonset/Davisville to the Boston Switch at Central Falls and out to western markets. The FRIP is to be administered by Amtrak Force Account—work performed by Amtrak forces—as well as Rhode Island DOT construction contracts. Funding for the project is a mix of state and Federal funds, including a combined \$51 million in planned GARVEE and Motor Fuel bonds. Use of the GARVEE bonds allowed Rhode Island to "reserve," or program, its future annual highway money in order to complete this project.

**Use of Direct User Fees—Arizona DOT**

Arizona's Safety Enforcement and Transportation Infrastructure Fund (SETIF) is capitalized using fees collected from commercial vehicles entering the United States via Arizona's southern ports of entry. These funds provide revenue for the enforcement of vehicle safety requirements by the department of public safety and the maintenance of transportation facilities, including roads, streets, and highways, as approved by the Arizona Transportation Board within 25 miles of the border between Arizona and Mexico.

**Use of Public-Private Partnerships—Virginia DOT**

Virginia's Public-Private Transportation Act of 1995 allows private entities to enter into agreements to construct, improve, maintain, and operate transportation facilities. Virginia DOT recently began soliciting proposals for the U.S. Route 460 Corridor Improvements Project. This corridor carries significant truck volumes, many of which serve the Port of Virginia. This corridor is also considered an excellent location for additional warehouse and distribution centers needed in the region. Through this PPP, Virginia DOT is seeking a private entity to develop and/or operate the new roadway. All or most of the project finance is expected to come from the private sector and may include tolling or other innovative finance methods.

*Strategies to Link to the Traditional Process*

- **Identify potential funding sources for freight projects prior to the programming stage.** Identifying a potential funding source can often make a proposed freight improvement project more attractive than other, competing projects during the programming phase and increase its chances for appearing on a TIP or STIP. Taking advantage of the state and Federal grant programs and other funding and financing options can help freight improvements more successfully navigate the project programming process. At the same time, funding and financing freight improvements in this way may make it easier for states and MPOs to attract private-sector equity for freight investments, because such funding creates an environment where both the public and private sectors can pool resources more effectively, share risks and rewards more equitably, and distribute costs and benefits more efficiently, further enhancing transportation efficiency and economic vitality.
- **Modify the project evaluation process/criteria to reward the use of alternative funding mechanisms.** States and MPOs should modify the project evaluation process to reward the use of alternative funding or financing mechanisms or to incorporate a factor which recognizes the leveraging of public investment dollars. Modifying TIP/STIP evaluation criteria to provide extra “points” or consideration for those projects that bring their own funding sources will allow freight projects to more effectively compete with non-freight improvements and may also encourage the private-sector freight community to propose improvement projects and enter into cost-sharing agreements.

**4.5 Project Development Strategies**

The project development stage of the transportation planning process includes a more detailed scoping and design of the potential project, along with a more formal assessment of the necessary permitting and approval activities. Several strategies have proven effective in integrating freight issues into project development activities, as described in Table 4-5 and below.

**Table 4-5. Relative importance of common stumbling points to project development strategies.**

Needs Identification Strategies	Data	Private Sector	Freight Expertise	Institutional Support
Addressing NEPA Requirements within Freight Projects	◐	◐	○	◐
Incorporating Context Sensitive Solutions (CSS) into Freight Projects	◐	◐	○	◐

**Key:** Less Important ○ → ◐ → ● More Important

**Addressing NEPA requirements within freight projects.**

Data	Private Sector	Freight Expertise	Institutional Support
◐	◐	○	◐

### Overview

National Environmental Policy Act (NEPA) reviews often present challenges for freight-specific projects. Freight-specific projects can be jurisdictionally complex, occur in environmentally sensitive areas, and involve a wide range of public and private-sector transportation, resource, and environmental agencies. If this part of the process is not conducted properly, the result can be significant delays in project implementation as alternatives are re-reviewed and new stakeholders are brought into the process for the first time.

### Key Steps

- **Understand the NEPA process and explain requirements to project stakeholders.** It is important to understand the NEPA process and how it applies to freight improvement projects. It also is critical that the NEPA requirements and processes be clearly explained to project stakeholders. Clearly articulating the NEPA process, its requirements, the agencies involved, and how its results may affect freight project implementation is particularly important for private-sector freight stakeholders, who may not be completely familiar with NEPA.
- **Identify key stakeholders and engage them early in the process.** It is critical to identify project stakeholders (e.g., freight, environmental, and community) and engage them early in the planning process. Engaging different groups throughout the process allows potential environmental pitfalls to be identified and mitigation strategies to be developed prior to project implementation. It also can help build advocacy among the general public as well as local and regional decisionmakers, which is key to the successful implementation of freight improvement projects.
- **Identify key points of contact to facilitate interagency coordination during the NEPA process.** Given the number of agencies that can become involved in NEPA processes, coordinating the activities during the project development and implementation process is a challenge often faced by state DOTs and MPOs. It is important that states and MPOs coordinating these activities first identify the agencies and entities involved and then identify a primary and a secondary point-of-contact for project-related matters. This can help ensure close coordination and regular exchange of information that can facilitate the design, environmental studies and compliance, and permitting activities associated with the project.

### Data Needs and Other Supporting Resources

- Commodity flow/Volume data (see Table 5-2)
- Freight Industry data (see Table 5-3)
- Socioeconomic and Industry data (see Table 5-5)
- NEPA and Transportation Decision-Making course (see Table 5-7)
- Linking Planning and NEPA: Towards Streamlined Decision-Making course (see Table 5-7)
- Freight Planning and Environmental Considerations course (see Table 5-7)

### Case Study—Calais-St. Stephen International Border Crossing

Over the last several years, the Maine and New Brunswick DOTs have been collaborating, along with the U.S. General Services Administration (GSA), Canada Border Services Agency (CBSA), and U.S. Department of Homeland Security's (DHS) Customs and Border Protection (CBP) to plan and design new border-crossing facilities in Calais, Maine and St. Stephen, New Brunswick.

(Continued)

Many state, Federal, and provincial agencies and entities are involved in a border-crossing project. On the U.S. side, stakeholders include those commonly consulted as part of major transportation improvements, such as the Environmental Protection Agency (EPA), the Fish and Wildlife Service, the U.S. Army Corps of Engineers, the GSA, agencies of the DHS, and the U.S. Coast Guard. On the Canadian side, similar agencies must be consulted, including provincial governments, the CBSA, and others. Finally, authorizations of the Federal Government of Canada and the U.S. State Department must be obtained before an international bridge may be constructed.

The development of this project involved close coordination of the various state, Federal, and provincial stakeholders in the project. A Project Advisory Committee, made up of representatives from these stakeholders, was developed to ensure that key issues were identified and addressed in a timely fashion and that lines of communication among the various parties remained open. Two key elements contributed to the success of this group and allowed them to drive this project forward:

1. **Points of Contact**—Each of the primary agencies involved in the planning and development of this project (i.e., Maine DOT, NBDOT, CBSA, and GSA) identified a primary and a secondary point-of-contact for project-related matters. This allowed the Project Advisory Committee to develop close relationships with the other agencies, improving their ability to identify and solve potential issues as they arose.
2. **Regular Progress Reports**—In addition to identifying points of contact at agencies, meetings of the Project Advisory Committee and other public meetings often began with progress reports from each of the key agencies. As part of these progress reports, information was provided on progress since the last meeting, planned activities over the next quarter, and unresolved issues/required information.

### *Strategies to Link to the Traditional Process*

- **Add resource agencies to freight advisory committees or similar groups.** States and MPOs should include appropriate resource and other environmental agencies to existing freight advisory committee or similar groups to ensure that potential environmental issues are identified and addressed well in advance of project development. Engaging these groups early in the planning and programming process has the added benefit of building advocacy and consensus for freight-related projects while avoiding costly environmental delays.
- **Include environmental data in existing data collection and mapping activities.** Geographic information systems (GIS) can be effective tools for identifying potential environmental issues associated with freight and other transportation improvement projects. Collecting environmental data and “overlying” these data on proposed transportation improvements can provide insight into how improvements may affect sensitive environmental areas, relate to land use strategies, and affect certain communities. States and MPOs should work closely with resource and other environmental agencies to collect appropriate environmental data and incorporate it in existing GIS or other mapping tools.

### Incorporating context-sensitive solutions (CSS) into freight projects.

Data	Private Sector	Freight Expertise	Institutional Support
			

#### Overview

Context-sensitive solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders in developing transportation facilities that complement physical settings; preserve scenic, aesthetic, historic, and environmental resources; and maintain safety and mobility. Incorporating CSS principles throughout the transportation planning and programming process can provide a better understanding of project context and community values. CSS also provides a vehicle for early cooperation, coordination, and consensus-building among key transportation, economic development, and environmental agencies and communities.

Incorporating CSS principles for freight-specific improvement projects can be challenging for several reasons. First, many freight facilities are already built on private property and require high degrees of interconnection with other existing facilities and networks. As a result, there are limited opportunities to relocate these facilities and CSS principles must be adapted when making improvements to these facilities. Second, some freight projects are planned and funded outside the state DOT or MPO process but affect the public-sector system and surrounding communities. In those cases, CSS issues may not arise until the permitting process and must be identified and incorporated during the project development process, possibly increasing costs and delays. Finally, freight movements are dictated by market forces and changes in these forces (e.g., demand, fuel costs, handling costs, and merger activities) can result in changes in freight volumes at facilities and along corridors. Changes in shipper logistics patterns or decisions can also affect mode choice decisions. As a result, freight facilities previously dormant could witness a rapid increase in operations, causing CSS and other environmental issues that might not have existed before. Despite these challenges, several states and MPOs have successfully incorporated CSS principles in freight improvement projects. By doing so, these states and MPOs have had an easier time overcoming potential environmental and other project development and implementation challenges.

#### Key Steps

- **Understand the project “context.”** Understanding the “context” of the proposed improvement (i.e., its location: its proximity to community, cultural, historic, or environmental resources, and its potential effects on those resources) is a critical component of CSS. Quantitative and qualitative methods can be used to describe the context of a proposed improvement. Quantitatively, environmental, transportation, and historical/cultural data can be used (within a GIS) to understand potential environmental and community implications of transportation improvements. Such data may have been collected, analyzed, and mapped as part of a freight/industry profile and can be used in this phase of the transportation planning process to identify potential effects. Qualitatively, engaging key freight, community, and environmental stakeholders throughout the planning and programming process can help you understand the context and potential implications of proposed improvements.
- **Identify key freight and community stakeholders and engage them early in the process.** Similar to addressing NEPA requirements for freight projects, identifying freight, environmental, and community stakeholders and engaging them early in the planning process is a key element

of successful incorporation of CSS principles. Balancing community, environmental, and freight transportation goals early in the process can help build advocacy for freight improvement projects and other freight-related planning activities.

### *Data Needs and Other Supporting Resources*

- Commodity flow/Volume data (see Table 5-2)
- Socioeconomic and Industry data (see Table 5-5)
- Context-Sensitive Solutions course (see Table 5-7)
- Freight Planning and Environmental Considerations course (see Table 5-7)

### **Case Study—Merrick/Memorial Neighborhood Redevelopment Plan**

The West Springfield (Massachusetts) CSX rail yard has long dominated the physical landscape and functioned as the economic engine for the surrounding Merrick and Memorial neighborhoods. The community's rail heritage dates to the turn of the century when the prosperous rail yard was the center of the area's industrial economy.

The businesses that the rail yard attracts, the jobs that it creates, and the traffic and environmental effects that it generates all directly influence the quality of life for the more than 5,000 people who reside in the immediate area. Key issues included poor truck access to the yard (trucks used neighborhood streets) and an increasing volume of rail traffic at the facility, causing noise and air quality issues.

The Pioneer Valley Planning Commission and the Town of West Springfield prepared a master redevelopment plan to assist efforts aimed at developing a redevelopment strategy for the West Springfield CSX rail yard and surrounding neighborhood. The plan was developed so that it would not adversely affect renewable energy sources or result in the waste of water, energy, or other natural resources. While open space in the Merrick and Memorial neighborhoods is limited, the plan encourages the development of additional areas for recreational use and seeks to enhance existing streetscapes with sidewalks and pedestrian amenities. The plan promotes building techniques that use land, water, and materials efficiently. Finally, significant mitigation measures, including increased signage and noise control measures, were identified.

### *Strategies to Link to the Traditional Process*

- **Incorporate “visioning” or “scenario planning” techniques within the long-range planning process.** Visioning or scenario planning techniques allow transportation planners to develop consensus-driven visions by analyzing various forces that affect future growth (e.g., health, transportation, economic, environmental, and land use). This is different from the traditional “build versus no-build” alternatives analysis because it incorporates the analysis of long-term socioeconomic, transportation, industry, and land use trends and their effects on a region. Successful scenario planning actively involves the general public, freight and industry communities, and elected officials on a broad scale, educating them about growth trends and tradeoffs, and incorporating their values and feedback into plans. Engaging key statewide and regional stakeholders in this process can help DOTs and MPOs more effectively balance community, environmental, and mobility needs, as well as allow them to incorporate CSS principles early in the transportation planning and programming process.

- **Include community, historical, and cultural data in existing data collection and mapping activities.** As discussed earlier, GIS can be an effective tool for identifying potential community, historical, and cultural issues associated with freight and other transportation improvement projects. Collecting and “overlaying” these data on proposed transportation improvements can provide insight into how improvements may affect communities and can help DOTs and MPOs avoid conflicts during project development and implementation.

# Freight Resource Tool Box

## 5.1 Overview

This section provides descriptions and links, where appropriate, to other freight planning and programming resources that can be used to support the activities described in this Guidebook. Resources are provided in seven categories:

1. **Freight-related data sources**, which describe key sources of freight network, commodity flow, industry, trade, and socioeconomic databases;
2. **Other guidebooks**, which identifies existing transportation planning guidebooks that can be used in conjunction with this Guidebook;
3. **Training and workshop opportunities** provided by FHWA, NHI, and others;
4. **Sample survey and interview guides** to support stakeholder outreach and information collection activities;
5. **Freight planning and programming self-assessment questions**;
6. **Full freight planning and programming case studies**;
7. **List of acronyms used in the Guidebook**; and
8. **Links to existing freight and intermodal glossaries**, developed by transportation planning agencies and industry associations.

## **Sample Carrier Interview Guide**

**Company Name:**

**Contact:**

**Title/Position:**

**Phone/Fax:**

**Address:**

**E-mail:**

### **Description of Operation**

- Describe the primary function of your operation. What are your day-to-day responsibilities?
- What type of service(s) do you provide?
- Is this your headquarters? If no, where is it? How many terminals/facilities do you have?
- How many employees do you have in the region? How many in total?
- What is the average length of haul for your trips?
- What transportation equipment do you use (tractors, trailers, airplanes, box cars, containers, etc.)? Please provide the number of each.
- What type of sorting or storage facilities do you use (cross-dock facilities, warehouses, distribution centers, classification yards, etc.)?
- Describe your receiving/shipping facilities (rail yards, loading docks, etc.).
- Do you have good access to other modes of transportation? Please describe.
- What volume of freight is moved by your operation per week/month/year?
- Define the average size shipment handled (by volume and unit).
- Categorize the type of freight you move (by weight, by value, by commodity).
- Describe the primary markets served (where is the freight originating and terminating).
- Identify the transportation infrastructure you use. What seaports, airports, and rail yards/facilities do you use? What are the key highways you rely on (please identify specific highways, arterials, local terminal access roads, etc., that you use regularly)?
- Describe the condition of these facilities. Are there significant operational or structural limitations (bottlenecks, poor reliability, size/weight constraints, etc.)?
- Are your customers mode dependent? Yes or No. If yes, how?
- Do you have balanced freight flows (backhaul)? Yes or No. Explain implications whether yes or no. How long is your typical deadhead trip length to pickup your next load?
- Is your operation dependent on any other mode of transportation? If so, which one(s) and why (level of intermodal/multimodalism)?
- How would you characterize the transportation services you provide (e.g., expedited, reliable, time definite, guaranteed, premium, economical, etc.)?
- How do you communicate with your customers (both shipper and receiver)? Do you provide en-route shipment status? Yes or No. If yes, how?
- Describe the typical flow of freight through your operation (e.g., from the time a load is picked up until it is delivered). Describe any uses of technology.
- Who are your major customers?
- Who are your major competitors?
- Do you have any expansion plans? Yes or No. If yes, what are they?

## General Questions

- Do you use the Internet for business operations? Do you maintain your own web page?
- What other types of technology do you use (on-board computers, transponders, track and trace, etc.)? Have these improved or hindered your operations? How?
- What type of security protocols do you have in place?
- How has the increased emphasis on homeland security impacted your operations?
- Are you aware of the congestion management systems/data provided by the MPO or DOT? Do you use or rely on any of the congestion management systems/data provided by the MPO or DOT? If so, please describe.
- What are the strengths of the region's freight transportation system?
- What are the weaknesses of the region's freight transportation system?
- How could the existing transportation system be operated differently to improve your operations?
- How could the existing transportation system physically be changed to improve your operations?
- Are you familiar with any freight planning that takes place in the region or state? Have you participated? If yes, how? If no, would you like to participate in the future?
- Are you aware of any planned improvements?
- Do you have any other comments, concerns, or issues that we have not addressed?

## Freight Study – Truck Driver Survey

<b>Interviewer:</b> _____	<b>Date:</b> _____	<b>Location:</b> _____	<b>Time:</b> _____
---------------------------	--------------------	------------------------	--------------------

**1. Are You:**

- |   |  |
|---|--|
| <input type="checkbox"/> Employed by the company you are driving for? | <input type="checkbox"/> An owner-operator?                        |
|   | <input type="checkbox"/> An independent driver hauling by the job? |

**2. How long have you been driving in the County?** \_\_\_\_\_

**3. What Kind of Vehicle Do You Drive?**

- |  |   |
|--|---|
| <input type="checkbox"/> Tractor-Trailer Combination<br>Trailer type/size/# axles? _____ | <input type="checkbox"/> Straight (single unit) |
|--|---|

**4. What Kind of Company Are You Driving for**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Steamship line | <input type="checkbox"/> Parcel delivery       | <input type="checkbox"/> Municipal waste |
| <input type="checkbox"/> Trucking       | <input type="checkbox"/> Retail (e.g., K-Mart) | <input type="checkbox"/> Other _____     |
| <input type="checkbox"/> Construction   | <input type="checkbox"/> Petroleum distributor |  |
| <input type="checkbox"/> Food products  | <input type="checkbox"/> Moving/storage        |  |

**5. Describe your typical load:**

Type of Commodity: \_\_\_\_\_  
 Load Size (by weight): \_\_\_\_\_  
 Trip Frequency: \_\_\_\_\_

**Route Variability**

- Set Route  
 Variable Routes

**Type of Load**

- Truck Load  
 Less than Truck Load

**6. For the load you have now, it originated at \_\_\_\_\_ and will terminate at (Please provide major intersection, if possible) \_\_\_\_\_.**

**7. Where do you typically operate?**

- |   |  |
|---|--|
| <input type="checkbox"/> Within County Only | <input type="checkbox"/> Within State  |
| <input type="checkbox"/> Within Region      | <input type="checkbox"/> Outside State |

**8. What roads do you use most frequently?**

Primary East/West: _____	Primary North/South: _____
<input type="checkbox"/> I-95	<input type="checkbox"/> U.S. 27
<input type="checkbox"/> Turnpike	<input type="checkbox"/> SR 441
<input type="checkbox"/> SR 710	<input type="checkbox"/> SR 80 (Southern)
	<input type="checkbox"/> U.S. 1
	<input type="checkbox"/> Congress Avenue
	<input type="checkbox"/> Military Trail



STATEWIDE FREIGHT STUDY

# Sample Motor Carrier Survey

Respondent's Name \_\_\_\_\_ Title \_\_\_\_\_  
 Company Name \_\_\_\_\_ Telephone \_\_\_\_\_  
 Address \_\_\_\_\_ E-mail \_\_\_\_\_  
 \_\_\_\_\_

If we have questions, can we contact you?  Yes  No

## Terminal Operations

1. How many terminals does your company operate in the state? Please check the most appropriate. If "0," skip to #5.  
 0     1     2-5     6-9     10-15     16-20     21-25     26+
2. How many doors does your facility(ies) have? \_\_\_\_\_
3. What is the average number of trucks inbound to each of your facilities in a month? \_\_\_\_\_
4. What is the average number of trucks outbound from each of your facilities in a month? \_\_\_\_\_
5. What is the average number of loads you carry in a month? \_\_\_\_\_
6. Do you usually have a backhaul?     Yes     No

## Operations

7. How many power units do you operate in the state?                      Long-haul: \_\_\_\_\_ Pick-up and Delivery: \_\_\_\_\_
8. How many trailers does your company operate in the state? **Please check all that apply and give the number.**  
 28-foot: \_\_\_\_\_  48-foot: \_\_\_\_\_  53-foot: \_\_\_\_\_  Other: \_\_\_\_\_
9. What is the average length of haul for your vehicles serving in the state? Please check the most appropriate.  
 1-25 miles     26-49 miles     50-99 miles     100-249 miles     250-500 miles     501+ miles
10. What products does your company haul (into/out of/through) the state? **Please check all that apply.**

<input type="checkbox"/> Automobiles	<input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Parcels	<input type="checkbox"/> Stone
<input type="checkbox"/> Concrete	<input type="checkbox"/> Household Goods-Movers	<input type="checkbox"/> Petroleum Products	<input type="checkbox"/> Transportation
<input type="checkbox"/> Electrical Equipment	<input type="checkbox"/> Lumber/Processed Wood Products	<input type="checkbox"/> Processed Foods	<input type="checkbox"/> Equipment
<input type="checkbox"/> Fabricated Metal Products	<input type="checkbox"/> Machinery	<input type="checkbox"/> Raw Forest Products/Logs	<input type="checkbox"/> Textile Products
<input type="checkbox"/> Farm Fresh Products/Dairy Products	<input type="checkbox"/> Metallic Ores	<input type="checkbox"/> Refuse	<input type="checkbox"/> Wood Pulp/Wood Products
<input type="checkbox"/> Furniture	<input type="checkbox"/> Nonmetallic minerals	<input type="checkbox"/> Retail Store Delivery	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Glass	<input type="checkbox"/> Paper/Paper Products	<input type="checkbox"/> Rubber/Plastic	<input type="checkbox"/> Other: _____
			<input type="checkbox"/> Other: _____

11. Which commodity is your primary freight hauled in the state? \_\_\_\_\_

12. What are the primary roads you use in the state? **Please indicate route number.** \_\_\_\_\_

13. What road(s) do you use as primary point(s) of entry into the state? **Please indicate route number and location.**

14. What road(s) do you use as primary point(s) of exit from the state? **Please indicate route number and location.**

15. What percentage of your loads destined for the state involve intermodal movements?

- 0     1-24%     25-49%     50-74%     75-100%

16. What intermodal terminals (rail, water, and air) do you most often use for these movements? **Please indicate city/town and state.** \_\_\_\_\_

17. What percentage of your loads originating in the state involve intermodal movements?

- 0     1-24%     25-49%     50-74%     75-100%

18. What intermodal terminals (rail, water, and air) do you most often use for these movements? **Please indicate city/town and state.** \_\_\_\_\_

19. What percentage of your inbound freight shipments originate in a foreign country?

- 0     1-24%     25-49%     50-74%     75-100%

20. In what countries do these international shipments most often originate? **Please also indicate the primary routes used to enter the United States, if known:** \_\_\_\_\_

21. What percentage of your outbound freight shipments are destined for a foreign country?

- 0     1-24%     25-49%     50-74%     75-100%

22. For what countries are these international shipments most often destined? **Please also indicate the primary routes used to exit the United States, if known:** \_\_\_\_\_

**Infrastructure Issues**

23. What is the closest major highway intersection to your facility? \_\_\_\_\_

24. How many miles is it to the nearest Interstate Highway? **Please check the most appropriate.**

- 1-5    6-10    11-25    26-50    50+

25. Does the existing limit on 53-foot trailer access to certain state roads affect your operation?

If yes, please explain.

- No    Yes \_\_\_\_\_

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26. What are the strengths of the state's freight infrastructure? \_\_\_\_\_

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27. What physical impediments/bottlenecks currently exist in the state's freight infrastructure? \_\_\_\_\_

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28. Please provide any additional comments, concerns, or recommendations regarding the state's infrastructure.

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STATEWIDE FREIGHT STUDY

# Sample Shipper/Receiver Survey

Respondent's Name \_\_\_\_\_ Title \_\_\_\_\_  
 Company Name \_\_\_\_\_ Telephone \_\_\_\_\_  
 Address \_\_\_\_\_ E-mail \_\_\_\_\_  
 \_\_\_\_\_

If we have questions, can we contact you?  Yes  No

### Overview of Operation

- How would you describe your operation? **Please check all that apply.**  
 Manufacturer  Warehouser/Distributor  Service/Utility  Other \_\_\_\_\_
- How many people does your company employ in the state? Please check the most appropriate.  
 1-9  10-25  26-50  51-100  101-500  500+
- Where are you located (town, county, state)? \_\_\_\_\_  
 Is this your headquarters?  Yes  No

### Inbound Freight Flows

- What is your primary inbound freight? \_\_\_\_\_
- Where are your major suppliers located? **Please provide the name of the city/town and state.**

6. Does any of your inbound freight originate from foreign countries? **If yes, please indicate which countries and which ports or gateways are used.**  
 No  Yes \_\_\_\_\_

7. On average, how many days of inbound inventory does your facility keep on-site? \_\_\_\_\_

8. What modes do you use to transport your inbound shipments? **Please check all that apply and note key routes, frequency of shipments and average monthly volumes.**

	Key Routes	Frequency of Shipments	Average Monthly Volume
<input type="checkbox"/> Truck			
<input type="checkbox"/> Rail			
<input type="checkbox"/> Water			
<input type="checkbox"/> Air			

### Outbound Freight Flows

9. What is your primary outbound freight? \_\_\_\_\_

10. What geographic market(s) do you serve? \_\_\_\_\_

11. On average, how many days of outbound inventory does your facility keep on-site? \_\_\_\_\_

12. Is any of your outbound freight destined for foreign countries? **If yes, please indicate which countries and which ports or gateways are used.**

No     Yes \_\_\_\_\_

13. What modes of transportation do you use for your outbound shipments? **Please check all that apply and note key routes, frequency, and average monthly volumes**

	Key Routes	Frequency of Shipments	Average Monthly Volume
<input type="checkbox"/> Truck			
<input type="checkbox"/> Rail			
<input type="checkbox"/> Water			
<input type="checkbox"/> Air			

### Truck and Highway Usage

14. What type of ground transportation services do you use?

Private Fleet     Common Carrier     Contract Carrier     Leased Equipment  
 Third-Party Logistics     Dedicated Transportation Management

15. What type of equipment is utilized to ship your freight? **Please check all that apply and indicate the number.**

	Number of Units in Operation	Length of Each Trailer Unit
<input type="checkbox"/> Single Unit		
<input type="checkbox"/> Tractor		
<input type="checkbox"/> Trailers		
<input type="checkbox"/> Containers		

16. What is the closest major highway intersection to your facility? \_\_\_\_\_

17. How many miles is it to the nearest interstate highway from your facility? Please check the most appropriate.

1-5     6-10     11-25     26-50     50+

**Rail Usage**

18. Does your facility have a rail siding?

No  Yes **If yes, how many railcars can it accommodate at once?** \_\_\_\_\_

19. Where is the closest railyard to your facility located? **Please provide the name of the city/town and state.**

Do you use this railyard?  Yes  No

**Infrastructure Issues**

20. Does the existing limit on 53-foot trailer access to certain state roads affect your operation? **If yes, please explain.**

No  Yes \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21. Would you consider shipping/receiving your goods via a different mode of transportation? **If yes, please explain what factors would influence your decision**

No  Yes \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

22. What are the strengths of the state's freight infrastructure? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23. What physical impediments/bottlenecks currently exist in the state's freight infrastructure? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

24. Please provide any additional comments, concerns, or recommendations regarding the state's infrastructure.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 5.2 The Freight Planning and Programming Self-Assessment

The freight self-assessment is designed to help you

- **Know Your Organization**, by helping you identify and understand the types of freight planning activities you already have undertaken or are undertaking; determine available staff resources for freight planning in terms of time, interest, and expertise; and evaluate the level of support provided by your leadership regarding freight transportation.
- **Know Your Process**, by helping you understand how freight issues are incorporated in your transportation planning and programming activities and pinpointing how your existing process facilitates or hinders effective freight planning.
- **Know Your Freight Stakeholders**, both internal and external and from both the public and private sectors. Understanding these freight stakeholders and their perspectives can help facilitate freight planning efforts as well as groom potential advocates for freight planning activities.

Tables 5-9 through 5-11 provide a series of questions to guide you through these three components of the self-assessment.

**Table 5-1. Modal networks.**

Source	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
North American Transportation Atlas (NORTAD)	Geospatial information for transportation modal networks, intermodal terminals, and related attribute information	Not specified	U.S. Totals, Canada, and Mexico	U.S. Department of Transportation, Bureau of Transportation Statistics	<a href="http://www.bts.gov/publications/north_american_transportation_atlas_data/">http://www.bts.gov/publications/north_american_transportation_atlas_data/</a>
National Transportation Atlas Databases (NTAD)	Most complete database source for highway network information outside Florida and for rail, water, and air networks for the zones inside and outside Florida	Not specified	50 U.S. States, District of Columbia, and Puerto Rico	U.S. Department of Transportation, Bureau of Transportation Statistics	<a href="http://www.bts.gov/publications/national_transportation_atlas_database/">http://www.bts.gov/publications/national_transportation_atlas_database/</a>
National Highway Planning Network, Year 2005	Highway link information in the United States (real-time information on vehicle movement and highway conditions)	Real-time	Major U.S. Highways	U.S. Department of Transportation, Federal Highway Administration	<a href="http://www.fhwa.dot.gov/planning/nhpn/">http://www.fhwa.dot.gov/planning/nhpn/</a>
Strategic Highway Corridor Network (STRAHNET) and Connectors	Highway link information outside Florida (real-time information on vehicle movement and highway conditions)	Not specified	Major Highway Systems in 50 U.S. States and District of Columbia	U.S. Department of Defense, Department of Army, Military Traffic Management	<a href="http://www.fhwa.dot.gov/ohim/hs00/hm49.htm">http://www.fhwa.dot.gov/ohim/hs00/hm49.htm</a>
Federal Railroad Administration (FRA) National Rail Planning Network	Digital representation of major continental U.S. railway systems, including Canada and Mexico	Not specified	50 U.S. States, Canada, and Mexico	U.S. Department of Transportation, Federal Railroad Administration	Contact FRA
Status of the Nation's Surface Transportation System: Condition and Performance	Highway, bridge, and transit operation and financial performance measures	Biennial	National	Department of Transportation, Federal Highway Administration	<a href="http://www.fhwa.dot.gov/policy/2002cpr/index.htm">http://www.fhwa.dot.gov/policy/2002cpr/index.htm</a>
Port Facilities Inventory	Detailed information on more than 4,000 major ocean and river port facilities (name, owner, operator, location, geographic boundaries, activity levels, wages, revenues, and number of employees)	No specific update cycle	Major U.S. ocean and river port facilities	U.S. Department of Transportation, Maritime Administration	Print version, available for purchase

Table 5-2. Commodity flow and volume data.

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
TRANSEARCH	All	Comprehensive market research data service for intercity traffic flows	Every 5 years, years ending in 3 and 8	Counties	Global Insight	CD ROM, available for purchase
Commodity Flow Survey (CFS)	All	Data on flow of goods and materials by mode of transport	Not specified	U.S. Totals and 89 National Transportation Analysis Regions	U.S. Department of Transportation, Bureau of Transportation Statistics	<a href="http://www.bts.gov/publications/commodity_flow_survey/index.html">http://www.bts.gov/publications/commodity_flow_survey/index.html</a>
Freight Analysis Framework (FAF)	All	Estimates of commodity flows among states, regions, and major international gateways. The original version, FAF <sup>1</sup> , provides estimates for 1998 and forecasts for 2010 and 2020. The new version, FAF <sup>2</sup> , provides estimates for 2002 and the most recent year plus forecasts through 2035	Not specified	States (FAF <sup>1</sup> ); 114 analysis regions (FAF <sup>2</sup> )	FHWA, Office of Freight Management and Operations	<a href="http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm">http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm</a>
The State Freight Transportation Profiles	All	Summaries of National Transportation Atlas Databases, Commodity Flow Survey, United States Waterway Data, and Railroad Accident/Incident Reporting System (RAIRS)	Not Specified	50 States	U.S. Department of Transportation, Bureau of Transportation Statistics	<a href="http://www.bts.gov/publications/state_transportation_profiles/">http://www.bts.gov/publications/state_transportation_profiles/</a>
Current Industrial Reports	All	Current statistics on commodity production and shipments for approximately 4,500 products	Annual	U.S. Totals	U.S. Department of Commerce, Bureau of the Census	CD ROM
Shifts in Petroleum Transportation	All – except Aviation	Movement, in ton-miles, of crude oil and petroleum products	Annual	50 States, District of Columbia, and Canada	Association of Oil Pipe Lines	Print version, free of charge
Coal Distribution Data	All – except Aviation	Information on coal distribution by origin, destination, consumer category, and method of transportation	Quarterly	Worldwide	U.S. Department of Energy, Energy Information Administration	Diskette format

**Table 5-2. (Continued).**

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
Highway Performance Monitoring System	Truck	National public road mileage on both a statewide and national basis	Annual	National, statewide, and urbanized areas	U.S. Department of Transportation, Federal Highway Administration	GIS version, available for purchase
Truck Weight Study Data	Truck	Database contains information on weigh-in-motion and vehicle classification information collected at truck weigh sites	Not specified	U.S. Totals	U.S. Department of Transportation, Federal Highway Administration	Free of charge if diskette is provided
Annual Vehicle Miles of Travel and Related Data (VM-1)	Truck	VMT estimates of current year and revised figures for previous years	Annual	U.S. Totals	U.S. Department of Transportation, Federal Highway Administration	Disk version, free of charge
Monthly Truck Tonnage Report	Truck	Information on tonnage moved by for-hire motor carriers	Yearly	U.S. Totals	American Trucking Associations	Print version, available for purchase
TranStats	Truck	Data on truck movement, truck shipments that move across the Woodrow Wilson Bridge, Federal gas tax, and findings from Transportation Satellite Accounts (TSA)	Varies	U.S. Totals	U.S. Department of Transportation	<a href="http://www.transtats.bts.gov/">http://www.transtats.bts.gov/</a>
Carload Waybill Sample	Rail	Rail shipment data such as origin and destination points, type of commodity, number of cars, tons, revenue, participating railroads, and interchange locations	Annual	U.S. Totals, BEA-to-BEA levels	Surface Transportation Board	CD ROM, available for purchase
Rail Waybill Database	Rail	Public-use aggregate nonconfidential rail shipment data (freight volume and revenue data)	Not specified	U.S. Class I Railroads	U.S. Department of Transportation, Bureau of Transportation Statistics	CD ROM, available for purchase
Weekly Railroad Traffic	Rail	Information on carloads by commodity and railroads plus intermodal traffic by railroad	Weekly	U.S. rail carloads	Association of American Railroads	Print version, available for purchase

*(continued on next page)*

Table 5-2. (Continued).

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
Domestic Waterborne Commerce of the United States	Seaport	Domestic waterborne commerce in short tons by commodity, vessel, operator, shipping and receiving dock, type of service, and trade segment	Annual	U.S. by ports	U.S. Department of Transportation, Maritime Administration	CD ROM
U.S. Waterborne Exports and Outbound In transit Shipments	Seaport	Shipping weight and value by type of vessel service	Annual	Counties	U.S. Department of Commerce, Bureau of Census	CD ROM
Port Import Export Reporting Service (PIERS)	Seaport	Comprehensive statistics on global cargo movements transiting seaports in the United States, Mexico, and South America to companies around the globe	Monthly	Global, including U.S. Seaports	Journal of Commerce Group, Inc.	Commercial database available on-line
Waterborne Tonnage by State	Seaport	Provides one page listings of the waterborne tonnage by states for a given calendar year	Annual	U.S. Totals, U.S. Territories, 50 States, and District of Columbia	U.S. Department of Defense, U.S. Army Corps of Engineers	Print version
Origin and Destination of Waterborne Commerce of the United States, Public Domain	Seaport	Aggregate information on waterborne commodity movements between 26 geographical regions in the United States	Yearly	U.S. Totals, U.S. Territories	U.S. Department of Defense, U.S. Army Corps of Engineers	Data file version, available for purchase
Airport Activity Statistics	Airport	Volume of revenue passengers, freight express, and mail traffic	Annual	U.S. Totals, state, and city	U.S. Department of Transportation, Bureau of Transportation Statistics	<a href="http://www.bts.gov/publications/airport_activity_statistics_of_certificated_air_carriers/">http://www.bts.gov/publications/airport_activity_statistics_of_certificated_air_carriers/</a>
Terminal Area Forecast	Airport	Air cargo volumes by commodity type	Not specified	Select Airports in the United States, including those with FAA control towers and/or receiving commercial service	U.S. Department of Transportation, Federal Aviation Administration	Printed format

**Table 5-2. (Concluded).**

<b>Source</b>	<b>Modes</b>	<b>Description/Attributes</b>	<b>Cycle Update</b>	<b>Geographic Coverage</b>	<b>Agency</b>	<b>Availability</b>
Federal Aviation Administration (FAA) Aviation Forecasts Fiscal Years 2006-2017	Airport	Air cargo historical and forecast volumes by commodity type	Not specified	Select Airports in the United States, including those with FAA control towers and/or receiving commercial service	U.S. Department of Transportation, Federal Aviation Administration	<a href="http://www.faa.gov/data_statistics/aviation/aerospace_forecasts/2006-2017/">http://www.faa.gov/data_statistics/aviation/aerospace_forecasts/2006-2017/</a>
North America Airport Traffic Report. Airport Council International – North America Traffic Report	Airport	Airport activity statistics in terms of passenger and cargo operations	Not applicable	130 North American Airports	Airports Council International, North America	Print version, available for purchase

Table 5-3. Freight industry data.

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
Transportation Annual Survey	All – except Aviation	Data on total operating revenue, and total operating expenses that include annual payroll and employee benefits, commodities carried, end-of-year inventory of revenue generating equipment, and type of carrier	Yearly	U.S. Totals	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
Motor Carrier Financial and Operating Information Program	Truck	Annual and quarterly survey of motor carriers (name, owner, operator, location, geographic boundaries, number of employees, wages, and revenues)	Quarterly and annually	National	Federal Highway Administration, Office of Motor Carriers	<a href="http://www.fmcsa.dot.gov/forms/reporting/prod.htm">http://www.fmcsa.dot.gov/forms/reporting/prod.htm</a>
Trucking Activity Report (TRAC)	Truck	Benchmarking statistics for both truckload and less-than-truckload carriers	Monthly	U.S. Totals	American Trucking Associations	Yearly subscription
Vehicle Inventory and Use Survey (VIUS)	Truck	Physical and operational characteristics on the Nation's vehicle population	Varies	U.S. Totals, 50 states, and District of Columbia	U.S. Department of Commerce, Bureau of Census	<a href="http://www.census.gov/svsd/www/tiusview.html">http://www.census.gov/svsd/www/tiusview.html</a>
America's private Carriers – Who are These Guys	Truck	Charts and analysis information on private carrier segment of trucking industry	Annual	U.S. Totals	Transportation Technical Services (TTS)	Disk version, available for purchase
Canadian Motor Carrier Directory	Truck	Survey of trucking firms in Canada (name, owner, operator, location, geographic boundaries, activity levels, wages, revenues, and number of employees)	Not specified	Canada	Transportation Technical Services (TTS)	Disk version, available for purchase
Mexican Motor Carrier Directory	Truck	Survey of trucking firms in Mexico (name, owner, operator, location, geographic boundaries, activity levels, wages, revenues, and number of employees)	Not specified	Mexico	Transportation Technical Services (TTS)	Disk version, available for purchase

**Table 5-3. (Continued).**

<b>Source</b>	<b>Modes</b>	<b>Description/Attributes</b>	<b>Cycle Update</b>	<b>Geographic Coverage</b>	<b>Agency</b>	<b>Availability</b>
Transportation Technical Services (TTS) Blue Book of Trucking Companies	Truck	Motor Carriers data, including income, operating expenses, labor, units, output, assets, and liabilities. Private fleet not included	Annual	U.S. Totals, Canada	Transportation Technical Services (TTS)	Disk version, available for purchase
Standard Trucking and Transportation Statistics (STATS)	Truck	Comprehensive overview of trucking industry (name, owner, operator, location, geographic boundaries, activity levels, wages, revenues, and number of employees)	Annual	U.S. Totals	American Trucking Associations	Yearly subscription
The Private Fleet Directory	Truck	Comprehensive overview of private firms with 10 or more trucks or tractors (name, owner, operator, location, geographic boundaries, activity levels, wages, revenues, and number of employees)	Annual	U.S. Totals	Transportation Technical Services (TTS)	Disk version, available for purchase
Trucking in Canada	Truck	Comprehensive overview of the Canadian trucking industry, both for-hire and owner-operators	Annual	Canada, provinces, and territories	Statistics Department	Print version, available for purchase
Railroad Facts	Rail	Summary of historic data on Class I railroads defined by the Surface Transportation Board	Annual	U.S. Totals, summary by east and west	Association of American Railroads	Print version, available for purchase
Analysis of Class I Railroad	Rail	Financial and operating statistics for each Class I railroad	Not specified	U.S. Totals, summary by east and west	Association of American Railroads	Print version, available for purchase
Profiles of U.S. Railroads	Rail	Annual survey of freight railroads (name, owner, operator, location, geographic boundaries, number of employees, wages, and revenues)	Annual	500 U.S. freight railroads	Association of American Railroads	Print copy, available for purchase

*(continued on next page)*

Table 5-3. (Concluded).

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
Railroad 10-Year Trends	Rail	U.S. freight industry performance, traffic, revenue, financial statistics, employment, plant, and equipment	Annual	U.S. Totals	Association of American Railroads	Print version, available for purchase
Transportation Files (TRANS Files)	Rail	Railroad annual report, including data on freight volumes, number of employees, and wages	Annual	U.S. Class I Railroads	Surface Transportation Board	Print version, available for purchase
Railroads and States	Rail	Amtrak and freight railroad statistics by state	Annual	48 Continental U.S. states and Alaska	Association of American Railroads	On-line version, available for purchase
Rail in Canada	Rail	Overview of size and structure of Canadian railway industry	Yearly	Canada	Statistics Canada, Transportation Division, Multimodal Transport Section	Print version, available for purchase
Intermodal Equipment Inventory	Seaport	Intermodal equipment of all U.S. – flag intermodal marine carriers and major container leasing companies operating in the United States.	Quarterly	National	U.S. Department of Transportation, Maritime Administration	Print version, available for purchase

**Table 5-4. Trade data.**

Source	Modes	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
U.S. Merchandise Trade	All	Tables on merchandise exports general imports, and imports for consumption	Annual	Custom districts, world area by countries of origin/ destination	U.S. Department of Commerce, Bureau of the Census	Print version, available for purchase
U.S. Exports of Merchandise	All	Year-to-date exports commodity information by district	Annual	U.S. Customs districts of exportations	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
U.S. Imports of Merchandise	All	Detailed general imports and imports for consumption data	Annual	U.S. Customs districts of entry and unlading and country of origin	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
U.S. Exports of Domestic and Foreign Merchandise	All	Exports by all modes to outside of the United States	Annual	U.S. Customs districts of exportations, countries of destination	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
U.S. General Imports and imports for Consumption	All	General imports and imports for consumption data	Annual	U.S. Customs districts of entry and unlading and country of origin	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
Transshipments via Canada	All	Dollar value and estimated waterborne tonnage for United States exports and imports trans-shipped through Canada	Annual	U.S. Totals, Canada	Association of American Railroads	CD ROM, available for purchase
U.S. General Imports and Imports for Consumption	All	Net quantity and value of imports for consumption and general imports	Annual	U.S. Customs districts of entry and unlading and country of origin	U.S. Department of Commerce, Bureau of the Census	CD ROM, available for purchase
Transborder Surface Freight Data	All – except Aviation	Annual tonnage and value data by commodity type and by surface mode of transportation	Monthly	U.S., Canada, and Mexico totals	U.S. Department of Commerce, Bureau of the Census, Foreign Trade Division	<a href="http://www.bts.gov/ntda/tbscd">www.bts.gov/ntda/tbscd</a>

**Table 5-5. Socioeconomic and industry data.**

Source	Description/Attributes	Cycle Update	Geographic Coverage	Agency	Availability
Regional Economic Information System	Base economic information for U.S. regions outside Florida, including population, employment by SIC code, housing construction, tourism, and sales by business group data	Every 10 years, years ending in 0	U.S. Totals, States, Basic Economic Analysis (BEA) regions, MSAs, and Counties	U.S. Department of Commerce, BEA	REIS CD-ROM version, available for purchase.
Statistical Abstract of the United States	National-level overviews of Freight Statistics, including operation costs, fuel consumption, employment, and revenue data	Annual	U.S. Totals, States, Cities, Metropolitan Areas	Bureau of the Census, Data Users Service Division	<a href="http://www.census.gov/compendia/statab/">http://www.census.gov/compendia/statab/</a>
Census Transportation Planning Package (CTTP)	Base year populations and households for analysis zones outside of Florida	Every 10 years, years ending in 0	U.S. Totals, State, County, Places with more than 2,500 persons	U.S. Department of Commerce, Bureau of Census	CD-ROM version, contact state/local agencies for free copy
County Business Patterns	SIC employment data	Annual	U.S. Totals, State, and County	U.S. Census Bureau	<a href="http://www.census.gov/epcd/cbp/view/cbpview.html">www.census.gov/epcd/cbp/view/cbpview.html</a>
National Income and Product Account (NIPA)	Consumption information for U.S.	Annual	U.S. Totals	U.S. Department of Commerce, BEA	Diskette version, free of charge
BEA Regional Projections to 2045	National projections of employment by industry type	Annual	U.S. Totals and State	U.S. Department of Commerce, BEA	Diskette version, available for purchase
Annual Survey of Manufacturers	Additional employment data and value of goods shipped by type of goods	Annual	U.S. Totals	U.S. Department of Commerce, Bureau of the Census, Manufacturing and Construction	<a href="http://www.census.gov/mcd/asmhome.html">http://www.census.gov/mcd/asmhome.html</a>
Survey of Employment, Payroll and Hours	Employment data for eastern and western Canadian regions	Annual	Canada, the province and territories	Statistics Canada, Labor Division	Print version, available free of charge
Trends in Occupation and Industry	Base occupation and industry data for Canadian regions	No specific pattern	Canada	Statistics Canada, Census Operations Division, Census of Population	Print version, available for purchase

**Table 5-5. (Concluded).**

<b>Source</b>	<b>Description/Attributes</b>	<b>Cycle Update</b>	<b>Geographic Coverage</b>	<b>Agency</b>	<b>Availability</b>
Covered Employment and Wages (ES-202) Programs	General employment data (number of employees, revenues, and wages by employment type)	Annual	U.S. Totals, State, and County	Department of Labor, Bureau of Labor Statistics	Print and CD-ROM versions, available for free from Florida DOT
Current Employment Statistics	General employment data (number of employees, revenues, and wages by employment type)	Annual	U.S. Totals, less details for states	U.S. Department of Labor, Bureau of Labor Statistics	<a href="http://stats.bls.gov/ces/home.htm">http://stats.bls.gov/ces/home.htm</a>
Census of Manufacturers	Employment and manufacturing industries statistics as well as quantity and value of material consumed and products shipped	Every 5 years, years ending in 2 and 7	U.S. Totals, State, and Local Geography	U.S. Department of Commerce, Bureau of Census	<a href="http://www.census.gov/econ/www/mancen.html">http://www.census.gov/econ/www/mancen.html</a>
Info USA	Employment by industry using refined SIC codes as well as NAICS codes	Weekly	U.S. Totals, State, Districts, and Counties	Info USA	Database version, available for purchase
Consumer Expenditure Survey	American households expenditures, income, and family characteristics	Weekly, and per quarter	U.S. Totals, Four Census regions, 26 selected Metropolitan Areas	U.S. Department of Labor, Bureau of Labor Statistics	<a href="http://www.bls.gov/cex/">http://www.bls.gov/cex/</a>

**Table 5-6. Existing transportation guidebooks.**

Source	Modes	Description/Attributes	Agency	Availability
Funding and Institutional Options for Freight Infrastructure Improvements	All	Provides information on funding sources for freight improvements, eligibility of particular projects, and funding/financing arrangements for case study examples	U.S. Department of Transportation, Federal Highway Administration	<a href="http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm">http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm</a>
A Guidebook for Performance-Based Transportation Planning	All	Provides practical tools and guidance for considering system performance in the multi-modal transportation planning and decision-making process	National Cooperative Highway Research Program, Report 446	Available for purchase from NCHRP
Best Practices in Statewide Freight Planning	All	Describes the elements that make up a statewide freight planning program, with associated key considerations and best practices	National Cooperative Highway Research Program, Project 08-36/ Task 33	Publication decision is pending
Return on Investment on Freight Rail Capacity Improvement	Rail	Examines methods for analyzing public investments in freight rail capacity from the perspectives of different likely revenue sources, practicality, and likely policy implications	National Cooperative Highway Research Program, Project 08-36/ Task 43	Publication decision is pending
Freight Capacity for the 21 <sup>st</sup> Century	All	Examines policy options for coping with capacity constraints including investment, pricing, regulatory, technological, and other approaches	Transportation Research Board, Special Report 271	<a href="http://onlinepubs.trb.org/onlinepubs/sr/sr271.pdf">http://onlinepubs.trb.org/onlinepubs/sr/sr271.pdf</a>
Rail-Freight Solutions to Roadway Congestion	Rail	Assesses the merits of public investment in rail-freight solutions to relieve roadway congestion	National Cooperative Highway Research Program, Project 08-42	<a href="http://www.trb.org/NotesDocs/8-42IR_4-04_v1.pdf">http://www.trb.org/NotesDocs/8-42IR_4-04_v1.pdf</a> (interim report)
Methods for Forecasting Statewide Freight Movements and Related Performance Measures	All	Develops an analytical framework for forecasting freight movements at the state level	National Cooperative Highway Research Program, Project 08-43	Publication decision is pending
Guidebook for Freight Policy, Planning, and Programming in Small- and Medium-Sized Metropolitan Areas	All	A resource guidebook for small- and medium-sized MPOs to begin and/or enhance their freight transportation planning program	National Cooperative Highway Research Program, Project 08-47	Currently available, see NCHRP website
Guidebook for Financing Freight Investments	All	Provide a tool that describes funding and financing tools available for freight investments	FHWA Office of Freight Management and Operations	Currently available, see FHWA website

**Table 5-7. Freight training opportunities.**

<b>Source</b>	<b>Description</b>	<b>Agency</b>	<b>Availability</b>
Integrating Freight in the Transportation Planning Process	Provides information about freight trends, identifies key stakeholders, and discusses issues related to incorporating freight into the transportation planning process	National Highway Institute (NHI)	Currently available as NHI Course 139001
Uses of Multimodal Freight Forecasting in Transportation Planning	Discusses the key factors that influence economic growth and the distribution of traffic, describes forecasting techniques, and reviews notable practices	National Highway Institute (NHI)	Currently available as NHI Course 139002
Engaging the Private Sector in Freight Planning	Reviews strategies and techniques to initiate private-public sector cooperation, identifies key private sector stakeholders, and suggests ways to improve communication	FHWA Office of Freight Management and Operations	Currently available
Freight Security Awareness	Provides an overview of security initiatives and describes how transportation agencies can incorporate security-related issues and programs	FHWA Office of Freight Management and Operations	Currently available
Freight Data Made Simple Workshop	Identifies major public and private freight data sources, reviews data source and reliability issues, and highlights examples of national, state, and local applications	FHWA Office of Freight Management and Operations	Currently available
NEPA and Transportation Decision-Making	Provides guidance for using the Council on Environmental Quality and FHWA's regulations and guidance for implementing NEPA and Section 4(f) of the Department of Transportation Act, as well as initiatives for interagency coordination and streamlining the project development process. Also emphasized are public involvement, Title VI/Environmental Justice, FHWA's policy for mitigation and enhancement, and the role of transportation in achieving sustainable development	National Highway Institute (NHI)	Currently available as NHI Course 142005
The CMAQ Program: Purpose and Practice	Provides an overview of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program; explains how it fits within the overall Federal-aid Highway Program; and describes eligibility for the CMAQ program, and reporting requirements	National Highway Institute (NHI)	Currently available as NHI Course 142045

*(continued on next page)*

Table 5-7. (Continued).

Source	Description	Agency	Availability
Context Sensitive Solutions	Provide participants with tools and techniques to effectively deliver timely and successful transportation projects using Context Sensitive Design principles	National Highway Institute (NHI)	Currently available as NHI Course 142050
Linking Planning and NEPA: Towards Streamlined Decision-Making	A two-part series of facilitated workshops focused on identifying the current process for performing planning and NEPA studies in support of project-level decisions, and developing strategies for achieving greater integration in this work	National Highway Institute (NHI)	Currently available as NHI Course 151041
Talking Freight Seminar Series	Monthly FHWA-sponsored net-conference seminars provide a convenient and no-cost way for transportation practitioners to broaden their freight knowledge base and develop new skills to help them do their jobs better.	FHWA Office of Freight Management and Operations	<a href="http://www.fhwa.dot.gov/freightplanning/talking.htm">http://www.fhwa.dot.gov/freightplanning/talking.htm</a>
Transportation and Land Use	Provides guidance on incorporating land use planning, visioning, and scenario planning techniques as part of transportation planning efforts	National Highway Institute (NHI)	Available in Summer 2007 as NHI Course 141053
Advanced Freight Planning	Provides the practical tools and techniques needed to further integrate freight in the planning process and engage the private sector in that process	National Highway Institute (NHI)	Currently available as NHI course 139003
Freight Planning and Environmental Considerations	Helps planners and engineers integrate environmental considerations in public sector freight planning and project development	National Highway Institute (NHI)	To be available as NHI course 139005 in late 2007
Multimodal Freight Financing Seminar	Provides information about available Federal public funding sources, eligibility criteria, and innovative financing options that can be used for freight projects	FHWA Office of Freight Management and Operations	Currently available
Principles of Effective Commercial Motor Vehicle Size and Weight Enforcement	Provides information on Federal rules and regulations governing size and weight, writing and evaluating state enforcement plans and certifications, funding issues, and new technologies	National Highway Institute (NHI)	Currently available as NHI course 139004

**Table 5-8. Technical assistance opportunities.**

Source	Description	Agency	Availability
Freight Planning Technical Assistance	Freight planning technical assistance on a range of topics, including creating freight advisory committees, initiating a freight study, forecasting freight traffic, and identifying key data sources	FHWA Office of Freight Management and Operations, FHWA Resource Center	Currently available
Peer-to-Peer (P2P) Program	Facilitates information sharing between public sector freight transportation professionals and provides technical assistance on an as-needed basis	FHWA Office of Freight Management and Operations, FHWA Resource Center	Currently available

**Table 5-9. Freight self-assessment—your organization.**

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1. What divisions within our agency are involved in freight planning? \_\_\_\_\_

What are their roles and responsibilities? \_\_\_\_\_

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2. How often do these divisions communicate or coordinate their activities? \_\_\_\_\_

Are there established committees that meet regularly? \_\_\_\_\_

3. Do we have a freight point-of-contact/technical lead? \_\_\_\_\_

If so, who is it? \_\_\_\_\_

If not, who within the organization has the authority to appoint one? \_\_\_\_\_

How would he/she relate to multiple departments or divisions? \_\_\_\_\_

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4. What other freight planning efforts have we already conducted? \_\_\_\_\_

What resources were used to support these efforts? \_\_\_\_\_

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5. What investments have we made in freight-related facilities in recent years? \_\_\_\_\_

How significant and/or successful have they been? \_\_\_\_\_

How were they funded? \_\_\_\_\_

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6. How closely do we work with our FHWA Division Office on freight issues? \_\_\_\_\_

Our DOT? \_\_\_\_\_

Our MPOs? \_\_\_\_\_

Regional coalitions or other groups? \_\_\_\_\_

7. What kind of freight-related data do we use or have access to? \_\_\_\_\_

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8. Are we an air quality nonattainment or maintenance area? \_\_\_\_\_

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9. What direction do we receive from our leadership regarding freight planning and programming? \_\_\_\_\_

Are they supportive? \_\_\_\_\_

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**Table 5-10. Freight self-assessment—your process.**


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1. How are transportation needs and deficiencies identified? \_\_\_\_\_  
 Are they categorized? \_\_\_\_\_  
 Is freight/goods movement a category? \_\_\_\_\_

2. Who is eligible to submit project ideas? \_\_\_\_\_  
 DOT/MPO staff? \_\_\_\_\_  
 Private sector freight community? \_\_\_\_\_  
 General public? \_\_\_\_\_

3. How does a project idea develop into a project that can be evaluated for inclusion in the TIP?  
 \_\_\_\_\_

4. Are freight issues included in your long-range transportation plan? \_\_\_\_\_  
 In what sections? \_\_\_\_\_  
 Are there individual projects or strategies identified? \_\_\_\_\_

5. How do you determine what projects to include in the TIP? \_\_\_\_\_  
 Are there criteria? \_\_\_\_\_  
 What are they? \_\_\_\_\_  
 Do they address freight or economic impacts? \_\_\_\_\_  
 Is there a TIP evaluation committee? \_\_\_\_\_  
 Who's on it? \_\_\_\_\_  
 Are there any freight or industry representatives? \_\_\_\_\_

6. How many freight improvement projects are included in your most recent TIP? \_\_\_\_\_

7. For MPOs: How much of a say does your Policy Board (or equivalent) have over what projects are included in the TIP?  
 \_\_\_\_\_  
 How often do they move projects on and off? \_\_\_\_\_

8. When do your environmental staff or resource agency staff weigh in on potential projects and their impacts?  
 \_\_\_\_\_

9. Have you had freight improvement projects that have stumbled during planning, programming, or project development?  
 \_\_\_\_\_  
 What happened and why? \_\_\_\_\_

10. What is the attitude of your management toward conducting freight planning activities and investing in freight transportation improvements?  
 \_\_\_\_\_

11. What state-specific funding programs do we have access to?  
 \_\_\_\_\_  
 Are there any freight- or mode-specific funding sources? \_\_\_\_\_

12. Do we have access to CMAQ funds? \_\_\_\_\_  
 How are CMAQ projects identified and funded? \_\_\_\_\_

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**Table 5-11. Freight self-assessment—your stakeholders.**

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1. What other agencies are involved in regional/state transportation policy, planning, and programming activities? \_\_\_\_\_

How well are your efforts coordinated? \_\_\_\_\_

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2. What are our key industries? \_\_\_\_\_  
Do they move a lot of freight? \_\_\_\_\_  
What are they moving? \_\_\_\_\_  
What mode of transportation do they use? \_\_\_\_\_

3. Are there railroads, ports, or transportation authorities in the region/state? \_\_\_\_\_  
How are they involved in our transportation planning and programming process? \_\_\_\_\_

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4. What privately funded freight improvements are planned for your state/region? \_\_\_\_\_

What is the schedule? \_\_\_\_\_  
How will these improvements impact traffic or economic development patterns? \_\_\_\_\_

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5. What is the attitude of the legislature toward conducting freight planning activities and investing in freight transportation improvements? \_\_\_\_\_

Is freight recognized as an issue in the state/region? \_\_\_\_\_

6. Has the private sector participated in policy, planning, or programming activities to date? \_\_\_\_\_  
How? \_\_\_\_\_  
Is there a formal freight advisory committee or other group? \_\_\_\_\_  
Is there a separate outreach process for the freight community? \_\_\_\_\_

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# Chicago Department of Transportation

## *TIP Development Process and the Chicago Regional Environmental and Transportation Efficiency Program (CREATE)*

Chicago can be considered one of the prime transportation hubs in America. Much of this status stems from its geographic proximity during a time when the United States was growing quickly in population and area. The Illinois and Michigan Canal, completed in 1848, allowed for transportation around the world with connecting waterways through Chicago to New York and the Atlantic Ocean, west to St. Louis, and south to New Orleans and the Gulf of Mexico. Chicago then became one of the largest grain and lumber ports in the world, with grain being sent to more established populations and lumber being sent to the forest-starved prairies where new settlers needed to build. Even today, Chicago's importance in global distribution remains strong with seven major interstate highways and the third-largest intermodal port in the world after Hong Kong and Singapore.

The metropolitan planning organization (MPO) role has evolved over the last 25 years with responsibility for multiple surface transportation efforts. In the late 1990s, the MPO role was strengthened by ISTEA and empowered local agencies to prioritize their own local freight issues. Historically, little work had been done to formalize a career path or to provide developmental training for freight planners. Much of the work done in the freight planning area was led by an entrepreneurial spirit. In Chicago, the MPO freight planner made a great effort to carve out an original niche for himself, complementary to the efforts the Illinois Department of Transportation (IDOT) and Chicago Department of Transportation (CDOT) had invested in freight activities. The Intermodal Advisory Task Force (IATF) was created by the Chicago Area Transportation Study (CATS), the designated MPO for the northeast Illinois area, in an effort to bring the carriers and the shippers into the freight planning process and to give freight a "face" in Chicago.

In 1994, Chicago DOT began a new planning initiative, which identified industrial corridors. In these designated areas, freight needs were identified for freight railroads and trucks. Projects were developed to improve turning lanes to accommodate truck turning radii needs and to improve and upgrade rail crossings. One full-time CDOT employee was tasked with freight responsibilities at the city level. Roughly 55 projects were accomplished to specifically target freight and intermodal connectors over the past 10 years.

IDOT also recognized the importance of freight planning in the region with several full-time positions in Chicago and three at the State Capitol. The primary role of this agency's efforts was to address congestion and the efficient movement of freight while aiding and supporting regional businesses in maintaining a competitive economic position.

In early 1999, a snowstorm paralyzed Chicago. Interstate highways and rail yards were impassable and the effects of the resulting freight gridlock rippled across the North American rail network. This single event brought the issue of freight mobility in Chicago to a head with both political and private-sector leaders. The Mayor of Chicago took action with the interests in Chicago and challenged the carriers to develop a coordinated plan to keep freight fluid. The final effort resulted in a \$1.5 billion plan to create improved rail efficiency and grade separation at critical crossings in Chicago. The plan also included important network redundancies to accommodate unanticipated natural disasters and unintended disruptions. The resulting unified rail plan became known as CREATE (Chicago Regional Environmental and Transportation Efficiency program).

The CREATE plan helped unify multiple freight stakeholders in supporting this project of national significance. Political leaders at CDOT, IDOT, and CATS have all supported the CREATE plan and have mobilized to gain public support from voters and freight organizations. Today, an estimated 1,200 trains move through Chicago and directly employ or affect over 38,000 transportation jobs in the region, contributing approximately \$22 billion to the local economy.

## Effective Use of Planning Process

The IATF is responsible for developing input about freight in the short- and long-range transportation planning documents. The latest 2030 plan incorporates approximately 75 references to freight and embraces the CREATE plan as a unified effort with national support. Input for the TIP and the STP comes from various sources. Voters often call elected officials or Chicago DOT about grade-crossing issues and congestion. Industry councils and trade groups participate at various levels with IDOT and CATS, usually on an ad hoc basis. Generally, freight is discussed as a component of larger projects, although a few discussions about projects only deal with freight movement. In almost every case, freight projects are largely justified by the motorist and transit improvements that would be generated as a result of improving freight mobility.

Studies of existing conditions are regularly updated by Chicago DOT staff; examples include bridge, viaduct, and street inventories. Projects are often identified primarily as economic development opportunities. Transportation components are typically secondary considerations, and any benefits are used to justify the primary goal. IDOT encourages public involvement from users, consultants, trade organizations, and industry. Typically, freight projects are identified by road programs and highway district offices.

The Capitol Improvement Program documents an inventory of conditions, cost of improvement, and description of benefits for specific projects. This project list is then circulated to elected officials. Freight benefits are often hard to quantify and require sophisticated analysis to quantify the project impact and resulting priority. The Transportation Improvement Program identifies the prioritized projects, given the annual funding. While the process is solid, in a period of funding shortfalls, only a few top priority projects are realized—often this leads to private-sector participants becoming frustrated due to the lack of results. It is difficult to justify the time spent planning when little comes from the exercise.

CREATE is an example of a freight-specific project where industry cooperation and funding were the two significant obstacles. The first obstacle was to get the railroad industry competitors and stakeholders to agree on a joint plan which would not change the competitive balance at a key national gateway. Significant time and effort were required to bring the parties together in a neutral environment. The Mayor of Chicago played a critical role in engaging all parties in the development of a unified plan. The second significant obstacle was funding justification for the project and estimation of benefits. The project cost was estimated at \$1.5 billion. At this time \$20

million has been spent on initial project mapping and preliminary engineering. The lack of funding in the early stages of the project may affect the total project budget significantly because land values are escalating rapidly in Chicago. The lack of project money for land acquisition is putting planners in a reactive position. Acquiring property later in the project process often leads to many more complex transactions and heightens local responses.

Illinois has no comprehensive formalized institutional strategy or policy to target freight mobility as a stand-alone issue. The State has designated a freight planning office to identify choke points and match resources against projected need. In general, the budget and funding for this work has been limited, and little interagency coordination has been required. However, the CREATE program did require support from all agencies in Illinois, and with strong private-sector participation, cross-cutting agency support was not difficult to coordinate.

## **Project Selection Process**

Freight projects are described and included in the TIP. From the State's perspective, the list of projects seems to be long and comprehensive. From the City and CATS perspective, the list is larger than current funding levels can accomplish. The informal policy is to tackle infrastructure needs first. When exceptions are made, they are usually made for job creation or economic development reasons.

The process to include freight in the plan begins when the agency submits program ideas for inclusion to the MPO; the MPO then evaluates the list. The MPO evaluation centers mostly on the basis of CMAQ funding eligibility. Chicago DOT then includes projects which have a funding commitment in the transportation plan. There is no formal process for objective statistical evaluation. Each submission is analyzed and assessed subjectively based on needs and available funding. Due to the diverse nature of the projects, formalized prioritization tools for ranking projects have not been used.

Projects which have demonstrated support and funding are included in the plan. IDOT has done considerable viaduct and clearance improvement work in support of freight. Historically, CDOT has also done viaduct clearance and grade separation work in support of freight.

Because freight projects must compete with all other work forms, getting a project from the drawing board to the "street" is very difficult. Given recent growth in the area, the need for infrastructure improvement seems insatiable. When agencies fund new infrastructure as a priority, smaller freight projects struggle to gain traction in the process. CREATE is the only recent example of a "Freight" project that made the leap from planning to programming. It has been included in the TIP program and some preliminary mapping work has been accomplished. The largest segment of the work is still awaiting funding. There are no freight-specific TIPs in Illinois.

Transit projects continue to dominate the transportation planning area, due to the large number of commuters. Given that freight does not vote and passengers do, it is hard for freight to gain priority in the budget process. There is recognition at the city and state level that the structure of how capitol funds are allocated does not accommodate freight programs. Furthermore, there is acknowledgment at the state level that more freight project integration is necessary, but at this time no new freight planning processes have been introduced. It has been suggested that if freight were recognized as a national priority with a dedicated source of funding, more freight work would be done.

CREATE is a unique example of a top-down approach to starting a project and positioning it for funding. A strong leadership presence helped bring private industry into the project design process. A significant transit benefit was justified by including Amtrak and Metra in the process.

Several key grade separations were also included, which added significant local voter appeal for neighborhoods bisected by freight lines.

## Use of Analytical Tools and Performance Measures

Many data sources are used by planning officials responsible for the Chicago area. Reebie, TRANSEARCH, the Freight Analysis Framework database, geographic information system (GIS) mapping, intelligent transportation system (ITS) capabilities, CATS reports and analysis, ADT (both truck and vehicle) models, and state DOT inventory data and condition reports are all used to evaluate the transportation environment in Chicago. Some of these data sources are more recent than others. CATS identified that the most recent data available to them is the commercial vehicle survey. This survey has been helpful for developing regional models and hypothesis testing. This information is also used to assess urban sprawl, water seepage, and rockfalls. Air quality measurements are taken regularly and used for CMAQ evaluations.

ITS tools are often used to identify truck clearance routes and to pinpoint low viaducts. The availability of data does not seem to be a problem in Chicago. Strong relationships between planners and industry leaders have paved the way to a trusted and cooperative relationship. The critical data issue seems to be the identification of the data source. Once the need is defined and the data found, help is often needed to identify what the information means. Many assumptions often go into database creation and it is very important to understand how data sources are populated and for what purpose. Generally, users seem happy with the technology, particularly with the GIS mapping and the current photos with up-to-date conditions. The weakness noted is that stakeholders seem to be moving to a “want it now” with real-time feedback.

Due to the diverse nature and private-sector role in freight management, Chicago does not have freight-specific performance measures or standardized tools to evaluate freight performance. The CREATE project is an example of a program that created tools specifically to measure freight mobility and performance over time. These tools are being used daily to measure efficiency; information is analyzed regularly to show network volumes and improvements. This tool, while very helpful for the CREATE project, is a single-purpose, project-specific tool and not applicable to other modes of traffic in Chicago.

Accurate, timely data does not seem to be an issue for Chicago planners. Much of the project-specific data come from private industry or can be easily validated between City data sources and private industry. For example, lift counts at intermodal facilities, grade-crossing location information, and viaduct specifications are easily accessible and easily validated by the private sector.

## Partnerships

Because of Chicago’s size and proximity to two state boundaries, there are many different interest groups and organizations with opinions on freight and industrial development. Three active corridor planning organizations and 11 interregional councils provide input on freight planning. Coordination of transportation activities and planning efforts in this region happens at four different levels: Federal, state, city, and local.

Information is freely shared between agencies, yet agencies tend to operate independently from one another and often with different priorities. Though a number of overlapping interest areas exist, coordination of interagency research efforts presents one of the greatest challenges. All agencies have identified the solicitation of private-sector input and engagement as one of the most difficult challenges they face. However, solicitation of public input is not formalized.

Different methods for capturing public input are used, depending on size and scope of the projects. Focus groups are often convened to get specific feedback, and public meetings are sometimes used when new projects are being launched. Each freight project tends to have a different audience. Like the affected audience, outreach methods vary based on the project.

While MPOs are tasked with developing local information and recommendation of project priority, MPOs feel that freight is struggling to gain a level playing field with transit, pedestrian, and bike path interests. The MPO role, while quite visible, is not always actively integrated in state and city planning. Since freight is often a component of other transportation projects, agency coordination is often difficult. As a separate agency, MPOs prepare reports and collect data for other agencies but this is often where their participation ends.

The second greatest challenge these agencies note is the establishment and coordination of multijurisdictional programs, especially at the state level. There is recognition that this type of coordination is beneficial, but the realities of implementation are so difficult that it was suggested program incentives should be designed to encourage more participation in this type of planning. States with different political leadership often have different funding and program priorities, leading to a more complex planning environment.

The Intermodal Advisory Task Force committee, coordinated by CATS and LIRI (Local Industrial Retention Initiative), appears to be the most successful organization in attracting private-sector participation in the planning process. Generally, the private sector has been represented by corridor coalitions at the industry level. The private sector is often the most vocal in short-term, site-specific issues which might include truck turning lanes or traffic signaling, yet the same companies seldom provide input on long-term policy issues. The City regularly hears from concerned citizens about specific problems having to do with congestion or delays, but rarely hears from citizens with long-range planning input or concerns.

The development of multi-jurisdictional corridors has been slow. The first barrier is usually funding. Many States focus on their local issues first. When collaboration with other states is accomplished and project benefits occur outside of individual state boundaries, local justification is often difficult. In early attempts at multijurisdictional planning, data collection and coordination was difficult. Data contributed to these efforts came from different sources and often from different timeframes. Data descriptions were not standardized at the state level, resulting in the need for significant database manipulation. Discussion of performance measures is a necessary next step to accomplish further joint efforts.

The CREATE project is a good example of bringing private industry into the long-range planning process. This effort has been alive for a 6-year period and has survived several political elections and one reauthorization effort and several extensions. Crisis seemed to be the initial rallying point which brought the industry together. Public-sector leadership has helped keep private stakeholders at the table, in hopes of a significant financial reward in the reauthorization of the highway trust fund. This project is of such magnitude that no one entity could have accomplished this project independently. Due to the complexities of an intermingled public transit and private freight network, a public-private partnership was essential to address the capacity and needed expansion.

## **Use of Innovative Funding Sources**

The primary funding issue that all agencies face is that there is never enough money to meet all of the project needs. Flexibility is limited in most programs today—this adds to the complexity of embarking on freight projects. In most cases, freight does not have an advocate in the budget process and falls silent when others are actively defending community interests and voter

needs. In order for freight projects to be funded, they typically need to be part of a larger more comprehensive program.

The State uses Federal Highway money for most of their transportation planning efforts and Surface Transportation Program Funds go to projects. ITS integration program funds have been used on a very limited basis. Illinois has enjoyed some limited earmarking money and uses FRA funds for positive train control work. The State would like to use more innovating financing and would like to use TIFIA and RIF funds in the future.

CDOT uses Federal Highway Administration (FHWA) money for general transportation planning but notes that this money is not used to plan freight projects. STP funds are used for viaducts and connectors. ITS funds have been used for smart corridor work and to improve signalization and traffic flow. CMAQ money is used sparingly.

CATS receives about one FTE from the UWP budget annually and receives some money to cover staff support for freight activities from the Council of Mayors. Only a small portion of CATS budget goes to support freight activities.

Innovative financing has resulted in accelerating expected delivery on a few projects. In general, the project priority is the primary driver of the work completion date. Project work is completed on a “worst first” system. Local Rail Service Assistance funds have been used but mostly in rural areas. The primary weakness of this process is that funding sources are small in comparison to the need for the project work.

State-specific funds, like the short-line rail access programs are used. This program’s strength is its flexibility; the weakness is that it is a small program. Illinois Tomorrow and Illinois First programs are used for grade separation work. The strength of these programs is that they can be used for critical projects; the weakness is that this money can be used for many types of projects and are not freight-specific.

Existing funding programs often limit the City and State’s ability to finance freight projects. Some very expensive projects need to include Federal money in order to accomplish the work. State and City matching funds are required to qualify for the Federal money. While freight may benefit from these projects, most projects are not freight-specific. All three planning agencies would like to see more priority given to NHS connectors and think that dedicated Federal funding programs are needed for freight-specific projects.

Public-private funding partnerships have not been widely used. There have been a few cases where property for right-of-way was swapped between the City and the developers. The CREATE project is a template for future projects. The railroads are contributing \$212 million as part of the \$1.5 billion project. The percentage of private participation was calculated based on an estimation of public and private benefits. CREATE will improve commuter train operations in the City and a number of grade separations in highly traveled corridors. These public benefits account for a significant portion of the funding justification. Given that most of the work will be completed on railroad-owned right-of-way, the land ownership was considered as part of the private contribution in addition to cash. The Chicago Skyway is an example of an operating and maintenance partnership where the City retains ownership of the property. The City would like to see more expansive projects similar to this one which would attract more private equity.

The Illinois State Highway Toll Authority has jurisdiction over 274 miles of limited-access highways in 12 counties, all of which are designated as part of the Interstate Highway System. The Illinois Tollway is a user-funded system—only those who use it pay for its construction, operations, maintenance, and debt repayment. The Tollway receives no state or Federal funding for road construction. It carries approximately 1.4 million vehicles per day or roughly 38 percent of

the average daily traffic count in Northern Illinois. This system generated \$421 million in revenues in 2004. The Chicago Skyway is the only toll highway in Illinois that is not operated by the Illinois Toll Highway Authority. According to the *Chicago Tribune*, in 2003, the Skyway served 17.4 million vehicles and generated \$39.7 million in toll revenues. It is a 7.8-mile-long toll bridge connecting the City of Chicago and the State of Indiana. The City is analyzing the feasibility of a truck-only tollway dedicated to freight movement, but it is difficult to justify because cars want to use it too. The cost of a new tollway is prohibitive due to the large property acquisition required, given current real estate values.

The railroad stakeholders in the CREATE project are opposed to any tolling for freight movements along the proposed corridor. The State and City have accepted this preference and the project has been valued assuming no toll collection or user fees.

### Critical Success Factors

- **Use a collaborative process.** All public planning agencies think that a more collaborative process is needed to identify transportation system improvements. Planners think that more active involvement from shippers, carriers, and freight processors is needed to address growth issues in the region. While shipper participation in planning has increased modestly, there is a recognition that carriers are often absent from these planning discussions. There seems to be an attitude that shippers control the freight routes and carriers simply move the goods to meet shipper specifications. Agency planners think that the front line freight mover's perspective is essential when it comes to identifying choke points, yet carriers seldom participate in planning or policy discussions at the city level.
- **Use freight performance measures.** Agencies agree that a national freight policy with universal performance measures, which can be applied across multijurisdictional corridors is needed. Today, policy seems to be in the "Talking Freight" development stage. Acknowledging freight issues, encouraging dialog, and educating planners is important work. What seems to be needed now is a "Doing Freight" program which would demonstrate how to design projects, evaluate project benefits, measure performance, and fund work. This is part of what the NCHRP is trying to accomplish with the 8-53 project.

### For More Information

For more information see:

- Chicago Region Environmental and Transportation Efficiency (CREATE) Program website at <http://www.createprogram.org/>.
- Chicago Intermodal Advisory Task Force website at <http://www.catsiatf.com/>.
- Chicago Department of Transportation (CDOT) website at <http://egov.cityofchicago.org/>.
- Chicago Area Transportation Study (CATS) website at <http://www.catsmpo.com/>.



# Delaware Valley Regional Planning Commission

## *Freight Planning and Programming Processes*

The Delaware Valley Regional Planning Commission (DVRPC) is the MPO for the Greater Philadelphia/Camden region. The region includes a large freshwater port; an airport with expanding international cargo services; an extensive highway network, including intermodal connectors; and numerous rail and port intermodal terminals, which are equipped to handle all types of cargo. The region also is served by three Class I railroads and 12 smaller short-lines.

DVRPC has long believed that moving freight and stimulating economic development are appropriate and worthwhile goals for transportation planning. The region's vitality and businesses, jobs, and consumers all rely on a transportation system that can handle goods efficiently and safely. Recognizing the link between efficient freight transportation and economic development, the MPO has committed significant resources and technical expertise to examining freight issues in an ongoing and comprehensive basis. In fact, the MPO has an Urban Goods Program, with two staff dedicated to conducting freight planning activities.

The following sections describe three key elements of DVRPC's freight planning and development program: the effective use of the planning process, the development of partnerships, and the use of innovative funding and financing techniques.

### **Effective Use of the Planning Process**

The DVRPC's overarching planning objective is to devise goods movement strategies that facilitate the flow of freight, accommodate future growth, and minimize adverse impacts on local communities and the environment. DVRPC has included several freight-specific goals and objectives in its long-range plan, including

- Identify strategies and improvements that maximize air, rail, ship, and truck modal contributions to the flow of goods, including connections between the modes and support facilities.
  - Collect, analyze, and disseminate strategic goods movement data using information from public sources and facility owners and operators;
  - Utilize and cultivate all available strategies and technologies to address capacity and bottleneck issues in corridors and for key freight generators and attractors;
  - Employ the Delaware Valley Goods Movement Task Force to identify and advocate policies, regulations, and projects that promote the movement of freight;
  - Promote orderly growth and development and a hierarchical transportation network that most efficiently uses primary corridors and feeder routes and that minimizes total travel; and
  - Promote compatible interface and balance competing demands posed by the mixing of freight and passenger operations.

- Elevate considerations of projects that promote efficient freight movement and economic development.
  - Maintain the freight community’s close involvement in Federal and state funding programs;
  - Document and communicate the positive economic and quality of life effects resulting from freight improvements, as well as the alternative consequences if no improvements are made, to decisionmakers when funding allocation priorities are being established; and
  - Support partnerships among the freight community, economic development agencies, adjacent regions and states, multinational corporations, and foreign diplomatic offices.
- Integrate freight facilities and operations with community goals.
  - Promote safety and environmental programs that minimize the negative effects of freight operations while supporting the positive contributions derived from freight movement;
  - Prepare educational materials and overviews that explain freight and distribution practices, trends, implications, and benefits to the private sector, the general public, and affected public agencies;
  - Inform local elected officials about zoning, planning ordinances, and site design strategies that help better manage freight activity;
  - Advance the reuse of brownfields as transportation and distribution facilities; and
  - Support efforts to ensure national security and national defense.

Many states and MPOs have developed similar goals with which to guide their freight planning programs. What makes DVRPC unique, however, is how it has used the Goods Movement Task Force to integrate freight within its three primary planning and programming activities: long-range planning, TIP development, and work plan development.

## Long-Range Planning

Long-range planning covers a significant breadth of MPO activities—development and maintenance of long-range plans, data collection and analysis programs, corridor plans/analyses, and stand-alone research and planning initiatives. Integrating freight into this group of activities is a fundamental first step for an MPO because it includes many of the initiatives that practitioners begin with, such as development of a freight study, or any of the specific technical elements that support an overall study (e.g., truck volume maps, freight system map, needs identification, outreach, land use, and modeling).

One of the key elements of long-range planning is to develop a better understanding of the existing needs and deficiencies of a region’s transportation system. Engaging the private-sector freight community, the primary users of the freight transportation system, is critical in assessing the strengths and weaknesses of a regional transportation system from a freight perspective. DVRPC accomplishes this through the Goods Movement Task Force, which it engages in an exercise to specifically identify port and rail freight needs that staff can then integrate in the long-range plan update activities. For the DVRPC 2030 Transportation Plan, 42 projects were identified as critical needs for the region’s freight system. Identifying needs and deficiencies is no guarantee of funding or implementation; however, the completion of a freight transportation needs and deficiencies analysis does do two important things:

1. **Demonstrates an institutional commitment to addressing freight needs** by helping MPO staff specifically integrate freight issues into the MPO’s existing transportation planning and programming processes; and
2. **Keeps the private sector involved** by helping them understand their role in the overall planning and programming process and giving them an opportunity to become engaged (giving freight a voice).

Although some participants may view the initial list of needs and deficiencies as a “dream list,” participation in the long-range planning process is critical, because regionally significant projects must be drawn from the long-range plan and all projects approved in the TIP (described below) must be consistent with the region’s long-range goals and objectives. Participation in the long-range planning process is critical in truly incorporating freight issues into a statewide or metropolitan transportation planning program.

## Transportation Improvement Programming

Transportation improvement programming is a more specific group of activities. Every 1 to 2 years, the proposed improvement projects, plans, studies, and other activities expected to occur over the next 3 to 5 years are taken from the long-range plan and entered into the programming process, which culminates in the development of a TIP and STIP. TIPs and STIPs are fiscally constrained, so each project identified must include a cost estimate and an anticipated funding source. Once the STIP is approved by FHWA and Federal Transit Administration (FTA), improvement projects can move to the implementation stage.

Again, the Goods Movement Task Force plays a critical role in advancing projects from planning to programming by helping to build support and advocacy for specific freight improvement projects among DVRPC member agencies. This is critical, because member agencies are the only entities allowed to formally submit candidate TIP projects. Potential projects are evaluated by the DVRPC’s Regional Transportation Committee (RTC), on which the Goods Movement Task Force is represented as a nonvoting member. The Goods Movement Task Force feeds potential works through the RTC to submit potential freight improvement projects. In fact, one of the Goods Movement Task Force’s subcommittees, the Planning Subcommittee, is specifically charged with identifying potential freight improvement projects and seeking to introduce them into the TIP process through the RTC.

One unique activity performed by DVRPC is to specifically highlight freight and economic development-related projects in the final approved TIP. The Goods Movement Task Force identifies approved TIP projects that promote goods movement and economic development efforts and the DVRPC highlights these projects in the TIP document itself. Freight and economic development-related projects are grouped into several categories, including those that reduce bottlenecks, facilitate truck movements, improve distribution of goods, maximize the efficiency of the region’s railroads, promote commerce, serve port facilities, speed delivery of goods to end customers, and support economic growth or redevelopment efforts. Figure 5-1 is a table provided within the FY 2005 DVRPC TIP that shows the approved projects in each of those categories.

The Goods Movement Task Force plays two important roles in this process:

1. **Help identify and justify freight improvement projects for inclusion in the TIP.** This advocacy goes a long way toward further integrating freight and freight issues in the MPO long-range planning and programming activities.
2. **Inform the larger freight community that freight projects are in the TIP.** This can help the private-sector freight industry better understand the role of the MPO and can encourage the private sector to continue to participate in the planning and programming process. This can help build advocates for freight planning in the private sector and has been an important factor in the continued success of the Goods Movement Task Force.

## Unified Planning Work Program (UPWP)

The Unified Planning Work Program (UPWP)—sometimes referred to simply as the work program—is the management plan for an MPO. It identifies and schedules all of the planning

<b>Benefit</b>	<b>Project Number</b>	<b>County</b>
<b><i>Eliminates Bottlenecks</i></b>		
Collingswood Circle	155B	Camden (New Jersey)
U.S. 13, Ninth Street Bridge	15396	Delaware (Pennsylvania)
<b><i>Facilitates Truck Movement</i></b>		
Reconstruction, Restoration, Resurface Projects	17876	Various (Pennsylvania)
PA 309 Expressway	16477	Montgomery (Pennsylvania)
<b><i>Improves Distribution</i></b>		
I-95/Pennsylvania Turnpike Interchange	13347	Philadelphia, Bucks (Pennsylvania)
I-295 Missing Moves	355A	Camden (New Jersey)
<b><i>Maximizes Railroads</i></b>		
River Line LRT Freight Improvements	T511	Burlington, Camden (New Jersey)
Rail-Highway Grade Crossing Projects	X35A1	Various (New Jersey)
<b><i>Promotes Commerce</i></b>		
Delaware River Tram	98553	Camden (New Jersey), Philadelphia (Pennsylvania)
Trenton Revitalization Improvements	02382	Mercer (New Jersey)
<b><i>Serves Ports</i></b>		
Packer Ave Gate Enhancement	68070	Philadelphia (Pennsylvania)
Philadelphia Naval Shipyard Access	46958	Philadelphia (Pennsylvania)
<b><i>Speeds Deliveries</i></b>		
Computerized Signal Control	D9911	Burlington (New Jersey)
Downington Closed Loop Signal System	47980	Chester (Pennsylvania)
<b><i>Supports Growth/Redevelopment</i></b>		
U.S. 202 Expressway	Various	Bucks, Chester, Montgomery (Pennsylvania)
Paulsboro Brownfields Access	04321	Gloucester

**Figure 5-1. Freight and economic development projects from DVRPC FY 2005 New Jersey and Pennsylvania TIPs.**

activities that will be accomplished annually and integrates policy, planning, and programming activities. DVRPC's work program integrates the planning programs and support activities of DVRPC and its member governments each year across 10 categories:

1. Facilitate regional coordination;
2. Invest in infrastructure;
3. Strengthen communities;
4. Increase mobility;
5. Limit sprawl;
6. Reduce congestion;
7. Grow the economy;
8. Enhance accessibility;
9. Protect the environment; and
10. Analyze and share information.

The UPWP, or work program, is often an overlooked element of the transportation planning and programming process. At the DVRPC, however, the annual work program has been an excellent place to keep freight issues in the limelight, identify potential issues and projects for feeding into the TIP and other funding programs, and maintain the momentum (and activities) of the Goods Movement Task Force. Several freight-related studies have been approved and funded by DVRPC based on input from the Goods Movement Task Force, including the following:

- Delaware Valley Freight Corridor Study;
- Delaware County Highway-Railroad Grade Crossing Study;
- Southern New Jersey Port Inland Distribution Network Study; and
- National Highway System Connectors to Freight Facilities.

In 2005, six candidate studies/project ideas were identified by the Goods Movement Task Force and prioritized using a voting process, by which Task Force members were asked to identify their highest priority projects using a weighted ballot. The prioritized list of project ideas was then submitted to the DVRPC Board Work Program Committee for consideration. Using this process in past years, several projects were approved and funded as part of the annual work program.

Getting freight-related programs and studies approved as part of the annual work program is critical to integrating freight in a metropolitan planning program, because it can identify freight-related issues, collect data and information describing the freight system, and build advocacy for incorporating freight into other transportation planning activities.

## **Development of Partnerships**

The DVRPC's freight planning efforts are guided by the Delaware Valley Goods Movement Task Force, which has served as a model of a regional, multisector freight partnership for over 12 years. The Task Force, whose members include freight practitioners and experts including trucking, railroad, port, airport, shipper, freight forwarder, economic development, and member government representatives, is divided into three subcommittees: data, planning, and shippers. The Task Force is co-chaired by PennDOT and DVRPC and meets quarterly.

The success of the Task Force can be evaluated not only by its longevity (it held its first meeting in 1993), but also by its average attendance, which has increased over 40 percent since 1993, from 34 to 60 participants. The sustained interest and participation in the Task Force by the private-sector freight community can be primarily attributed to one thing: they have a reason to come. The Task Force not only provides input into the MPO's long-range plan, transportation improvement program, and annual work program, it also can see the positive benefits of participation: a number of freight-related projects were included in the MPO's most recent TIP; \$2.7 million was provided for freight-related projects in the region's most recent Congestion Mitigation and Air Quality (CMAQ) program; and several freight planning studies recommended by the Task Force have been approved as part of the MPO's annual work program. The following sections describe how the activities of the Goods Movement Task Force fit within the context of DVRPC's overall transportation planning and programming process and how effective private-sector involvement can facilitate the implementation of freight improvements in a region.

## **Innovative Funding and Financing**

The traditional UPWP-LRP-TIP process for identifying, planning, programming, and implementing freight improvement projects is not the only process through which critical regional projects can be developed in the DVRPC region. The following sections describe the DVRPC Competitive CMAQ and Freight Forward Programs.

### **Competitive CMAQ Program**

Every 2 to 3 years, the DVRPC sets aside a specific amount of CMAQ money in its TIP to fund projects through a competitive program. Projects may be submitted by any public agency or public-private partnership, including a member of the Goods Movement Task Force. For FY

2003/2004, \$9.6 million was set aside for Pennsylvania-related projects; and \$3 million for New Jersey-related projects. A CMAQ Subcommittee of the RTC evaluates the projects on several different criteria and makes recommendations to the DVRPC Board. Criteria include emissions reduction, ease of implementation, availability of matching funds, and other factors.

In 2003, the DVRPC Board selected 24 projects to receive funding under the Competitive CMAQ Program. The Board awarded \$11.7 million of Federal CMAQ funds, including \$2,331,000 for 7 projects in New Jersey and \$9,370,797 for 17 projects in Pennsylvania. Among the approved projects were five freight projects, which encourage reduced truck emissions and promote rail freight as an alternative to long-haul trucks. These projects, their objectives, costs, and sources of funding are described in Table 5-12.

### **Freight Forward Improvement Program**

Another example of innovative funding and financing is the DVRPC's Freight Forward program. The Freight Forward program encourages shippers, carriers, and other freight stakeholders in the region to propose quick-fix improvement projects by completing a small form that can be sent to DVRPC via traditional mail, e-mail, or the DVRPC website. Candidate quick-fix projects include

- Pothole repairs,
- Highway/railroad grade-crossing resurfacing,
- Signage improvements,
- Truck turning radii improvements,
- Traffic signal timing adjustments,
- Pavement marking improvements, and
- Railroad siding improvements.

Each project is quickly reviewed by DVRPC transportation planners and engineers; although a concerted effort is made to immediately complete approved projects, DVRPC cannot guarantee that each project will be completed, because DVRPC must rely on the local public works divisions of its member agencies to complete approved projects. A strong working relationship between the DVRPC and its member agencies is essential to this program's success.

DVRPC's Freight Forward program has been successful in identifying small projects that can result in immediate benefits to the area's freight movements. More importantly, Freight Forward has been a way to energize the private-sector freight community and provide them an incentive to more fully participate in the development and approval of longer range freight improvement projects. The private-sector freight community often responds very well to such quick-fix improvement projects, because such projects not only satisfy the need of the private sector to see immediate improvements, but also foster a positive relationship between the public and private sectors, increasing the chance that they will work together on more long-term issues.

Small-scale improvements, such as those completed via the Freight Forward program, can have the most "bang for the buck." In many cases, the private-sector freight community is more interested in these small-scale improvements (which can immediately improve their efficiency) than in large-scale capacity improvement or construction projects.

### **Critical Success Factors**

- **Designate a freight point-of-contact.** A freight technical lead should be designated in MPOs and DOTs. This point-of-contact can act as the liaison between various transportation initiatives and between the MPO/DOT and other agencies and stakeholders, ensuring that freight

**Table 5-12. DVRPC competitive CMAQ program winning projects 2003.**

<b>Project</b>	<b>Description</b>	<b>Sponsor</b>	<b>CMAQ Funding (Match)</b>
Advanced Travel Center Electrification (ATE)	Installation of equipment in 70 parking spaces at a selected truck rest stop (Paulsboro Travel Center, I-295, exit 18A) to provide heat/air conditioning, electric power, phone, Internet, etc., for an hourly fee to drivers so that they may turn off their engines while resting.	IdleAire Technologies Corporation	\$600,000 (\$305,750)
Coatesville Transload/ Intermodal Facility	Development of a new regional transload/intermodal facility in Coatesville, Pennsylvania. The project would require the relocation of existing Brandywine RR operations from Coatesville to a yard in South Modena, Pennsylvania. This project included rebuilding 1,600 feet of track, installing 300 ties and one switch, and drainage, grading, and pavement work. A Pennsylvania Rail Freight grant was obtained by the railroad to complete the South Modena Yard improvements necessary for this facility. The facility was meant to allow use by bulk commodity shippers and receivers, and enable commercial shipments to be accommodated by rail instead of long-haul truck service.	Brandywine Valley Railroad Company	\$316,400 (\$79,100)
Philadelphia Food Distribution Center Cross-Dock Facility	Construction of a railroad boxcar-to-truck Cross-Dock Transfer Terminal for transloading frozen/refrigerated food in the Philadelphia Food Distribution Center. The goal was to eliminate long-distance truck trips from interstate highways and local Philadelphia Streets by converting trips to rail boxcars. Using a newly constructed dock built especially to accommodate frozen or refrigerated goods, cargo would be transloaded from rail boxcars onto trucks for delivery to customers who lack sidings for direct rail access.	Philadelphia Industrial Development Corporation	\$200,000 (\$643,000)
Packer Avenue Marine Terminal Gate Enhancement	Construction improvements to modernize the current gate structure, and the purchase and installation of software and hardware to automate the gate process at the Packer Avenue Marine Terminal in the Port of Philadelphia. Truck idling time will be reduced. Truck processing time and congestion in the terminal and on access roads would be reduced using automated equipment for surveillance, security, remote processing, and help/problem resolution.	Philadelphia Regional Port Authority	\$420,000 (\$105,000)
New Rail Line Track to Former Philadelphia Navy Yard	Development of a new intermodal terminal at the former Philadelphia Navy Yard. The new facility is one of the projects planned by the City and State to redevelop the navy yard into a viable economic site. The goal was to eliminate long-distance truck trips from interstate highways and local Philadelphia Streets by converting trips to rail boxcars. This facility would accommodate double-stack trains by rebuilding 2.1 miles of track, and reconstructing and reinstalling lead tracks. The initial estimate was a removal of 150 over the road trucks daily being diverted from area roadways.	Norfolk Southern Railroad	\$1,153,300 (\$546,700)

issues are addressed within multiple transportation planning activities. A freight point-of-contact is critically important when dealing with the private sector, because that person often can become the “face” of the organization. In addition, designation of a point-of-contact helps to demonstrate a commitment to freight planning in an organization. Finally, and perhaps most importantly, a designated freight point-of-contact understands the MPO or DOT transportation planning process and can facilitate moving projects from the planning stage to the programming and implementation stages.

- **Develop and use alternative funding approaches.** One of the keys to the success of DVRPC's freight planning program is that projects are identified, programmed, and implemented. Getting to projects is where many of the most successful freight planning programs have built their credibility and created the momentum to move forward. DVRPC has recognized that alternative funding approaches work for freight improvements, such as the Competitive CMAQ and Freight Forward Programs, as well as the more traditional earmark projects. Developing and using these kinds of innovative programs together with traditional ones is one way to move freight improvement projects forward.
- **Support from projects' stakeholders and investors.** DVRPC benefited from the support of both state DOTs as well as from private companies that invest in freight projects (i.e., railroad and port improvements). These are important complements to projects that can be funded through the MPO. DVRPC brings together all of their investors to the Goods Movement Task Force meetings to give them support and provide an umbrella for all projects that happen in the metropolitan region.
- **Link to the metropolitan long-range planning process.** Treating freight transportation with the same level of emphasis as passenger transportation is important to ensure long-term commitment to the results of the freight planning process. Although there are projects and activities funded by innovative sources, such as the Competitive CMAQ and Freight Forward programs, the DVRPC effectively incorporates freight issues in traditional planning and programming activities of the MPO, as well. DVRPC staff effectively use the Goods Movement Task Force to feed into work program, long-range plan, and TIP activities, ensuring that freight projects are considered as equal partners in the planning process. This mainstreaming of freight issues in existing processes can facilitate the programming and delivery of freight projects and encourage private-sector stakeholders to stay the course over time. As discussed earlier, the work program is often an overlooked element of the transportation planning and programming process, but incorporating freight issues into this program by funding studies or other activities is a good way to keep freight issues in the limelight, identify potential issues and projects for feeding into the TIP and other funding programs, and maintain the momentum (and activities) of the private-sector stakeholder groups.
- **Develop prioritization process for potential projects and studies, even if it is rudimentary.** For many reasons, freight issues often have an "uphill climb" when competing with other projects and studies for funding within UPWPs and TIPs. One of the obstacles that freight often has to overcome is that many state DOTs and MPOs find it difficult to justify spending money on projects or studies perceived to benefit the private sector inordinately. One way that DVRPC has overcome this is to mainstream freight within the traditional planning and programming process, as described above. Another way that DVRPC has overcome this obstacle is by evaluating potential projects and studies for inclusion in the work program and prioritizing them using a voting process. This process helps to build consensus within the freight community on the types of activities that should move forward and can provide reassurance to MPO and DOT management that the private-sector freight community is recommending projects and studies in the best interest of regional and statewide mobility, in addition to improving their own operations.

## For More Information

For more information see the Delaware Valley Regional Planning Commission (DVRPC) website at <http://www.dvrpc.org/index.htm>.



# Michigan Department of Transportation

## *Detroit Intermodal Freight Terminal (DIFT)*

Freight movements have long been an important part of the picture of Michigan's overall transportation system. The State is home to the busiest and third-busiest U.S.-Canada border crossings for commercial vehicles, the Ambassador Bridge and the Blue Water Bridge. In addition, the State has several active ports along the Great Lakes and a significant amount of freight rail and air cargo activity. The automotive industry, based primarily in the Detroit and Windsor (Ontario) regions, drives demand for freight transportation infrastructure and services, because finished and partially finished automobiles and parts are routinely transported back and forth across the border. Because freight movements greatly affect the State's transportation system and economic vitality, actively incorporating freight issues and needs in the transportation planning process is a priority for the Michigan Department of Transportation (MDOT).

Freight planning at MDOT is conducted within the Bureau of Transportation Planning, with freight specialists housed in the Intermodal Policy Division. A Freight Division within the Multimodal Transportation Services Bureau is responsible for managing approximately 650 miles of state-owned rail lines, providing loans or grants to railroads and others to improve rail infrastructure or promote economic development, and other freight activities. One of the primary activities of freight planners at MDOT has been coordinating the planning and implementation of the Detroit Intermodal Freight Terminal (DIFT).

### **Project Background**

Deregulation of the railroads, coupled with the eventual sale of Conrail, helped lead to a wide range of mergers, consolidations, and operating agreements among the Class I railroads in the 1980s and 1990s. These consolidations had a particular effect in the Detroit area, which handled a significant amount of carload and intermodal traffic and was served by several Class Is, including the Canadian Pacific (CP), the Canadian National (CN), Norfolk Southern (NS), CSX, and Conrail. In the early 1990s, freight planners at MDOT recognized two key trends affecting rail service and overall mobility in the Detroit region: START

1. **Volume of intermodal rail shipments.** Detroit was (and still is) one of the top 10 markets in the United States for intermodal freight movements. Detroit's growth in intermodal traffic has and will likely continue to outpace national intermodal growth because of the high volume of automobile production and the region's proximity to the Canadian border. Detroit also leads the United States in its use of "RoadRailer" technology, where a truck trailer can be converted to a rail car through a wheel frame placed beneath the container.<sup>1</sup>

<sup>1</sup> <http://www.wabashnational.com/products/roadrailer>.

2. **Multiple yards and terminals.** Six individual railroads were providing intermodal service to the region at seven different intermodal facilities throughout the Detroit area. Major yards included the Livernois Junction Yard, then owned by Conrail; Oakwood, Melvindale, and Willow Run terminals, served by NS; Oak Yard Terminal, served by CP; and the Moterm Terminal, served by CN. The existence of multiple, small terminals throughout the region led to fragmented and inefficient operations by the railroads as well as significant traffic issues as trailers and containers were transferred from place to place on local roadways. (During conduct of the study, Oakwood Yard was closed, Delray Yard was opened for NS, and Expressway Terminal was opened for CP.) In addition, it was thought that limited space at existing rail yards in the Detroit area would lead to the loss of shipments to other cities, such as Chicago, Cincinnati, and Toledo. The potential economic repercussions could affect the regional economy and employment levels.

MDOT recognized that, without public participation, the individual railroads would likely develop solutions to these issues that might or might not be in the best interest of the State's transportation system and the mobility of its citizens. The Michigan legislature also recognized this and directed MDOT to study intermodal freight transportation facilities in the Detroit area (Section 326, P.A. 154 of 1992). The early interest of the legislature was to identify whether or not the Michigan Central Depot, an abandoned train station and yard in southwest Detroit, would be suitable to serve as an intermodal terminal.

MDOT contracted with a consultant firm to undertake an assessment of the adequacy of existing or planned intermodal freight terminals in the greater Detroit area. The resulting report, the Greater Detroit Intermodal Study, recommended the development of a large consolidated intermodal freight terminal to serve traffic generated in southeast Michigan and surrounding areas. The study found that the most logical location for such a terminal was Conrail's Livernois/Junction Yard in Detroit (see Figure 5-2). This 320-acre facility was used as a classification yard in the 1940s and 1950s (with approximately 40 tracks) and had been largely unused since the 1970s. The facility had good access from several interstate highways and was in an industrial/commercial zone. MDOT followed up on the recommendation with Phase II of the study in 1994 and quantified the economic and service benefits, validated the recommended site, prepared preliminary site design alternatives, and prepared financing and organizational recommendations.

Over the next several years, the concept of a large consolidated intermodal freight terminal evolved into the Detroit Intermodal Freight Terminal (DIFT), a project designed to enhance intermodal service provided to business, industry, and the military by coordinating improvements to a series of intermodal rail terminals in and around the existing Livernois Junction Yard. A Draft Environmental Impact Statement (DEIS) was completed in May 2005 and is undergoing public comment. MDOT hopes to select a specific development alternative by early 2006 and obtain a record of decision (ROD) by early 2007. If approved, the project would be implemented in stages between 2007 and 2020 as warranted by traffic volumes and railroad business decisions. A guiding principle has been that this is not a "build it and they will come" project; but rather, infrastructure will be developed as needed and based on business decisions. The following sections describe two key elements—the development of partnerships and the use of innovative funding and financing techniques—that have helped contribute to the hitherto success of the DIFT development.

## Partnerships

Although several factors justify MDOT moving the DIFT project from the planning stage toward implementation, a primary factor is the understanding reached through partnerships with the private-sector freight community, particularly the railroads and the automotive industry—the two biggest benefactors of the project.

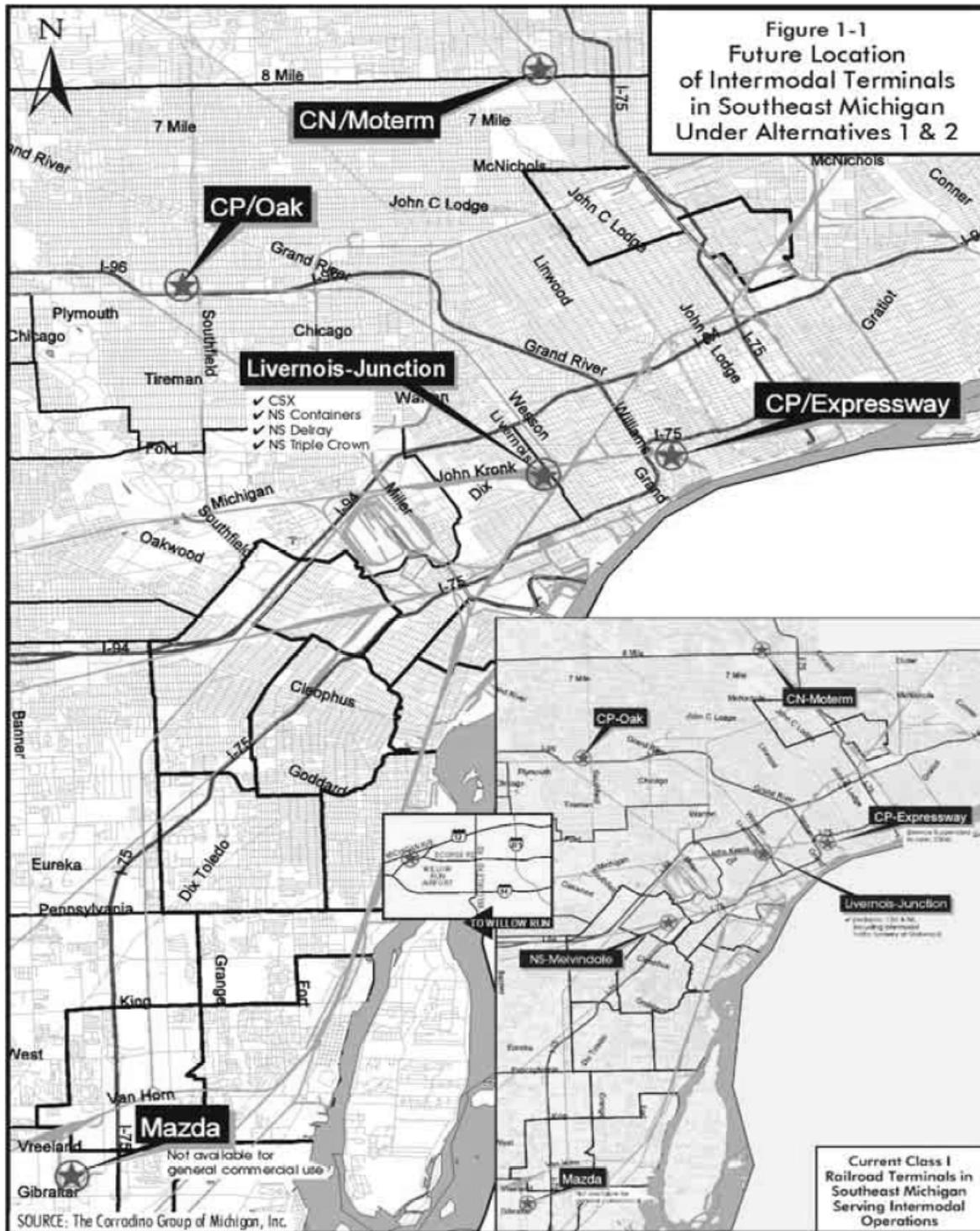


Figure 5-2. Intermodal rail terminals in Southeast Michigan.

The recommendation of the Greater Detroit Intermodal Study to acquire and develop Conrail's Livernois/Junction Yard originally attracted widespread support in the State, including that of the automobile industry, major North American railroads, then-Governor Engler, the City of Detroit, and the region's congressional delegation. The Governor was a strong advocate for the project and established an Implementation Task Force consisting of representatives from major railroads, the automotive industry, the City, MDOT, and other appropriate parties in 1994. The Task Force was to address site issues, funding and organizational structures, and terminal operating issues. This Task Force, which eventually evolved into a somewhat smaller Steering Committee made up of the core Task Force members, allowed the various stakeholders to

- **Balance public and private requirements and needs.** The Implementation Task Force/Steering Committee provided a forum for public and private DIFT stakeholders to better understand the public and private benefits of consolidating intermodal operations in the region and to recognize and address the needs and requirements of both the public and private sectors. For instance, both the public- and private-sector DIFT stakeholders recognized the potential public benefits of DIFT-related rail improvements in the forms of jobs created or retained, improved rail service to industrial customers, and reduction in traffic congestion and were willing to discuss cost-splitting of these improvements. This forum also allowed the private-sector DIFT stakeholders to better understand potential public issues and concerns. For instance, maintaining and improving air quality is a major concern of the public-sector DIFT stakeholders and many public-sector DIFT stakeholders pushed for on-terminal paving to be included in the DIFT improvement package (something the railroads might not have accomplished had they managed the project without public-sector involvement). Through the Task Force/Steering Committee, appropriate cost-sharing strategies could be identified and discussed before they became "show-stoppers." Using the Implementation Task Force/Steering Committee as a forum to raise and address these concerns early in the process allowed the project to move forward more effectively. Engaging the region's major shippers, the automotive industry, was another key to the Implementation Task Force/Steering Committee's continued success. The involvement of the automotive industry ensured that the resulting facility met the transportation and logistics needs of this critical industry and that the facility would remain viable as a transportation hub (important to the railroads) and as an economic development engine (important to the DOT and other public stakeholders). Finally, during conduct of the environmental studies, two additional committees were established: a Local Agency Committee, which provided needed coordination with local agencies, and a Local Advisory Council, which provided an opportunity for coordination with local citizens, elected officials, and other interested parties.
- **Maintain project momentum.** As with many large infrastructure projects, the development of the DIFT has taken a long time to develop and has been subject to forces outside the control of MDOT. For example, in the immediate aftermath of the Greater Detroit Intermodal Study, serious discussions between MDOT and Conrail were held concerning ownership of the Livernois/Junction Yard, with MDOT expressing an interest in acquiring the property to develop a centralized intermodal facility. Starting in 1996, however, CSX and NS began discussions to jointly acquire and split the assets of Conrail. Once this merger/acquisition process began, Conrail was no longer able to continue negotiations on the acquisition of the Livernois/Junction Yard. In many cases, such an upheaval would derail a project completely. However, thanks in part to the relationships developed within the Implementation Task Force/Steering Committee, along with the recognition of both public and private benefits of the DIFT, planning for the project continued. In fact, through extensive discussions with the railroads through the Implementation Task Force/Steering Committee, the DIFT concept evolved from a single, large terminal served by all the major railroads to a complex of several terminals adjacent to one another and operated independently. As a result of insufficient

railroad-owned property to accommodate anticipated traffic and input obtained from local interest groups and citizens, the project further evolved into a study of several alternatives, including expansion of existing terminals. Again, the relationships developed in the Implementation Task Force/Steering Committee, along with the recognition of both public and private benefits of the project, helped allow the DIFT to address various issues.

## Innovative Funding and Financing Techniques

Funding for the DIFT and DIFT-related planning and development activities came from traditional sources: FHWA High-Priority Project funds (earmarked in ISTEA), Federal Rail Administration (FRA) funds, State Planning and Research (SPR) funds, and state-specific funding sources. Funding for actual implementation of the project, including terminal construction and railroad infrastructure improvements, is expected to use private-sector funding from the participating railroads, additional Federal earmarks included within future reauthorization legislation, other FHWA funds, and funds from two state-specific programs:

1. **The Michigan Rail Loan Assistance Program (MiRLAP)**, which awards non-interest-bearing loans to fund eligible rail infrastructure improvement projects with a repayment period of up to 10 years; and
2. **The Freight Economic Development Program**, which offers financial assistance to transportation companies, private companies, and local units of government in developing and/or expanding business and industries. The program offers loans/grants covering up to 50 percent of the rail freight portion of the project when the rail improvement facilitates economic development.

What makes the funding and financing of the DIFT and DIFT-related activities unique is the memorandum of understanding (MOU) drafted by the participants (MDOT and the Class I railroads) during preparation of the Draft EIS. This MOU outlines the intentions and responsibilities of all parties and does two important things:

1. **Provides a framework for cost-sharing of intermodal improvements** without ascribing individual shares among participants. This is an important tenet of the MOU, because it certifies that there will likely be both public and private benefits associated with many of the individual improvements associated with the DIFT (e.g., improvements to access, grade crossings, track, signals, and terminals), but allows all parties the flexibility to determine costs and benefits (and how they should be allocated) on a project-by-project basis.
2. **Establishes a process for continued dialogue among the stakeholders.** This is another important tenet of the MOU, because it provides some assurance that the participating agencies and railroads will continue to collaboratively identify and address implementation issues, regardless of staff turnover or other issues.

Once a preferred alternative is selected, the MOU will be updated with additional specificity, including percentage cost shares between the public and private sectors for such features as terminal improvements, track improvements outside the terminals, and highway-related improvements necessary for access to the terminals. Finally, after the ROD is obtained, a highly detailed Development Plan Agreement will be executed among the railroads and MDOT.

## Critical Success Factors

- **Involve the private-sector freight industry.** One of the key factors of success in moving the DIFT through the planning process was the early and active involvement of the private-sector

freight community, particularly the Class I railroads and the automotive industry. The involvement of key shippers, in particular, was noted as contributing to the success of the DIFT process. As freight is a “derived demand,” shippers have a direct role (and sometimes a say) in the operations of freight service providers such as the railroads. Engaging key shippers in the region helped MDOT and the railroads ensure that their activities related to the DIFT met the transportation and logistics needs of the automotive industry, helping to ensure that the facility would remain viable as a transportation hub (important to the railroads) and as an economic development engine (important to MDOT and other public stakeholders). Engaging industry can also help develop advocates for a project or program, helping to push the project forward even in the face of adversity. This was certainly the case for DIFT, which evolved from a proposed single intermodal terminal served by all railroads, to a series of adjacent terminals that would better meet the needs of the railroads and still serve the automotive industry, other major shippers, and the public. One of the reasons that the DIFT was able to overcome some obstacles was because the automotive industry was involved and championed the project.

- **Develop champions/advocates.** Another key factor that has allowed the DIFT to maintain its progress through the planning process is that it had high-level advocacy. As discussed earlier, then-Governor Engler was a strong advocate for the project and established an Implementation Task Force to guide its development. Even more important, though, was the involvement of the automotive industry, which recognized the importance of the project to its bottom line and helped maintain interest and momentum. Involving key industry leaders can help build support for potential freight improvement projects with two key constituencies. Because industry leaders often create jobs and tax revenue, they can help articulate to government leaders how potential freight improvements can lead to more/better jobs and increased revenue, helping to build public-sector advocates. Similarly, because industry is the major customer of the freight transportation providers, such as railroads, trucking companies, and others, they can help build support for potential freight improvements within the private sector, as well. DOT staff play a critical role, as well. As discussed earlier, MDOT staff were able to identify key trends affecting freight movements within the Detroit region and also recognized that, without public participation, the individual railroads might develop solutions to these issues that were not in the best interest of the State’s transportation system and the mobility of its citizens. DOT staff who understand freight movements in their areas—and can articulate the effects of those movements—are often better able to advance freight improvement projects.
- **Use planning studies to drive projects.** Due, in part, to the high-level attention being paid to the issue, MDOT was able to use the results of the Greater Detroit Intermodal Study to drive a specific project. Even in areas where there are not yet high-level advocates for freight planning or freight improvements, planning studies, such as freight plans, regional profiles, corridor studies, or other activities, can be excellent vehicles for building advocates within and outside a transportation planning organization. These planning activities can be excellent sources to identify and describe potential freight issues (and their effects), reach out to the private-sector freight community (including industry), and identify potential solutions to issues. Many states and DOTs conduct planning activities with little or no follow up. Those DOTs and MPOs that have successfully developed and implemented freight improvement projects are often those that have taken the results of freight planning studies and moved them forward.
- **Use MOUs to balance assurances while reserving flexibility.** This case study provides an excellent example of how to effectively use MOUs to define partnership arrangements. One of the challenges associated with public-private partnerships is that they can take years to develop and bear fruit. This leads to two issues:
  1. **Organizational memory**—Both the public- and private-sector participants can be concerned that the personnel who originally developed the partnership will not be around in 10 or 20 years when the arrangement is ready to bear fruit; and

2. **Long planning horizons**—Many in the private sector hesitate to commit to specific funding shares or amounts over a 10- or 20-year horizon, given the volatility of their industry.

The MOU developed by the DIFT partnership effectively alleviated these concerns by (1) documenting the partnership arrangement to maintain organizational memory (to withstand changes in personnel) and (2) providing a framework for cost-sharing of improvements without ascribing individual shares among participants (to withstand potential changes in the ability of individual participants to share in the costs).

## **For More Information**

For more information see the Michigan Department of Transportation (MDOT) website at <http://www.michigan.gov/mdot/>.



# Rhode Island Department of Transportation

## *TIP Development Process and Freight Rail Improvement Program*

Rhode Island, because of its size, is unique in its organizational structure for transportation planning. Planning activities are carried out on a statewide basis, rather than occurring at both the statewide and metropolitan levels, as is the case in most other states. Rhode Island's Statewide Planning Program (RISPP) is responsible for transportation planning within the State and is also the designated MPO for Rhode Island (the MPO region covers the entire State).

RISPP is responsible for developing a long-range Surface Transportation Plan, a Freight Rail Plan, and an Airport System Plan, which set long-term statewide policies and investment strategies in these areas. The Rhode Island Surface Transportation Plan, the Freight Rail Plan, and the Airport System Plan are then included as elements of an overall State Guide Plan, which is a collection of plans and policy documents adopted by the State Planning Council that addresses overall social, economic, and physical development within the State. RISPP is also responsible for developing the Transportation Improvement Program (TIP), which is used to implement the policies and strategies contained in the Surface Transportation and Freight Rail Plans and to advance specific improvement projects. Rhode Island also has a State Airport System Plan. The Capital Improvement Program for the six state airports is included in the TIP for informational purposes.

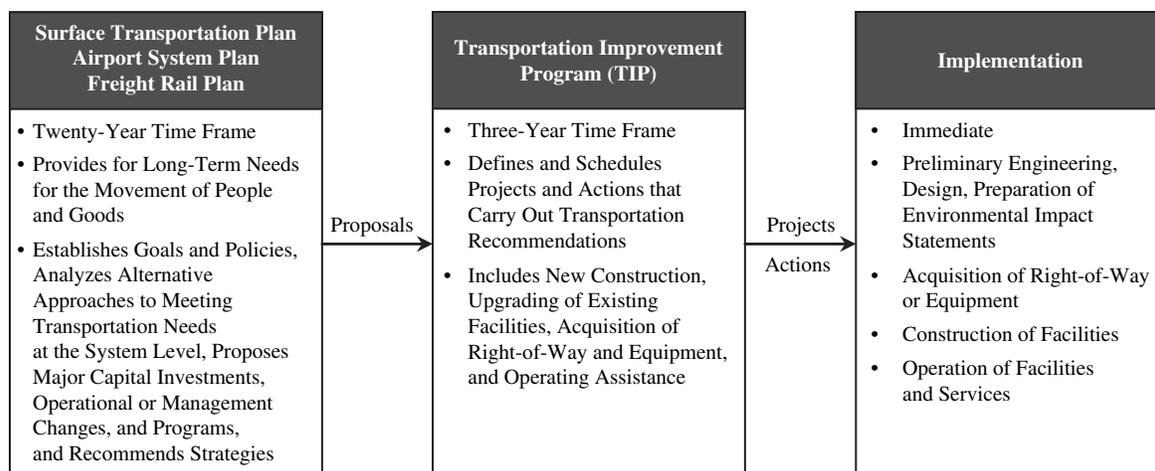
The following sections describe how RISPP uses its project selection process to advance freight-specific improvement projects within the State.

### **Project Selection Process**

Rhode Island's transportation planning and programming process is described in Figure 5-3.

This process is guided by RISPP staff in conjunction with the State's Transportation Advisory Committee (TAC), whose members are appointed by the State Planning Council. TAC members include representatives from state and local governments, transportation user groups, environmental groups, and the general public. There are several freight representatives on the TAC, including representatives from the Rhode Island Trucking Association, the Construction Industries of Rhode Island, and the Rhode Island Economic Development Corporation.

Rhode Island has an open call for projects as part of its TIP development process, meaning that potential transportation improvement projects can be submitted by any agency, entity, or individual, including state and local governments, the private sector, industry, or the general public. All projects must be consistent with the goals, objectives, and policies described in the



**Figure 5-3. Rhode Island transportation planning process.**

Surface Transportation, Freight Rail, or Airport System Plans. Because the State requires cities and towns to have comprehensive transportation plans consistent with the State Guide Plan, this is not normally a big issue. Most projects submitted for the TIP come from cities and towns. In fact, RISPP and the TAC hold public hearings around the State to encourage local involvement and provide support for development of project proposals. For the most recent TIP (approved in August 2005), the State received 137 proposals from 31 (of 39) cities and towns, 3 state agencies, 2 regional agencies, 1 citizen, and 3 private-sector transportation providers (e.g., passenger ferry operator, freight rail operator). The State submits a few project proposals, but it generally does not want to compete for funding with the cities and towns.

Project proposals are reviewed by the TAC in four regional subcommittees (i.e., Northwest Region, Metro Providence Region, East Bay, and South County). Other subcommittees are established as needed based on the type of proposals received. In 2005, a Rail Subcommittee was formed to review passenger and freight rail projects. These proposals are evaluated using criteria adopted by the State Planning Council. The scoring system evaluates projects in six major categories: Mobility Benefits, Cost-Effectiveness, Economic Development, Environmental Impact, Degree of Support to Local and State Goals and Plans, and Safety/Security/Technology. Specific qualitative and quantitative measures were developed for each category and proposals are scored on a scale from -5 to 5 (negative values being assigned to indicate negative effects) within each of the six areas. Tables 5-13 through 5-18 describe the criteria, measures, and scoring guidance for each of the six categories.

Following scoring by the TAC subcommittees, a prioritized list of recommendations is presented to the full TAC. The full TAC, using information on anticipated funding and scheduling, assembles its recommended fiscally constrained program into a draft TIP. The draft TIP is reviewed by the State Planning Council and made available for public comment before it is approved.

Development of quantifiable criteria with which to evaluate potential improvement projects for inclusion in the TIP gives freight improvement projects a “fighting chance” to compete for funding with other proposed transportation improvements. In fact, many freight improvement projects would score highly in several of the criteria described in Tables 5.13 through 5.18, particularly those criteria included in the Mobility, Economic Development, and Safety/Security/Technology categories. In the most recent TIP, a freight rail track improvement project and several grade crossing separation projects were approved for funding. In addition to these projects, the State is completing

**Table 5-13. Mobility criteria.**

Criterion	Measure(s)	Scoring Guidance
Number of travelers served/ volume of freight transported	ADT (for highways)  Trip generation potential (bike and pedestrian facilities)  Volume of trains, freight cars, tons (for freight movements)	None.
Level of service improved, congestion reduced, or efficiency of freight service improved	Level of service (for highway projects)  Potential for higher speeds (for rail projects)	None.
Number of modes provided for and linkages among different transportation modes	Number, quality, or importance of multiple modes	More points should be given for a greater number of connections or for quality or importance of connections.
Regional scale and impact	Effects on more than one community	Projects that complete links between transportation facilities should score well.
Mobility provided to transit users and people not using personal motor vehicles	Population of elderly or students in the project area	None.
Improvement of user comfort, convenience, or information	Potential for increased ease of use or comfort of facilities	None.

the Freight Rail Improvement Project (FRIP) using funds from the FRA, Rhode Island Economic Development Corporation Revenue Bonds, FHWA bridge funds, and other sources. This project, described in detail below, provides an example of how states and MPOs can use innovative sources of funding and financing to complete major freight improvement projects.

## Use of Innovative Funding Sources

### Freight Rail Improvement Project (FRIP) Overview

The Port of Davisville is in the Quonset-Davisville Commerce Park in Quonset Point. The Park is generally bordered on the west by Amtrak’s Northeast Corridor (NEC), on the east by the Narragansett Bay, on the north by Newcomb Road and the Mountview neighborhood, and on the south by the Shore Acres neighborhood and Camp Avenue. The on-site freight rail system at Quonset-Davisville connects to the Northeast Corridor at West Davisville. The NEC in Rhode Island is owned by Amtrak. The main line freight service is operated by the Providence and Worcester Railroad (P&W).

Along the 22 miles of track between West Davisville and P&W’s “Boston switch” in Central Falls, passenger service and freight service either share the same track or run on existing sections of parallel track. This creates major conflict issues for the Port of Davisville, given that they can only use the line for freight service during off-peak hours (to allow Amtrak to transfer passengers during the day). This conflict often limits their competitiveness in the market.

To address this situation, the DOT completed a major investment study in 1996 and a final EIS in 1998. The preferred alternative (dubbed Freight Rail Improvement Program—FRIP)

**Table 5-14. Cost-effectiveness criteria.**

Criterion	Measure(s)	Scoring Guidance
Capital cost in proportion to travel benefit or economic benefit	Cost versus number of users benefiting Time, distance, or delay reduced	Projects that are hugely expensive, save only a few minutes of travel time, or serve few people will tend to score low.
Project uses innovative and low-cost alternative designs	Use of innovate materials, such as stamped concrete rather than brick, or automation	Points can be awarded for inclusion of design features or materials that improve efficiency, performance, or durability.
Utilization and preservation of existing infrastructure, consideration of future maintenance, operating, and capital costs	Pavement condition Use of existing infrastructure	A new facility would score low. High scores should be reserved for projects whose purpose is to restore facilities that are dilapidated or unused.  For roadway rehab projects:  Failed pavement = 5 points Poor pavement = 4 points Fair pavement = 3 points Good pavement = 2 points Excellent pavement = 0 points  Negative points can be assigned to projects involving reconstruction of facilities less than 10 years old.
Potential to leverage Federal transportation funds with other public or private investment	Percentage of funding available from other sources	> 50% = 5 points 25-49% = 4 points 10-24% = 3 points 5-9% = 2 points 1-4% = 1 point
Project scaled back to achieve cost savings	Overall cost savings due to project cuts	< 10% of previous cost = 5 points 10-25% = 4 points 26-50% = 3 points 51-75% = 2 points 76-90% = 1 point

would locate the third rail additions in Hillsgrove (Warwick), Cranston, and from Atwells Avenue in Providence to the Boston Switch in Central Falls. A ROD approving this alternative was provided in 1998.

The \$196 million FRIP entails constructing a freight-dedicated track along Amtrak's mainline tracks, linking Quonset/Davisville to the Boston Switch at Central Falls and out to western markets. The FRIP is to be administered by Amtrak Force Account (work performed by Amtrak forces) as well as RIDOT construction contracts. RIDOT construction contracts consist of nine individual site-work and structure projects, containing elements of work necessary for preparing the alignment and track bed for the construction of the third track. The objectives of the project are to

- Increase operating times available for freight operation, which are being greatly reduced by Amtrak's electrification project;
- Increase freight efficiency and effectiveness;
- Provide tri-level clearance between Boston Switch and Davisville;
- Provide for increased passenger safety on the Amtrak main line; and
- Provide for future commuter rail, off of main line, between Warwick and Providence.

**Table 5-15. Economic development criteria.**

<b>Criterion</b>	<b>Measure(s)</b>	<b>Scoring Guidance</b>
Support of state-designated enterprise zones	Location of project	Project located within an enterprise zone = 5 points All other projects = 0 points
Creation or retention of jobs	Jobs created or retained; or potential for jobs to be created  Improved access to employment centers	Points may be deducted for projects that support the relocation of jobs to remote areas not accessible to public transit.
Facilitating movement of goods	Percent truck traffic on affected roadway	8% truck traffic = high 5-8% = medium < 5% = low  A high score can be given to projects that have a special role for goods movement, such as any freight rail project or a project serving a freight terminal.
Encouraging tourism	Enhanced access to historical, recreational, cultural, or scenic assets	None.
Benefit to economically disadvantaged populations	Number of low-income residents or employees in project area, measured by percent of state median income	< 50% of state median income = 5 points 50-80% = 3 points 81-99% = 1 point Equal or greater to state median income = 0 points
Results in rehabilitation of brownfield sites, reuse of certified mill building, or is located in state-designated growth center	Project location	Located in state-designated growth center = 5 points

This is a complex job, including design components, environmental issues, constructability issues, historic concerns, and extensive coordination with several state and Federal agencies, including the FRA, the FHWA, Amtrak, the Environmental Protection Agency, the Rhode Island Department of Environmental Management, and the Rhode Island Economic Development Corporation.

As part of the project, several bridges had to be reconstructed or raised to provide additional clearance. Parallel tracks to Amtrak's existing tracks also had to be built to further accommodate freight rail. In northern areas of the corridor, RIDOT undercut the existing tracks to provide additional vertical clearance from the tracks. This alteration also helped to prevent modifying the existing transportation infrastructure, including a series of bridges in Pawtucket and Central Falls. By the end of 2005, there will be track access for the trains; any additional work not related to train operations (i.e., landscaping) will be completed in 2006.

### **Use of GARVEE and Motor Fuel Tax Bonds**

Funding for the FRIP was driven by two high-level advocates for the project: then-Governor Almond and Senator Lincoln Chafee. Together, these project advocates encouraged the U.S. Congress to appropriate \$6 million for the project, while requiring a 50-percent local share (25 percent from state obligation bonds and 25 percent from private user fees). In addition, these project advocates encouraged Congress to make the FRIP eligible for FHWA funds, which it was in the National Highway Systems Bill.

**Table 5-16. Environmental impact criteria.**

Criterion	Measure(s)	Scoring Guidance
Improves air quality	Emissions reduction	None.
Promotes energy conservation	Reduction in number of trips or vehicle-miles traveled	None.
Improves water quality	Improved drainage control	None.
Protection and enhancement of environmental resources	Level of protection of existing environmental resources	None.
Preservation and enhancement of scenic and historic districts or viewsapes, or improvement of visual appeal	Level of improvement	None.
Contribution to a greenways system	Improved access to parks or greenways	None.
Promotes walkability and bikeability of neighborhoods, retains community and quality of life values	Degree to which projects do not disrupt communities	None.
Consistency with environmental justice for minority and low-income populations	Degree to which projects support environmental justice (EJ) initiatives	None.
Improvement of urban or village centers and/or preservation of open space	Degree to which projects strengthen existing communities	None.

The DOT also used \$51 million in planned GARVEE and Motor Fuel bonds to fund the remainder of the project. GARVEE bonds are tax-exempt debt instrument financing mechanisms backed by annual Federal appropriations for Federal-aid transportation projects. Under the GARVEE program, FHWA authorizes a project agreement that reimburses the State for project debt service over a number of years, rather than construction outlays. The state agency, in turn, issues GARVEE bonds that provide the funds to cover construction outlays. Future Federal appropriations are pledged to pay debt service on the GARVEE bonds. RISPP indicated that this financing mechanism has worked very well for them—they were able to lower the amount paid in debt service over time. The only drawback is that by issuing the bonds, they have taken away some of their anticipated highway improvement funding for the next 15 years. Motor Fuel bonds are those floated against anticipated revenues from the State’s motor fuel tax (currently \$0.30 per gallon).

## Critical Success Factors

- **Develop quantifiable criteria and guidance for project evaluation.** Many states and MPOs do not use evaluation criteria that reflect potential economic and business development benefits of freight improvement projects. As a result, many freight projects never appear on a TIP or are ranked very low. As discussed above, RISPP has developed project evaluation criteria that give more recognition of and emphasis to freight projects. Projects are evaluated in six major categories: Mobility Benefits, Cost-Effectiveness, Economic Development, Environmental Impact, Degree of Support to Local and State Goals and Plans, and Safety/Security/Technology. Just as important is the guidance provided to project evaluators to assist them in applying criteria to

**Table 5-17. Degree of support to local and state goals and plans criteria.**

Criterion	Measure(s)	Scoring Guidance
Priority given by local government compared to other projects	Priority of proposer in relation to all proposed projects by that proposer	No. 1 priority = 5 points No. 5 priority = 1 point
Past commitment such as completion of studies or design and provision of local funding share	Degree to which project builds on existing activities or studies	None.
Linkage with other local projects	Degree to which project supports other local initiatives	None.
Cooperation among two or more municipalities	Degree to which multiple communities are involved	More points could be given for evidence of active cooperation or for more than two communities' involvement.
Implements land use, housing, and other goals and policies of local comprehensive plans	Degree to which project is consistent with local comprehensive plans	All projects must be consistent with local comprehensive plans. Points should be given to those projects that carry out a specific recommendation from an existing plan.
Implements goals and policies of the state transportation plan and other State Guide Plan elements	Degree to which project is consistent with state transportation plan and other State Guide Plan elements	All projects must be consistent with state transportation plan and other State Guide Plan elements. Points should be given to those projects that carry out a specific recommendation from an existing plan.
Degree of public support	Degree of public support	None.

different types of projects. These factors give freight improvement projects a “fighting chance” to compete for funding with other proposed transportation improvements in the State.

- **Include freight representation on the project evaluation committee.** The private-sector freight community can provide the background, training, and expertise necessary to address freight in statewide and metropolitan planning processes. Rhode Island successfully engages the private-sector freight community by including freight representation on the TAC, which reviews and recommends transportation improvement projects for inclusion on the TIP. TAC membership includes representatives from the Rhode Island Trucking Association, the Construction Industries of Rhode Island, and the Rhode Island Economic Development Corporation. By including representatives from the private-sector freight community on the TAC, Rhode Island can more effectively evaluate potential freight improvement projects and better understand the potential public benefits of freight transportation investments. Engaging the private sector in this way also encourages this sector to stay engaged in the transportation planning process in the long term.
- **Encourage project submissions from many different agencies and entities.** In many state DOTs and MPOs, freight improvement projects must be “sponsored” by an MPO member agency or developed in-house. This discourages private-sector freight stakeholders from proposing freight projects during the needs identification phase of the transportation planning process because it forces the private sector to lobby members of the state DOT or MPO in order to ensure that their project proposals are entered in the formal planning process. This adds work to a process that the private sector already perceives as overly bureaucratic. Rhode Island has an open call for projects as part of its TIP development process, meaning

**Table 5-18. Safety, security, and technology criteria.**

Criterion	Measure(s)	Scoring Guidance
Corrects a significant safety problem or enhances safety	Number of fatalities, crashes	<p>5 points = project address safety in a segment/intersection where there are annual fatalities</p> <p>1-4 points = project address safety in a segment/intersection where there have been fatalities or other injuries</p> <p>0 points = no safety or crash data provided</p> <p>Negative points = project undermines safety or creates new hazards</p>
Improves walking and bicycling safety on routes to schools and other public facilities, especially for children and the elderly	Degree to which project is consistent with existing safety or other studies	<p>5 points: top priority project identified in a community Safe Routes to School study</p> <p>3-4 points: identified in a comprehensive plan or other planning study</p> <p>1-2 points: not identified in a study but demonstrates safety benefits</p> <p>0 points: does not improve safety of walking/biking routes to facilities</p> <p>Negative points = project undermines safety or creates new hazards</p>
Improves evacuation route (hurricane or otherwise)	Degree of improved performance of an evacuation route	<p>5 points: improves traffic flow on major designated hurricane evacuation route in high-hazard/high-population area</p> <p>3-4 points: improves traffic flow on secondary evacuation roads or lower risk/lower population area</p> <p>1-2 points: improves route to inland shelter</p> <p>0 points: does not serve evacuation route or shelter</p> <p>Negative points: project allows for increased development in flood hazard areas or increases congestion on evacuation route</p>
Improves diversionary route for Interstates and other major highways	Degree of improved performance on diversionary routes for Interstate or other major highway measured by AADT	<p>5 points: improves traffic flow on designated diversionary route with Interstate AADT &gt; 125,000</p> <p>3-4 points: improves traffic flow on designated diversionary route with Interstate AADT &gt; 75,000</p> <p>1-2 points: improves traffic flow on designated diversionary route with Interstate AADT &lt; 75,000</p>
Serves hospital or other public safety facility	Degree to which project improves access to a hospital or other public safety facility	<p>5 points: project serves a hospital on Emergency Response Network map or multiple public safety facilities</p> <p>1-4 points: project serves other hospitals or public safety facilities</p> <p>0 points: no public facilities served</p> <p>Negative points: project impedes access or increases congestion in and around public safety facilities</p>

*(continued on next page)*

**Table 5-18. (Continued).**

Criterion	Measure(s)	Scoring Guidance
Improves security of a critical asset or system	Degree to which project improves or serves critical transportation assets	<p>5 points: project is on the Strategic Highway Network (STRAHNET) or protects bridges or reservoirs</p> <p>3-4 points: Hardening (blast-proofing) of infrastructure, passenger screening systems</p> <p>1-2 points: fencing or surveillance of passenger or freight terminal</p> <p>0 points: does not improve security</p> <p>Negative points: hinders security or creates a vulnerability or new risk</p>
Enhances ITS network	Degree to which ITS is used or improved upon	<p>5 points: provides hardware and/or monitoring equipment to implement Rhode WAYS Strategic Deployment plan or RIPTA ITS Plan (bus fare boxes, vehicle locators, etc.)</p> <p>1-4 points: installation of fiberoptic cable on off-system highway; enhances dissemination of information; provides for shared use of equipment already in place</p> <p>0 points: no ITS elements</p> <p>Negative points: project is on a Rhode WAYS route that calls for ITS equipment, but equipment is not provided</p>

that potential transportation improvement projects can be submitted by any agency, entity, or individual, including state and local governments, the private sector, industry, or the general public. As a result, the private-sector freight industry is better able to develop and submit potential improvement projects for consideration.

- **Build advocacy for major projects by linking them to economic development efforts.** The FRIP was championed by two high-level advocates, then-Governor Almond and Senator Lincoln Chafee, in part because of the economic effects that the FRIP would provide to the State. By improving freight access into the Quonset-Davisville facility, companies would be more likely to expand or relocate in the area, more jobs would be created or retained, and local and statewide tax revenues would be improved. By linking freight improvements to economic development efforts/benefits, these two advocates got behind the project and helped push it to completion.

### For More Information

For more information see the Rhode Island Statewide Planning Program (RISPP) website at <http://www.planning.state.ri.us/spp/default.htm>.



# Maine Department of Transportation

## *Calais-St. Stephen Border Crossing*

The Maine DOT has 2,400 employees with a biennial operating budget of over \$1 billion. Prior to 1996, Maine DOT's Bureau of Transportation Services maintained individual divisions for the highway, rail, transit, water, and air modes. Recognizing the need to address freight transportation issues more holistically, however, Maine DOT dissolved the Bureau of Transportation Services, dividing its responsibilities between the newly formed Offices of Freight and Passenger Transportation. The Office of Freight Transportation (OFT) is charged with developing a free-flowing intermodal freight network that can offer Maine shippers greater choice among modes, increased productivity, environmental benefits, and reduced transportation costs by developing policies, programs, and projects to improve freight transportation operations throughout the State. The OFT is functionally divided into a planning section; a program management section (responsible for managing special projects and operations); and a development/marketing section, which advocates new freight ideas and technologies and implements economic development strategies.

The formation of the OFT has also allowed freight and freight issues to be more visible to the general public and the state legislature and has also allowed the DOT to think more systematically. Before reorganization, the seaport modal office and the rail modal office might not have discussed ways to improve on-dock rail access to the State's seaports. Since reorganization, the rail and seaport managers have been able to more easily use their investments and projects to improve transportation more holistically.

The Maine OFT has been successful in identifying projects and policies that improve the connectivity between the various freight transportation modes as well as how improvement projects that benefit one mode can affect the operations of another. The OFT has been instrumental in overseeing the construction of intermodal facilities in Presque Isle, Bangor, Waterville, Jackman, and Houlton, Maine. In each case, Maine OFT personnel were able to foster public-private partnerships, provide funding support, and ensure due attention was given to needed intermodal access improvements to complement these new facilities.

Recognizing that the transportation systems and economies of Maine and its Canadian neighbors are inexorably linked, one of the Maine OFT's primary focus areas has been on improving the performance of the State's border crossings with Canada. Both passenger and freight traffic through Maine's gateways has been growing significantly over the last several decades, particularly since the implementation of free trade between the United States and Canada in 1989. Of particular concern to the OFT is the crossing between Calais (Maine) and St. Stephen (New Brunswick), a border crossing constructed in the 1950s that traverses the downtowns of both cities. This border crossing represents the eighth-largest truck crossing along the United States/Canadian border

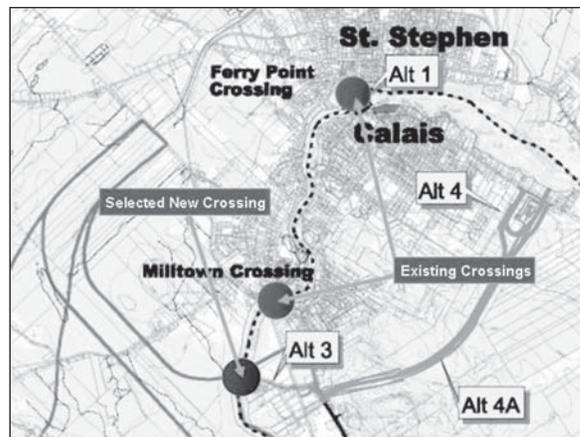
(by volume) and the busiest truck crossing in all of New England and Atlantic Canada. The queues for trucks moving into the United States from Canada, particularly on peak travel days, are significant. With the lack of expansion capabilities and forecasts for additional growth (total trade between Maine and New Brunswick increased by more than 56 percent from 1995 to 2003), the new crossing has become a priority for the Maine and New Brunswick DOTs, the Canada Border Services Agency (CBSA), and U.S. Customs and Border Protection (CBP). In fact, completion of this new border crossing was a cornerstone of the Maine DOT's seven-step strategy to address east-west transportation issues in the State. The project is described in more detail below.

## Calais-St. Stephen Area Border Crossing

Over the last several years, the Maine and New Brunswick DOTs have been collaborating, along with the U.S. General Services Administration (GSA), CBSA, and U.S. Department of Homeland Security's (DHS) CBP to plan and design new border crossing facilities in Calais, Maine, and St. Stephen, New Brunswick. This new crossing will be upstream on the St. Croix River, just outside of both town centers. The existing crossing, in the downtowns of both cities, will remain in place exclusively for passenger cars. Figure 5-4 shows the locations of the existing and new crossings.

The new crossing will become the third crossing in the region and will be the only commercial vehicle crossing in the Calais-St. Stephen region. This crossing represents the first brand-new stand-alone crossing in several decades along the U.S.-Canadian border. The new crossing will provide a significant expansion in space and capacity, with both CBP and CBSA site footprints increasing from less than an acre of land to approximately 50 and 15 acres, respectively.

The selected alternative for the new border crossing includes a new bridge across the St. Croix River, a new four-lane highway bypassing the town of St. Stephen that connects to Route 3 and includes a Route 1 bypass, and a new connection to U.S. 1 through an industrial park in Calais. Each facility will have multiple lanes for cars and trucks, including some dedicated specialized lanes. The Maine DOT and New Brunswick DOT will be responsible for the highways leading into the facilities as well as the bridge across the St. Croix that connects the two countries. CBSA will design and construct the Canadian facility and GSA will design and construct the U.S. facility based on input from the CBP. The highway and bridge design process is underway and being coordinated between the Maine DOT and New Brunswick DOT. The GSA completed its pro-



**Figure 5-4.** Locations of existing and new Calais-St. Stephen crossings.

gram development study in 2004 and is preparing to request construction funding from Congress. The CBSA is working on its design.

One of the keys to the successful design and implementation of the new Calais-St. Stephen crossing was the ability of the Maine DOT to develop and nurture partnerships with all the affected stakeholders. The following sections describe how Maine DOT was able to develop and use these partnerships to move this project toward completion.

## **Development of Partnerships**

The planning and implementation of a new international border crossing not only requires “traditional” stakeholder involvement and outreach, but also significant multijurisdictional cooperation and coordination. The Maine DOT and New Brunswick DOT have a long history of coordinating on major border projects and alternating lead responsibilities on border construction projects. The Maine DOT is leading the bridge design and construction for this project with funding provided by both agencies. The Calais-St. Stephen border crossing project to date has been an excellent example of these agencies’ cooperative attitudes and commitments to their respective communities. These two agencies have worked extensively together not only to advance their individual projects, but to make sure the concerns of both local communities were addressed and that their respective Federal agencies were also coordinating.

While multijurisdictional and multiagency coordination are clearly important when planning and implementing freight improvement projects that affect multiple areas, in the case of an international border crossing, coordination is mandated by Presidential Permit requirements. Presidential Permits are required under Executive Order 11423 of August 16, 1968 (33 CFR 11741) for “the full range of facilities” on the border, including bridges, pipelines, tunnels, conveyor belts, and tramways. Permit applications for most facilities at the border are processed by the Department of State. To issue a Permit, the State Department must find that (1) the proposed project would serve the national interest; and (2) that the concerned Federal and state agencies, along with the general public, have been provided an opportunity to comment on the proposed improvement.

The requirements of the Presidential Permit process provided Maine DOT with sufficient motivation to coordinate the planning and implementation of the new Calais-St. Stephen crossing with the affected stakeholders. However, Maine recognized that early and active outreach with affected stakeholders would allow them to build support for the project and “grease the skids” for project development and implementation.

Active outreach was particularly important for this project because of the unique nature of small, rural border communities. Although Calais and St. Stephen are clearly separated by jurisdictional boundaries, in many ways they behave as a single community. Many Calais-St. Stephen residents live, work, shop, and recreate on both sides of the border. In fact, many Calais-St. Stephen residents have close family and friends “on the other side” and make frequent trips back and forth between the two communities. In addition, many local businesses rely on border-related traffic for their livelihoods. Duty-free shops, gas stations, eateries, and many other establishments depend on tourist and truck traffic at or near the border.

In addition to the public stakeholders, many state, Federal, and provincial agencies and entities are involved in a border-crossing project. In the United States, stakeholders include those commonly consulted as part of major transportation improvements, such as the Environmental Protection Agency (EPA), the Fish and Wildlife Service, and the U.S. Army Corps of Engineers. In addition, border crossing projects also involve other key stakeholders. The GSA, for instance, is an important stakeholder in the border crossing planning and development process. GSA’s Border Station Center (BSC) is the central program body for its border station capital program.

This office develops and maintains standard processes and procedures to ensure land ports of entry are developed consistently and to an acceptable standard. Border crossing projects must also be coordinated with agencies of the DHS, including Customs and Border Protection, Immigration and Customs Enforcement, the Transportation Security Administration, and the U.S. Coast Guard, in the case of international bridges. In Canada, similar agencies must be consulted, including provincial governments, the CBSA, and others. Finally, in accordance with the 1972 International Bridge Act, all required authorizations of the Federal Government of Canada must be obtained before an international bridge may be constructed.

The development of this project has involved significant outreach to these stakeholders, including 11 public meetings held during the environmental assessment (EA) process. More important, though, was the close coordination of the various state, Federal, and provincial stakeholders in the project. A Project Advisory Committee, made up of representatives from these stakeholders, was developed to ensure that key issues were identified and addressed in a timely fashion and that lines of communication among the various parties remained open. This Project Advisory Committee also acted as an effective forum to coordinate outreach and information sharing with other affected stakeholders, particularly the citizens and businesses in the Calais-St. Stephen area. Two key elements contributed to the success of this group and allowed them to move this project forward:

1. **Points of Contact**—Each of the primary agencies involved in the planning and development of this project (i.e., Maine DOT, NBDOT, CBSA, and GSA) identified a primary and a secondary point of contact for project-related matters. This was important for several reasons. First, it allowed the Project Advisory Committee to develop close relationships with the other agencies, improving the ability to identify and solve potential issues as they arose. Second, it gave other stakeholders, most notably the citizens and businesses in the Calais-St. Stephen area, a person to call to answer project-related questions, an important element of successful public outreach efforts. Finally, it ensured that “institutional knowledge” would be retained in each of the agencies, critical to projects planned and developed over long periods of time.
2. **Progress Reports**—In addition to identifying points of contact at agencies, meetings of the Project Advisory Committee and other public meetings often began with progress reports from each of the key agencies. As part of these progress reports, information was provided on progress since the last meeting, planned activities over the next quarter, and unresolved issues/required information. These progress reports helped to provide critical information to those in attendance as well as help in identifying and resolving key issues.

## Critical Success Factors

- **Engage all the stakeholders early in the process.** One of the keys to the success of the Calais-St. Stephen crossing project is that the Maine and New Brunswick DOTs were able to “grease the skids” for the project by identifying and engaging key project stakeholders early in the process. This case study highlights the complex interagency coordination that must occur when planning and programming a major transportation improvement, particularly an international border crossing. In addition to the general public, several Federal, state, and provincial agencies were involved in the planning and approval of this project. Outreach was conducted in several ways. First, a Project Advisory Committee was developed. This committee helped ensure that key issues were identified and addressed in a timely fashion and that lines of communication among the various parties remained open. In addition, 11 public meetings were held to discuss key issues and concerns from the general public about the project. Finally, in addition to having key points of contact in each agency for the project (described below), a project-specific website was developed and maintained by the Maine and New Brunswick DOTs.

- **Identify key points of contact in each agency.** Coordinating the activities of the various agencies during the planning process is a challenge often faced by state DOTs and MPOs when planning large freight improvement projects, particularly in the case of an international border crossing. This coordination was effectively accomplished here through the use of a Project Advisory Committee. As discussed earlier, each of the primary agencies involved in the planning and development of the Calais-St. Stephen crossing identified a primary and a secondary point of contact for project-related matters. This ensured close coordination and regular exchange of information that facilitated not only the design, environmental studies and compliance, and permitting being done in the United States, but those being performed in New Brunswick as well. As a result, the project had an easier time navigating the planning and programming process toward implementation.
- **Clearly define roles.** As in many successful partnerships, a clear definition of the roles of each agency was a key ingredient. Early in the process, it was decided that CBSA would design and construct the Canadian facility and the GSA would design and construct the U.S. facility based on input from the CBP. The highway and bridge design process is underway and being coordinated between the Maine and New Brunswick DOTs. Maine DOT worked closely with the New Brunswick DOT and Transport Canada and agreed that each agency would do their own work leading up to the bridge and would share the bridge construction costs 50/50 (the organizations are working on an MOU for the reimbursement process).

## For More Information

For more information see:

- Maine Department of Transportation (Maine DOT) web site at <http://www.maine.gov/mdot/>.
- New Brunswick Department of Transportation (NBDOT) web site at <http://www.gnb.ca/0113/index-e.asp>.
- United States Customs and Border Protection (CBP) web site at <http://www.cbp.gov/>.
- United States General Services Administration (GSA) web site at <http://www.gsa.gov/>.
- Canadian Border Services Agency (CBSA) web site at <http://www.cbsa-asfc.gc.ca/>.



# Minnesota Department of Transportation

Minneapolis is a key agricultural and trade center of the Midwest. The State is home to 9,000 manufacturing businesses; 28,000 retail stores; 15,000 wholesale trade companies; and 3,000 agricultural businesses. In 2001, more than 600 million tons, with a combined value of \$562 billion, moved into, out of, and within the State. Clearly, freight is an important component of the State's economic competitiveness and vitality. The ability to preserve and enhance the freight transportation system has been a significant focus of the Minnesota Department of Transportation (MnDOT) for a number of years.

Transportation planning and programming in Minnesota are governed by the State's Strategic Plan, which identifies key strategic directions for the State, and by the Statewide Transportation Plan, which lists 10 specific policies to implement the department's strategic directions. Over the last several years, MnDOT has undertaken a wide range of freight planning activities, including an intermodal terminal study, a statewide freight flows study, and the development of a freight facilities database. In 2005, to better link its freight planning activities to the strategic directions and key policies outlined in the Strategic and Statewide Transportation Plans, MnDOT's Office of Freight and Commercial Vehicle Operations (OFCVO) developed the Minnesota Statewide Freight Plan. Two key objectives of this plan were to adapt the strategic directions and policies outlined in the Strategic and Statewide Transportation Plans to freight transportation and to define performance measures specifically for freight within those directions and policies.

## **Development of Freight Performance Measures**

When MnDOT adopted its Statewide Transportation Plan in 2003, it implemented a performance-based planning approach in its investment decision-making process. This approach was designed to allow MnDOT to better target investments to address identified transportation performance issues. As part of that effort, several performance measures were developed to assist MnDOT staff in monitoring the performance of the statewide transportation system and identify key problem areas. One of the first steps taken by the OFCVO when developing freight-specific performance measures as part of the Statewide Freight Plan was to review these existing performance measures and assess their relevance to freight issues. Twenty existing measures directly relevant to freight issues were identified. A sampling of these are described in Table 5-19, organized by mode.

Following the review of the performance measures included in the Statewide Transportation Plan and their relevance to freight issues, OFCVO identified additional performance measures and indicators for all modes of freight transportation. These additional freight-specific performance measures are designed to supplement and enhance the performance measures already

**Table 5-19. Freight performance measures from Minnesota Statewide Transportation Plan.**

Mode	Measure
Trucking	Percent of miles of highway that meet “good” and “poor” ride quality targets
	Clearance time for incidents, crashes, or hazmats
	Ice and snow removal clearance time
	Percent of major generators with appropriate roadway access to key regional highway corridors
	Peak-period travel time reliability on high-use truck roadways
	Ratio of peak to off-peak travel time
	Heavy truck crash rate
	Number of heavy truck-related fatalities
Rail	Percent of major generators with appropriate rail access
	Total crashes at at-grade rail crossings
	Number of truck-related fatalities at at-grade rail crossings
Air Cargo	Percent of airport runways that meet “good” and “poor” pavement conditions targets
	Percent of air cargo facilities with appropriate roadway and rail access
Intermodal Facilities	Percent of intermodal facilities with appropriate roadway and rail access

included within the Statewide Transportation Plan. These freight-specific performance measures are described in Table 5-20.

A critical, final step in the development of freight performance measures was to link them with the freight-specific policies and strategies defined in the Statewide Freight Plan, but also to understand how they could be used to meet the policies and strategies defined in the Statewide Transportation Plan. The OFCVO accomplished this by developing a freight policy statement consistent with and built on the overall policies included in the Statewide Transportation Plan. OFCVO then developed specific strategies to meet this policy statement and identified key performance measures that could be used to measure progress and identify opportunities for improvement.

## Critical Success Factors

- **Link freight to existing process and policies.** One of the key lessons from the Minnesota experience is the importance of linking freight planning and policy activities within the context of existing transportation planning and programming processes. In this case, freight policy statements, strategies, and performance measures were developed so that they were consistent with MnDOT’s overall goals for mobility, safety, security, and reliability. This is critically important, because it shows how freight-specific activities can be used to support “traditional” transportation planning and programming, helping to integrate freight into existing processes, rather than handling freight issues in a separate, unconnected process.
- **Review existing planning documents for relevance to freight.** In many cases, states and MPOs are already addressing freight movements within their transportation planning programs, albeit indirectly. A review of the performance measures developed as part of the Minnesota Transportation Plan revealed that several measures, particularly those related to highways and bridges, already had direct relevance to freight issues. Understanding how existing

**Table 5-20. Additional Minnesota freight performance measures.**

<b>Mode</b>	<b>Measure</b>
Trucks	Benefit of truck weight enforcement on pavement service life
Rail	Percent of rail track-miles with track speeds greater than or equal to 25 mph
	Percent of rail track-miles with 286,000 pound railcar capacity rating
Waterways	Average delay time at river locks
Air cargo	Availability of direct international air cargo freighter service
Intermodal Facilities	Percent of intermodal facilities whose infrastructure condition is adequate
	Availability of container-handling capability and/or bulk transfer capability

processes and policies already address freight issues can often help DOT or MPO staff more effectively mainstream freight within these processes.

### **For More Information**

For more information see the Minnesota Department of Transportation (Mn/DOT) website at <http://www.dot.state.mn.us/>.



# Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area (i.e., Sonoma, Napa, Solano, Marin, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco). According to estimates by the California Department of Finance, the region's population in 2004 is 7 million persons. The region is highly urbanized with the three largest cities being San Jose, San Francisco, and Oakland. Despite the efforts of a vibrant Smart Growth program, the region continues to experience outward expansion of population into the Bay Plain region and the Outer Ring suburban community. Economic integration with the Northern San Joaquin Valley is also evident, both in terms of commute shed and regional warehouse and distribution activity. Between 1990 and 2004, regional population grew by 16.9 percent.

Over 37 percent of Bay Area economic output is in manufacturing, freight transportation, and warehouse and distribution businesses. Collectively, these goods movement-dependent businesses spend approximately \$6.6 billion on transportation services. The businesses providing these services also play a critical role as generators of jobs and economic activity in their own right. Bay Area goods movement businesses provided at least 5.9 percent of the region's employment in 1997. Since these estimates do not include employment in private warehouses, it is likely that goods movement businesses provide almost twice as much employment as indicated in these figures. In addition, the types of jobs provided are critical at a time when other opportunities in manufacturing are declining.

More than 80 percent of the goods movement in the Bay Area involves trucking in several major corridors: I-880, U.S. 101, I-580, and I-80. Other highway corridors play supporting roles to these major goods movement corridors. The I-880 corridor carries the highest volume of truck traffic in the region and among the highest of any highway in the State. Serving the Port of Oakland, Oakland International Airport, and the Oakland Intermodal Gateway Terminal (the Joint Intermodal Terminal), as well as a major concentration of industrial and warehouse land uses, I-880 serves as both an access route for major interregional and international shippers and a primary intraregional goods movement corridor. The I-580 corridor is the primary connection between the Bay Area and the national interstate truck network. A substantial share of Bay Area domestic trade is with Southern California, the San Joaquin Valley, and other West Coast destinations, and most of this trade uses I-580 as a connector. This corridor experiences the second-highest volumes of truck traffic in the region, most of it long-haul in nature and involving the heaviest trucks. Increasingly, regional distribution centers have located in the San Joaquin Valley, and trucks providing goods to the Bay Area use this corridor for access. I-80 carries the third-highest truck volumes in the region, serving primarily as a connector to the transcontinental truck network. The U.S. 101 corridor acts as a gateway corridor in the southern end of the region with modest truck volumes between Salinas and San Jose. Truck volumes increase substantially from San Jose to San Francisco, where the corridor serves as a primary access route to San Francisco International Airport and intraregional goods movement.

After trucking, rail carries the next largest fraction of Bay Area goods. The region is served by two Class I carriers, the Burlington Northern Santa Fe (BNSF) and the Union Pacific (UP). Oakland is the center of the Bay Area rail network, and the most significant elements are in the East Bay and along the Suisun Bay Network (north and south). Major intermodal terminals are in Richmond and Oakland. Oil refineries and auto terminals along the Suisun Bay network also generate substantial rail traffic. The UP line to Roseville and the BNSF line to Stockton are the two major rail routes in the Bay Area.

Although the Bay Area has several public port facilities, the largest is the Port of Oakland. Bay Area maritime cargo includes containerized cargo at Oakland and San Francisco; bulk cargoes at San Francisco, Richmond, Redwood City, and Benecia; and crude petroleum products, raw sugar, and bay sand handled at private terminals. Unlike the Ports of Los Angeles and Long Beach, export cargo volumes at Oakland exceed import cargo volumes. Containerized cargo at the Port of Oakland accounts for the largest share of tonnage and value.

Three major commercial airports in the Bay Area handle air cargo: San Francisco International Airport (SFO), Metropolitan Oakland International Airport (OAK), and San Jose International Airport (SJC). SFO handles the largest volume of cargo (approximately 50 percent of the regional total) and is the principal airport for international cargo. OAK is the next largest shipper of air cargo and handles a substantial amount of domestic freight. Air cargo is the fastest growing segment of the Bay Area goods movement system. Air cargo volume is forecast to triple between 1998 and 2020 with 125 percent increase in all-cargo flights.

The case of the Metropolitan Transportation Commission (MTC) provides an interesting example of how local, regional, and state roles and priorities are coordinated through the planning and programming process for freight projects.

## **Effective Use of Planning Process**

### **Long-Range Planning**

Prior to the 2004 Regional Transportation Plan (RTP) update, MTC had never had a formal goods movement element in its RTP, and there was no explicit process for identifying and programming goods movement projects. Like many MPOs, the MTC region has many unfunded transportation needs so the opportunities to fund major freight investments are limited without special consideration in state or Federal funding resources. In fact, MTC has very limited discretionary investment funding opportunities for which it has primary jurisdiction. Several major freight projects have been undertaken in the region during the post-ISTEA era, the most significant being the development of the Joint Intermodal Terminal (JIT) at the Port of Oakland. The JIT project came largely at the instigation of the Port and was funded as a regionally significant project. However, this type of freight investment in the Bay Area has been the exception, rather than the result of an ongoing and deliberate process to identify and program such projects.

During the development of the 2001 RTP, goods movement planning received a higher level of attention, largely at the instigation of the business community. During the public outreach process prior to finalizing and releasing the RTP, businesses and their representatives [including the Economic Development Alliance for Business (EDAB), an Alameda County-based economic development organization, and the Bay Area Council, a business-based organization] made it clear to MTC that they believed more attention needed to be paid to goods movement. Some of the problems that had pushed freight issues to the forefront of business concerns included trade growth at the Port of Oakland and associated highway and rail access issues, congestion around the regional airports and access to air cargo facilities, and land use and real

estate market pressures on industrial and warehouse/distribution businesses throughout the inner East Bay.

As a result of this business concern, MTC, in partnership with EDAB, the Bay Area Council, the Port of Oakland, and the Bay Area Air Quality Management District, applied for a discretionary SPR grant from Caltrans to conduct a regional goods movement study. The study compiled data on existing and forecast goods movement activity, evaluated the economic significance of goods movement to the region, identified critical land use and environmental issues affecting goods movement, and developed a preliminary list of strategies for addressing regional goods movement needs.

The Regional Goods Movement Study was being undertaken at the same time that MTC was preparing the 2004 update of the RTP and ultimately provided important input so that goods movement could be called out as a specific element of the plan update. It was also the first time that goods movement projects were specifically called out in the RTP project list and were given explicit consideration in the project selection process.

How projects are identified in the RTP process has a strong relationship with project programming in subsequent phases of project development. Funding for transportation investments in the Bay Area can be thought of as having three major sources: (1) Federal funding through the sources such as STP and CMAQ, (2) the state highway account, and (3) local funding (i.e., local sales tax measures). Federal funding actually represents a relatively small part of overall investment dollars (in the 2004 RTP, STP and CMAQ funds accounted for \$2.4 billion of a total of \$9.0 billion of uncommitted project investments going into the RTP process). It has been MTC's policy to use these Federal funds to support the Regional Investment Priorities, which are largely determined by the MPO in consultation with its partner agencies. MTC has chosen the following activities as the core of its Regional Investment Priorities:

- Local streets and roads rehabilitation;
- Transit rehabilitation;
- Regional operations program (including the 511 program and certain ITS elements);
- Clean air activities; and
- Regional bike program.

These regional priorities reflect the policies embodied in the RTP, which emphasize maintenance and operation of the existing system and support of alternative modes. Although goods movement could be incorporated in the Regional Investment Priorities, it has not reached a level of constituent interest and support at this time. However, activities like the Regional Goods Movement Study and the high level of interest that freight is getting at the State level could influence the visibility of freight interests. For example, EDAB and the Bay Area Council have been using the Goods Movement Study to educate local elected officials about the economic significance of goods movement. Key elected officials who sit on the MTC board are beginning to see the importance of goods movement investment, and this is changing the agency's position on goods movement priorities. However, it is likely to continue to be difficult for goods movement to make it into the Regional Investment Priorities program because the funding for these activities is so limited and goods movement projects are expensive. The RTP does include a policy statement that commits MTC to promoting goods movement efficiency in its investment priorities and other policy statements outside of the RTP have been considered that would be more specific in identifying the types of goods movement actions that MTC should commit to (for example, investments to maintain the viability of trade gateway facilities as regional economic and transportation assets). In the long run, this advancement of goods movement priorities in policy statements and the goals and objectives of the RTP could result in a more active role by the MPO to recommend regionally significant investments as part of the fiscally constrained element of the RTP, but this has not happened at this time.

The RTP project process has other influences on subsequent project programming. The Regional Investment Plan included in the RTP includes two lists of projects: (1) projects in the fiscally constrained element, and (2) “Vision” projects. The fiscally constrained element only lists projects for which funding has been identified or that fit within projected revenues. These projects are included in the Regional Transportation Improvement Program (see below) and are identified largely by the county congestion management agencies (CMA), the county agencies with jurisdiction over RTIP programming. Because this funding source and local measures represent the largest share of transportation investment funds in the region and because they are controlled and programmed by county agencies, they tend to reflect local priorities. Nonetheless, MTC staff believe that activities such as the Regional Goods Movement Study and the prospects of funding through the Statewide Goods Movement Action Plan, continue to raise the visibility of goods movement issues, and counties with significant goods movement-related economic activity (e.g., Alameda County) are beginning to program goods movement projects. As an enterprise agency of the City of Oakland, the Port of Oakland (which operates both the seaport and the airport) provides project recommendations to the Alameda County CMA as part of its call for projects.

The Visions projects are identified needs that do not have the same priority as the RTIP projects, but they often include more regionally significant projects. In the 2004 RTP update, MTC included several major goods movement projects in the Vision element of the RTP. MTC believes that even though these projects cannot be programmed at the present time, getting them into the plan creates a greater likelihood that they will be programmed if a special source of funding becomes available at the state or Federal level. For example, the Statewide Goods Movement Action Plan is compiling a list of regionally and statewide significant goods movement projects that presumably could be funded with bond proceeds from a general obligation infrastructure bond that would be a major aspect of the funding for the statewide plan. Both the legislature and the governor are crafting proposals for such a bond issue. The Bay Area projects that have appeared on the draft lists of projects for the statewide plan have all been culled from the RTP (both Vision and fiscally constrained elements).

## **Project Programming**

Projects are programmed in the Bay Area as part of two primary programming documents: the Regional Transportation Improvement Program (RTIP) and the Interregional Transportation Improvement Program (ITIP). For the most part, projects programmed through this process are using state money from the state highway accounts and local sales tax measures. The State also takes money off the top of the state highway account funding and Caltrans makes decisions on how to use this money for state facilities. An example of a program funded through the State’s direct allotment of funds from the state highway account is the State Highway Operations Protection Program (SHOPP), which funds operational improvements in the state highway system. MTC has argued that this would be an appropriate place to either earmark funds for goods movement projects or to create special criteria that would favor projects with goods movement operational efficiency benefits. This is an idea that the MPO has advanced as part of the Statewide Goods Movement Action Plan (GMAP) that is being developed at the behest of the governor.

After Caltrans’ direct allocation, the remainder of state highway account funds are split 75/25—75 percent is allocated directly to the Regional Transportation Planning Agencies (RTPA), which are county-level agencies, and 25 percent is allocated to the ITIP. The California Transportation Commission has jurisdiction over the ITIP projects and it programs these funds in consultation with the MPOs. Goods movement projects have been identified as a priority category for ITIP programming by Caltrans and, during the 2004 RTP update, MTC used the Regional Goods Movement Study as a source of project recommendations to the CTC for the ITIP. Unfortunately, due

to budget deficits at the state level, ITIP funding has been diverted elsewhere in recent years, but MTC believes that it is important to continue making ITIP programming recommendations and that given the interregional nature of goods movement projects, this is an appropriate place for these projects to be programmed.

The remaining 75 percent of state highway account funds are programmed by the CMAs and as such they reflect local priorities. These also make up the bulk of projects included in the fiscally constrained element of the RTP as noted previously. This local orientation of a significant amount of the programming process tends to give lower priority to goods movement projects, although various business and economic development groups along with MTC have been using vehicles like the Regional Goods Movement Study to influence this. In fact, the current RTIP includes some goods movement-oriented projects primarily in Alameda County.

## Project Selection and Alternatives Evaluation

MTC does not use a formal quantitative process to rank projects for inclusion in either the RTP or the RTIP. The CTC is piloting a program that will require the use of performance measures to evaluate how projects contribute to regional goals. MTC has developed a performance-based process for evaluating projects and ensuring that they are consistent with regional priorities and policies as established by its board. However, these measures are in development and are not used explicitly for project selection. During this past RTP update, as part of the Regional Goods Movement Plan, a relatively qualitative process was used to evaluate the goods movement benefits of projects proposed by the CMAs for inclusion in the fiscally constrained element of the plan. The Regional Goods Movement Study had identified a series of primary goods movement corridors and identified critical issues within these corridors. Projects submitted by the CMAs were reviewed to identify those projects that were within the goods movement corridors. MTC had required that each project submit a project data sheet that was used in the performance measure evaluation. The project data and descriptions were reviewed by the Goods Movement Study consultant team to determine qualitatively whether the projects addressed critical goods movement issues in the corridors and a judgment was made as to whether or not the projects contributed to addressing the goods movement projects. Projects that scored highly in this review were flagged as goods movement projects. However, the projects were not developed as goods movement projects by the CMA and the goods movement flag was not used as a critical aspect of the project selection process.

As part of the Environmental Impact Report (EIR) required for the RTP, MTC conducts an evaluation of its plan using the regional travel demand model. However, this looks at the entire plan as a package and compares performance against a no-build alternative. There are no goods movement performance measures developed as part of this evaluation. However, the region does have a limited truck element in its travel demand model, and several measures (total truck delay and travel times between major goods movement activity centers) were suggested that could be included in future evaluations.

## Critical Success Factors

- Sources of funding and programming authority for these sources has a big impact on the effectiveness of goods movement project programming. Sources for which primary programming authority rests with local agencies are less likely to result in programming of goods movement projects, whereas sources targeted for interregional priorities or designated regional investment priorities are more likely to result in goods movement programming.
- The development of major regional goods movement studies and policy discussions influences the inclusion of goods movement projects in regional and local TIPs. The visibility of goods

movement issues in localities with major goods movement activity is likely to get some projects in development.

- Having goods movement entities engaged in the call for projects and project prioritization is important if projects are to be programmed. Because ports are often public entities, their projects are the mostly likely goods movement projects to be programmed.
- Having earmarked sources of funding targeted to goods movement projects is an effective way of getting projects programmed.
- Focusing some project funding resources for lower cost projects (e.g., operational projects) can be useful for goods movement project programming, although the focus is most often on mega-project funding. Because mega-projects are likely to deplete limited project funding resources rapidly, these are least likely to be programmed when local entities have programming authority.
- Although quantitative performance measures can help justify selection of goods movement projects, project selection criteria are often qualitative and, in these instances, data and tools may be less critical.

### **For More Information**

For more information see the Metropolitan Planning Commission (MTC) web site at <http://www.mtc.ca.gov/>.



# City of Reno

## *Reno Transportation Rail Access Corridor (ReTRAC)*

Reno is the focus of culture, commerce, and tourist activity in northern Nevada. The City strives to develop financial resources to the fullest potential, promote the safety of the community, provide for maximum efficiency and effectiveness in delivery of City services, and encourage a diversified economic base which provides for long-term economic health and quality of life, among other goals. The City has an estimated 200,000 residents and a very solid economy; *INC Magazine* rated Reno number 4 in the top 50 small metro areas to start and grow small businesses and *Forbes/Milliken* rated it among the top 25 places in the Nation.

### **Project Overview**

The Union Pacific (UP) Railroad's Central Corridor mainline between Oakland, California, and the Midwest runs directly through downtown Reno, separating many of the casinos and other downtown businesses from other parts of the City. The City of Reno's interest in modifying this corridor to reconnect the City dates back to the Great Depression, when the U.S. Bureau of Public Roads proposed that the railroad be elevated. At that time, the Reno City Engineer recommended that the tracks be depressed instead, to avoid creating a barrier through the City. By 1942, the Chamber of Commerce endorsed the depressed trainway project as "A number 1 civic improvement for the readjustment period after the war." Subsequent reports in 1944, 1968, 1972, 1976, and 1980 described the benefits of a depressed railroad and updated the project's estimated costs.

The proposed merger of the UP and Southern Pacific (SP) railroads in 1995 and its subsequent approval by the Surface Transportation Board (STB) presented the City of Reno with an opportunity to address this long-standing transportation and public safety issue. The UP acknowledged that rail traffic along the Central Corridor line could increase from 14 trains a day to 24 or more within 5 years. The City of Reno quickly recognized that the potential existed for significant effects on ground transportation, pedestrian safety, service delivery systems, and other environmental factors in the City as a result of the merger. The City engaged consultants and consulting teams to conceptually investigate a range of alternative methods to mitigate those potential effects and appealed to (and even sued) the STB to encourage them to recognize and require the UP to mitigate potential transportation, noise, and safety impacts to the City.

Beginning in April, 1996, the City, in conjunction with the UP and then-separate SP railroads, funded a "Railroad Merger Mitigation Alternatives" study. The study identified alternatives, preliminary cost estimates, and schedules. The City Council's analysis established the Reno Transportation Rail Access Corridor (ReTRAC) Project, a below-grade railroad transportation

corridor, as the best long-term value for the region. ReTRAC will primarily be located below the existing UP railroad grade in the central portion of the City of Reno where it will reach a center depth of approximately 33 feet. The railway transportation corridor will be approximately 2.3 miles long between West Second and Sutro Streets, as shown in Figures 5-5 and 5-6.

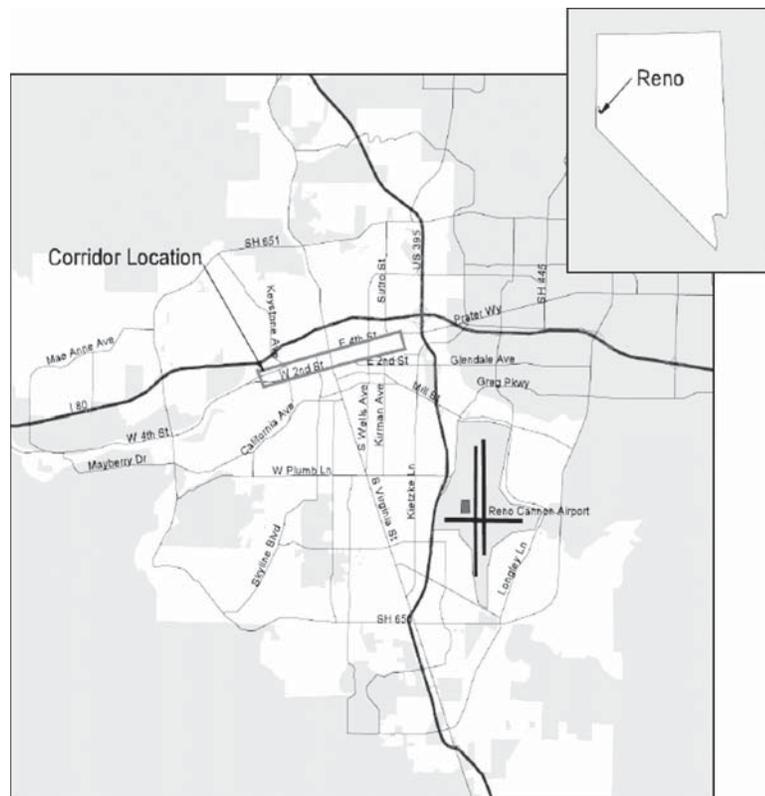
The ReTRAC Project consists of two mainline tracks, constructed to standards permitting maximum train speeds of 60 miles per hour, an access road adjacent to and on the south side of the tracks within the below-grade corridor, and the reconstruction of 11 (10 existing and 1 approved but unbuilt) street crossings built as street “bridges” across the top of the depressed trench.

There will be no turnouts or connections to other tracks within the project area, except for the Reno Branch Connection Track. Prior to severing UP’s existing mainline tracks for construction of the trench portion of the ReTRAC Project, a “shoo-fly” track is being constructed adjacent to the existing mainline tracks. This “shoo-fly” track will serve as a temporary bypass route for trains during the construction.

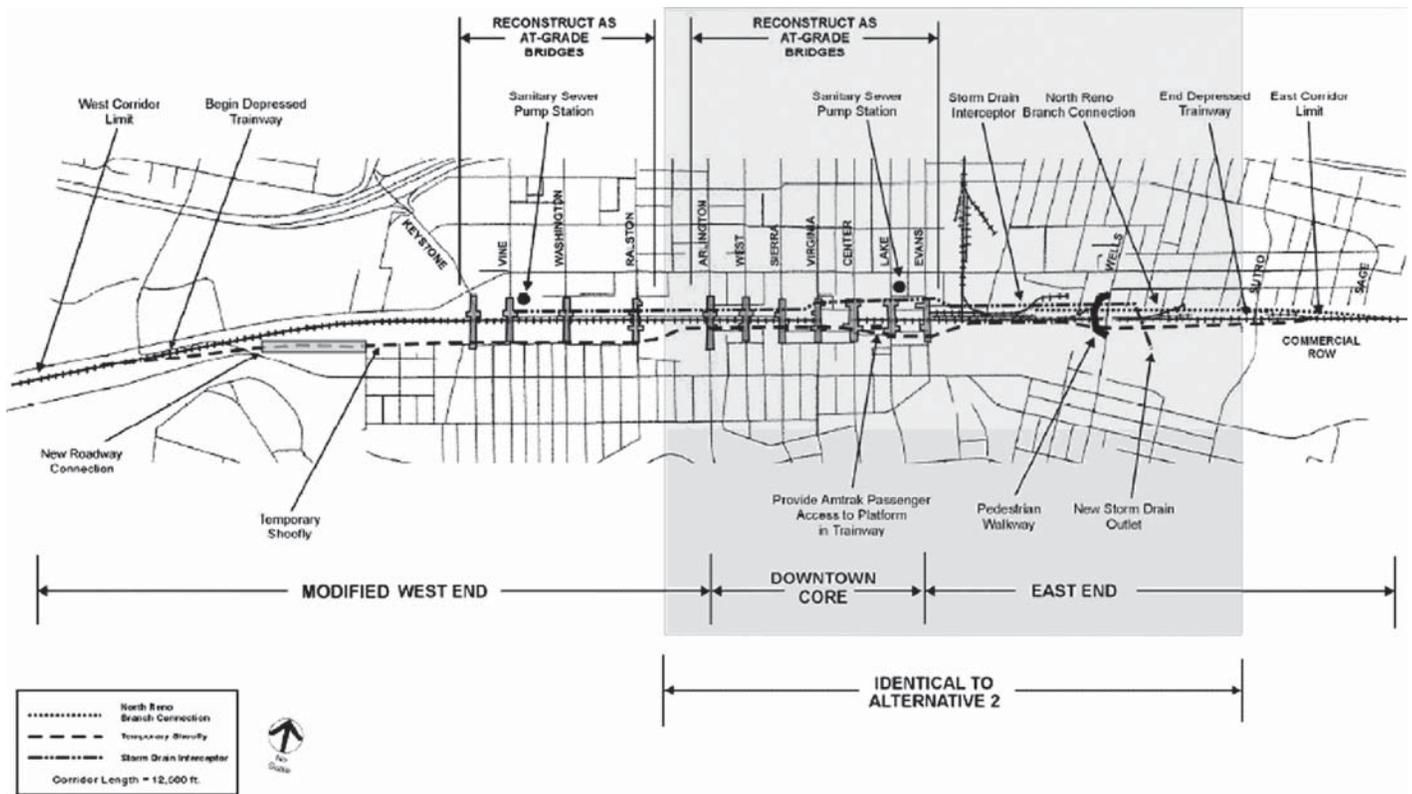
An Environmental Impact Statement (EIS) was prepared and a Record of Division (ROD) was issued in 2001. The City of Reno is overseeing the project, which is expected to be complete in the Spring of 2006. Once construction is complete, the City of Reno will own UP’s current right-of-way along the 2.3-mile-long corridor. The following sections describe how innovative funding and financing techniques were used to finance the completion of ReTRAC.

## Use of Innovative Funding and Financing Techniques

One of the key steps to developing a funding and financing plan for the ReTRAC project was to identify critical stakeholders who would share in the benefits of the improvement. This is a



**Figure 5-5. ReTRAC corridor location.**



Sources: Information Delivery Service, 1999; Myra L. Frank & Associates, Inc., 2000

**Figure 5-6. ReTRAC preferred alternative.**

critical first step, because describing how project benefits could accrue to individual stakeholders opens the door to discussing how costs can be shared by those stakeholders. Various stakeholders would be affected by ReTRAC, each with different focus areas, as shown in Table 5-21.

By understanding the local stakeholders and their concerns, the City of Reno was able to put together a funding and financing program that allowed all of the potential benefactors to share in the costs of the ReTRAC project. The financing program for the project consisted of contributions from several different sources, including

- UP Railroad,
- Federal sources, and
- Local taxes and other sources.

Each of these sources is described in more detail below.

## Railroad Contributions

Due in part to the City of Reno's appeals to the STB to require the UP to mitigate potential impacts that would be caused by its merger with SP, UP was highly motivated to work closely with city officials to address these impacts and develop methods to share in the costs and benefits. The UP agreed to contribute over \$58 million in cash and in-kind contributions toward completion of the project:

- **Lease Income from Railroad-Owned Properties**—The UP agreed to donate 77 parcels of land in the City of Reno and lease the property back from the City. The leases currently produce about \$1,100,000 a year. It is anticipated that the lease income will increase every year by

**Table 5-21. ReTRAC stakeholders and key issues.**

Stakeholder	Public Safety	Traffic Congestion	Air Quality	Economic Growth	Noise
City of Reno	●	●	●	●	●
Washoe County	◉	◉	●	●	◉
State of Nevada	◉	●	●	●	◉
UP Railroad	◉	●	◉	◉	○
Casinos and Downtown Businesses	◉	◉	◉	●	●

- Very important
- ◉ Somewhat important
- Not Important

an average of 3.5 percent. This stream of income produces about \$34,000,000 for the project over 25 years.

- **Air Rights over Depressed Tracks**—The UP also agreed to donate the air rights over the depressed tracks to the City. It is anticipated that, over the next 25 years, air rights over the depressed tracks will produce about \$5,000,000.
- **Right-of-Way through the City**—The UP agreed to donate the right-of-way of the depressed tracks themselves to the City, allowing the City to collect property taxes from the railroad along that right-of-way.
- **Track Ballast and Ties**—The UP is responsible for constructing and funding the track ballast and ties along the route. The cost associated with this work is approximately \$17 million.
- **Signal System**—The UP also agreed to pay for all the rail signal systems to be installed along the corridor.

**Federal Sources**

Approximately \$21.3 million in Federal grants, earmarked within the TEA-21 legislation, was used for the project. These funds were passed to the City of Reno through the Nevada DOT.

**Local Taxes/Other Sources**

Several types of local taxes and other sources were used. These funding sources are described below and their relative shares are shown in Figure 5-7.

- **Sales Tax**—Washoe County and the state legislature approved a one-eighth-cent sales tax with proceeds targeted directly at the ReTRAC project.
- **Downtown Hotel Occupancy Tax**—Downtown hotels agreed to and the state legislature passed a 1-percent occupancy tax with proceeds targeted directly at the ReTRAC project.
- **Downtown Special Assessment District**—Approximately \$18 million was provided by bonds backed by a special assessment district made up of the downtown core. This funding was targeted at the sound and congestion improvements associated with the ReTRAC project.

These sources were used to secure a TIFIA direct loan, which closed in June 2002. This loan, along with the other funding sources used, is summarized in Table 5-22.

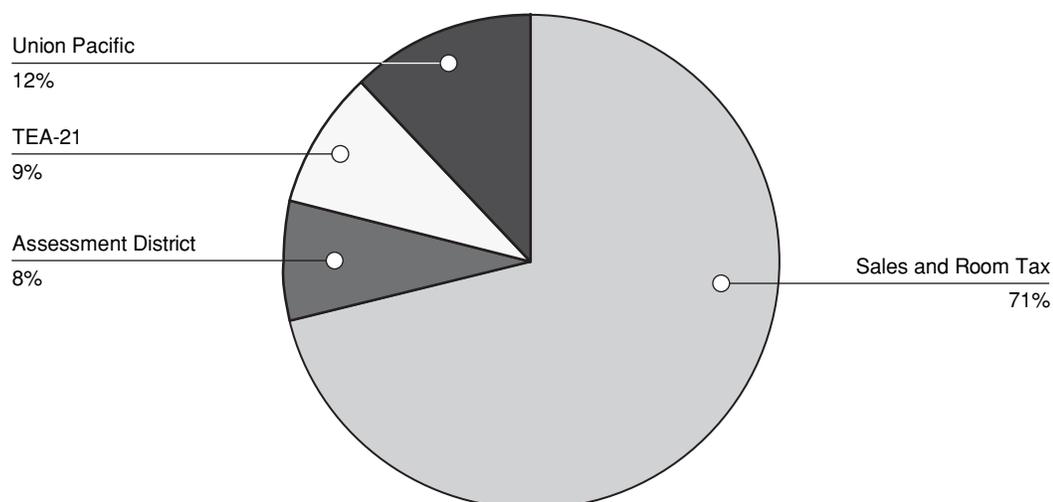


Figure 5-7. ReTRAC funding sources.

Table 5-22. ReTRAC funding and financing summary.

Funding Source	Total Funding (Millions)	Notes
Bond Proceeds	\$111.5	Revenue bonds backed by the City of Reno
TIFIA Direct Loans	\$50.5	To be repaid from 1/8-cent sales tax and 1% hotel occupancy tax
	\$5.0	To be repaid from lease income derived from UP properties
	\$18.0	To be repaid from tax assessments from properties within downtown special assessment district
Federal Grants	\$21.3	TEA-21
Railroad Contribution	\$17.0	Track and ballast work
Other	\$56.6	Includes cash on-hand and interest earnings
<b>Total</b>	<b>\$279.9</b>	

## Critical Success Factors

- Understand regional stakeholders and build advocacy.** One of the keys to the successful implementation of the ReTRAC project was the identification of the key regional stakeholders and the ability of the City of Reno to describe potential benefits of the project to those stakeholders. As shown in Figure 5.7, the UP railroad, downtown businesses, and City residents all stood to benefit from this project, although in different areas (e.g., congestion, air quality, and economic growth). The ability of the City of Reno to understand the benefits that the different stakeholders were interested in allowed them to engage and build advocacy among many different groups: citizens/legislators, businesses/industry, and the private-sector freight transportation industry. By understanding the players involved and their interests, the City was better able to describe how the ReTRAC project could benefit each of these individual stakeholders and helped open the door to discussing how costs could be shared by those stakeholders.
- Focus on public benefits.** In a related item, the City of Reno conducted several outreach activities to build advocacy for the ReTRAC project among City residents. These outreach efforts focused on the key public benefits of the project, including air quality benefits, traffic

congestion relief, and pedestrian safety. Several benefits were quantified during the EIS process. For example, the EIS quantified the overall vehicle delay caused by at-grade crossings (and how the project would minimize that delay); the number of police, fire, and ambulance calls delayed at grade crossings (and how the project would improve those delays); and the number of at-grade fatalities (and how the project would reduce those). In addition, the EIS calculated the effect on the region's economy from construction and induced employment stemming from the project. Being able to identify and quantify the benefits of freight improvement projects can help build advocacy among the general public as well as local and regional decision-makers and is key to the successful implementation of such projects.

- **Use multiple sources of funding and financing mechanisms.** Another key to the successful implementation of the ReTRAC project was that existing local and Federal funds were successfully leveraged using TIFIA direct loans and other sources. Again, because the City of Reno was able to articulate the potential benefits of ReTRAC, it was better able to convince local and statewide decisionmakers and the private sector to develop ways to share in the costs. As described in Table 5-22, many sources of funds and financing mechanisms were used to pay for the project.

### **For More Information**

For more information see the City of Reno's ReTRAC website at <http://www.cityofreno.com/gov/retrac/>.



# Delaware Department of Transportation

## *Shellpot Bridge Restoration*

Freight and freight issues have been a key component of Delaware Department of Transportation (DelDOT) planning activities for a number of years. Freight issues were first addressed within Delaware's Statewide Long-Range Transportation Plan (LRTP) in 1997 and again in 2002. Freight-related recommendations within this plan included

- Propose partnerships with adjacent states to achieve “seamless borders” for commercial vehicle operations and to coordinate programs related to the Northeast Corridor and local rail freight service issues;
- Implement weigh-in-motion and electronic tolling to speed truck movements;
- Re-establish local rail freight service in selected areas; and
- Improve rail and truck access to the Port of Wilmington.

The Delaware Freight and Goods Movement Plan was developed to assist in the implementation of these strategies by defining actions and investments that DelDOT could make to improve freight movement in the State. One of the proposed rail and intermodal freight improvements described in this Plan was to restore the Christina River movable rail bridge (Shellpot Bridge) to provide direct, head-on access to the Port of Wilmington, as described below.

### **Project Overview**

The Port of Wilmington, Delaware, is a full-service deepwater port at the confluence of the Delaware and Christina Rivers, 65 miles from the Atlantic Ocean. The port is owned and operated by the Diamond State Port Corporation, a corporate entity of the State of Delaware. It serves East Coast markets by truck via I-95; rail service to the port is provided by two Class I carriers, Norfolk Southern and CSX. The Port is a major Mid-Atlantic import/export gateway for maritime cargoes and trade. The Port and marine terminal handle more than 400 vessels per year and have an annual import/export cargo tonnage of five million tons. It is the leading port in North America for the imports of fresh fruit, bananas, juice concentrate, and meat and is home to one of the largest dockside cold-storage facilities in the United States. The port is also a leading container port on the Delaware River, handling more than 200,000 twenty-foot equivalent units (TEU) per year for the Dole Fresh Fruit Company and Chiquita Banana North America. For the past 25 years, the port has been a successful import/export automobile and roll-on/roll-off (ro/ro) port and, as such, has begun construction of a dedicated auto berth to enhance this trade. The port also handles bulk cargoes, such as lumber, steel, paper and pulp, and petroleum products.

Rail service to the Port is provided over Norfolk Southern's line, using the Shellpot Bridge to cross the Christina River (see Figure 5-8). The Shellpot Bridge is a swing-style railroad drawbridge



**Figure 5-8. Shellpot Bridge location.**

originally constructed in 1888 on timber piers. The timber framework was replaced by a concrete foundation in 1951. The moveable portion of the bridge is 242 feet long, and the total length of the bridge is 725 feet. Conrail, which owned the bridge prior to its merger with Norfolk Southern and CSX, discontinued service over the bridge in December 1995 for two reasons. First, the bridge's foundation could no longer support heavy freight trains. Second, Conrail was focusing on east-to-west markets going across Pennsylvania and bringing freight from the Midwest into the region; north-south markets that would be served by the Shellpot Bridge were not a focus area for the railroad. Closure of the bridge degraded service into the Port of Wilmington, because the Edgemook Yard (on the north side of the river) was effectively stranded, and port-related traffic was rerouted on the Northeast Corridor (NEC), increasing transit times and decreasing reliability. In addition, some of this freight traffic was rerouted through Wilmington Station, a passenger rail station served by Amtrak and Southeastern Pennsylvania Transportation Authority (SEPTA) trains.

In June 1999, the Conrail merger was completed and NS took over all of Conrail's Delaware assets. NS was interested in exploiting the north-to-south market, along the NEC, all the way up to the New York/New England area. However, at the time, the infrastructure needed significant improvements, and the merger had left NS cash starved. The company had come into a good business opportunity, but lacked the resources to exploit it.

DelDOT had created a Freight Rail Plan in 1999, just before the Conrail merger was completed. This plan examined the State's rail system and identified key issues affecting rail service into and out of the State. One of the primary goals of the Freight Rail Plan was to increase rail's mode share for freight in Delaware, which was far below the national average. The Plan helped identify key industries in the region that are dependent on efficient reliable rail service (e.g., the

Port of Wilmington, chicken farms on the Delmarva Peninsula which require grain service by rail, and GM and Chrysler plants in Newport and Newark) and identify improvements that could meet their needs and allow them to continue to contribute to the State's economic well-being. As NS provided service to these key industries and their facilities, restoration of the Shellpot Bridge and associated infrastructure was identified as an important strategy in meeting these goals. NS also recognized the Shellpot Bridge as an issue. In fact, rehabilitation of the Shellpot Bridge was included in NS's capital investment plan, although it was not at the top and was not expected to occur for several years.

The following sections describe how innovative funding and financing techniques were used to complete the restoration of the Shellpot Bridge.

## Use of Innovative Funding and Financing Techniques

Although technical staff at DelDOT recognized the restoration of the Shellpot Bridge as an important project, two key issues had to be overcome:

- **Hesitancy on the part of the DOT to spend money on a project that would inordinately benefit the private sector.** When conducting freight planning activities and developing freight improvement projects, many state DOTs struggle with this question. DelDOT was no exception. The risk to the DOT was that they would spend public money on a piece of privately owned infrastructure without being certain that the public benefits would be fully realized (i.e., “what if we build and they do not come?” Can Norfolk Southern generate the business to justify the public investment?).
- **Limited NS capital for investment.** NS recognized the Shellpot Bridge as an issue, but was hesitant to invest right away because the Conrail merger had left very little capital and the railroad believed that the return on investment might not be high enough to appease their stockholders. Furthermore, they did not want to negatively affect their credit score (and their ability to access additional capital) by going deeper into debt for this project.

The solution developed jointly by the DelDOT Secretary and Norfolk Southern management to address these issues was part grant, part loan. The restoration of the Shellpot Bridge was estimated to cost \$13.9 million. DelDOT provided a \$5 million grant to NS. The remaining \$8.9 million was provided as a loan with a sliding-scale payback agreement (a sliding per-car tariff based on overall volume) that guaranteed DelDOT a minimum payback each year while encouraging NS to increase traffic over the restored bridge, as described in Tables 5-23 and 5-24. Computerized devices, similar to E-ZPass transponders used on toll roads and bridges, are used to count cars as they cross the Shellpot.

This kind of agreement allowed both parties to share the risks and rewards of restoring the bridge by allowing DelDOT to receive a guaranteed minimum payback on its loan and simultaneously

**Table 5-23. Sliding-scale payback for Shellpot Bridge.**

Annual Car Volume	Per-Car Tariff
Less than 5,000	\$35/car
5,000-15,000	\$20/car
15,000 – 25,000	\$15/car
25,000 – 50,000	\$10/car
Greater than 50,000	\$5/car

**Table 5-24. Minimum annual payback amounts.**

Loan Years	Minimum Payback
1-5	\$750,000/year
6-10	\$1 million/year
11-15	\$1.2 million/year
16-20	\$1.25 million/year

encouraging NS to use the restored bridge to the largest degree possible. Even if the bridge were not used at all, DelDOT would make back its money from the loan from the minimum payback guarantees. If the restored bridge is a success, DelDOT could make back more than the original outlay of the loan, which could then be invested in other projects. At the same time, NS is encouraged to make better use of the restored bridge, because the more volume they put across it, the lower the per-car tariff is. By allowing NS to improve service in and around Wilmington, NS also can expand business and provide a viable option to truck movements in the region.

Additionally, as part of the Shellpot Bridge agreement, NS allowed use of all its tracks within the State for passenger use. This added benefit will allow DelDOT to achieve some of its other transportation objectives, particularly those related to improved passenger mobility.

## Critical Success Factors

The development of the financing plan for the bridge's restoration was driven by two key elements:

1. **High-level advocacy for the project.** The project had the support of the DelDOT Secretary, Nathan Hayward III. In fact, it was Secretary Hayward, along with senior management at Norfolk Southern, who initially developed the concept for financing the Shellpot Bridge restoration.
2. **Recognition of both public and private benefits.** The other driving factor was the recognition by both DelDOT and Norfolk Southern that the restoration of the Shellpot Bridge would have specific benefits to both parties. Because both parties recognized the potential rewards of the project's completion, both parties were motivated to figure out a way to share the risks.

In addition, there are other lessons from the Shellpot Bridge restoration that could be applicable to other states and MPOs:

- **Willing private-sector partners are key.** A key element of the success of the Shellpot Bridge restoration project was that both the DOT and the affected railroad had identified the bridge as a priority and were able to identify important benefits to both parties. This highlights the importance of understanding the private-sector freight industry and working with local stakeholders to better understand their needs and priorities.
- **Investigate ways to leverage state funds.** The combination of a grant with a guaranteed-payback loan was an effective way to leverage state funds. This strategy allowed the State to justify its investment and get a guaranteed payback, even if the bridge went unutilized. At the same time, it encouraged the railroad to use the restored bridge to the highest degree possible.
- **Focus on eliminating key bottlenecks.** One issue that often prevents freight from moving from planning to programming and delivery is that the general freight issues identified in the long term are not specific enough to permit identification of actual projects that can be programmed and delivered. States and MPOs that have successfully implemented freight

improvements are often those that focus on identifying key bottlenecks and working with private-sector partners to develop solutions to those bottlenecks. Focusing on key freight bottlenecks is a very effective way to identify potential freight improvement projects.

- **Highlight benefits of freight projects.** Potential freight improvement projects can be much more palatable to DOT and MPO decisionmakers when public benefits can be quantified and articulated. In the case of the Shellpot Bridge, the benefits to a wide range of stakeholders (e.g., NS, Port of Wilmington, Amtrak and SEPTA riders, key industries) were easy to identify and describe, making the project easier to justify as it moved forward.

## **For More Information**

For more information see the Delaware Department of Transportation (DelDOT) website at <http://www.deldot.gov/> or the Port of Wilmington website at <http://www.portofwilmingtonde.com/>.



# Texas Department of Transportation

## *Trans-Texas Corridors*

The Texas Department of Transportation (TxDOT) is the lead state agency handling multimodal transportation planning for the State of Texas. With 23 million people and a land area larger than France, Texas is the second-largest state in the country, both in terms of population (second to California) and land size (second to Alaska). Texas has 13 deepwater ports, with several, including Houston, Texas City, Beaumont, and Corpus Christi ranking among the busiest in the United States. Although Texas is a leader in energy and petrochemical trading, several of the State's large ports also have multimodal facilities to handle container traffic. The value of Texas exports exceeds that of all other states, and Laredo is the busiest border crossing between the United States and Mexico, both in terms of rail and truck traffic. Texas is served by three Class I railroads and more than two dozen smaller short-lines. Several of the most traveled rail lines in the country, some carrying large volumes of Asian exports/imports processed at the Ports of Los Angeles/Long Beach, traverse Texas. Two Texas airports—Houston Intercontinental and Dallas-Fort Worth International—rank among the 10 busiest in the United States.

Freight is a growing priority for TxDOT. In the past, passenger movement (either by highway or by transit) received greater emphasis, but freight is now treated with equal consideration. TxDOT inaugurated a Multimodal Section in the mid-1990s and today has an 11-person staff dedicated to freight. Congestion levels, economic development concerns (maintaining/enhancing the competitiveness of the Texas economy), and forecasts for continued strong population and employment growth in the State have all contributed to a greater awareness of the importance of freight movement. Texas, along with Florida and California, are experiencing net gains in population that far exceed the increases posted by other states. By 2030, the Texas population is expected to reach 33 million (the same as California in 2000). The growth in trade, population, and jobs is contributing to rising congestion and reliability problems, particularly on I-35 and I-45—corridors that are crucial to keeping Texas' \$900 billion economy thriving.

Acknowledging that growth in Texas is inescapable and that today's congestion levels, already onerous on several of the State's rail lines and roadways, will become worse without significant action, TxDOT has engaged in the planning of a multimodal "Trans-Texas Corridor" system to improve mobility and sustain the State's economic competitiveness well into the future. Crisscrossing the State, the corridors may be up to 1,200 feet wide and include rail lines, highways, pipelines, and communications and utility lines. Once complete, the Trans-Texas Corridor project will be a 4,000-mile multimodal transportation system that will reduce congestion and increase mobility for Texas businesses and citizens. Freight forms an integral part of the Trans-Texas Corridor plan, which includes dedicated freight rail lines and truck lanes. The following sections describe the genesis of the Trans-Texas Corridor, highlighting the strategies being used to plan and finance the \$180 billion (total) project.

## Project Background: Trans-Texas Corridors and the Movement of Freight

Through 2030, the Texas population is expected to add about 400,000 people per year. These people and their vehicles will be competing with trucks on the same roadways that form a lifeline for the State's economy and a main conduit for U.S. trade with Mexico. According to the Freight Analysis Framework, freight volumes carried by trucks on Texas roads will rise by 86 percent between 1998 and 2020. Over the same period, rail freight will grow by 68 percent. With these levels of expected growth, Texas' transportation system, already confronting major congestion issues today, simply does not have the capacity to accommodate the projected increases in personal and freight-related traffic.

The relative success Texas has in solving its transportation needs is not only crucial to the continued growth of the Texas economy, but is also a national concern as the State handles the majority of U.S. trade with Mexico and is a crossroads for Pacific trade. Texas' multiple rail, air, and trucking hubs also serve critical roles in the Nation's internal distribution network. For these reasons, economic development concerns have been a main impetus for the Trans-Texas Corridors project. Without adequate transportation capacity, Texas may become less economically competitive and the State's record as one of the leading generators of new jobs in the United States would be jeopardized. Trans-Texas Corridors can help solidify the State's long-term economic competitiveness by increasing transportation efficiency. This would lower the State's business costs and enhance overall productivity, benefiting Texas companies and attracting the attention of out-of-state corporations considering locations for expansion.

Trans-Texas Corridors is a multimodal project which includes separate passenger car, truck, freight rail, commuter rail, and high-speed rail projects with a 200-foot utility corridor. The project emphasizes multimodal solutions based on the State's conclusion that it could not pave its way out of congestion by solely relying on roadways. The original idea for the Trans-Texas Corridors project came from a University of Texas professor investigating potential solutions for the State's worsening congestion problems. Ambitious in concept, the idea behind Trans-Texas Corridors was to provide Texas with the transportation capacity to absorb decades of growth and set the system apart as one of the most efficient regional transportation systems in the world. The professor introduced the concept to legislative officials years ago. Recently, the active promotion of the project by the Governor has sparked a much greater interest in the project and, with the support of the Texas Transportation Commission, strategies to make Trans-Texas Corridors a reality are now being developed.

While the Governor of Texas provided a vision for Trans-Texas Corridors, legislation passed in 2003 (House Bill 3588) and 2005 (House Bill 2702) provided TxDOT with the tools it needed to implement the project. The foundation of Trans-Texas Corridors is public-private partnership and these bills have made that possible.

- **HB 3588 (2003)**—This bill created the Trans-Texas Corridors project, including its operation and funding. The bill gives TxDOT the authority and ability to purchase land and allows TxDOT to put funds into toll projects. The bill provides a range of new financial tools that will speed transportation improvements. It provides additional authority to Regional Mobility Authorities (RMA), which are charged with constructing, maintaining, and operating toll facilities on a regional basis. HB 3588 authorizes the RMAs to issue revenue bonds backed by tolls and to enter into comprehensive development agreements with the private sector to design, construct, and operate toll road facilities. The law also has introduced innovative new features—it authorizes the Texas Transportation Commission to convert regular state highways to toll facilities (if such conversion will improve overall mobility in the region or if it is found to be the most feasible and economic means to improve or extend a nontoll segment)

to transfer toll facilities to RMAs for operation and maintenance; and it provides for payment by Texas DOT of per-vehicle fees (called pass-through or “shadow” tolls) as reimbursement to RMAs for construction and maintenance of state highways or as compensation for the cost of maintaining toll facilities transferred to an RMA. In a recent action, the Commission, acting under its new authority, directed TxDOT to establish guidelines to evaluate all highways “in any phase of development or construction” for potential tolling.

- **HB 2702 (2005)**—This bill clarified the land rights of property owners (compensation, condemnation, permitted land uses) who would be affected by Trans-Texas Corridors. It also grants TxDOT with the legal authority to address passenger and freight rail issues, including relocation (e.g., relocating of rail yards from downtown locations to sites adjacent to a Trans-Texas Corridor), and to set toll rates (includes rail as well as roadway tolling).

Working off the Governor’s vision for Trans-Texas Corridors, TxDOT has encouraged industry to present innovative and creative solutions to the State’s transportation challenges. To date, industry has responded with several unsolicited proposals to work in partnership with TxDOT addressing the transportation needs. HB 3588 is the foundation to this synergy, providing the necessary tools to TxDOT to allow Trans-Texas Corridors to move forward. Ultimately, the premise is to increase resources for transportation improvements by providing a greater role for private investments. Private financing will be combined with public financing to make Trans-Texas Corridors a reality.

Today, TxDOT is actively working with a consortium of Madrid, Spain-based and San Antonio developers and the FHWA to formulate and develop the TTC-35 Project Master Development and Financial Plan that will identify sources of funding, sequence, and timing of individual projects over a 50-year horizon to ultimately build the first high-priority corridor from the Oklahoma border to Laredo and the Rio Grande Valley. TxDOT will review and approve these multimodal master plans and coordinate with cities, counties, and MPOs. The TTC-35 Master Plan is expected to be approved in late 2006, and it is anticipated that facilities identified in the plan will be included in the statewide planning process.

## Use of Analytical Tools and Performance Measures

TxDOT is incorporating several models to forecast demand and determine the most optimal alignments for the proposed Trans-Texas Corridors:

- **SAM and REMI Models**—TxDOT uses a Statewide Analysis Model (SAM) that can analyze all modes and includes travel demand models for specific regions. SAM can model freight demand for five modal networks. SAM is applied as a tool to analyze alternatives to determine the optimal sites for locating the proposed Trans-Texas Corridors. The results of the SAM are used as inputs into the Regional Economic Models, Inc.’s “REMI model” to estimate the economic impacts of the alternatives.
- **Rail Traffic Controller Model**—TxDOT uses this model to compare a base case freight system with alternatives. The model shows the transportation performance benefits resulting from the alternatives. These benefits, in turn, are translated into economic development benefits and then can be used as inputs into the REMI model. The REMI model then generates the total economic impacts of the alternative, including multiplier benefits.

**Issues with the Models.** The SAM model depends on proprietary data from freight shippers and does not provide an “apples-to-apples” comparison between modes. It works particularly well for estimating the benefits of highway improvements, but is not as effective for showing the benefits of rail. In its studies and presentations, TxDOT officials must condition SAM’s outputs so people do not erroneously compare the benefits shown for a highway improvement with

those for a rail improvement project. People are naturally inclined to ask which mode generates the greatest relative benefits—“what is more effective—a rail project or highway project?”—but SAM cannot be used to answer this question, even though it does provide estimates of both rail and highway benefits.

An issue with REMI is that the outputs, while useful for providing estimates of the economic impacts (e.g., jobs, personal income, and gross regional product) of proposed segments for the Trans-Texas Corridors, it cannot make strong distinctions between possible corridor alignments within a county. The alignment options generally vary by only a few miles within a particular region or county, so the differences in economic benefits between proximate corridor alternatives may not be captured by the REMI model which does not provide geographic detail below the county level.

## **Partnerships and Coordination**

The locations of the first Trans-Texas Corridor (TTC-35) will be established in December 2006 (10-mile-wide study area from Oklahoma to Mexico) as part of the ROD with the no action or proceed determination. This is the result of a collaborative process that has involved the State’s MPOs and three rounds of public meetings/hearings held throughout the corridor region as part of the ongoing tiered environmental process. To date, TxDOT estimates nearly 10,000 people have attended 117 meetings statewide.

TxDOT has been working with rail carriers and port facilities to better coordinate Trans-Texas Corridors. TxDOT has signed MOUs with the State’s large rail carriers, Union Pacific and BNSF who have both provided the agency with data to support the planning of the Trans-Texas Corridors. Texas’ deep sea ports are also cooperating with TxDOT on the building of access points between the ports and Trans-Texas Corridors. Well-located and well-functioning links between the State’s busy ports and the corridors are expected to enhance the competitiveness of the ports as well as economic development opportunities for the State. Encouraged by high-level Texas government officials, TxDOT plans to increase coordination with the shipping and trucking communities once the corridor alignments are selected. Initial talks with the trucking industry shows support for the corridors—truckers are very interested in avoiding the growing delays in Texas urban areas.

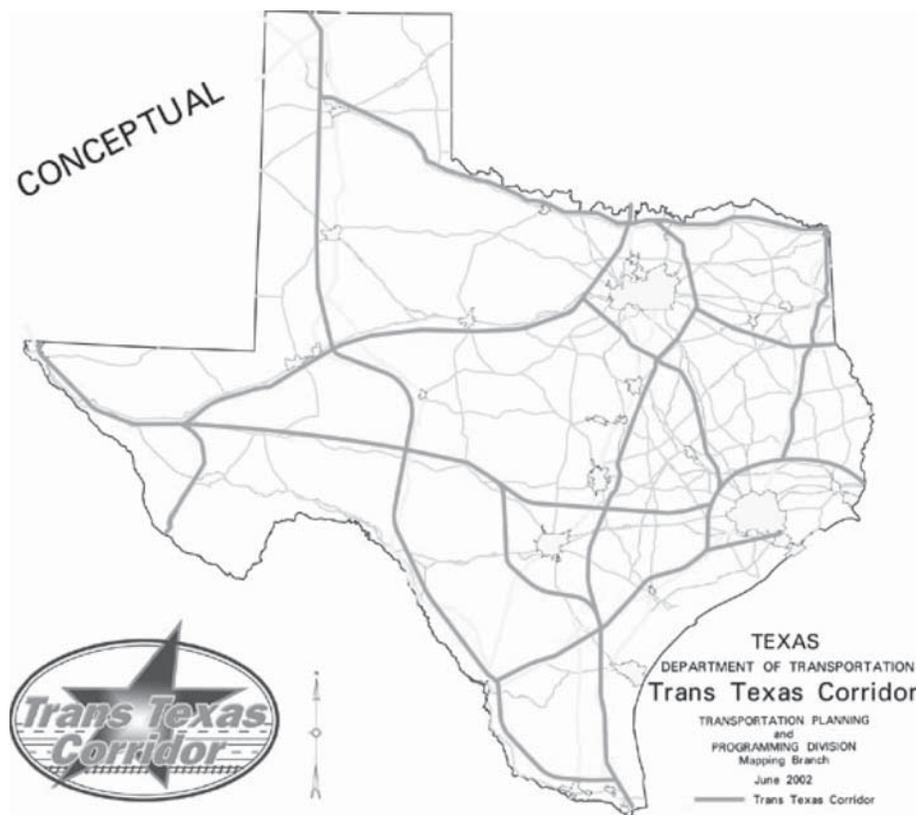
TxDOT has also held talks with Oklahoma and the transportation authorities of three Mexican states to coordinate the continuation of the Trans-Texas Corridors after they cross the State’s borders on heavily traveled routes. The State of Oklahoma is interested in the development of an improved Oklahoma City to Dallas-Fort Worth corridor while Mexican officials are considering the extension of the Trans-Texas Corridors concept from the Lower Rio Grande Valley and Laredo to Monterrey, one of Mexico’s largest and most industrialized cities. Initial meetings have been held with these out-of-state officials and further meetings are planned after the initial draft EIS of Trans-Texas Corridor TTC-35 has been released in January 2006.

## **Innovative Funding and Financing Techniques**

The Trans-Texas Corridors program, once complete in 50 years, is estimated to cost between \$150 billion and \$180 billion in today’s dollars. Given its costs, it would be impossible to build the Trans-Texas Corridors by solely relying on traditional transportation funding mechanisms. For this reason, funding for the project will come from a combination of public and private sources, using a unique financing approach ratified by the Texas Legislature in House Bills 3588 and 2702.

The development of Trans-Texas Corridors is ultimately dependent on securing funding as prescribed by a finance plan that must be developed for all segments of each corridor of the project. The framework to finance Trans-Texas Corridors includes the following guidelines and principles:

1. Trans-Texas Corridors will be built by individual facilities, when needed and when environmentally cleared with the most “financially viable” segments being built first or as directed by TxDOT.<sup>2</sup> These first facilities are likely to have the greatest effect on existing infrastructure (i.e., highest traffic volumes and have high congestion levels). Today, the highest priority segment is the I-35 corridor, stretching from San Antonio to Dallas-Fort Worth. This segment represents the most congested portion of I-35’s 1,600 miles between Laredo and Duluth, Minnesota.
2. The revenues collected from the early projects of the Trans-Texas Corridors can be used to subsidize the building of less toll-viable segments (those that lack the traffic volumes and resulting higher revenue levels to cover costs).
3. Individual TTC-35 facilities may be financed through a combination of public and private sources, including Transportation Infrastructure and Finance Innovation Act (TIFIA), private activity bonds, equity financing, and standard highway program funding.
4. Conceptually, the Trans-Texas Corridors program is envisioned to include separate passenger car lanes, truck lanes, high-speed passenger rail, commuter rail, freight rail and a 200-foot utility corridor (see Figure 5-9). However, given Texas’s varied development patterns, ranging from the dense urbanization of some of the Nation’s largest metropolitan areas to vast ranch-



**Figure 5-9. Map of Trans-Texas Corridor.**

<sup>2</sup> Toll and revenue estimates are the primary tool used to identify the most financially viable facilities.

lands extending hundreds of miles, many corridor transportation modes will not have sufficient demand to justify such extensive infrastructure.

5. The use of private investors is paramount for financing Trans-Texas Corridors. The roadways in the TTC-Project will include tolls to generate revenues. Private investors will be granted 30- to 50-year concessions on the corridor facility for the maintenance, operation, and collection of tolls in return for their investments to build the infrastructure.

## Critical Success Factors

- **Traditional approaches are no longer enough to meet future transportation needs.** Every state DOT is in crisis right now—funding levels are not sufficient to meet future transportation maintenance, capacity, and diversification needs. Texas’ fast growth further accentuates the existing deficiencies of the State’s transportation system and heightens concerns about how future needs will be met. These conditions underline the need to identify and implement new approaches to address transportation issues. Trans-Texas Corridors and its emphasis on public-private partnerships to build infrastructure is the result of a willingness (and a need) to pursue new approaches to expand transportation capacity. The Trans-Texas Corridors project is innovative both in its magnitude and its funding approach.
- **Legislative support is crucial to gain momentum and move programs forward.** The Trans-Texas Corridors project would not be able to move forward without new state legislation that enables TxDOT to introduce innovative approaches to transportation development. In fact, TxDOT officials believe that the innovation of Trans-Texas Corridors “is in the legislation,” as they would not be able to pursue the building of the corridors without it. HB 3588 (2003) provided the framework (e.g., the use of tolling and public-private partnerships) for Trans-Texas Corridors while HB 2702 (2005) added further refinements (e.g., adding a means to toll rail carriers using the corridor).

## For More Information

For more information see the Texas Department of Transportation (TxDOT) website at <http://www.dot.state.tx.us/> or the Trans-Texas Corridors website at <http://www.keeptexasmoving.org/>.



# Toledo Metropolitan Area Council of Governments

## *Freight Planning and Programming Processes*

The Toledo Metropolitan Area Council of Governments (TMACOG) was established in 1968 as a voluntary organization of local governments in Lucas and Wood Counties, Ohio; and Erie, Bedford, and Whiteford Townships, and the City of Luna Pier in Monroe County, Michigan. TMACOG was formed primarily to review Federally funded projects and to address Federal initiatives and local intergovernmental needs. Today, it focuses on promoting a positive identity for the Region, enhancing awareness of its assets and opportunities, providing stakeholders a voice in Regional decision-making, and supporting opportunities for Regional stakeholder networking.

The Toledo region, at the southwestern tip of Lake Erie, is considered a crucial crossroads on the Nation's "fourth coast"; it is within a 1-day drive of 65 percent of North America's manufacturing capabilities and 48 percent of its (Canada and United States) population. Driven by manufacturing links to southern Ontario, Ohio is the country's largest trading partner with Canada. These factors, as well as the region's proximity to Detroit, stimulate very large volumes of freight traffic through the Toledo area. Although most of the freight traffic is pass-through, Toledo's port and large manufacturers (e.g., the Toledo area has plants that build Jeeps, GM transmissions, and Ford engine blocks) also make the City a significant generator of origin-destination freight traffic. Toledo ranks as one of the country's busiest rail hubs, generally placing between third and seventh, depending on the year. The Port of Toledo, handling general purpose cargo, is one of the busiest on the Great Lakes, and Toledo's airport is the 16th busiest air freight hub in the United States.

### **Freight Planning at TMACOG**

1. TMACOG believes that freight planning receives the same level of emphasis as passenger and transit planning in the region. TMACOG has six standing committees (i.e., TIP, LRTP, Rail Passenger, Freight, Bike/Ped, and Data/Modeling) including one stand-alone freight committee. This gives freight prominence.

Freight is a crucial element of TMACOG's Long-Range Transportation Plan (LRTP) and is a top priority for the 2035 LRTP under development. The 2035 LRTP includes an explicit goal to make Toledo a "premier intermodal hub."

2. The emergence of freight planning as a TMACOG emphasis is due to an evolutionary process that germinated in 1984 when TMACOG convened a meeting with the region's freight railroads and set up a Rail Task Force. As a major crossroads for both east-west and north-south rail freight movements, the impetus to work more closely with the railroads was to better address the changes precipitated by rail consolidation. With the railroads, TMACOG sought to better serve both the carriers and communities by rationalizing the

network of rail facilities serving the region. The network was changing as rail carriers consolidated operations, completely closing some rail lines while increasing traffic on others. In response, TMACOG needed to analyze the effects of rail deregulation and ensure the region maintained (or improved) the rail services and links that are vital to sustaining Toledo's port and businesses, particularly manufacturers.

3. The president of the Toledo-Lucas County Port Authority, today, is a very strong advocate of freight, its role in the Toledo economy, and its importance to Toledo's future prosperity. The Port Authority is an important partner to TMACOG and its president is now chairman of TMACOG's Transportation Council which oversees and manages the transportation planning and implementation functions of TMACOG.

Further underlining the critical role of freight to the Toledo economy, the Toledo Port Authority, TMACOG, and private-sector participants have partnered to create the Intermodal Transportation Institute (ITI) at the University of Toledo. The goal of the institute is to create a laboratory to experiment with and coordinate research related to transportation, logistics, and supply chain issues. Ultimately, the activities of ITI are expected to improve quality of life and contribute to a more competitive economy in the Toledo region.

4. TMACOG has a GIS planner who has a programmatic function to support the agency's Freight Committee. This planner spends about half his time on freight-related initiatives. TMACOG also has a senior planner involved in freight, but to a lesser extent than the GIS planner. The job descriptions for both planners include, explicitly, duties related to freight planning.

## Effective Use of Freight Planning

Freight themes, issues, and initiatives are woven throughout TMACOG's 2025 Long-Range Transportation Plan. Meeting the overarching goals of the LRTP will depend on the successful implementation of freight-related projects. The LRTP's goals include

- Enhance the region's economic competitiveness in the global economy;
- Be an integrated intermodal transportation system;
- Be a sustainable system; and
- Enhance the region's quality of life.

The objectives tied to these goals tie back to improving the movement of goods in the Toledo region. Freight-related objectives include

- Maximize economic efficiency and safety for movement of goods and people;
- Enhance "connections" into interregional and international transportation systems;
- Minimize delays for movement of goods and people;
- Maximize ease of intermodal transfers; and
- Enhance viability of non-highway modes to achieve a balanced system and provide for choice of modes for many trips (both freight and passenger).

The language for these goals and objectives helps integrate freight into the fabric of the 2025 LRTP. Consistent with this emphasis on freight, Toledo has "mainstreamed" freight as an intrinsic consideration in the prioritization of TIP projects (see "TIP Criteria," below).

## Role of Freight Committee and the Evolution of a Freight Project

TMACOG's Freight Committee is integral to the development of the region's 2025 LRTP. Several members of the Freight Committee were part of the task force directly involved with providing inputs into the LRTP and the entire Committee was given the opportunity to provide

comments and voice concerns. The Freight Committee reviews all LRTP updates and is the genesis for many of the specific projects (such as rail separation projects) included in the LRTP.

The Freight Committee spearheaded an effort to develop a new interchange and connector to enhance freight access to the airport. While the airport already had excellent passenger access from I-90 on its north side, the airport's freight facilities on the Southside are less accessible. The need for better and more direct access to the airport was identified as a major concern by the Toledo Port Authority and an air freight carrier. TMACOG evaluated alternatives, and improvements to U.S. 20A rose as the most optimal option for remedying the problem. The improvement was then included in TMACOG's LRTP as a priority project. TMACOG received support for the project and funding for preliminary engineering from the Lucas County Engineer, the City of Maumee, and the Toledo Port Authority. Realizing development pressure on the area, these entities raised \$5 million for right-of-way purchases. All of this activity began before the Ohio DOT became involved with the project. Today, the project to improve U.S. 20A and develop a U.S. 20A/I-475 interchange is in the preliminary engineering phase and will provide trucks a safer and more direct route between the airport and the Interstate system.

## **Identification of Freight Projects**

TMACOG works to identify needs and deficiencies affecting the Toledo area's freight community. Information is gathered by sending Freight Committee members to shippers and carriers in the region, and by organizing listening sessions and field trips for the Freight Committee and key stakeholders. The Freight Committee organizes listening sessions that provide shippers and carriers with a forum to express concerns. When possible, Freight Committee members contact the individuals that they know to promote higher attendance at the meetings. TMACOG prefers speaking with dispatchers because they are aware of the mobility issues affecting their operations. While large issues are important, TMACOG finds out through these meetings if there are smaller problems they can easily address ("low-hanging fruit" such as signage, signal, access, turning radius, and surface rideability). By taking care of these types of issues quickly, TMACOG earns the respect of the shippers/carriers and is able to maintain long-term relationships that benefit future information gathering and planning.

When larger issues are identified, such as "last-mile" connector difficulties between portside grain elevators and the Interstate system, TMACOG organizes field trips (site visits) to allow Freight Committee members, county and city engineers, private sector interests (shippers and carriers), police, and commercial truck enforcement to witness the problems first-hand. In this case, participants saw trucks having to make "scary maneuvers" on the various connectors linking the grain elevators to the highways. During the sessions, TMACOG asks the shippers/carriers "what they need." From these sessions, TMACOG develops a freight transportation needs list and tries to address the needs quickly. As a result of this process, modifications (new freeway ramps, routings, etc.) are going into TMACOG's TIP. This provides the shippers/carriers with a sense of quick "give back," and is an incentive to keep them cooperating with TMACOG because they see results.

## **Implementation of Freight Projects**

While the LRTP provides strategic guidance for transportation planning in the Toledo area, the Freight Committee provides the tactical organization to ensure freight projects move forward from planning to implementation. TMACOG follows a process to make sure needs become addressed. This includes letters to the affected jurisdiction(s), the City of Toledo, commissioners

of engineering and construction, and county engineers. For example, a project is now taking place to improve (widening, relocation of drainage ditches, guard rails, pavement stabilization) a narrow county road that serves as an access road from a state highway to a community college, chemical plant, two trucking terminals, and a window manufacturer. In order to speed the process to get this project started, TMACOG brought all the stakeholders into a room together (this included a lot of letter-writing and phone calls by Freight Committee members, as well as the provision of fruit, donuts, and coffee to help boost attendance—approaches that are also used by TMACOG for its listening sessions and field trips), confirmed the need, and conceptualized how to solve the problem. Initially TMACOG has to be a salesman (and appeal to the stakeholders and implementers) because it is not responsible for the actual construction of improvements, but by having the “right” people attending the meetings, TMACOG finds champions that can address obstacles (“traverse chasms”) and can rally momentum to move projects forward. With the aid of this process, improvements to the narrow county road are now scheduled to be completed by Wood County.

### **MPO Involvement on Freight-Related Boards**

Dave Dysard, the Vice President of Transportation at TMACOG, sits on the boards of the Toledo Trucking Association and the Ohio Contractors Association. He takes time for these responsibilities because it provides a good back and forth “cross-talk” between TMACOG and shippers/carriers as well as the construction industry. His involvement opens lines of communication and further encourages key transportation stakeholders to participate in TMACOG activities.

### **TIP Criteria**

TMACOG has new prioritization factors for its 2006-2009 TIP that will help in the scoring of freight projects. The criteria were developed by TMACOG’s TIP Committee which includes a subcommittee for developing ranking factors. These criteria include a “multimodal” factor that accounts for 15 points of the 100 point scoring system. This factor includes up to 10 points for a project that provides access to multimodal terminals that operate on a regional scale. The largest factor for project scoring, “System Use and Performance” (50 points), includes points for truck impact routes (5 points for roadways with over 25 percent truck traffic).

Economic development is another prioritization factor (10 points) that benefits freight projects. Toledo has a very manufacturing intensive economy and must support this base while also pursuing initiatives to promote diversification. For these reasons, economic development is an underlying force that guides transportation planning—projects are selected to retain or expand the Toledo region’s job base. The Toledo transportation system’s ability to move freight was considered crucial in Chrysler’s decision to invest \$2.2 billion in the area. Key parts suppliers must be within an hour of Chrysler’s assembly plant (Jeep) to ensure reliable just-in-time deliveries. In fact, Chrysler requires deliveries to follow routes that do not include river crossings subject to closure or at-grade rail crossings. Chrysler is also carefully monitoring TMACOG’s efforts to mitigate congestion and safety concerns at the I-75/I-475 interchange on the north side of the City.

Despite these freight-friendly factors, project ranking criteria still lean to heavier traffic facilities. At times, freight routes in need of improvements are not the highest traffic volume routes, so the well-known “freight versus people” situation emerges.

Even if a freight project has scored highly, because TMACOG does not provide construction dollars, it must find a local sponsor (city, county, state) who also considers the project to be important. This process is enhanced by the TMACOG outreach initiatives to key stakeholders already described above.

## Planning to Programming

TMACOG's experience with programming improvements recommended from its Rail Corridors Study provide insight about how a project successfully transitions from the planning to programming stages. The study was precipitated by growing rail congestion in the region corresponding with an increase in conflicts (roadway congestion and accidents) at at-grade crossings. The study identified six priority segments in the Toledo area, and through listening sessions held with shippers, railroad companies, local governments, and neighborhood representatives, identified five specific rail-highway grade separation projects. These projects were identified in the mid-1990s and as of mid-2005, one is built (Seaman Road), two are in detailed design (Wales Road and Oregon Road), one is in preliminary engineering (McCord Road), and one is in the feasibility study stage (Summit Street). Due to the Rail Corridors Study, TMACOG and the Toledo region were well-prepared when Ohio's Governor Taft released \$200 million for a statewide grade separation program in response to changes at Conrail. State money funded four of the five projects. TMACOG wished to address a rail chokepoint (an at-grade meeting of a north-south rail line with an east-west line) as well as build a highway-rail grade separation for one of those projects (Wales Road), but much to its frustration was not able to gain the cooperation of the railroad carrier despite success in securing state, CMAQ, and other public monies for the improvement. Today, the project will go forward as only a grade separation without addressing the rail chokepoint. Working with the rail companies is hindered by centralized decision-making and their relative aloofness about working with the public.

A new \$300 million bridge is being built to replace an antiquated lift bridge over the Maumee River that will benefit the movement of trucks in the region. When in use (to let ships pass), the lift bridge caused traffic backups and was considered Northwest Ohio's top transportation priority. While the new bridge rose to the top of the priority list due to auto congestion, it provides significant freight benefits. The bridge, on I-280, provides a crucial link between the Detroit region, a major origin and destination for truck traffic, and I-90.

TMACOG regards the most important factor for moving a project from planning to programming is finding a project sponsor who will develop the project. TMACOG policy requires finding a project sponsor to fund preliminary development of the project, including initial feasibility work and preliminary design. These sponsors include local governments, agencies (Toledo-Lucas County Port Authority, the Toledo Area Rapid Transit Authority, etc.), and the Ohio DOT. For major projects, funding is designated as "within fiscal restraint" if it makes it to the Regional Transportation Plan. The sponsor must then apply for project funding from appropriate sources including the TMACOG TIP.

## Analytical Tools

TMACOG has a robust counting program that includes 400 count locations with dedicated personnel. In cooperation with ODOT and local agencies, all count locations are on a three- to four-year cycle so emerging trends will not be missed. These data provide a solid basis for scoring prospective freight projects (e.g., measuring factors related to truck traffic volumes).

The Ohio DOT has purchased Reebie freight flow data and has allowed all MPOs to access this resource. TMACOG considers the origin/destination data for the Toledo region to be very useful and is glad that ODOT provides it. On the other hand, TMACOG is disappointed with Federal Rail Administration data, considering it outdated and not as useful because it lacks origin and destination data.

## Success Factors

- **Actively solicit potential freight improvement projects.** As described earlier, potential freight improvement projects in many regions are not developed “organically,” particularly in areas that do not have strong relationships with local freight stakeholders. As a result, few freight projects are even identified for consideration within the statewide or metropolitan planning process. To combat this, TMACOG has developed a continuing process that allows it to identify freight transportation issues of the region and provide that input to the Freight Committee through freight transportation listening sessions. These sessions are programmed annually into the MPO’s UPWP. Typically, the MPO tries to conduct four to five of these listening sessions per year (about one per quarter). The MPO has one staff member that sets up and conducts these sessions, often in conjunction with members of the Freight Committee. The interviews focus on identifying freight-specific issues that affect the operations of the interviewee. The MPO has successfully identified several projects as a result of these sessions, including the rehabilitation of an access road to a major chemical manufacturer on the outskirts of town. It is unlikely that this or other improvements would have been included in the TIP had it not been identified as part of these sessions.
- **Let freight advocates (and potential advocates) view freight issues first-hand.** One of the keys to moving projects from planning toward implementation is to develop advocates or champions for freight projects. This is true at both the state and metropolitan levels, as freight projects must compete with other transportation priorities for limited funding and having an advocate that can effectively link freight improvements to broader mobility and economic development goals can often drive freight projects forward. This is particularly important at the MPO level, as these agencies often rely on their member governments to fund and implement improvements. Site visits with key members of the MPO and others have allowed these stakeholders to witness key freight needs and deficiencies first-hand. As a result, these stakeholders can better understand how freight improvements can benefit overall safety, mobility, and economic competitiveness in the region and can more effectively advocate for freight improvement projects.
- **Mainstream freight within the existing transportation planning process.** As was discussed earlier, treating freight transportation with the same level of emphasis as passenger transportation is important to ensure long-term commitment to the results of the freight planning process. Through the activities of its Listening Sessions and Freight Committee, TMACOG has facilitated the programming and delivery of several important freight projects and has encouraged private sector freight stakeholders to stay the course over the long haul.

## For More Information

For more information see the Toledo Metropolitan Area Council of Governments (TMACOG) web site at <http://www.tmacog.org/>.



# East-West Gateway Coordinating Council

The East-West Gateway Coordinating Council (EWGCC) is the MPO for the St. Louis region. Its area of responsibility comprises three counties in Illinois, four counties in Missouri, and the City of St. Louis. The region is home to many large companies that rely on efficient goods movement, including Boeing, Anheuser-Busch, Ford, and General Motors. Six Class I railroads provide service in the region, along with several regional and shortline railroads. These railroads also rely on a network of intermodal facilities and the four interstate highways that serve the area. Additionally, the St. Louis-owned Lambert International Airport offers air cargo facilities, numerous ports line the Mississippi River, and the region includes seven designated NHS Intermodal Connectors.

## **Development of Freight Performance Measure**

While the EWGCC had been exploring the use of performance measures for transportation planning since the early 1990s, two key initiatives contributed directly to the development and use of freight performance measures. The first initiative was the explicit development and implementation of a performance-based planning strategy for the MPO's transportation planning activities. A policy statement describing this strategy was included in the MPO's long-range transportation plan, *Transportation Redefined*:

*East-West Gateway planners follow a performance-based planning process centered around the transportation customer that evaluates needs and prioritizes transportation investments against six focus areas including system preservation, safety, congestion, access to opportunity, sustainable development and the movement of goods.*

The second initiative was the development of a regional freight planning study, which was guided by a freight advisory committee consisting of officials from all levels of government and freight representatives from the trucking, rail, air cargo, barge, warehousing, and shipping industries. This freight advisory committee played two important roles in the development of the regional freight study. First, they assisted in the designation of a Priority Goods Movement Network (PGMN). This network consists of the most critical elements of the region's surface, air, maritime, and intermodal infrastructure as well as critical features of the distribution and manufacturing sectors. Designation of the PGMN helps EWGCC identify potential freight improvements that have the most impact on regional freight mobility and needs of the region's key freight stakeholders.

The second key role of the freight advisory committee was to lead the development of freight performance measures and determine processes for incorporating these performance measures into the MPO's existing transportation planning and programming process. Development of the regional freight performance measures was guided by two key principles. First, the measures had to be supported by data and information that was relatively easy to collect, analyze, and update.

The freight advisory committee and MPO staff realized that performance measures that come with overwhelming data collection and analysis requirements will quickly be abandoned. Second, the measures had to be regionally significant, i.e., they had to measure the overall performance of the region's freight transportation system, not solely the performance of individual elements of that system.

Twenty-eight specific performance measures were developed in five specific categories, as described in Table 5-25. This final list reflects a balance between the need for meaningful indicators that truly inform the process for programming freight improvements and the need for indicators that are easily measurable.

Just as important as identifying key performance measures and the data and analysis requirements to support them is the ability to mainstream these performance measures into existing transportation planning and programming processes. Linking freight data collection and performance measurement to existing processes can help ensure that freight issues become "mainstreamed" within an MPO or DOT and allow freight projects to compete more effectively in the regional prioritization and funding processes. The EWGCC linked freight performance measures to the overall transportation planning and programming process in two ways. First, they develop a freight "report card" that helps measure progress toward key freight-related goals and objectives included in the long-range plan. Second, the EWGCC developed a framework, shown in Figure 5-10, to describe how freight planning activities, including the freight report card and related performance measures, fit within existing transportation planning activities, particularly the development of long- and short-range plans and the development of the TIP.

**Table 5-25. EWGCC freight performance measures.**

Category	Performance Measure
Connectivity/ Congestion	Average speed on the regional roadway network
	Truck counts at several key locations on the PGMN
Safety	Number of at-grade railroad crossings in the Region or on the PGMN
	Number of overpasses in the Region (or on the PGMN) that have vertical clearance restrictions
	Number of weight-restricted bridges in the Region (or on the PGMN)
	Intersections with inadequate turning radii for 53' trailers in the Region (or on the PGMN)
	High-accident locations on the PGMN as well as total number of accidents in the region
	Ramp geometry where sight distance is poor or where sharp turns are required
	Pavement life remaining on PGMN routes
Reliability	Level-of-service below C on PGMN roadways
Intermodal	Tons of air freight departing STL airport
	Number of intermodal lifts that occur yearly at the local intermodal facilities.
	Tons of cargo transported through the port
Economic/ Environmental	Value of freight moved from, to, and within the Region
	Number of people employed in five major economic sectors in the Region
	Amount of warehouse space available in the Region and current occupancy rate of the warehouse space
	Number of projects and dollars expended on the PGMN

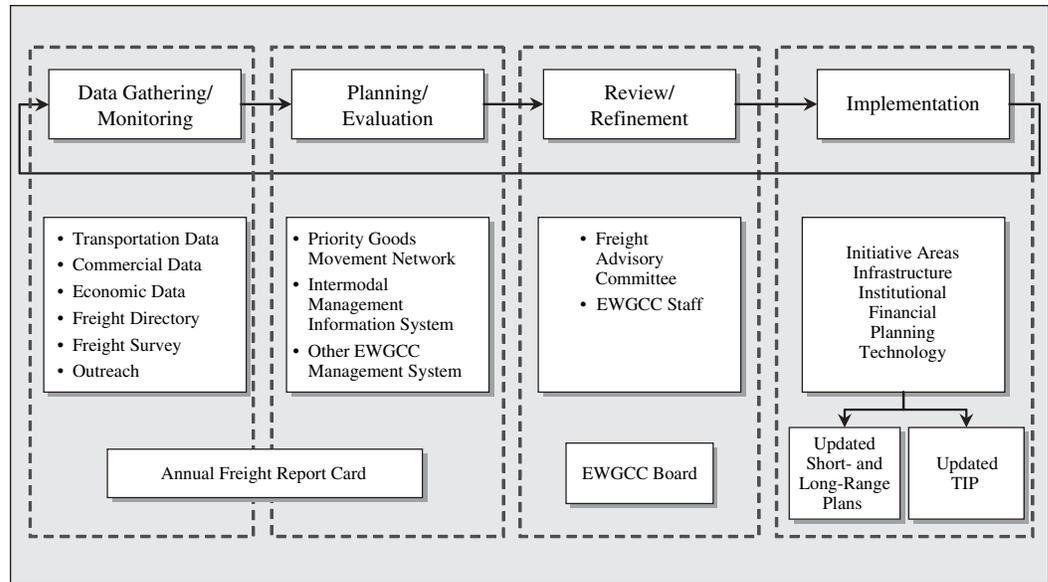


Figure 5-10. EWGCC freight planning process.

### Critical Success Factors

- Private sector involvement.** Involvement of the private sector freight industry is critical in many elements of freight planning and programming and is particularly important in the development of freight performance measures. Regional freight stakeholders work in the field everyday and their perspectives on the most important aspects of the goods movement system are essential. By including the private sector freight community, including shippers, carriers, and key industry leaders, in the development of freight performance measures, EWGCC was able to develop meaningful performance indicators that accurately reflect the operations of the private sector while providing targeted information to MPO staff and decision-makers.
- Dedication to data collection and analysis.** A key component of the success of the development and implementation of EWGCC's freight performance measures was the fact that they were selected based on ease of data collection. MPO staff realized that potential indicators are by themselves meaningless if they cannot be measured routinely. When selecting the final set of performance measures, the freight advisory committee, along with MPO staff, was mindful of their capacity for data collection to support them. While it may be tempting to expand the number of overall indicators to more comprehensively understand the performance of the freight transportation system, some prospective measures may be too peripheral to offer value to the overall transportation planning and programming process and actually reduce the overall effect of performance measurement. EWGCC considers 15 to 20 measures to be optimal.
- Link to existing planning and programming processes.** Treating freight transportation with the same level of emphasis as "traditional" transportation planning is important to ensure long-term commitment to the results of the freight planning process. In order to more effectively link freight planning activities with existing transportation planning and programming processes, EWGCC developed a framework to describe how freight planning activities fit within existing transportation planning activities, particularly the development of long- and short-range plans and the development of the TIP. This has helped raise the profile of freight issues throughout the planning and programming pipeline, making it more likely that freight transportation projects receive equal consideration during regional prioritization and funds allocation.

## **For More Information**

For more information see the East-West Gateway Coordinating Council (EWGCC) website at <http://www.ewgateway.org/>.



# Freight Mobility Strategic Investment Board

In the mid 1990s, private industry representing seaports, railroads, and truckers contacted the Washington State legislature to express their concern that freight interests were not being adequately addressed by the State's transportation planning program. The State's ports sponsored a tour for the legislature of the Alameda Corridor in California to illustrate that freight was being taken seriously in some parts of the country.

Following the tour, the State undertook a study in 1995 to identify and document the conditions in Washington. The study found that the missing piece was project implementation. In 1996, the State began working on its project ranking/priority formula.

The private sector has been involved in the process since the beginning. In 1998, the state legislature passed a budget and created the Freight Mobility Strategic Investment Board (FMSIB) as an independent Washington State agency that recommends freight improvement projects to the state legislature for funding. The 12-person board includes representatives from the Washington State DOT (WSDOT), local governments, public ports, the Governor's office, and the trucking, rail, and marine shipping industries. FMSIB Board members are appointed by the Governor. At the group's inception, technical staff support was initially provided by Washington DOT. In 1999, FMSIB opened its own office and hired a director. The mission of FMSIB is described below:

*The mission of the Freight Mobility Strategic Investment Board is to create a comprehensive and coordinated state program to facilitate freight movement between and among local, national and international markets which enhances trade opportunities. The Board also is charged with finding solutions that lessen the impact of the movement of freight on local communities.<sup>3</sup>*

## Project Selection Process

FMSIB provides matching funds for freight improvement projects of regional or statewide significance. Every other year, the board receives a slate of potential freight improvement project proposals from cities, towns, counties, ports, and WSDOT. Potential projects must meet three important criteria:

1. The project must be included in an established regional or state transportation plan;
2. The project must fall on one of Washington's defined Strategic Freight Corridors (which are updated every two years by WSDOT) or emerging corridors; and
3. The project must provide a minimum 35 percent match.

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<sup>3</sup> <http://www.fmsib.wa.gov/documents/fmsibmission.pdf>.

Potential projects are then evaluated using a standard set of evaluation criteria in 10 categories:

1. Freight mobility for the project area;
2. Freight mobility for the region, state, and nation;
3. General mobility;
4. Safety;
5. Freight and economic value;
6. Environment;
7. Partnerships;
8. Consistency with regional and state plans;
9. Cost; and
10. Special issues.

These categories provide a mix of qualitative and quantitative criteria that are used by FMSIB to evaluate and rank potential freight improvements. Tables 5-26 through 5-32 describe the criteria, measures, and scoring guidance for some of these categories.

**Table 5-26. FMSIB criteria *freight mobility for the project area.***

Criteria	Scoring
Reduce truck, train, or rail car delays	0-25 points
Increase capacity for peak-hour truck or train movements	0-10 points
<b>TOTAL</b>	<b>35 points possible</b>

**Table 5-27. FMSIB criteria *freight mobility for the region, state, and nation.***

Criteria	Scoring
Importance to regional freight system and economy	0-10 points
Importance to state freight system and economy	0-10 points
Direct access to ports or international border	0-10 points
Provide a corridor or system solution	0-5 points
<b>TOTAL</b>	<b>35 points possible</b>

**Table 5-28. FMSIB criteria *general mobility.***

Criteria	Scoring
Reduce vehicular traffic delay	0-10 points
Reduce queuing and backups	0-7 points
Reduce delay from use of alternative railroad crossing	0-5 points
Address urban principal arterials	3 points for urban principal arterial 0 points for all other
<b>TOTAL</b>	<b>25 points possible</b>

**Table 5-29. FMSIB criteria *safety*.**

<b>Criteria</b>	<b>Scoring</b>
Reduce railroad crossing accidents	0-5 points
Reduce non-railroad crossing accidents	0-5 points
Provide emergency vehicle access	5 points for essential access route 0 points otherwise
Close additional related railroad crossings	5 points for 2 or more crossing closure 3 points for 1 additional closure 0 points for 0 additional closures
<b>TOTAL</b>	<b>20 points possible</b>

**Table 5-30 FMSIB criteria *freight and economic value*.**

<b>Criteria</b>	<b>Scoring</b>
Benefit mainline rail operations	High: 5 points Moderate: 3 points Minimal: 1 point Negligible: 0 points
Access to key employment areas	0-5 points
Support faster train movements	0-5 points
<b>TOTAL</b>	<b>15 points possible</b>

**Table 5-31. FMSIB criteria *environment*.**

<b>Criteria</b>	<b>Scoring</b>
Reduce vehicle emissions	0-5 points
Reduce train whistle noise in crossing vicinity	Measured by improvements in delay times 0-5 points Measured by number of sensitive receptor sites
<b>TOTAL</b>	<b>10 points possible</b>

**Table 5-32. FMSIB criteria *partnerships*.**

<b>Criteria</b>	<b>Scoring</b>
Matching funds (minimum 35%)	Public sector match: 1 point for every 4% of match above 20% Private sector match: 1 point for every 2% of match above 20%
Critical timing of partner investments (i.e., availability of funds)	0-5 points
<b>TOTAL</b>	<b>25 points possible</b>

Following evaluation and prioritization, the FMSIB project selection committee determines the amount of funding to be allocated given the anticipated freight-specific benefits of each approved project.

Using these criteria, 14 freight-specific projects were approved for funding in 2005. These projects include several grade separations, safety and operational improvements to existing roadways, access and corridor improvements, and ITS deployments.

## Partnerships

The FMSIB's project identification and selection process demands partnerships, both between the public and private sectors, and among various public sector entities. This requirement is a key contributor to the FMSIB's ability to identify and provide funding for freight improvement projects. Project proposers must work closely with the state DOT or MPOs to ensure that projects are consistent with regional and statewide transportation plans and goals, principles that underlie all FMSIB-approved projects. Like the Rhode Island DOT, a variety of stakeholders have the ability to identify issues and suggest projects to the FMSIB for consideration. FMSIB staff work closely with statewide and local partners to help garner support for proposed projects. Finally, since at least a 35 percent match is required (and more points are allocated if a greater share can be provided), it also behooves the DOT and MPOs to work closely with the private sector freight community to identify the most critical freight needs and develop the most cost-effective and meaningful solution. Such projects have a higher likelihood to secure more widespread support and funding.

## Critical Success Factors

- **Separate budget ensures funding while maintaining consistency with statewide and regional priorities.** One of the key success factors of FMSIB stems from the fact that it is an independent state agency that recommends projects for implementation with its own funding sources. As a result, potential freight projects do not have to compete with other, non-freight transportation priorities for funding. Rather, they are evaluated by how well they meet specific mobility, safety, and economic goals as compared with other freight improvements. By requiring potential improvement projects to have already been included within existing regional or statewide transportation plans, FMSIB fundamentally links its transportation planning processes and project recommendations with regional and statewide priorities. This process allows the highest priority freight improvements to receive funding while ensuring that established statewide mobility, safety, and environmental goals are met.
- **Quantifiable criteria and guidance for project evaluation.** Like the Rhode Island DOT case study described earlier, FMSIB has developed project evaluation criteria that provide greater recognition to freight projects. Some of the criteria applied by the FMSIB could be useful to other states and MPOs when developing or enhancing their own project evaluation processes. In the FMSIB environment, these criteria provide board members with a basis to better understand how potential freight projects compare to one another. If adopted by other states and MPOs, these criteria could make freight projects more competitive with other proposed transportation improvements for funding.
- **Recognition of regional, statewide, and national benefits of freight improvements.** One of the FMSIB's project criteria categories evaluates how well proposed improvements enhance regional, statewide, and national freight mobility. This is an important criterion, as it forces project sponsors (i.e., DOT or MPO staff or members of the private sector freight community) to consider the impacts and benefits of freight improvements that may accrue outside

their own jurisdictions. It is crucial for state DOT and MPO staff to think regionally and even nationally regarding freight issues. Understanding and expressing the regional impacts and benefits of potential freight improvements can help build support and open the door to additional sources of funding.

### Key Interview Notes

*Note: These are additional important notes provided by the interviewees. The information, along with the complete case study, was used in the “Recommended Practices, Processes, and Procedures” section of this report (Section 4.0).*

- All the projects funded by FMSIB require partnerships and matching funds. FMSIB typically leverages \$3 to \$4 to every \$1 it provides. As such, FMSIB funding has significant purchase power.
- The private sector modal representatives work well with each other as well as with the legislators on the Transportation Committee.
- Currently, the Transportation Commission is initiating a study to explore the State’s role in preserving and enhancing mainline rail corridors in Washington.
- The private sector has a sense of ownership in the FMSIB; without this ownership, the program would fail.
- A variety of stakeholders have the ability to identify issues and suggest projects for consideration. FMSIB staff work with their local partners to determine if these projects have local support. In addition, staff support outreach and meetings with communities impacted by the proposed project to build support.
- This process repeats every other year. Current funding goes out 15 years; FMSIB tries to maintain a 6-year work program; this is difficult given fluctuating funding levels. Projects range across modes and tend to be primarily landside/intermodal connector-related.
- Projects need to be scoped out (some engineering, some costs, specific construction/design understanding); project managers will be held accountable to these plans; projects can not be significantly altered.
- Projects are monitored over time, although there are no formal performance measures.
- Washington has a defined network of strategic corridors; they are updated every two years; data collection activities support these corridors.
- Funding matches can be 80/20 but in practice the match has been 50/50 or less. Projects with the largest percent of private funding get the most points during the scoring process. The 80/20 limit exists for unusual situations, such as a rural area with a major bottleneck with no population to provide the match.
- FMSIB funding ranges from a 25 to 45 percent match.
- Leaders “get it” and support investments of public funds in private facilities.
- FMSIB has developed an educational video to remind the general public of the importance of freight.
- Rail investments today have focused on intermodal connections, port access, on-dock rail, and grade separations. Limited state funding has been provided to improve mainline tracks.
- Several of the State’s MPOs have or are working to incorporate freight into their planning and programming processes.
- SAFETEA-LU provides funding for freight, but most of the resources are ear marked. Washington makes out well with the Borders Program, however, FMSIB would like to see international seaports qualify for the program.
- FMSIB works to link complimentary projects, even when it requires working with the legislature to advance funding.
- FMSIB is a resource to the Transportation Commission regarding public policy decisions relating to freight transportation.

**For More Information**

For more information see the Freight Mobility Strategic Investment Board (FMSIB) website at <http://fmsib.wa.gov/> or the Washington State Department of Transportation (WSDOT) website at <http://www.wsdot.wa.gov/>.



# Puget Sound Regional Council

The Puget Sound Regional Council (PSRC) serves as the MPO for four counties (King, Kitsap, Pierce, and Snohomish) in the Seattle-Tacoma-Everett metropolitan area in northwestern Washington. Members of the MPO in addition to the counties include 70 cities and towns; two Federally recognized Indian tribes; six transit agencies and the Seattle Monorail Project; the Washington State DOT (WSDOT) and Washington Transportation Commission; and the Ports of Everett, Seattle, and Tacoma. The fast-growing metropolitan region, with a current population of about 3.3 million, expects a one percent annual rate of increase through 2030, when the population is projected to exceed 4.5 million. Demographers expect a slightly higher annual rate of growth for employment, going from 1.8 million jobs in 2000 to 2.5 million jobs by 2030. About 13.4 percent of jobs in the region are manufacturing jobs, and nearly one-third of those jobs are in the aerospace industry, dominated by Boeing and affiliated companies.

The Seattle region also has two major interstate highway routes (I-5/I-405 and I-90), two Class I railroads (UP and BNSF), about 6 short-line carriers, over 30 NHS intermodal connectors (many of which connect to freight facilities), 3 major ports, over 30 transload facilities, Sea-Tac International Airport, and Boeing Field. Together, these facilities comprise the area's "freight movement package" to compete with other major west coast port cities such as Vancouver, Portland, San Francisco-Oakland, and Los Angeles-Long Beach.

Based on trade volumes as a share of gross state product, the PSRC affirms that Washington is "the most trade-dependent state in the Nation." Consequently, PSRC and other responsible public agencies devote considerable attention to freight planning and advocating for freight projects. The primary vehicle for addressing freight-related issues in the region is a commission called the Freight Action Strategy (FAST) Corridor, though the MPO also recognizes the importance of freight through core planning initiatives such as the long-range transportation plan and transportation improvement program.

## **Freight Planning Activities**

The PSRC operates within the context of a very freight-conscious region and state. A variety of state task forces as well as public and private sector partnerships focus on freight needs, perform freight planning, and identify freight projects in need of funding. The PSRC's contribution to these activities has been largely in a supporting role, although the MPO, along with WSDOT, runs the FAST Corridor program, which has identified a very specific list of freight improvements.

In 1991 ISTEA broadened the goals of the transportation planning program. WSDOT has already formed a freight advisory committee in 1990, representing a key first step. PSRC updated its regional plan in 1995. As part of this process, staff assembled private sector freight stakehold-

ers and asked, “what do we need to know about freight transportation?” This led to the formation of the Regional Freight Mobility Roundtable, which was co-sponsored by the private sector. Five meetings were held to engage the freight stakeholders. Their input was included in the regional plan to help define what needed to be done to integrate freight into the program.

Following the regional plan update process, the Roundtable wanted to go on meeting. It has evolved beyond an advisory committee. It has become a communication hub for regional freight stakeholders and public agencies. It includes marine shipping lines, railroads, trucking companies, air cargo operators, transit, ports, PSRC, several Federal agencies (FTA, FHWA, FRA, MARAD, U.S. DOD, the Coast Guard), WSDOT, FMSIB, and several cities. Meetings continued from 1994 to 1996. Public agencies began to look at land side access needs to compliment on-dock rail. This led to grade separation projects. Fifteen projects were identified. PSRC and WSDOT sponsored a meeting to discuss the projects. However, no funding was available.

Currently, PSRC is reinventing and updating its freight story for the region and identifying action strategies. Staff would like to be able to fund incomplete projects; in addition, they want to have a broader perspective, looking at more than the narrow focus of the FAST program (on-dock rail, rail, etc.). It will be a multimodal nexus freight story, with an action strategy that speaks to each mode.

PSRC will begin positioning itself to influence the next Federal reauthorization. It will work with the West Coast Corridor Coalition (WCCC). It also has the Prosperity Partnership, which is looking at how a region prospers in a global economy.

## **FAST Corridor**

Since 1995, the PSRC has published about a dozen freight and goods mobility reports, with topics ranging from general discussion of the development of FAST partnerships to analyses of existing freight movements and conditions in the region to a regional “business plan” for FAST.

TEA-21 expanded on ISTEA by providing funding for freight. The FAST program was used to help write the language in TEA-21 relating to “freight corridors.” FAST has received money from a variety of sources, and has been able to reallocate it based on which project is ready to go. The Federal funding that FAST has received has been used to attract other funding partners; as a result earmarks for specific projects (not programs) emerged. Consequently, the FAST program has seen a decrease in funding as individual projects compete more successfully for the limited available funding.

Today, the FAST partnership is hanging together based on local and regional support (no Federal support). A new FAST brochure is under development and will be rolled into the regional and state plans; there also will be coordination with the WCCC. The program will still be project-based, but it will also support other initiatives, namely the issues that impact modal networks and their impacted stakeholders. The MPO feels that it will be important to reconnect with policy-makers to focus effectively on (1) what the story is, and (2) what the following steps are.

The PSRC’s long-range transportation plan, *Destination 2030*, includes a section supporting the efforts of FAST Corridor. In particular, the plan supports adoption of recommended infrastructure improvements from Phase I and Phase II of FAST as part of the long-range plan and continued inclusion of identified improvements from FAST. While recognizing that the FAST recommendations largely fall into the near-term category, *Destination 2030* mentions its commitment to “corridor improvements, truck priority and truck geometrics projects, intermodal and multimodal infrastructure projects, and information infrastructure projects” throughout

the planning horizon. Presumably, such projects will be included in the long-range plan as they are identified by FAST Corridor.

### **Critical Success Factors**

- The Roundtable meets every 2 months; the FAST group has met every month since January 1996. The Roundtable does not take positions; instead it provides a safe haven where all are welcome. Furthermore, the meetings happen “unofficially.” The group does not have letterhead or a “formal” identify. PSRC staff believe this is a major strength and that it has allowed the Roundtable to continue.
- PSRC management takes its freight program seriously. Staff have been committed to freight programming for well over a decade, and have had good communication with the U.S. DOT, WSDOT’s freight office, and members of the Roundtable.

### **For More Information**

For more information see the Puget Sound Regional Council (PSRC) website at <http://www.psrc.org/> or the Washington State Department of Transportation (WSDOT) website at <http://www.wsdot.wa.gov/>.



# Florida Department of Transportation

## *Strategic Intermodal System*

The Florida Department of Transportation (FDOT) is the lead state agency for providing a safe transportation system that ensures the mobility of people and goods. FDOT builds and maintains the State Highway System and has an increasing role in ensuring access to major ports and terminals. The DOT has had to be proactive in planning for key trends that are shaping the State's economy, and therefore, the use of the transportation system. These trends include a strong population and economic growth, a shift toward regional economic centers, lagging economic performance of rural areas, a shift toward service and information industries, and continued concerns about growth management and environmental quality.

In fact, the Southeast region of the United States is one of the fastest growing regions in the Nation; according to the U.S. Census Bureau, the population of Florida has increased at a rate 3.5 higher than the rest of the country, a figure that is expected to keep up through 2030. These population growth patterns will have several impacts on the region's transportation system, including growth in regional and interstate movements of freight and passengers along highway and rail lines.

Florida's 2020 Florida Transportation Plan envisioned a transportation system that will enhance Florida's economic competitiveness. In that plan, the State realized that its future economic health will depend on a transportation system that provides seamless and efficient movement for the growing number of residents and tourists, and transports goods within Florida and to and from markets in other states and nations. To respond to this challenge, the plan called for the development of a Strategic Intermodal System (SIS), which will be composed of transportation facilities and services of statewide and interregional significance providing for the smooth and efficient transfers for both passengers and freight.

### **Project Overview**

The SIS represents a fundamental shift in the way Florida views the development of—and makes investments in—its transportation system. The goal of the SIS is to provide a transportation system that efficiently serves Florida's citizens, businesses, and visitors; helps Florida become a worldwide economic leader; enhances economic prosperity and competitiveness; enriches quality of life; and, reflects responsible environmental stewardship. A significant portion of the State's transportation investments will be targeted toward projects on the SIS, as they have the most direct bearing on the State's future mobility and economic vitality.

The individual components of the SIS were designated by the DOT in 2002, under the guidance of a 41-member Steering Committee. The Steering Committee represented the DOT and

31 statewide stakeholders with an interest in the future of Florida's transportation system, economy, and quality of life. Members included representatives from local governments, the private sector freight community, environmental interest groups, and others. In addition to designating the specific components of the system, i.e., the transportation hubs, corridors, and connectors that make up the SIS, the Steering Committee also recommended that the DOT develop a Strategic Plan to guide the implementation of the system.

## Effective Use of the Planning Process

The SIS Strategic Plan provides policy direction for implementing the SIS and serves as the foundation for a new way of planning and managing Florida's transportation system. Developed by the DOT in cooperation with the SIS Steering Committee and other regional and local partners, the SIS Strategic Plan outlines a fundamental shift in Florida's transportation policy. This plan:

- **Redefines the State's primary role in transportation** as focusing on international, interstate, and interregional travel of passengers and goods, with emphasis on the SIS. At the same time, stronger regional partnerships will identify and invest in regionally significant transportation facilities, while local governments will have more flexibility to address purely local transportation needs.
- **Advances a multimodal approach to planning** to increase mobility for people and freight on complete end-to-end trips. Rather than focusing on individual modes and facilities, state funding will be used to improve connectivity among individual modes, eliminate bottlenecks and unnecessary delay, improve travel time reliability, and expand the options available for interregional travel.
- **Links the State's transportation planning and investment decisions to statewide economic policies**, with emphasis on Florida's Strategic Plan for Economic Development. The SIS will support interregional, interstate, and international transportation services that support the diversification of Florida's economy by reducing transportation and logistics costs, improving access to markets from urban and rural areas and supporting growth in trade and tourist flows.
- **Shifts from reactive to proactive planning of future transportation investments.** In the past, transportation investments too often have responded to development instead of proactively advancing statewide goals related to economic growth, rural development, urban revitalization, and environmental preservation. The SIS will provide a foundation for managing growth in the future by focusing the State's transportation investments.

A key element of the SIS Strategic Plan was the development of a process for determining which SIS investments will be funded by FDOT and its partners. This process was divided into three stages:

1. FDOT will work with its partners to determine investment needs based on the performance of the transportation system relative to the goals and objectives of the SIS. The resulting product will be a long-term SIS Needs Plan that identifies all future needs without regard to available funding.
2. FDOT and its partners will gather detailed information about each proposed investment to help determine which should be the highest priorities for funding. The resulting project priorities will comprise the SIS Cost Feasible Plan, which will have both 10- and 20-year components and will be constrained by available forecasts of SIS funding from FDOT and its partners.
3. From the prioritized list of projects, FDOT will select projects for funding in its 5-year work program. FDOT will encourage the financial participation of partners in projects to leverage state resources and thereby raise the priority of individual projects.

This process has two key benefits for freight-related projects. First, by allowing the state DOT to target investments on the elements of the system that meet its mobility, environmental, and economic competitiveness goals, it provides state funding opportunities for all modes and projects that can prove a public benefit, not just highway or transit projects. As a result, although the majority of leaders and the general public more heavily support passenger transportation improvements, freight needs and projects are being considered for state funding more today than ever before. Second, it encourages the DOT to work closely with its public and private sector partners, including local governments, MPOs, district offices, and the private sector freight community, to identify freight improvement projects of statewide and regional significance. The identification of needs, development of projects, and the promotion of the projects through FDOT's work program relies on a network of partnerships, primarily district offices, working with their local partners and their central office counterparts. At the Central office, the various modal offices form the foundation of the transportation planning program. In addition, there are many other departments that contribute technology, funding, and economic development components to the process. The development of the SIS Strategic Plan has strengthened all of these relationships and allowed the DOT to develop relationships with organizations and entities that traditionally have not had a large role in planning improvements to the transportation system. As a result, the DOT is better able to identify, plan, program, and implement freight improvements throughout the State.

## Critical Success Factors

- **Development of partnerships.** The Florida DOT engaged its partners, including other public sector agencies, local and regional governments, interest groups, and key freight stakeholders from the very beginning stages of SIS designation and implementation. Engaging these groups throughout the process has helped ensure that the resulting SIS designation and implementation meets the needs of the DOT as well as its key customers. As the SIS moves forward into full implementation, particularly as needs are identified and prioritized, the continued cultivation of these relationships and the importance of keeping all stakeholders involved will be paramount.
- **High-level commitment to the concept.** Designation and implementation of the SIS represents a major shift in how the Florida DOT identifies, plans, funds, and implements transportation improvements throughout the State. The policies and programs developed as part of these SIS-related activities have allowed the State to better identify transportation needs and deficiencies across modes and more effectively target state resources on projects of regional or statewide significance. It was not an easy process and several challenges still remain. The successful designation of the SIS and its current implementation requires and will continue to require the commitment of DOT management and others to this new way of planning and funding transportation improvements.

## Key Interview Notes

*Note: These are additional important notes provided during by the interviewees. The information, along with the complete case study, was used in the "Recommended Practices, Processes, and Procedures" section of this report (Section 4.0).*

- Freight transportation has not and does not receive the same attention as passenger transportation, however, the SIS and work underway by the Public Transportation Office is slowly changing this. In addition, the Florida Intrastate Highway System (FIHS), which has always been the major focus of the transportation program has and continues to address the majority of freight corridors, as well as trade and tourism corridors.

- Florida has always been ahead of Federal requirements. It is one of the lead planning states. Each modal office of FDOT had been doing its own thing; the SIS provided the motivation to bring it all together as one integrated strategic system.
- FDOT leaders championed the FIHS development as well as the move towards the SIS. The focus was on a balanced system. The private sector has its own champions, such as the head of the Florida Ports Council.
- There are no official freight staff positions; freight is part of every job description for staff working in transportation.
- FDOT has been working over the last few years to develop a multimodal cost feasible plan. Historically, this has been a highway only plan. The highway plan addressed freight needs through the inclusion of truck characteristics. In 2006, FDOT is poised to have its first multimodal cost feasible plan, which will address passenger and freight needs for all modes of transportation.
- Needs are identified at the district level; some districts use models for the highway network; passenger/freight traffic is combined; staff look at continuity of the network; with the creation of the SIS, each modal office is identifying needs with input from their private sector partners. Hub needs are evaluated against supporting connector and corridor capacities. District staff work closely with their MPO partners as part of this overall process.
- At the district level, staff know what the needs are and develop projects to address those needs; needs must be in the form of projects if they are to progress into the cost feasible plan. The process of moving projects into the cost feasible plan is political and is tied to established priorities and county equality.
- FDOT's current program has many freight-specific projects that develop or enhance intermodal connectors, seaports, railroads, and airports. Examples include harbor/channel dredging projects at seaports; landside access connector improvements to seaports, rail intermodal terminals, and airports; and rail siding projects. The SIS created the opportunities for non-highway projects to be eligible and compete for state funds. In addition, the funding match requirements help encourage good projects. Projects can be proposed by anybody, but they must work with a partner.
- Historically, Florida had funded freight projects as part of the overall transportation program; these projects typically have been highway projects; and these projects have never been called out as "freight projects." However, there have been examples, prior to SIS, of freight-specific projects. The Freight Task Force, created in the late 1990s by the legislature, was given \$10 million dollars to spend on freight projects. The most significant example, which has been in place since 1991, is the Florida Seaport Transportation and Economic Development (FSTED) program. This program, funded by the Florida legislature, provides funding on an annual basis to Florida's seaports. The FSTED, made up of the seaports, allocates the funding based on individual port needs and project readiness.
- Currently, the SIS has dramatically expanded the State's involvement in funding freight projects across modes for both passenger and freight operations. Although these projects are still not labeled as freight projects, staff acknowledge it may be useful to do so in the future.
- FDOT currently is using a bottom up process for ranking projects. This process starts at the district level. District staff work with their local and regional partners to prioritize their projects. This ranked list of projects is provided by mode to the Central Office. For the non-highway modes, modal partners were asked to provide their input. For example, the Florida Ports Council worked with each of the seaports to develop a comprehensive list of seaport projects. Central Office staff review the lists of modal projects and create a list of prioritized projects.
- This process is evolving as the SIS has changed the way FDOT operates. Prior to last year, the DOT focused on the FIHS. Under the SIS, the DOT must rank and fund projects across all modes. The Department is still working to define the best approach for combining the modes

as it works to complete its first ever multimodal cost feasible plan. Ultimately, it may be best to have a defined set of performance measures by which all projects will be evaluated, regardless of mode. Otherwise, FDOT will continue to struggle with the “apples and oranges” of multiple modes.

- Although the majority of leaders and the general public more heavily support passenger transportation improvements, freight needs and projects are being considered more today than ever before. The SIS has created a more even playing field that not only differentiates between passenger and freight transportation, but opens up funding opportunities for all modes and projects that can prove a public benefit.
- FDOT has developed statewide travel demand models for passengers and trucks. To date, the truck model has not been used extensively to support programming activities. FDOT relies on vehicle counts and classification data, and performance indicators such as volume to capacity and vehicle hours of delay. In addition, local models developed by MPO partners provide local traffic operations data.
- In order to utilize the highway-based prioritization tool on all modes it had to be simplified; this loss of detail is a programmatic loss for highways.
- FDOT would like to be able to measure project impacts using benefit/cost calculations for all types of transportation projects. This will require economic impact or analysis tools that currently do not exist. Staff hope these types of tools will be developed in time.
- FDOT recognizes the importance of performance measures. Staff are challenged as the SIS unites multiple modes with very different operational characteristics and data availability. Staff currently are researching the topic as they work to move away from measures like delay and towards mobility and reliability. At this point, there are no performance measures specifically tracked for freight.
- Florida has one of the best traffic monitoring programs in the Nation for highways. It will be difficult to expand this program to the other modes without strong leadership and a champion.
- As FDOT staff have moved beyond highways in their programming activities, they have been challenged by data needs. The challenge has two factors: 1) determining exactly what data are needed for processes that are new and still evolving; and 2) identifying and collecting the necessary data.
- Staff anticipate the data management program to smooth out for non-highway modes as the programming processes are repeated over the next few years.
- In addition to the new data required for non-highway modes, additional highway data will be required to meet the measures defined by the SIS.
- A variety of funding programs are available to fund freight projects. The majority of these programs are funds available to all transportation projects, not just freight, and many of them require partner matches. Current funding programs include: SIS, Growth Management, TRIP, SIB Loans, Turnpike Bonds, Chapter 311 (seaports only), and NHS.
- New state programs, like SIS, Growth Management SIS, and TRIP have allowed many projects that are ready to go to be accelerated. These have included passenger as well as freight projects across modes.
- With the creation of the SIS, the majority of new capacity dollars has been focused on the designated multimodal system. Partners are given the opportunity to participate in the allocation of funds; however, there is not enough funding available for all projects.
- The identification of needs, development of projects, and the promotion of the projects through FDOT's work program rely on a network of partnerships of district offices with their local partners and with their central office counterparts. At the Central office, OPP, SPO, PTO, and Transtats form the foundation of the transportation program. In addition, there are many other departments that contribute technology, funding, and economic development components to the process. The SIS has strengthened all of these relationships as the transportation program has truly become integrated.

- FDOT recently joined the I-95 Corridor Coalition; it also has participated in several multi-state initiatives, including Advantage I-75, I-10 Corridor, and LATTs.
- FDOT believes it has a successful freight transportation program. Freight is being addressed by the SIS more effectively than ever before. Specific freight projects are being funded; success is defined as getting projects funded.
- Florida has been able to bring its partners to the table to provide ongoing input to the planning and programming processes. The development and implementation of the SIS has been overwhelming and difficult. Staff just do not have time to do everything they want to once the implementation begins. Success in large part will be defined over time; continued progress and evolution is proof the process works.
- FDOT has struggled to identify and collect specific facility data requirements for non-highway facilities; this has been a major obstacle as a traditional highway program has been expanded to fund projects across all modes. FDOT recommends that any state ready to take on an initiative of this type spend significant resources early in the process to develop the network and collect as much data as possible.

### **For More Information**

For more information see the Florida Department of Transportation (FDOT) website at <http://www.dot.state.fl.us/>.



# Port of Seattle

*[Note: This section presents key findings from interviews held with officials from the Port of Seattle. While it is not a complete case study, it provides valuable information on how a nongovernment agency can get involved in the freight planning and programming process. This information was used in Section 4 of this report.]*

The Port of Seattle is a municipal corporation created September 5, 1911, by the voters of King County. As a public enterprise with unique authority operating in an international, market-driven environment, the Port gives careful consideration to the economic, social, and environmental implications of its business decisions. The Port's goal is to be the most effective and respected provider of transportation facilities and services to promote international trade and commerce and to be the best publicly owned catalyst for sustained regional prosperity in the Nation.

In accomplishing its goals, the Port often works as a partner with other public and private entities. The intent is to complement, rather than duplicate or compete with, the functions of general purpose governments or the private sector.

## **Partnerships**

The City of Seattle has an active freight advisory committee. This has been useful to the Port, as it provides another access point to reach out to the industry. In addition, it has helped elevate freight needs on the City's agenda. The Port of Seattle works closely with this committee, as well as several other local, regional, and national organizations to plan for transportation improvement projects. The list of organizations includes the Puget Sound Regional Council (PSRC), the Freight Mobility Strategic Investment Board (FMSIB), Texas Transportation Institute (TTI), West Coast Corridor Coalition (WCCC), and the International Mobility and Trade Corridor (IMTC) Project.

These partners work with the Port of Seattle to secure funding for key projects and clear the hurdles that come up through the implementation process. This is an important component of their planning process given that the Port's location in the urbanized area of Seattle often generates major issues that affect the communities and local jurisdiction.

## **Involvement in Local and Regional Projects**

### **Freight Action Strategy (FAST)**

The Port of Seattle has been an active participant in a variety of regional transportation program activities. The FAST Corridor has been the most effective tool to integrate freight mobility into the greater funding program (see the PSRC case study for details on FAST).

Three projects in Seattle Harbor were included in the FAST program. One is half complete and the other two have been delayed. The City has blocked each of these projects politically. Support for freight projects has decreased under new leadership. The projects were all fully funded; the funding agencies are pressuring the City to advance the projects. One key lesson: Getting freight into plans and programs and securing funding is one thing; actual project construction can be a new and separate challenge.

Studies were conducted to illustrate the issues and needs. Project ideas were submitted to the Federal government and resulted in the first three projects. The Port has worked with the City, FMSIB, and TIB to develop and implement freight transportation improvement projects. This included economic impact analyses and negotiations with private partners. BNSF and UP both provided a share of the funding. This worked, in part, because leaders participated in the process, showing corporate commitment.

To date, measuring a project's success has proven a difficult task. The Port has been working on techniques to do this in conjunction with the FMSIB and the Washington Transportation Research Center.

## **Trucking Community**

The Port has worked extensively with the trucking community, especially through a group of truckers that meets quarterly to discuss port access issues. This forum provides the Port with an opportunity to disseminate key information on terminal access issues. An example of this is the trucker's guide developed by the Port of Seattle; this is a laminated map that is distributed at the marine terminals to facilitate a trucker's ability to maneuver through ongoing construction projects. The Port also sponsors a trucker's appreciation day annually.

## **ITS Projects**

- The Port has worked with the City on a variety of projects relating to warning lights, signs, and variable message signs. The City is in the process of designing the systems; if they put in place what the Port asked for, the port will be a funding partner.
- Several web cameras were deployed several years ago to provide real time traffic information to trucks serving port terminals. These cameras are still operational and tend to be used most by larger companies with dispatchers; however, many trucks serving the port are small drayage companies without real time access to the system.
- The Port is currently working on a pilot project test of Radio Frequency Identification (RFID) tags and Optical Character Recognition (OCR) technologies. RFID tags are being given to 750 trucks at one terminal; OCR technology is being deployed at three international terminals. Combined, they are anticipated to streamline the velocity of terminal operations and relieve land side access bottlenecks.

## **For More Information**

For more information see the Port of Seattle website at <http://www.portseattle.org/>.



# Washington State Department of Transportation and Transportation Center

*[Note: This section presents key findings from interviews held with officials from the Washington State Department of Transportation and Transportation Center. While it is not a complete case study, it provides valuable information on how a state DOT can work closely with other statewide stakeholders when conducting freight planning activities. This information was used in Section 4 of this report.]*

The Washington Department of Transportation (WSDOT) created the Freight Strategy and Policy Office in 2001 to develop a business investment plan for the freight system, and to build consensus within WSDOT that freight was an important element in the State's transportation program. The Office works to provide data and information to support the needs of the State's decision-makers, which requires an ongoing data collection program. Staff work to maintain and expand a private sector contacts database; surveys have been conducted with private industry; and there is a focus on calculating economic impacts.

WSDOT has prepared a detailed statewide freight system profile. This profile distinguishes the key industry and transportation characteristics by region. These target market requirements help decision-makers understand the varying needs throughout the State. To date, WSDOT has completed over 200 interviews with industry partners to understand and define their transportation requirements. This is seen as an ongoing process; additional interviews are conducted by staff when possible. This ensures the Department has in-house expertise and actively builds strong relationships with industry partners.

## **Development of Partnerships**

WSDOT works closely with several agencies locally, regionally, and nationally to provide a more efficient transportation plan for its residents. In particular, the DOT works with two key "freight partners" in the State: the Washington State Transportation Center (TRAC) and the Freight Mobility Strategic Investment Board (FMSIB). These agencies, and their function, are described below.

### **The Washington State Transportation Center (TRAC)**

TRAC is a cooperative transportation research agency. Its members, the University of Washington, Washington State University, and the WSDOT, support TRAC to coordinate both state and commercial transportation research efforts and to develop research opportunities both nationally and locally.

TRAC investigators conduct research on numerous transportation-related topics. TRAC employs professional staff to provide support services, including the production of proposals,

reports, other documents and presentation materials, as well as budget preparation and tracking, requests for travel, requests for equipment, and other administrative tasks.

TRAC historically has worked closely with the Washington DOT, providing a variety of research capabilities. Over the last several years, TRAC has used Eseals, Transponders, cameras, queue detection, and GPS-based trip data. In addition, TRAC staff have the unique ability to step back and take a look at the transportation system and program development taking place throughout the region and the State.

### **The Freight Mobility Strategic Investment Board (FMSIB)**

Historically, the State's port authorities lobbied the legislature claiming that WSDOT was not doing enough to help them. The FMSIB was established by the State in response to the recognition of the importance of freight mobility and economic prosperity. It is designed to stimulate improvements in Washington's freight transportation system. It is a highly political machine that has effectively and successfully advanced a variety of projects. FMSIB project selection activities are not based on quantitative measures. This does not mean that bad projects are selected; it simply means there is no standardized process.

### **Effective Use Planning Process**

The TRAC recently developed and submitted a report that discusses ways to measure the success of freight transportation improvements. The State has a ballot item that will require performance measures for each state agency. This is politically challenged due to the costs associated with data collection to support the performance measures. It is interesting to compare this situation to the private sector, which effectively uses its own data to drive its operations and performance. For example, Federal Express relies on the effective use of data to drive its operation and determine its performance. Imagine the possibilities of the Intelligent Vehicle Initiative (IVI) if abundant data were available.

In order to build support for a freight transportation program, it is critical that an effective story be developed. This story should define the system, identify the needs, and communicate the public interest. WSDOT has done a great job selling the story that freight is good. Significant data collection and analysis has been completed that effectively paints the picture for Washington. This story successfully shows why public policy and public investments in the freight transportation are important.

### **For More Information**

For more information see:

- Washington State Transportation Center (TRAC) website at <http://depts.washington.edu/trac/>.
- Freight Mobility Strategic Investment Board (FMSIB) website at <http://www.fmsib.wa.gov/>.
- Washington State Department of Transportation (WSDOT) website at <http://www.wsdot.wa.gov/>.



# Southern California Association of Governments

The Southern California Association of Governments (SCAG), as the MPO for the Los Angeles region, is charged with the development of a coordinated transportation plan addressing the transportation needs and priorities for the region. The six-county region serves as an international gateway for freight, facilitating goods movement to every other state in the country. In order to balance the burdens of congestion, infrastructure maintenance, and environmental impacts associated with the high volume of goods movement with the regional and national economic benefits, freight-related planning has been integrated into the SCAG regional transportation planning process.

Freight facilities in the region include the seaports of Long Beach, Los Angeles, and Hueneme; five commercial airports; six rail intermodal transshipment yards; and an array of trucking, warehousing, manufacturing, and retail centers. The ports of Los Angeles and Long Beach handle approximately one-third of all United States waterborne freight container traffic. In 2000, the nearly \$200 billion in trade passing through these ports supported a total of 2 million jobs and \$61 billion in income nationwide. In 2003, the Port of Los Angeles, not including the Los Angeles International Airport (LAX), handled more freight than JFK International Airport in New York, making it the top dollar value international gateway in the United States.

Elements of the SCAG planning process, Regional Transportation Plan (RTP), and Transportation Improvement Programs reflect the value of freight planning in the region. The *Southern California Regional Strategy for Goods Movement: A Plan for Action* released in February 2005 establishes goods movement principles to guide evaluation, planning, and funding of freight-related improvements, emphasizing the need to consider interagency impacts on the region while establishing performance measures, state and nationwide impacts of infrastructure investments, and the need to consider alternative financing mechanisms.

## Effective Use of Planning Process

Destination 2030, the 2004 Long-Range Transportation Plan for the SCAG region, has adopted goals related to enhancing elements of both the passenger and freight transportation system. These goals include maximizing the mobility and accessibility, and ensuring the travel safety and reliability for all people and goods. As a result, adopted performance indicators call for the need to consider investment in the maintenance of safe and efficient multimodal facilities as well as expansion of other systemwide investments.

SCAG's Goods Movement Program has supported projects which support the identification and advocacy of freight-related transportation initiatives of regional significance. In addition to projecting future infrastructure and funding needs and prioritization processes, studies also have been conducted to identify trends affecting the regional economy, such as the

globalization of the manufacturing industry, and proposing long-term planning solutions. Principles in the Goods Movement Action Plan include the need for systemwide balance and leadership of initiatives from the statewide level. SCAG also has established the Goods Knowledge Database, accessible to the public via the Internet. The database includes over 150 goods movement studies, dating as far back as 1982, allowing users to access reports related to their topic of interest.

### Private-Sector Involvement

The Plans and Programs Technical Advisory Committee includes members of the public and private sector freight community, community members, and interest groups. The TAC coordinates and ensures the technical integrity of the RTP.

In addition to the TAC, SCAG has established a Goods Movement Task Force comprised of elected officials, Caltrans and CTC staff, representatives from the California Trucking Association, National Industrial Transportation League, railroads, and other stakeholders. The Task Force serves as a stakeholder advisory group for specific freight initiatives, involving and obtaining private industry perspective early on in the planning process. SCAG has recently completed a series of regional roundtables involving various stakeholders to showcase freight issues and seek further input.

Working closely and cooperatively with public and private stakeholders, SCAG has been a moving force providing rationale for and advocating for transportation investments identified through its planning and programming process. This process has helped give visibility to freight needs and has been successful in securing much needed funds for projects such as the Alameda Corridor Project and Proposition 1B, a recent transportation bond package, both of which are described below:

- **The Alameda Corridor Project.** This project was conceived in the 1980s as an innovative way to improve goods movement from the ports of Los Angeles and Long Beach while relieving traffic congestion and improving air quality. The corridor, opened in 2002, is a 20-mile dedicated rail link combining 90 miles of branch railroads into one high-speed rail line. The project eliminated more than 200 at-grade crossings where street traffic had to wait for long freight trains and cut by more than half the time required to move cargo containers by train through the corridor. Funded by a public-private partnership, the \$2.4 billion project serves as a model for how complex freight projects can be developed through public-private cooperation.
- **Proposition 1B.** The Governor of California made freight investment a priority in the fall 2006 elections by including a transportation ballot initiative Proposition 1B. This initiative called for the approval of almost \$20 billion in bonds with \$3.2 billion devoted specifically to freight, \$1.5 billion to safety and security, including port security, with the major amount going to congestion relief and transit. The passing of the proposition with 61 percent in favor and 39 percent opposed statewide, and 65 percent in favor and 35 percent opposed within Los Angeles County, serves as an indication of public support for the transportation initiative with a significant freight component.

### Critical Success Factors

- **Development of a Freight Profile/Action Plan**—The development of a regional freight action plan increases the visibility of goods movement issues in localities with major goods movement activity but also guides the direction of freight planning and emphasizes the need for leadership and funding early in the process.

- **Private Sector Collaboration**—In a complex freight environment such as the SCAG region, regular involvement of the private sector as an advisory committee such as the Goods Movement Task Force facilitates collaboration when needed and allows for earlier identification of freight-related issues as well as enabling potential public private partnerships.

### **For More Information**

For more information see the Southern California Association of Governments (SCAG) website at <http://www.scag.ca.gov/index.htm>.



# Acronyms

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ADT	Average Daily Traffic
BNSF	Burlington Northern Santa Fe
BSC	U.S. General Services Administration Border Station Center
CATS	Chicago Area Transportation Study
CBP	U.S. Customs and Border Protection
CBSA	Canada Border Services Agency
CDOT	Chicago Department of Transportation
CFR	Code of Federal Regulations
CMA	Congestion Management Authority
CMAQ	Congestion Mitigation and Air Quality
CN	Canadian National Railroad
CP	Canadian Pacific Railroad
CREATE	Chicago Regional Environmental and Transportation Efficiency Program
CTC	California Transportation Commission
DEIS	Draft Environmental Impact Statement
DelDOT	Delaware Department of Transportation
DHS	U.S. Department of Homeland Security
DIFT	Detroit Intermodal Freight Terminal
DOT	Department of Transportation
DVRPC	Delaware Valley Regional Planning Commission
EA	Environmental Assessment
EDAB	Economic Development Alliance for Business
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
EWGCC	East-West Gateway Coordinating Council
FAST Corridor	Freight Action Strategy Team for the Everett-Seattle-Tacoma Corridor
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FIHS	Florida Intrastate Highway System
FMSIB	Freight Mobility Strategic Investment Board
FRA	Federal Rail Administration
FRIP	Freight Rail Improvement Project
FSTED	Florida Seaport Transportation and Economic Development
FTA	Federal Transit Administration

FTE	Full-time equivalent
GARVEE	Grant Anticipation Revenue Vehicles
GIS	Geographic Information System
GMAP	California Statewide Goods Movement Action Plan
GSA	U.S. General Services Administration
HB	House Bill
IATF	Intermodal Advisory Task Force
IDOT	Illinois Department of Transportation
IMTC	International Mobility and Trade Corridor
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITI	University of Toledo Intermodal Transportation Institute
ITIP	Interregional Transportation Improvement Program
ITS	Intelligent Transportation Systems
IVI	Intelligent Vehicle Initiative
JFK	John F. Kennedy International Airport
JIT	Port of Oakland Joint Intermodal Terminal
LATTS	Florida Latin American Trade and Tourism Study
LAX	Los Angeles International Airport
LIRI	Chicago Local Industrial Retention Initiative
L RTP	Long-Range Transportation Plan
MARAD	United States Maritime Administration
MAROps	Mid-Atlantic Rail Operations
MDOT	Michigan Department of Transportation
MiRLAP	Michigan Rail Loan Assistance Program
MnDOT or Mn/DOT	Minnesota Department of Transportation
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MTC	Metropolitan Planning Commission
NBDOT	New Brunswick Department of Transportation
NCHRP	National Cooperative Highway Research Program
NEC	Northeast Corridor
NEPA	National Environmental Policy Act
NHI	National Highway Institute
NS	Norfolk Southern Railroad
OAK	Oakland International Airport
OCR	Optical Character Recognition
ODOT	Ohio Department of Transportation
OFCVO	Minnesota DOT Office of Freight and Commercial Vehicle Operations
OFT	Maine DOT Office of Freight Transportation
OPP	Florida DOT Office of Policy Planning
P&W	Providence and Worcester Railroad
PGMN	EWCC Priority Goods Movement Network
PSRC	Puget Sound Regional Council
PTO	Public Transportation Office
REMI	Regional Economic Models, Inc
ReTRAC	Reno Transportation Rail Access Corridor
RFID	Radio Frequency Identification
RIF	Regional Investment Fund
RIPTA	Rhode Island Public Transit Authority
RISPP	Rhode Island Statewide Planning Program

RMA	Regional Mobility Authority
ro/ro	roll-on/roll-off
ROD	Record of Division
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SAM	Texas Statewide Analysis Model
SCAG	Southern California Association of Governments
SEPTA	Southeastern Pennsylvania Transportation Authority
SFO	San Francisco International Airport
SHOPP	State Highway Operations Protection Program
SIS	Strategic Intermodal System
SJC	San Jose International Airport
SP	Southern Pacific Railroad
STB	Surface Transportation Board
STIP	Statewide Transportation Improvement Programs
STL	St. Louis International Airport
STRAHNET	Strategic Highway Network
TAC	Transportation Advisory Committee
TEA-21	Transportation Equity Act of the 21st Century
TEU	Twenty-Foot Equivalent Unit
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIP	Transportation Improvement Programs
TMACOG	Toledo Metropolitan Area Council of Governments
TRAC	Washington State Transportation Center
TRB	Transportation Research Board
TRIP	Transportation Regional Incentive Program
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
UP	Union Pacific Railroad
UPWP	TMACOG Unified Planning Work Program
UWP	Unified Work Program
WCCC	West Coast Corridor Coalition
WSDOT	Washington State Department of Transportation



# Freight and Intermodal Glossaries

## Freight and Intermodal Glossaries.

Glossary Name	Link
FHWA Freight Professional Development Program Freight Glossary	<a href="http://ops.fhwa.dot.gov/freight/fpd/glossary/">http://ops.fhwa.dot.gov/freight/fpd/glossary/</a>
Intermodal Association of North America Intermodal Glossary	<a href="http://www.intermodal.org/statistics_files/Intermodal%20Glossary.html">http://www.intermodal.org/statistics_files/Intermodal%20Glossary.html</a>
Council of Supply Chain Management Professionals Supply Chain and Logistics Glossary	<a href="http://www.cscmp.org/Downloads/Resources/glossary03.pdf">http://www.cscmp.org/Downloads/Resources/glossary03.pdf</a>
American Association of Port Authorities Glossary of Maritime Terms	<a href="http://www.aapa-ports.org/Industry/content.cfm?ItemNumber=1077&amp;navItemNumber=545">http://www.aapa-ports.org/Industry/content.cfm?ItemNumber=1077&amp;navItemNumber=545</a>

*Abbreviations and acronyms used without definitions in TRB publications:*

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation