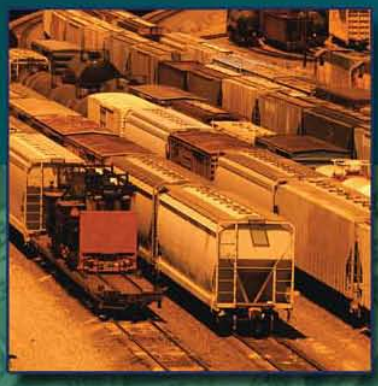
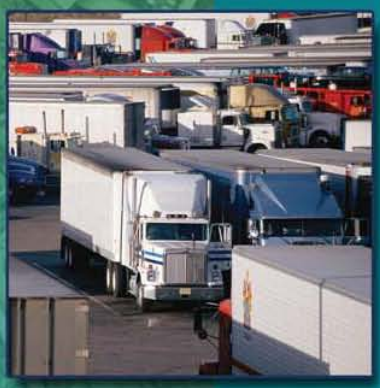
Financing Freight Improvements

January 2007

U.S. Department of Transportation
Federal Highway Administration


Notice

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document. This report does not constitute a standard, specification, or regulation.

The U.S. Government does not endorse products of manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of the document.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Table of Contents

1.0 Introduction 1
Freight Transportation Needs 2
The Role of the Public Sector in Financing Freight Improvements. 5

2.0 Funding and Financing Tools for Freight Investments..... 7
The Federal-Aid Highway System and Federal-Aid Programs... 8
Federal Highway Funding Programs 9
Federal Financing Tools 26
State Grant and Loan Programs for Freight Improvements 33
Other Funding Methods and Financing Tools..... 49

3.0 Case Studies of Freight Financing..... 59
Arkansas 59
California..... 67
Colorado..... 72
Delaware..... 74
Florida 75
Illinois 76
Indiana 85
Iowa 87
Kansas 88
Kentucky 89
Louisiana..... 90
Maine 93
Michigan..... 97
Missouri-Kansas..... 98
North Carolina..... 100
Nevada..... 101
New York..... 103
New Jersey 108
Ohio 110
Oregon 113
Pennsylvania..... 116
Rhode Island..... 118
South Carolina 119
Tennessee 122
Texas 123
Virginia-West Virginia-Ohio..... 126
Washington 128
Wisconsin..... 133

4.0 References..... 137
Federal Funding Programs 137
Federal Financing Tools 138
State Grant and Loan Programs for Freight Improvements 138
Case Studies..... 140
Other Resources..... 141

Glossary of Terms..... 143

Acronyms..... 153

List of Tables

2.1 Federal Funding Programs 23
2.2 Federal Financing Tools 31
2.3 Illustrative State Grant and Loan Programs 34
3.1 Case Studies by Project Type 61
3.2 Case Studies by Funding Type/Project Size 63

List of Figures

1.1 2020 Freight Shipments by Mode 2
2.1 Public-Private Partnership Options 54

1.0 Introduction

The Federal Highway Administration's (FHWA) Office of Freight Management and Operations and Office of Planning developed this guidebook as a resource for FHWA, states, metropolitan planning organizations (MPOs), and other parties involved in the identification of freight needs, development of financing plans to fund projects designed to address these needs, and involved in the actual delivery of an eligible project.

This guidebook is composed of four sections:

1. **Funding and Financing Tools for Freight Improvements –** This section describes existing federal funding programs and financing tools that could be considered for funding freight improvements. In addition, this section provides an overview of several programs available through the States that have been created to support the increasing need for the public sector to invest in freight-related infrastructure as a way of promoting economic development and addressing multimodal transportation issues.

2. **Case Studies of Freight Financing –** Each freight project and the approach to funding various freight projects is unique. Valuable information can be gleaned from investigations into the way that a variety of intermodal freight facility projects have been funded. Obviously, larger, more complex projects require more intricate financial planning and tend to require a wide array of funding instruments in delivery of the project. For this reason, this section provides brief summaries of how various types of freight-related projects were financed.

3. **References –** Acknowledging that a significant amount of information is readily available to assist in developing funding strategies for freight projects, additional resources beyond the scope of this guidebook can assist in development of a reasonable project financing plan. This section provides links to such freight financing resources, including additional information on federal and state funding and financing programs.

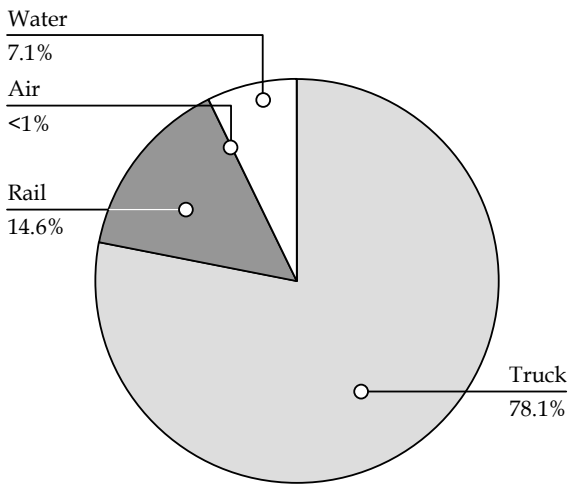
4. **Glossary of Terms and List of Acronyms –** This section provides descriptions for the various funding categories and terms used in

conjunction with the delivery of intermodal freight facility projects, and a list of acronyms of terms used in the guidebook.

Freight Transportation Needs

The efficient movement of goods is key to the continued economic health of the nation. Freight shipment tonnage moved by truck, rail, water, and air increased by 20 percent from 1993 to 2002, and is projected to increase by 65-70 percent by 2020. By 2020 (Figure 1.1), trucks are expected to haul about 75 percent of the tonnage, followed by rail (about 15 percent), water (about 7 percent), and air (less than 1 percent).[1] The efficient movement of these goods will depend on the availability of a reliable and efficient transportation network, including highways, freight rail lines, airports, ports, intermodal terminals, and intermodal connectors.

Figure 1.1 2020 Domestic Freight Shipments by Mode



Trucks carry the largest share of domestic freight movements. In 2002, trucks moved 60 percent of freight by weight. Not surprisingly, truck traffic has doubled over the last 20 years, about the same growth rate as for highway travel as a whole. In 2004, truck traffic accounted for 7.6 percent of the total vehicle-miles traveled (VMT) in the United States, but the impact of truck traffic is noticeable on major routes connecting major population centers, border crossings, and other major hubs of

[1] U.S. Department of Transportation, Federal Highway Administration. *Freight Facts and Figures 2005*.

activity. According to the 2004 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance (2004 C&P Report),[2] trucks account for 30 percent of the vehicles on 20 percent of the Interstate System. A study[3] on freight bottlenecks on highways found that most bottlenecks are located at Interstate urban interchanges. Overall, highway truck bottlenecks generate 243 million hours of truck delays annually at a cost of $7.8 billion per year.

Congestion is a problem that affects both the movement of people and goods. Between 1980 and 2004, route miles of public roads increased by 4 percent compared with a 94 percent increase in VMT. The 2004 C&P Report estimates the highway capital investment needs, at all levels of government, at $73.8 to $118.9 billion per year (2004 dollars), which is much higer than current funding available. Meeting highway capital investment needs certainly benefits the movement of goods by truck.

Other important highway infrastructure investment needs include additional and enhanced rest areas, improvements to intermodal connector facilities, improved operations at gateway and border crossings, and delivery of safety improvements at rail-highway crossings

The physical condition of many existing National Highway System Intermodal Connectors has been identified as a concern along with the adequacy of the mileage designated as intermodal connectors. Many large nationally and regionally significant intermodal freight terminals are connected to higher order roadway networks like the Interstate System by local streets and roads that local governments struggle toward keeping in good physical condition. According to the 2004 C&P Report, about one-third of the intermodal connector system is in need of additional capacity due to current congestion conditions and over 40 percent of intermodal connector mileage needs some type of pavement or lane width improvement. Improved land access from highway networks to airports and ports is critical for the movement of goods across the nation.

---

[2] U.S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration. *2004 Status of the Nation's Highway, Bridges, and Transit: Conditions and Performance – Report to Congress*. Washington, D.C., February 2006.

[3] U.S. Department of Transportation, Federal Highway Administration. *An Initial Assessment of Freight Bottlenecks on Highways*. Prepared by Cambridge Systematics and Battelle Memorial Institute. October 2005. Available at http://www.fhwa.dot.gov/policy/otps/bottlenecks/index.htm.

Railroads are currently serving record volumes, despite the fact that rail miles have continued to decline since their peak in the 1920s. Just a two-year comparison of statistics for the seven Class I railroads operating in the United States shows a decline in rail miles from 97,662 in 2004 to 95,830 in 2005, while tonnage increased from 1.84 billion in 2004 to 1.90 billion in 2005.[4] Volumes in 2006 are up 2.8 percent over 2005 through the first 29 weeks of the year.[5] Railroads have been reducing track through mergers and branchline rationalization in an effort to reduce costs. Increased volumes are resulting from higher densities on mainlines, which has so far offset traffic lost through the reduction in rail miles. The result is that railroads are currently operating at capacity in many parts of the country and have little ability to expand their role in freight transportation to more desirable levels.

The AASHTO Freight Rail Bottom Line Report[6] estimates that shifting all freight rail to trucks would add 92 billion truck VMT, creating the need for an additional $64 billion in highway improvements over the next 20 years. Clearly, it is in the nation's interest to keep the rail system operating effectively. Assuming rail maintains its current share of freight movements, annual capital for freight system needs were estimated between $5.3 to $11.2 billion.

The interface among major transportation modes (i.e., highway, rail, air and waterborne) is a critical junction point in the freight mobility and goods movement chain. Rail and highway access has been identified as one of the main infrastructure needs at major port and airport locations. In addition, the growth of goods moving through ports and airports has increased considerably in recent years, and is expected to continue growing at an increasing rate. Current and future growth projected in freight demand puts increasing pressure on ports' and airports' capacity, especially since demand for port and airport sector has outpaced the growth in capacity.[7]

---

[4] Association of American Railroads *Class I Railroad Statistics*. The seven Class I railroads are Burlington Northern Santa Fe, Canadian National, Canadian Pacific, CSX Transportation, Kansas City Southern, Norfolk Southern, and Union Pacific.

[5] Association of American Railroads, *Freight Traffic Up on U.S. Railroads*, July 27, 2006.

[6] American Association of State Highway and Transportation Officials. *Freight-Rail Bottom Line Report*. Washington, D.C., 2002.

[7] Hudson Institute. *2010 and Beyond: A Vision of America's Transportation Future*. Washington, D.C., 2004.

The Role of the Public Sector in Financing Freight Improvements

The ability of our nation's transportation system to provide for and maintain the efficient movement of freight is important to the continuing economic health of the United States. Ports, railroads, and intermodal terminals are primarily owned and operated by the private sector. On the other hand, while the trucking industry belongs to the private sector, the infrastructure (i.e., highways) required to move goods by truck is owned and financed, for the most part, by the public sector. Governments at all levels have a critical interest in the health of the freight transportation network due to its role as an important contributor to local, state, regional and national economic growth and productivity. In addition, there has been increasing discussion over the last several years about government's role in financing freight-oriented improvements, including investments in private infrastructure where there is a public benefit and, conversely, private sector investments in public infrastructure where, once again, a public benefit is identified.

State and local governments typically have limited experience with *financing* freight transportation improvement projects. Although most freight projects have been delivered in the form of highway improvement projects, eligible for the same funds as other highway program projects, they often require a financial plan that includes a variety of funding opportunities derived from multiple sources, sometimes involving complex public-private partnership arrangements. These projects often require specialized finance skills not typically available within State departments of transportation (DOT), metropolitan planning organizations (MPOs), or local governmental units (i.e., county, city, town, etc.).

THIS PAGE INTENTIONALLY LEFT BLANK

2.0 Funding and Financing Tools for Freight Improvement Improvements

This section provides an overview of existing federal and state funding programs and financing tools that could be used to facilitate freight investments.

Federal programs can be described as one of two types distinguished by the manner in which funding is made available:

1. **Funding Programs,** that can be targeted to specific projects to address freight transportation needs.

2. **Financing Tools,** that include loans, credit enhancement, and tax-exempt financing programs. Loans and credit enhancement programs allow states to leverage both public and private resources and stimulate capital investment in transportation infrastructure. Local financing programs can be used to provide property tax relief and other tax benefits for investments made to improve efficiency or increase the capacity of the freight transportation system by reducing or eliminating tax burdens on interest paid by investors.

Some states have created grant and loan programs to stimulate freight investment. This section also presents information on several of these programs.

Additionally, this section provides an overview of other funding and financing tools – such as dedicated revenue sources, public debt, and institutional arrangements – that have been used by states, local government, and the private sector to finance freight projects.

The Federal-Aid Highway System and Federal-Aid Programs

The Federal-aid Highway System is defined in law as the National Highway System (NHS). The NHS is comprised of certain roadways identified as being of interest nationally. The NHS includes the Dwight D. Eisenhower National System of Interstate and Defense Highway (the "Interstate System"), the Strategic Highway Network (StraHNet), other Principal Arterial roadways not designated as part of the Interstate or StraHNet systems and connections from the NHS to intermodal or strategic military facilities. Highway program funding is not limited to the Federal-aid System as described above; the Surface Transportation System (STP) funds are viewed as a State administered program and may be used to fund projects on the NHS as well as other roadways not functionally classified as Rural Minor Collectors or Rural and Urban Local System roadways. NHS and STP eligible roadways, thereby, define the roadway systems eligible for federal highway aid. States and MPOs use the funding they receive for a wide variety of highway program-related activities including planning, design, environmental studies, construction, reconstruction, and improvements on the Federal-aid highway system authorized through legislation enacted by Congress. In general, funding under the Federal-aid highway program falls into two categories depending on the manner by which they are distributed to the States: apportionments and allocations. A significant difference between apportioned and allocated highway funding programs is that each state is guaranteed to receive funding via apportioned programs each year while there are no guarantees that a particular state will receive highway funding via an allocation in any given year. On a broader level, apportioned programs are guaranteed to be funded each year as long as authorizing legislation is in place while Congress may chose not to fund an authorized allocated program in any given fiscal year.

1. **Apportionments** are distributed annually to all states via formula provided in law. Apportioned funds are made available to the states through the funding programs authorized by Congress. Once apportionments are distributed to states using these

formulas,[8] the use of these funds is subject to statewide and metropolitan planning process requirements provided in law and regulation. Although, the funding is federal, and must be used for projects that fit highway program eligibility criteria and follow all federal environmental and contracting rules (among others), states and MPOs have the discretion to determine which eligible projects will receive funding. The majority of the programs funded through the Highway Trust Fund (approximately $40 billion annually) are distributed through apportionments, and programmed by state and local governments and agencies. Thus, freight project sponsors (such as port authorities, local governments, industry members, and others) interested in funding projects with these types of federal-aid funds should work through their state and MPOs, rather than directly through FHWA or U.S. Department of Transportation (U.S. DOT).

2. **Allocations.** Congress creates and identifies intended funding levels for "discretionary" programs. To select projects under a discretionary program, the U.S. DOT conducts a nationwide selection process among eligible projects, under congressionally mandated criteria. Congress also has chosen to direct federal transportation funding specifically to states, local governments, or projects. This is often referred to as earmarking. In both cases, federal funds are not distributed by formula, but allocated to specific states or projects. Projects seeking discretionary funding under programs created by Congress must participate in the discretionary selection process, as designed by Congress and announced by U.S. DOT, typically in the Federal Register.

Federal Highway Funding Programs

Specific federal funding programs that can be used to fund freight transportation improvements are classified as:

[8] Apportionment formulas for Federal-aid Highway Programs are available in Table FA-4A of Highway Statistics, http://www.fhwa.dot.gov/policy/ohim/hs04/htm/fa4a.htm.

Formula Distributed Highway Funding Programs. These include Interstate National Highway System (NHS), Surface Transportation Program (STP), Interstate Maintenance (IM), and Coordinated Border Infrastructure Program. These programs are typically used to fund highway improvements, although the STP contains provisions for other transportation investments.

1. **Special Funding Programs.** Programs in this category are identified by their specific program goals and objectives and, consequently, special eligibility criteria. For example, only certain areas, as identified by the U.S. Environmental Protection Agency (USEPA) are eligible to receive Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds and these funds can only be used on projects that can demonstrate a reduction in highway-based vehicle emissions. Also included is Highway Bridge Program, Railway-Highway Crossings, Truck Parking Facilities, Capital Grants for Rail Line Relocation projects, the Fixed Guideway Modernization Program, and other federal funding programs.

3. **Discretionary Programs.** There are several discretionary programs that support freight mobility projects, such as Projects of National and Regional Significance (PNRS), National Corridor Infrastructure Improvement Program and the Freight Intermodal Distribution Grant Program. Although most of these programs are fully earmarked in the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), they have been included in the guidebook to demonstrate the potential of these discretionary programs to support additional freight investment.

Table 2.1 at the end of the section summarizes the funding programs, including project eligibility and funding levels (where applicable) authorized in SAFETEA-LU for fiscal years (FY) 2005 through 2009.

NHS Examples:

- *North Carolina Railroad Improvement Program (page 100)*
- *Portway (New Jersey) (page 108)*

HIGHWAY FUNDING CORE PROGRAMS

National Highway System (NHS) – 23 USC 103, 104(b)(1)

SAFETEA-LU Funding (FY 2005-2009): $30.5 Billion

The NHS is currently comprised of approximately 160,000 miles (256,000 kilometers) of roadway that have been determined to be important to the

nation's economy, defense, and mobility. The NHS includes the following five subsystems of roadways: 1) Interstate; 2) Other Principal Arterial; 3) Strategic Highway Network (StraHNet); 4) major strategic highway connectors providing access between major military installations and StraHNet; and 5) intermodal connectors. The NHS program provides funding for roadways designated as part of the National Highway System, including intermodal connectors between the NHS and intermodal terminals. Eligible activities include construction, reconstruction, resurfacing, and rehabilitation on a roadway connecting the NHS with a truck-rail facility, port, pipeline terminal, or an airport.

The federal share of NHS funding is 80 percent. When the funds are used for Interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the federal share may be 90 percent. Certain safety improvements listed in 23 USC 120(c) have a federal share of 100 percent.

Surface Transportation Program (STP) – 23 USC 133, 104(b)(3), 140

SAFETEA-LU Funding (FY 2005-2009): $32.6 Billion

The STP program provides flexible funding for projects on any federal-aid highway, bridges on public roads, transit capital investments, and intracity and intercity bus terminals and facilities. Eligible freight projects include:

- Preservation of abandoned rail corridors;
- Bridge clearance increases to accommodate double-stack freight trains;
- Capital costs of advanced truck stop electrification systems; and
- Freight transfer yards.

The federal share of STP funding is generally 80 percent. When the funds are used for Interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the federal share may be 90 percent. Certain safety improvements listed in 23 USC 120(c) have a federal share of 100 percent.

STP Examples:

- *Railroad Crossing Reliability Program (Dallas-Fort Worth, Texas) (page 123)*
- *Red Hook Container Barge (Brooklyn, New York) (page 103)*
- *Port of Tacoma Overpass (Tacoma, Washington) (page 132)*

Interstate Maintenance (IM) – 23 USC 119, 104(b)(4), 118(c)

SAFETEA-LU Funding (FY 2005-2009): $25.2 Billion

The IM program provides funding for resurfacing, restoring, rehabilitating and reconstructing (4R) routes on the Interstate System. These funds cannot be used to provide additional capacity on Interstate routes, and freight-specific projects are not eligible, although some activities may improve freight mobility.

The federal share is 90 percent, subject to the sliding scale adjustment. Certain safety improvements listed in 23 USC 120(c) have a federal share of 100 percent.

Coordinated Border Infrastructure Program – SAFETEA-LU Section 1303

SAFETEA-LU Funding (FY 2005-2009): $833 Million

The Coordinated Border Infrastructure Program provides funding for projects in border states that improve international cross-border movements of passenger vehicles and cargo. Previously provided as an allocated program, SAFETEA-LU changed the distribution mechanism to formula-based. Funds are distributed by formula to international border states based on factors related to the movement of people and goods through the land border ports of entry within the boundaries of the state as follows:

- 20 percent based on the number of incoming commercial trucks;
- 30 percent based on the number of incoming personal motor vehicles and buses;
- 25 percent based on the weight of incoming cargo by commercial trucks; and
- 25 percent based on the number of land border ports of entry.

Eligible projects should be located within 100 miles of the border and may include the construction of transportation and supporting infrastructure, operational improvements, or coordination of planning activities. A border state may use these funds to construct a project in Canada or Mexico, if the project directly and predominantly facilitates cross-border vehicle and cargo movement at an international port of

entry in the border region of the state. Canada/Mexico must assure that the project will be constructed to standards equivalent to those in the United States, and be maintained and used over the useful life of the facility only for the purpose for which the funds were allocated.

The federal share is generally 80 percent. When the funds are used for Interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the federal share may be 90 percent. Certain safety improvements listed in 23 USC 120(c) receive a federal share of 100 percent.

Special Funding Programs

Congestion Mitigation and Air Quality Improvement Program (CMAQ) – 23 USC 149, 104(b)(2), 126(c)

SAFETEA-LU Funding (FY 2005-2009): $8.6 Billion

The CMAQ program funds transportation projects and programs that improve air quality (by reducing transportation-related emissions) in nonattainment and maintenance areas for ozone, carbon monoxide (CO), and particulate matter (PM_{10}, $PM_{2.5}$).

CMAQ funds have been used for freight-related projects that improve air quality by reducing truck, locomotive or other emissions. Examples of CMAQ-funded freight projects include construction of intermodal facilities for moving containers off of highways and onto rail, defraying barge operating costs, rail track rehabilitation, diesel engine retrofits, idle-reduction projects, and new rail sidings. Additionally, though previously eligible, SAFETEA-LU highlighted advanced truck stop electrification system at truck parking facilities, on-road diesel engine retrofits, and other cost-effective mitigation activities as CMAQ eligible projects. In addition, SAFETEA-LU provided new eligibility for nonroad diesel engine retrofit projects.

CMAQ funds may be used to fund construction and other activities that could benefit a private entity, if it can be documented that the project will remove truck traffic on the Federal-aid system or reduce other freight-related emissions, thus improving the region's air quality. This would be accomplished through a public-private partnership agreement. It is the public-private partnership agreement that allows spending public CMAQ funds on most private freight projects. CMAQ is often the only funding source that many freight projects can access.

CMAQ Examples:

- *Dixie Siding Installation (Indianapolis, Indiana) (page 85)*
- *Auburn Intermodal Transfer Facility (Auburn, Maine) (page 93)*
- *DVRPC CMAQ Competitive Program (New Jersey-Pennsylvania) (page 116)*

The federal share is generally 80 percent for CMAQ projects. Certain other activities, including carpool/vanpool projects, priority control systems for emergency vehicles and transit vehicles, and traffic control signalization receive a federal share of 100 percent.

Highway Bridge Program – 23 USC 144

SAFETEA-LU Funding (FY 2005-2009): $21.6 Billion

The Bridge Program provides funding for replacement, rehabilitation, and systematic preventive maintenance of bridges. States must use a minimum of 15 percent of the funding for projects on off-system bridges (i.e., on non-federal-aid eligible roadways).

The federal share for all projects, except those on the Interstate System, is 80 percent. For those on the Interstate System, the federal share is 90 percent.

Railway-Highway Crossings – 23 USC 130

SAFETEA-LU Funding (FY 2006-2009): $880 Million

Formerly a set-aside of the STP program, the Railway-Highway Crossings program provides funding for projects that improve safety at public highway-rail at-grade crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. SAFETEA-LU requires that states set aside at least 50 percent of the funding allocation for the installation of protective devices at rail-highway crossings. If all needs for installation of protective devices have been met, then the funds available can be used for other at-grade crossing projects eligible under this program. The federal share is 90 percent.

Rail-Highway Grade Crossing Examples:

- *Ohio Southern Rail Line Rehabilitation* *(page 109)*
- *Southern Tier Project (Hornell, New York to Corry, Pennsylvania)* *(page 105)*

Eligible projects include:

- Separation or protection of grades at crossings;
- The reconstruction of existing railroad grade crossing structures; and
- The relocation of highways or rail lines to eliminate grade crossings.

Truck Parking Facilities – SAFETEA-LU Section 1305

SAFETEA-LU Funding (FY 2006-2009): $25 Million

The Truck Parking Facilities is a pilot program that provides grants for projects that address the shortage of long-term parking for commercial vehicles on the NHS. Eligible projects include construction of new or expanded commercial vehicle parking facilities, construction of turnouts for commercial vehicles, improvement to interchanges, electrification systems, and Intelligent Transportation System (ITS) deployments promoting availability of parking.

The federal share for Truck Parking Facilities funding is generally 80 percent. Certain safety improvements listed in 23 USC 120(c) receive a federal share of 100 percent.

Capital Grants for Rail Line Relocation Projects – 49 USC 20154 (SAFETEA-LU Section 9002)

SAFETEA-LU Funding (FY 2006-2009): $1.4 Billion
(Subject to annual appropriation)

The Rail Line Relocation Grant program provides grants to states for local rail line relocation and improvement projects that improve rail traffic safety, motor vehicle traffic flow, community quality of life, or economic development, or involve relocation of any portion of the rail line. SAFETEA-LU authorized $350 million per year for FY 2006 through 2009, subject to appropriations. No funds were appropriated for this program in FY 2006. At least 50 percent of the funds shall be awarded for grants of $20 million or less. The federal share shall not be more than 90 percent.

Federal Transit Administration (FTA) Fixed Guideway Modernization Program – 49 USC 5337 (SAFETEA-LU Section 3035)

SAFETEA-LU Funding (FY 2006-2009): $6.1 Billion

FTA's Fixed Guideway Modernization program provides funding for capital improvements on "fixed guideway" systems, including heavy rail, commuter rail, high-occupancy vehicle (HOV) systems, and light rail. Transit and commuter rail providers are eligible to receive funds from this program for systems that have been in place for at least seven years. The funds are allocated to urbanized areas by statutory formula. Although freight projects are not eligible to use this funding source,

capital improvements on passenger rail lines shared with freight rail could benefit railroads. The federal share for eligible projects is 80 percent.

Federal Aviation Administration (FAA) – Airport Improvement Program (AIP)

AIP Examples:

- *Stockton Airport Freight Terminal (California)* *(page 71)*
- *Air Freight Regional Hubbing Facility (Columbia, South Carolina)* *(page 119)*

FAA's Airport Improvement Program (AIP) provides funding for airport planning and development projects at airports included in the *National Plan of Integrated Airports Systems* (FAA AIP Handbook). Eligible airports must meet the following criteria:

- Cargo service airports receiving cargo in excess of 100 million pounds annually; and
- Private commercial airports that enplane more than 10,000 passengers annually.

For large and medium primary hub airports, the grant covers 75 percent of eligible costs (or 80 percent for noise program implementation). For small primary, reliever, and general aviation airports, the grant covers 95 percent of eligible costs. Eligible projects include those improvements related to enhancing airport safety, capacity, security, and environmental concerns. In general, sponsors can use AIP funds on most airfield capital improvements or repairs except those for terminals, hangars, and non-aviation development.

OTHER FEDERAL FUNDING PROGRAMS (NON-U.S. DOT)

U.S. Army Corps of Engineers (USACE) – Harbor Maintenance Trust Fund

Harbor Maintenance Examples

- *Little Rock Port Authority Slackwater Harbor (Arkansas)* *(page 59)*
- *Port of Humboldt Dredging (California)* *(page 68)*

The Harbor Maintenance Trust Fund (HMTF) provides funding for operations and maintenance (i.e., dredging costs) of federally authorized channels for commercial navigation. Ports located along federal navigation channels are eligible to receive HMTF funding. The USACE FY 2007 budget includes approximately $2.3 billion for Operations and Maintenance (O&M), of which $707 million (31.3 percent) will be appropriated from the HMTF. The funds are distributed among 21 designated USACE regions. The O&M budget for commercial navigation expenditures is estimated at $1.3 billion (56 percent).

The federal share of O&M expenses funded by HMTF is 100 percent in coastal ports with a harbor less than 45 feet deep, and 50 percent for ports with harbors more than 45 feet deep.

U.S. Department of Commerce – Economic Development Administration (EDA) Funds

EDA provides grants for projects in economically distressed industrial sites that promote job creation and/or retention. Eligible projects must be located within an EDA-designated redevelopment area or economic development center. Eligible freight-related projects include: industrial access roads, port development and expansion, and railroad spurs and sidings. Grantees must provide evidence of economic distress that the project is intended to alleviate. Grant assistance is available up to 50 percent of the project, although the EDA could provide up to 80 percent for projects in severely depressed areas.

During the last quarter of 2005, the EDA announced 117 grants greater than $100,000, totaling almost $103 million. These investments were part of projects that totaled over $240 million. EDA's Fiscal Year 2004 investments totaled approximately $278 million, with grants ranging from $12,000 to $5.6 million.

EDA Examples:

- *Southern Tier Project (Hornell, New York to Corry, Pennsylvania) (page 105)*
- *Port of South Louisiana Rail Spur Upgrade (page 90)*
- *I-55 Access to Center Point Intermodal Center at Deer Run (Joliet, Illinois) (page 81)*

U.S. Department of Agriculture (USDA) – Community Facility Program

The USDA Rural Housing Service's Community Facility Program provides three funding mechanisms to fund construction, enlargement, extension, or improvement of community facilities, providing essential services in rural areas and towns with a population of 20,000 or less. The three programs are 1) Direct Community Facilities loans, 2) Community Facility Loan Guarantees, and 3) Community Facility Grant Program. Grant assistance is available up to 75 percent of the project cost. Eligible transportation-related community facilities include airport hangars, airports, bridges, parking facilities, sidewalks, street improvements, transportation infrastructure for industrial parks, railroads, marinas, municipal docks, and special transportation equipment.

The Community Facility Program provides $297 million in direct loans, $208 million in loan guarantees, and $17 million in grants for FY 2007. The average loan is estimated at $442,000, whereas the average grant is estimated at approximately $32,000. The average loan guarantee is estimated at about $860,000.

Environmental Protection Agency (EPA) – Brownfield Revitalization Program

Through EPA's Brownfield Revitalization Program, the Federal government provides grants and loans for brownfield site cleanup. Brownfield sites could be redeveloped for commercial, residential, and/or industrial uses, including intermodal facilities (e.g., rail-truck transfer facilities). Site cleanup grants provide up to $200,000 per site to fund cleanup conducted by cities, development agencies, nonprofit groups, and similar entities at sites that they own. A 20 percent match (of funds or in-kind services) is required, although this can be waived in the case of hardship. The Revolving Loan Fund (RLF) grants provide up to $1 million per recipient, available for five years, to establish state or locally administered loan funds. Local governments, states, Indian tribes, and entities such as redevelopment agencies, regional councils, and land clearance agencies are eligible for these capitalization grants. RLF also can make low- or no-interest loans for cleanup. Beginning in FY 2003, recipients may use up to 40 percent of a capitalization award for cleanup subgrants at sites owned by subgrantees. Repayment of subgrants is not required. A 20 percent non-federal cost share in the form of money, labor, services, or materials is required.

As of May 2006, EPA has awarded 202 RLF grants totaling $186.7 million, and 238 cleanup grants totaling $42.7 million.

DISCRETIONARY AND OTHER PROGRAMS

This section presents discretionary and other programs included in SAFETEA-LU that support projects with freight infrastructure elements. Through designation to a specific program, Congress allocates funding to carry out specific projects, or provides a set amount to states for a particular type of transportation investment. Funds from the programs presented below are dedicated to the projects specified in SAFETEA-LU.

Discretionary programs are identified for funding at the "discretion" of the Secretary of Transportation or as identified specifically for funding by Congress (also known as "earmarking"). Project sponsors typically submit a request or application and must meet certain eligibility criteria.

High-Priority Projects – 23 USC 117

SAFETEA-LU Funding (FY 2005-2009): $14.8 Billion

The High-Priority Projects Program provides designated funding for specific projects identified in SAFETEA-LU, some of which affect freight mobility. A total of 5,091 projects are identified, each with a specified amount of funding over the five years of SAFETEA-LU. The federal share for projects under this program is generally 80 percent.

Section 1702 of SAFETEA-LU contains the complete list of High-Priority Projects. The full list of projects is available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_public_laws&docid=f:publ059.109.pdf.

Transportation Improvement Projects – SAFETEA-LU Section 1934

SAFETEA-LU Funding (FY 2005-2009): $2.6 Billion

The Transportation Improvement provision in SAFETEA-LU provides approximately $2.6 billion for 466 earmarked projects designated under Section 1934. Some of these projects are freight-related and/or may affect freight mobility, including funding allocations for major freight corridor projects such as the Alameda Corridor East (California) and ReTRAC (Nevada). The federal share for Transportation Improvement projects is generally 80 percent and 100 percent for certain safety projects.

Section 1934 of SAFETEA-LU contains a complete list of Transportation Improvement Projects to be funded through 2009. The full list of projects is available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_public_laws&docid=f:publ059.109.pdf.

Projects of National and Regional Significance – SAFETEA-LU Section 1301

SAFETEA-LU Funding (FY 2005-2009): $1.8 Billion

The Projects of National and Regional Significance program provides funding for high-cost projects that are expected to have national and regional benefits, including: 1) improving economic productivity by facilitating international trade; 2) relieving congestion; and 3) improving transportation safety and security by facilitating passenger and freight movement.

Eligible projects include any surface transportation project eligible for federal assistance under 23 USC, including freight railroad projects. The total project cost must be greater or equal to the lesser of $500 million, or 75 percent of the amount of federal highway assistance funds apportioned to the state where the project is located. The federal share for this program is 80 percent.

SAFETEA-LU authorized $1.8 billion for fiscal years 2005-2009; these funds have been fully earmarked to 25 projects, some of which are freight projects, including the Heartland Corridor (Virginia-West Virginia-Ohio), CREATE (Chicago, Illinois), and the Alameda Corridor East (California). The full list of projects is available on the Office of Operations, Freight Management and Operations Web site, http://www.ops.fhwa.dot.gov/freight/policy.htm.

National Corridor Infrastructure Improvement Program – SAFETEA-LU Section 130

SAFETEA-LU Funding (FY 2005-2009): $1.9 Billion

The National Corridor Infrastructure Improvement Program is a discretionary program that provides funding for construction of highway projects in corridors of national significance to promote economic growth and international or interregional trade. These corridors of national significance include major freight corridors. SAFETEA-LU authorized $1.9 billion for 33 earmarked projects. The federal share for projects under this program is 80 percent. When the funds are used for Interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the federal share may be 90 percent. Certain safety improvements listed in 23 USC 120(c) receive a federal share of 100 percent. The full list of projects is available on the Office of Operations, Freight Management and Operations Web site, http://www.ops.fhwa.dot.gov/freight/policy.htm.

Freight Intermodal Distribution Grant Program – SAFETEA-LU Section 1306

SAFETEA-LU Funding (FY 2005-2009): $30 Million

The Freight Intermodal Distribution Grant Program is a pilot program that provides funding for intermodal freight transportation and distribution facilities at inland ports and intermodal freight facilities. Projects are intended to relieve congestion, improve safety, facilitate international trade, and encourage public-private partnerships.

SAFETEA-LU authorized $6 million per year through FY 2009. All available funds have been earmarked to six projects. The full list of projects is available on the Office of Operations, Freight Management and Operations Web site, http://www.ops.fhwa.dot.gov/freight/policy.htm.

Ferry Boat Discretionary Program – 23 USC 129(c)

SAFETEA-LU Funding (FY 2005-2009): $285 Million

The Ferry Boat Discretionary Program provides funds for the construction of ferry boats and ferry terminal facilities connecting to the NHS. Eligible locations represent logical extensions of the NHS roadways where construction of a bridge is neither practical or feasible. Ferry boat projects eligible under the program include services designed to carry motor vehicles from one point to another including commercial vehicles. A set-aside of $20 million per year is provided for the construction or refurbishment of ferry boats and ferry terminals and their approaches that are part of the NHS in the states of Alaska, New Jersey, and Washington.

The remaining funds ($167 million for fiscal years 2006 through 2009) are available for projects on a competitive basis. Because of the large number of requests, $2 million or less is typically awarded, in order to disburse funding to as many states as possible.

KEY ISSUES AFFECTING FEDERAL FUNDING PROGRAMS

Although SAFETEA-LU expanded the number and type of funding programs available for freight improvement projects, there remain several key issues affecting the ability of states and MPOs to use these programs or funds from other federal agencies to fund freight-specific projects:

- **Project Eligibility –** The programs described above are limited to specific modes or specific types of projects. CMAQ has been widely used for several freight projects, including public-private partnerships. However, CMAQ funds cannot be used for highway improvements that increase capacity for single-occupant vehicles, and are limited to projects that improve air quality in nonattainment or maintenance areas. Projects funded by EDA grants must be located in economically distressed areas (as designated by the EDA) and are limited to projects that attract or

retain jobs. While these funding programs are useful for some projects, many freight transportation improvement projects do not meet these specific eligibility requirements.

- **Competition from Other Priorities –** Traditional programs, such as STP or NHS funds, are more flexible than mode-specific or special programs and can often be used to address a wide range of transportation needs in an area. However, potential freight projects have to compete with other transportation investments for funding under these programs.
- **Multijurisdictional Investments –** The NHS and STP funding programs may not be eligible for multistate freight investments. Federal-aid funds are allocated by formula and must be matched by state or local funds, making it difficult for states to invest in projects beyond their state boundaries.
- **Funding for Complex Projects –** Complex projects that include several construction elements could be funded using a combination of federal programs. For instance, a project that includes improvements on an intermodal connector, bridge rehabilitation, and rail-highway crossing safety improvement would be eligible for NHS, Bridge, and Rail-Highway Grade Crossing funds for respective eligible costs. Examples included in this guidebook in which multiple funding programs have been used to fund freight investments include the North Carolina Railroad Improvement Program (NCRRIP) and the FAST Corridor Program.

Table 2.1 Federal Funding Programs

Funding Program	Eligibility	SAFETEA-LU Funding Level (FY 2005-2009)	Freight Application	Project Size	Who Approves Funding?
Interstate Maintenance (IM) 23 USC 119	Provides funding for resurfacing, restoration, rehabilitation, and reconstruction (4R) of Interstate facilities.	$25.2 billion	Ativities improve freight mobility.	Any size depending on funds available to state DOT; may require combination with other funding sources for very large projects.	State DOTs http://www.transportation.org/?siteid=37&pageid=332
National Highway System (NHS) 23 USC 103	Provides funding on designated highway intermodal connectors to intermodal facilities also NHS.	$30.5 billion	Funds can be applied for construction, reconstruction, resurfacing, and rehabilitation on a roadway connecting the NHS with a truck-rail transfer facility or an airport.	Any size; may require combination with other funding sources for very large projects.	State DOTs http://www.transportation.org/?siteid=37&pageid=332
Surface Transportation Program (STP) 23 USC 133	Funds projects on any Federal aid highway, bridge projects on any public road, transit capital projects, and other state or local projects. Can be used for improvements to accommodate rail freight.	$32.6 billion	Rail freight improvements include: • Lengthening or increasing vertical clearance of bridges; • Adjusting drainage facilities; • Lightning; • Signage; • Minor adjustments to highway alignment.	Any size; may require combination with other funding sources for very large projects.	State DOTs/MPOs http://www.transportation.org/?siteid=37&pageid=332 http://www.ampo.org/directory/index.php
Coordinated Border Infrastructure Program SAFETEA-LU Section 1303	Provides funding to border states for projects that improve the safe movement of motor vehicles and cargo at or across the U.S. border with Canada and Mexico.	$710 million	Projects that facilitate/expedite cross border crossing, such as: Operational improvements related to electronic data interchange and use of telecommunications Safety enforcement facilities related to international trade.	Small projects; requires combination with other funding sources for very large projects.	State DOTs http://www.transportation.org/?siteid=37&pageid=332
CMAQ Improvement Program 23 USC 149	Funds transportation projects in nonattainment and maintenance areas that improve air quality. Can be used for start up costs associated with operations (for up to three years).	$8.6 billion	Freight-related eligible projects include: • Advanced truck stop electrification systems; • Construction of Intermodal freight facilities that result in air quality improvements; • On-road and nonroad diesel engine retrofits; • Cost-effective congestion mitigation activities.	Any size.	State DOTs/MPOs http://www.transportation.org/?siteid=37&pageid=332 http://www.ampo.org/directory/index.php

Table 2.1 Federal Funding Programs (continued)

Funding Program	Eligibility	SAFETEA-LU Funding Level (FY 2005-2009)	Freight Application	Project Size	Who Approves Funding?
Bridge 23 USC 144	Provides funding for replacement, rehabilitation, and systematic preventive maintenance of bridges.	$21.6 billion	Bridge rehabilitation and replacement with freight-related components or serving high truck volumes. In some cases bridge replacements or rehabilitation can benefit freight by increasing height of ships that can pass under a bridge.	Any size; may require combination with other funding sources for very large projects.	State DOTs http://www.transportation.org/?siteid=37&pageid=332
Rail Grade Crossings 23 USC 130	Provides funding to eliminate rail-highway crossing hazards.	$880 million	Eligible uses include: • Separation or protection of at-grade crossings; • Reconstruction of at-grade crossings; • Highway relocation to eliminate crossing; • Rail relocation to eliminate crossing (where most cost-effective).	Small projects; requires combination with other funding sources for very large projects.	State DOTs/MPOs http://www.transportation.org/?siteid=37&pageid=332 http://www.ampo.org/directory/index.php
Truck Parking Facilities SAFETEA-LU Section 1305	New funding program; provides funds for projects addressing the shortage of long-term parking for commercial vehicles on the NHS.	$25 million	Eligible projects include: • Construction of commercial vehicle parking facilities adjacent to truck stops and travel plazas; • Constructing turnouts for commercial vehicles; • Improving geometric design of interchanges to improve truck access to parking facilities; • Advanced truck electrification systems.	Small project; requires combination with other funding sources for very large projects.	U.S. DOT/FHWA
Capital Grants for Rail Relocation Projects SAFETEA-LU Section 9002	New program that provides grants for local rail line relocation and improvement projects. Projects should improve vehicle traffic flow, quality of life, and economic development.	$1.4 billion authorized, subject to appropriations	Relocation of a rail line, such that rail crossing impacts are mitigated.	Any size, although legislation requires that at least half of the funding is used for projects that are $20 million or less.	U.S. DOT/FHWA
FTA Rail Modernization 49 USC 5309	Funds for capital improvements on "fixed guideway" systems that have been operating for at least seven years.	$6.07 billion	Rehabilitation of tracks, structures, signals and communications, power equipment and substations, and preventive maintenance. Rail freight benefits from capital improvements on shared commuter rail lines.	Any size; may require combination with other funding sources for very large projects.	Transit Agencies http://www.fta.dot.gov/35_ENG_HTML.htm
USACE Harbor Maintenance	Funding for operations and maintenance of federally authorized channels for commercial navigation	N/A	Port O&M costs (e.g., dredging)	Small projects; requires combination with other funding sources for very large projects.	USACE http://www.usace.army.mil/

Table 2.1 Federal Funding Programs (continued)

Funding Program	Eligibility	SAFETEA-LU Funding Level (FY 2005-2009)	Freight Application	Project Size	Who Approves Funding?
U.S. Department of Commerce – Economic Development Administration Funds	Grants for projects sites that promote job creation and/or retention in economically distressed industrial. Eligible projects should be located within an EDA-designated redevelopment area or economic development center.	N/A	Industrial access roads, port development and expansion, and railroad sidings.	Small projects; requires combination with other funding sources for very large projects.	U.S. Department of Commerce – EDA http://www.eda.gov
U.S. Department of Agriculture – Community Facility Program	Grants and loans to fund construction, enlargement, extension or improvement of community facilities in rural areas (population less than 20,000).	N/A	Roads, transportation infrastructure for industrial parks, and airports.	Small projects; requires combination with other funding sources for very large projects.	USDA– Rural Development http://www.rurdev.usda.gov/rhs/cf/cp.htm
Environmental Protection Agency – Brownfield Redevelopment Program	Provides grants and loans for brownfield site cleanup.	N/A	Brownfield sites could be redeveloped for commercial, residential, and/or industrial uses, including intermodal facilities (e.g., rail-truck transfer facilities).	Small projects; requires combination with other funding sources for very large projects.	USEPA http://www.epa.gov/brownfields/

Note: Earmarked programs have not been included in this table, since funds are committed to specific projects through 2009.

Federal Financing Tools

Federal financing tools include four mechanisms to finance transportation investments:

1. **Loans**, where a project sponsor borrows federal highway funds directly from a state DOT or the Federal Government [e.g., State Infrastructure Banks (SIB), and TIFIA loans].
2. **Credit Enhancement**, where a state DOT or the Federal Government makes federal funds available on a contingent (or standby) basis [e.g., Transportation Infrastructure Finance and Innovation Act (TIFIA) loan guarantees and lines of credit]. Credit enhancement helps reduce risk to investors and thus allows the project sponsor to borrow at lower interest rates.
3. **Debt financing through Grant Anticipation Revenue Vehicles (GARVEEs) bonds,** where a state DOT can pledge a share of future federal highway funding toward debt service on a long-term bond issue.
4. **Special Experimental Project Number 15 (SEP-15),** allows the Secretary to waive the requirements of title 23 and the regulations under title 23 on a case-by-case basis. SEP-15 allows FHWA to experiment in four major areas of project delivery – contracting, right-of-way acquisition, project finance, and compliance with the National Environmental Policy Act (NEPA) and other environmental requirements.

Table 2.2 shows the financing tools that are included in SAFETEA-LU.

TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT (TIFIA) – SAFETEA-LU SECTION 1601

TIFIA Examples:

- *ReTRAC (Reno, Nevada)* *(page 101)*
- *Cooper River Bridge (Charleston, South Carolina)* *(page 121)*

The TIFIA credit program, originally enacted in the Transportation Equity Act for the 21st Century (TEA-21), was modified by SAFETEA-LU. The strategic goal of this program is to leverage limited federal resources and stimulate private capital investment by providing credit assistance (up to 33 percent of the project cost) for major transportation investments of national or regional significance. Credit assistance is provided through secured loans, loan guarantees, or lines of credit. Project costs must be at least $50 million or one-third of the state's annual apportionment of federal-aid highway funds whichever is less. SAFETEA-LU expanded TIFIA eligibility to certain private rail projects. Eligibility for freight facilities include:

- Public or private freight rail facilities providing benefits to highway users;
- Intermodal freight transfer facilities;
- Access to freight facilities and service improvements, including capital investments for ITS; and
- Port terminals, only when related to surface transportation infrastructure modifications to facilitate intermodal interchange, transfer, and access into and out of the port.

SAFETEA-LU authorizes $122 million per year to pay the subsidy costs of supporting federal credit under TIFIA. There is no limit on the amount of credit assistance that can be provided to borrowers in a given fiscal year. Repayment of TIFIA loans is required to come from tolls, user fees, or other dedicated revenue sources. As of July 2006, TIFIA assistance amounted to $3.2 billion, leveraging $13.2 billion in transportation investments for a total of 14 projects. About $994 million in TIFIA debt has been repaid to date. Additional information on this financing program is available at http://tifia.fhwa.dot.gov/.

STATE INFRASTRUCTURE BANKS (SIB) – SAFETEA-LU SECTION 1602

The SIB program, expanded under SAFETEA-LU, allows all states, the District of Columbia, Puerto Rico, and other United States territories to establish infrastructure revolving funds eligible to be capitalized with federal transportation dollars authorized through FY 2009. In addition, the implementation of multistate SIBs is permitted, which may encourage states to implement and fund projects (including regional freight improvements) that cross jurisdictional boundaries. States also are allowed to create a rail account within the SIB using funds available to capital projects under Subtitle V (Rail Programs) of 49 USC. Through the SIB, states can issue loans and other credit tools to public and private sponsor of transportation infrastructure projects.

SIB Examples:

- *Ohio Southern Rail Line Rehabilitation (page 109)*
- *Cooper River Bridge (Charleston, South Carolina) (page 121)*

The SIB program was created within the Intermodal Surface Transportation Efficiency Act (ISTEA) legislation, and re-enacted under Transportation Equity Act fro the 21st Century (TEA-21). The first SIB pilot program was open to 10 states, but was expanded to include 38 states plus Puerto Rico. Under TEA-21, only four states (California, Florida, Missouri, and Rhode Island) could transfer additional federal

funding to further capitalize their banks. Other SIBs could continue to operate by using whatever funds had already been deposited in the bank, supplementing the initial capitalization with additional state or local funds.

States participating in the SIB program may capitalize their account(s) in their SIBs with federal surface transportation funds for each of FY 2005-2009 as follows:

- **Highway Account –** Up to 10 percent of the funds apportioned to the state for the NHS, STP, Bridge, and Equity Bonus.
- **Transit Account –** Up to 10 percent of funds made available for capital projects under Urbanized Area Formula Grants, Capital Investment Grants, and Formula Grants for Other Than Urbanized Areas.
- **Rail Account –** Funds made available for capital projects under Subtitle V (Rail Programs) of 49 USC.
- The State must match federal funds used to capitalize the SIB on an 80-20 Federal/non-Federal basis.

Currently 32 states and Puerto Rico participate in the NHS and TEA-21 programs. These states have issued more than $5 billion in loans. No states have entered into cooperative agreement for SAFETEA-LU SIBs to date.

RAIL REHABILITATION AND IMPROVEMENT FINANCING (RRIF) – SAFETEA-LU SECTION 9003

RRIF Examples

- *Iowa Interstate Railroad Rehabilitation and Purchase of Locomotives* *(page 87)*
- *Riverport Railroad Rehabilitation and Yard Expansion (Savanna, Illinois)* *(page 83)*

The RRIF program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. Direct loans can fund up to 100 percent of a railroad project with repayment terms of up to 25 years and interest rates equal to the cost of borrowing to the government. Thirteen loans have been issued since 2002 for a total of $517 million. The smallest and largest loans approved were $2.1 million (Mount Hood Railroad) and $233 million (Dakota, Minnesota & Eastern Railroad), respectively.

SAFETEA-LU authorizes $35 billion for this credit program, of which $7 billion is directed to short line and regional railroads. In addition, SAFETEA-LU eliminated two major issues that had made RRIF loans virtually unusable to the railroads. First, it removed the requirement

that collateral be provided. Second, it removed the "lender of last resort" provision, that required applicants to provide evidence that private lending was denied for the project by two lenders.

GARVEE BONDS

A Grant Anticipation Revenue Vehicle (GARVEE) bond is a financing instrument that allows states to issue debt backed by future federal-aid highway revenues. Eligibility for freight projects is constrained by the underlying federal-aid highway programs that will be used to repay debt service.

GARVEE Examples:

- *Rhode Island Freight Rail Improvement Project (page 118)*
- *Widening of I-64, I-65, and I-75 (Kentucky) (page 89)*

PRIVATE ACTIVITY BONDS

Title XI Section 11143 of SAFETEA-LU amends Section 142(a) of the IRS Code to allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities. Therefore, states and local governments are allowed to issue tax-exempt bonds to finance highway and freight transfer facility projects sponsored by the private sector. SAFETEA-LU includes a cap of $15 billion on private activity bonds.

Passage of the private activity bond legislation reflects the Federal Government's desire to increase private sector investment in United States transportation infrastructure. Providing private developers and operators with access to tax-exempt interest rates lowers the cost of capital significantly, enhancing investment prospects. Increasing the involvement of private investors in highway and freight projects generates new sources of money, ideas, and efficiency.

SPECIAL EXPERIMENTAL PROJECT 15 (SEP-15)

SEP-15 is an experimental process for FHWA to identify, for trial evaluation, new public-private partnership approaches to project delivery. It is anticipated that these new approaches will allow the efficient delivery of transportation projects without impairing FHWA's ability to carry out its stewardship responsibilities to protect both the environment and American taxpayers.

SEP-15 addresses, but is not limited to, four major components of project delivery:

- Contracting;
- Compliance with environmental requirements;
- Right-of-way acquisition; and
- Project finance.

Elements of the transportation planning process may be also involved. SEP-15 applications may include suggested changes to the FHWA's traditional project approval procedures and may require some modifications in the implementation of FHWA policy. Deviations from current title 23 USC, requirements and generally applicable FHWA regulations also may be involved.

Key Issues Affecting Federal Financing Tools

SAFETEA-LU greatly enhanced the loan and credit enhancement programs available to finance freight improvements. Some of these programs are primarily targeted at major transportation improvements, which can limit their applicability in some regions. Although SAFETEA-LU reduced the minimum project size for TIFIA loans, projects must still cost at least $50 million, or one-third of a state's annual federal-aid apportionments, whichever is less. While some freight projects are large, multimodal projects that fit within this category, many others are small, local roadway, rail, or access projects that do not meet this threshold. SIB loans and GARVEE bonds are more suitable for smaller freight investments.

Table 2.2 Federal Financing Tools

Funding Program	Eligibility	SAFETEA-LU Funding Level (FY 2005-2009)	Application	Project Size	Who Approves Funding?
Transportation Infrastructure Finance and Innovation Act (TIFIA) SAFETEA-LU Section 1601	Provides loans and credit assistance for major transportation investments of national or regional significance, including public intermodal freight facilities. SAFETEA-LU expanded TIFIA eligibility to private rail projects. Private sponsors are eligible.	SAFETEA-LU authorizes $122 million per year to pay the subsidy costs of supporting federal credit under TIFIA. This level of funding can support loans with a total value of more than $2 billion annually.	Any project eligible for federal funding under Title 23 and Chapter 53 of Title 49. International bridge or tunnel Intercity passenger bus and rail facilities and vehicles (including Amtrak and magnetic levitation systems) Freight-specific projects eligible for TIFIA include: • Public or private rail facilities providing benefits to highway users; • Intermodal freight transfer facilities; • Access to freight facilities and service improvements, including ITS; • Surface transportation infrastructure modifications to facilitate intermodal interchange, transfer, and access into and out of ports.	$50 million minimum, no specific maximum, but credit assistance under TIFIA can only support 33% of eligible project costs.	U.S. DOT http://tifia.fhwa.dot.gov
State Infrastructure Banks (SIB) SAFETEA-LU Section 1602	SAFETEA-LU authorizes all 50 states, the District of Columbia, Puerto Rico, and U.S. territories to establish infrastructure revolving funds that can be capitalized with federal transportation funds authorized through FY 2009. Current legislation allows for the creation of rail accounts. Private sponsors are eligible.	Highway Account – up to 10% of NHS, STP, Bridge, and Equity Bonus programs, at the discretion of the state DOT. Rail Account – funds made available for capital projects under Subtitle V (Rail Programs) of Title 49.	Any project eligible for federal funding under Title 23 and Section 5302 of Title 49.	Any size; depends on state capitalization. Generally small projects are funded.	State DOT (and/or SIB Board established). http://www.transportation.org/?siteid=37&pageid=332
Rail Rehabilitation and Improvement Financing (RRIF) SAFETEA-LU Section 9003	Loans and credit assistance to both public and private sponsors of rail and intermodal projects. Private sponsors are eligible.	$35 billion; $7 billion is directed to short line and regional railroads.	Acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities.	Any size; generally small projects.	U.S. DOT/FRA http://www.fra.dot.gov

Table 2.2 Federal Financing Tools (continued)

Funding Program	Eligibility	SAFETEA-LU Funding Level (FY 2005-2009)	Application	Project Size	Who Approves Funding?
Private Activity Bonds SAFETEA-LU Section 11143	Title XI Section 1143 of SAFETEA-LU amends Section 142(a) of the IRS code to allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities. Private sponsors are eligible.	Up to $15 billion.	Surface transportation projects (including highways, toll roads and truck only lanes), international bridges and tunnels receiving federal assistance under Title 23. Rail-truck transfer facilities receiving federal assistance under Title 23 or 49.	Any size; potential for large infrastructure projects.	U.S. DOT http://www.fhwa.dot.gov/ppp/private_activity_bonds.htm
GARVEE Bonds 23 USC 122	Financing instrument that allows state to issue debt backed by future federal-aid highway revenues. Eligibility for freight projects is constrained by the underlying federal-aid programs that will be used for debt service. 63-20 Corporation may be eligible.	N/A	All Title 23 eligible projects. Intermodal facilities that are eligible for federal assistance under Title 23 or 49; NHS-eligible intermodal connectors.	Typically large projects or groups of projects ($10 million or larger).	State DOT/Local Government must be willing to dedicate future revenue. http://www.transportation.org/?siteid=37&pageid=332

In addition, while loan and credit enhancement programs can accelerate the time it takes to move projects from the planning stage to actual implementation, some states – particularly those that do not have many large urban areas or significant congestion problems – do not have a need to accelerate projects, making these types of programs less useful. In these areas, regional or statewide freight mobility can be effectively improved by using smaller projects that do not require innovative financing techniques.

Other issues on the application of these financing tools include:

- **Financing Tools Require Dedicated Revenue –** The financing tools described above still require a dedicated revenue source, such as tolls, user fees, or dedicated taxes, to repay debt. Some state DOTs and MPOs find it difficult to identify or develop such dedicated sources of revenue, limiting the use of these financing tools.

- **Some of These Federal Financing Tools Require State Enabling Legislation –** While the use of innovative financing tools has proven to be very useful to accelerate and implement transportation investments, some states are unable to use these tools. For instance, several states have reached the limits on the amount of debt that can be incurred, whereas other states' legislators have not specifically authorized the use of SIBs or GARVEE bonds.

State Grant and Loan Programs for Freight Investments

When it comes to the implementation of freight projects, several states have created innovative programs that provide ongoing capital resources to support freight-related improvements. Illustrative examples of some of these programs are described below.[9] Table 2.3 shows a list of these programs, along with the type of freight modes that they support.

[9] The information in this section has been accumulated over the last few years. Some of these programs contain information that was collected for FHWA's *Funding and Institutional Options for Freight Infrastructure Improvement* (report done in 2002). Updated information has been incorporated were available.

Table 2.3 Illustrative State Grant and Loan Programs

Program	State	Highway	Rail	Airport	Port	Intermodal
California Infrastructure and Economic Development Bank (I-Bank)	CA	●			●	●
California Maritime Infrastructure Bank (CMIB)	CA			●	●	
Florida Seaport Transportation and Economic Development Funding (FSTED)	FL	●	●		●	●
Florida Strategic Intermodal System (SIS)	FL	●	●	●	●	●
Illinois Rail Freight Program (IRFP)	IL		●			
Indiana Rail Service Fund/Grade Crossing Improvement Fund	IN	●	●			
Maine Industrial Rail Access Program (IRAP)	ME		●			
Michigan Rail Loan Assistance Program (MiRLAP)	MI		●			●
Michigan Freight Economic Development Program	MI		●			
Michigan Local Grade Crossing Program	MI	●	●			
Michigan Grade Separation Loan Program	MI	●	●			
Minnesota Port Development Assistance Program	MN				●	
Minnesota Rail Service Improvement Program	MN		●			●
Mississippi Multimodal Transportation Improvement Program	MS		●	●	●	
New York State DOT Industrial Access Program (IAP)	NY	●	●			
Ohio Rail Development Commission (ORDC)	OH		●			
Oregon Port Revolving Fund (OPRF)	OR				●	
Oregon Transportation Investment Act	OR	●				
Pennsylvania Rail Freight Assistance Program (RFAP)	PA		●			
Pennsylvania Airport Assistance Program	PA			●		
Tennessee Aeronautics Transportation Equity Fund (TEF)	TN		●	●	●	
Texas Rail Relocation and Improvement Fund	TX		●			
Virginia Rail Enhancement Funds (VREF)	VA		●			
Virginia Rail Industrial Access Program (RIAP)	VA	●	●			
Washington Freight Mobility Strategic Investment Board (FMSIB)	WA	●	●		●	
Wisconsin Harbor Assistance Program	WI				●	
Wisconsin Rail Freight Programs	WI		●			●

California Infrastructure and Economic Development Bank (I-Bank)

The California I-Bank was established in 1994 to finance public infrastructure and private investments that promote economic growth, revitalize communities, and enhance the quality of life throughout

California. I-Bank's Infrastructure State Revolving Fund (ISRF) Program provides low-cost financing to public agencies for a wide variety of infrastructure projects, including city streets, county highways, state highways, drainage, water supply and flood control, educational facilities, environmental mitigation measures, parks and recreational facilities, port facilities, public transit, sewage collection and treatment, solid waste collection and disposal, water treatment and distribution, defense conversion, public safety facilities, and power and communications facilities. ISRF Program funding is available in amounts ranging from $250,000 to $10,000,000, with loan terms of up to 30 years. The I-Bank issued a second series of ISRF Revenue Bonds in December 2005, worth $52.8 million.

The interest rate is fixed for the term of financing and is set at 67 percent of a tax-exempt "A" rated bond with a weighted average life similar to the I-Bank financing. Projects must pay either a one-time origination fee of 0.85 percent of the ISRF financing amount, or $10,000, whichever is greater, and an annual fee of 0.3 percent of the outstanding principal balance. The origination fee may be included in the ISRF financing amount. There is no required match or leverage amount, and ISRF financing can be the sole source of financing for a project.

California Maritime Infrastructure Bank (CMIB)

In 1994, California State legislation established CMIB as the first statewide, maritime-specific public investment bank in the United States. CMIB was developed to service the financing needs of projects not funded by the State of California or the private sector. The idea behind CMIB is that the bank would request a one-time grant from federal or state sources for initial capitalization. Once capitalized, CMIB's potential tools for financing would include long-term, low-interest loans, and taxable and tax-exempt bonds. Funds provided through CMIB would be less restrictive than other state funding sources such as the State Harbors and Watercraft Revolving Fund (HWRF). For instance, HWRF funds cannot be used on a project for a private tenant on public land, but funds coming from the CMIB could be used for that purpose.

CMIB has been heralded as an innovative financing mechanism in the maritime industry, but it has yet to gain the financial support needed to capitalize the bank and begin loaning to projects. Although, lacking in funding capacity, CMIB has been able to provide conduit financing using its status as a public agency with Joint Powers Authority (JPA). As a

JPA, CMIB has been able to issue bonds to finance several port projects. To date, CMIB has issued $200 million in bonds for several port projects.

Florida Seaport Transportation and Economic Development Funding (FSTED)

Florida has 14 deepwater ports that serve interests in domestic trade, international cargo, and cruise ship operations. The seaports are represented by a trade association, the Florida Ports Council, which succeeded in getting Florida Senate Bill 1316 passed by the Florida Legislature in 1990. This bill established the state-funded Florida Seaport Transportation and Economic Development Program (FSTED). Since then, FSTED Program has been amended from the original $8 million to provide $15 million annually in grants and a total of $25 million annually to support bondable state revenues. State funding cannot exceed 50 percent of the total cost of a project.

In order to be approved, a proposed project must be found to be consistent with the seaport's comprehensive master plan and the local government's comprehensive plan, be of demonstrable economic benefit to the State, and be found consistent with the Florida DOT's adopted five-year work program. Candidate projects to be financed through bondable funding must also meet statutory eligibility and consistency requirements. Waterside dredging-related improvements require a 75/25 port/local government match. Landside access improvements (off-port) and on-port bonded projects require a minimum 50/50 contribution from recipient ports.

Florida Strategic Intermodal System (SIS)

Florida's SIS was established in 2003 to enhance Florida's economic competitiveness by focusing limited state resources on those transportation facilities that are critical to Florida's economy and quality of life. The SIS is a statewide network of high-priority transportation facilities, including the State's largest and most significant commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, and highways.

Legislation enacted in 2003 and 2004 identified SIS as the State's top transportation priority and made all SIS and emerging SIS facilities, including those owned by local governments, independent authorities or

private sector partners, eligible for state funding. Florida DOT's new investment policy is expected to dedicate about $2 billion per year for SIS and Emerging SIS improvement projects by 2015. SIS investments are expected to be funded through a combination of dedicated state funds, anticipated revenues, innovative financing, and joint funding by public and private partners. Florida DOT and its partners will work to expedite project delivery and provide sufficient flexibility in the planning and funding process to address unanticipated economic opportunities.

Implementation of the SIS began in 2004 with the identification and funding of 36 projects on SIS connectors totaling $100 million. The improvements included additional capacity, geometry improvements, and ITS deployments on several SIS connectors; design of exclusive truck lanes to the Port of Tampa; and dredging at Port Manatee.

Illinois Rail Freight Program (IRFP)

The IRFP was established in 1983 by the Illinois DOT to facilitate investments in rail service by serving as a link between interested parties and to channel government funds to projects that achieve statewide economic development. Illinois DOT generally provides low-interest loans to finance rail improvements and, in some cases, provide grants. The focus of the program is on those projects that have the greatest potential for improving access to markets and maintaining transportation cost savings, and those where state participation will leverage private investments to foster permanent solutions to rail service problems. A benefit/cost ratio is used to evaluate potential rail freight projects. The program uses federal and state funding to support this loan program. The federal funds came originally from the Local Freight Rail Assistance Program (LFRA), which was eliminated in the 1990s. State funding comes from General Fund appropriations.

Indiana Rail Service Fund (IRSF) and Grade Crossing Improvement Fund

The IRSF Program is administered by the Rail Section of Indiana DOT. The program provides grants and loans to assist with both the funding of rail infrastructure improvements and with the purchase of lines threatened with abandonment. The level of grant funding available for each project is determined based on project cost, IRSF balance, and the number of anticipated applicants in any funding cycle. The program is targeted towards short line railroads and port authorities (the program's

funds are not available for use by Class I railroads). IRSF grants totaling more than $1.7 million were provided to short line railroads throughout the state for 2006.

IRSF funds have been used to improve one-third of the short line track designated as "excepted" (i.e., lines that are in such poor condition that speed is limited to a maximum of 10 miles per hour (mph) to Class I standards). Program funds also can be used to provide loans to railroads for the purchase or rehabilitation of real or personal property that will be used by the railroad in providing rail transportation services; provide $50,000 annually to the Indiana DOT for rail planning activities; provide money for the high-speed rail development fund; provide grant funding for railroads owned or operated by a port authority; and provide grant funding to a Class II or III railroad for the rehabilitation of railroad infrastructure or railroad construction. The maximum funding provided to any one railroad is $200,000 and a minimum match of 25 percent is required.

The Passive Grade Crossing Improvement Fund was established in 1997 to upgrade at-grade crossings that do not have automatic train-activated warning devices to indicate the presence of an oncoming train. Since the commencement of the fund, more than $1.5 million in state funds has been made available to local jurisdictions and railroads, resulting in over 2,000 passive grade crossing improvements in 36 counties. Examples of eligible improvements include crossbucks, advance warning signs, pavement marking, and overhead streetlights to illuminate a crossing, median barriers, and improvements for better sight distance.

MAINE INDUSTRIAL RAIL ACCESS PROGRAM (IRAP)

Maine DOT provides rail funding through IRAP. This program was designed to encourage economic development and employment growth; preserve essential rail service; enhance intermodal transportation; and preserve rail corridors for future transportation uses. The program, funded through revenues from General Fund bonds, provides up to 50 percent of the estimated project cost. The 2003 transportation bond referendum contained $2.6 million for the IRAP. The Office of Freight Transportation administers the Program, and selects potential projects based on the ratings a project received for 10 criteria that measure the impact on the economy, the environment, and the transportation system.

Michigan Rail Loan Assistance Program (MiRLAP)

The MiRLAP is designed to help preserve and improve Michigan's rail freight infrastructure through the provision of non-interest-bearing loans to fund eligible improvement projects with a repayment period of up to 10 years. The MiRLAP operates as a revolving fund, with an estimated $1.8 million available for the current funding year. Examples of eligible projects include track rehabilitation, bridge and culvert repair, new construction, transload facilities, and rail consolidation projects.

Projects are evaluated to determine their relative merit in conjunction with program goals. The selection process evaluates a project's economic and safety benefits to the public, improvement of rail service to industrial and agricultural rail customers, elimination of grade crossings, and reduction in highway traffic congestion. All loans must be approved by the State Transportation Commission and the State Administrative Board.

Michigan Freight Economic Development Program

The Freight Services and Safety Division of Michigan DOT offers financial assistance to transportation companies, private companies, or local units of government in the development and/or expansion of business and industries. The program offers financial assistance in the form of loan/grants covering up to 50 percent of the rail freight portion of the project when the rail improvement facilitates economic development. All loans are made at a minimum interest rate of 2 percent below the prime rate then in effect. Priority is given to projects that can demonstrate multiple users or the potential for future public use, such as spur tracks into new or expanding industrial parks or transloading facilities. The number of jobs created or retained, total anticipated carloadings, and relative project cost are other important considerations. Over the 1995 through 2005 period, the program has funded 33 projects, for a total state investment of $13.1 million.

Michigan Local Grade Crossing Program

The Local Grade Crossing Program provides local governmental units and railroad companies with assistance for developing and implementing projects to enhance motorist safety at public highway-railroad grade crossings. Locations are selected using a statewide

prioritization system that identifies crossings where safety enhancements will have the greatest benefit to the motoring public.

The selection process evaluates a number of factors, including the average numbers of vehicles and trains per day, the existing level of warning devices, and the five-year vehicle/train crash history. Funding assistance can be used for projects such as the installation of new active warning devices or the upgrade of existing devices.

Michigan Grade Separation Loan Program

The Local Road/Railroad Grade Separation Loan Program was recently established to encourage and facilitate the construction of grade separations where essential local roads must intersect railroads. Loans are available to local road authorities for preliminary engineering and design (capped at 10-15 percent of project costs) and for 100 percent of the construction of new structures (overpasses and underpasses) that separate the grade between local roads and railroads.

The Program is funded with $4 million in state funds. The interest rate varies based on payback term, ranging from 4-5 percent. All applications received are reviewed by Michigan DOT's Freight Services and Safety Division. All recommended loans must be approved by the State Transportation Commission and the State Administrative Board.

Minnesota Port Development Assistance Program (PDA)

The Minnesota Legislature began funding the PDA in 1996. The PDA program is designed to assist private sector operators of public facilities through the provision of grants and loans paid out of a revolving fund.

The program provides a state match of up to 80 percent and requires a local match of at least 20 percent for port improvements. The Ports and Waterways Section of the Minnesota DOT is responsible for the administration of the program.

As of June 2005, the State of Minnesota had appropriated a total of $14.5 million toward the PDA Program. Eligible projects include dredging of dock areas, dock wall reconstruction, building rehabilitation, and bringing facilities up to safety code.

MINNESOTA RAIL SERVICE IMPROVEMENT (MRSI) PROGRAM

The MRSI Program was established in 1976 to prevent the loss of rail service on lines subject to abandonment. As of 2003, the MRSI Program had received $14.5 million in state general funds and $25.5 million in general obligation bonds.

The five subprograms that fall under the broader MRSI Program are presented below:

1. **Rail Line Rehabilitation Program –** This Program provides low- or no-interest loans to rehabilitate and preserve rail lines. Upon completion of the rail rehabilitation project, the railroad repays the State on a negotiated per-car basis or at a predetermined fixed rate. The State provides up to 70 percent of the rehabilitation costs.

2. **Rail Purchase Assistance Program –** This Program helps regional rail authorities purchase rail lines if a financial analysis shows that the line can operate at a profit, that purchase cost and necessary rehabilitation will not exceed benefits, and that the regional railroad authority is capable of operating the rail line or can contract with an operator to do so.

3. **Rail User and Rail Carrier Loan Guarantee Program –** This program helps shippers and carriers to obtain loans for rail rehabilitation and capital improvements. The program guarantees up to 90 percent of the loan.

4. **Capital Improvement Loans –** This Program lends rail users up to $200,000 or up to 100 percent of the project, whichever is less, to improve rail facilities. Capital improvement loans are available to improve rail service through construction or improvements to rail line segments (i.e., side track and team track connections); and to construct or improve facilities used to load, unload, store and transfer freight and commodities. Loans are repaid on a quarterly basis or a lump sum within 10 years.

5. **Rail Bank Program –** This Program is used to acquire and preserve abandoned rail lines for future state, public, and commercial transportation; and for transmission needs (transit, trails, pipelines, etc.).

Minnesota DOT uses the capital improvement portion of the MRSI Program on a regular basis, with other program areas (rail line rehabilitation, rail purchase assistance, rail bank, and rail user and rail carrier loan guarantee) used on an as-needed basis.

Mississippi Multimodal Transportation Improvement Program

The Mississippi Multimodal Transportation Improvement Program was created in 2002 by the Mississippi Legislature, with the purpose of providing funds for nonhighway transportation projects. The legislation establishes funding percentages for each mode as follows: 38 percent for ports, 34 percent for airports, 16 percent for transit systems, and 12 percent for rail. Mississippi DOT has included $5 million annually in its budget for FY 2005 and 2006. To date, the Program has funded 19 port projects, 29 airport projects, 8 rail projects, and 35 transit projects.

New York State Department of Transportation Industrial Access Program (IAP)

The New York State IAP was designed to complement economic development projects where transportation access may pose a problem or may offer a unique opportunity to improve the viability of a project. Awards are made on a 60 percent grant, 40 percent interest-free loan basis, up to a maximum of $1 million or 20 percent of any annual appropriation. The loan must be paid back within five years, although the repayment terms are negotiable. IAP funds are not designed to be a substitute for private financing and are only available to those projects where attempts to obtain conventional (government and private) financing do not result in the necessary support on a timely basis. Eligible work includes design, acquisition of property, public access road/rail construction or reconstruction, curbing, sidewalks, traffic control and safety devices, drainage systems, landscaping, and similar work that may facilitate industrial access. IAP funds cannot be used for debt service payments or for costs incurred prior to the effective date of the agreements.

Ohio Rail Development Commission (ORDC)

The ORDC was established in 1994 within the Ohio DOT to provide assistance to companies for new rail and rail-related infrastructure. ORDC funding is used to promote the retention and development of Ohio companies through the use of effective rail transportation, and also is available to companies that are increasing existing rail operations within the State. ORDC works closely with the Ohio Department of Development and other public and private development-related organizations to provide assistance to companies.

Grant funding is generally limited to projects where significant job creation or retention is involved (25 or more jobs). ORDC loan financing is available to qualified applicants even when jobs are not being created or retained. ORDC's standard loan package is a five-year loan term and an interest rate that equals two-thirds of prime at the time of the loan closing.

Oregon Port Revolving Fund (OPRF)

The OPRF was established in 1977 in order to provide long-term loans at below-market interest rates for the planning and construction of facilities and infrastructure that promote maritime shipping, aviation, and commercial/industrial activities of ports. The fund is focused towards small- and medium-sized projects that are not suitable to finance through a large bond program. The loan fund makes projects possible that otherwise would not be undertaken due to lack of funding. For instance, many ports developing commercial waterfront property would prefer to lease the land rather than sell it. Because businesses usually cannot qualify for a loan to build facilities on leased land, OPRF allows a port to receive money for building in the form of a loan from the State. The port can then build and lease the facility to an interested tenant, while maintaining ownership of the land and retaining the new facility as an asset.

The OPRF loan program is administered by the Port's Division of the Oregon Economic Development Department. Loan applicants are limited to total awards of not more than $3 million outstanding at any one time. The loan term can be as long as 20 years or the useful life of the project, with interest rates set by the Department at market rates, but not less than Treasury Notes of a similar term minus 1 percent.

Oregon Transportation Investment Act (OTIA)

Over the last five years, the Oregon Legislation has enacted the OTIA I, OTIA II, and OTIA III to support Oregon's transportation needs.

OTIA I was passed by the 2001 Legislature with the goal of funding bridge replacement and highway improvement programs. OTIA I increased several Driver and Motor Vehicle fees to secure $400 million in bonds to increase lane capacity and improve interchanges ($200 million), repair and replace bridges ($130 million), and preserve road pavement ($70 million). OTIA II, passed a year later, added $50 million for projects to increase lane capacity and improve highway interchanges, $45 million for additional bridge projects, and $5 million to preserve road pavement. The $500 million in bonds from the two acts was used to leverage $172 million in matching funds from local governments.

OTIA III, signed into law in 2003, provides about $2.5 billion to improve Oregon's highways, roads, and streets over a 10-year period. Of the total, $1.6 billion will be used to repair and replace bridges, $361 million to preserve road pavement, and $500 million to increase lane capacity and improve interchanges. Of the $500 million for capacity and interchange improvements, $100 million was directed to projects that would enhance freight mobility, access to industrial lands, and/or access to job creation sites. The program is supported by increases in title, registration, and other fees authorized by the legislation, as well as transfer payments of $25 million from Oregon DOT's annual state modernization program budget of about $56 million.

Projects for the OTIA program are selected through an extensive public input process. Local governments and area commissions on transportation work together to forward project lists to the Oregon Transportation Commission, which approves the final list. For OTIA III, Oregon DOT worked with local governments and the Oregon Freight Advisory Committee to assist in identifying bridges that are important to freight movements and to identify projects that enhance freight mobility and access.

Pennsylvania Rail Freight Assistance Program (RFAP)

The RFAP provides financial assistance for investment in rail freight infrastructure through grants of up to $250,000 or 70 percent of rail project costs, whichever is less. The purpose of the Program is to

preserve essential freight rail service where economically feasible, and to preserve or stimulate economic growth through new or expanded rail service. Railroads, shippers, and local development agencies can apply for grants through RFAP. The Program is funded with appropriations from the general fund and is administered by the Bureau of Rail Freight within the Pennsylvania DOT. Eligible projects include both maintenance of existing infrastructure and new railroad construction, but funding cannot be used to cover the cost of land, rights of land, buildings, or building materials to construct a new building.

Pennsylvania Airport Assistance Program

Three major programs are administered under Pennsylvania DOT's Bureau of Aviation: Airport Development grants (including the Federal Aviation Administration Block grants); Real Estate Tax Reimbursement grants; and Capital Budget grants. While the FAA has traditionally provided AIP funds directly to airports, it offers states block grants for nonprimary airports. Act 164 of 1984 authorized the Bureau of Aviation to provide assistance to all public airports, including those privately owned, and also provided for expanded airport development and real estate tax relief to public airports. These funds are needed to ensure the growth and development of Pennsylvania's airport system.

The FAA Block Grant, administered by the State, is issued to a sponsor for 90 percent of the federally eligible amount. A grant for state matching funds can be issued for 50 percent of the remaining unfunded amount. Therefore, a single grant will be issued to the sponsor for 90 percent Block Grant funds and 5 percent state and local matching funds. The state grant issued to a sponsor provides for 75 percent of the eligible amount of the project, with local sponsors being responsible for the remaining 25 percent.

Tennessee Aeronautics Transportation Equity Fund (TEF)

TEF was created in 1986. This fund allocates receipts from taxes collected from transportation fuels based on the actual annual individual collection percentage for each mode. Aviation accounts for the largest share, followed by rail and waterways. The funds are used for statewide grants to Tennessee air carrier and general aviation airports, and can cover up to 90 percent of the total cost of airport projects depending on the type of project. The types of projects that are eligible for state

funding are safety projects, and airside and improvements and enhancements. Examples include security fencing, runway repair, drainage, fuel facilities, and access roads. Each request for funding is evaluated on the basis of demonstrated need, consistency with state and local plans, compliance with state standards, availability of funds, and any unique circumstances.

All rail funds were spent on the State's 19 short line railroads. In addition to funds received from the TEF, the Tennessee DOT Rail Program receives a $3.5 million annual transfer from user fees collected. These funds also are used primarily to support the State's short line railroads.

Texas Rail Relocation and Improvement Fund

In November 2005, voters in Texas approved the creation of the Texas Rail Relocation and Improvement Fund. The fund was created to finance or partially fund the relocation and improvement of both privately and publicly owned passenger and freight rail facilities. Eligible projects should: 1) relieve congestion on public highways; 2) enhance public safety; 3) improve air quality; and 4) expand economic opportunity. The Texas Transportation Commission administers the fund and is authorized to issue and sell obligations that will be paid from fund revenues. No funds have been appropriated yet to establish the fund.

Virginia Rail Enhancement Funds (VREF)

VREF was established in 2005 to support improvements for intercity passenger, commuter, and freight rail throughout the State. The VREF provides $23 million in annual, dedicated funding for passenger or freight rail improvements. Use of these funds requires a minimum matching contribution of at least 30 percent, which must come from nonstate sources such as railroads, local governments, or regional authorities.

Projects are selected by the Commonwealth Transportation Board based upon the recommendations of the Rail Advisory Board. Potential uses of the VREF could include the creation of additional track and capacity, track and infrastructure improvements, improved intermodal facilities, and advancement of passenger rail initiatives. Eligible expenses may include preliminary service, engineering, or feasibility study; final

engineering; acquisition, lease, or improvement of rights-of-way or facilities; environmental mitigation directly related to the project; site preparation, including grading, drainage, and relocation of utilities; acquisition, lease, or improvement of railways, including signal and communications equipment; acquisition, lease, or improvement of railroad equipment; and acquisition, lease, or improvement of rolling stock. However, at least 90 percent of VREF funds must be spent on capital improvements.

VIRGINIA RAIL INDUSTRIAL ACCESS PROGRAM (RIAP)

Virginia's RIAP was established in 1987 to provide funds for new or improved access to a business for freight delivery. Businesses wishing to acquire funds from this Program are required to complete an application, which is reviewed by the Economic Development Group of Virginia. Funds are allocated by the Commonwealth Transportation Board. The first $100,000 granted to any one project requires no match from the business. Any funds above $100,000 require a one-to-one match. In FY 2004-2005, the program had funds totaling $1.5 million available for distribution to localities. The funds that are not used do not carry over into the next year. Instead, they are used for highway industrial access projects.

WASHINGTON FREIGHT MOBILITY STRATEGIC INVESTMENT BOARD (FMSIB)

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 Washington DOT. 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 Washington DOT) or emerging corridors; and

3. The project must provide a minimum 35 percent match.

The FMSIB Capital Account was established in 2005 to receive levies from license fees, weight fees, motor vehicle or multimodal fees and private funds. The 2006 funding recommendations are estimated at over $350 million, providing matching funds for a total investment of almost $4 billion.

Wisconsin Harbor Assistance Program (HAP)

Wisconsin's Legislature created the HAP in 1979 to assist harbor communities along the Great Lakes and Mississippi River in maintaining and improving waterborne commerce. The Program provides grants of up to 80 percent of total project cost to publicly owned harbors in Wisconsin for facility improvement projects. Harbor projects typically include dock reconstruction, mooring structure replacement, dredging, and the construction of facilities to hold dredged material.

To be eligible for funding, the project must: benefit facilities that are used for cargo transfer, ship building, commercial fishing, or regular ferry service; be a local unit of government or a private owner of a harbor facility; pass a rigorous benefit/cost analysis; and have been identified in a current Three-Year Harbor Development Plan. Project selection criteria include the economic impact of the project; type and urgency of the project; and priority of the project.

Recent grants include $2 million toward a total project cost of $2.6 million for the construction of a new dock wall for the City of Manitowoc, and $1 million for a dock facility in Milwaukee for the Lake Express high-speed ferry.

Wisconsin Freight Rail Programs

The Wisconsin DOT has been providing freight rail assistance since 1977. Early efforts focused on preserving freight rail service to communities that would otherwise suffer if service was abandoned. In 1992, Wisconsin voters approved an amendment to the state constitution allowing the State to become directly involved in rail acquisition, rehabilitation, and development projects. Currently, two programs operate under this authority: the Freight Rail Infrastructure Improvement Program (FRIIP) and the Freight Rail Preservation Program (FRPP).

FRIIP loans enable the State to encourage a broad array of improvements to the rail system, particularly on privately owned lines. It also provides funding for other rail-related projects such as loading and transloading facilities. Since 1992, $79 million in FRIIP loans have been awarded. The available funding is from repayments of prior loans. The FRIIP provides up to 100 percent loans for rail projects that connect an industry to the national railroad system; make improvements to enhance transportation efficiency, safety, and intermodal freight movement; accomplish line rehabilitation; and develop the economy.

FRPP provides grants to local units of government, industries, and railroads for the purpose of preserving essential rail lines and rehabilitating them following purchase. Since 1980, under the original Rail Assistance Program and later FRPP, some $80 million in grants have been awarded for rail acquisition and rehabilitation projects. The 2005-2007 state budget provides $6.5 million in bonding authority for the program. The FRPP provides grants up to 80 percent of the cost to purchase abandoned rail lines in an effort to continue freight service, or for the preservation of the opportunity for future rail service; and to rehabilitate facilities, such as tracks or bridges, on publicly owned rail lines.

Other Funding Methods and Financing Tools

The previous sections provided an overview of the federal and state programs that are available to fund freight improvements. This section covers other ways to raise dollars to fund freight improvements and/or match grant funds, grouped in three major categories:

1. **Funding Sources**, which refers to dedicated revenue sources to support freight investments, either as "pay-as-you-go" funding, or to support debt;

2. **Financing Tools** that use debt; and

3. **Institutional Arrangements**, which include public-private partnerships and tax-exempt corporations.

Funding Sources

User Fees/Tolls

User fees commonly provide a dedicated stream of revenue to repay the loans or bonds issued to support freight investments. For instance,

railroads pay fees on the Alameda Corridor (per container) or the Shellpot Bridge (per rail car) for using the new infrastructure.[10]

Truck-only toll (TOT) lanes have been studied in the Los Angeles region on SR-60 and I-710, both of which are heavily used by trucks accessing the Ports of Los Angeles and Long Beach. In 2005, the Georgia State Road and Tollway Authority published a study that proposed the construction of TOT lanes in the Atlanta Metropolitan Area. These studies have paved the way for potential exploration of TOT lanes on heavily congested truck routes in urban corridors, and provide a potential innovative use of toll revenue to implement freight infrastructure. In May 2006, the Georgia DOT signed a $38.5 million agreement with Georgia Transportation Partners to develop a concept for the expansion of I-75 and I-575 northwest of Atlanta. Georgia DOT estimates the project cost at $1.8 billion (2004 dollars), and includes TOT, high-occupancy toll lanes, bus rapid transit station, and additional capacity.

Dedicated Taxes

The use of dedicated taxes at the state and local level for transportation investments has increased significantly in the past few years. Highway projects are traditionally funded with motor fuel taxes levied at the state level. Local governments have used property taxes to fund local transportation investments, because such taxes are the primary revenue source at the local level. However, in recent years, local governments have implemented other local option taxes to support transportation investments, mainly for highway and transit projects.

The ReTRAC project in Reno, Nevada provides an example of local government dedicating taxes for freight investments. The City of Reno dedicated a one-eighth-cent sales tax and a 1 percent hotel occupancy tax as part of a package of dedicated revenue sources to repay a TIFIA loan.

Special Taxing and Assessment Districts

Special taxing or assessment districts capture the benefits of particular improvements. Residents and/or business owners agree to pay additional property taxes that are allocated for specific improvements. In some instances, the assessment district is dissolved once the proposed

[10] Projects referenced in this section are discussed in more detail in Section 3.0 – Case Studies.

improvements are completed. Special taxing or assessment districts are commonly used for transit investments, although they have been increasingly used for general highway or port, and even for freight rail investments.

Revenues from special assessment districts can be applied to the full value of the subject property, or used as a tax increment financing technique in which bonds are issued to finance public infrastructure improvements, and repaid with dedicated revenues. These improvements encourage redevelopment, which in turn increases the value of property surrounding the redeveloped area. The incremental property taxes that are used to pay for these bonds are collected within the boundaries of a "tax increment district."

Equity and In-Kind Contributions

Private sector funding for freight improvements could be in the form of cash or in-kind contributions. For the CREATE project in Chicago, Illinois the railroads pay a share of the total project costs based on the anticipated railroad benefits from the project. In the case of in-kind contributions, private entities (such as railroads) donate land or professional services, which are included as part of the project costs. Local governments often donate right-of-way for highway projects, which accounts for the non-federal share for federally funded projects.

FINANCING TOOLS

Public Debt

Fundamental to the concept of credit is the source of funds used to repay the debt. In the case of bonds issued by public entities there are two broad classifications of debt: 1) tax-supported bonds; and 2) revenue bonds. General obligation bonds are backed by the full faith and credit of a state or local government and are usually the highest-rated debt of a state or locality. Revenue bonds are backed by a specific revenue source, such as a dedicated tax or tolls. In the case of the Alameda Corridor project in California, user fees were pledged both to the TIFIA loan and to debt issuances for the project. Lease revenue bonds or certificates of participation are backed by a state or locality's general credit, but with no specific tax pledge, and debt service payments are subject to annual appropriation (they carry a lower rating than general obligation debt). They are often used to avoid debt limits and voter approval requirements.

Special tax district bonds are paid from special charges added to property tax bills, and only beneficiaries pay the special assessment. As discussed earlier, an important subclass is tax increment bonds, which are paid from *increases* in property tax revenues in specified areas. Tax increment financing is most valuable for projects in redevelopment areas and requires a long-term development perspective to realize significant funding levels.

Tax-Exempt Facility Bonds/Private Activity Bonds

Tax-exempt facility bonds have been extensively used to finance port and airport capital projects. SAFETEA-LU amended the IRS code to allow these type of bonds for highway and freight transfer facilities. Tax-exempt facility bonds, otherwise known as private activity bonds, are qualified and thus their interest is excluded for federal income tax purposes in the gross income of recipients. However, interest on such bonds is taken into consideration for certain federal tax purposes, such as the alternative minimum tax for individuals and corporations. With this qualified status and the accompanying tax benefit to investors, exempt facility bonds can be offered at a lower interest rate, thus providing the issuer with considerable financing cost savings.

INSTITUTIONAL ARRANGEMENTS

Joint Development

The concept of joint development takes on many meanings in the area of public capital development. In the freight arena, these partnerships have seen the greatest application and success at port facilities. For the purposes of this guidebook, joint development is defined as any formal arrangement between a public authority and a private organization (beyond just ports) that involves either private sector payments to the public authority, or the private sector sharing project capital costs. This definition essentially describes two classes of joint development strategies: 1) revenue-sharing arrangements, and 2) cost-sharing arrangements:

Revenue-Sharing Arrangements/Leases – For public ports in the United States, leases are the most common form of joint development. When a public port enters into a contractual lease arrangement, it is transferring the future services rendered by a fixed asset (e.g., a container crane or other terminal facility) to a private organization, while retaining the title to that fixed asset. In the case of container terminal leasing, there are

three major types of lease arrangements: the flat rate lease, a defined minimum/maximum compensation lease, and a shared revenue lease. While these three lease types vary in terms of the amount of risk that is assumed by the port and the incentives it creates for the lessee, all three lease types provide two important features for ports. First, long-term lease relationships provide a secure cash flow base upon which to issue bonds to finance new facilities and assure a steady base revenue base for the port. Second, a long-term lease relationship allows for specifying appropriate risk sharing between the public and private sector.

Other lease transactions, include sale/lease-back arrangements, in which assets are sold and then leased back by the seller. An example of such transaction is the Southern Tier Rail Rehabilitation project, in which Norfolk Southern transferred the rail line title to a rail authority for 10 years and then leased the rail line from the rail authority. The purpose of this transaction was to allow for a tax abatement on the rail line over the lease period.

Cost Sharing/Voluntary Agreements – These are agreements between public ports and private organizations whereby the private party recognizes a specific port capital investment as sufficiently beneficial or even necessary to enhancing its own operations that it will share the initial capital costs with the port. These voluntary joint development agreements enable capital costs funded from the port's revenues to be decreased, and any risk associated with the capital investment is shared with the private organization. Additionally, a long-term lease for other terminal facilities usually accompanies the joint venture, and therefore a secure revenue source is often concomitant with the joint venture.

Public-Private Partnerships for Freight Investments

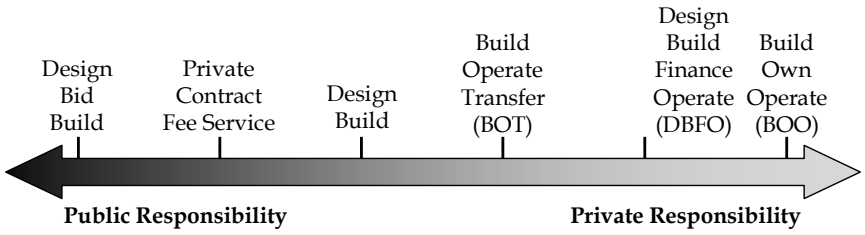
Public-private partnerships (PPP) refer to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of transportation projects. The three principal aspects of private sector participation are: 1) Project Delivery (development phase through design and construction); 2) Project Management (long-term operational and maintenance responsibilities); and 3) 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).

In the case of freight investments, PPPs are essential for project implementation for several reasons. First, the private sector is heavily invested in freight transportation, whether it is through ownership of infrastructure or by facilitating the movement of goods. Second, unlike other transportation investments, much of the freight investments are on private property, which makes it difficult for allocation of public funding. Third, the efficient movement of goods is important to both the private and public sectors. Overall, the creation of partnerships can facilitate freight investments by leveraging scarce resources, and accelerating the benefits realized through these investments.

Public-Private Partnership Options

Traditionally, private sector participation in surface transportation projects was limited to either planning, design, or construction contracts. Figure 2.1 shows the different options of PPPs. These PPP arrangements provide for expanded participation and responsibility from the private sector in traditionally public investments on transportation. A brief description of these PPP options is provided below.

Figure 2.1 Public-Private Partnership Options



Source: FHWA.

- **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, including plans, specifications, and supporting documentation. 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. Once construction is completed, the facility is operated and maintained

by the public sector. The project design and construction is financed by the public sector.

- **Private Contract Fee Services**. For this PPP option, the public sector transfers the responsibility for services that would be typically performed in-house to the private sector. Two functions that the public sector has transferred to private sector partners as contract fee services are operations and maintenance of public-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. It is usual for the project sponsor to have completed a certain level of preliminary engineering and project definition (e.g., preliminary design at about 10-15 percent complete) before letting the project for bids.

- **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 would design, construct, and operate/maintain the project. Once the contract expires, the facility is turned over to the public owner. The public sector can decide on whether to extend or rebid the operations and maintenance contract or take over the operations and maintenance responsibilities. For this model, the financing responsibility is retained by the public sector.

- **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 that are 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 that is backed by revenue sources dedicated to the project. Direct user fees are the most common revenue source. However, others

ranging from shadow tolls[11] to vehicle registration fees and other dedicated revenues. Future revenues are leveraged to issue bonds or other debt that provide funds for capital and project development costs. They also are often supplemented by public sector grants in the form of money or contributions in kind, such as right-of-way. In certain cases, private partners may be required to make equity investments as well. Ownership of the facility remains in the public sector.

- **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 assuring performance of the concession provisions.

The concepts presented above describe PPPs in terms of both project implementation and financing. In terms of funding/financing schemes specifically for freight infrastructure projects, the PPP projects that are presented in Section 3.0 can be grouped in the following categories:

- **Public sector provides funding up-front through grants and loans and the private sector pays back through user fees.** Examples: Sheffield Flyover/Argentine Connection, Ohio Southern Railroad Project, Shellpot Bridge.

- **Investment fully paid by the public sector and the private sector provides in-kind contributions.** Example: North Carolina Railroad Improvement Program.

- **Public-Private Funded, where the funding share determined by benefits realized by each sector.** Example: CREATE.

- **Public-Private Funded, where the funding share determined through agreements between partners.** Examples: FAST Corridor, ReTRAC.

[11] Shadow tolls refer to public sector "toll" payments to the private operator for the use of a facility. Drivers do not pay tolls for using the roadway. Instead, the public sector make payments based on the volumes and service levels.

- **Concessions (Private sector financing and ownership) –** Example: Texas Pacifico Rail Line.

- **Operations and Maintenance or warrants by private sector**

Examples of Recent PPP Solicitations

In Virginia, the Public-Private Transportation Act of 1995 allows private entities to enter into agreements to construct, improve, maintain, and operate transportation facilities. The Virginia DOT has implemented several highway projects through public-private partnerships. Recently, Virginia DOT began soliciting proposals for the U.S. Route 460 Corridor Improvements Project. This corridor carries significant truck volumes, and traffic on this road, mostly generated by the ports located in the Hampton Roads area, is expected to grow significantly in the future. Additionally, the U.S. Route 460 corridor is 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.

The Port of Miami Tunnel will provide access between the Seaport, I-395, and I-95 in Miami. Currently, the Port Bridge is the only connection between the Seaport and the mainland. The Florida DOT plans to implement this project through a concession, in which a private entity will be responsible to design, finance, build, operate, and maintain the tunnel. In return, Florida DOT will provide annual "availability payments" based on the availability of the project for use by trucks and buses and such other factors as safety and compliance with other performance standards.[12] Florida DOT recently selected three qualified "proposers," who are eligible to submit project proposals by March 2007. Final decision and contract award to a concessionaire is expected by the spring of 2007.

Port of Miami
Source: Florida Department of Transportation, The Port of Miami Tunnel Project, http://www.portofmiamitunnel.com.

As mentioned earlier, Georgia DOT recently signed a $38.5 million agreement with Georgia Transportation Partners to develop the concept for the I-75 and I-575 expansion project in northwest Atlanta. This is the

[12] Testimony of Karen J. Hedlund, Partner of Nossaman, Guthner, Knox and Elliot LLP, before the Highway, Transit, and Pipelines Subcommittee on Transportation and Infrastructure, U.S. House of Representatives, May 24, 2006.

third project that has been submitted to Georgia DOT under Georgia's 2003 Public-Private Initiative law, which allows private entities to submit unsolicited proposals for highway projects, but is the first to advance into concept development. The expansion project has been estimated at $1.8 billion, including TOT lanes, HOT lanes, bus rapid transit stations, and roadway widening. The concept development contract awarded to Georgia Development Partners includes preliminary engineering and the development of a financial plan and an investment-grade traffic and revenue study.

Tax-Exempt Corporations

A common barrier to project implementation by the private sector is the high costs of financing projects. The creation of tax-exempt corporations allows for the issuance of debt at lower interest rates, reducing the financing costs of the project. In recent years, a couple of highway projects have been financed through the creation of 63-20 Nonprofit Corporations. A 63-20 Nonprofit Corporation is an entity created under IRS Rule 63-20, which allows it to issue tax-exempt debt on behalf of private project developers. The Pocahontas Parkway in Virginia and the Southern Connector in South Carolina were partially financed through the issuance of tax-exempt debt issued by 63-20 corporations specifically created for these projects.

The Missouri Transportation Corporation statute is an example of legislation created to facilitate major investments through the creation of tax-exempt corporations. Missouri statute permits the formation of transportation corporations for the purposes for issuing tax-exempt debt. One recent project that has taken advantage of this statute is the widening of the Highline Bridge and the construction of a railroad flyover in the Argentine area of Kansas City. For the Argentine Connection, the Missouri Highway and Transportation Commission created Westside Intermodal Transportation Corporation, which issued about $46 million in bonds to fund the project. The Highline Bridge spans the Kansas River, and its rehabilitation allowed for increased train speeds and a second line to run across the bridge. The combined cost of the two projects was about $120 million. The bonds will be repaid through user fees paid by the railroads operating in the area.

The railroad flyover was developed through a public-private partnership between BNSF, KC Terminal Railway, the State of Missouri, and the unified government of Kansas City. The two-year project was funded in the same way as the Sheffield Flyover, which opened in July 2000.

3.0 Case Studies of Freight Financing

This section provides case studies of financing strategies used for different types of freight-related projects. Table 3.1 lists the case studies discussed in this section, by type of freight need addressed by each project. Table 3.2 lists the same case studies, by project size and type of funding and financing tools used for project implementation. The case studies are organized by state.

Arkansas

Little Rock Port Authority Slackwater Harbor Improvements

Location: Little Rock, Arkansas

Project Type: Rail construction, highway access to port, dock construction, intermodal facility

Project Cost: $11.8 million

Project Sponsors/Partners: Arkansas State Highway Commission, Arkansas Department of Economic Development, City of Little Rock, and Little Rock Port Authority

Federal Agencies: FHWA, U.S. Army Corps of Engineers, and Economic Development Administration

Project Status: Projects completed between 2002 and 2003

Project Description: The Little Rock Port Authority Complex is a freight intermodal facility, consisting of an industrial park, a Class III railroad, a riverport terminal, and a slackwater harbor. Due to the lack of funding, the harbor area had remained undeveloped. The Slackwater Harbor Improvements included:

- Railroad line extension;
- Highway access improvements;
- Dock construction and paved working area;

- Warehouses;
- Water and sewer lines;
- Major drainage structures;
- Product staging area, and
- Bank stabilization.

The rail and highway components of the project have enhanced cargo shipments at this facility by increasing throughput capacity. The rail line was extended to the harbor, with a loop back to the main line. The highway improvements included the connection of Harbor Drive to Frazier Pike Road, providing more direct access between the industrial park and the harbor.

Funding Sources: The Little Rock Port Authority Slackwater Harbor improvements were funded through a combination of federal, state, city, and port funding. The High-Priority Projects program under TEA-21 included $750,000 for road improvements and $4.0 million for port development and the rail improvements. The funding partners and contributions to the project:

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Federal	$7.2	FHWA; U.S. Army Corps of Engineers; Economic Development Administration
State	$1.1	Department of Economic Development; Arkansas State Highway Commission
City of Little Rock	$1.5	
Little Rock Port Authority	$2.0	

Source: AASHTO, 2005 Freight Transportation Achievers, http://freight.transportation.org/freight_awards.html.

Additional Information:

- Little Rock Port Authority – http://lrport.dina.org
- Arkansas State Highway Commission – http://www.arkansashighways.com
- AASHTO 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

Table 3.1 Case Studies by Project Type

Project Name	State	Page Number	Highway					Rail									Air	Port			Other				
			Truck Lanes/Routes	Emission Reduction/Fuel Savings	Bridge	Highway Improvements/ Capacity	Highway Access to Port/ Airport/Intermodal	Railroad Rehabilitation	Railroad Construction	Railroad Relocation	Rail Terminal/Yard	Freight/Commuter Rail Separation	Highway-Rail Crossing Upgrade/Elimination	Rail Crossing Separation	Vertical/Horizontal Clearance	Rail Access to Port/ Airport/Intermodal	Airport Expansion	Barge Service	Dredging	Port Construction	Rail/Truck Border Crossing	Storage/Loading Facility	Intermodal Transfer Facility	Equipment	Land Acquisition
Little Rock Port Authority Slackwater Harbor Improvements	AR	59					●		●											●		●	●		
Alameda Corridor	CA	67							●				●			●									
Port of Humboldt Dredging	CA	68																	●						
Port of San Diego Land Acquisition	CA	69																							●
Port of San Diego West Terminal Airport Expansion	CA	70															●								
Stockton Airport Freight Terminal	CA	71					●										●								
Denver International Airport Cargo Facility	CO	72															●					●			
Shellpot Bridge Replacement	DE	74			●											●									
Palm Beach Skypass Bridge Construction	FL	75											●			●									
Bensenville Rail Yard Improvements	IL	76						●	●							●									
Chicago Area Consolidation Hub	IL	77				●	●						●										●		
CREATE	IL	79						●	●			●	●	●											
I-55 Access to CenterPoint Intermodal Center at Deer Run	IL	81				●	●																		
Kedzie Avenue Access Road/Stoplight	IL	82				●	●																		
Riverport Railroad Rehabilitation and New Facilities	IL	83						●		●												●	●		
Rochelle Intermodal Center/UP Global III	IL	84					●									●									
Dixie Siding Installation	IN	85							●																
Iowa Interstate Railroad Rehabilitation and Locomotive Purchase	IA	87						●																●	
Marysville Rail Projects	KS	88								●			●												
Widening of I-64, I-65, and I-75	KY	89				●																			
Port of South Louisiana Rail Spur Upgrade	LA	90						●																	
Tchoupitoulas Corridor Improvements	LA	91	●			●	●			●															
Auburn Intermodal Freight Facility	ME	93																					●		
Calais/St. Stephen Commercial Vehicle Border Crossing	ME	94			●	●															●				
Guilford Intermodal Yard – Lifting Equipment Lease	ME	96																						●	
Luce County Industrial Park Rail Project	MI	97						●	●							●									
Sheffield Flyover and Argentine Connection	MO-KS	98												●											
North Carolina Railroad Improvement Program	NC	100						●	●																

Table 3.1 Case Studies by Project Type (continued)

Project Name	State	Page Number	Highway					Rail									Air	Port			Other				
			Truck Lanes/Routes	Emission Reduction/Fuel Savings	Bridge	Highway Improvements/ Capacity	Highway Access to Port/ Airport/Intermodal	Railroad Rehabilitation	Railroad Construction	Railroad Relocation	Rail Terminal/Yard	Freight/Commuter Rail Separation	Highway-Rail Crossing Upgrade/Elimination	Rail Crossing Separation	Vertical/Horizontal Clearance	Rail Access to Port/ Airport/Intermodal	Airport Expansion	Barge Service	Dredging	Port Construction	Rail/Truck Border Crossing	Storage/Loading Facility	Intermodal Transfer Facility	Equipment	Land Acquisition
ReTRAC	NV	101							●				●												
Red Hook Container Barge	NY	103																●							
Southern Tier Extension Railroad Restoration Project	NY	105						●					●												
Albany Express Barge	NY-NJ	106																●							
Portway	NJ	108				●							●			●									
Ohio Southern Line Rehabilitation	OH	109						●					●									●			
Rickenbacker Intermodal Facility Construction	OH	111																					●		
Columbia Slough Bridge to Intermodal Yards	OR	112			●				●																
Improving Fuel Economy and Air Quality on the I-5 Corridor	OR-CA-WA	114		●																					
DVRPC CMAQ Competitive Program	PA-NJ	116		●			●		●														●		
Freight Rail Improvement Project	RI	118							●			●			●										
Air Freight Regional Hubbing Facility	SC	119															●						●		
Cooper River Bridge Replacement	SC	121			●		●																		
Travel Center Electrification Units	TN	122		●																					
Railroad Crossing Reliability Partnership Program	TX	123											●												
Texas Pacífico Rail Line	TX	125						●																	●
Heartland Corridor	VA-WV-OH	126								●					●								●		
FAST Corridor	WA	128				●	●		●							●									
Hyundai Terminal at Port Tacoma	WA	131																		●				●	
Port of Tacoma Overpass Construction	WA	132				●	●		●																
Didion Milling Project and Rail Line Improvements	WI	133						●														●			
Port of Superior General Mills S/X Elevator Project	WI	135																		●					

Table 3.2 Case Studies by Funding Type/Project Size

			Federal Funds/Grants											Federal Financing Tools				State/Local Funds/Grants				State/Local Financing Tools				Other		Repayment Sources		
Project Name	State	Cost (Millions of Dollars)	IM	NHS	STP	CMAQ	Rail-Highway Grade Crossing	USACE Harbor Maintenance	EDA	FAA Airport Improvement	FHWA Earmarks	Other Federal Grants	TIFIA	SIB	RRIF	GARVEE	State Funds/Grants	Local Funds/Grants	Port Funding	Airport Funding	State Loan	G.O. Bonds	Revenue Bonds	Tax-Exempt Bonds	Private Sector	Uncommitted/ Unknown Funding	User Fees	Lease Income	Comments
Project Cost – Less than $5 million																														
Luce County Industrial Park Rail Project	MI	0.6															●	●			●				●					
Gilford Intermodal Yard – Lifting Equipment Lease	ME	1.2				●																			●					
Travel Center Electrification Units	TN	1.3				●																			●					
Port of Superior General Mills S/X Elevator Project	WI	1.4															●								●					
Dixie Siding Installation	IN	1.5				●											●								●					
Stockton Airport Freight Terminal	CA	1.7								●							●	●							●					
Port of South Louisiana Rail Spur Upgrade	LA	2.7							●			●							●											
Improving Fuel Economy and Air Quality on the I-5 Corridor	OR-CA-WA	3.3										●		●			●								●					
DVRPC CMAQ Competitive Program	PA-NJ	4.4				●											●	●							●					
Kedzie Avenue Access Road/Stoplight	IL	4.7				●												●												
Auburn Intermodal Freight Facility	ME	4.8				●												●							●					
Project Cost – $5 million to $15 million																														
Riverport Railroad Rehabilitation and New Facilities	IL	5.5													●															
Albany Express Barge	NY-NJ	5.7				●													●											
Columbia Slough Bridge to Intermodal Yards	OR	6.0				●					●								●											
Didion Milling Project and Rail Line Improvements	WI	8.7															●				●				●					
Rochelle Intermodal Center/UP Global III	IL	9.8							●								●				●									

Table 3.2 Case Studies by Funding Type/Project Size (continued)

			Federal Funds/Grants											Federal Financing Tools				State/Local Funds/Grants				State/Local Financing Tools				Other		Repayment Sources		
Project Name	State	Cost (Millions of Dollars)	IM	NHS	STP	CMAQ	Rail-Highway Grade Crossing	USACE Harbor Maintenance	EDA	FAA Airport Improvement	FHWA Earmarks	Other Federal Grants	TIFIA	SIB	RRIF	GARVEE	State Funds/Grants	Local Funds/Grants	Port Funding	Airport Funding	State Loan	G.O. Bonds	Revenue Bonds	Tax-Exempt Bonds	Private Sector	Uncommitted/ Unknown Funding	User Fees	Lease Income	Comments
Project Cost – $5 million to $15 million (continued)																													
Ohio Southern Line Rehabilitation	OH	11.0					●							●			●				●				●		●		Rail fees used for repayment of loans
Railroad Crossing Reliability Partnership Program	TX	11.7			●												●	●							●				
Little Rock Port Authority Slackwater Harbor Improvements	AR	11.8						●	●		●						●	●	●										
Shellpot Bridge Replacement	DE	13.9															●				●						●		Rail car fees used for repayment of loan
Port of Humboldt Dredging	CA	14.3						●										●						●					
Red Hook Container Barge	NY	14.7			●	●					●						●		●										
Project Cost – $15 million to $50 million																													
Palm Beach Skypass Bridge Construction	FL	29.7															●		●				●				●		Port user fees used for repayment of port bonds
Port of Tacoma Overpass Construction	WA	30.8			●						●	●					●		●						●				
I-55 Access to CenterPoint Intermodal Center at Deer Run	IL	33.3							●								●												
Texas Pacífico Rail Line	TX	31.0															●								●				
Bensenville Rail Yard Improvements	IL	35.0				●																			●				
Southern Tier Extension Railroad Restoration Project	NY	38.2					●		●								●	●											
Iowa Interstate Railroad Rehabilitation and Locomotive Purchase	IA	42.1													●														

Table 3.2 Case Studies by Funding Type/Project Size (continued)

			Federal Funds/Grants										Federal Financing Tools				State/Local Funds/Grants				State/Local Financing Tools				Other		Repayment Sources		
Project Name	State	Cost (Millions of Dollars)	IM	NHS	STP	CMAQ	Rail-Highway Grade Crossing	USACE Harbor Maintenance	EDA	FAA Airport Improvement	FHWA Earmarks	Other Federal Grants	TIFIA	SIB	RRIF	GARVEE	State Funds/Grants	Local Funds/Grants	Port Funding	Airport Funding	State Loan	G.O. Bonds	Revenue Bonds	Tax-Exempt Bonds	Private Sector	Uncommitted/ Unknown Funding	User Fees	Lease Income	Comments
Project Cost – $50 million to $100 million																													
Air Freight Regional Hubbing Facility	SC	64.3								●							●	●		●					●				
Marysville Rail Projects	KS	75.8															●	●							●				
North Carolina Railroad Improvement Program	NC	77.8		●	●	●											●								●				In-kind contributions from private sector
Portway	NJ	83.7		●													●		●				●						New Jersey Bridge Bonds
Chicago Area Consolidation Hub	IL	97.6															●	●							●				
Tchoupitoulas Corridor Improvements	LA	100.0			●													●	●			●	●						Local G.O. Bonds; Revenue bonds repaid by dedicated motor fuel tax (4 cents)
Denver International Airport Cargo Facility	CO	100.0																					●		●			●	Revenue bonds repaid with lease income
Calais/St. Stephen Commercial Vehicle Border Crossing	ME	100.0									●	●														●			
Rickenbacker Intermodal Facility Construction	OH	100.0									●														●	●			
Project Cost – Over $100 million																													
Hyundai Terminal at Port Tacoma	WA	101.0																	●					●	●		●	●	Tax-exempt private activity bonds, repaid with lease income and container handling fees
Port of San Diego Land Acquisition	CA	115.0																					●					●	Taxable short-term bonds repaid with lease income
Sheffield Flyover and Argentine Connection	MO-KS	133.8																				●	●		●		●		Tax-exempt bonds repaid through rail user fees
Freight Rail Improvement Project	RI	196.0										●				●	●						●		●		●		Motor fuel tax bonds; user fees used to match federal grant

Table 3.2 Case Studies by Funding Type/Project Size (continued)

			Federal Funds/Grants										Federal Financing Tools				State/Local Funds/Grants				State/Local Financing Tools				Other		Repayment Sources		
Project Name	State	Cost (Millions of Dollars)	IM	NHS	STP	CMAQ	Rail-Highway Grade Crossing	USACE Harbor Maintenance	EDA	FAA Airport Improvement	FHWA Earmarks	Other Federal Grants	TIFIA	SIB	RRIF	GARVEE	State Funds/Grants	Local Funds/Grants	Port Funding	Airport Funding	State Loan	G.O. Bonds	Revenue Bonds	Tax-Exempt Bonds	Private Sector	Uncommitted/ Unknown Funding	User Fees	Lease Income	Comments
Project Cost – Over $100 million (continued)																													
Port of San Diego West Terminal Airport Expansion	CA	232.0																						●		●			Tax-exempt Certificates of Participation (COPS)
ReTRAC	NV	279.9									●		●					●				●			●			●	TIFIA repayment sources included: 1/8% sales tax; 1% hotel occupancy tax; lease income; and assessment district levies
Heartland Corridor	VA-WV-OH	309.0									●						●								●	●			
Widening of I-64, I-65 and I-75	KY	440.0	●	●												●	●												IM and NHS funds used to pay GARVEEs; toll credits used for matching
Cooper River Bridge Replacement	SC	667.0										●	●	●			●	●											
FAST Corridor	WA	863.8									●	●					●		●						●	●			
CREATE	IL	1,500.0									●						●	●							●	●			
Alameda Corridor	CA	2,431.0							●			●	●				●	●	●				●				●		Loans and bonds repaid with container fees

California

Alameda Corridor

Location: Los Angeles to Long Beach, California

Project Type: Port access, highway-rail crossing elimination, rail construction

Project Cost: $2.4 billion

Project Sponsors/Partners: Alameda Corridor Transportation Authority, Los Angeles County Metropolitan Transportation Authority, and Ports of Los Angeles and Long Beach

Federal Agencies: U.S. DOT and Economic Development Administration

Project Status: Completed in 2002

Project Description: The Alameda Corridor is a 20-mile freight-rail line linking the ports of Los Angeles and Long Beach to the transcontinental rail yards and railroad mainlines near downtown Los Angeles. The Corridor's centerpiece is the Mid-Corridor Trench, a below-ground railway that is 10 miles long, 30 feet deep, and 50 feet wide. The Corridor project consolidated 90 miles of branch rail lines into a high-speed line, thereby eliminating conflicts at more than 200 at-grade railroad crossings and cutting by more than half the time it takes to transport cargo containers by train between the ports and downtown Los Angeles rail yards. The Corridor began operations on April 15, 2002.

Funding and Financing Mechanisms: The project was constructed at a cost of $2.4 billion by the Alameda Corridor Transportation Authority (ACTA), a joint powers agency, and governed by the cities and ports of Los Angeles and Long Beach and the Los Angeles County Metropolitan Transportation Authority. The Alameda Corridor was funded through a unique blend of public and private sources, including $1.16 billion in proceeds from bonds sold by ACTA; a $400 million loan by the U.S. DOT; $394 million from the ports; $347 million in grants administered by the Los Angeles County Metropolitan Transportation Authority; and $130 million in other state and federal sources and interest income.

Debts are retired with fees paid by the railroads for transportation of cargo into and out of the region.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
U.S. DOT Loan	$400	Precursor of TIFIA loan
Port of Los Angeles and Long Beach	$394	
Los Angeles Metropolitan Transportation Authority	$347	
Federal/State/Interest Income	$130	Includes a $2 million grant from EDA
Revenue Bonds	$1,160	Repaid by user fees

Source: NCHRP 8-36 Task 43, Return on Investment on Freight Rail Capacity Improvement. Available at http://www.transportation.org/sites/planning/docs/nchrp43.pdf.

Additional Information:

- Alameda Corridor Transportation Authority – http://www.acta.org

PORT OF HUMBOLDT DREDGING

Location: Humboldt, California

Project Type: Dredging

Project Cost: $14.3 million

Project Status: Completed in 2000

Project Sponsors/Partners: Port of Humboldt, City of Eureka, and California Maritime Infrastructure Bank

Federal Agencies: U.S. Army Corps of Engineers

Project Description: The project consisted of channel dredging at the Port of Humboldt.

Funding and Financing Mechanisms: The Port of Humboldt had never issued bonds before. They used the California Maritime Infrastructure Bank (CMIB) as the "bank of last resort" to generate the local match for

the federal share for dredging. The U.S. Army Corps of Engineers required $3.9 million to match the federal grant of $10.4 million. The City of Eureka contributed $1 million in combination with the CMIB bond issuance. The Port of Humboldt used the CMIB to issue the remaining share for the local match, $2.9 million in tax-exempt revenue bonds for private placement. CMIB worked with a local bank to buy the bonds. The project was completed in 2000.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
USACE – Harbor Maintenance Fund	$10.4	
CMIB	$2.9	Tax-exempt bonds
City of Eureka	$1.0	

Source: FHWA, *Funding and Institutional Options for Freight Infrastructure Improvements.* Available at http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.

Additional Information:

- Port of Humboldt Bay – http://www.humboldtbay.org/about/about.html

PORT OF SAN DIEGO LAND ACQUISITION

Location: San Diego, California

Project Type: Land acquisition

Project Cost: $115 million

Project Sponsors/Partners: Port of San Diego, California Maritime Infrastructure Bank;, and Duke Power

Federal Agencies: None

Project Status: Land purchased in 1999

Project Description: The Port of San Diego used California Maritime Infrastructure Bank (CMIB) financing to purchase land. CMIB issued taxable bonds to be repaid under a leaseback arrangement between the Port of San Diego and Duke Power. Duke Power contracted with the

Port to operate and sell power for a 10-year period, after which the power plant will be dismantled and the land may be used by the Port for other purposes.

Funding and Financing Mechanisms: CMIB issued taxable short-term bonds that qualified for a lower rate of 6 percent than private capital sources available to Duke Power. The project did not qualify for tax-exempt status under the Industrial Development Act because the extent of the benefit to be derived by the private-sector, Duke Power. By using CMIB to issue debt instead of issuing debt itself, the Port was able to avoid a lengthy internal Board of Commission review process that is required for any major financing activity undertaken by the Port.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMIB	$115.0	Taxable short-term bonds

Source: FHWA, *Funding and Institutional Options for Freight Infrastructure Improvements*. Available at http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.

Additional Information:

- Port of San Diego – http://www.portofsandiego.org

PORT OF SAN DIEGO WEST TERMINAL AIRPORT EXPANSION

Location: San Diego, California

Project Type: Airport terminal expansion

Project Cost: $232 million (airport expansion) and $90 million (CMIB funding)

Project Sponsors/Partners: Port of San Diego, and California Maritime Infrastructure Bank

Federal Agencies: None

Project Status: Completed in 1998

Project Description: The Port of San Diego undertook major expansion of the west terminal, mainly to accommodate increased passenger traffic along with proportionate increases in cargo shipment.

Funding and Financing Mechanisms: The Port of San Diego used California Maritime Infrastructure Bank (CMIB) to expand the San Diego Airport to avoid lengthy commission approval activities. CMIB issued Certificates of Participation to finance long-term borrowing. Qualifying for tax-exempt status, they were issued at 5.1 percent. Certificate of Participation debt was secured by net airport revenues, which protected general port revenue.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMIB	$90.0	Tax-exempt COPS

Source: FHWA, *Funding and Institutional Options for Freight Infrastructure Improvements*. Available at http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.

Additional Information:

- San Diego Airport – http://www.san.org

STOCKTON AIRPORT FREIGHT TERMINAL

Location: Stockton, California

Project Type: Airport freight terminal and highway access to airport

Project Cost: $1.7 million

Project Sponsors/Partners: San Joaquin County, and Farmington Fresh

Federal Agencies: Federal Aviation Administration

Project Status: Completed in 1995

Project Description: The project consisted of the development of an air freight terminal at Stockton Airport. This included airport apron improvements, the relocation of Webber's Slew (a small stream running through the airport), and access road (shoulder) improvements. The

freight terminal houses the operations of Farmington Fresh, a company that specializes in the import and export of fresh produce.

Funding and Financing Mechanisms: With San Joaquin County support, Farmington Fresh built a $6.5 million air freight terminal and made improvements to a cargo handling facility on a county-owned airport to meet their shipping needs. No public funds aided in the construction of the terminal. Public funding was directed at the airport apron and road improvements. At the end of the 49-year lease on the airport land, the county will own the Farmington Fresh terminal. The County can then lease the terminal at market prices.

The airport apron and road improvements were funded through a combination of federal, state, local, and private funds.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Federal – FAA Airport Improvement Program grant	$1.40	
State	$0.07	FAA grant matching funds
Local	$0.20	FAA grant matching funds
Farmington Fresh	$0.07	Private contribution for airport apron and road improvements only/Matching funds to FAA grant

Source: FHWA, *Funding and Institutional Options for Freight Infrastructure Improvements.* Available at http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.

Additional Information:

- Stockton Airport – http://www.co.san-joaquin.ca.us/airport/

Colorado

Denver International Airport (DIA) Cargo Facility

Location: Denver, Colorado

Project Type: Airport cargo facility, intermodal facility, airport expansion

Project Cost: $100 million

Project Sponsors/Partners: City of Denver, WorldPort at DIA Owners LLC, and Lehman Brothers

Federal Agencies: None

Project Status: Under construction; construction to be completed in 2006

Project Description: DIA entered a 30-year ground lease with a third-party developer (WorldPort at DIA Owners LLC), to design, construct, and operate a cargo handling facility on 70 acres of DIA property. The new cargo facility, WorldPort at DIA, consists of seven buildings (500,000 square feet), a new taxiway, and an aircraft ramp. Two of the buildings are completed and have been in operations since 2001/2002.

Funding and Financing Mechanisms: The City of Denver, which owns the airport, issued special facility bonds to finance construction. Special facility revenue bonds are repaid solely from revenues generated by the facility, in this case, leases. This protects general airport authority revenues. Bond repayment will be collected from the third-party developer who will collect rents from subleases with cargo airlines, freight forwarders, and the U.S. Departments of Agriculture and Homeland Security (Customs operations).

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
City of Denver	$54.0	Special facility bonds, repaid by lease income
Lehman Brothers	$46.0	Equity

Source: Denver International Airport. *Wing Tips.* Volume 1, Issue 1, April 2002. Available at http://www.flydenver.com/biz/news/wingtips/2002_qtr1.pdf.

Additional Information:

- Denver International Airport – http://www.flydenver.com/guide/facility/cargo.asp
- World Port – http://www.worldportatdia.com

Delaware

Shellpot Bridge Replacement

Location: Port of Wilmington, Delaware

Project Type: Rail bridge replacement, rail access to port

Project Cost: $13.9 million

Project Sponsors/Partners: Delaware DOT and Norfolk Southern

Federal Agencies: None

Project Status: Completed in 2004

Project Description: The Shellpot Bridge rehabilitation project reinstated a freight rail connection between the Port of Wilmington, Delaware and Norfolk Southern's (NS) Edgemoor Yard and rail system. Rail service on the bridge had been suspended in 1994, when the foundation could no longer support the heavy freight trains. The bridge provided access to and from the Port of Wilmington to the NS line that provides northbound service. After the bridge went out of service, freight trains that served the Port of Wilmington were forced to take a longer route in order to connect with the NS line. The bridge opened in October 2004.

Funding and Financing Mechanism: The Delaware DOT provided a $5 million grant and an $8.9 million loan to NS for the bridge replacement project. The payment agreement requires NS to make payments based on the number of rail cars using the bridge, with guaranteed minimum annual payment over a 20-year period. The annual minimum payments increase every five years, from $150,000 during the first five years, to $300,000 over the last five years of the agreement. The guaranteed minimum would ensure a minimum payback of 50 percent of the loan.

The rail car fees are based on a sliding scale, in which NS pays a toll of $35 per car on the first 5,000 cars crossing the bridge, decreasing to $5 per car when the number of cars using the bridge exceeds 50,000. The purpose of the sliding scale scheme is to encourage NS to increase their traffic over a certain threshold, in order to pay the lowest sliding rate per car.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
DelDOT Loan	$8.9	Repaid by rail car fees
DelDOT Grant	$5.0	

Source: Delaware Department of Transportation.

Additional Information:

- Delaware DOT– http://www.deldot.gov
- Port of Wilmington – http://www.portofwilmingtonde.com

Florida

PALM BEACH SKYPASS BRIDGE CONSTRUCTION

Location: Palm Beach, Florida

Project Type: Rail-highway grade separation, port access

Project Cost: $29.7 million

Project Sponsors/Partners: Port of Palm Beach, Florida DOT, Florida Office of Trade Tourism, and Economic Development

Federal Agencies: None

Project Status: Completed in 1999

Project Description: The Skypass Bridge is a four-lane overpass on U.S. 1 that eliminated a highway-rail crossing along U.S. 1, and improved internal access at the Port of Palm Beach. Prior to the overpass construction, the Port of Palm Beach was divided by U.S. 1. The west side of the port houses the Florida East Coast Railroad yard and storage facilities, whereas the waterfront and marine terminal lies on the east side of the port. The construction of the overpass was completed in 1999.

Funding and Financing Mechanisms: The Skypass Bridge was funded through a combination of state and port funding sources. The State provided funds through the Florida Seaport Transportation and Economic Development (FSTED) program, Florida DOT funds, and a grant from the Office of Trade, Tourism, and Economic Development.

The Port of Palm Beach used $10 million in bond proceeds and $0.1 million in cash for the project. Bonds are repaid through user fees from port operations, although these fees are not directly related to the improvements.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
FDOT	$0.9	For right-of-way
Florida Office of Trade, Tourism, and Economic Development grant	$2.0	
FSTED Program	$16.7	
Port of Palm Beach	$10.1	$10 million from port bonds; $0.1 million in cash

Source: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- Port of Palm Beach – http://www.portofpalmbeach.com
- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

Illinois

BENSENVILLE RAIL YARD IMPROVEMENTS

Location: Chicago, Illinois

Project Type: Rail access to rail yard, rail construction, rail rehabilitation

Project Cost: $35 million

Project Sponsors/Partners: Chicago Area Transportation Study and Canadian Pacific Railroad

Federal Agencies: FHWA

Project Status: Completed in 1998

Project Description: The Bensenville rail yard project improved rail access and egress to and from the yard, and rerouted trains from an east

route to a west route. The construction cost included new tracks, interlockings, and signals to raise train speeds and reduce rail/traffic conflict at rail-highway crossings. The estimated emission reductions were 54 kg/day VOC and 48 kg/day NOx.

Funding and Financing Mechanisms: The project was funded through a combination of federal and private funds. Federal funding included a CMAQ grant of $2.1 million. The CMAQ grant was justified based on the reduction in emissions and traffic congestion resulting from the rail improvements. The remaining funds were provided by Canadian Pacific Railroad.

The Chicago Area Transportation Study conducted an evaluation to estimate the public benefits realized from the project. Public benefits were estimated at $2.6 million. The CMAQ grant was equivalent to 80 percent of the share of public benefits.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$2.1	
Canadian Pacific	$32.9	Private Sector funding

Source: FHWA.

Additional Information:

- Chicago Area Transportation Study (CATS) – http://www.catsmpo.org

CHICAGO AREA CONSOLIDATION HUB (CACH)

Location: Hodgkins, Illinois

Project Type: Highway access to terminal, intermodal facility, rail-highway crossing separation, highway improvements

Project Cost: $97.6 million

Project Sponsors/Partners: Illinois DOT, Illinois State Toll Highway Authority, Illinois Department of Commerce and Community Affairs, Village of Hodgkins, United Parcel Service and Burlington Northern Santa Fe

Federal Agencies: None

Project Status: Completed in 1995

Project Description: The CACH, the largest sorting facility in the world, is owned by United Parcel Service (UPS) and built in the mid-1990s. A number of projects were implemented to improve access to the facility, including: 1) interchange access from I-294 to the facility; 2) a rail intermodal facility; 3) rail-highway crossing separation, and 4) local street access improvements.

Funding and Financing Mechanisms: The projects were funded through a combination of state, local, and private funds. The funding partners for this effort included the Illinois State Toll Highway Authority (ISTHA), Illinois IDOT, Illinois Department of Commerce and Community Affairs (DCCA), Village of Hodgkins, UPS, and Burlington Northern Santa Fe (BNSF).

- **I-294 Interchange**. The cost of the I-294 Interchange was $15.6 million. This interchange was funded through a public-private partnership that included ISTHA, Illinois DOT, DCCA, Village of Hodgkins, and UPS. No federal funds were used to fund this project, even though the interchange was constructed on an Interstate road.

- **Intermodal Facility**. The intermodal facility was entirely funded by BNSF. The cost was estimated at $70 million.

- **Rail-Highway Crossing Separation.** The at-grade crossing separation was funded by Illinois DOT and BNSF. The grade separation cost was $10 million.

- **Local Road Improvements.** The local road improvements were entirely funded by UPS, at a cost of $1.3 million.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Illinois DOT	$7.5	$2.5 million for I-294 Interchange; $5 million for rail grade separation
ISTHA	$7.0	For I-294 Interchange
DCCA	$2.5	For I-294 Interchange
Village of Hodgkins	$0.65	For I-294 Interchange
UPS	$4.75	$3 million for I-294 Interchange; $1.3 million for local road improvements; $0.45 million on annexation fees to the Village of Willow Springs
BNSF	$75.0	$70 million for intermodal facility; $5 million for rail grade separation

Source: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

CHICAGO REGION ENVIRONMENTAL AND TRANSPORTATION EFFICIENCY (CREATE) PROGRAM

Location: Chicago, Illinois

Project Type: Rail crossing separation, highway-rail crossing, rail rehabilitation, rail construction, new/improved signaling systems

Project Cost: $1.5 billion

Project Sponsors/Partners: Illinois DOT, City of Chicago; Metra, Union Pacific, Burlington Northern Santa Fe, Norfolk Southern, Canadian Pacific, Canadian National, and CSX

Federal Agencies: FHWA

Project Status: Currently in planning stages

Project Description: The CREATE Program encompasses the rationalization, reconstruction and upgrade of five cross-town passenger and freight rail corridors in Chicago. Approximately 70 projects are planned as part of this program, including:

- Grade separation of six railroads crossings (rail-rail flyovers);
- Grade separation of 25 highway-rail crossings;
- Upgrade of existing track infrastructure;
- Double or triple tracking along certain corridors, and
- Installation of new or improved signaling system.

The CREATE program is aimed at addressing existing and future congestion issues on the rail system, which are expected to bring adverse effects to the national economy and the transportation system if they are not addressed in the near future. The CREATE program partners include: the Illinois DOT, Metra (passenger rail), and six of the largest North American freight railroads (Union Pacific, Burlington Northern Santa Fe, Norfolk Southern, Canadian Pacific, Canadian National, and CSX).

Funding and Financing Mechanisms: The cost of the program is estimated at $1.5 billion. The railroads will provide $212 million, based on the value of the economic benefits (estimated by the CREATE partnership) that the private sector will gain from the proposed improvements. Since the majority of the work will be completed on railroad-owned right-of-way, the land ownership will be considered part of the private contribution. The remainder of the funds will be provided by the public sector partners, including federal and state.

SAFETEA-LU authorized $100 million through the "Projects of National and Regional Significance" program. The CREATE program partners are in the process of selecting the projects that will go into Phase I. The railroads and the state plan to provide $100 million each (for a total of $200 million) to match the SAFETEA-LU earmark and the City of Chicago plans to commit about $30 million. Phase I will provide funding for about one-fifth of the total program costs.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
FHWA	$100.0	SAFETEA-LU Projects of National and Regional Significance
Illinois DOT	$100.0	Planned to date to match federal earmark
City of Chicago	$30.0	Planned to date to match federal earmark
Railroads	$212.0	Private contribution, based on economic benefits to private sector. Includes $100 million planned to date to match federal earmarks, and the value of railroad-owned right-of-way used for the program.

Note: Total program cost is $1.5 million; funding amounts in this table only includes funding that may be committed for Phase I and the estimated total private contribution.

Additional Information:

- CREATE Program – http://www.createprogram.org

I-55 Access to CenterPoint Intermodal Center at Deer Run

Location: Joliet, Illinois

Project Type: Highway improvements and access to intermodal facility

Project Cost: $33.3 million (for I-55 interchange construction)

Project Sponsors/Partners: Illinois DOT

Federal Agencies: FHWA and Economic Development Administration

Project Status: Included in FY 2007-2012 Highway Improvement Program

Project Description: The Center Point Intermodal Center encompasses the BNSF Logistics Park. Roadway improvements include the construction of a new interchange on I-55 to handle traffic generated by the industrial park, replacing an existing intersection, and improvements to the arterial road (Arsenal Road) connecting I-55 and the intermodal facility.

Funding and Financing Mechanisms: The Illinois DOT has included the I-55 interchange construction in the FY 2007-2012 Highway

Improvement Program and committed $27 million for the construction of the interchange, in addition to $6.3 million for engineering and land acquisition.

The Economic Development Administration (EDA) granted $3 million to Will County for improvements on Arsenal Road.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Illinois DOT	$33.3	Funding for I-55 Interchange
EDA	$3.0	Grant for improvements on Arsenal Road

Source: Illinois Department of Transportation; AASHTO 2005 Freight Transportation Achievers.

Additional Information:

- Illinois Department of Transportation FY 2007-2012 Highway Improvement Program – http://www.dot.il.gov/hip0712/hwyimprov.html
- AASHTO 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

KEDZIE AVENUE ACCESS ROAD/STOPLIGHT

Location: Chicago, Illinois

Project Type: Highway reconstruction, traffic signal installation and synchronization, highway access to rail yard

Project Cost: $4.7 million

Project Sponsors/Partners: City of Chicago DOT

Federal Agencies: FHWA

Project Status: Completed in 1997

Project Description: The Kedzie Avenue project consisted of the reconstruction of about 1.5 miles of roadway, the installation of a traffic signal at the intersection of Kedzie Avenue and 47th Street, and the

modernization and synchronization of signals along Kedzie Avenue. Kedzie Avenue provides access to the BNSF Corwith Rail Yard. Prior to the implementation of this project, the area experienced significant congestion from trucks trying to access or exit the rail yard.

Funding and Financing Mechanisms: CMAQ funds ($720,000) were used to procure the installation of the traffic signal at the entrance of the rail yard since it would improve air quality by reducing truck emissions. The City of Chicago DOT provided $4 million to match the CMAQ grant and for the roadway reconstruction.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$0.7	
City of Chicago DOT	$4.0	Including matching funds for CMAQ ($180,000)

Sources: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

RIVERPORT RAILROAD REHABILITATION AND NEW FACILITIES

Location: Savanna, Illinois

Project Type: Rail rehabilitation, car storage facility expansion, and yard and transload facility construction

Project Cost: $5.5 million

Project Sponsors/Partners: Riverport Railroad

Federal Agencies: Federal Railroad Administration

Project Status: Rail Rehabilitation and Improvement Financing (RRIF) loan awarded in 2005, under construction

Project Description: This short line operator located in Northwestern Illinois, received a RRIF loan to rehabilitate rail-related infrastructure and facilities that were once part of the Savanna Army Ordnance Depot. The loan is being used to improve and consolidate about six miles of existing track to make operations more efficient and install new, heavier track to handle the industry standard 286,000-pound railcars. In addition, yard storage capacity will be increased by 33 percent (from 3,000 to 4,000 railcars) and real estate will be acquired to support planned business expansion. New facilities include a bulk commodity yard and transload facility, and a marshalling yard to store up to 110-car trains. Additionally, a portion of the funding will be used to remove and relocate about 9.6 miles of track from land owned by the U.S. Fish and Wildlife Service.

Funding and Financing Mechanisms: FRA approved a RRIF loan in 2005 for $5.5 million.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
RRIF loan	$5.5	

Source: Federal Railroad Administration.

Additional Information:

- Riverport Railroad – http://www.riverportrailroad.com
- Federal Railroad Administration – http://www.fra.dot.gov

ROCHELLE INTERMODAL CENTER/UP GLOBAL III

Location: Rochelle, Illinois

Project Type: Highway access to intermodal facility; rail access to intermodal facility

Project Cost: $9.8 million in federal and state funds for highway and rail access projects, plus water and sanitary sewer lines funded by an EDA grant.

Project Sponsors/Partners: City of Rochelle; Illinois Department of Transportation; Union Pacific

Federal Agencies: Economic Development Administration (EDA)

Project Status: Completed in 2003

Project Description: The Rochelle Intermodal Center was built in recent years to help alleviate some of the freight congestion in Chicago. The project included providing highway and rail access to the facility.

Funding and Financing Mechanisms: Roadway and rail access projects were funded through federal, state, and local funds. The Illinois DOT provided $4.3 million through the Economic Development Program for roadway access, and $3.3 million in loans through the Rail Freight Program for the construction of rail lines into the main facility and rail spurs. An EDA grant for $2.2 million was used for construction of water and sewer lines and several roadway improvements.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Illinois DOT	$4.3	Economic Development Program grant for roadway access
Illinois DOT	$3.3	Rail Freight Program loan
EDA Grant	$2.2	Funding for water and sanitary sewer lines, and roadway improvements

Source: AASHTO 2005 Freight Transportation Achievers.

Additional Information:

- Illinois Department of Transportation – http://www.dot.il.gov/
- AASHTO 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

Indiana

Dixie Siding Installation

Location: Indianapolis, Indiana

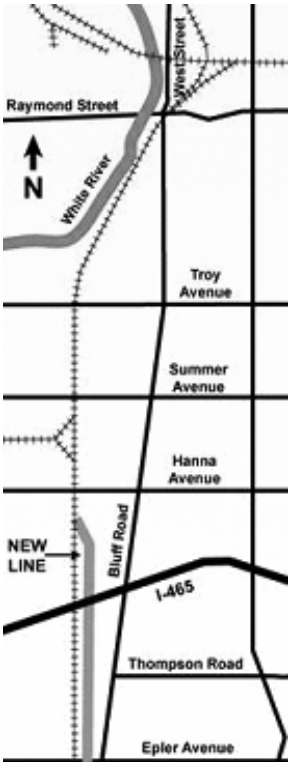
Project Type: Rail siding

Project Cost: $1.5 million

Project Sponsors/Partners: Indiana Railroad Company, Indiana DOT, and Indianapolis Metropolitan Planning Organization

Federal Agencies: FHWA

Dixie Siding



Source: Indianapolis MPO.

Project Status: Completed in 2003

Project Description: The Dixie Siding project consisted of the construction of a mile-long siding between Epler Avenue and Lick Street to eliminate traffic blockage on West Street and Bluff Road in the west side of Indianapolis. The siding was built to handle the exchange of empty and loaded coal cars from the Indianapolis Power & Light Company (IPL). Prior to the construction of the Dixie Siding, empty coal trains moved from the IPL Harding Street Station to the Senate Avenue Terminal to provide space for incoming loaded coal trains. The placement and retrieval of empty coal trains from the Senate Avenue Terminal would disrupt traffic at the West Avenue rail-highway crossing, causing significant delays. With the construction of the siding, the empty cars are placed at the siding, eliminating the trips to and from the Senate Avenue Terminal, and consequently, reducing the number of trains passing at the West Avenue crossing and vehicle congestion and delays at this location and improving air quality.

Funding and Financing Mechanisms: The Dixie Siding project was funded through a combination of federal, state, and private sector funds. The Indiana Rail Road Company (IRR) provided $815,000 for the project. The Indiana DOT provided a grant of $200,000 through its Industrial Rail Service Fund. A CMAQ grant of $480,000 provided the remaining funds needed for the project. An air quality analysis by the Indianapolis Metropolitan Planning Organization showed that air quality improvements would be realized from reduced traffic congestion at the West Street Crossing.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$0.48	
Indiana DOT Industrial Rail Service Fund Grant	$0.20	
Indiana Railroad Company funds	$0.82	Private sector funding

Source: FHWA Indiana Division.

Additional Information:

- Indianapolis Metropolitan Organization, TeMPO (Volume 7, Issue 4, Special Edition 2003) – http://www.indympo.org/Public/tempo.htm
- Indiana Department of Transportation – http://www.ai.org/dot

Iowa

Iowa Interstate Railroad Rehabilitation and Locomotive Purchase

Location: Atlantic, Iowa to Bureau, Illinois

Project Type: Rail rehabilitation; equipment purchasing

Project Cost: $42.1 million

Project Sponsors/Partners: Iowa Interstate Railroad

Federal Agencies: Federal Railroad Administration

Project Status: Loans awarded in 2005 and 2006, under construction

Project Description: The Iowa Interstate Railroad received two RRIF loans from FRA. The first RRIF loan will be used to improve service to rural areas that rely on trains to ship corn, soybeans, steel, chemicals, and other products to market. This loan will pay for track improvements needed to haul heavier freight cars and get products to key shipping points faster and safer. Specifically, RRIF funds will improve 266 miles of track, replace 180,000 crossties, lay thousands of tons of new ballast, and rebuild 95 highway-rail grade crossings between Atlantic, Iowa, and Bureau, Illinois. A portion of the loan also will be used to purchase a rail line that Iowa Interstate Railroad currently is leasing, and refinance debt incurred from previous infrastructure improvement projects.

The second RRIF loan will be used to purchase 22 locomotives that it currently leases from General American Transportation Corporation (GATX) Rail.

Funding and Financing Mechanisms: FRA approved two loans to Iowa Interstate Railroad in 2005 and 2006 for $32.7 million and $9.4 million, respectively.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
RRIF Loans	$42.1	

Source: Federal Railroad Administration.

Additional Information:

- Iowa Interstate Railroad – http://www.iaisrr.com
- Federal Railroad Administration – http://www.fra.dot.gov

Kansas

Marysville Rail Projects

Location: Marysville, Kansas

Project Type: Rail-highway crossing separation and rail relocation

Project Cost: $75.8 million

Project Sponsors/Partners: City of Marysville, Kansas DOT, and Union Pacific

Federal Agencies: None

Project Status: Currently under construction; scheduled for completion in 2006. Roadway construction completed in 2004.

Project Description: The north-south Marysville subdivision of the Union Pacific Railroad divided the City of Marysville, separating the majority of the city from the business district. The rail line is heavily traveled, causing major vehicle traffic delays at five rail-highway crossings. Daily delays have been estimated at 7.5 to 8 hours. These delays affect not only the passenger vehicle traffic, but are a major concern for the mobility of emergency vehicles.

The proposed solution consisted of relocating the rail line to the south and west edge of the city and providing grade separations at U.S. 36 and U.S. 77. The project also includes the construction of a levee for flood protection.

Funding and Financing Mechanisms: The project was funded with state, local, and private monies. Kansas DOT provided almost 52 percent of the project cost. The City of Marysville contributed $1 million, and the remaining funds came from Union Pacific.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Kansas DOT	$39.2	
Union Pacific	$35.6	
City of Marysville	$1.0	

Source: AASHTO, 2005 Freight Transportation Achievers, http://freight.transportation.org/freight_awards.html.

Additional Information:

- Kansas Department of Transportation – http://www.ksdot.org
- AASHTO 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

Kentucky

WIDENING OF I-64, I-65, AND I-75

Location: I-64 (Shelby County from Jefferson County line to Shelbyville); I-65 (from Tennessee State line to Bowling Green); and I-75 (from northern Scott County to south of KY-22 in Grant County), Kentucky

Project Type: Highway capacity

Project Cost: $440.0 million

Project Sponsors/Partners: Kentucky Transportation Cabinet

Federal Agencies: FHWA

Project Status: Currently under construction, included in FY 2005-2007 STIP

Project Description: The project consists of widening Interstates 64, 65 and 75 in northern Kentucky from three to six lanes. The Kentucky General Assembly approved the issuance of GARVEE bonds to accelerate the widening in these three corridors. The widening projects are expected to increase the State's ability to accommodate freight and passenger movements.

Funding and Financing Mechanisms: In 2005, Kentucky issued $139.6 million in GARVEE bonds to fund the first phase. They will be repaid with IM and NHS funding. Debt service funding will be matched with toll credits. The Kentucky Transportation Cabinet plans to issue $290 million in additional GARVEE bonds in fiscal year 2007 and 2008 to complete the widening projects.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
GARVEE Bonds	$139.6	Issued to date; repaid with IM and NHS funds

Source: Innovative Finance.Org, http://www.innovativefinance.org.

Additional Information:

- Kentucky Transportation Cabinet – http://transportation.ky.gov

Louisiana

PORT OF SOUTH LOUISIANA – RAIL SPUR UPGRADE

Location: LaPlace, Louisiana

Project Type: Rail rehabilitation, roadway improvements

Project Cost: $1.2 million (rail component); $1.5 million (roadway improvements)

Project Sponsors/Partners: Port of South Louisiana

Federal Agencies: Economic Development Administration

Project Status: Roadway improvements completed in 2003 and rail rehabilitation completed in 2005.

Project Description: The Port of South Louisiana, which stretches for 54 miles along the Mississippi River, is the third-largest port in the world in terms of total tonnage handled, and some of the most prestigious names in industry operate cargo transfer terminals and manufacturing plants. The Port handled over 248 million tons of cargo in 2004, brought to its terminals by vessel, barge, rail, and truck. The Port is ranked highest in the nation for export tonnage and total tonnage, with over 50,000 barges

and 4,000 ocean-going vessels calling at the port each year. The Port purchased the Globalplex Intermodal Terminal in 1992, and currently is redeveloping the facility into a world-class complex to accommodate a variety of dry bulk and break-bulk cargo. Roadway improvements within the Port were completed in 2003. The Port recently completed a $1.2 million effort to upgrade a 1,500-foot rail spur that will eventually link the Canadian National/Illinois Central Railroad and the Kansas City Southern Railroad at the northern end of the 335-acre industrial park.

Funding/Financing Mechanisms: Roadway improvements within the Port of South Louisiana were funded by a Community Development Grant and Port funds. The cost of the road improvements were estimated at $1.5 million, of which 75 percent were provided by federal grant. The rail rehabilitation project was partly funded by an EDA grant of $900,000. The project is expected to attract an estimated $56 million in private sector investments and create an additional 200 jobs.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
EDA grant	$0.9	For rail rehabilitation project
U.S. Department of Housing and Urban Development – Community Development Block Grant	$1.1	For roadway improvements
Port of South Louisiana	$0.7	Matching funds for federal grants

Source: Port of South Louisiana.

Additional Information:

- Port of South Louisiana – http://www.portsl.com

TCHOUPITOULAS CORRIDOR IMPROVEMENTS

Location: New Orleans, Louisiana

Project Type: Truck route, highway access to port, highway capacity, and rail relocation

Project Cost: Approximately $100 million

Project Sponsors/Partners: Port of New Orleans, New Orleans Department of Public Works, State of Louisiana, and City of New Orleans Regional Planning Commission

Federal Agencies: FHWA

Project Status: Completed in 2005

Project Description: The Tchoupitoulas Corridor project consisted of several transportation access and infrastructure improvements to the Port of New Orleans. The project included the expansion of a two-lane local road to a four-lane boulevard, the construction of an exclusive port-traffic access road, sewer and drainage system repairs/replacement, modifications to existing flood walls, and the relocation and consolidation of railroad trackage. One of the main elements of this project, the port access road, consolidated four existing truck routes into one, and separated truck traffic from local traffic. The exclusive truck route improved access to the port, but also improved safety and the level of service on local streets. The project was completed during the summer of 2005.

Funding/Financing Mechanisms: The Tchoupitoulas Corridor project was funded through a combination of federal, state, local, and port funds. The State provided $55 million through the Transportation Infrastructure Model for Economic Development (TIMED) program, which was created by the legislature in 1989 and is funded through bonds backed by a 4 cent per gallon tax on motor fuels. Other funding sources included $13.7 million in STP funds, $8.0 million in bond proceeds from the City of New Orleans, $12 million from the City of New Orleans Regional Planning Commission, and $12 million from the Port of New Orleans.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
STP funds	$13.7	
TIMED program	$55.0	Backed by dedicated motor fuel tax (4 cent per gallon)
City of New Orleans Bond proceeds	$8.0	
City of New Orleans Regional Planning Commission	$12.0	
Port of New Orleans	$12.0	

Sources: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs,* 2003; Transportation Infrastructure Model for Economic Development (TIMED), http://www.timedla.com/.

Additional Information:

- Louisiana's Transportation Infrastructure Model for Economic Development – http://www.timedla.com/
- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

Maine

AUBURN INTERMODAL FREIGHT FACILITY

Location: Auburn, Maine

Project Type: Truck-rail intermodal facility

Project Cost: $3.1 million (Phase I); $1.7 million (Phase II)

Project Sponsors/Partners: Maine DOT, City of Auburn, and St. Lawrence & Atlantic Railroad

Federal Agencies: FHWA

Project Status: Phase I completed in 1994 and Phase II completed in 2001

Project Description: The Auburn Intermodal Freight Transfer Facility opened in 1994, with an expansion completed in 2001. The facility is used to transfer cargo between truck and rail. Rail service at the facility is operated by the St. Lawrence & Atlantic Railroad (SLR).

The intermodal facility consists of a double-track rail line, parking and container storage, a weighing and freight-control operations center, and a lift for transferring cargo containers between flatbed rail cars and trucks. A customs clearance facility recently opened at the facility.

The project's first phase resulted in estimated emissions reductions of 7 kg/day VOC and 77 kg/day NOx.

Funding and Financing Mechanisms: Funding for the construction and subsequent expansion of the facility included federal, local, and private funds.

For the Phase I, SLR approached the State of Maine requesting funding for the construction of the intermodal facility. Because the City of Auburn was an air quality nonattainment area and the facility was built on public land, the City was able to obtain CMAQ funding to construct the facility based on projected reductions of long-haul truck traffic and the corresponding decrease in vehicle emissions. Additionally, the creation of an intermodal hub in Auburn was seen as an opportunity for economic growth in the region. The project costs were funded using CMAQ (80 percent), with matching funds from the City of Auburn. SLR pays a lease to the city for the use of the facility.

A 19-acre expansion, completed in 2001, was implemented when the cargo volume at the facility reached a point that justified the expansion. Phase II also was funded using CMAQ funds and City of Auburn funds, matched with private funds.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$2.7	$2.3 million – Phase I; $0.4 million – Phase II
City of Auburn	$1.0	$0.6 million – Phase I; $0.4 million – Phase II
St. Lawrence & Auburn Railroad	$1.0	$0.2 million – Phase I; $0.8 million – Phase II

Source: Maine Department of Transportation; FHWA, http://www.fhwa.dot.gov/environment/cmaqpgs/retroatt.htm.

Additional Information:

- Maine DOT – http://www.maine.gov/mdot/index.php

CALAIS/ST. STEPHEN BORDER CROSSING

Location: Calais, Maine/St. Stephen, New Brunswick, Canada

Project Type: Border crossing, highway capacity, bridge

Project Cost: $100 million

Project Sponsors/Partners: Maine DOT and New Brunswick DOT

Federal Agencies: U.S. General Services Administration, Canada Border Services Agency, and U.S. Department of Homeland Security's Customs and Border Protection

Project Status: Planning stages; project completion scheduled by 2008.

Project Description: Over the last several years Maine DOT and New Brunswick DOT 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. The new crossing will be located upstream on the St. Croix River just outside of both town centers. It 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 new crossing in several decades along the United States/Canadian border. The existing crossing, which is located in the downtowns of both cities, will remain in place exclusively for passenger cars.

The selected alternative for the new border crossing includes a bridge across the St. Croix River, a 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, Maine. 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 United States facility.

Funding and Financing Mechanisms: Funding for the new border crossing is split between Canada and the United States. In 2005, $3.2 million was secured from the GSA's FY 2005 budget for the design and site acquisition for a new customs house, while a further $50 million was secured in the FY 2006 budget. Additional funding is still being sought for road and bridge work on the United States side of the project. SAFETEA-LU earmarked $12.0 million for this project through the High-Priority Projects and Transportation Improvement Programs.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
GSA	$53.2	
FHWA SAFETEA-LU Earmarks	$12.0	Funding from the High-Priority Projects and the Transportation Improvement Programs

Source: Maine Department of Transportation; FHWA.

Note: Funding listed above only includes existing funding commitments.

Additional Information:

- Maine DOT – http://www.maine.gov/mdot/index.php

GUILFORD INTERMODAL YARD – LIFTING EQUIPMENT LEASE

Location: Waterville, Maine

Project Type: Intermodal yard equipment

Project Cost: $3.0 million

Project Sponsors/Partners: Maine DOT, and Guilford Transportation

Federal Agencies: FHWA

Project Status: Completed in 1997

Project Description: Guilford Transportation used public funding to improve a truck-rail intermodal yard, including equipment purchase. The project allows trailers and containers of central Maine products to move via rail, reducing heavy truck traffic and diesel emissions. The estimated emissions reductions were 28 kg/day VOC and 6.3 kg/day NOx.

Funding and Financing Mechanisms: Maine DOT used CMAQ funding to lease port packer lift equipment to support the operations of a private intermodal yard in Waterville, Maine. CMAQ funding was granted because the project demonstrated that truck traffic and emissions would be reduced. This project was sponsored by Guilford Transportation, a regional rail company supporting CSX and Norfolk Southern shipments. Since the project was built on private land, CMAQ funding could only be applied under a leaseback arrangement with the intermodal operator. A

total of $1.2 million of CMAQ funding was used to buy the equipment, which the operator leases through the useful life of the equipment with the option to purchase at the end of the lease.

Maine DOT conducted a similar deal at the Presque Isle Intermodal Facility.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$1.2	Funding for lifting equipment
Other	$1.8	

Source: Maine Department of Transportation.

Additional Information:

- Maine Department of Transportation – http://www.maine.gov/mdot/index.php

Michigan

Luce County Industrial Park Rail Project

Location: Luce County, Michigan

Project Type: Rail rehabilitation, rail construction, rail access to industrial park

Project Cost: $647,000

Project Sponsors/Partners: Michigan DOT, Luce County Economic Development Corporation, and Sustainable Forest Products, Inc.

Federal Agencies: None

Project Status: Completed in 2004

Project Description: The freight-related investments at the Luce County Industrial Park consisted of the rehabilitation of an unused rail line, and the construction of new rail tracks into the Industrial Park and into the Sustainable Forest Products facility. The project was completed in 2004.

Funding and Financing Mechanisms: The rail rehabilitation and construction were funded through a combination of state, local, and private funds.

The Michigan MDOT provided a total of $324,000 through the Michigan Rail Loan Assistance (MiRLAP) and the Freight Economic Development (FEDP) programs. The Luce County Economic Corporation contributed to the project with $218,000.

Private contributions came from the Canadian National Railroad ($95,000) and Sustainable Forest Products, Inc. ($10,000).

Funding Source/ Financing Mechanism	Amount	Comments
Michigan DOT – MiRLAP	$198,000	
Michigan DOT – FEDP	$126,000	
Luce County EDC	$218,000	
Canadian National	$95,000	
Sustainable Forest Products	$10,000	

Source: AASHTO, 2005 Freight Transportation Achievers, http://freight.transportation.org/freight_awards.html.

Additional Information:

- Michigan Department of Transportation, http://www.michigan.gov/mdot/
- AASHTO 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

Sheffield Flyover

Source: Don Rickle, http://www.trainboard.com.

Missouri-Kansas

Sheffield Flyover and Argentine Connection

Location: Kansas City, Missouri/Kansas City, Kansas

Project Type: Rail crossing separation

Project Cost: $74 million (Sheffield Flyover); $59.8 million (Argentine Connection)

Project Status/Sponsors: Kansas City Intermodal Transportation Corporation, Westside Intermodal Transportation Corporation, Unified

Government of Wyandotte County/Kansas City, Kansas City Terminal Railway, Burlington Northern Santa Fe, Union Pacific, and Kansas City Southern Railroad

Federal Agencies: None

Project Status: Sheffield Flyover completed in 2000 and Argentine Connection completed in 2004

Project Description: The Sheffield Flyover and the Argentine Connection projects consisted of the construction of flyovers to eliminate at-grade rail crossings.

Before the grade separation was completed, the Sheffield Junction was the third-busiest rail crossing in the country, causing major bottlenecks to both east-west and north-south rail traffic through Kansas City. The Sheffield Flyover resulted in speed improvements and reducing the travel time of freight trains through Kansas City from 40 minutes to 15 minutes.

Similarly, the Argentine Connection consisted of a grade separation project at the Santa Fe Junction. The project resulted in increased capacity on east-west and north-south routes. Prior to the project, the Santa Fe junction handled 55 trains east-west and 25 train north-south per day. The Argentine Connection increased capacity to 70-95 trains east-west and 40 trains north-south.

Funding and Financing Mechanisms: The Sheffield Flyover was financed through the issuance of bonds by a nonprofit transportation corporation, created under Missouri law. The Kansas City Terminal Railway created a transportation corporation, the Kansas City Intermodal Transportation Corporation, for the purpose of issuing debt for construction and accessing tax-exempt status from property tax. The railroads (BNSF, UP, and Kansas City Southern) are responsible to pay back the bonds over a 20-year period.

The Argentine Connection project was located in the state border area between Missouri and Kansas. Therefore, two financing mechanisms were devised to fund the construction of the flyover. The Missouri portion of the project was financed by issuing bonds through a transportation corporation, the Westside Intermodal Transportation Corporation. For the Kansas portion of the project, the Unified

Government of Kansas City/Wyandotte issued bonds. The Kansas City Railway Terminal is responsible for debt service on those bonds.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Kansas City Intermodal Transportation Corporation bonds	$70.0	Sheffield Flyover bonds
Westside Intermodal Transportation Corporation	$46.3	Argentine Connection bonds – Missouri share
Unified Government of Wyandotte County/Kansas City	$13.5	Argentine Connection bonds – Kansas share

Sources: Mid-America Regional Council; Kansas City Business Journal, http://www.bizjournals.com/kansascity/stories/2001/11/05/story1.html.

Additional Information:

- Missouri Department of Transportation – http://www.modot.org

North Carolina

North Carolina Railroad Improvement Program

Location: Raleigh to Charlotte, North Carolina

Project Type: Rail improvements, rail extension, rail modernization

Project Cost: $19.3 million (completed projects); $77.8 million (total program)

Project Sponsors/Partners: North Carolina DOT and Norfolk Southern

Federal Agencies: FHWA

Program Status: Six projects completed in 2005 and other projects under construction

Project Description: The North Carolina Railroad Improvement Program (NCRRIP) consists of several upgrades and improvements along existing rail corridors to enhance safety, efficiency, and capacity for passenger rail. The program is expected to increase train speeds and capacity on the 172-mile corridor between Raleigh and Charlotte. However, these improvements have an indirect and positive impact for freight rail service operating on this corridor.

Funding and Financing Mechanisms: The NCRRIP program has been financed through a combination of federal and state funds. Federal funds include NHS, CMAQ, and STP funds. State grants include matching funds to federal grants, and funds from the State's Rail and Moving Ahead programs. A total of $37.8 million has been spent in the program (including project currently under construction).

Norfolk Southern (NS) operates freight service on the corridor. As part of the NCRRIP program, NS is responsible for the design and construction of the program elements. While NS is not a funding partner of the program, the company has covered the cost of project management, which could be considered an in-kind contribution.

Funding Source/ Financing Mechanism	Amount (Millions)
NHS	$2.90
STP	$4.00
CMAQ	$13.36
NC State – Match for federal funds	$5.31
State Rail funds	$7.80
State Moving Ahead	$4.39

Source: North Carolina Department of Transportation, Rail Division.

Additional Information:

- North Carolina Department of Transportation, http://www.bytrain.org/track/

Nevada

RENO TRANSPORTATION RAIL ACCESS CORRIDOR (RETRAC)

Location: Reno, Nevada

Project Type: Rail construction and rail-highway grade separation

Project Cost: $279.9 million

Project Sponsors/Partners: City of Reno and Union Pacific Railroad

Federal Agencies: FHWA

Project Status: Trench opened for traffic service on November 18, 2005, with final completion in spring 2006.

Project Description: The Reno Transportation Rail Access Corridor (ReTRAC) program consists of the construction of a 33-foot-deep trench below existing tracks to separate auto traffic from rail traffic in downtown Reno. The project also includes the reconstruction of 11 bridges to provide crossing over the trench and an access road. The corridor length is 2.3 miles.

Funding and Financing Mechanisms: The ReTRAC program is funded through a public-private partnership that includes federal, local, and private sector funds. Several revenue sources have been dedicated to repay a TIFIA loan.

Federal funding includes $21.3 million in earmarked funds within TEA-21 legislation. The project was approved for TIFIA credit assistance up to $73.5 million that was to be repaid through local revenue sources, including: 1) one-eighth-cent sales tax; 2) one percent hotel-occupancy tax; 3) lease income from Union Pacific properties, and 4) tax assessments from a downtown special assessment district. The City of Reno repaid the original TIFIA loan issued in 2002 of $50.5 million in May 2006.

Local funding includes $111.5 million in General Obligation bonds issued by the City of Reno, and $79.6 million in city funding allocated for the project.

Union Pacific contributions to the ReTRAC project include $17 million towards the construction of track ballast and ties. Other contributions include in-kind donations of land and air rights to the City of Reno that will generate revenue to pay back the TIFIA loan. In addition, Union Pacific will pay for the rail signal systems to be installed in the corridor.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
TEA-21 earmarks	$21.3	
TIFIA direct loan	$50.5	To be repaid through local revenue sources; paid back in May 2006 through refinancing
City of Reno revenue bonds	$111.5	
Cash on-hand and interest earnings	$79.6	
Union Pacific funds	$17.0	

Source: City of Reno; Cambridge Systematics, Inc.

Additional Information:

- City of Reno, ReTRAC – http://www.cityofreno.com/gov/retrac/

New York

Red Hook Container Barge Service

Location: Brooklyn, New York

Project Type: Barge system

Project Cost: $14.7 million for capital costs; $58.8 million for capital and operations (excluding private contribution) through 2001.

Project Sponsors/Partners: New York State DOT, New Jersey DOT, Port Authority of New York and New Jersey, and American Stevedoring

Federal Agencies: FHWA

Project Status: Operating since 1993

Project Description: The Red Hook Container Barge project consisted of the implementation of a barge service between the Red Hook Marine Terminal in Brooklyn, New York and the American Stevedoring terminal at the Port Newark, New Jersey. The purpose of this project was to provide alternative access between these two facilities to mitigate the impacts of construction on the Gowanus Expressway, which was the main route used by trucks accessing the Red Hook Marine Terminal.

The estimated emissions reductions were 12 kg/day VOC, 48 kg/day CO, and 53 kg/day NOx.

Funding and Financing Mechanisms: The Red Hook Container Barge service was funded through a combination of federal, state, and port funds. American Stevedoring (Red Hook terminal operator) also has supported the service, although investment amounts have not been specified.

Federal funding sources include allocations from CMAQ and STP funds, and TEA-21 funds. This project was the first freight project to apply for CMAQ funds. In addition to matching funds to federal grants, New York State DOT and New Jersey DOT have supported the project, and the Port Authority of New York and New Jersey has provided almost $40 million to fund the barge operation.

Funding Source/ Financing Mechanism	Amount (Millions)
CMAQ	$7.7
STP	$1.6
TEA-21	$3.0
CMAQ, STP, and TEA-21 matching funds	$3.2
New York State DOT	$1.8
New Jersey DOT	$1.7
Port Authority of NY and NJ	$39.8

Sources: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

SOUTHERN TIER EXTENSION RAILROAD RESTORATION PROJECT

Location: Hornell, New York to Corry, Pennsylvania

Project Type: Railroad rehabilitation

Project Sponsors/Partners: Southern Tier West Regional Planning and Development Board; New York State DOT, Pennsylvania DOT, and Norfolk Southern

Federal Agencies: FHWA and Economic Development Administration

Project Status: Restoration of rail service along the rail line completed in the fall of 2003; other rehabilitation activities underway/planned

Project Cost: $38.2 million through 2006

Project Description: The Southern Tier Extension Railroad Restoration Project consisted of the implementation of several rehabilitation tasks along the 145-mile-long rail line between Hornell, New York and Corry, Pennsylvania. Tasks completed to date include: 1) repair of two washouts; 2) replacement of ties; 3) signal upgrades, and 4) grade crossing improvements.

The Southern Tier Extension rail line had been threatened with abandonment since the 1980s. The counties within the Southern Tier West (Allegany, Cattaraugus, Chautauqua, and Steuben) initiated efforts in the late 1980s to retain service on the line after the expiration of the Conrail-New York State DOT agreement to provide service until 1998. As part of the of the CSX-Norfolk Southern acquisition of Conrail, Norfolk Southern (NS) would acquire the Southern Tier Extension. The Southern Tier West and NS reached a sale-leaseback agreement in which NS would sell the line to a railroad authority, leaseback the line and receive a property tax abatement for a period of 10 years. After the 10-year period, ownership of the rail line will revert back to NS, and in the last 3 years of the agreement, NS will begin paying property taxes on the line to the local communities. The Chautauqua, Cattaraugus, Allegany and Steuben Southern Tier Extension Railroad Authority (STERA), was created in 2000, and the sale-leaseback agreement was executed in 2001. NS currently subleases the rail line to the Western New York and Pennsylvania Railroad Company (WNYP). Service along the entire line was restored in fall 2003.

The Southern Tier Extension Railroad Authority and Norfolk Southern entered in a sale-leaseback agreement in which NS passes ownership of the rail line to STERA, leases back the line, and receives a property tax abatement for 10 years.

Southern Tier Line Washout – Before and After

Source: Southern Tier West Regional Planning and Development Board.

Funding and Financing Mechanisms: The initial rehabilitation work was funded with an Economic Development Administration grant ($3 million) and $8.9 million from New York State DOT, including capital grants and Federal Rail-Highway Grade Crossing funds. As of September 2006, PennDOT and WNYP had provided $7.6 million and over $10 million, respectively, to bring the rail line back to operation. The counties have provided about $0.3 million, and local communities have contributed to the investment by giving up the property tax revenues on the rail line over a 10-year period. About $38.2 million had been invested in the line through 2006. Future investments to complete the rail line restoration are estimated at over $20 million, including: Phase 6 improvements ($7.5 million), which are schedule for completion by the spring of 2007; and an intermodal study ($225,000) funded with EDA, NYSDOT and private funds.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
FHWA	$0.9	
FEMA	$0.2	
EDA Grant	$3.1	
New York State DOT Capital Funding	$8.9	Including initial $2 million to match EDA grant
Pennsylvania DOT	$7.6	
Counties	$0.3	
Local Communities	$10.0	Tax abatement (through 2006)

Sources: NYSDOT; Southern Tier West Regional Planning and Development Board presentation at FHWA *Talking Freight Seminar*, September 2006. Provided by Thomas M. Barnes; additional NYSDOT funding information provided by Steve Slavick.

Additional Information:

- Southern Tier West Regional Planning and Development Board – http://www.southerntierwest.org

ALBANY EXPRESS BARGE

Location: Albany, New York to Port of New York and New Jersey

Project Type: Short sea shipping

Project Cost: $5.7 million in public sector subsidies for operations (excluding Port of Albany contributions to match CMAQ funds).

Project Sponsors/Partners: Port of Albany and Port Authority of New York and New Jersey

Federal Agencies: FHWA

Project Status: Service in operation since 2003, other routes are in planning stages

Project Description: The Albany Express Barge service transports containers by barge between the Port of Albany and the Port of New York and New Jersey. The service began operating in the spring of 2003, and is the first element of the Port Inland Distribution Network (PIDN) initiative. The PIDN initiative is envisioned as a system to distribute containers between the Port of New York and New Jersey and other inland container terminals by barge and rail to relieve highway congestion. In addition to the Port of Albany, other potential barge routes include: 1) Bridgeport, Connecticut; 2) Camden, New Jersey; 3) Providence, Rhode Island; 4) Wilmington, Delaware, and 5) Boston, Massachusetts.

Funding and Financing Mechanisms: The Albany Express Barge service is paid through user fees, and federal and local port subsidies. The user fees have been set at 10 percent below the truck shipping fees to attract users, since the barge service is slower than truck shipping on this route. The federal port subsidies are needed to support the service.

The Albany Express Barge service has received CMAQ grants, with matching funds coming from the Port of Albany. In addition, the Port Authority of New York and New Jersey has provided $0.5 million to subsidize operations and provides $25 per container moved to keep the user fees below trucking fees.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$5.3	Federal funds are matched with Port of Albany and PANYNJ contributions
Port Authority of NY and NJ	$0.5	Operations subsidy

Sources: U.S. Government Accountability Office, *Freight Transportation: Short Sea Shipping Option Shows Importance of Systematic Approach to Public*

Investment Decisions. Washington, D.C. July 2005. Report Number GAO-05-768.

Additional Information:

- Port Authority of New York and New Jersey – http://www.panynj.com
- Port of Albany – http://www.portofalbany.com

New Jersey

PORTWAY

Location: Port of New York/New Jersey

Project Type: Rail access to port, rail-highway grade separation, and highway improvements

Project Cost: $83.7 million (for three Phase I projects, excluding Doremus Avenue roadway improvements)

Project Sponsors/Partners: New Jersey DOT and Port Authority of New York and New Jersey

Federal Agencies: FHWA

Project Status: Three Phase I projects completed with other projects under planning/design stages

Project Description: The New Jersey DOT is the lead agency behind Portway, which consists in a series 11 projects that will improve access between key maritime, air cargo, railroad, regional roadways, and warehouse/distribution facilities. The Port Authority of New York and New Jersey (PANYNJ) is responsible for the remaining projects. Projects implemented to date include:

- Doremus Avenue Bridge and roadway improvements (NJDOT) – $36.5 million;

- Rail-highway crossing separation (rail flyover) at McLester Street (PANYNJ) – $35 million; and

- Charlotte and Tonnele Circle Improvements (NJDOT) – $12.2 million.

Funding and Financing Mechanisms: The projects listed above were funded with federal, state, and port funds. NHS funds were used for the Charlotte and Tonnele Circle Improvements. The state funding contribution included allocations from the New Jersey Transportation Trust Fund (TTF) and the 1999 NJ Bridge bonds. PANYNJ paid for the rail flyover.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
NHS	$11.2	For Charlotte and Tonnele Circle improvements
New Jersey TTF	$21.5	$20.5 million for the Doremus Avenue project; matching funds for NHS
1999 NJ Bridge bonds	$36.5	Doremus Avenue Bridge only
PANYNJ	$35.0	Rail flyover

Source: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf
- New Jersey Department of Transportation – http://www.state.nj.us/transportation/works/portway/index.html

Ohio

Ohio Southern Line Rehabilitation

Location: Zanesville to New Lexington, Ohio

Project Type: Rail rehabilitation, highway-rail crossings

Project Cost: $11 million

Project Sponsors/Partners: Ohio Rail Development Commission, Ohio DOT, and Ohio Southern Railroad

Federal Agencies: FHWA

Project Status: Completed in 2000

Project Description: The Ohio Southern Line Rehabilitation consisted of the rehabilitation of an out-of-service rail line to provide rail service between a coal mine in Glouster, Ohio and the American Electric Power (AEP) Conesville Power Plant. The rehabilitation work included: 1) renovation of 12 railroad bridges; 2) renewal and upgrading of 16 public rail-highway crossings; 3) replacement of 19 miles of existing obsolete rail with modern heavy rail; 4) replacement of crossties; and 5) two new passing sidings and a 13-track bulk loading facility. The rail line is owned by the State, and rail service on the line currently is provided by the Ohio Southern Railroad Company.

Funding and Financing Mechanisms: The total cost of the project was $11 million, of which $5.5 million (50 percent) was paid by public sector loans repaid by rail fees, $3.0 million (27 percent) was paid by public grants, and $2.5 million (23 percent) was paid by the private sector. The Ohio DOT issued a State Infrastructure Bank (SIB) loan for $2 million. The Ohio Rail Development Commission (ORDC) allocated $1 million in federal funds from the Rail-Highway Crossing Program, and provided a $2 million grant and a $3.5 million loan for track improvements. The project loans already have been repaid with rail fees. The Ohio Southern Railroad provided the remaining $2.5 million to fund the rail line rehabilitation.

The Ohio Southern Railroad is in the process of purchasing the rail line from the State for its liquidation value, estimated at $362,000 in 2000, before it was rebuilt.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Rail-Highway Crossing	$1.0	
Ohio DOT SIB loan	$2.0	Ohio Southern Railroad paid back SIB loan with rail user fees
ORDC Grant	$2.0	
ORDC loan	$3.5	Ohio Southern Railroad paid back ORDC loan with rail user fees
Ohio Southern Railroad	$2.5	Private sector share

Source: Ohio Rail Development Commission, http://www.dot.state.oh.us/ohiorail.

Additional Information:

- Ohio Rail Development Commission – http://www.dot.state.oh.us/ohiorail

RICKENBACKER INTERMODAL FACILITY CONSTRUCTION

Location: Columbus, Ohio

Project Type: Intermodal facility

Project Cost: $100 million ($65 million for intermodal facility/$35 million for road and utility work)

Project Partners/Sponsors: Columbus Regional Airport Authority, Pickaway County, Franklin County, City of Columbus, Mid-Ohio Regional Planning Commission, Ohio DOT, and Norfolk Southern

Federal Agencies: FHWA

Project Status: Currently under construction

Project Description: Rickenbacker Airport in Columbus, Ohio, is an international multimodal cargo airport with Foreign-Trade Zone (FTZ) status that serves as a national and international distribution hub. The facility also is a high-speed international logistics hub with a strategically

planned cargo complex that serves several key business segments, including international airfreight, freight forwarding, corporate aviation, e-commerce fulfillment, and distribution.

The Columbus Regional Airport Authority has partnered with Norfolk Southern Corporation to create an intermodal facility on an adjacent to the Rickenbacker Airport property. The new Rickenbacker Intermodal Facility is expected to be operational by early 2007. The facility will relieve pressure on the area's existing intermodal facility at Discovery Park. Discovery Park has been operating at capacity for several years, forcing Norfolk Southern to turn away business from the Central Ohio region.

Funding and Financing Mechanisms: The new intermodal facility will be a public-private partnership among Norfolk Southern, the Columbus Regional Airport Authority, and other government agencies. The Airport Authority is paying for various environmental and traffic studies, and currently is working with Pickaway County, Franklin County, the City of Columbus, Mid-Ohio Regional Planning Commission, Ohio DOT, and FHWA to obtain funding for the other needed improvements. SAFETEA-LU provided $30.4 million in funding for the facility and Norfolk Southern is investing $34 million. Additional funding support is derived from Norfolk Southern Railroad, and from the States of Virginia, West Virginia, and Ohio for rail-related improvements to the Heartland Corridor. The Heartland Corridor, which runs between the deep water port at Norfolk, Virginia, and the planned Rickenbacker intermodal facility, is detailed in a separate case study.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
SAFETEA-LU	$30.4	Earmark
Norfolk Southern	$34.0	Private Sector investment

Source: Columbus Regional Airport Authority.

Note: The table does not include funds from other project partners.

Additional Information:

- Rickenbacker Airport – http://www.rickenbacker.org

Oregon

Columbia Slough Bridge to Intermodal Yards

Location: Portland, Oregon

Project Type: Railroad construction and railroad bridge

Project Cost: $6 million

Project Sponsors/Partners: Port of Portland and Ohio DOT

Federal Agencies: FHWA

Project Status: Completed in 1997

Project Description: The project consisted of construction of a railroad bridge over the Columbia Slough to connect the Port of Portland to inland rail yards and eliminate the need for truck drayage from the port. The project was part of a series of projects under the Partnership for Transportation Investment (PTI), an Oregon DOT program that encourages states and localities to use a variety of sources to pay for transportation infrastructure. The project was completed in 1997. The estimated truck emissions reductions were 52 kg/day VOC, 241 kg/day CO, and 364 kg/day NOx.

Funding and Financing Mechanisms: The rail bridge was funded through a combination of federal and port funds. Federal funds came from ISTEA Demonstration ($2.1 million) and CMAQ funds ($0.9 million).

The Port of Portland provided $3 million for the project. The tracks are leased to Union Pacific and Burlington Northern Santa Fe. The railroads pay a "wheelage" fee of $53 per rail car for 15 years.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
ISTEA Demonstration grant	$2.1	
CMAQ	$0.9	
Port of Portland	$3.0	

Source: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- Port of Portland – http://www.portofportland.com
- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

IMPROVING FUEL ECONOMY AND AIR QUALITY ON THE I-5 CORRIDOR

Location: Oregon, Washington and California

Project Type: Emission Reduction and Fuel Savings

Project Cost: $3.3 million to date, $5.7 million available in loan fund

Project Sponsors/Partners: *State and Local Agencies:* Oregon Department of Transportation; Oregon Department of Energy, Oregon Department of Environmental Quality, Lane Regional Air Protection Agency, Sacramento Air Quality Management District, Port of Seattle, Puget Sound Clean Air Agency, Washington Department of Ecology, Sacramento Council of Governments, Lane Council of Governments; Portland Metro; *Trade Associations:* Oregon Trucking Association, National Fuel Negotiators; *truck stops:* Jubitz Truck Stop, Truck and Travel, The 49er; *trucking companies:* over 300 small fleets and owner-operators; SmartWay Transport; West Coast Diesel Collaborative; and others

Federal Agencies: U.S. Environmental Protection Agency; Federal Highway Administration, National Research Energy Lab, Clean Cities

Project Status: Ongoing

Project Description: This project consists of providing and facilitating EPA SmartWay upgrades to trucks traveling along the I-5 Corridor in Oregon. EPA SmartWay upgrades consists of a combination of technologies that improve fuel efficiency and reduce emissions. The SmartWay upgrade includes:

- Auxiliary Power Units (APU);
- Single wide tires and aluminum wheels;
- Light-weight truck and trailer components;

- Aerodynamic packages;
- Automatic tire inflation systems;
- Shore Power HVAC systems with plug in capability;
- Exhaust retrofits; and
- Heaters.

Cascade Sierra Solutions (CSS) has showcase centers of SmartWay technologies in truck stops in Oregon and is in the process of setting up centers in California and Washington. CSS breaks down the awareness barrier by showcasing technologies, educating and providing information to truck drivers about these technologies and coordinating the installation of equipment. CSS breaks down the capital cost barrier by providing low-cost financing with no down payment and extended terms. CSS also provides grants and tax credits for truck owners. CSS breaks down the regulatory barrier by providing information about impending laws and rules that impact the trucking industry.

Funding Sources: CSS purchases the SmartWay equipment and pays for installation (with SIB loan money, and state energy loan funds). The final cost of the SmartWay upgrades to truck owners includes a small percentage for risk and a low interest rate for the term of the lease. Currently, the interest rate is zero percent because of a U.S. EPA grant that is being used to pay the interest. The next round of funding will be below market between 4 and 7 percent with no down-payment and a five-year payback period.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Sacramento AQMD/SACOG	$0.2	For Sacramento Center
U.S. EPA Grant	$0.2	For Coburg Center and initial project development
Oregon State Department of Energy	$2.7 plus 30.5% of Oregon leases	
Oregon DOT – SIB Loan	$3.0	
Original Equipment Manufacturer (OEM) support	6% of sales	Manufacturers contribute 6 percent of sales generated; currently have more than 30 OEM partners with CSS.

Source: Cascade Sierra Solutions

Additional Information:

- Cascade Sierra Solutions, http://www.cascadesierrasolutions.org

Pennsylvania

Delaware Valley Regional Planning Commission (DVRPC) CMAQ Competitive Program

The DVRPC CMAQ competitive program awarded funds to five freight projects in the last round of project selection.

Location: Greater Philadelphia-Camden-Trenton Area, Pennsylvania-New Jersey

Project Type: Intermodal facility, rail construction, port access, truck idle-reduction

Project Cost: Five freight-related projects, $4.4 million

Project Sponsors/Partners: Delaware Valley Regional Planning Commission, IdleAire Technologies Corporation, Brandywine Valley Railroad Company, Philadelphia Industrial Development Corporation, Philadelphia Regional Port Authority, and Norfolk Southern

Federal Agencies: FHWA

Project Status: Included in FY 2005-2008 TIP

Project Description: Every two to three years, DVRPC sets a specific amount of CMAQ funds within its Transportation Improvement Program (TIP) to fund projects through a competitive program. Projects may be submitted by any public agency or public-private partnership. On the last round of competitive CMAQ projects, DVRPC selected a total of 24 projects, of which 5 are freight projects.

- **Coatesville Transload/Intermodal Facility –** This project consists of the development of a new regional transload/intermodal facility that will allow use by bulk commodity shippers and receivers, and enable commercial shipments to be accommodated by rail instead of long-haul truck service. The project includes the rebuilding of track, installing ties, and one switch, among other activities. The total cost of the project is $395,500.

- **Philadelphia Food Distribution Center Cross-Dock Facility –** This project consists of the construction of a railroad boxcar-to-truck transfer terminal for transloading frozen/refrigerated food in the Philadelphia Food Distribution Center. The air quality goal is to eliminate long-distance truck trips from Interstate highways

and local streets by converting trips to boxcars. The total project cost is $843,000.

- **New Rail line track to Former Philadelphia Navy Yard –** The project includes rebuilding 2.1 miles of track, and reconstructing and reinstalling lead track into a new intermodal terminal. The air quality goal is to eliminate long-distance truck trips from Interstate highways and local streets by converting trips to boxcars. The project cost is $1.7 million.

- **Advanced Travel Center Electrification –** This project consists of installation of equipment at selected truck rest stops to provide heat/air conditioning, electric power, phone, Internet, and other amenities, for an hourly fee to drivers so that they may turn off the truck engines while resting. The project cost is $905,750.

- **Packer Avenue Marine Terminal Gate Enhancement –** This project includes the construction of improvements to modernize the 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. The cost of this project is $525,000.

Funding and Financing Mechanisms: The competitive CMAQ program awarded $2.7 million to the freight projects listed above. Other project funds come from the project sponsors. For instance, the project sponsor for the rail line into the Former Philadelphia Navy Yard is Norfolk Southern railroad. Their share for this project is $546,700.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$2.7	
Project Sponsor Share	$1.7	Matching to CMAQ funding

Source: DVRPC.

Additional Information:

- Delaware Valley Regional Planning Commission – http://www.dvrpc.org/transportation/capital/cmaq.htm

Rhode Island

FREIGHT RAIL IMPROVEMENT PROJECT (FRIP)

Location: Rhode Island

Project Type: Rail construction and vertical clearance

Project Cost: $196 million

Project Sponsors/Partners: Rhode Island DOT and Amtrak

Federal Agencies: FHWA

Project Status: Completed in October 2006

Project Description: The FRIP is a 22-mile project located within Amtrak's Northeast Corridor in Rhode Island. It entails constructing a freight dedicated track along Amtrak's mainline tracks, and linking Quonset/Davisville to the Boston Switch at Central Falls and out to western markets.

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, Rhode Island DOT 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. There was track access for the trains in 2005. Additional work not related to train operations (i.e., landscaping) was completed in 2006.

Funding and Financing Mechanisms: The FRIP is administered by the 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 allowed Rhode Island to "reserve," or program, its future annual highway dollars in order to complete this project. The project also received a $6 million congressional earmark that required a 50 percent local match. The local match was provided by the State and private sector through general obligation bonds and private user fees, respectively.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Bonds	$51.0	GARVEE and Motor Fuel bonds
Congressional Earmark	$6.0	
State/Private Sector	$6.0	Matching funds to federal grant

Source: Rhode Island DOT; FHWA Innovative Finance Quarterly, Fall 2003.

Additional Information:

- Rhode Island Department of Transportation – http://www.dot.state.ri.us

South Carolina

AIR FREIGHT REGIONAL HUBBING FACILITY

Location: Columbia, South Carolina

Project Type: Air-truck cargo facility

Project Cost: $64.3 million

Project Sponsors/Partners: South Carolina DOT, South Carolina Coordinating Council for Economic Development, Central Midlands Regional Planning Council, Richland-Lexington Airport Commission, and United Parcel Service

Federal Agencies: Federal Aviation Administration

Project Status: Completed in 1996

Project Description: This project involved the installation of a southeast regional air freight hubbing facility for United Parcel Service (UPS) at the Columbia Metropolitan Airport. The installation of the facility was initiated with design in September 1994, and construction was completed in July 1996. Freight arrives by truck and plane, is tugged to a sorting facility and sorted, and is then distributed by truck and plane across the southeastern United States and beyond. To accommodate this process, various transportation facilities were constructed. These included: an aircraft parking apron (over 35 acres for 14 DC-8 aircraft), a bridge for

trucks and tugs, a vertical depression of SC 302 to separate local traffic from trucks, and a sorting facility (260,000 square feet).

Funding and Financing Mechanisms: Federal, state, local, and private sector funds were committed for the construction of the facility and access elements.

The Federal Aviation Administration provided $21.6 million for the aircraft parking and other airfield improvements.

State and local funds came from the South Carolina DOT, South Carolina Coordinating Council for Economic Development, and Central Midlands Regional Planning Council. These agencies provided $1.2 million for the bridge and vertical depression of SC 302. The Richland-Lexington Airport Commission provide $6.5 million for the entire project (except the sorting facility).

UPS paid for the construction of the sorting facility ($35.0 million).

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Federal Aviation Administration	$21.6	Aircraft parking apron and other airfield improvements
South Carolina DOT	$0.05	Vertical depression of SC 302
South Carolina Coordinating Council for Economic Development	$0.7	Bridge and vertical depression of SC 302
Central Midlands Regional Planning Council	$0.5	Bridge and vertical depression of SC 302
Richland-Lexington Airport Commission	$6.5	Aircraft parking apron, airfield, bridge and vertical depression of SC 302
UPS	$35.0	Sorting facility

Source: FHWA, Freight Planning, http://www.fhwa.dot.gov/freightplanning/index.htm.

Additional Information:

- FHWA, Freight Planning, http://www.fhwa.dot.gov/freightplanning/index.htm

COOPER RIVER BRIDGE REPLACEMENT

Location: Charleston, South Carolina

Project Type: Bridge replacement and highway access to port

Project Cost: $667 million

Project Sponsors/Partners: South Carolina DOT, South Carolina State Ports Authority, and Charleston County

Federal Agencies: FHWA

Project Status: Completed in 2005

Project Description: The Cooper River Bridge was built to replace two obsolete bridges over the Cooper River, providing improved access and capacity between Charleston and Mount Pleasant. The new eight-lane bridge opened to traffic in July 2005, and includes an oceanside pedestrian/bicycle lane. The new bridge also provides increased clearance for vessels accessing the Port of Charleston and has the capacity of handling heavy vehicles. The bridge is an important roadway link to the Port of Charleston.

Funding and Financing Mechanisms: The Cooper River Bridge was financed with a TIFIA loan, and FHWA, state, and local funds. The TIFIA loan provided $215 million; the loan was refinanced in 2004 through the issuance of tax-exempt bonds by the South Carolina Transportation Infrastructure Bank (SCTIB). In addition, $127 million came from FHWA and South Carolina DOT matching funds.

The SCTIB provided a grant of $325 million. Before the repayment of the TIFIA loan, the SCTIB was responsible for the loan payments, estimated at $15 million annually. Funding sources to repay the TIFIA loan included funds from South Carolina DOT, the South Carolina State Ports Authority (SCSPA), and Charleston County.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
TIFIA Loan	$215	
FHWA Funds (including state match)	$127	
SCTIB Grant	$325	

Source: NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, 2003.

Additional Information:

- South Carolina Department of Transportation – http://www.scdot.org
- Cooper River Bridge – http://www.cooperriverbridge.org
- NCHRP Report 497 *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*. Available at http://trb.org/publications/nchrp/nchrp_rpt_497.pdf

Tennessee

Travel Center Electrification Units

Location: Petro Travel Center Number 12 on Watt Road just south of the I-40/75 interchange, Knoxville, Tennessee

Project Type: Truck Idle Reduction

Project Cost: $1.3 million

Project Sponsors/Partners: Knox County, Knoxville Regional Transportation Planning Organization, IdleAire Corporation

Federal Agencies: FHWA

Project Status: Completed November 2002

Project Description: The primary goal of the Advanced Travel Center Electrification (ATE) units are to reduce emissions created by idling trucks. Large diesel truck idling contributes significantly to air pollution levels in and around the Watt Road area. IdleAire's Advanced Travel Center Electrification (ATE) units can eliminate truck idling emissions while drivers rest by providing power to the truck cab, temperature

control, and other amenities such as Internet. This proposal is to design and construct a demonstration ATE project at the Watt Road Petro Travel Center, consisting of 100 ATE parking spaces. By converting the parking spaces to ATE, IdleAire hopes demonstrate the viability of the technology, judge the acceptability of the technology among truck owners and drivers, and lay a foundation for expanding across Tennessee and the nation as an effective idling alternative. The 100 ATE parking spaces will remove emissions by about 3,753 metric tons annually or 10,283 kilograms per day. The project has a projected useful life of 15 years or longer and is self-supporting after initial funding.

Funding and Financing Mechanisms: Congestion Mitigation and Air Quality (CMAQ) funds contributed $1 million to this project. Knox County acted as the sponsor and provided the funding match of $250,000 which was refunded to the county by IdleAire Corporation.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
CMAQ	$1.0	
Knox County	$0.3	

Source: Knoxville Regional Transportation Planning Organization

Additional Information:

- Knox County Department of Engineering and Public Works, http://knoxcounty.org/epw/highwaymain.php
- IdleAire Technologies Corporation, http://www.idleaire.com
- Knoxville Regional Transportation Planning Organization, http://www.knoxtrans.org.

Texas

Railroad Crossing Reliability Partnership Program

Location: Dallas-Fort Worth, Texas

Project Type: Rail-highway crossing improvements

Project Cost: $11.74 million (projects selected in 2004); $4.99 million (projects selected in 2005)

Project Sponsors/Partners: North Central Texas Council of Governments, Dallas Area Rapid Transit, Texas DOT, local municipalities in Dallas-Fort Worth region, and Burlington Northern Santa Fe

Federal Agencies: FHWA

Project Status: Program currently under implementation; some projects completed and/or under construction.

Project Description: The goal of the Railroad Crossing Reliability Partnership Program was to improve the safety and/or reliability of at-grade railroad crossings in the Dallas-Forth Worth region. Eligible projects include: crossing elimination, gate improvements, structural barriers, channelization, ITS deployments, improvement to roadway geometry and crossing surfaces, access roads, pedestrian or bicycle facilities, improved signs or warning devices, and other capital expenses necessary to meet the Program goals. The sponsor is the Regional Transportation Council (RTC). A process for project selection was approved in September 2002. Projects were submitted between August and October 2003, and evaluations and project recommendations made by the evaluation committee were approved in August 2004. In 2005, 17 projects to improve rail-highway crossings along the Trinity Railway Express (Dallas-Fort Worth commuter rail) were approved for a total program investment of $5 million. The timeframe for contract letting of the last round of projects is 2006 through 2012.

Funding and Financing Mechanisms: The Program is funded with STP funds. The program requires a 20 percent match. Funding partners include Burlington North Santa Fe Railway, Dallas Area Rapid Transit, local Texas DOT, North Central Texas Council of Governments local municipalities.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
STP	$3.12	Fort Worth District
Local Match	$0.78	Fort Worth District
STP	$6.27	Dallas District
Local Match	$1.57	Dallas District

Source: North Central Texas Council of Governments.

Additional Information:

- North Central Texas Council of Governments – http://www.nctcog.org

TEXAS PACIFICO RAIL LINE

Location: Forth Worth to Presidio, Texas

Project Type: Railroad acquisition and rehabilitation

Project Cost: $9.5 million for railroad acquisition; initial rehabilitation cost estimated at $21.5 million

Project Sponsors: Texas DOT and Grupo México

Federal Agencies: None

Project Status: Railroad acquired by TxDOT in 2001

Project Description: The South Orient Railroad Company filed for abandonment of the Texas Pacifico Rail Line (formerly known as the South Orient Rail Line) in 1998. The rail line is 400 miles long, running between Forth Worth to the border of Mexico, at Presidio, where it connects to Ferromex railroad in Mexico. TexasDOT purchased the rail line in 2001, acquiring all rights, titles, and interests in the rail line. The rail line was leased and is currently operated by Grupo México.

Funding and Financing Mechanisms: The rail line acquisition cost was $9.5 million. The Texas legislature appropriated $6 million in 1999 to purchase the rail line. The remaining $3.5 million came from a 40-year lease and operating agreement with Grupo México. Initial rehabilitation expenditures have been reported at $21.5 million, shared between Grupo México ($15 million) and Texas DOT ($6.5 million).

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Texas DOT	$6.0	Texas Legislature appropriation for rail line acquisition
Grupo México	$3.5	Lease and Operating agreement
Texas DOT	$6.5	Rehabilitation funding
Grupo México	$15.0	Rehabilitation funding

Source: Traffic World, February 14, 2005.

Additional Information:

- Texas Department of Transportation – http://www.dot.state.tx.us/

Virginia–West Virginia–Ohio

HEARTLAND CORRIDOR

Location: Norfolk, Virginia to Columbus, Ohio

Project Type: Vertical clearance, intermodal facilities, and rail relocation

Project Cost: $309 million

Project Sponsors/Partners: Norfolk Southern, Virginia DOT, West Virginia DOT, and Ohio Rail Development Commission

Federal Agencies: FHWA

Project Status: Currently in planning stages; intermodal terminal in Columbus, Ohio currently is under construction (see Rickenbacker Intermodal Facility Construction case study, page 111).

Project Description: The Heartland Corridor project includes: 1) providing double-stack clearance between Roanoke, Virginia, through West Virginia to Columbus, Ohio; 2) new or expanded intermodal facilities in three locations along the corridor, and 3) rail relocation of the Western Freeway Rail Corridor in Portsmouth, Virginia. The total project costs are distributed among the elements listed below as follows:

- Heartland Corridor Double-Stack Clearance (including intermodal facility in Prichard, West Virginia) – $169 million;
- Intermodal Terminals in Columbus, Ohio and Roanoke, Virginia – $80 million; and
- Western Freeway Rail Relocation – $60 million.

Funding and Financing Mechanisms: Federal and state funding sources have been identified to fund all the elements of this project. About $11 million of the project cost remain unfunded, related to the Western Freeway rail relocation.

SAFETEA-LU authorized a total of $143 million for this project, including $95 million for the double-stack clearance work, $15 million for the rail relocation, and $33 million for the intermodal facilities.

Virginia has approved a $22.4 million grant through the Rail Enhancement Fund to pay for the Virginia components of the Heartland Corridor (double-stack clearance and Roanoke intermodal facility). The Rail Enhancement Fund grant requires a 30 percent match, which is expected to come from Norfolk Southern. The Ohio Rail Development Commission (ORDC) recently approved (April 2006) $836,355 to pay for the double-stack clearance work in Ohio, with matching funds (10 percent) from Norfolk Southern. Norfolk Southern has committed $44.4 million to the double-stack clearance and $5.4 million for the Roanoke intermodal facility.

For the Western Freeway rail relocation projects, $25.8 million will be provided from the Rail Enhancement Fund, $5.0 million from the Governor's Transportation Funds, and $3.75 million from the state to match the SAFETEA-LU earmark. The Rail Enhancement Fund grant requires a 30 percent match that would complete the unfunded costs of this project.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Projects of National and Regional Significance	$90.0	For double-stack clearance work
Projects of National and Regional Significance	$15.0	For Western Freeway Rail Relocation
High-Priority Projects	$5.0	For Roanoke intermodal facility
VA Rail Enhancement Fund	$48.2	For double-stack clearance (VA), Roanoke intermodal facility, and Western Freeway Rail Relocation
Governor's Transportation Funds	$5.0	For Western Freeway Rail Relocation
VA Match to Federal Funds	$3.7	For Western Freeway Rail Relocation
ORDC grant	$0.8	For double-stack clearance work
Norfolk Southern	$49.8	Includes matching funds for VA Rail Enhancement Fund and ORDC grants (double-stack clearance and Roanoke intermodal facility)

Sources: FHWA, SAFETEA-LU Legislation, available at http://www.fhwa.dot.gov/safetealu/index.htm, and Public Private Partnership Case Studies, http://www.fhwa.dot.gov/ppp/heartland.htm; Virginia Department of Rail and Public Transportation, http://www.drpt.state.va.us/projects/current/rail-fund.aspx; Ohio Rail Development Commission, http://www.dot.state.oh.us/OHIORAIL/.

Note: The table includes only committed funds and matching funds for Virginia and Ohio grants. Funding for the Rickenbacker Intermodal Facility are excluded; see case study on page 111.

Additional Information:

- Virginia Department of Rail and Public Transportation – http://www.drpt.state.va.us
- Ohio Rail Development Commission – http://www.dot.state.oh.us/OHIORAIL/

Washington

Freight Action Strategy (FAST) Corridor

Location: Puget Sound Region; Everett-Seattle-Tacoma, Washington

Project Type: Highway and rail port access, highway improvements, and rail capacity

Project Cost: Phase I – $545.6 million; Phase II – $318.2 million

Project Sponsors/Partners: Puget Sound Regional Council, Washington State DOT, Ports of Everett, Seattle and Tacoma, Transportation Improvement Board, Freight Mobility Strategy Investment Board, local governments, Union Pacific, and Burlington Northern Santa Fe.

Federal Agencies: FHWA

Project Status: Eight projects completed; remaining projects under design or construction

Project Description: The FAST Corridor Program started in 1996, and consists of several freight-related investments to address future increases of freight traffic at the ports in the Puget Sound region due to projected increases in imported goods (mainly from Asia), and needed improvements on east-west access from the ports to outside of the region. FAST Corridor improvements were needed to ensure that ports in the Puget Sound region remain competitive with other ports on the United States West and East coasts, and Vancouver, Canada.

Phase I of the FAST Corridor program included 15 projects, of which eight have been completed, and the remaining are under design or construction. Funding for Phase I already has been identified and committed. Phase II consists of 10 projects, which focus mainly on truck mobility improvements. FAST Corridor partners are still in the process of obtaining funds for remaining projects.

Funding and Financing Mechanisms: Federal funding for the FAST Corridor Phase I has been provided through several grant and discretionary programs, earmarks, STP and NHS. The Federal Government has provided $190.9 million for Phase I and $88.5 million for Phase II.

Burlington Northern Santa Fe and Union Pacific have provided $19.8 million for the Phase I project. The railroads agreed to provide 5 percent of the cost of grade separation projects. For Phase II, the railroads are expected to contribute about $3.4 million to fund four rail-related projects.

State funding includes funds from the Washington DOT, the Transportation Improvement Board, and the Freight Mobility Strategy Investment Board. Local governments and the ports also have provided funding for the FAST program.

Phase I

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
ISTEA Earmarks	$13.5	
STP and NHS	$63.8	
TEA-21 High-Priority Projects	$44.0	
TEA-21 Demonstration (Section 378)	$22.0	
TEA-21 FAST earmarks	$2.0	
TEA-21 National Corridors and Borders (Sections 1118/1119)	$33.5	
SAFETEA-LU	$3.5	
Anticipated federal funds	$8.7	
Washington DOT	$29.3	
Transportation Improvement Board	$49.3	
Freight Mobility Strategy Investment Board	$92.6	
Ports	$36.6	
Railroads	$19.8	
Local/Other	$67.3	
Unknown Funds	$59.7	

Source: FAST Project Funding Matrix (Updated: September 2005), provided by Puget Sound Regional Council (PSRC).

Phase II

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
ISTEA	$10.9	
STP and NHS	$7.1	
TEA-21 FAST earmarks	$44.7	
TEA-21 National Corridors and Borders (Sections 1118/1119)	$6.2	
SAFETEA-LU	$3.9	
Anticipated federal funds	$15.9	
Transportation Investment Board	$29.3	

Phase II (continued)

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Freight Mobility Strategy Investment Board	$41.2	
2003 Nickel Package (Washington DOT)	$46.0	Funded by an increase of five cents per gallon of gas. Program includes 158 projects and a total investment of $3.9 billion over 10 years.
Ports	$9.1	
Railroads	$3.4	
Local/Other	$49.6	
Unknown Funds	$51.0	

Source: FAST Project Funding Matrix (Updated: September 2005), provided by PSRC.

Additional Information:

- FAST Corridor – http://www.wsdot.wa.gov/mobility/fast/

HYUNDAI TERMINAL AT PORT OF TACOMA

Location: Port of Tacoma, Washington

Project Type: Port terminal and lifting equipment

Project Cost: $101 million

Project Sponsors/Partners: Port of Tacoma and Hyundai Corporation

Federal Agencies: None

Project Status: Completed in 1999

Project Description: Port of Tacoma Hyundai terminal construction and equipment purchase.

Funding and Financing Mechanisms: The Port of Tacoma partnered with the Hyundai Corporation to build the Hyundai Terminal, a $101 million 50-acre facility. The Port provided $56 million for new terminal construction and a new pier. The Port of Tacoma issued $40 million in tax-exempt private activity bonds, which are repaid through lease

income and container handling fees. Hyundai Corporation contributed $45 million for four new cranes and other lifting equipment in return for a leasehold interest in the new terminal. In 2000, the Port of Tacoma initiated the expansion of the original facility to increase the terminal size to 100 acres. To date, the terminal has been expanded to 80 acres, with plans to add the final 20 acres by 2006.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Port of Tacoma – Private Activity Bonds	$40.0	Repaid with lease income and container handling fees
Port of Tacoma	$16.0	
Hyundai Corporation	$45.0	For cranes and cargo handling equipment

Source: University of Washington, *Multimodal and Intermodal Infrastructure Development in Washington State*. Written by Balwani, Seema Kimberly Berry, Angela Leung, Joseph Llobrera, Evan Matthews, and Lisa Voight. May 2001.

Additional Information:

- Port of Tacoma – http://www.portoftacoma.com

PORT OF TACOMA OVERPASS CONSTRUCTION

Location: Port of Tacoma, Washington

Project Type: Highway crossing separation, port access, and rail construction

Project Cost: $30.8 million

Project Sponsors/Partners: Port of Tacoma, Washington DOT, and Burlington Northern Santa Fe

Federal Agencies: FHWA

Project Status: Completed in 2001

Project Description: The Port of Tacoma Overpass project, the first project from the FAST Corridor program to be implemented, was completed in August 2001. The project consisted of the construction of an overpass (to eliminate the intersection of the Port of Tacoma Road

and SR-509) and construction of a new interchange connecting both roadways. The project also provided additional rail capacity with the construction of "arrival and departure" tracks.

Funding and Financing Mechanisms: Funding for this project included federal, state, port, and railroad sources. Federal funds for the project totaled $24.3 million and included STP, High-Priority Project, and Borders and Corridors funds. Washington DOT provided approximately $2 million, and Burlington Northern Santa Fe contributed with $1.1 million. The remaining funding was provided by the Port of Tacoma.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
STP	$15.4	
TEA-21 High-Priority Projects	$4.5	
TEA-21 National Corridors and Borders (Sections 1118/1119)	$4.4	
Washington DOT	$1.9	
Port of Tacoma	$3.5	
Burlington Northern Santa Fe	$1.1	

Source: FAST Project Funding Matrix (Updated: September 2005), provided by PSRC.

Additional Information:

- Port of Tacoma – http://www.portoftacoma.com
- FAST Corridor – http://www.wsdot.wa.gov/mobility/fast/

Wisconsin

Didion Milling Project and Rail Line Improvements

Location: Horicon-Cambria, Wisconsin

Project Type: Rail loading/unloading facilities and rail rehabilitation

Project Cost: $3.87 million for Didion Milling facilities and rail connections; $4.85 million for Horicon to Cambria rail line rehabilitation

Project Sponsors/Partners: Wisconsin DOT, Didion Milling, and Wisconsin & Southern Railroad Company

Federal Agencies: None

Project Status: N/A

Project Description: The Didion Milling project consisted of the construction of a food packaging/processing facility in Cambria, Wisconsin. The Wisconsin DOT provided two loans for the construction of a rail-related storage and loading/unloading facility, and spur track connecting to the rail line from Cambria to Horicon.

The Horicon-Cambria rail line, owned by Wisconsin DOT and the East Wisconsin Counties Railroad Consortium, and rail service is provided by the Wisconsin & Southern Railroad Company (WSOR). The rail line was in need of substantial upgrading to ensure long-term service to the Cambria milling facility. The rail line rehabilitation project included replacement of cross-ties and switches, rail tracks, new ballast, and the reconstruction of 31 road crossings. In addition, a classification yard was constructed in Horicon to serve the northern division of the Wisconsin & Southern Railroad System.

Funding and Financing Mechanisms: The Didion Milling projects were funded through loans provided by Wisconsin DOT, totally $3.87 million. The rail rehabilitation work was funded with a loan and a grant from Wisconsin DOT, with matching funds provided by WSOR. The loans were provided through the Freight Rail Infrastructure Program (FRIIP), which provides loans to local governments, railroads, and private industries for railroad projects and repaid by revenues generated by Didion Milling and WSOR respectively. The grants were provided through the Freight Railroad Preservation Program (FRPP), which provides funding to local governments, railroads, and private industries for rail preservation, rehabilitation on publicly owned rail lines, and for purchasing abandoned rail lines.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Wisconsin DOT – FRIIP Loan	$2.21	1999 loan to Didion Milling; for rail-related storage and loading/unloading facilities
Wisconsin DOT – FRIIP Loan	$1.66	2003 loan to Didion Milling; for spur track and rail-related infrastructure at soybean processing facility
Wisconsin DOT – FRIIP Loan	$1.07	2001 and 2002 loans to WSOR for rail line rehabilitation
Wisconsin DOT – FRPP Grant	$3.03	2001 and 2002 grants to WSOR for rail line rehabilitation
WSOR/East Wisconsin Counties Railroad Consortium	$0.76	Rail line rehabilitation

Source: Wisconsin Department of Transportation, http://www.dot.wisconsin.gov/localgov/aid/railprojects.htm.

Additional Information:

- Wisconsin Department of Transportation – http://www.dot.wisconsin.gov
- AASHTO, 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

PORT OF SUPERIOR GENERAL MILLS S/X ELEVATOR PROJECT

Location: Superior, Wisconsin

Project Type: Dock reconstruction

Project Cost: $1.4 million

Project Sponsors/Partners: Wisconsin DOT, City of Superior, and General Mills

Federal Agencies: None

Project Status: N/A

Project Description: The S/X Facility is a large grain-handling facility currently leased by General Mills from Burlington Northern Santa Fe. Access to the facility is through vessel, truck, and rail. According to Wisconsin DOT, the facility's primary transfer operation is rail to vessel.

The existing dock was in need for extensive repair after the collision of two vessels, and many years of exposure to the elements.

Funding and Financing Mechanisms: Wisconsin DOT awarded a $1.1 million grant through the Harbor Assistance Grant Program for the dock restoration. The City of Superior assisted with the grant request. General Mills will provide matching funds (20 percent) to this grant.

Funding Source/ Financing Mechanism	Amount (Millions)	Comments
Wisconsin DOT – Harbor Assistance Program Grant	$1.1	
General Mills	$0.3	Matching funds to Wisconsin DOT grant

Source: Wisconsin Department of Transportation.

Additional Information:

- Wisconsin Department of Transportation – http://www.dot.wisconsin.gov
- AASHTO, 2005 Freight Transportation Achievers – http://freight.transportation.org/freight_awards.html

4.0 References

Federal Funding Programs

- SAFETEA-LU Legislation and Fact Sheets, http://www.fhwa.dot.gov/safetealu/index.htm.
- FHWA CMAQ Program Guide, http://www.fhwa.dot.gov/environment/cmaq99gm.htm.
- FHWA Freight Management and Operations, http://ops.fhwa.dot.gov/freight/.
- FHWA Freight Planning, Freight Provisions in SAFETEA-LU, http://www.fhwa.dot.gov/freightplanning/safetea_lu.htm.
- FHWA Freight Planning, Funding Programs, http://www.fhwa.dot.gov/freightplanning/funding.htm.
- FHWA Freight Management and Operations, *Funding and Institutional Options for Freight Infrastructure Improvements,* http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.
- Financing Federal-aid Highways http://www.fhwa.dot.gov/reports/finfedhy.htm
- Highway Trust Fund Primer http://www.fhwa.dot.gov/policy/primer98.pdf
- A Guide to Federal-Aid Programs and Projects http://www.fhwa.dot.gov/programadmin/covert21.htm
- FAA Airport Improvement Program, http://www.faa.gov/airports_airtraffic/airports/aip/, http://www.Federalgrantswire.com/airport_improvement_program.html.
- U.S. Department of Commerce, Economic Development Administration, http://www.eda.gov/InvestmentsGrants/Investments.xml,

http://www.Federalgrantswire.com/grants_for_public_works_and_economic_development_facilities.html.

- U.S. Department of Agriculture, Community Facility Program http://www.rurdev.usda.gov/rhs/cf/cp.htm, http://www.Federalgrantswire.com/community_facilities_loans_and_grants.html.

- U.S. Environmental Protection Agency, Brownfields Cleanup and Redevelopment http://www.epa.gov/swerosps/bf/partners/2005_fpg.pdf

Federal Financing Tools

- FHWA Innovative Finance, http://www.fhwa.dot.gov/innovativeFinance/index.htm.

- FHWA Public-Private Partnerships, http://www.fhwa.dot.gov/ppp

- Federal Railroad Association, Freight Financial Assistance, http://www.fra.dot.gov/us/content/26.

- FHWA Transportation Infrastructure Finance and Innovation Act (TIFIA) Program, http://tifia.fhwa.dot.gov

- FHWA Special Experimental Project Number 15 http://www.fhwa.dot.gov/ppp/sep15.htm

State Grant and Loan Programs for Freight Improvements

- California Infrastructure and Economic Development Bank, http://www.ibank.ca.gov/state/ibank/ibank_homepage.jsp.

- Florida Seaport Transportation and Economic Development Funding, http://www.dot.state.fl.us/seaport/fsteddesc.htm.

- Florida Strategic Intermodal System, http://www.dot.state.fl.us/planning/sis/.

- Illinois Rail Freight Program, http://www.dot.state.il.us/rfp.html.
- Indiana Rail Service Fund, http://www.in.gov/dot/modetrans/train/page3.html.
- Maine Industrial Rail Access Program, http://www.maine.gov/mdot/freight/irap.php.
- Michigan Rail Loan Assistance Program, http://www.michigan.gov/mdot/0,1607,7-151-11056_22444-22233-,00.html.
- Michigan Freight Economic Development Program, http://www.michigan.gov/mdot/0,1607,7-151-11056_22444-59638-,00.html.
- Michigan Local Grade Crossing Program, http://www.michigan.gov/mdot/0,1607,7-151-11056_22444-59617-,00.html.
- Michigan Grade Separation Loan Program, http://www.michigan.gov/documents/gradesepprogram_55324_7.pdf.
- Minnesota Port Assistance Development Program, http://www.dot.state.mn.us/ofrw/waterways.html.
- New York Industrial Access Program, http://www.dot.state.ny.us/progs/iap.html.
- Ohio Rail Development Commission, http://www.dot.state.oh.us/ohiorail/Programs/Rail%20Programs.htm.
- Pennsylvania Rail Freight Assistance Program, http://www.dot.state.pa.us/Internet/Bureaus/pdBRF.nsf/RailFreightHomepage?OpenFrameset.
- Tennessee Aeronautics Transportation Equity Fund, http://www.tdot.state.tn.us/aeronautics/handbook/SponsorsTOC.htm.
- Virginia Rail Enhancement Fund, http://www.drpt.virginia.gov/projects/current/rail-fund.aspx.

- Virginia Rail Industrial Access Program, http://www.drpt.virginia.gov/downloads/files/rail_indust_appl_2003.pdf.
- Washington Freight Mobility Strategic Investment Board, http://www.fmsib.wa.gov/.
- Wisconsin Harbor Assistance Program, http://www.dot.wisconsin.gov/localgov/aid/hap.htm.
- Wisconsin Railroad Infrastructure Improvement Program, http://www.dot.wisconsin.gov/localgov/aid/friip.htm, http://www.dot.wisconsin.gov/business/econdev/friip.htm.
- Wisconsin Railroad Preservation Program, http://www.dot.wisconsin.gov/localgov/aid/frpp.htm.

Case Studies

- NCHRP Report 497, *Financing and Improving Land Access to U.S. Intermodal Cargo Hubs*, http://trb.org/publications/nchrp/nchrp_rpt_497.pdf.
- AASHTO Innovative Finance, http://www.innovativefinance.org.
- AASHTO 2005 Freight Transportation Achievers, http://freight.transportation.org/freight_awards.html.
- U.S. Government Accountability Office, *Freight Transportation: Short Sea Shipping Options Shows Importance of Systematic Approach to Public Investment Decisions*, http://www.gao.gov/new.items/d05768.pdf.
- U.S. Government Accountability Office, *Port Infrastructure: Financing of Navigation Projects at Small- and Medium-Sized Ports*, http://www.gao.gov/archive/2000/rc00058.pdf.
- FHWA Freight Management and Operations, *Funding and Institutional Options for Freight Infrastructure Improvements,* http://ops.fhwa.dot.gov/freight/freight_analysis/financing.htm.
- California – Alameda Corridor, http://www.acta.org.

- Louisiana – Tchoupitoulas Corridor (TIMED Program Information), http://www.timedla.com.

- Nevada – ReTRAC, http://www.cityofreno.com/gov/retrac/.

- New York – Southern Tier Rail Project, http://www.southerntierwest.org/L5/trans_railauthority.htm.

- New York-New Jersey – Albany Express Barge, http://www.panynj.gov/commerce/PIDN-2-2004-rev.pdf.

- New York-New Jersey – Portway, http://www.state.nj.us/transportation/works/portway/index.html.

- South Carolina – Cooper River Bridge, http://www.cooperriverbridge.org.

- Texas – Railroad Crossing Reliability Partnership Program, http://www.nctcog.org/trans/goods/rcrpp/index.asp.

- Texas – Texas Pacífico Rail Line, Gallagher, John, *Rail Bridge for Growth: Resurrected Line in West Texas could serve as model for future government investment.* Traffic World. February 14, 2005.

- Washington – FAST Corridor, http://www.wsdot.wa.gov/mobility/fast/.

Other Resources

- AASHTO Directory – State DOTs Contact Information, http://www.transportation.org/?siteid=37&pageid=332
- Association of Metropolitan Organizations – MPO Directory, http://www.ampo.org/directory/index.php
- Federal Transit Administration – Transit Agencies by State, http://www.fta.dot.gov/35_ENG_HTML.htm

THIS PAGE INTENTIONALLY LEFT BLANK

Glossary of Terms

63-20 Corporations – Corporations established under IRS Revenue Rule 63-20, which permits nonprofit corporations other than solely governmental bodies to issue tax-exempt debt.

Airport Improvement Program – FAA program that provides funding for airport planning and development projects at airports included in the FAA AIP Handbook.

Allocations – Method of delivering Federal-aid Highway Funds without a codified formula. Allocated federal funds are distributed, at the discretion of the U.S. DOT Secretary, to states based on specific selection criteria serving specific program goals identified by Congress or distributed to projects identified by Congress through "earmarking."

Apportionments – Federal funds distributed to states by Congressionally designed formulas. Includes FHWA programs such as Bridge (HBRR), Congestion Management and Air Quality (CMAQ), Interstate Maintenance (IM), National Highway System (NHS), Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP), and Corridor Border Infrastructure Program (CBI).

Assessment District – A special district created where additional property taxes are levied to generate revenue used for a specific purpose such as infrastructure improvements. Often implemented using tax increment financing techniques.

Authorization Act – In most recent years, a multiyear substantive legislation that establishes or continues federal programs or agencies and establishes an upper limit on the amount of funds made available for the program(a) for a certain period (historically, four to six years). The current authorization acct for surface transportation programs is the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU; PL 109-59).

Bidding Process – Process in which transportation agency requests contractors to submit proposals for the construction of transportation infrastructure. Usually, a contractor is selected based on best value determined and the lowest cost proposal.

Bridge Program – Provides funding for replacement, rehabilitation and systematic preventive maintenance of the Nation's highway bridges.

Brownfield Revitalization Program – A program of the Environmental Protection Agency that provides grants or loans for brownfield site cleanup.

Capitalization – Process of depositing funds as seed capital into a State Infrastructure Bank (or for other state/local loan programs) to enable financial assistance.

Concession – Long-term agreement in which the private sector obtains the rights to operate and collect revenues on a transportation facility.

Congestion Mitigation Air Quality (CMAQ) Improvement Program – Provides funding for transportation projects and programs that improve air quality in nonattainment and maintenance area for ozone, carbon monoxide, and particulate matter by delivering transportation improvements that lead to measurable reductions in highway-based emissions.

Corridor Border Infrastructure Program – Program designed to improve the safe and efficient movement of motor vehicles at or across the land border between the United States and Canada and the land border between the United States and Mexico.

Credit Enhancement – Financial guarantees or other types of assistance that improve credit of underlying debt obligations. Credit enhancement has the effect of lowering the interest costs and improving marketability of bond issues.

Credit Ratings – Credit quality evaluations of bonds and notes made by independent rating services. A higher bond rating generally lowers the interest rate that the borrower must pay, and therefore, overall capital costs.

Debt Service – The amount of money necessary to pay principal and interest on a debt instrument (i.e., a bond or loan).

Dedicated Revenues – Funding source funded through certain deposits for funding specific purposes and includes repayment of debt, and may

include tolls, lease income, or dedicated taxes (e.g., motor fuel taxes, or sales taxes).

Economic Development Administration Funds – A U.S. Department of Commerce program that provides grants for projects in economically distressed industrial sites that promote job creation and/or retention.

Equity – Commitment of money from public or private sources for project finance, with a designated rate of return target.

Fixed Guideway Modernization Program – Federal Transit Administration program that provides funding for capital improvements on "fixed guideway" systems, including heavy rail, commuter rail, HOV systems, and light rail.

Flexible Match – Any non-federal match that is allowed under FHWA laws and regulations other than state and local cash contributions to a project. Flexible match permitted include use of private cash and in-kind contributions, publicly owned right-of-way, and funds from other federal agencies.

General Obligation (G.O.) Bond – A security backed by the full faith and credit of a state, locality, or other governmental authority. In the event of default, holders of G.O. bonds have the right to compel a tax levy, other borrowing, or legislative appropriation in order to satisfy the debt obligation.

Grant Anticipation Revenue Vehicle (GARVEE) – A GARVEE is any bond or any other form of debt repayable, either exclusively or primarily, with future federal aid highway funds under Section 122 of Title 23. Although the source of payment is federal aid fund, GARVEEs cannot be backed by a federal guarantee, but are issued at the sole discretion of, and on the security of, the state issuing entity.

Harbor Maintenance Fund – A U.S. Army Corps of Engineers program that provides funding for operations and maintenance of federally authorized channels for commercial navigation.

Highway Safety Improvement Program (HSIP) – Program established under SAFETEA-LU consolidating several safety-based highway programs and creating new safety programs designed to achieve a

significant reduction in traffic fatalities and serious injuries on all public roads.

In-Kind Contributions – Contributions employed in funding a project other than cash (including land and professional services) usually used to meet non-federal share payable (match) program requirements.

Interest – Sum paid for the use of capital.

Interstate Maintenance Program – Provides funding for resurfacing, restoration, rehabilitation, and reconstruction (the four "R's") of Interstate System facilities.

Intermodal Connectors – Roadways providing a connection major, intermodal facilities and routes designated as part of the National Highway System.

Investment-Grade Traffic and Revenue Study – Detailed study of current travel demand levels and forecasts of future traffic levels used in estimating potential revenues required to support project financing and bond issuance of toll projects.

Joint Development – Any formal arrangement between a public entity and a private organization that involves either private sector payments to the public authority or the private sector sharing project capital costs.

Junior Debt – Debt having subordinate or secondary claim on an underlying security or source of payment for debt service, relative to another issue with a higher priority claim (e.g., Senior Debt).

Letter of Credit – An instrument or document issued by a bank guaranteeing debt holder payment by enabling the bond trustee to draw from the bank the full amount of principal and interest due on each debt payment date.

Leverage – A financial mechanism used to increase available funds usually by issuing debt (typically bonds) or by guaranteeing or otherwise assuming liability for others' debt on an amount greater than cash balances.

Liability – Amount owed (i.e., payable) by an individual or entity, such as for terms received, service rendered, expenses incurred, assets

acquired, construction performed, and amount received but not yet earned.

Line of Credit – A form of loan to be used only in the instance of a shortfall in net revenue debt service or other financial commitment (i.e., a contingent loan). A line of credit, while similar to a letter of credit, is security available directly to the borrower/project sponsor with flexibility in the use of funds.

Loan – Legally binding document which obligates a specific value of funds available for disbursement. The amount of funds disbursed is to be repaid (with or without interest and late fees) in accordance with the terms of a promissory note and/or repayment schedule.

Long-Range Transportation Plan (LRTP) – Transportation plan developed for Urbanized Areas (population greater than 50,000) that covers at least a 20-year period and includes both short- and long-term strategies and actions that develop and maintain an integrated, intermodal transportation system. LRTPs are developed at statewide and metropolitan areas. In metropolitan areas, the LRTP must be constrained to reasonably available funding sources. In air quality nonattainment and maintenance areas the metropolitan LRTP must conform to air quality State Implementation Plans. The plan must conform to regional air quality implementation plans, where applicable. The plan must be constrained to available funding resources.

Municipal Bonds – Interest bearing obligations issued by state or local governments to finance operating or capital costs. The principal characteristic that has traditionally set municipal bonds apart from other capital market securities is the exemption of interest income from Federal income tax.

National Highway System (NHS) – The NHS is approximately 160,000 miles (256,000 kilometers) of roadway important to the nation's economy, defense, and mobility designated by Congress. The National Highway System (NHS) includes the following subsystems of roadways: 1) Interstate; 2) other principal arterial; 3) Strategic Highway Network (STRAHNET); 4) major strategic highway connectors providing access between major military installations and STRAHNET; and 5) intermodal connectors (see definition).

Non-Federal Match – The commitment of state or other non-federal funds required to receive federal funds where non-federal share payable apply.

Pay-As-You-Go Financing – Describes government financing of capital projects from current revenues or grants, rather than by borrowing.

Principal – Amount loaned to the borrower and owed to the lender which excludes interests, penalties, administrative costs, loan fees, and prepaid charges.

Private Activity Bonds – Tax-exempt bonds issued by states and local governments for projects sponsored by a private entity.

Project Revenues – All rates, rents, fees, assessments, charges and other receipts derived by a project sponsor from a project.

Public-Private Partnerships (PPP) – Contractual agreement between a public agency and the private sector that allows for greater private sector participation in the delivery of transportation projects.

Rail Line Relocation Grant Program – New federal funding program that provides grants to states for local rail line relocation and improvement projects. No funding appropriations were provided for fiscal year 2006.

Rail Rehabilitation and Improvement Financing (RRIF) – RRIF is an FRA program that provides loans and credit assistance for acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities.

Rail-Highway Crossing Program – Provides funding for projects that reduce the number of fatalities and injuries at public highway-rail crossings.

Revenue Bonds – Bonds whose principal and interest are payable exclusively from earnings of a public enterprise.

Revolving Fund – Financing tool that recycles funds by providing loans, receiving loan repayments, and then providing further loans.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – Current transportation authorization act, signed into legislation in August 2005 (PL 109-59) providing for transportation programs continuity through FY 2009.

Senior Debt – Debt obligations having a priority claim on the source of payment for debt service.

Shadow Tolls – Per vehicle amounts paid to a facility operator by a third party such as a sponsoring governmental entity and not directly by facility users. Shadow toll amounts paid to a facility operator can be based upon the type of vehicle and distance traveled.

State Infrastructure Bank (SIB) – A state or multistate revolving fund that provides loans, credit enhancement and other forms of financial assistance to surface transportation projects.

State Transportation Improvement Program (STIP) – A short-range transportation planning document developed by state DOTs, in cooperation/consideration with MPOs, tribal governments, and nonmetropolitan local officials. The STIP includes prioritized projects/project phases that cover at least four years and is developed at least every four years. Projects in the STIP must be consistent with LRTPs. In addition, the STIP must be financially constrained (achievable within existing or reasonably anticipated funding sources).

State/Local Match – Funding required to match federal funding and discretionary funds. Requirements toward this non-federal share payable funding is provided in 23 USC Section 120.

Strategic Highway Network (STRAHNET) – A network of highways important to the United States' strategic defense policy and which provide defense access, continuity and emergency capabilities for defense purposes.

Surface Transportation Program (STP) – FHWA program that provides flexible funding for projects on any federal aid highway, bridges on public roads, transit capital investments, and intracity and intercity bus terminal and facilities.

Tax Increment Financing – Financing technique in which bonds are issued to finance public infrastructure improvements, and repaid from

dedicated revenues from the increase in property taxes as a result of such improvements.

Tax-Exempt Bonds – A bond, issued by a state or local government, whose interest payments are not subject to Federal income tax, and sometimes also state or local income tax.

Title 23 of the United States Code (USC) – Highway Title of the United States Code that sets forth many of the laws governing the Federal-aid Highway Program. The title embodies substantive provisions of law that Congress considers permanent and need not to be re-enacted in each new highway authorization act.

Title 49 of the United States Code (USC) – Transportation title that includes laws governing various transportation-related programs and agencies, including the U.S. DOT, general and intermodal programs, interstate commerce, rail and motor vehicle programs, aviation programs, pipeline, and commercial space transportation.

Toll Credits – Section 1044 of the Intermodal Surface Transportation Efficiency Act permitted states to apply the value of certain highway expenditures funded with toll revenues toward the required state match on current federal aid projects. States may only substitute toll credits for state match if they demonstrate that a state's prior year highway spending equaled or exceeded the average of the previous three years' expenditures.

Transportation Improvement Program (TIP) – A short-range transportation planning document developed by MPOs, in cooperation/consideration with state DOT(s), Transit Operator(s), tribal governments, and nonmetropolitan local officials. The TIP includes prioritized projects/project phases that cover at least four years and is developed at least every four years. Projects in the TIP must be consistent with LRTPs. In addition, the TIP must be financially constrained (achievable within existing or reasonably anticipated funding sources).

Transportation Infrastructure Finance and Innovation Act (TIFIA) – Federal transportation credit program enacted under TEA-21, and modified by SAFETEA-LU, that provides direct federal loans, lines of credit, or loan guarantees provided through U.S. DOT to large projects of national significance, under criteria developed by Congress.

Truck Parking Facilities Program – New program under SAFETEA-LU that provides funding for projects which address the shortage of long-term parking for commercial vehicles on the NHS.

Turnkey – A generic term for a variety of public-private partnership arrangements whereby a public sector entity awards a contract to one or more private firms to undertake the development, construction, and/or operation of an infrastructure project for a predetermined period of time before turning the project back over to the public entity. Turnkeys may take various forms, including design-build-transfer and build-operate-transfer.

User Fees – Revenue collected directly from facility users, including tolls or container fees.

THIS PAGE INTENTIONALLY LEFT BLANK

Acronyms

AIP	Airport Improvement Program
AASHTO	American Association of State Highway and Transportation Officials
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
CFR	Code of Federal Regulations
CMAQ	Congestion, Mitigation, and Air Quality Improvement Program
DBFO	Design-Build-Finance-Operate
DBOM	Design-Build-Operate-Maintain
DOT	Department of Transportation
EDA	Economic Development Administration
FAA	Federal Aviation Administration
FRA	Federal Railroad Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GARVEE	Grant Anticipation Revenue Vehicle
HOT	High-Occupancy Vehicle
IM	Interstate Maintenance
IRS	Internal Revenue Service
ISTEA	Intermodal Surface Transportation Efficiency Act
MPO	Metropolitan Planning Organization
NHS	National Highway System
PPP	Public-Private Partnership
RLF	Revolving Loan Fund
RRIF	Rail Rehabilitation and Improvement Financing
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SIB	State Infrastructure Bank
STP	Surface Transportation Program
STRAHNET	Strategic Highway Network
TEA-21	Transportation Equity Act of the 21st Century
TIFIA	Transportation Infrastructure Finance and Innovation Act
TOT	Truck-Only Toll
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle-Miles Traveled

Technical Report Documentation Page

1. Report No. FHWA-HOP-06-108 (EDL 14295)	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Financing Freight Improvements		5. Report Date January 2007
		6. Performing Organization Code
7. Author(s) Jeffrey Buxbaum, Iris N. Ortiz, Cambridge Systematics, Inc.; Carol Keenan, FHWA		8. Performing Organization Report No.
9. Performing Organization Name and Address Cambridge Systematics, Inc. 100 CambridgePark Drive, Suite 400 Cambridge, MA 02140		10. Work Unit No.
		11. Contract or Grant No. DTFH61-01-C-00181
12. Sponsoring Agency Name and Address Federal Highway Administration 400 Seventh Street S.W. Washington, DC 20590		13. Type of Report and Period Covered Final Report
		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

This Guidebook describes funding and financing tools available for freight investments. The Guidebook has been designed to provide information to the FHWA, states, MPOs, and other parties interested in investing in freight infrastructure.

The Guidebook is composed of four sections:

1. **Funding and Financing Tools for Freight Investment –** This section describes existing Federal funding programs and financing tools that could be used to fund freight investments. It also provides an overview of several state programs that support freight projects.

2. **Case Studies of Freight Financing –** This section provides brief summaries of how various types of freight-related projects were financed.

3. **References –** This section provides links to other freight financing resources.

4. **Glossary of Terms**.

17. Key Words freight, airports, ports, rail, intermodal, funding, financing tools	18. Distribution Statement No restrictions. This document is available to the public through the National Technical Information Service, Springfield, VA 22161.

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No of Pages 159	22. Price

Form DOT F 1700.7 (8-72) **Reproduction of completed pages authorized**

SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
		NOTE: volumes greater than 1000 L shall be shown in m^3		
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
		TEMPERATURE (exact degrees)		
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	$candela/m^2$	cd/m^2
		FORCE and PRESSURE or STRESS		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
		TEMPERATURE (exact degrees)		
°C	Celsius	1.8C+32	Fahrenheit	°F
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m^2	$candela/m^2$	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.
(Revised March 2003)

U.S. Department of Transportation
Federal Highway Administration

Office of Freight Management and Operations
Phone: 202-366-9210
Fax: 202-366-3302
Web site: http://ops.fhwa.dot.gov/freight

January 2007
FHWA-HOP-06-108
EDL 14295