

MAP TO A VIBRANT ECONOMY



CONNECTICUT'S TRANSPORTATION STRATEGY



Report and Recommendations of the Transportation Strategy Board

January, 2011

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Photos courtesy of the Department of Transportation

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“Not later than January 1, 2007, and biennially thereafter, the board shall review and, if necessary, revise the strategy adopted pursuant to subsection (a) of this section. A report describing any revisions and the reasons for them shall be submitted to the Governor and, pursuant to section 11-4a, the General Assembly. Such report shall include a prioritized list of projects which the board, in consultation with the commissioner, determines are necessary to implement the recommended strategy, including the estimated capital and operating costs and time frame of such projects. Not later than January 31, 2007, the joint standing committees of the General Assembly having cognizance of matters relating to transportation, finance, revenue and bonding and planning and development shall meet with the Commissioners of Transportation and Economic and Community Development, the Secretary of the Office of Policy and Management, the chairperson of the Transportation Strategy Board and such other persons as they deem appropriate to consider the report required by this subsection”.

Section 13b-57g, General Statutes of Connecticut

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Transportation Strategy Board

January 11, 2011

Governor Dannel Malloy
Executive Office of the Governor
State Capitol
210 Capitol Avenue
Hartford, CT 06106

Dear Governor Malloy,

There seems to be a strong consensus that growing the economy of Connecticut to create jobs for its citizens and taxes to support public services is critical to our future prosperity. Such economic growth must come from the private sector and from federal investment in research and development; state and local governments for the most part play a supporting role. That role, however, is critical in certain areas—education, public safety, and transportation infrastructure being prime examples, and economic growth is unlikely to occur unless government is effective in those crucial arenas.

These past twelve months, working closely with both the State's Department of Transportation and the Office of Policy and Management, the Transportation Strategy Board has attempted to determine the major projects and scope of investment in transportation infrastructure required to support the economic prosperity of the state. Broadly speaking these investments involve first repairing and maintaining the facilities we currently have in place, and second investing in improvements necessary to keep Connecticut competitive in the future, especially by exploiting the geographic advantages of a state that sits astride major regional transportation corridors.

While the magnitude of the additional investments recommended is not small, especially in the face of the extraordinary deficits in the current State budget, the Board felt it important to face up to the magnitude of the task both because unless a solution is found to the transportation infrastructure issues the State runs the risk of choking off future economic growth critical to the creation of additional jobs and increased tax revenues, and because knowing the scope of the problem is the first step in determining alternatives for managing it.

The Board is submitting two documents to you, first a "Strategic Framework for Investing in Connecticut's Transportation Infrastructure," and second, under separate cover, a 2011 update of the full report required by the legislature every four years.¹ Because increased levels of support are recommended even in this time of extraordinary fiscal stress, the "Strategic Framework" document categorizes potential transportation infrastructure investments by type of need and strategic value. While the specific project list for each category may be further refined, DOT feels they have provided a reasonable order of magnitude of financial needs for each of the categories.

¹ I wish to thank in particular Tom Maziarz, Policy Bureau Chief for DOT who, with input from DOT Bureau Chiefs and the Transportation Strategy Board members, did the bulk of the drafting of the former report, and then Undersecretary of the Office of Policy and Management Phil Smith and his staff, who did the drafting of the latter document.

The strategic framework document also suggests the kind of economic impact analysis and potential return on investment that should be an important ingredient in any decision about which specific transportation projects to fund, although much additional work needs to be done to strengthen this form of analysis.

Finally, it is hoped that the strategic framework document might serve as the basis for a public discussion about the scale of the investments needed to move Connecticut forward in what is an increasingly competitive global economy, as well as a dialogue about the near-term burdens and long-term rewards those infrastructure investments will entail for citizens of our State.

Respectfully submitted,



Bruce D. Alexander
Chair, Transportation Strategy Board

Cc: President Pro Tempore Donald E. Williams, Jr.
Senator Martin M. Looney, Senate Majority Leader
Senator John P. McKinney, Senate Minority Leader
Speaker Christopher G. Donovan
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INTRODUCTION

It has now been almost a decade since the Transportation Strategy Board was established. During that time much has changed. The state's transportation programs have become much more multi-modal, services have been initiated or expanded and billions of dollars in new transportation investments have been approved. Those investments have included:

- Over 300 new railcars for use on the New Haven Line;
- New rail maintenance facilities in New Haven to support the new railcars;
- New rail stations in West Haven and Fairfield
- \$187 million for operational improvements on Interstate 95;
- \$150 million for transportation improvements other than those on I-95;
- Commuter rail service between New Haven, Hartford, Springfield and intermediate points;
- Additional funding for the New Britain-Hartford busway;
- Improvements on the New Haven Line branch lines; and
- Station and parking improvements on the New Haven Line, the branch lines and Shore Line East.

However, those initiatives are not self implementing. A great deal of work will be required in order to make each of them a reality. For that reason, implementing initiatives already approved is the Transportation Strategy Board's highest priority.

Achieving that goal will require aggressive action by the Department of Transportation and other state agencies involved in transportation, economic development and environmental issues. It will also require the state to ensure those agencies have the capacity to get the job done.

The Transportation Strategy Board recommends that:

- **The Department of Transportation establish detailed public project schedules leading to the timely implementation of the major transportation initiatives;**
- **The Governor and the General Assembly provide adequate staffing and resources for the Department of Transportation, consistent with workload and productivity models, to implement the transportation initiatives included in the 2005 and 2006 transportation legislation**

The last decade has also seen a shift in emphasis away from highways and toward public transportation as a means of addressing Connecticut's transportation needs. While the Transportation Strategy Board recognizes the importance of maintaining,

modernizing and in some cases expanding the state highway system it believes that the new emphasis on public transportation is necessary, proper and appropriate.

Each strategy prepared by the Transportation Strategy Board has identified a need for significant additional operating and capital funding. This report is no exception. As discussed in the report, billions of dollars in expenditures will be required over the next decade in order to maintain our transportation system in a state of good repair.

Additional resources will also be required in order to meet increased operating costs, including additional Department of Transportation staffing and bus and rail operating subsidies, all of which continue to grow faster than revenues.

Over the last decade Connecticut's leadership has demonstrated a commitment to meeting the State's transportation needs. The strategy and accompanying recommendations contained in this report represent the Transportation Strategy Board's roadmap for continuing to move the state's transportation network forward and ensuring that Connecticut remains a vibrant competitor in the global economic environment.

Guiding Principles & Strategies

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GUIDING PRINCIPLES AND STRATEGIES

Early in its deliberations, the Transportation Strategy Board adopted a series of eight guiding principles which are the central themes of this strategy, report and recommendations; these remain relevant. Taken together their goal is the creation of a balanced, intermodal transportation system which provides for the efficient, cost effective movement of people and goods.

These are the guiding principles:

- A balanced transportation system is essential to Connecticut's economic and social health and welfare. That system must provide mobility for people and goods in a way which meets the needs of users, business and commerce.
- Connecticut's transportation system must be multi-modal and provide options to the single passenger automobile.
- Connecticut's transportation system represents an investment in the state's future which must be maintained and preserved. It requires both strategic investments and on-going operating and capital support. It also requires efficient, cost effective, management and operations which make the best use of available resources.
- Transportation policy does not exist in a vacuum; it must also reflect the economic, social and environmental needs and policies of the state. Transportation investments, or the lack of them, can be an important factor in influencing economic development and job growth. Likewise, proper planning of transportation infrastructure and improvements can positively influence housing, land use and commutation patterns. It must support both economic development and a sustainable environment.
- Connecticut's transportation system must be flexible and responsive enough to meet the transportation needs of a wide variety of customers, including those with special needs. It must leverage innovation and advances in technology in order to improve service and control costs.
- The provision of accurate, timely, information about transportation systems and services is essential to the success of Connecticut's transportation system.

- Connecticut's transportation and development investments must support responsible growth, transit oriented development and the State Plan of Conservation and Development.
- Transportation planning, at all levels, must be comprehensive, inclusive and visionary and must maximize the options available to decision makers. Cooperation between local, state and federal organizations and entities must be encouraged. Whenever possible, transportation investments should be coordinated with similar planning and investments in neighboring states.

The Transportation Strategy Board also adopted broad strategies dealing with economic development, movement of people and movement of goods. All three adopted strategies are substantially similar to those adopted by the Transportation Strategy Board in 2003 and reaffirmed in 2007.

The strategies are:

- Ensure that the State's regions remain vibrant and competitive economic engines for Connecticut and attractive gateways to the State by leveraging existing transportation and other infrastructure assets, especially in Connecticut's urban centers, and by focusing appropriate resources on the mitigation and management of road congestion throughout the State with a focus in the near term on the Coastal Corridor.
- Facilitate the movement of people within and through the State by: expanding the quality and quantity of options (e.g. air, bike, bus, ferry, flex-time, rail, ridesharing, telecommuting) to single occupancy automobile trips; encouraging employer participation in demand management programs; enhancing the customer's transit experience; improving transit travel times through better integration of all transportation options; increasing capacity of roads through continued focus on information, safety, and incident management tools; and expanding targeted portions of certain roads.
- Facilitate the movement of goods to and through the State by: expanding and coordinating the State's air, rail, road and water infrastructure; improving the flow and safety of commercial truck traffic; and providing a broader range of competitive options to commercial trucks.

Transportation and Air Quality

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TRANSPORTATION AND AIR QUALITY

Connecticut's transportation choices play an important role in achieving the state's air quality goals. Integration of air quality considerations into transportation planning is the best way to assure Connecticut achieves its multi-faceted goals for our State's transportation sector.

In accordance with the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) must establish health-based National Ambient Air Quality Standards (NAAQS) for certain pollutants. Once EPA sets the standard, states must submit State Implementation Plans (SIPs) to attain and maintain air quality within their borders consistent with the NAAQS requirements. Currently, the entire state has been designated as non-attainment for the federal, health-based standard for ozone. Fairfield and New Haven Counties have also been designated non-attainment for the fine particulate NAAQS standard. Non-attainment designation means that the air quality exceeds the maximum limits for ozone and fine particulate established by EPA.

EPA is in the process of updating the NAAQS for several criteria pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, fine particulate matter (PM_{2.5}) and lead. EPA's recently revised nitrogen dioxide NAAQS clearly shift the focus of air quality monitoring to transportation sources.² EPA intends to issue final standards by September 1, 2010 to strengthen the 8-hour "primary" ozone standard, designed to protect public health, to a level within the range of 0.060-0.070 parts per million. EPA is also conducting a review of the existing air quality criteria and the NAAQS for PM_{2.5}³ and is expected to promulgate new standards in October of 2011.

A new State Implementation Plan (SIP) for ozone is due to EPA in 2013. In the SIP, the Connecticut Department of Environmental Protection (DEP) will have to specify how Connecticut will meet the new, more stringent ozone NAAQS. Under federal law, Connecticut must identify legally binding strategies to attain the federal NAAQS. Failure to submit an approvable SIP demonstrating attainment of the federal health-based standards within prescribed time frames can result in the loss of federal highway funds.

Connecticut's commitment to attain the ozone and particulate matter health standards requires strategies designed to reduce emissions of nitrogen oxides (NO_x), volatile organic compounds (VOCs) and fine particulate matter (fine particulate). The mobile source sector, which includes cars, trucks, buses, locomotives, and construction

² On January 22, 2010, EPA adopted stricter standards for NO₂ emissions that mandate changes to air monitoring near roadways. By 2013, such monitors must be operational in the New Haven, Bridgeport and Hartford urban areas.

³ A new Federal Reference Method for monitoring PM_{2.5} is to be implemented at the new multi-pollutant monitoring stations by January 1, 2011.

equipment, is a significant source of NO_x, VOC, and fine particulate emissions. Minimizing Vehicle Miles Traveled (VMT) and single-occupancy vehicles, as well as reducing emissions from the diesel-powered engines, are important strategies to improve Connecticut's air quality.

Mobile sources are also significant carbon emitters. State efforts to address climate change recognize the substantial contribution of mobile sources to the state's total annual carbon emissions. In 2008 the legislature established aggressive mandatory greenhouse gas reductions targets that are outlined in CGS section 22a-200a. Connecticut must achieve reductions of greenhouse gases (GHGs) by over 80% by 2050, and the transportation sector represents over 40% of the GHGs emitted in the State. Similarly, the state has recognized that diesel-powered engines produce toxic emissions of concern as well as carbon and fine particulate.

State-wide plans have been developed as part of an integrated approach to addressing air quality impacts from transportation sources. These plans include The 2005 Climate Change Action Plan and the planning efforts currently underway to meet the GHG reduction targets under CGS section 22a-200a, the Governor's Energy Plan, the Connecticut Diesel Plan, as well as the state's on-going SIP efforts.

Key transportation initiatives identified in these plans include:

- Reducing VMTs by encouraging transit, rail, bicycle and pedestrian components for the strategic transportation network.
- Encouraging inclusion of climate modeling data in repair/replacement of transportation infrastructure.
- Developing an infrastructure plan for providing alternatives to freight trucks, including enhanced freight rail infrastructure and intermodal transfer facilities.
- Reducing emissions from legacy fleets, in the transit, construction, school bus and motor transport sectors.
- Enhancing education and enforcement of the state's existing anti-idling strategy.
- Participating in a Transportation Climate Initiative (TCI) with ten other states to work on innovative regional initiatives such as an electric vehicle corridor between Maine and Washington D.C. to expand sustainable transportation options, support livable communities, and work towards connecting the region's existing mixed use transit oriented communities.

The Transportation Strategy Board supports integrating Connecticut's air quality goals into the state's transportation planning

Planning and Responsible Growth

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PLANNING AND RESPONSIBLE GROWTH

The Guiding Principles adopted by the Transportation Strategy Board and included in this strategy recognize the link between transportation, economic development, responsible growth and air quality:

“Transportation policy does not exist in a vacuum; it must also reflect the economic, social and environmental needs and policies of the state. Transportation investments, or the lack of them, can be an important factor in influencing economic development and job growth. Likewise, proper planning of transportation infrastructure and improvements can positively influence housing, land use and commutation patterns. It must support both economic development and a sustainable environment”.

Recognizing the importance of coordinating transportation planning with other state activities, Public Act 06-136 directed the Secretary of the Office of Policy and Management to “in consultation with the Commissioners of Transportation, Economic and Community Development and Environmental Protection, ensure the coordination of state and regional transportation planning with other state planning efforts, including, but not limited to, economic development and housing plans”.

Over the next four years, a number of important state planning documents are scheduled to be revised and updated. These include the Conservation and Development Policies Plan (Plan of Conservation and Development), DOT’s Long Range Plan and Master Transportation Plan, DECD’s Economic Development Strategic Plan and DEP’s State Implementation Plan. **The Transportation Strategy Board believes that that it is important to achieve the maximum possible coordination and integration between these plans.**

Those plans will be developed at a time when the state is placing an increased emphasis on the Responsible Growth initiatives which began over the last four years. For example, the most recent version of the Conservation and Development Policies Plan is organized around six Growth Management Principles. They are:

- Redevelop and Revitalize Regional Centers and Areas with Existing or Currently Planned Physical Infrastructure
- Expand Housing Opportunities and Design Choices to Accommodate a Variety of Household Types and Needs

- Concentrate Development Around Transportation Nodes and Along Major Transportation Corridors to Support the Viability of Transportation Options
- Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands
- Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety
- Promote Integrated Planning Across all Levels of Government to Address Issues on a Statewide, Regional and Local Basis

State agencies are required to consider the Plan when they prepare agency plans. In addition, certain agency prepared plans are required to be submitted to the OPM for a review of conformity with the Plan.

In addition, State agency actions are required to be consistent with the Plan when undertaking the following actions:

- The acquisition of real property when the acquisition costs are in excess of one hundred thousand dollars;
- The development or improvement of real property when the development costs are in excess of one hundred thousand dollars;
- The acquisition of public transportation equipment or facilities when the acquisition costs are in excess of one hundred thousand dollars; and
- The authorization of any state grants for an amount in excess of one hundred thousand dollars for the acquisition, development, or improvement of real property or for the acquisition of public transportation equipment or facilities.

The Transportation Strategy Board’s strategic actions and tactics included in the Transportation Strategy support the growth management principles of the Plan of Conservation and Development.

In 2006, the Governor and General Assembly authorized the use of Urban Act bond funds for Transit Oriented Development projects anywhere in the state, regardless of whether the community was otherwise eligible for urban act funding. The following year \$ 5 million in bonding funding was authorized for TOD projects. However, as a result of the state’s fiscal crisis, those funds were not released.

Interstate Cooperation



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INTERSTATE COOPERATION

The reach and impact of Connecticut's transportation system is not limited to within the state itself. It is also part of larger regional and national transportation systems. For that reason, Section 20 of Public Act 06-136 provides that:

“The state of Connecticut, acting through the Governor or the Governor's designee, shall initiate ongoing formal discussions with the commonwealth of Massachusetts and the states of New York and Rhode Island regarding opportunities to enhance commuter and freight mobility throughout the region. On or before January 1, 2008 and biennially thereafter the Governor or the Governor's designee shall report to the General Assembly on such discussions and any actions taken or recommended as a result of such discussions”.

A number of the Transportation Strategy Board's recommendations involve, or potentially involve, other states. They include:

- Including business and community leaders from Western Massachusetts in Bradley Airport planning and service development.
- Implementing commuter rail service between New Haven and Springfield by 2010
- Supporting the development and implementation of a “smart card” based transit pass program that can be utilized across the entire public transportation network.
- Improving integration of the New Haven Line, the branch lines, Shore Line East and the New Haven to Springfield Line so that seamless service is provided regardless of the entity responsible for operating a particular line.
- Purchasing 24 M8 electric rail cars for use on Shore Line East by 2013.
- Purchasing additional electric rail cars for use on the New Haven Line to increase reliability and support additional service.
- Specifying, funding and purchasing new rolling stock for use on the New Haven-Springfield rail line.
- Supporting cost effective proposals for Metro North access to Penn Station and intermediate stops.
- Supporting the efforts of DOT, the Governor and the General Assembly to:
 - Obtain voting representation for Connecticut on the Metropolitan Transportation Authority and the Metro-North Board of Directors;
 - Until voting representation is obtained continue DOT's participation on a non-voting basis; and

- Take other actions necessary to ensure the long term financial and operational vitality of the Metro-North line as one of the most critical components of the State's transportation infrastructure.
- Supporting DOT's continued monitoring of the future of Amtrak and its effects on operations and operating agreements for SLE and New Haven–Hartford–Springfield rail service.
- Supporting the state's acquisition of the New Haven-Springfield rail line currently owned by AMTRAK.
- Developing a comprehensive analysis of the potential for enhanced rail freight service to and through Connecticut, including, but not limited to: (1) the market for enhanced rail freight services; (2) the impact of enhanced rail freight service on traffic and congestion; (3) obstacles to enhanced rail freight service and ways to address them; and (4) the impact of enhanced rail freight service on commuter rail service, including scheduling and track availability, safety and physical infrastructure.
- Supporting continued federal funding for development and completion of a Dredged Material Management Plan for Long Island Sound.
- Reviewing the feasibility and viability of the proposed Bridgeport to New York feeder barge service. Entertain, and potentially fund, proposals for feeder barge services from ports other than Bridgeport.
- Finalizing and implementing a plan to increase available truck rest stop parking spaces, to increase the safety of Connecticut's highway system. Include support systems necessary to comply with state anti-idling laws.
- Supporting the expansion and improvement of Automated Traveler Information Systems, and other technologies that provide more comprehensive and timely information to travelers.
- Continuing the development and build out of the Commercial Vehicle Information Systems and Network.

The Transportation Strategy Board believes that effective partnerships with our neighboring states and their respective transportation systems are essential to Connecticut's development of a sound and effective state transportation system. **The Transportation Strategy Board specifically endorses the interstate initiative required by Public Act 06-136 and recommends that the State explore and, where appropriate, implement regional planning, cooperation and operating partnerships wherever they will enhance Connecticut's transportation system.**

Highways



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HIGHWAYS

Overview

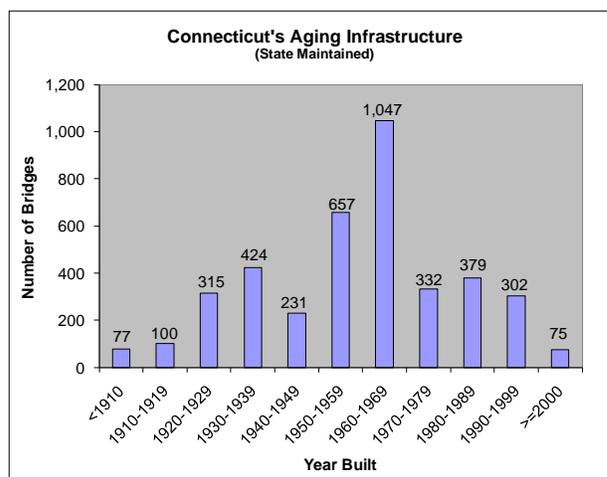
With 3,733 miles (9,775 lane miles) Connecticut's state highway and roadway system provides the backbone to the transportation network. These state owned and maintained roadways include 376 ramp miles and connectors and 3,701 state maintained bridges. The state's road network also includes 16,852 miles of roads maintained by local municipalities.

The Department of Transportation is responsible for the operation and maintenance of the entire state highway system. This includes the design and construction of roads and bridges; directing, managing and coordinating all engineering and support; administration, supervision and coordination of all highway related maintenance programs and activities; and managing construction activities for the State highway network.

In doing so it must deal with an aging infrastructure, the effects of New England weather, increasing auto use, and, most of all, traffic congestion. Addressing that congestion through alternatives to single passenger auto trips⁴, operational and safety improvements, and selected additional capacity has been, and continues to be, a central focus of the State's transportation strategy.

Connecticut's Interstate highway system poses a special challenge because most of it was built in the 1950s and 1960s. Bridges and other structures built in that time period are 40-60 years old and nearing or at the end of their design life.

For example, as the chart shows, Connecticut built 657 bridges in the 1950s and 1047 bridges in the 1960s. The sum represents almost half of our highway bridge inventory. Many of the bridges built in these two decades were part of the Interstate highway building surge that began in the 1950s and peaked in the 1960s. The federal



⁴ According to US Census Data, the single occupancy vehicle represents the predominant mode of travel for all trip types. That fact is a major cause of highway congestion.

government, which financed much of the development of the Interstate system, has shown little interest in financing the renewal of that system and states must now bear much of that cost.

Recognizing the difficult challenges facing Connecticut's interstate highways, the Transportation Strategy Board reiterates its prior recommendation that the State develop a master plan for the maintenance, capacity and future operations of the State's interstate highway system.

System Preservation and Renewal

Two years ago, the Department of Transportation assessed the level of resources needed to restore the state's highway infrastructure to a good state of repair, and to maintain that infrastructure going forward. The DOT assessment included two parts: (1) a preservation and restoration needs analysis, and (2) a maintenance needs analysis.

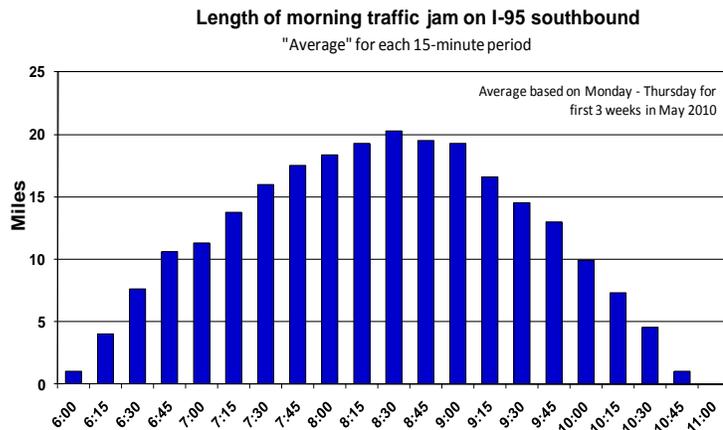


The preservation and restoration needs assessment evaluated existing conditions, identified the work needed over the next decade to restore conditions to an acceptable level, and estimated the costs for those treatments. DOT estimated that the State needs to spend \$75 million/year to restore about 350 miles of road annually, and about \$129 million/year to restore 50 highway bridges annually.

Major 'reconstruction' and 'replacement' projects are not included in the 'preservation' cost estimate. These costs are in addition to on-going annual maintenance costs, which DOT estimated at \$50 million a year for roads and \$25 million for bridges.

Congestion

Highway congestion impacts virtually every urban area in Connecticut, but it is



particularly severe in the Bridgeport-Stamford area. It is also a serious problem in the Hartford and New Haven areas, and a regular occurrence in the Danbury, Waterbury, and New London areas.

According to the Texas Transportation Institute's *Urban Mobility Report (UMR)* congestion causes over 32 million hours of delay annually in Connecticut's three largest urban areas. This congestion imposes an enormous cost on state residents and businesses. A conservative estimate is that the annual cost of congestion exceeds \$670 million⁵.

To fully appreciate the potential impact on businesses, it is necessary to consider the duration as well as the extent and severity of congestion in the I-95 corridor. Congestion has become pervasive and affects much of the corridor over an extended portion of the day. Planning deliveries and travel to meetings requires building in lots of extra travel time, or taking advantages of relatively small windows of opportunity during the day when congestion is normally absent.

For example, in the traffic back-ups on I-95 southbound begin shortly after 6:00 am on a typical morning and last until almost 11:00. The length of the back-up reaches



a maximum of over 20 miles around 8:30, but is still 10 miles in length at 10:00 am. This means that if you choose to travel I-95 at 10:00 am on a weekday morning, you should expect to encounter stop-and-go conditions in at least 10 miles of the corridor.

It is important to remember that this analysis reflects only the congestion on I-95 and does not take into consideration congestion on the Merritt Parkway (Route 15) and the Boston Post Road (Route 1). When those roads, as well as the major north-south feeders (Routes 7, 8 and 25), are taken into consideration the total congestion in the region is even higher. Further, the level of congestion on these roads reduces the alternatives available to drivers seeking alternatives to I-95.

The impact of this congestion and the resulting delay on businesses can take many forms. For example, businesses might need to offer higher wage rates to attract employees, and recruiting can become more difficult. Productivity is reduced when

⁵ The actual cost is probably much higher. It does not include smaller urban areas such as Danbury, Waterbury, and New London. It uses assumptions and national averages that do not reflect the higher wage rates in Connecticut or the fact the congestion in Connecticut often extends beyond the traditional morning and afternoon peak periods. A study conducted for the Southwestern CT RPA, found that when local wages rates are used and a more complete accounting of congestion is done, congestion costs in Southwestern CT far exceed the costs suggested by the UMR study.

employees arrive late, time needed for travel to business meetings increases, or meetings in certain parts of the state are avoided entirely. Inventory costs increase if deliveries become less reliable or require longer lead times. Delivery services become more expensive when delivery companies increase fleet size and hire more drivers to cope with increased traffic delays that directly reduce driver productivity by reducing the number of deliveries they can make over the course of a day.

Because of its central role in the state's highway system, the impact of the congestion on I-95 is felt throughout all of Connecticut. As the state's primary link to New York markets, economy, and transportation hubs, congestion in the I-95 corridor reduces the entire state's access to this global economic and transportation center.

While congestion is most severe in Southwestern Connecticut it is also an issue in the New Haven and Hartford areas. We are working with DOT to better define the extent of the problem in those areas.

Transportation Demand and System Management

States, including Connecticut, employ a variety of strategies and methods to deal with the causes and effects of existing and predicted congestion, including a mix of physical improvements to highways, in the form of either capacity or operational improvements; transit services that match demand with markets; and transportation demand management (TDM) and transportation system management (TSM). Those strategies are discussed more fully in another part of this report.

Major Roadway Projects

The 2005 transportation initiative provided \$187 million for a series of operational and safety improvements on Interstate 95.⁶ While several of these projects have been approved by the State Bond Commission implementation has been slower than

⁶ The list of planned projects included:

- West of New Haven
 - Operational and speed change lanes:
 - Interchange 10 NB (on) to 11NB (off)
 - Interchange 11 NB (on) to 12 NB (off)
 - Interchange 13 NB
 - Interchange 14 NB (on) to 15 NB (off)
 - Interchange 12 SB (on) to 11 SB (off)
 - Interchange 11 SB (on) to 10 SB (off);
- East of New Haven (Specific Projects TBD)
 - Speed change lanes, as needed, between Interchanges 54-93
 - Intersection Improvements
 - Median Improvements
 - Interchange 59 NB off ramp relocation
 - Interchange 70 SB off lane relocation
 - Reconfiguration of Interchanges to Route 85
 - Interchange 90, widen NB off ramp and improve destination signing

expected. The Transportation Strategy Board again recommends that the State expeditiously implement the safety and operational improvements authorized and funded by Public Act 05-4 and identify and implement similar improvements on other state highways.

The expansion of I-95 east of Branford has been a TSB recommendation since its initial strategy. The project implements recommendations of the *Interstate 95 Branford-Rhode Island Feasibility Study*, which was completed in August 2004. The study presented an assessment of the existing transportation and environmental conditions, an analysis of future transportation conditions (projected to 2025), recommended improvement concepts and an implementation plan of action for the I-95 corridor improvements that involved a mix of capacity improvements (additional lanes) and interchange access modifications.



The 2005 state transportation initiative provided funding for the environmental assessment of the most strategic section of the corridor, from Old Lyme to New London. Full design and construction funding is not currently available. In 2007, the TSB recommended that “the State continue to support and fund the capacity expansion of the I-95 between Branford and North Stonington consistent with on-going environmental study of that project”.

The Transportation Strategy Board has also considered a number of other strategic highway projects, including:

- Route 6. This project, which was intended to address safety, access and mobility issues on the principal state highway connecting Willimantic to Hartford, has been delayed for a number of years as the result of disagreements between state and federal transportation and environmental officials over the layout of the road. During the delay the Department of Transportation has undertaken safety improvements along the existing highway. However, highway access to and from Willimantic remains problematic and presents both an economic development and a mobility challenge. In 2007 the TSB recommended that “the state support the funding and construction of the Route 6 Expressway from

Bolton Notch to Windham and urged DOT, DEP and federal agencies to resolve outstanding issues”.

- Route 11. This project, which is among the region's top transportation priorities, involves construction of a limited access highway from the current terminus of Route 11 in Salem to Interstate 95. The Department of Transportation recently completed an updated environmental assessment of this project, which is currently in the review process. DOT's most recent estimate of the cost of this project is \$850 million. Construction funding is not currently available and the Department is not advancing the project at this time. This project includes interchange improvements between I-95 and several highways, including Route 11, which will need to be incorporated in the planned I-95 improvements if this project does not move forward.
- I-84 west of Waterbury. This project involves the design and construction of an additional lane in each direction between Waterbury and the New York State line in Danbury. An environmental assessment of this project is currently underway. The 2006 transportation initiative provided funding for the preliminary design of the improvements. Construction funding is not currently available and the Department of Transportation does not expect construction to begin before 2017. In 2007 the TSB recommended that “the state support and fund the widening of Interstate 84 west of Waterbury”.
- Interstate 84/Route 8 Interchange. This project involves the rehabilitation or replacement of the elevated interchange between Connecticut and Route 8 and Interstate 84 in Waterbury. The Department of Transportation estimates the construction of the project will not begin for a decade. The cost estimate is about \$2 billion. In 2007, the TSB recommend that “the State support and fund the feasibility and environmental studies for the reconstruction of the interchange of Routes 8 and I84 in Waterbury”. Those studies are currently underway.

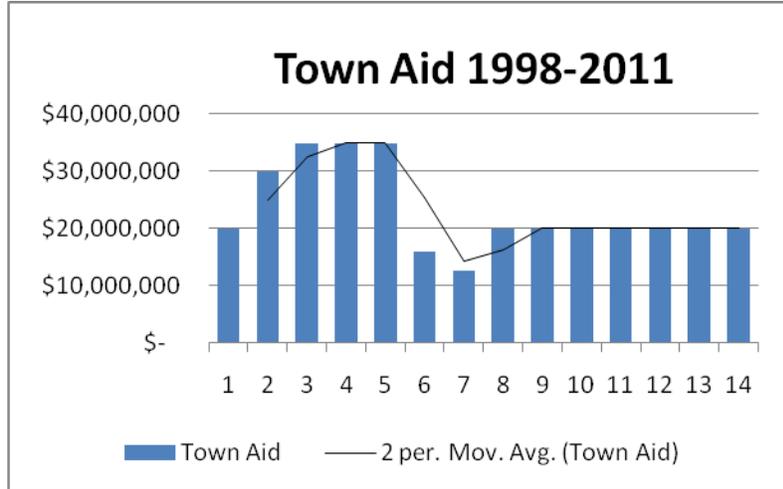
Town Aid Roads

The Town Aid Road (TAR) Grant funding is provided to municipalities to assist in the construction, reconstruction, improvement or maintenance of their local roads, highways and bridges. This includes snow plowing, the sanding of icy pavements, trimming and removal of trees, the installation, replacement and maintenance of traffic signs, signals and markings for traffic control and vehicle safety programs, and the operation of essential public transportation services and related facilities. The chart below shows the history of Town Aid Road funding from FY 1998 to FY 2011.

The Transportation Strategy Board repeats its 2007 recommendation that the Governor and General Assembly substantially increase the level of funding made available for the Town Aid Road program.

The Board further recommends that:

- Towns be encouraged to utilize TAR funds in either cooperative or regional ways (joint and/or cooperative purchasing, coordinated maintenance and other similar actions) as a means of efficiently utilizing public monies while maximizing the impact on the local road network.
- That priority for additional funding be given to regional and/or intra town use of TAR funds.
- That towns be required to utilize best management techniques, as recommended by the University of Connecticut Transportation Institute when utilizing TAR funds, in order to produce the best long term investment for road systems and the most efficient use of limited resources.



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Congestion Mitigation and System Management



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CONGESTION MITIGATION AND SYSTEM MANAGEMENT

As noted earlier in this report congestion on Connecticut roadways, particularly in the southwest corridor, comes at a great cost to the state. With the current economic climate it is of the utmost importance that the state maximizes the use and effectiveness of its existing transportation systems. Two ways to accomplish this goal are through the use of Transportation Systems Management (TSM) and Transportation Demand Management (TDM).

TDM and TSM and are two strategic approaches to dealing with the causes and effects of congestion. They include a mix of physical improvements to highways, in the form of either capacity or operational improvements; limitations on, or management of, highway use, transit services that match demand with markets; and similar strategies and tactics.

Transportation System Management

As the name suggests, Transportation System Management (TSM) is the name given to a series of strategies and techniques which focus on managing the transportation system in a way which reduces or mitigates the causes and/or effects of congestion. They can include limitations on access to highway facilities (HOV Lanes), congestion or value pricing, incident management, and traveler information systems.

Transportation system management techniques utilized in Connecticut include:

- High Occupancy Vehicle (HOV) lanes;
- E-traffic and rail alert system;
- Dynamic message signs on roadways to alert travelers to congestion/suggest alternate routes if necessary;
- Incident Management techniques; and
- The Commercial Vehicle Information Systems & Networks (CVISN).



HOV Lanes

Connecticut's highway network includes 38 lane miles of high occupancy vehicle (HOV) lanes. These are located north and east of Hartford, along both I91 and I84. The HOV lanes were established along I91 in 1993 and I84/I384 in 1989. These were extended into Hartford in 2000. The benefits of HOV lanes include promotion of carpooling, travel time savings, reduced fuel usage and reduced congestion.

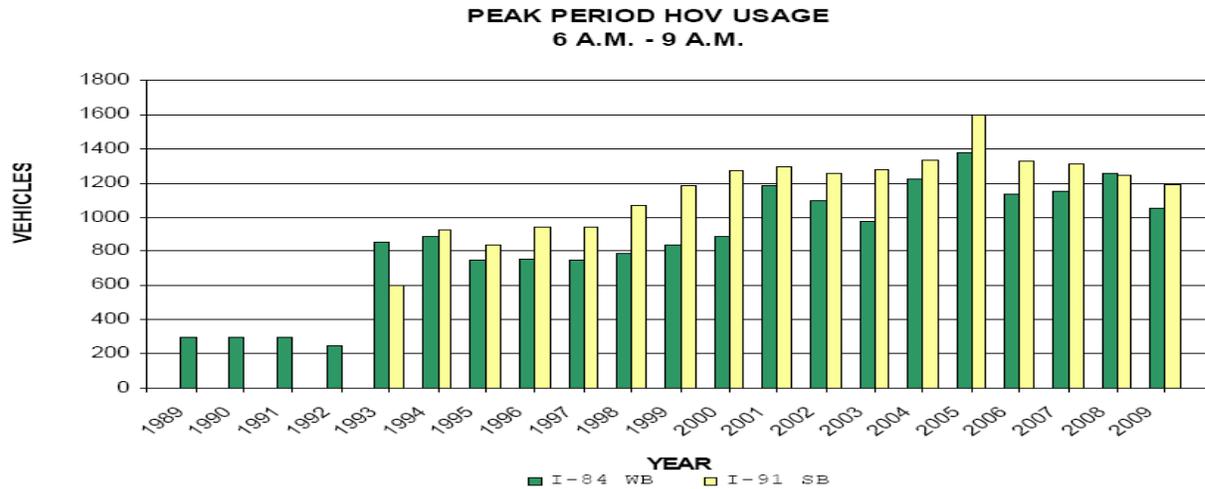


Figure 2. HOV Lanes Vehicle Count
NOTE: Motorcycles and illegal vehicles not included

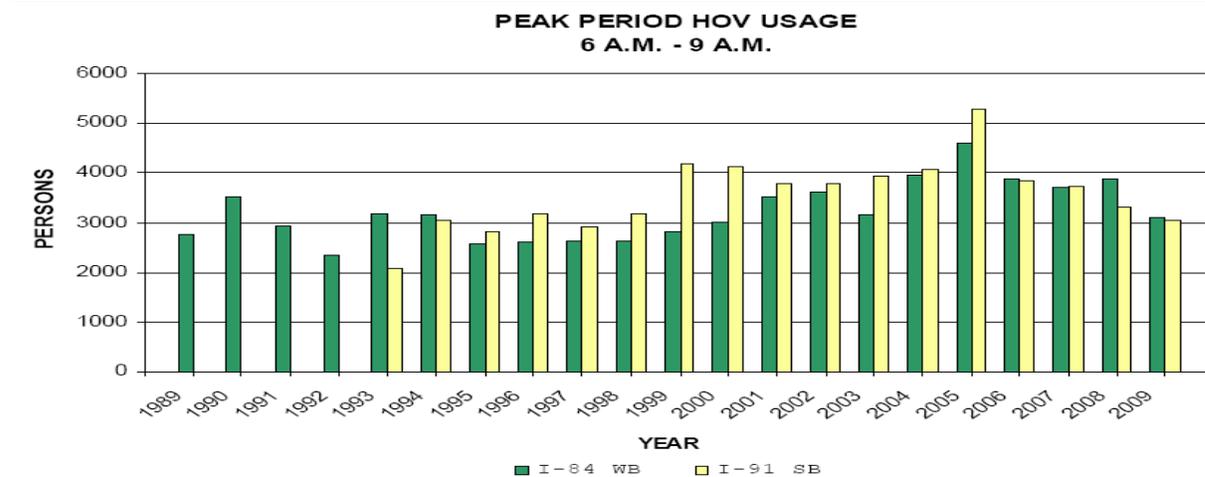


Figure 3. HOV Lanes Person Count
NOTE: Motorcycles and illegal vehicles not included

In November 2009 DOT issued a report on Connecticut's HOV lanes. The charts below from that report provide a snapshot of the HOV lane usage over the 20 year time period from 1989 – 2009.

From an all time high in 2005 there has been a continual decline in the usage of these lanes. This decline may possibly be attributed to the economic recession and the resulting loss of jobs as well as the relocation of several of Hartford's major employers to the surrounding suburbs.

Currently passenger vehicles in these lanes must have two or more occupants to use the HOV lane. In many places states have found that underutilized HOV lanes can be converted to High Occupancy Toll (HOT) lanes to ease congestion. Generally under this scenario vehicles with two or more occupants may continue to use the lane free of charge and those vehicles without the required minimum number of occupants may also use the lane for a fee. In this way the motorists can continue to access the free general purpose lanes or if two or more passengers HOT lanes or choose to pay a fee to access the HOT lane for single occupant vehicles. By drawing additional vehicles into the HOT lanes congestion is reduced in the general purpose lanes.

The Transportation Strategy Board recommends that the High Occupancy Vehicle (HOV) lanes on Interstate 91 be converted to High Occupancy Toll (HOT) lanes to address the current congestion in to and out of the Hartford area.

Congestion Pricing/Value Pricing

Congestion/value pricing is a multi-pronged approach to address congested corridors by encouraging drivers to change their travel behavior (mode, time of day, route, etc)_resulting in less congestion on the priced route and providing revenue to support the highway that is priced and possibly other modes of transportation as well.

Dr. Floyd Lapp FAICP, Executive Director of the South Western Regional Planning Agency (SWRPA) is a proponent of Congestion Pricing and shares his thoughts with the TSB below.

“Congestion pricing, if managed properly, has the potential to improve traffic flow, shift some people to transit, provide cleaner air, as a result of fewer vehicles on the road, and provide a financial resource especially where none now exists. It is part of a larger hierarchy of options related to managed lanes aimed at making more effective use of existing roadways and recognizing that building new facilities is just a short term, expensive “fix.” High occupancy vehicle lanes (HOV) put more people in cars and reduce the number of vehicles on the road. High occupancy toll lanes (HOT) improve the traffic flow for those willing to pay a price. Both options work well where traffic levels, the number of lanes and even space for expansion make these approaches feasible. Congestion pricing in Connecticut must recognize that space is limited and congestion is major along aging corridors such as I-95 and the Merritt Parkway where the problem is most severe, between

the NYS line going east and through the Greater Bridgeport region. HOV and HOT are not appropriate in this portion of the state because the roads are congested in all directions and there is not enough space to dedicate to a special purpose lane. Furthermore, these two regions can't be alone in charging a fee as if they were an island because of the impact on quality of life and economic development, among other related factors. What is needed throughout the state are variable pricing programs (HOV, HOT, full congestion pricing) on most limited access highways and related service routes or corridors. The fee would vary based upon the time of day and the level of congestion. Before a program is launched, a very extensive education program is needed to orient people as to what the program is and the positive impact it can have. The gist of the education would be to teach people that the private automobile is not a sustainable mode of travel and should be discouraged whenever feasible."

As Dr. Lapp points out the implementation of congestion pricing is not a simple process and must be considered as part of a "hierarchy of options". Within the last few years there have been two studies looking at the possibilities for the use of congestion pricing in Connecticut including the issues and concerns around implementation.



In September of 2008 the Connecticut Cooperative Transportation Research Program (CCTRP) at the University of Connecticut issued a report entitled *Value Pricing in Connecticut: A Policy Simulation*.⁷ The goal of the research was to determine which roadways and or regions in Connecticut were candidates for congestion pricing and to evaluate the impact of pricing in these areas. Initially the research considered looking at the Hartford area High Occupancy Vehicle (HOV) lanes as candidates for pricing by converting the existing HOV lanes High Occupancy Toll (HOT) lanes. Upon further investigation it was determined that due to the lack of transit options for the area a determination of this possibility could not be completed without looking at the need for transit and this would be beyond the scope of the project. The report then identified Interstate 95 and Route 15 as possible candidates for congestion pricing and looked at the impact of pricing only I-95, only Route 15 or pricing both.

⁷ Connecticut Cooperative Transportation Research Program, [Value Pricing in Connecticut: A Policy Simulation](#) September 2008, N. Garrick, W. Marshall, E. Jackson

The report showed that pricing only one route through the region would have a significant negative impact on the other route. Pricing both routes would result in a shift from auto to rail and as the price increased, the shift to rail would increase. In addition to the shift to rail there would also be a diversion of traffic to local roads, alternate routes, and other transit options. To optimize the benefit of congestion pricing the State would have to enhance the transit options in this area, particularly rail as well as invest in transit oriented development.

In March of 2008 the Office of Policy and Management (OPM), on behalf of the TSB issued a Request for Proposals to undertake a comprehensive review and analysis of the potential applications of both electronic tolls and congestion pricing on Connecticut's highways as a means of both managing transportation demand and raising revenue.

Cambridge Systematics, the selected contractor for the review and analysis, looked at nine tolling scenarios for the state including the conversion of HOV to HOT lanes and congestion pricing in the Southwestern (I-95, Route 15) corridor.



The final report, submitted to the TSB in April 2009 found that with a HOV to HOT lane conversion in the Hartford area although it would be relatively easy to implement there is not enough sustained congestion to generate revenue to cover operating costs and would result in a life-cycle financial shortfall.

In looking at congestion pricing in the I95-Route 15 corridor they found that using pricing to eliminate congestion would be virtually impossible due to the amount of congestion, the extended length of the congested commuting times and the inability to construct additional lanes for dedicated HOV/HOT purposes. Cambridge Systematics also noted that there would be significant diversion to local roads such as Route 1 which would be unable to accommodate the additional traffic. In conclusion they reported that this option would raise economic, environmental, equity and safety concerns in the impacted communities.⁸

The Transportation Strategy Board supports ConnDOT in making an application to the USDOT Value Pricing Program to further analyze the possibility of implementing congestion pricing in Connecticut.

⁸ Connecticut Electronic Tolling and Congestion Pricing Study, Cambridge Systematics, April 2009

Incident Management

Studies estimate that more than half of all highway delays in urban areas are the result of incidents. These incidents can include a flat tire, vehicle breakdown, traffic accident or truck rollover, as well as weather. Connecticut's incident management system is primarily operated by the Department of Transportation. The program is managed out of two operations centers located in Newington and Bridgeport. These centers monitor 262 closed circuit cameras and operate commuter notification through 110 fixed and 8 portable variable message signs. In addition, the Department of Transportation has access to seven highway advisory radio transmitters, with three more planned for deployment as part of projects on Interstates 91 and 95 which can be used to advise commuters of traffic incidents. The average detection time of incidents in Connecticut is under two minutes.

ConnDOT operates a statewide electronic highway traffic and rail incident notification system for Connecticut. The service provides subscribers with alerts via e-mail when there is a traffic or major rail incident that affects travel in the subscriber's chosen area. Subscribers may choose preferences including geographical area(s), time(s) of day, and day(s) of the week. The traffic e-alerts are generated from the ConnDOT's Highway



Operations Centers in Newington and Bridgeport. The rail e-alerts are generated from the ConnDOT's New Haven Rail Operations Center and indicate route and delay information.

As a result of the 2003 Transportation Strategy Board's report a statewide incident management task force was

established that included representatives from the State Departments of Public Safety, Transportation, Motor Vehicles, and Environmental Protection, the Connecticut Chiefs of Police Association, Connecticut Fire Chiefs Association, Towing and Recovery Professions of Connecticut, emergency management services, and regional planning organizations with incident management councils. The task force has been successful in providing a forum for various responding disciplines to discuss after-action reviews; examining and emphasizing the sharing of "best practices" both within the State of Connecticut and elsewhere; cross-training and other issues of mutual interest; and identifying additional recommendations for improving the management of traffic incidents in our State. **The Transportation Strategy Board supports the continuation of the statewide incident management task force.**

Among the task forces successes was the approval of the 2007 Highway Incident Management Policy by five State agency commissioners and the presidents of four statewide local responder associations including fire chiefs, career fire chiefs, police chiefs and towing professionals. This policy represented real progress in recognizing the importance of promoting a team concept for managing incidents on our State's highways. **The Transportation Strategy Board supports the reaffirmation and distribution of this policy through the chain of command to all appropriate response personnel.**

In addition the task force recommended the development and aggressive implementation of "an efficient, coordinated incident management system to secure its economic future by enhancing its ability to compete in the national and global marketplaces and by strengthening the use of its overall transportation infrastructure."

The task force recommendations to develop and adopt a unified response manual (URM), the expansion of the Connecticut Highway Assistance Motorist Patrol program (CHAMP) and the

development and distribution of highway diversion plans for major incidents have been implemented. A Unified Response Manual has been developed with



approval by various state agencies. The development and coordination of training on the URM has been assigned to the Department of Emergency Management and Homeland Security. **The Transportation Strategy Board supports the development and conducting of appropriate training to implement the URM.**

As outlined in the task force's November 12, 2010 letter to the TSB "the relatively low-cost (incident management) recommendations are implementable and are proven to significantly reduce highway congestion caused by traffic incidents. More importantly, these (incident management) recommendations improve the safety of responders and motorists alike by allowing for quicker response and clearance of incidents." In support of the task force, **the Transportation Strategy Board recommends the support and fund a public awareness campaign for motor vehicle laws, including but not limited to the "Move Over" and "Move It" laws, and include these laws in the Department of Motor Vehicles (DMV) Drivers Manual and driver training; as well as the complete**

review of towing issues, including but not limited to tower payments (amount and method), equipment and training requirements, and liability issues.

The Transportation Strategy Board's 2007 report also recommended the development



of diversion plans for major accidents that close or hamper travel on limited access highways. This

recommendation has been implemented and diversion plans for the state's limited access highways have been developed and can be found on the Capitol Region Council of Governments website at http://www.crcog.org/homeland_sec/DivPlans.html

Completion of the expansion of the Connecticut Highway Assistance Motorist Patrol program (CHAMP) which the TSB recommended in its 2007 report occurred in July of 2008, with the addition of two vehicles to the Merritt Parkway, three to the Greater Waterbury area and three to southeastern Connecticut, bringing the program's total to fifteen. The expansion has been very successful assisting an average of 270 motorists per month on the Merritt Parkway, 350 per month in southeastern Connecticut and 480 per month in the Greater Waterbury area. The original CHAMP services on the I-95 corridor in southern/southwestern CT (includes I-95 from the NY state line to Branford, I-91 from exit 8 to I-95 interchange, sections of Route 7, route 8 and route 34) provide approximately 500 assists per month while those in the Greater Hartford area (including sections of I-91, I-84, I-291 and Route 2) provide approximately 700 per month. In addition to providing motorist assistance, the program notifies the highway operations centers of any need for emergency personnel. The program has been very successful in quickly removing disabled vehicles and in providing protection to broken down motorists.

The Transportation Strategy Board also recommends the initiation of a discussion with the Department of Public Utilities (DPUC) and utility companies regarding their emergency response procedures and capabilities, which can help to expedite the clearance of roadways during large weather-related events and call-outs for hazardous incidents.

Weigh Stations

Connecticut's weigh station program consists of 6 permanent weigh facilities as well as the use of portable scales.

Connecticut's commercial weigh station facilities are jointly staffed and operated



by the Departments of Motor Vehicles and Public Safety. The Department of Motor Vehicles' operations implement the federal Motor Carrier Safety Assistance Program, which also includes enforcement of carrier compliance and rating programs. The Department of Motor Vehicles is primarily responsible for the

weighing program at the Union facility. The Department of Public Safety is responsible for a law enforcement effort aimed at achieving strict compliance with applicable commercial motor vehicle regulations and laws, specifically the enforcement of commercial motor vehicle size, weight and safety requirements. The Department of Public Safety is primarily responsible for operations at the Greenwich and Danbury facilities.

CVISN

The Commercial Vehicle Information Systems & Networks (CVISN) organizes commercial vehicle operations, allowing all systems to operate in an integrated manner. In 1996, Connecticut became one of ten pilot states that began field operational testing of CVISN technology. The program emphasizes three main components:

- (1) Credentials administration - which is an electronic permitting system for over-dimension vehicles. This system has been operational since mid-2004 and is an internet-based, 24-hour service to apply and pay for permits. An automatic issuance component is scheduled to be operational by the end of 2006.
- (2) Electronic pre-clearance - which was installed in 2001 at Union Station on I84. An implementation plan for pre-clearance at the Greenwich Station is funded and is currently under development at the Department of Transportation.

- (3) Safety Information Exchange - is the electronic exchange of current and historical safety data, which allows inspectors to concentrate their efforts on those motor carriers with poor or unknown safety records.

The 2006 transportation legislation included \$1 million to support continued build-out of the CVISN system. In addition federal funds, some of which are set to expire next year are available if state matching funding can be identified.

The two components of the build-out are e-Route and Bridge analysis. A review of the e-Route system implemented in October 2007 by ConnDOT and motor carrier industry representatives revealed that several enhancements of the system were required before it could be utilized to automatically route commercial vehicles. The routing capability of the system is currently limited to State numbered routes, and therefore cannot route vehicles on local roads. Bridges and structures on local roads could not be analyzed due to the lack of the local road information and lack of authority over local roads.

Concern has been raised that for the project to be successful ConnDOT must continually maintain accurate data for all state roads and bridges bringing into question the scope and cost of the project. At the present time ConnDOT is re-evaluating the need for and viability of this project.

The Transportation Strategy Board recommends the continued development and build out of the Commercial Vehicle Information Systems and Network.

511 Traveler Information Systems

In March 1999 the US Department of Transportation petitioned the Federal Communications Commission to designate a three digit telephone number to be used for providing traveler information services. In July 2000, the FCC designated 511 as the national traveler information number. The goal of the 511 Deployment Program is “the timely establishment of a national 511 traveler information service that is sustainable and provides value to users.”

The USDOT is facilitating national implementation of 511 systems to make real-time traveler information more widely available to motorists. It is working with a 511 Deployment Coalition that includes the American Association of State Highway and Transportation Officials, Intelligent Transportation Society of America, and American Public Transportation Association.⁹ Since 2001, systems have been deployed in all or parts of thirty-four states.

⁹ Federal Highway Administration, <http://www.fhwa.dot.gov/crt/lifecycle/511.cfm>.

The Federal Highway Administration has recently approved Connecticut's 511 project request. Currently, ConnDOT personnel are establishing the operational requirements for the telephone and Internet-based components of the 511 system.

Interactive Travel Map

In November of 2009 DOT launched a real time interactive travel map at http://www.dotdata.ct.gov/iti/master_iti.html. The website provides information on current road conditions, travel resources and links to other travel websites.

The Transportation Strategy Board supports the providing of a coordinated 511, Automated Traveler, construction, incident alert, transit, parking availability, directions and other information via email, website, platform kiosk, brochures, schedules, maps and customer assistance telephone.

Transportation Demand Management

Transportation Demand Management (TDM) is the name given to actions designed to influence travel behavior in a way that manages congestion and increases overall mobility. TDM strategies can be site specific or region-wide. Significantly, TDM strategies differ depending upon the purpose of the trip. For example, strategies designed to influence travel behavior for work trips are different than those for tourist trips. Since work trips have a more concentrated distribution and occur in compressed timeframes, management of work trips presents a significant opportunity to improve decrease congestion and mobility. As the Board pointed out in its 2003 report, TDM techniques "represent the lowest cost tactics for congestion mitigation."



The Department of Transportation funds four private non-profit ridesharing organizations to develop and implement programs that promote carpooling, vanpooling, mass transit, and other strategies in order to reduce the number of single occupancy vehicles on the highways. Programs include outreach to employers to deliver the ridesharing message to employees at the work site; developing and distributing materials on the value of transit and ridesharing; facilitating the establishment of telecommuting programs; and providing incentives to employers and commuters to try transit and ridesharing using various financial and non-financial mechanisms. ConnDOT encourages employers and employees to take advantage of the federal employee commute benefit program. ConnDOT also offers a free trial ride for commuters on state-subsidized buses and existing Easy Street vanpool routes with available seats.

Demand-side strategies can often be implemented more quickly, and at a lower cost, than capacity increases and other supply-side improvements. For that reason, supply-side and demand-side approaches are complementary, with demand-side efforts taking on an asset management role by maximizing the performance and extending the life of existing infrastructure.

However, it is important to recognize the limits of demand side strategies. They need to be implemented as part of a comprehensive and integrated strategy which balances supply-side infrastructure investments and demand side strategies.

Demand side strategies are ultimately about choice and balance. Expanding the array of mode, route and departure-time choice available and supported by robust real-time traveler information, incentives and other resources, allows the traveling public to make informed decisions and choose an option that works best for them.

The Transportation Strategy Board recommends the development and implementation of strategies to encourage modes of travel other than single occupancy vehicles, specifically:

- **Support of public (commuter connections), public/private (shuttles, vans, station cars) and private (ridesharing) participation to get more people onto transit and reduce congestion;**
- **Enhancement of state employee transit benefits and encouraging private employers to provide transit benefits to their employees, including the consideration of tax benefits, incentives, matching investments and recognition programs to encourage participation;**
- **Utilization of the trip reduction tax credit statewide;**
- **Support the development of a customer focused traveler assistance network; and under the Department of Transportation Commuter Assistance brand offer train, bus, ferry, shuttle, parking, pedestrian, ridesharing information and customer assistance;**
- **When a transportation project or initiative requires extensive redesign or construction, develop and implement a targeted strategy to minimize the effects of those projects on employers and employees; and**
- **An evaluation of the effectiveness of Connecticut's existing transportation demand management programs.**

Public Transportation



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PUBLIC TRANSPORTATION

Nowhere has progress in the last decade been more evident than in the field of public transportation. Over that period the State of Connecticut has committed over two billion dollars to support transportation projects, facilities and services, the largest such investment in at least a generation.

Public transportation, both rail and bus, has been a central focus of this transportation strategy. Among the challenges facing the state's public transportation system are implementation of the initiatives already approved; continuing to build on the progress made in recent years; better integrating bus and rail services into a true statewide transportation system; maintaining our existing infrastructure; dealing with new federal policies and spending bills; and providing and funding an adequate level of bus and rail service.

Coordinated Service

Several past Transportation Strategy Board recommendations focused on coordinating and integrating a variety of public transportation services with the goal of providing a seamless statewide transportation system. Central to this approach is the recommendation to:

- **Identify a statewide Strategic Transportation Network linking rail and transit services and determine the basic level of service necessary to provide statewide mobility.**

Both the rail and bus transportation systems involve a variety of services, provided by multiple operators. Recognizing the advantage of coordinating and integrating those services, the **Transportation Strategy Board recommends that the State:**



- **Improve integration of the New Haven Line, the branch lines, Shore Line East and the New Haven to Springfield Line so that seamless service is provided regardless of the entity responsible for operating a particular line.**
- **Design and implement, as part of the Strategic Transportation Network, an integrated multimodal transit network that uses common brand identity and that takes into account all forms of bus service and provides links to the state's rail system.**

Much of this strategy deals with traditional public transportation systems. But, the Department of Transportation, the transit districts, and rail services are not the only entities providing publicly funded transportation services to Connecticut residents. For example, the Department of Social Services and local aging and social service agencies provide transportation services to their clients. The Department of Transportation has recently undertaken an effort to better coordinate those services. **The Transportation**



Strategy Board recommends and encourages the Department of Transportation's efforts to ensure coordination of all state funded transportation services regardless of the program or agency responsible for administering and/or funding such services.

In order to help make the state's public transportation system truly intermodal, **the Transportation Strategy Board recommends that the State support the development and implementation of a "smart card" based transit pass program that can be utilized across the entire public transportation network.**

Employee Transit Incentives

As a major employer, especially in the Hartford area, the State of Connecticut is in a position to encourage its employees to utilize public transportation while at the same time serving as an example for other employers. That effort should begin, as several Transportation Investment Areas have suggested, with the transportation benefits the State provides to its own employees.

The current state employee transit benefits take the form of a fairly minimal three dollar per month reduction in the price of bus and rail passes. To put that figure in perspective, federal employees are provided with a transit benefit capped at \$100 per month. **The Transportation Strategy Board believes that, over time, the existing employee transit benefit should be increased to a level that provides a significant incentive to transit use. In addition, the state should consider other such incentives. The State should also encourage municipal and private employers to provide transit benefits and incentives to their employees.**

Passenger and Commuter Rail



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PASSENGER AND COMMUTER RAIL

Connecticut's rail passenger system consists of five elements:

- The New Haven Line main line between New Haven and Grand Central Terminal in New York City
- The New Haven Line branch lines which run between Stamford and New Canaan, South Norwalk and Danbury, and Bridgeport and Waterbury;
- Shore Line East, which provides service between New Haven and New London;
- The New Haven-Hartford-Springfield commuter rail service which the Governor recommended and the General Assembly approved in 2006; and
- AMTRAK, whose Northeast Corridor service between Washington and Boston makes stops in Stamford, Bridgeport, New Haven, Old Saybrook and New London and which provides feeder service between Springfield and New Haven?

The New Haven Line service is operated by Metro North Commuter Railroad (Metro-North), a subsidiary of New York's Metropolitan Transportation Authority (MTA), under a contract with the Connecticut Department of Transportation and the MTA. AMTRAK operates its own service and operates Shore Line East Service under a contract with the Connecticut Department of Transportation. The operator for the New Haven-Hartford-Springfield rail service has not been selected. Public Act 06-136 requires that the operator of that service be selected through a competitive process.

The Transportation Strategy Board recommends that the Department of Transportation and service providers continue to improve integration of the New Haven Line, the branch lines, Shore Line East and the New Haven to Springfield Line so that seamless service is provided regardless of the entity responsible for operating a particular line.

New Haven Line



The New Haven Line main line service between New Haven and New York City is the oldest, the busiest and, by any measure, the most productive of the Connecticut's commuter rail lines. Indeed, it is one of the most productive commuter railroads in the nation. It runs between New Haven and New York's Grand Central Station. The 46.8 miles between New Haven and the New York state line are owned by the State of Connecticut. The MTA owns the portion of the line within New York State. There

are eighteen mainline stations in Connecticut with two others, in Fairfield and West Haven, under construction.

The State of Connecticut's involvement with the New Haven Line dates back to the mid-1960's when Connecticut Governor John N. Dempsey and New York Governor Nelson Rockefeller agreed to provide public subsidies in order to ensure the continuation of commuter rail service between New Haven and New York. Initially the two states' participation took the form of subsidy payments to the private carriers operating the commuter service. Under the original agreement each state paid 50% of the operating deficit for both the main line and the branch lines.

In 1970, the State of Connecticut began providing capital grants to support the improvement of the commuter rail service both directly and utilizing federal funds. At about the same time the state acquired ownership of the New Haven line tracks and other infrastructure within the State of Connecticut.

In 1983, as the result of federal legislation, the two states were forced to accept responsibility for the actual operation—as opposed to the financial subsidization—of the New Haven Line. They agreed that Metro-North, a newly created subsidiary of the Metropolitan Transportation Authority, would assume operational responsibility for the line¹⁰.

While the two states agreed about who would operate the service, they were unable to agree how much each state would pay and that issue eventually went to arbitration. That arbitration, and another a few years later, resulted in a substantial change in the original 50/50 division of expenses.

Under the current formula, the State of Connecticut pays about 65% of the operating deficit and moveable capital and some other capital expenses of the main line service and 100% of the operating debt and moveable capital expenses for the branch line¹¹. It also continues to pay 100% of the cost of fixed capital equipment located in Connecticut¹².

According to Metro North, during 2009 about 37.8 million passengers used the main line and branch line service. About 25 million of those trips began and/or ended in Connecticut.

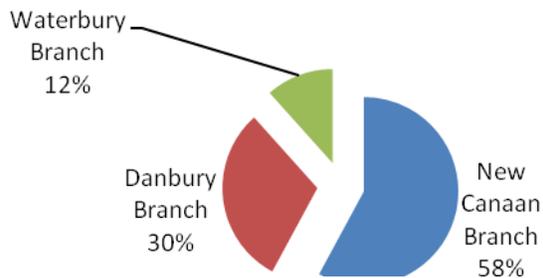
¹⁰ That decision proved to be very controversial, with critics contending that Connecticut would have limited influence over a rail service operated by the MTA. It was so controversial that a legislature controlled by the Governor's party passed legislation designed to block the plan. It was vetoed by the Governor and the legislature failed to override the veto.

¹¹ Until recently, the State of Connecticut's payment was reduced by a factor intended to reflect the fact that Connecticut had been more willing than New York to hold down deficits (and subsidy payments) by raising fares. That adjustment now benefits New York.

¹² New York pays 100% of the cost of most fixed capital costs (other than Grand Central Station) which are located in that state.

The New Haven Line includes branch lines running between Stamford and New Canaan; South Norwalk and Danbury and Bridgeport and Waterbury. All of these branch lines are owned by the State. During calendar 2009, the branch lines carried about 2.5 million passengers.

Branch Line Ridership Shares 2009



The New Canaan branch operates between Stamford and New Canaan, a distance of about eight miles. It is the shortest of the branch lines and the only one which is electrified. In many ways it functions more like an extension of the main line than a true branch line.

For example, because the line is electrified, New Canaan line trains utilize the same electric rail cars which operate on the main line. Unlike the other branch lines, most New Canaan branch trains continue beyond Stamford to Grand Central Station without the need for passengers to change trains. Indeed, the Metro North timetable treats the New Canaan service as a part of the main line service, rather than as a branch line. The New Canaan branch is the most productive of the branch lines, carrying about 1.45 million passengers in 2009.

The Danbury Branch operates between South Norwalk and Danbury¹³, a distance of about 24 miles. There are seven station stops on the line, which carried about 761,000 passengers in 2009. The line was at one time electrified, but the electrification was eliminated in the 1950's.

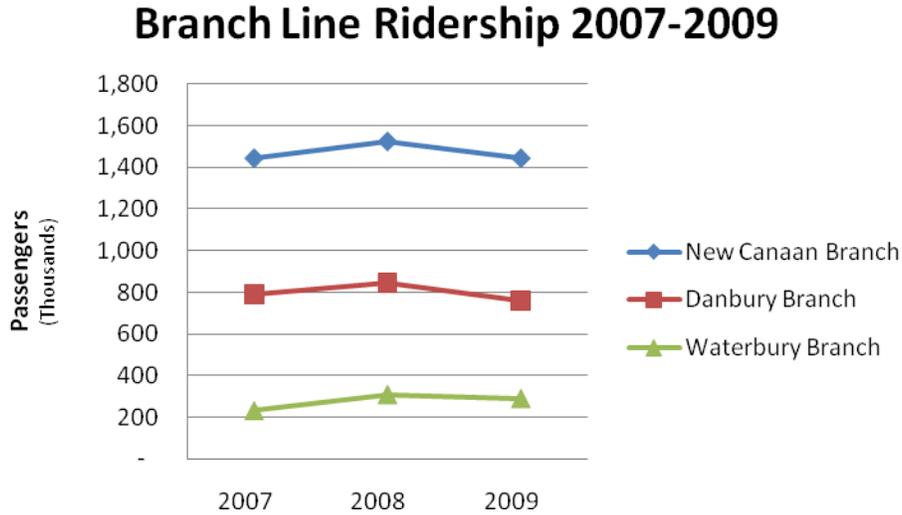


The longest (27 miles) and the least utilized of the branch line is the Waterbury branch, which operates between Bridgeport and Waterbury with station

¹³ There have been proposals to extend the Danbury branch service from Danbury to New Milford.

stops in Derby, Ansonia, Seymour, Naugatuck and Waterbury. During 2009, the branch line carried about 290,000 passengers.

The following chart shows ridership on all three branch lines rose in 2008 before declining in 2009.



Over the last five years, the Department has completed studies of potential service and facility improvements on all three New Haven Line branches. The recommended improvements are under review by the Department of Transportation.

The mainline and the three branch lines were all part of the former New York, New Haven and Hartford Railroad, which went bankrupt during the 1960's¹⁴.

Shore Line East

The creation of Shore Line East was approved by the General Assembly in the late 1980's and the service began operations in 1990. It offers weekday service between New Haven and Old Saybrook. It primarily operates westbound (toward New Haven) in the morning and eastbound (toward New London) in the evening. The service is supposed to operate from New Haven to New London. However, until recently restrictions on bridge use forced most trains a day to stop in Old Saybrook.

Over the last decade, Shore Line East has seen dramatic growth in ridership, which has risen from 229,000 in FY 2000 to projected FY 2011 ridership of 550,000.

¹⁴ Following the New Haven Railroad's bankruptcy the Penn Central Railroad took over the lines. When the Penn Central declared bankruptcy a government created corporation, ConRail, took over the lines and operated them until 1983

In early 2007, the Department of Transportation submitted a report to the Governor and the General Assembly on obstacles to improved service on Shoreline East¹⁵. The report offered a three-phase plan for implementing expanded Shore Line East service:

- Phase 1: Weekday Evening and Weekend Service between New Haven and Old Saybrook;
- Phase 2: Extend all Shore Line East service to New London; and
- Phase 3: Provide regular bi-directional train service.

Phase 1 of the recommended improvements, which established night and weekend service between New Haven and Old Saybrook was implemented in the summer of 2008, six months ahead of schedule. At the same time, DOT implemented an agreement under which AMTRAK honored SLE tickets on six of its New London trains.



Phase 2 has been partially implemented with ten trains extended to New London. The start of bi-directional service (Phase 3) is still several years in the future.

The Transportation Strategy Board recommends that (1) the state continue to implement the Shore Line East service improvements recommended in the Department of Transportation's 2007 study and continue to work with the Department of Environmental Protection, the United States Coast Guard and other responsible entities to address bridge issues limiting or potentially limiting rail service especially on Shore Line East.

New Haven-Hartford-Springfield Commuter Rail Service

In 2006, Governor Rell recommended, and the General Assembly authorized, the initiation of commuter rail service between New Haven, Hartford and Springfield, which would be supplemented by the existing AMTRAK rail service¹⁶ on that line. The service was originally scheduled to begin in 2010.

The original plan was to provide commuter rail service to eight existing and three new stations between New Haven and Springfield. The service would also be linked to the New Britain – Hartford busway. The existing stations were in New Haven,

¹⁵ http://www.ct.gov/dot/lib/dot/SLE_Service_Expansion_Report.pdf

¹⁶ The AMTRAK service, which is designed as a feeder for the railroad's Northeast Corridor service, does not operate at times or frequencies that meet the needs of most commuters.

Wallingford, Meriden, Berlin, Hartford, Windsor, Windsor Locks and Springfield¹⁷. The new stations were proposed for North Haven, Newington, and Enfield. Transit oriented development will be a key aspect of the planning for each station.

Under the original plan service was to begin by 2010. However, that date was pushed back as a result of the time required for environmental documents and a change in the state's implementation strategy as a result of the federal government's high-speed rail initiative.

The current plan is to integrate the commuter rail service with a high-speed rail initiative. To date the state has committed \$280 million in state bonds funds to



support the initiative. It has also received \$160 million in federal high-speed rail funding. The federal funds will be combined with the state funds to create a combined high-speed/commuter rail corridor.

As a result of the new implementation strategy the start of service is expected to be delayed until sometime between 2012 and 2016, depending upon whether the high-speed rail plan is implemented.

The Transportation Strategy Board recommends that the state implement commuter rail service between New Haven and Springfield as soon as possible.

Amtrak

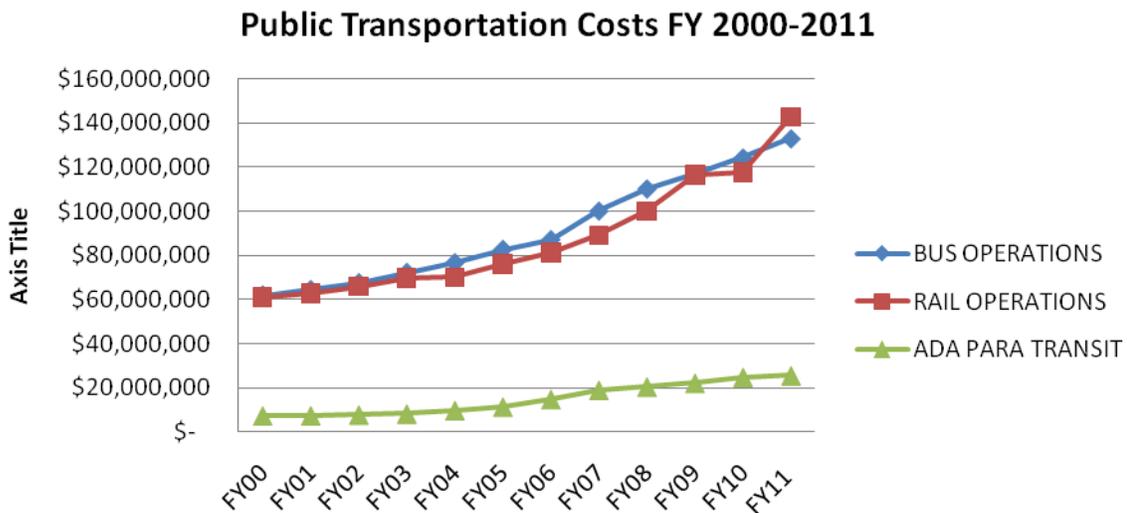
Amtrak's Northeast Corridor service operates between Boston, Washington D.C. and intermediate points, including stops in Stamford, Bridgeport, New Haven, Old Saybrook, New London and Mystic. It also operates feeder service between New Haven, Hartford and Springfield, with Connecticut stops in Wallingford, Meriden, Berlin, Hartford, Windsor and Windsor Locks.

¹⁷ An additional station, in West Hartford, has since been added in order to improve connections between the Busway and the rail line

State Financial Support

The next table compares the cost of rail and bus operations since the state's 2000 fiscal year¹⁸ (FY 2000). During that period the cost of rail operations has risen from just under \$61 million in FY 2000 to a projected cost of about \$138 million in the current fiscal year. Most of that increase has taken place since the last rail fare increase in 2005.

In FY 2010 the cost of rail operations exceeded bus operations for the first time. That trend is expected to continue over at least the next several years.



ISSUES

PIIRA

Two years ago Congress passed and the President signed the Passenger Rail Investment and Improvement Act of 2008, which authorized the high speed rail corridor program, reauthorized AMTRAK and made changes in its finances and governance. The legislation also gave states a larger role in the planning and funding a rail passenger service and required the states to provide operating and capital assistance when their commuter route lines operate over AMTRAK owned right-of-way.

Specifically, the law requires the development of a standard nationwide cost allocation methodology for operating and capital costs and compensation, which would specify the costs to be paid by commuter rail lines¹⁹. AMTRAK was required to adopt

¹⁸ July 1, 1999 to June 30, 2000

¹⁹ AMTRAK is taking the position that this PRIIA provision requires the State of Connecticut and the Commonwealth of Massachusetts to subsidize a portion of the operating and capital costs for its existing feeder service

that standard by October 16, 2010. When it didn't that responsibility passes to the surface transportation Board (STB). A number of states are asking Congress to extend the deadline for AMTRAK to act on the cost allocation methodology.

Two Connecticut rail lines are potentially impacted by this requirement. Shore Line East (SLE) operates over AMTRAK right away between New Haven and New London. The New Haven-Hartford-Springfield commuter rail service, which is now in development, will also operate primarily over AMTRAK right away. It is unclear how the state's proposed investment of over \$200 million to improve and update infrastructure on the New Haven-Hartford-Springfield line.

No Metro North trains currently operate over AMTRAK right of way. But, that would change if Metro-North service is extended to Penn Station. The PRIIA requirements could increase the cost of that service.

Connecticut may end up being one of the few states to benefit from the new cost allocation formula. That is because AMTRAK operates over state owned right-of-way between Greenwich and New Haven and it appears that, for the first time, it will be required to compensate the state in the same way Connecticut is required to compensate AMTRAK when it operates over AMTRAK owned infrastructure. This could significantly offset the state's required payments to AMTRAK.

The Transportation Strategy Board recommends that the State of Connecticut play an active part in the PRIIA process in order to achieve the best result for the state's commuter rail system.



Rail Cars

The Department of Transportation is the process of receiving and testing the first of the new M8 rail cars intended for use on the New Haven Line and Shore Line East. The first of those cars are scheduled to go into service by the early in 2011. The remaining cars will be delivered at the rate of 10 cars per month, or 120 cars per year, with the last car

scheduled for delivery in 2013.

between New Haven and Springfield. Until now, AMTRAK has, for more than three decades taken the position that its New Haven-Springfield service is a feeder for its Northeast Corridor service and is not designed or intended to serve commuters.

In 2005, funding was authorized for 342 new cars for the New Haven Line. In 2007 funding was authorized for an additional thirty-eight cars, including twenty-four for use on Shore Line East²⁰. Three hundred of those cars have been ordered²¹ and the state has an option to purchase for up to 80 additional cars.

The Transportation Strategy Board reiterates its recommendation that the state purchase additional rail cars for the New Haven Line, Shore Line East and the New Haven-Springfield rail service and that funding be set aside for the design of the next-generation electric rail car for use on the New Haven Line.

Maintenance Facilities

In 2005, at the same time funding for the new M-8 rail cars was approved, the General Assembly authorized funding for “rail maintenance facilities to support” the new rail cars. The estimated cost of those facilities was \$300 million. Over time, as the result of the enlarged scope of the project, the addition of new facilities, and the passage of time, the cost grew to an estimated \$1.2 billion.

Faced with a cost estimate that far exceeded the available funds, Governor Rell directed the Office of Policy and Management to retain an outside engineering firm to audit the project develop an independent cost estimate and recommend ways to reduce costs.

Hill International’s Transportation group was selected for the assignment and delivered its report²² in early 2009. Hill recommended that the New Haven Rail Yard project be divided into three tiers:



- Tier One (\$849.3 million) included facilities “critical for the maintenance operations of the expanded fleet”.
- Tier Two (\$56.9 million) included enhancements to the Tier One facilities. It included one project, a car wash facility.
- Tier Three (\$160.2 million) included projects which Hill believed could be deferred or eliminated.

²⁰ Funding for these cars was a recommended in the 2007 TSB report.

²¹ The remaining 42 cars are expected to be ordered late this year or early next.

²² http://www.ct.gov/dot/lib/dot/documents/dconndot/hill_international_report_010209.pdf

The General Assembly subsequently authorized an additional \$250 million in bonding for the rail maintenance facilities in order to allow the Component Change out shop (CCO), the centerpiece of the new rail yard, to move forward. Construction of the CCO is expected to be completed in the fall of 2012.

Because of national economic conditions, construction bids for the CCO were substantially lower than expected. That has allowed DOT to proceed with some additional portions of the maintenance facility project. However, additional bond authorizations will be required in order to complete the Tier One projects.

The Transportation Strategy Board recommends that the funding be provided for the balance of the Tier One projects.

Rail Parking

There are an estimated 16,700 parking spaces at rail stations on the New Haven line. Utilization of those spaces is generally high. For example, parking utilization on New Haven Line mainline exceeds 80%. Waterbury Branch parking utilization varies between stations and ranges between 72% and 10%. Parking utilization ranges between 90% and 58% on the Danbury Branch and between 88% and 82% on the New Canaan Branch.



The State of Connecticut owns almost all rail stations and the associate parking facilities between New Haven and Greenwich. However, most station facilities and parking are operated by local communities under long-term leases with the Department of Transportation. Under those arrangements each community generally establishes its own rules and parking rates and is responsible for collecting the fees and maintaining local parking and Station facilities. This arrangement has led to a wide variety of local rules, charges and station and parking conditions.

In 2004, the Department of Transportation commissioned a rail governance study to “develop a Governance Policy and Financial Policy which improves current

conditions and offers improved quality of service for our riders”²³. The study identified options for governing rail stations and the parking supporting them. It also recommended that the Department of Transportation develop a Standards and Practices Manual (S&P) which would be utilized regardless of which governance model was selected.

The three potential governance models identified by the study were:

- Minimal Strategy, in which governance is basically left the same as it is now, but incorporating improved leases and the use of the S&P;
- Memorandum of Understanding (MOU), in which CDOT negotiates with owners of non-CDOT parking to develop standard operations across all facilities, including use of the S&P; and
- State Governance of stations and parking by a single entity, in which the management of all stations and parking (including the purchase of parking CT does not now own) is assumed by the state and operated by CDOT either with its own employees, under a contract or a created authority²⁴.



No action was taken on the recommendations, including the development of a Standards and Practices Manual.

More recently, the Department established a rail parking task force which, according to the department is developing recommendations “regarding capacity maximization, parking expansion, pricing, permit management, customer information, and bus and jitney access strategies”.

The Transportation Strategy Board recommends that the Department of Transportation take aggressive action to improve rail station parking on the New Haven line.

²³ Connecticut Rail Station Governance Study, Final Report, May 2005 at 1. The study can be found at: http://www.ct.gov/dot/lib/dot/documents/ddotinfo/ctgov/final_report_052605.pdf

²⁴ Ibid at 78-84

The Board also repeats its 2007 recommendations that the State:

- **Develop, in consultation with local officials and commuters a uniform policy concerning rail station governance and implement it as existing leases come up for renewal. The policy should provide for centralized oversight of rail stations and parking, uniform policies, permits and fees; consistency with low-impact environmental standards; design of attractive enclosed structures that are in harmony with abutting structures and should ensure adequate funding for station and parking area improvements; and**
- **Implement planned rail station parking initiatives in Bridgeport, Stratford and New Haven; expedite replacement of the Stamford rail station parking garage; and maximize the amount of parking associated with new rail stations.**

Branch Lines

Several years ago the State undertook studies of potential improvements to facilities and services on the New Canaan, Danbury and Waterbury branches of the New Haven Line. Those studies were recently completed and are being evaluated by the Department of Transportation.

Among the issues being addressed as part of the studies are the extension of Danbury branch service to New Milford; electrification of the Danbury branch; service and facility improvements and the evaluation of the Branch Line "collector" stations recommended by the Board in 2003.

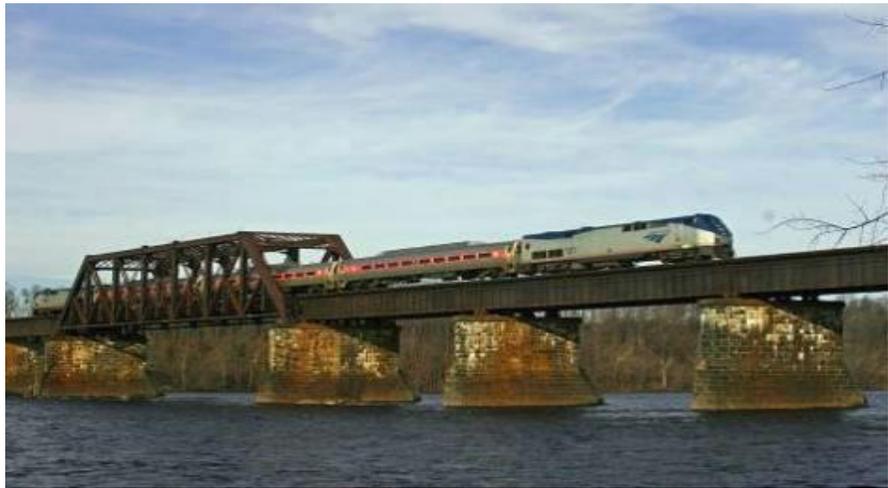
There is some funding included in the 2006 transportation initiative for branch line improvements. However, environmental evaluations and additional funding will be required before most projects move forward.

The Transportation Strategy Board recommends that the state fund and implement priority improvements on all three branch lines.

The 2007 TSB strategy recommended that the installation of a modern centralized train control (CTC) on the Danbury branch be made a high priority. That project is currently underway, using federal stimulus and state and federal transportation funding. Construction began in the summer of 2010 and is expected to take about two years. The estimated cost is about \$67.2 million.

Infrastructure

There are a number of other critical rail infrastructure projects which will be needed over the next decade. These include the rehabilitation of rail bridges in Norwalk and Westport²⁵; completion of other scheduled bridge replacements and rehabilitations, including major bridge projects in Greenwich and Milford; continued work on the replacement of the catenary system on the New Haven mainline; replacement and improvement of the electric substations; replacement and enhancement of the Main line signal system, including establishing a positive train control system; and lengthening the platforms at all stations so they can accommodate at least 10 coaches.



The Transportation Strategy Board recommends that funding be provided for priority capital investments in the state's rail infrastructure, with special emphasis on projects effecting the safety and reliability of the system.

Penn Station Service

Currently all Metro North rail service operates into Grand Central Station with no direct service to Penn Station. However, the MTA is studying the potential for such service. Metro North service to Penn Station would potentially benefit Connecticut in two ways. First, it would provide commuters with direct service to the west side of Manhattan. Second, it would also create the potential for commuters from Long Island and Queens to access southwestern Connecticut using Metro-North rather than passenger automobiles.

Metro-North is currently conducting an environmental assessment of alternatives for providing access to Penn Station from the New Haven, Harlem and Hudson lines. **The Transportation Strategy Board recommended that the State support and encourage cost-effective proposals for Metro-North access to Penn Station and intermediate stations.**

²⁵ Both bridge s are over 100 years old.

Service Coordination

As previously noted, the New Haven Line service, is operated by the Metropolitan Transportation Authority's Metro-North subsidiary, while AMTRAK operates the Shore Line East service. An operator has not yet been selected for the New Haven to Springfield rail service.

The Transportation Strategy Board believes that it is essential that service between the lines be integrated regardless of which operator is responsible for the operation of a particular line. The Transportation Strategy Board also supports and recommends the adoption of a state rail operations plan which will address this and other issues.

In 2003, the Transportation Strategy Board recommended, and the legislature endorsed, the state seeking voting representation for Connecticut on the Metropolitan Transportation Authority's board of directors and on the board of directors of Metro-North²⁶. This is proven to be difficult, if not impossible, because of the MTA's status as an authority established under state law by the State of New York and the constitutional requirement that its members being nominated for the Governor of New York and confirmed by that state's Senate.

In the absence of an agreement granting the state a seat on the MTA Board, the Department of Transportation has taken a more aggressive role in its dealings with Metro-North, treating the railroad as a vendor and insisting on its contractual rights under the existing service agreement. For example, DOT was recently successful in blocking service reductions ordered by MTA as a cost-saving measure. It has also resisted metro North's attempt to shift some operating costs from New York to Connecticut

In 2007 the TSB reiterated its 2003 recommendation concerning voting representation and said that "until such time as voting representation is obtained the Connecticut Department of Transportation continue to participate in both boards on a nonvoting basis".

²⁶

There is no separate Metro North Board. It is overseen by a committee of the MTA.

Bus Transit



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BUS TRANSIT

Historically, the delivery of local bus service, including express buses, was the responsibility of private companies, many of them successors to the old trolley companies, granted franchises and regulated²⁷ by what was then the Public Utilities Commission (PUC)²⁸. However, during the late 1960's and early 1970's, state and local governments began stepping in to assist failing companies.

The State of Connecticut's involvement in local bus service evolved as the results of a declining ridership, labor disputes, fare increases and corporate failures. At the center of those developments were two large bus companies, the Connecticut Railway and Lighting Company (CR&L), which served Bridgeport, Waterbury and New Britain, and the Connecticut Company, which served Hartford, New Haven and Stamford.

In 1972, when the CR&L line faced (along with several other smaller carriers) labor disputes which would shut down and eventually bankrupt the company, state officials refused to become directly involved in providing financial assistance for companies, insisting instead that local transit districts be established and that local communities, as well as the state, provide financial assistance to companies. As a result, a number of carriers ceased operations and/or abandoned routes.

However, state officials took another approach when the Connecticut Company, which served Hartford, New Haven and Stamford, found itself in a similar position. This time there was no insistence on the establishment of transit districts or local financial assistance. Instead, the Department of Transportation purchased the assets of the company; established a private-state owned holding company; and hired a contract operator. The company did not cease operations and few routes were abandoned.

The story of Connecticut's entry into the fixed route bus business is more than a historical footnote. It is also the root of policy and operational issues which continue to this day.

Overview

Connecticut's bus transit system consists of six types of service delivered by a variety of providers. They are:

- Fixed route service, which provides traditional urban bus service, operating on a fixed route with regularly scheduled service;

²⁷ In 1979 the regulation of buses, taxis and livery companies was transferred from the Public Utilities Commission to the Department of Transportation.

²⁸ Now the Department of Public Utilities Control (DPUC).

- The ADA paratransit services required by federal law whenever fixed route service is offered;
- Express service, which makes one or few stops before proceeding non-stop to an end destination, (in Connecticut this service is almost exclusive to the Greater Hartford area);
- Commuter connection, connecting rail services to residential and employment centers;
- Demand responsive and Dial-a-Ride services, providing as-needed service within a system's service area;
- Flex route, which provides similar service as demand responsive service, however boardings are at pre-arranged times within a system's service area.

Connecticut Transit

Connecticut Transit is the largest transit operation in the State and is owned by the State of Connecticut. Three divisions, in Stamford, New Haven and Hartford, are owned by the State of Connecticut and operated by a management firm under a five year contract with the State (last awarded in September 2006). Also included under the Connecticut Transit banner are services provided by operators in Waterbury, New Britain, Bristol, Meriden and Wallingford.



Connecticut Transit provides fixed route and express services. ADA paratransit services are contracted out by Connecticut Transit to various organizations located within the respective service areas. In 2011, Connecticut Transit's three divisions and its contract operators are projected to carry about 27.86 million passengers.

Transit Districts

Connecticut's urban transit districts provide various types of services within the State's urban population and employment centers. In 2011 urban transit districts are projected to carry about 7.44 million fixed route bus passengers.

- The Greater Bridgeport Transit Authority serves Bridgeport, Fairfield, Stratford and Trumbull as well as providing limited service to Monroe, Shelton and Derby.
- The Housatonic Area Region (HART) serves the eight towns of the Greater Danbury area and operates the Katonah shuttle, which links commuters in Ridgefield with the Metro North's Harlem Line service to New York City.
- The Middletown Transit District provides bus transit service connecting Middletown and Meriden, in addition to servicing the Route 372 corridor in Cromwell.

- The Milford Transit District serves the Milford area and provides Jobs Access service to Norwalk.
- The Norwalk Transit District provides fixed route service in Norwalk and Westport; inter-town service between Norwalk and Milford and between Norwalk and Danbury; and ADA paratransit service in Westport, Norwalk, Darien, Stamford and Greenwich.
- The Southeast Area Transit District (SEAT) serves nine towns in Southeastern Connecticut.
- The Valley Transit District primarily provides dial-a-ride and ADA services in the four towns of the Naugatuck River Valley.



Local transit districts also provide service in five rural service areas:

- The Northwestern Transit District serves sixteen towns with deviated fixed (flexible) route and dial-a-ride services.
- The Northeastern Transit District operates flex route service in the seven towns around Putnam.
- The Windham Transit District provides rural fixed route, demand response and ADA service to ten towns in the Willimantic area.
- The Connecticut River Estuary area is serviced by the Estuary Transit District, which provides demand response services as well the Shoreline Shuttle service, which is a fixed route service operating between Old Saybrook and Madison.
- The Middletown Transit District provides rural fixed route service linking the rural suburbs with Middletown.

In addition there are transit districts, primarily served by Connecticut Transit, which provide specialized transit services such as ADA and Dial-A-Ride. These transit districts include the Greater New Haven Transit District, and the Greater Hartford Transit District.

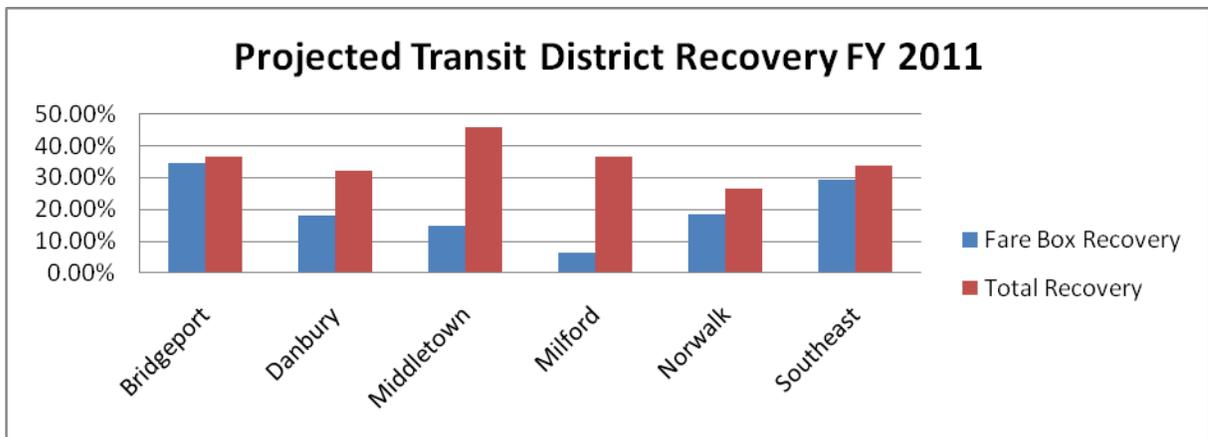
Ridership

The table below shows the projected FY 2011 ridership for Connecticut's fixed route bus systems. The ridership shown for Connecticut Transit is the total ridership for the Hartford, New Haven and Stamford systems.

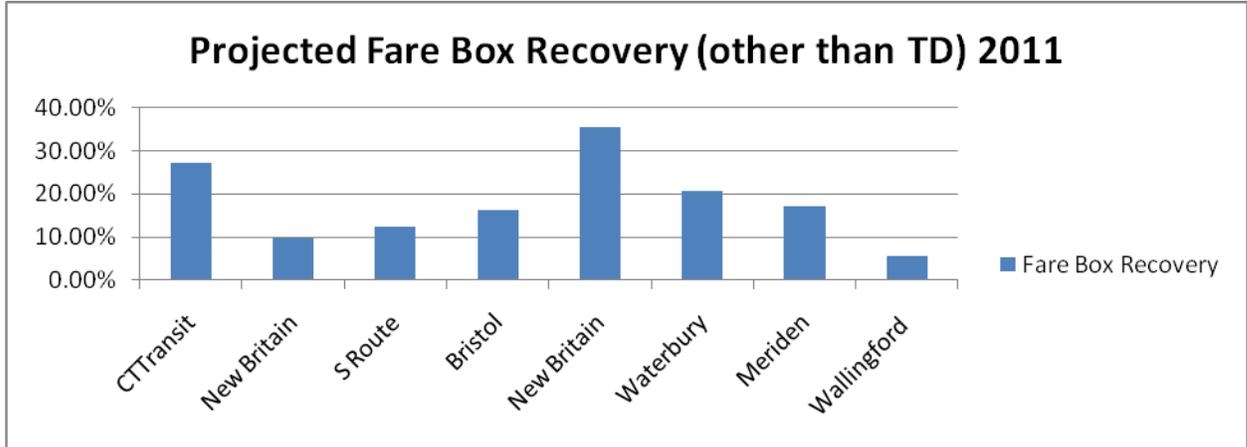
System	Ridership
CT Transit	25,622,538
Greater Bridgeport Transit Authority	4,622,647
Housatonic Area Regional Transit	677,281
Middletown Transit District	322,760
Milford Transit District	69,871
Norwalk Transit District	964,180
Norwalk Transit District	91,515
Southeast Area Transit	878,627
New Britain	157,248
S Route	85,003
Bristol	49,038
New Britain	578,012
Waterbury	1,411,312
Meriden	166,845
Wallingford	13,791

Financial Performance

One commonly used measure of the operating efficiency of bus transit services is the percentage of operating costs paid for by fares, known as the fare box ratio. The table below shows the fare box and total recovery rates for the Transit Districts which operate fixed route systems. Total system recovery includes fare box revenue and any local contribution to operating costs.



Performance statistics for the Connecticut Transit system and the private fixed route properties under contract with DOT are shown on the chart below²⁹. Since only one of these systems (Wallingford) is supported by local contributions only the farebox recovery is shown.



At one time, farebox recovery rates for the largest transit systems exceeded 40%. However, they have declined substantially, especially since the last fare increase in 2005.

State Financial Assistance

The State of Connecticut provides both operating subsidies and capital funding to Connecticut Transit and the urban and rural transit districts. In FY 2006 the appropriation for bus operations was \$100 million. The projected bus operations expense for the current year (FY 2011) is \$ 140 million. During the same period, the cost of para-transit operations rose from \$7 million in FY 2006, to a projected \$25.5 million in the current fiscal year.

The state subsidy for fixed route services varies depending upon who operates the service. For Connecticut Transit and the contract operators it is the difference between operating expenses and farebox revenues. For transit districts, the state’s contribution is limited to two-thirds of the operating deficit. The balance must come from local sources³⁰. The fare box recovery rate and degree of state subsidy varies from service to service and is dependent on a variety of factors, including population density and the type of service.

²⁹ Two operators serve the City of New Britain.

³⁰ The requirement for local contributions in areas serviced by transit districts, but not those serviced by the state owned Connecticut Transit services, has been, and continues to be, a subject of controversy.

The State of Connecticut also provides funding for capital needs at Connecticut Transit and the transit districts. A majority of transit capital projects have a funding ratio of 80% federal, matched with 20% state or local matching funding. These figures do not include the capital funding included in the 2005 and 2006 transportation initiatives, which provided 100% state funding for most capital projects funded as part of the initiatives.

The Department of Transportation has taken steps to address several issues related to the long-term capital needs of the bus transit system. The Department's capital program includes plans to update and upgrade buses, the fare box and revenue collection systems; radio system improvements; implementation of intelligent transportation system technology to provide automated vehicle location, global positioning systems and geographic information systems; and fleet replacement.

Transit Districts and public transportation advocates have been critical of bus transit funding levels and services; the 67% rule (which limits the state's funding contribution to bus systems other than Connecticut Transit); silo funding and overcrowded routes.



The transit districts have also reported difficulty accessing available Federal funds due to a lack of matching funds. The 2007 TSB strategy included the recommendation that “the State ensure that sufficient capital and/or operating funds are available to match the available Federal funds”.

The 2007-2009 biennial budget appropriated funds to provide matching funding for local projects which did not qualify for state bond funding. As a result of the state's current fiscal crisis, that funding was not carried forward to the current (2009-2011) biennial budget.

Transit districts have also expressed concern about the lack of flexibility in most efficiently utilizing the available state funds. The Department of Transportation has thirteen separate program based funding silos for transit districts. Funds can generally not be moved from one silo to another. As a result of this policy, a surplus from program or funding source generally cannot be applied against the deficit for another program or service. Funding silos are generally the result of program specific budgets, rules and/or funding sources. Several transit districts argued that, subject to program accountability, they should have the ability to move funding to address needs. **The Transportation Strategy Board recommends that the State provide transit districts funding flexibility consistent with program accountability.**

New Britain-Hartford Busway

The New Britain-Hartford Busway was one of ten demonstration projects in the country approved by the Federal Transit Administration in 1999. The project consists of a two-way, 9-mile exclusive busway with 12 on-line stations linking downtown New Britain and Hartford's Union Station. Two stations will also link the busway to the New Haven-Hartford-Springfield commuter rail service. The 2006 transportation initiative provided \$50 million towards the State's portion of the capital funding required to complete this busway.

The New Britain-Hartford will be built on active and inactive rail rights-of-way and offer four types of service: express, shuttle, neighborhood collectors and feeder bus. The primary busway service will operate 18 hours each day using a mix of standard buses and 40-foot articulated buses. In addition, the project includes a station area planning component with a goal to encourage transit oriented development in order to enhance the State's transportation investment with enhanced community livability.

In 2006, construction of the busway was estimated to begin in 2008 and take two to three years to complete. That schedule has slipped considerably. As of early December 2010, the state's application for a federal "Full Funding Grant Agreement", which funds the federal government's portion of the busway costs, was pending with the Federal Transit Administration (FTA). The Department of Transportation expects a decision on that application early next year.

The operating budget for the busway service is estimated at \$9.6 million annually, with a 30% fare box return; this results in a needed annual subsidy of \$7.0 million.³¹ Ridership is forecasted at 16,400 daily riders upon commencement of the service.

Other Issues

Coordination of Services



Bus transit services are funded by the State of Connecticut and delivered by a wide variety of providers, including Connecticut Transit, local transit districts and private providers. The Transportation Strategy Board believes it is important to coordinate these largely local transit services in a way that provides an effective statewide transit service. **The Transportation Strategy Board recommends that the State "design and implement, as part of the strategic transportation network, an integrated multimodal transit**

³¹ Operating cost estimates are in 2010 dollars

network that uses a common brand identity and that takes into account all forms of bus service and provides links to the states rail system".

Funding

As previously discussed, officials of several local transit districts have expressed concerns about the level of operating capital to support local bus transit services. In particular, users and providers expressed concern about the level of local bus service which can be provided based on current funding levels. **The Transportation Strategy Board recommends that the Governor and the General Assembly review transit district funding formulas and requirements in order to ensure adequate funding for bus transit services and parity between transit districts and state owned or operated transit services, including Connecticut Transit.**

Jobs Access and Reverse Commute

The Jobs Access and Reverse Commute program originally began as a result of the welfare reform legislation in the mid-1990s and was later enhanced using state and federal funds. It has been a transit success story, extending bus service and providing access to jobs in areas not previously served. **The Transportation Strategy Board recommends that the State continue funding for the Jobs Access and Reverse Commute program, while making maximum use of federal funds to support needed services. The state should also continue to identify and implement additional service opportunities as appropriate.**

Bike & Pedestrian



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BICYCLE AND PEDESTRIAN

Improved bicycle and pedestrian travel options are an important part of the state's transportation strategy. Effective bicycle and pedestrian networks result in a reduction in vehicle trips. The reduction in vehicle trips then result in a reduction in emissions, need roadway infrastructure and parking facilities.

There are three major roles the bicycle and pedestrian modes can fill.³²

- As a primary mode, directly accessing a job or other site;
- As a feeder mode, accessing transit services that will complete the trip; or
- For circulation through an activity center.

Important factors that influence the choice of bicycle or pedestrian commuting include:

- Trip distance;
- Perceived traffic safety;
- Travel cost (surveys suggest that financial incentives could make a difference in the choice of this mode)³³;
- Physical environment, including terrain, climate, circulation within activity centers and availability of alternative modes; and
- Demographics (bicycle commuting generally declines rapidly in the segment of the population over age 45).

The 2000 Census found, that compared to national averages, Connecticut has a lower percentage of bike commuters (0.2% v. 0.4% nationally), and roughly the same percentage of pedestrian commuters (2.7% v. 3% nationally).

The Department of Transportation has recently undertaken a new initiative to be more supportive of non-motorized travel modes. According to the Department, the initiative is intended to outline a significant shift in the



³² Goldsmith, S. 1993, Case Study No. 1: Reasons Why Bicycle and Walking Are and Are Not Being Used More Extensively as Travel Modes, Report FHWA-PD-92-041, Federal Highway Administration, Washington, D.C.

³³ Herman, M. 1993. Bicycle Blueprint: A Plan to Bring Bicycling into the Mainstream in New York City, New York.

Department's multi-modal strategy to one more supportive of bicycle and pedestrian needs. It is also intended to develop a more rational approach to indentifying high priority state-level needs, and allocating scarce resources to meet those needs.

The changes are part of the Department's efforts to development a more balanced multi-model transportation system, and to support state goals of livable and sustainable communities. The Department believes that, as a result of these changes, it will become more proactive in planning, designing and funding programs and projects that make it safer and more convenient for residents to walk and bicycle in Connecticut.

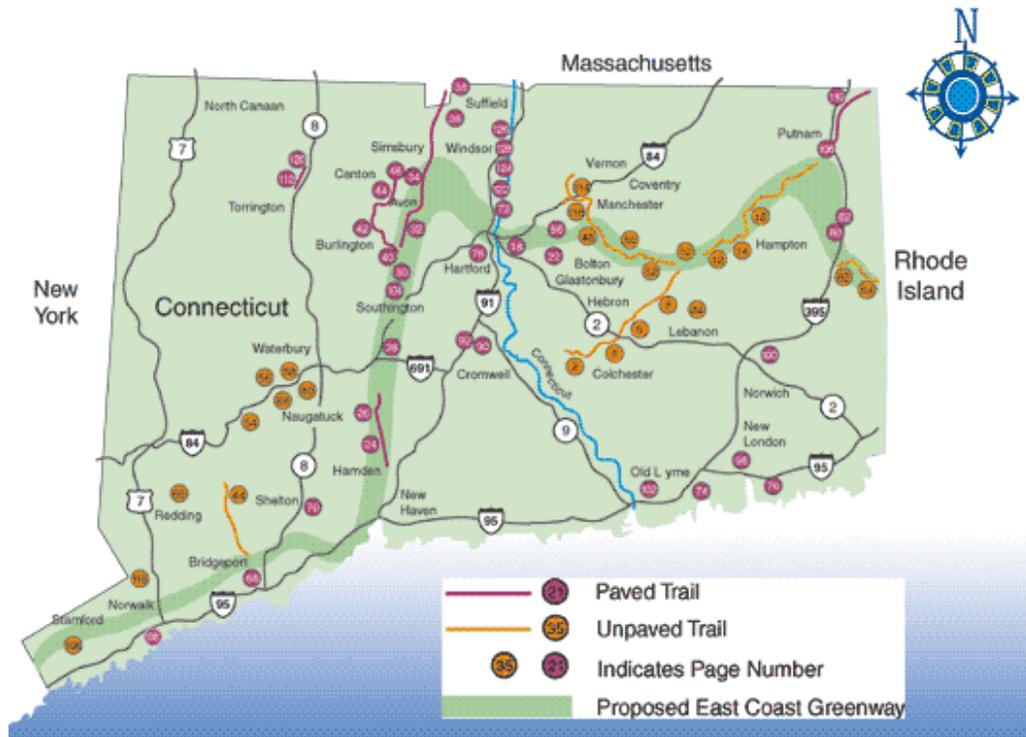
These new initiatives include the following elements:

- Quick Fix Program: this program will quickly respond to relatively minor bicycle and pedestrian issues;
- DOT Sidewalk Policy: this policy will assure that sidewalks are considered as part of the normal roadway design process and that their funding is treated the same way as any other element of a road construction project;
- Funding: the Department has committed to reserve 50 percent (\$4 million) of the State Transportation Plan Enhancement funding each year for bicycle and pedestrian projects and allow the use of STP-Urban funding for bicycle and pedestrian projects;
- Project Design Manual: the Department will enhance the existing project design manual to fully consider bicycle and pedestrian needs as part of transportation project design process; and
- Inter-agency Collaboration: the Department and the state Department of Environmental Protection have committed to collaborate more closely on issues related to bicycle and pedestrian needs.

The Department of Transportation has also worked to provide bike racks on buses; specifically the full equipping of CTTransit buses in the Stamford and New Haven areas. Equipping of CTTransit buses in the Hartford area is scheduled as part of the upcoming bus fleet replacement project. Additionally, the Department is addressing the providing of bike racks at train stations on a continual basis.



It should also be noted that the current State Plan of Conservation and



Development recommends incorporation of Greenways into state agency and municipal development plans, acknowledging the importance of Greenways as an alternative mode of transportation.

In recognition of the role that bicycle and pedestrian strategies play in accomplishing the State's transportation strategy, the Transportation Strategy Board recommends:

- Provide bike space on passenger trains at all times of the day;
- Identify and support bike routes to transportation centers;
- Identify and remedy existing bicycle storage and parking deficiencies, particularly in urban and transportation centers;
- Encourage municipal and regional officials to work closely with DOT to include expanded bicycle and pedestrian facilities as a part of all roadway projects; and
- Support the development and implementation of the Federal Safe Routes to School program.

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Rail Freight



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RAIL FREIGHT

Connecticut's rail freight network includes over six hundred miles of trackage owned by public and private parties, including about 250 miles shared with passenger rail services. About 381 miles (60%) are owned by public bodies³⁴ and almost 250 miles (40%) are in private hands.

Eight freight carriers, or partnerships between carriers, operate within the State of Connecticut. According to the department, about 8.5 million tons of cargo was shipped by rail in 2008, the last year for which information is available. This is down from 8.8 million tons in 2007 and the recent high of almost 9.7 million tons in 2005³⁵.

Rail freight cargos include crushed stone, gravel and sand, scrap metal and paper, pulp and paper products, chemicals, soaps, cleaners, concrete, clay, construction and demolition debris, clay, steel, primary metal products and hazardous waste.

Issues impacting rail freight operations in Connecticut include overhead clearances, speed and weight limits (generally related to track conditions), changes in the state's economy and manufacturing base, changes in business practices (for example, "just in time" delivery) and limited connectivity to the national rail network.



Since the Transportation Strategy Board was created it has repeatedly heard from speakers, organizations and legislators who have argued for expanding the use of rail freight as a means of diverting traffic from the highways and thereby reducing congestion. At the same time, the Department of Transportation and others have

³⁴ The State of Connecticut, AMTRAK and the City of Bristol.

³⁵ State of Connecticut, Draft State Rail Plan (2010)

expressed concern about the possible impact of increased rail freight on Connecticut's growing commuter rail system.

In 2007, the TSB identified a “series of important questions and issues which need to be resolved in order for the state to properly assess the potential impact of increased rail freight service and whether to pursue that service”. They included:

- Whether a commercial market exists and will support enhanced rail freight service;
- How increased rail freight service would impact highway congestion, particularly on Connecticut's interstate highways;
- How enhanced rail freight service would impact Connecticut's existing and planned commuter rails lines, including scheduling, track availability, safety and physical infrastructure; and
- The obstacles to enhanced rail freight service and how best to address them.

The TSB went on to recommend “that the State develop a comprehensive analysis of the potential for enhanced rail freight service to and through Connecticut, including, but not limited to: (1) the market for enhanced rail freight services; (2) the impact of enhanced rail freight service on traffic and congestion; (3) obstacles to enhanced rail freight service and ways to address them; and (4) the impact of enhanced rail freight service on commuter rail service, including scheduling and track availability, safety and physical infrastructure”.

Funds for that study were initially approved by the Governor and the General Assembly, but were last rescinded as a result of the state’s fiscal crisis.

The Transportation Strategy Board repeats its recommendation concerning the need for a comprehensive analysis of the potential for enhanced rail freight service to and through Connecticut and urges the Governor and the General Assembly to restore funding for that purpose.



During the Board's deliberations, Rep. David McCluskey suggested that the state go one step further and development a rail freight expansion plan. The Board agrees with that such a plan is needed.

The Transportation Strategy Board recommends the creation of a rail freight expansion plan for the State of Connecticut.

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Aviation



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AVIATION

Connecticut's statewide aviation system consists of over 150 facilities of various types, including:

- Six State Airports;
- Five Municipal Airports;
- 13 Private Airports which are open to the public; and
- 130 Private Airports and Landing Areas.

The State owned airports are:

- Bradley International Airport in Windsor Locks, which is the largest airport in the state and the only state owned airport with scheduled commercial air service;
- Brainard Airport in Hartford, a general aviation airport and a reliever airport for Bradley;
- Groton-New London Airport in Groton, a general aviation airport which had scheduled commercial air service until 2004;
- Oxford, a general aviation airport which serves the corporate aviation market in Western Connecticut;
- Windham Airport, a general aviation airport serving the local aviation community; and
- Danielson Airport, a general aviation airport serving the local aviation community.



The municipal airports are:

- Tweed-New Haven Airport is owned by the City of New Haven and located in New Haven and East Haven. It is the only Connecticut airport other than Bradley with scheduled commercial air service;
- Sikorsky Memorial Airport is owned by the City of Bridgeport and located entirely in the Town of Stratford. It is a general aviation airport which had scheduled commercial air service until 1999;
- Danbury Airport, owned by the City of Danbury, is a general aviation airport which serves as the base for a substantial amount of pilot training;

- Meriden Markham is a general aviation airport owned by the City of Meriden and located in Meriden and Wallingford; and
- Robertson Airport is owned by the Town of Plainville and is primarily used for charter flights and flight training.



charter flights and flight training.

Connecticut residents are also served by a number of commercial airports outside the state, including Logan Airport in Boston, T.F. Green Airport in Providence, Kennedy, LaGuardia, Stewart International and Westchester Airports in New York and Newark Airport in New Jersey.

Airport Funding

Funding for publicly owned airports depends on who owns the airport and the services which it provides.

Bradley International Airport is primarily funded through airport fees, including landing and gate fees and rental charges paid by the airlines, and concession fees. Those fees and rentals are deposited in an enterprise fund which supports the airport's operations. The airport's annual operating and capital budgets are approved by the Bradley Board of Directors and the Commissioner of Transportation and the Secretary of the Office of Policy and Management, but are not part of the state budget process and are not subject to legislative approval.

Because the airlines fund a large part of the airport's operations the current master agreement between Bradley and the major carriers which use the airport gives the airlines a role in the approval of the airport's operating budget. That provision is fairly typical of agreements between airlines and other airports that were negotiated at the same time as the Bradley agreement. However, it has proven problematic at times and has led to disagreements over issues such as how much, and what type of, marketing is required. The current operating agreement expires next year and the State is seeking to follow the lead of other airports and eliminate the requirement for airline budget approval.

Seventy-five per cent of the cost of most Bradley capital projects is paid for by the federal government with the balance coming from a combination of revenue bonds

and “Passenger Facility Charges”, which are ticket surcharges paid by passengers using the airport.

Operating costs for the other state owned airports are paid from the Department of Transportation’s budget and, unlike Bradley, are subject to the state’s annual budget process. Ninety-five per cent of approved capital project expenses are paid by the federal government, with the balance coming from Department of Transportation’s annual capital program.

Municipal Airport operating costs are, with one exception, paid entirely by the community owning the airport. The sole exception is Tweed-New Haven Airport which has, for a number of years, received a \$600,000 operating grant from the State of Connecticut. In 2007, the TSB recommended a continuation of the grant, which has since been raised to about \$ 1.4 million³⁶ a year.

For municipal airports, ninety-five per cent of the costs of approved capital projects are paid by the federal government. The State of Connecticut pays three and three quarters per cent of the federally approved costs and the balance are paid by the local community.

Bradley International Airport

Bradley International Airport is, by far, the largest and busiest airport in the State of Connecticut. It ranks:

- 60th of 193 Airports nationwide in terms of passenger volume³⁷ⁱ
- 33rd of 169 airports nationwide in terms of cargo volume³⁸

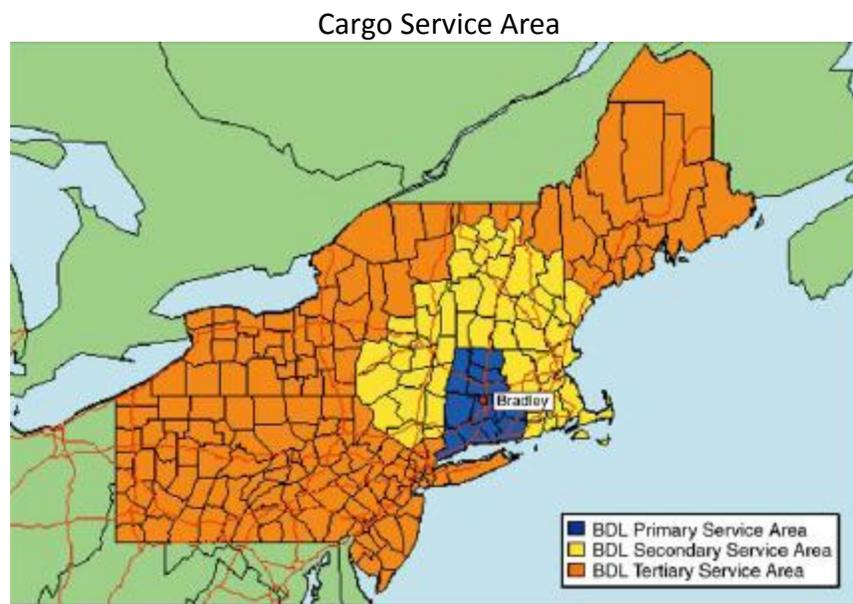
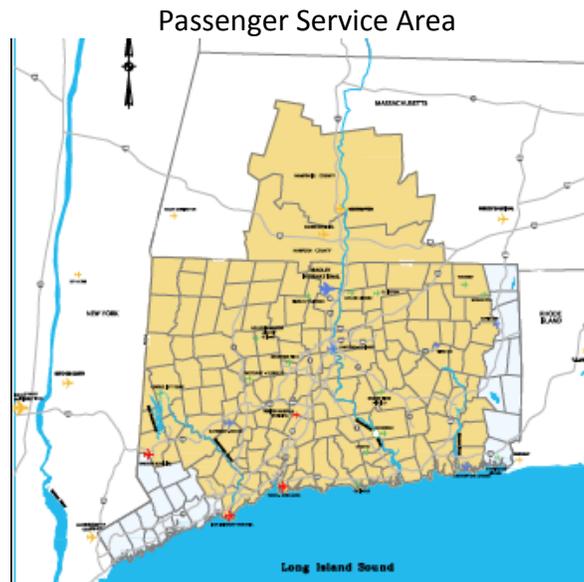


³⁶ It was increased to \$1.5 million and then reduced because of the state’s financial situation.

³⁷ Source: Airports Council International, North America, 2009

³⁸ Ibid.

The figures below show Bradley's passenger and cargo service areas³⁹.



As these figures demonstrate, a significant part of Bradley's service area is outside Connecticut. Recognizing the interstate nature of Bradley's market, the TSB recommended that that business and community leaders from Western Massachusetts be involved in airport planning and service development.

³⁹ Source: Connecticut Department of Transportation, Connecticut Statewide Airport Systems Plan.

Bradley Board of Directors

In 2001 the same legislation which created the Transportation Strategy Board created a Board of Directors for Bradley International Airport. The Bradley Board of Directors is composed of:

- A Chairperson, appointed by the Governor;
- The Commissioner of Transportation;
- The Commissioner of Economic and Community Development;
- A representative of the Transportation Strategy Board, appointed by the Speaker of the House;
- A member of the Bradley International Airport Community Advisory Board⁴⁰, appointed by the Minority Leader of the House of Representatives;
- One member appointed by the President Pro Tempore of the Senate; and
- One member appointed by the Minority Leader of the Senate.

The Bradley Board of Directors shares responsibility for the management of the airport with the Department of Transportation. The Board of Director's duties include:

- Developing an organizational and management structure that will best accomplish the goals of Bradley International Airport;
- Approving the annual capital and operating budgets of Bradley International Airport;
- Establishing a procedure to review significant contracts;
- Approving Bradley International Airport's master plan;
- Ensuring the establishment of service standards, performance targets and performance assessment systems;
- Establishing and reviewing policies and plans for marketing the airport and for determining the best use of airport property,
- Advocating for Bradley International Airport's interests and ensure that Bradley International Airport's potential as an economic development resource for the state and region are fully realized;



⁴⁰ The Bradley International Airport Community Advisory Board is composed of the chief elected officials of the towns (Windsor, Windsor Locks, East Granby and Suffield) which adjoin the airport.

- Developing an appropriate mission statement and set of strategic goals for Bradley International Airport and that progress toward those goals is regularly assessed;
- Ensuring appropriate independent expertise is available to advise the Bradley Board of directors;
- Approving community relations policies and ensure that the community advisory board operates effectively to ensure that community comment and information is regularly and fully considered in decisions related to Bradley International Airport;
- Creating a code of conduct for the Bradley Board of Directors consistent with the Code of Ethics;
- Acting in cooperation with the Connecticut Transportation Strategy Board ; and
- Reporting to the Governor and the General Assembly on an annual basis.

In 2007, the TSB voiced support for “the strategies and tactics (including the traffic improvement recommendations) adopted by the Bradley Board of Directors to strengthen Bradley as the State’s major commercial airport for both passenger and air freight services for the State and the rest of Western New England.

The Transportation Strategy Board also encouraged the Bradley Board of Directors to work with the appropriate State agencies and neighboring municipalities to:

- Define economic development goals and priorities for Bradley;
- Establish procedures to pre-approve development sites on Bradley property; and
- Encourage support for complementary and coordinated multi-town economic development plans.



Passenger and Cargo Trends

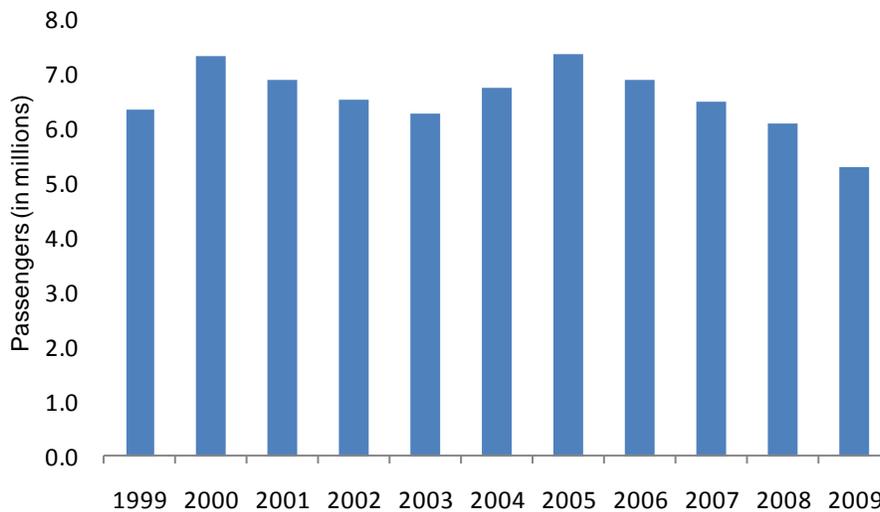
Figure 13 shows Bradley passenger trends since 1997. From 1997 through 2000 passenger use rose steadily to a record of 7,338,744 passengers in 2000. Through the first eight months of 2001 the airport seemed certain to set a new passenger record. The events of September 11, 2001 had a significant impact on the airline industry. By 2003 annual passengers had fallen to 6,261,807. In 2004, Bradley saw its first increase in passenger travel since 2001 and in 2005 the Airport set a record of over seven million passengers.

The impact of changes in the airline industry and the global economic crisis on Bradley resulted in a 15% decrease in the number of seats available in 2009 compared to 2008. Nationally the decline was 6%. There were 11.2% fewer passengers (5%

nationally) and a 9.9% decrease in fares (9.7% nationally). DOT believes Bradley experienced downturns greater than the national average due in part to the airport's position in the highly competitive markets of New York, Boston and Providence.

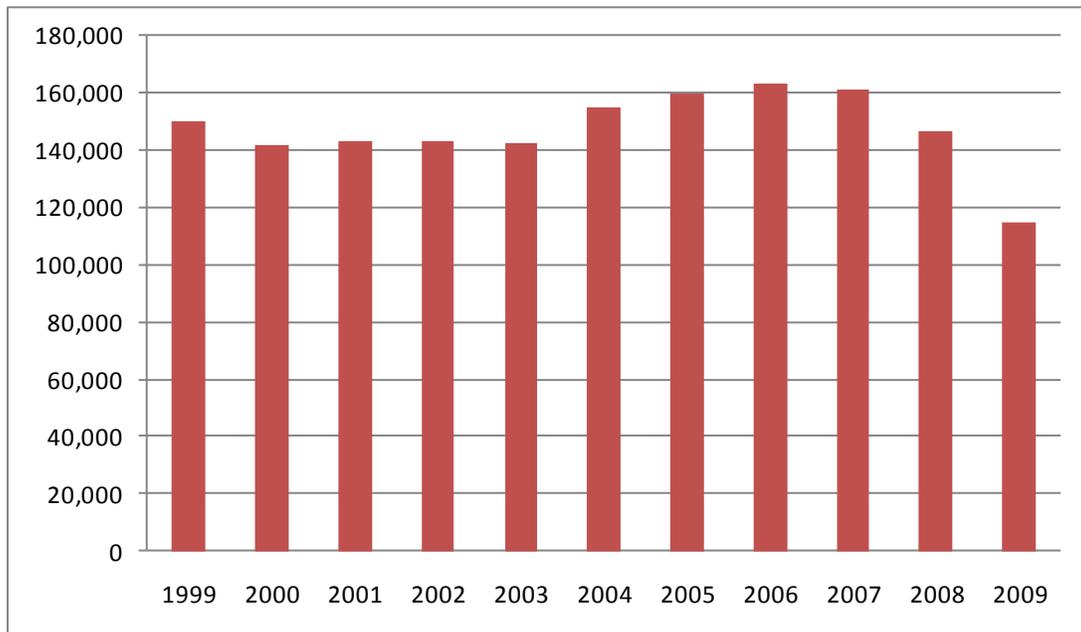
While passenger numbers had decreased since 2005, the most recent statistics indicate passenger numbers at the Airport are rebounding.

Figure 13
Passenger Trends 1999-2009



Cargo volumes at the airport dropped from 1999 to 2000 and remained fairly level for several years before rising in 2004 and again in 2005 with a record high of freight handled in 2006. Since 2006 the national economic climate has negatively impacted the Airport's freight tonnage.

Figure 14
Cargo Trends 1999-2009



In 2007, the Transportation Strategy Board recommended the establishment of improved cargo service as a priority for the Bradley Board of Directors and the Department of Transportation.

Infrastructure and Initiatives

Over the last decade Bradley has undertaken a number of initiatives aimed at improving the airport's physical infrastructure, including a new terminal and terminal improvements; a new on-airport parking garage; an electric cogeneration facility designed to reduce energy costs; and a new customs and federal inspection station. Planned improvements include replacement of Murphy Terminal, the oldest part of the current terminal facilities; expansion of the parking garage; a high speed taxiway and consolidated cargo and rental car facilities. All of the planned projects are to be funded from the airport's state and federal resources.

Bradley International Airport has also undertaken a number of marketing and route development initiatives designed to increase the markets, especially in the western United States and Europe. The evolution of these efforts now includes serious discussion of additional programs that may be necessary to secure international service to Europe.

In recent years several direct services have ended, these include: Amsterdam, Salt Lake City, and Phoenix. However Bradley International Airport has added direct flights to a number of destinations including Cancun, Denver, Los Angeles and Milwaukee. In addition, JetBlue recently began daily service to Fort Lauderdale and Orlando.

In 2007 the Transportation Strategy Board recognized the success of Bradley's marketing and route development efforts and supported continuation of those efforts.

Recognizing the value of Bradley International Airport as a major economic resource for the Capitol Region and the State of Connecticut, the Capitol Region Council of Governments (CRCOG) undertook a comprehensive analysis of current and future traffic conditions and land use in the airport area.

The Bradley Area Transportation (BAT) Study identifies transportation improvements that are needed to accommodate growth and to develop a strategic plan for maintaining safe and efficient access to the airport area.



Improvements identified in the study are categorized as regional or local (primarily of town concern) based on the nature of their impacts and/or benefits. The following four improvements were identified as being of regional significance:

- Northern Bradley Connector Roadway - provides a direct connector (4.3 miles) for industrial and commercial parcels on and adjacent to Bradley Airport by connecting Route 75 near Bradley Airport to Route 190 over the Connecticut River
- Route 75-Bradley Airport Gateway - recommended to provide access from the rear of businesses to Route 75 and Schoephoester Road at existing signalized intersections, and helps to alleviate traffic and unsignalized left-turns on Route 75.
- Bradley Park Road - improves access and safety to existing cargo and industrial land uses along Perimeter Road, and unlocks the potential for new cargo and industrial development on land north of and on Russell Road.
- Improved Transit Service to the Bradley Area - incorporates several transit

enhancements of CROG's Regional Transit Strategy, including the Griffin Busway, New Haven-Hartford-Springfield Commuter Rail⁴¹, additional Bradley local bus service and bus connections to Hartford and Springfield.

In 2007, The Transportation Strategy Board supported the funding and implementation of the Bradley Area Transportation Study.

The Capitol Region Council of Governments (CROG) subsequently allocated STP Urban funds for the relocation of Bradley Park Road; however efforts to secure the necessary 20% nonfederal share fell short. Currently the Air National Guard is pursuing funding through military sources, although funding is not likely in the near term.

The recommendation to evaluate and if feasible implement express bus service from Hartford to Bradley International Airport has been completed by ConnDOT. As part of ConnDOT's evaluation they met with business groups from the Hartford area. Based on the dialogue of these meetings, the Department determined that at this time there was not the demand for express bus service from Hartford to Bradley International Airport.

In order to encourage airport related economic development, earlier this year the legislature Public Act 10-98, which creates a multi-town development zone around the airport and extends enterprise zone tax incentives to manufacturers and other specified businesses that develop or acquire property in the zone and create jobs. The zone, called the Bradley Airport Development Zone (BADZ), encompasses specified contiguous census tract blocks in Windsor Locks, Suffield, East Granby, and East Windsor. The act designates these blocks as "distressed municipalities," a designation that qualifies projects in BADZ for other economic assistance.

Other Airports

Tweed-New Haven Airport is the only other state airport which currently has scheduled commercial air service. The other two airports which have had scheduled commercial service are Groton-New London Airport and Sikorsky Airport in Stratford. All three airports are located along the coast and face a similar issues and challenges.

Tweed-New Haven

Tweed-New Haven Regional Airport provides both scheduled commercial and general aviation services. The Airport is situated on 396 acres in New Haven and East Haven. Tweed is owned by the City of New Haven and leased to the 15-member Tweed

New Haven Airport Authority, established by state law in 1997. The annual operating budget is approximately \$3.0 million of which about \$1 million is on-airport revenue.



Tweed's facilities are in good to excellent condition, with two runways and up to five airline gates. The Authority has implemented over \$36 million in FAA-funded capital improvement projects since 2007 as part of Tweed's overall Airport Master Plan. These improvements standardize the airport under FAA regulations. The City and State both provide operating support and matching grants for ongoing and future capital projects.

Tweed is one of just two Class I facilities in Connecticut and is a significant part of the state's transportation infrastructure. In 2005, the Transportation Strategy Board adopted a two-airport strategy supporting high quality service at Bradley International Airport and regional service at Tweed.

Historically, Tweed-New Haven's location led to a number of controversies between the New Haven and East Haven, including a legal dispute about the implementation of runway safety areas. The action was resolved in 2008 by a Federal Court ruling which held that matters of airport safety are governed by Federal law and upheld Tweed's right to proceed with the runway safety area project. Subsequently, a Memorandum of Agreement (MOA) signed by the City, the Town, and the Authority in March 2009 put to rest many of the disputed issues and the municipalities now work cooperatively on many airport projects and initiatives.

US Airways provides scheduled commercial service of five flights daily to its major hub at Philadelphia. From there, passengers connect to 84 domestic and 36 international destinations. Current passenger volume is just a fraction of the air traveling public in the region. An estimated 47% of the regional New Haven market uses out-of-state airports. Local companies spend over \$36 million on air travel and much of this spending likewise leaks to out-of-state facilities.

Improved commercial air service to New Haven is vital to Connecticut's success as a knowledge economy. Tweed service is closely tied to attraction of future investment in technologies developed at Yale University and Yale-New Haven Hospital. Reliable local air service is known to facilitate the recruitment and retention of world-class talent to the university and medical research businesses. Bioscience and other growing companies need quick access to global product and financial markets. With these core business needs in mind, the Airport Authority is aggressively seeking airline service to additional hubs.

Recommendations

With respect to Tweed's economic development and transportation role in south central Connecticut, **the Transportation Strategy Board recommends that the State:**

- **Support Tweed's ability to serve the travel needs of business, institutional and leisure travelers in Southern Connecticut as a complement to service at Bradley.**
- **Increase the State's annual operating assistance grant to the Tweed-New Haven Airport Authority to \$2.0 million.**
- **Release the State bond funds (\$4.25 million) originally approved in 2001 and reauthorized in 2010 for airport infrastructure and community benefits, as outlined in the City/Town/Authority Memorandum of Agreement.**
- **Assist the Airport Authority with the removal of off-airport obstructions as enabled under State law.**
- **Support the Airport Authority's ongoing capital improvement and master plan for the airport.**

Groton – New London

Groton – New London Airport, located in Groton, is owned by the State of Connecticut and operated by the Department of Transportation's Bureau of Aviation and Ports. It previously had scheduled air service provided by US Air through its Philadelphia regional hub. The airport currently has no scheduled commercial air service and operates as a general aviation facility.



Sikorsky Airport

Sikorsky Airport is owned by the City of Bridgeport and is located entirely in the Town of Stratford, a fact which has, as in the case of Tweed New Haven, led to a long running series of disputes between the city and the town over taxes, zoning, obstructions, runway safety areas and other issues. The airport is managed by an Airport Commission composed of Bridgeport city officials and the mayor of Stratford.

Sikorsky had scheduled commercial air service, provided by a variety of carriers, until 1999. It currently operates as a general aviation facility and has more total aircraft based at it than any other airport in the state.

Waterbury-Oxford Airport

The Waterbury-Oxford Airport is owned by the State of Connecticut. Most of the airport's 430 acres are located in the Town of Oxford (a small northern portion is located in the Town of Middlebury). The airport does not offer scheduled airline service, but serves many charter, corporate and personal aircraft. In fact the airport serves as a base for over 200 aircraft, including approximately 40 corporate jets. As such, Waterbury-Oxford Airport is classified as a General Aviation (GA) airport by the FAA. GA airports service communities that do not receive scheduled commercial service.

In addition, Waterbury-Oxford Airport provides approximately 140 tiedown positions, 64 T-hanger bays and several large hangers. Ownership of these facilities is split amongst the airport's fixed base operator and multiple service operators, as well as the State of Connecticut. These hangers store aircraft ranging in size from small single-engine Cessna's to large Gulfstream and Global Express corporate jets. Several changes have occurred at the airport over the past several years, including runway extensions and the construction of several corporate aircraft hangers. Development options at the airport are constrained by limited available property, steep terrain and environmental issues such as wetland impacts.



In January 2009 a FAR Part 150 Noise Study for Waterbury-Oxford Airport was approved by FAA. The study recommended several alternatives that reduce noise in the residential areas surrounding the Airport. However, the mitigation measures were determined that they would not reduce airport noise to below compatible levels, thus a voluntary acquisition and insulation were recommended. The Environmental Assessment of these recommendations was released in October 2009. ConnDOT began a program to implement the voluntary acquisition of 72 private properties in late 2010.

Other Issues

As previously noted Tweed, Sikorsky and Groton/New London airports are located along the Connecticut coast and two out of three are located, in whole or in part, in communities other than the one which owns it. This combination tends to make proposals involving physical alterations of any kind highly controversial. It has also effectively prevented any serious consideration of expansion possibilities. Indeed, officials at both Tweed New Haven and Sikorsky airports have experienced difficulty implementing proposals for enhanced runway safety at least partially because of

concerns that they will ultimately lead to runway expansion and/or use by larger aircraft.

The issue of runway safety areas is not limited to coastal airports. Four of the five state general aviation airports have at least one runway which is shorter than the Federal Aviation Administration standards, as do two of the four municipal airports.

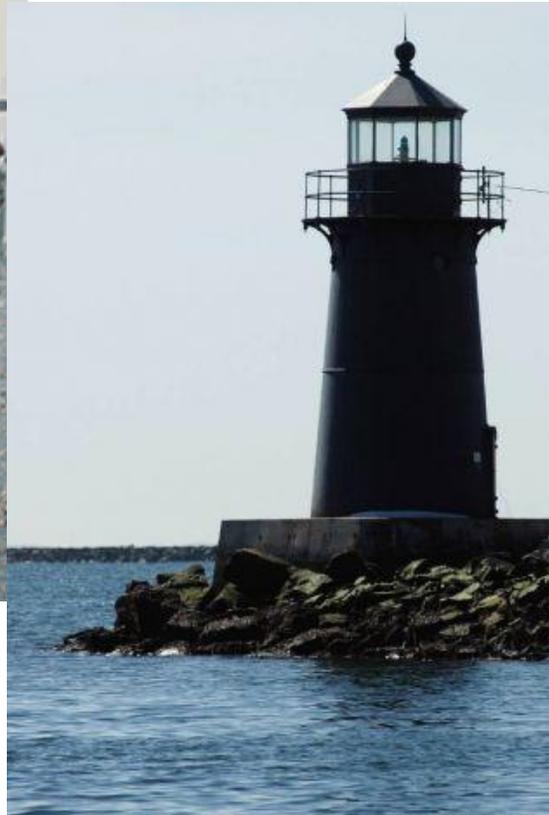
Other issues facing Connecticut's general aviation airports include zoning in areas adjoining or near airports, which can affect airport access, and difficulties encountered dealing with both natural and man-made obstructions which are located off the airport property but impact airport operations

In 2007, the Transportation Strategy Board recommended that the State assist airport operators in addressing obstruction issues which cannot be resolved locally.

The Board also expressed concern about the potential loss of privately owned airports which are open to the public, especially those which serve as relievers for other public airports. The State of Connecticut currently provides Grant in Aid funds to municipalities to evaluate and possibly purchase privately owned airports. Legislation was passed to provide funding to certain privately owned, public use airports for capital improvements. The legislation provided for a cost sharing program with airports. To date, no funding has been allocated for this program.

The Transportation Strategy Board repeats its 2007 recommendation that the State support efforts to retain and preserve private airports open to the public, including an adequate number of reliever airports.

Maritime



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MARITIME

The State of Connecticut's maritime programs support the movement of both people and goods by water. They function as a part of the State's larger maritime transportation industry.

Connecticut's port system handles just over 19 million tons of cargo annually, with about 87% handled at the State's three deep water ports⁴². A recent study commissioned by the Maritime Coalition estimates that waterborne cargo represents the equivalent of 950,000 truck trips annually. Connecticut is also served by several smaller commercial ports as well as numerous recreational ports and facilities.

In addition to goods and cargo transportation, Connecticut also has several passenger ferry services, which together transport over 2 million passengers and close to 82,000 vehicles annually. These services operate out of Bridgeport and New London as well along the Connecticut River. The Connecticut River ferries are owned and operated by the Department of Transportation and operate on a seasonal schedule; while the Bridgeport and New London based services are privately owned and operated on a year-round schedule.

Connecticut's Ports

Connecticut's three deep water ports⁴³ account for the bulk of the State's maritime commerce. These ports each have several unique features which include their geographical location, ownership and operating entities.



Geographically, Connecticut's deep water ports are located at the mouth of rivers. This feature is most important when considering dredging issues due to silt and sediment build-up which occurs more quickly than at other areas, including Long Island. A vast majority of the port facilities in Bridgeport, New London and New Haven are privately owned and operated, which too is a unique feature in comparison to other commercial US ports.

⁴² The deep water ports are in Bridgeport, New Haven, and New London

⁴³ "Deep Water Port" is defined by the Army Corps of Engineers as having an authorized depth in excess of 14'

The Port of Bridgeport is located at the mouth of the Pequannock River and operates as a port district organized by the City of Bridgeport, and managed by the Bridgeport Port Authority. More than 5 million tons of goods flow into Bridgeport's harbors, the second most active port in the state. Cargo typically has included fruit, coal, sand, gravel, stone, gasoline, and oil.

The Port of Bridgeport also receives 250 barges of petroleum products annually and houses commercial passenger ferry service to Port Jefferson, NY. There is no rail connection to the Port of Bridgeport.

The Port of New Haven is located on the east side of the Quinnipiac River. Like Bridgeport its nine terminals are owned and operated by private entities. The New Haven Port Authority was formed in 2003 and governs a 366-acre port district.

The Port of New Haven is the State's busiest port and a leading port of call on the Atlantic Seaboard. New Haven primarily receives petroleum (handling over 70% of all petroleum movements at Connecticut's ports); in addition the port handled 98% of all manufactured goods shipped through the State's



ports. Other significant commodities include steel products; sand and gravel; copper and other non-metallic materials. All tonnage is handled through the nine private terminals at the port. An almost invisible part of the port operation is the petroleum products received in New Haven and moved via pipeline to inland users. Exports that flow through the Port of New Haven include scrap metal. In addition, the port houses several large storage facilities.

Currently, the rail connection to the Port of New Haven stops at a loading dock which the Department of Transportation constructed on Waterfront Street. The development of potential rail spur links from the Waterfront Street rail extension into the individual port operators is in development. Rail extension is identified as a priority project in the 2006 transportation initiative (Public Act 06-135). This rail line is serviced by Providence & Worcester Railroad.

The Port of New London is located at the mouth of the Thames River. Unlike the State's other two deep water ports, the port's primary dry cargo facilities and piers are

owned by the State of Connecticut, which leases the facilities to private operators. In addition to housing a commercial fishing fleet, the State Pier handles lumber and copper products. Additionally, the State Pier accommodates major cruise ships calling on the Port of New London. The State Pier facility is very land constrained, a fact which helps define its market niche. New London also has three passenger ferry operations, serving Orient Point and Fisher’s Island, NY as well as Block Island. There are also several other port petroleum product facilities and a major naval facility located on the east side of the Thames River.

The State Pier facility in New London is serviced by a direct rail connection operated by New England Central Railroad and indirectly by the Providence and Worcester Railroad, providing relatively seamless intermodal linkage. It is the best rail connection of the three deep-water Connecticut ports.



According to the Army Corps of Engineers’ Navigation Data Center, Connecticut’s ports accounted for just over 18 million tons of freight traffic annually. As noted, the Port of New Haven handled about 50% of this commerce. Between 2004 and 2008 the flow in the freight traffic has increased on a steady and significant basis, most notably at Bridgeport).

Freight Traffic-CT Ports 2004 -2008⁴⁴

PORT	FREIGHT TRAFFIC (TONS) CY2004	FREIGHT TRAFFIC (TONS) CY2007	% CHANGE
BRIDGEPORT	5,671,230	7,627,957	+34%
NEW HAVEN	10,855,934	9,574,406	-12%
NEW LONDON	1,534,648	1,255,763	-18%

⁴⁴ http://www.iwr.usace.army.mil/ndc/wcsc/webpub/Part1_Ports_tonsbycomm.HTM

Connecticut's 5 other commercial ports house gravel and stone operations as well as several other activities.

The State's recreational facilities, which are primarily marinas, house and support the 113,000 registered recreational boats in Connecticut.

ISSUES

Dredging

The degree of accessibility to Connecticut's ports and waterways is controlled by the depth of the navigational channels. Most, if not all of the ports' channels have an authorized depth established by Congress. It is the responsibility of the US Army Corps of Engineers (ACOE) to maintain the authorized depth of a channel, commonly referred to as the controlled project depth. The ACOE receives funding from Congress for specific projects. However, Congress does not provide the ACOE with enough funding for all project needs within any specific fiscal year and has historically underfunded the ACOE for maintenance dredging projects for decades.

The Connecticut Maritime Coalition, at the request of the Connecticut Maritime Commission and with funding from the Department of Economic and Community Development, conducted an Economic Impact Study of the maritime industry on Connecticut's economic health. This study, released in 2010 and entitled "Economic Impact Study of Maritime Industries in Connecticut" documents that Connecticut's maritime dependant industries, their suppliers and related economic activity accounted for over \$5 billion in business output within the State. Additionally, the study concluded that the State's maritime industry employs over 30,000 people, and is responsible for \$1.7 billion in annual household income and \$2.7 billion in State GDP. Furthermore, the study found that the net result of direct, indirect and induced economic effects within the state economy maritime industries annually account for over \$56 million in taxes paid to local communities, \$54 million in state tax revenues and over \$224 million in Federal tax revenues.

The most pressing issue facing Connecticut's ports is a need for maintenance dredging, which is the process of restoring channels and pier areas to their previously permitted or authorized depths. While this need is the most pressing in Bridgeport it exists at other ports as well.

Maintenance dredging is necessary in order to ensure that ships can safely enter and leave the port. Failure to maintain proper depths will (1) limit the types and size of ships able to use the ports, which affects their competitiveness and/or (2) require multiple handling of cargo, such as loading the cargo onto smaller barges in order to get

it to port, which adds to the cost and reduces the competitiveness of the Port as well as presenting potential environmental risks.

The US Army Corps of Engineers has the primary responsibility for the scheduling, funding and undertaking of maintenance dredging in federally authorized channels. The cost of maintenance dredging in federally authorized channels has historically been borne by the Federal government, while port operators have paid to dredge their pier areas. Historically, state transportation officials have played little or no role in the dredging process.



However, the Federal government has changed its system for prioritizing and funding dredging activities from one based upon regional cooperation and priorities to one based on national competition. In effect, this means that

Connecticut's ports will be competing with all ports nationwide for federal funding. In addition, the Federal government is increasingly looking to state and local governments to pay a portion of the cost of dredging projects.

Dredging projects are also subject to environmental regulation at the state and federal level through the permitting authority of the Connecticut Department of Environmental Protection and the U.S. Army Corps of Engineers. Each dredging project is unique, therefore the material to be dredged must be tested to determine the physical characteristics of the sediment and to identify any contamination of concern. The character of the sediment information is then used by regulators to determine the appropriate method and location of reuse or disposal. The method of disposal chosen directly affects the cost of a dredging project.

In determining the suitability of dredged material for open water disposal in Long Island Sound, state and federal regulators apply criteria established under the authority of the federal Clean Water Act, including the State's water quality standards, and for some projects by the Marine Protection, Research and Sanctuaries Act of 1972

("MPRSA"). One of the primary federal environmental regulations affecting dredging and disposal of dredged sediments in Long Island Sound results from the so-called "Ambro Amendment" to the MPRSA. This legislation, named after the Long Island congressman who proposed it, applies the inflexible requirements of the MPRSA to open water disposal in Long Island Sound from all Federal dredging projects and non-federal dredging projects disposing more than 25,000 cubic yards of sediment. This unique application of MPRSA singles out the Long Island Sound estuary for regulation the same way that material is regulated for disposal in the open ocean. Such regulation limits the state of Connecticut's ability to use existing disposal sites in Long Island Sound (shown in Figure 16) for the disposal of dredged materials. In other words, Connecticut has less control of what happens in our state waters than other states around the country.

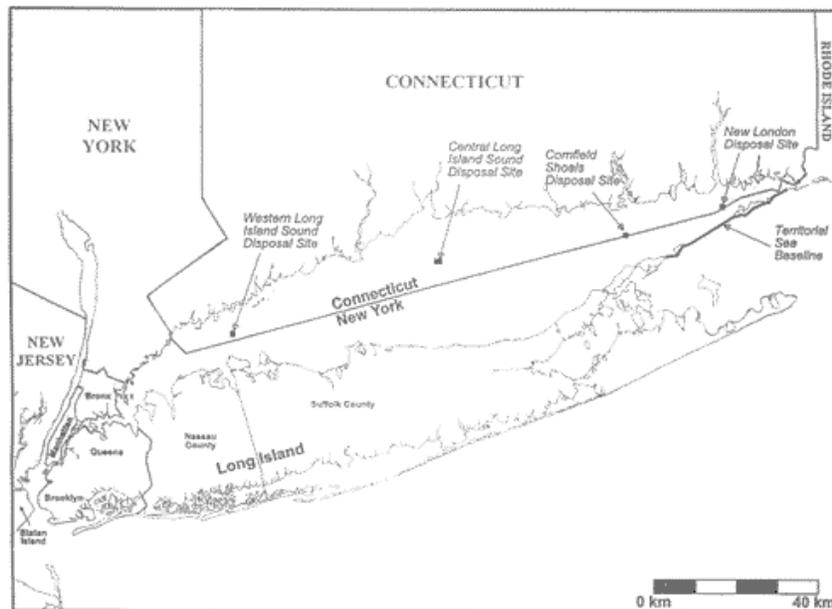
There are several alternative methods to treat or dispose of dredged materials which do not meet these standards or the State water quality standards. Disposal of dredged materials may require confinement by "capping" with cleaner dredged sediment at a Long Island Sound disposal site, or, if determined unsuitable for open water disposal in Long Island Sound, require upland disposal. To be eligible for upland disposal, contaminated sediments are subject to solid waste and possibly hazardous waste disposal regulations and may require pretreatment by methods such as washing or chemical treatment. The costs of alternative treatment methods are generally significantly higher than those for open water disposal and may not be eligible for federal payment

Under the Ambro Amendment, Connecticut's four open water disposal sites must be "designated" as disposal sites by the federal Environmental Protection Agency ("EPA"). The designation process was completed for two of the sites in June 2005. As a result of the disposal site designation process the EPA has required by federal rule the development of a Long Island Sound Dredged Materials Management Plan (LISDMMP) for Long Island Sound in cooperation with New York and Connecticut by 2013. The LISDMMP will be developed by the Army Corp of Engineers utilizing federal dollars in coordination with the States of Connecticut and New York and the EPA. Federal funding for this requirement has been sporadic, which has resulted in further delays in the development of the LISDMMP. The previously announced supplemental EIS by EPA to potentially designate the two disposal sites in Eastern Long Island Sound has not materialized to date. Thus, it is expected that the New London Disposal Site will close to Ambro-regulated projects in September 2011.

The requirements of the Ambro Amendment are just one of several layers of state and federal regulation on the disposal of dredged materials. First, the materials must be determined to be suitable for open water disposal through application of the Federal Clean Water Act and the Marine Protection, Research and Sanctuaries Act. These Federal standards address the testing criteria and are generally applicable to all disposal options and methods.

Disposal of dredged materials which do not meet these standards, or other State water quality standards, require the treatment, confinement or a combination of the two options (such as pretreatment, washing or chemical treatment). There are also several alternative methods to treat or dispose of dredged materials, one of which is the use of confined aquatic disposal or CAD cell. The costs of alternative treatment methods are generally higher than those for open water disposal and may not be eligible for federal payment.

Figure 16⁴⁵



The State's role in dredging activities is guided by the Connecticut Coastal Management Program, the Connecticut Coastal Area Management Act, the Structures, Dredging & Fills Act and the issuance of a Water Quality Certificate and dredging permit.

The Connecticut Coastal Management Program balances economic growth of coastal communities with the preservation and protection of coastal resources. The Coastal Area Management Act identifies key policies and standards to be used at all levels of government in the evaluation of activities that affect the shoreline and coastal management. Additionally the adoption of the Harbor Management Act by the State in 1984, provided for a role of the State's municipalities for determining how their coastal areas are used and developed.

⁴⁵ Source: www.epa.gov/ne/eco/lisdreg/index.html

Finally, the Army Corps of Engineers has encouraged the State to take a more active role in setting dredging priorities. Historically, decisions and the setting of priorities for dredging projects were fulfilled by the Army Corps of Engineers based on regional needs as well as a variety of other factors. As noted earlier the changes to the Federal dredging program in 2005 have significantly changed the funding formula for the districts.

The ability to implement or undertake dredging activities are also driven by factors such as cost and funding, the length of time needed to obtain the necessary permits from the federal and state sources, and testing requirements placed on the disposal or use of dredged materials which arise under federal and state regulations. Also, the Federal budget and project appropriations process typically adds an additional layer of process to negotiate in order to facilitate these projects.

Lastly, the scheduling of dredging activities in Connecticut is affected by seasonal considerations; these include weather conditions, recreational traffic as well as reproductive cycles of marine wildlife.

Dredging Needs at State Ports

While an essential step in the economic development of port cities, dredging is an expensive and environmentally sensitive process which demands careful attention to ecological concerns.

The Connecticut Maritime Coalition's 2010 report entitled "Economic Impact Study of Maritime Industries in Connecticut" estimate that "...for every \$1 spent on dredging in the State, that as much as \$9-\$12 of economic activity will be generated through projected resultant increases in Maritime business, netting anticipated tax receipts that will cover the initial investment in the dredging..." Further the report estimates that a state, local and private sector investment of approximately \$80 million could lead to a return of as much as \$1 billion in total economic benefit leading to the creation of 6,100 jobs."⁴⁶



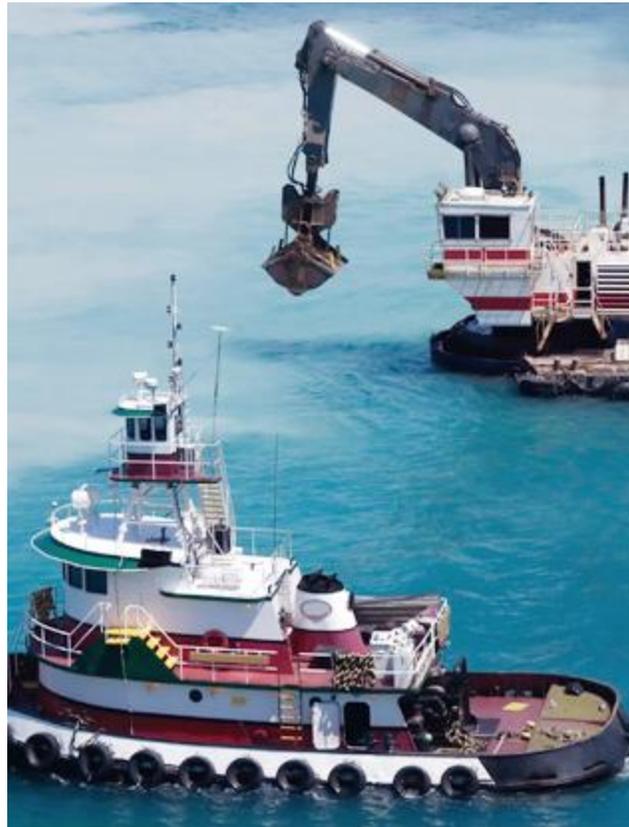
Public Act 08-101 established a Harbor Improvement Account (HIA). The HIA is designed to provide funds to facilitate dredging projects and other harbor infrastructure improvements in support of or at times in place of Federal funds. To date, no funding has been allocated to this account by the State Legislature.

⁴⁶ Economic Impact Study, Connecticut Maritime Coalition, page 131

The immediate need to address dredging issues is the greatest at the Port of Bridgeport. Action is critical so that deepwater vessels can operate at times other than high tide.

Bridgeport's main channel has not been dredged since at least 1966. Because of the lack of maintenance dredging it is sometimes necessary to offload cargo onto barges in order for them to access the port. This affects the attractiveness of the port in terms of costs and time.

Dredging of the Port of Bridgeport is made more difficult because of the level of contamination of much of the materials located within the channel and which are difficult and expensive to dispose of. The current main channel has an authorized project depth of 35' according to the Army Corps of Engineers. However, the actual depth is reported to be about 29 feet.



Maintenance dredging of the federal main channel at the Port of New Haven was last completed in January 2004. Dredging of the channel is scheduled on a 10-year cycle. However, the city of New Haven believes that the channel needs to be improved beyond its current depth⁴⁷ in order to remain competitive. Improvement projects, such as deepening the channel beyond the authorized federal depth require non-Federal cost-sharing. In addition, to be eligible for federal funding the project must have a positive cost-benefit analysis.

The Port of New London underwent limited dredging of the main channel north of I95 in 1996 as part of an operation by the Department of Defense in order to accommodate their needs at the US Sub Base. However, significant maintenance dredging of the channel was last done in 1986. The main channel into New London is

⁴⁷ The current main channel has a project depth of 23'-33' according to the Army Corps of Engineers.

maintained to a depth of 40', with the access channel to the east side of the State Pier at 35'. Dredging is constrained at portions of the pier by the presence of bedrock which will likely preclude the possibility of dredging for true "deepwater" capability. Maintenance dredging of the piers at the State Pier facility is also needed at this port. The channel has a current project depth of 35' according to the Army Corps of Engineers.

Several other commercial and recreational ports in Connecticut also have dredging needs. These include Norwalk which recently completed the maintenance dredging of upper Norwalk River, north of I95, and which is currently working to identify funding for the remainder. Norwalk has received earmark funding for a third consecutive year in order to complete its dredging needs. However the funding is between \$8-\$10 million short. Dredging needs in Greenwich, Southport, and Westport as well as along the Housatonic River are in various states of review by the Connecticut Department of Environmental Protection in cooperation with the Army Corps of Engineers.

Movement of People

In addition to freight service, Connecticut's ports provide important passenger ferry services.

Passenger ferry services currently operate out of New London and Bridgeport and carry over 2 million passengers and 82,000 vehicles a year. The Department of Transportation also operates two passenger ferries which cross the Connecticut River and operate on a seasonal schedule.



The New York Metropolitan Transportation Council recently completed a study of services in Long Island Sound and made a number of recommendations to grow the industry. In addition to recommending a new service between New Haven and Long Island; proposals have been offered for new passenger high speed ferry services linking Stamford and Bridgeport to New York's financial district, mid-Manhattan and LaGuardia Airport.

Also, Bridgeport and Stamford have received earmark funding in the FY2006 Federal Ferryboat Discretionary Program that could be used to launch a high-speed ferry service.

Issues that remain before implementation of such a service include terminal location, parking, identification of a source of capital funds and potential operating subsidy.

Other Issues

Port zoning and land use issues also have an effect on any maritime strategy. In addition to items already reviewed, the competing interests for the use and development of the State's coastal areas, that is the gentrification versus the commercial use of these areas, are things which need to be considered in the development of a maritime policy. The Coastal Management Act as well as the Harbor Management Act play a role in addressing this, by discouraging the conversion of existing water-dependent facilities to other uses, such as condominiums and hotels, which could be located inland.

Recommendations

The urgent need to address and manage dredging issues will determine to a large degree, the long term sustainability of the State's use of this natural resource as a component of our transportation strategy. Issues which directly impact the ability to perform dredging include cost, the disposal of dredged material in compliance with Federal and State standards and the establishment and use of disposal sites. The ability and willingness to balance these, at times competing, factors determines the degree of success in efforts to enhance the State's maritime transportation system.

The Transportation Strategy Board's 2007 report, *Moving Forward*, included recommendations related to the review of the feasibility and viability of a feeder barge service from Bridgeport to New York, as well as the completion of the rail link to the Port of New Haven's terminals. While these recommendations and the projects they relate to remain of interest to the advancement of a comprehensive transportation strategy for the State of Connecticut, developments since the issuance of *Moving Forward* as well as the current budgetary constraints necessitate, in the Board's opinion, that these recommendations be further reviewed and evaluated prior to taking any additional steps.

The Transportation Strategy Board does recommend the implementation of the following maritime based initiatives and policies (some of which were included in the Board's 2007 report):

- **Inventory and prioritize statewide dredging needs and develop an estimate of the non-federal funding required for each such project.**
- **Expedite the long overdue dredging of Bridgeport harbor.**
- **Support continued federal funding for development and completion of a Dredged Material Management Plan for Long Island Sound.**
- **Determine the State's role in the funding and prioritization of dredging projects.**
- **Coordination of planning, projects and development of the state's three deep water ports to ensure and encourage long-term economic growth and vitality at same.**

- **The TSB recommends that ConnDOT, DECD and DEP enter into a dialogue with the private owners and operators of the State's three deep water ports for the purpose of coordinating any state capital investment related to the State's three deep water ports, and that OPM examine the benefits of establishing a system whereby such funding would be provided through a centralized, strategic authority.**

Funding & Finance

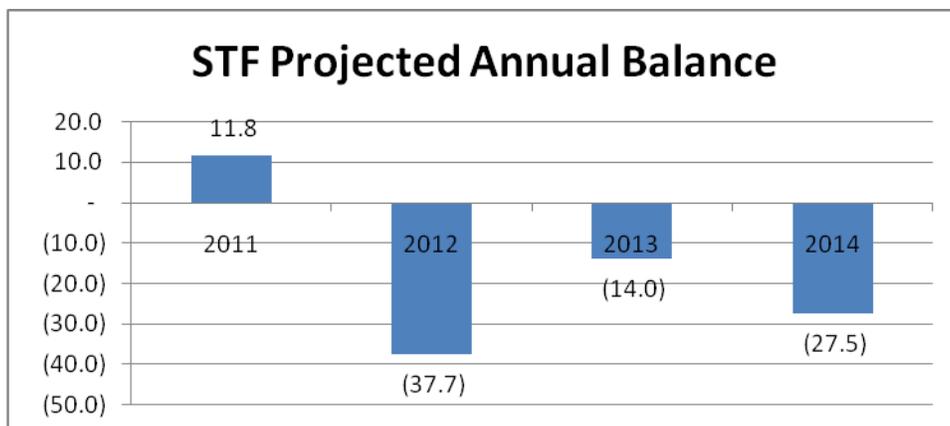


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FUNDING AND FINANCE

Connecticut faces serious challenges financing its transportation system in both the short and long term. The Department of Transportation has indentified a need for \$16 billion in new capital funding over the next twenty years, including over \$7 billion in capital spending during the next decade. To put that number in context, over the next decade it would almost double DOT's current capital program, with no increase in federal funding. That is a daunting challenge, but it is only one of several funding challengers facing Connecticut's transportation system. Others include operating and debt service costs that are rising faster than revenues; stagnant federal funding and limited revenue growth.

At the same time, the Special Transportation Fund, which is Connecticut's principal transportation funding vehicle, is strained by current obligations, rising costs and future capital needs. Even without new capital projects, the Special Transportation Fund is expected to end the current fiscal year with a small surplus, but faces challenges in the future. Deficits of \$37.7 million in FY 2012, \$12.0 million in FY 2013 and \$27.5 million in FY 2014 are currently projected. Annual deficits will continue into the future and exhaust the STF's accumulated surplus without additional revenues



Background

The Special Transportation Fund

The Special Transportation Fund (STF) is the funding source for virtually all transportation operating and capital expenditures. It is the State's second largest appropriated fund, surpassed only by the General Fund.

The state constitution, state law and bond covenants all require the adoption of balanced budgets for the fund. Perhaps the most stringent requirements are those contained in the bond covenants associated with the special tax obligation bonds which support transportation capital projects. According to the Office of the State Treasurer, they define a balanced budget as one where current year revenues are equal to or exceed current year expenses. This requirement is essentially prohibits using the fund's accumulated surplus to balance the annual budget.

In addition, the bond covenants require that total STF revenues in any year equal at least twice the debt service payments required in that year.

The fund was established in 1983, following the collapse of the Mianus River Bridge on the Connecticut Turnpike (I-95), to provide a dedicated revenue stream for transportation infrastructure projects and programs. The following year, the Transportation Infrastructure Program was established and the first Special Tax Obligation (STO) bonds were authorized. Special Tax Obligation bonds are special obligations of the State and are payable solely from the pledged revenues of the special transportation fund.

Originally, the STF was designed to cover only the direct costs (including debt service) of the transportation infrastructure program. However, starting in 1987, the legislature transferred a series of agency costs from the General Fund to the STF, in part due to growing General Fund deficits. Currently, the fund supports the operations of the Department of Transportation and the Department of Motor Vehicles as well as associated fringe benefit costs, debt service, and workers' compensation claim costs.

A significant feature of the original legislation establishing the fund was the decision to authorize bonding and, at the same time, approve future tax increases needed to order to make debt service payments on those bonds. Approving the tax changes upfront, rather than waiting until the year when the cash was actually needed, was designed to give investors confidence that those revenues would, in fact, be available to support the bonds. More than two decades later, the 2005 and 2006 transportation initiatives followed a similar approach.

Special Tax Obligation (STO) Bonds

Special Tax Obligation Bonds, first issued in 1984, are a central feature of Connecticut's system for financing transportation capital expenses, including the state's share of capital projects primarily supported by federal funds.

STO bonds are revenue bonds payable solely from the pledged revenues of the special transportation fund, which are dedicated to the repayment of the bonds. Because they are not supported by the "full faith and credit of the state" they do not count against the state's statutory bonding cap.

In order to ensure repayment of the bonds, the statutes and the bond covenants contain a number of requirements related to STO bonds and the Special Transportation Fund.

- Proceeds of Special Tax Obligation Bonds can only be used for the transportation purposes defined in the statute;
- The Governor and the General Assembly must adopted a balanced STF budget for each biennium;
- STF Revenues are pledged by law to the STF. If any pledged revenues are reduced another revenue source must be substituted;
- Debt service payments must be paid before all other STF expenses; and
- Pledged revenues must be at least two times the total principal and interest requirements of the bonds in each fiscal year.

At the end of the last fiscal year, there were approximately \$3.0 billion in Special Tax Obligation Bonds outstanding.

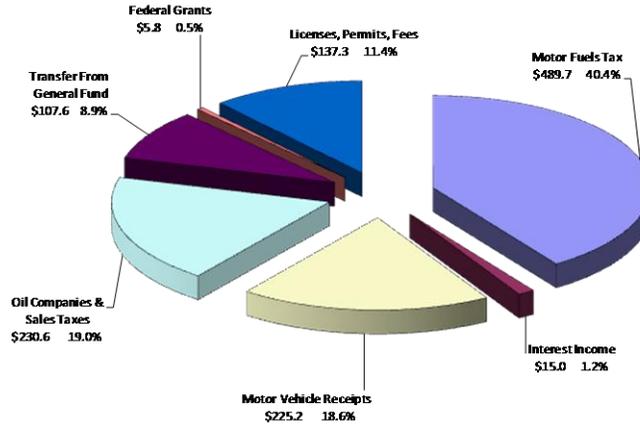
Revenues

The Special Transportation Fund is supported by revenues from a variety of sources. These sources are considered to be "pledged revenues" under the terms of existing bond covenants. Because the revenues have been pledged to support outstanding bond issues any revenue sources which are reduced or eliminated must be replaced by other revenues.

They include:

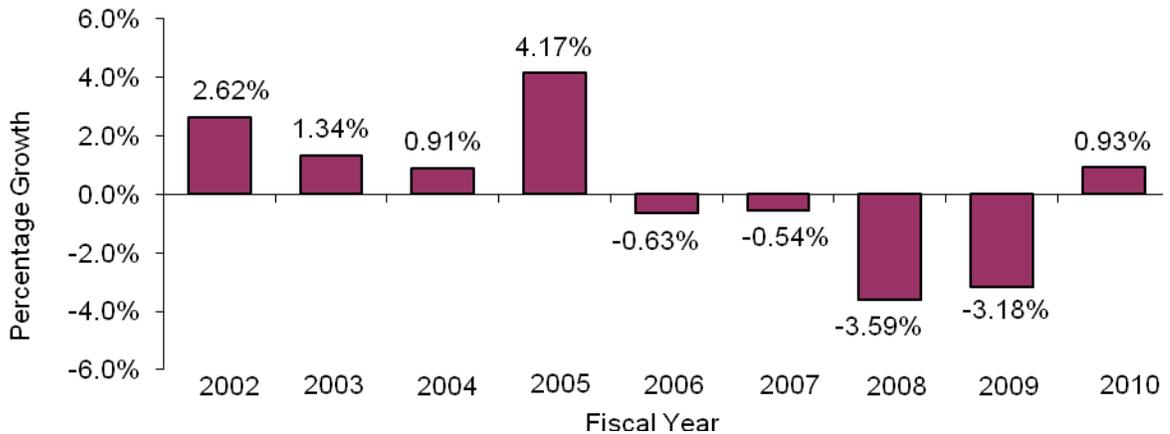
- Motor Fuels Taxes, including the gasoline tax, the diesel oil tax (except diesel oil used for home heating purposes), and the Motor Carrier Road Tax paid by out-of-state truckers operating in Connecticut.
- A portion of the Petroleum Gross Receipts Tax, which is a tax levied on the first sale in Connecticut (generally from a wholesaler to a retailer) on a variety of petroleum products including gas and oil.
- Fees paid to the Department of Motor Vehicles for licenses, permits and fees.
- Sales tax paid on the private sale of motor vehicles (paid to the Department of Motor Vehicles).
- Interest income.
- Transfers from the general fund.

FY 2011 Budgeted Revenue Sources- Special Transportation Fund (in millions)
Total: \$1,180.0 million



In recent years the motor fuels tax, the single largest source of revenue for Special Transportation Fund and normally a very stable revenue source, has shown some volatility. In FY 2005 gas tax receipts grew by over 4%. The next year, with gas and oil prices rising, receipts actually fell below the prior level, the first time since the fund was established that receipts declined in the absence of a recession. That decline continued through FY 2007 and into FY 2008⁴⁸. As the national economic decline set in receipts fell even further. While motor fuels tax receipts have begun to grow slightly they remain significantly below FY 2005 levels.

History of Growth in Motor Fuels Tax Collection



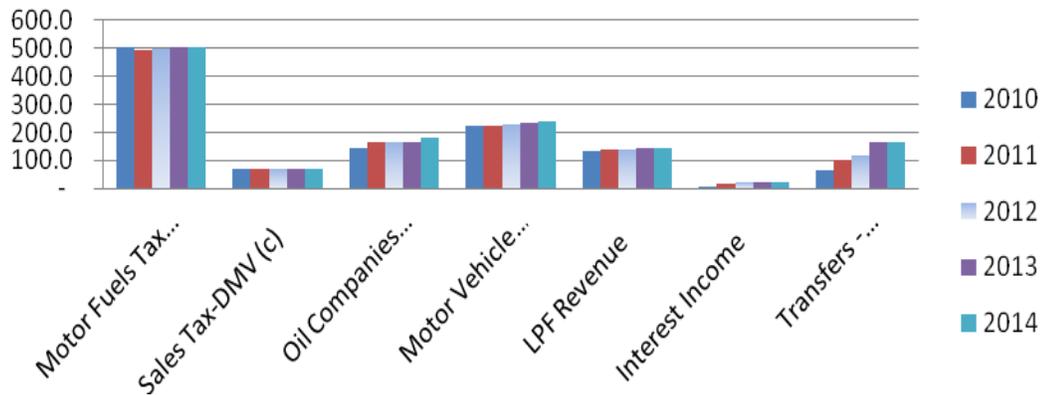
The reduction in the price of oil during the current economic downturn has significantly reduced revenues from the more volatile Petroleum Gross Receipts Tax (GRT). The GRT is a more volatile revenue source since it is based on percentage of the price of gas rather than the volume of sales. However, the Special Transportation Fund has not been affected by that revenue loss. That is because all receipts from the Gross

⁴⁸ During that time public transportation ridership was growing substantially, suggesting that some commuters were changing how they traveled.

Receipts Tax flow into the general fund and a fixed amount of money is then transferred to the Special Transportation Fund regardless of the actual receipts.

The chart below shows the projected growth in STF revenues from 2010 to 2014. While some growth is anticipated, overall growth is slow and highly dependent on improving economic conditions. In addition, efforts to deal with the multi-billion-dollar shortfall in the state's General Fund may also impact STF revenues.

STF Revenues 2010-2014



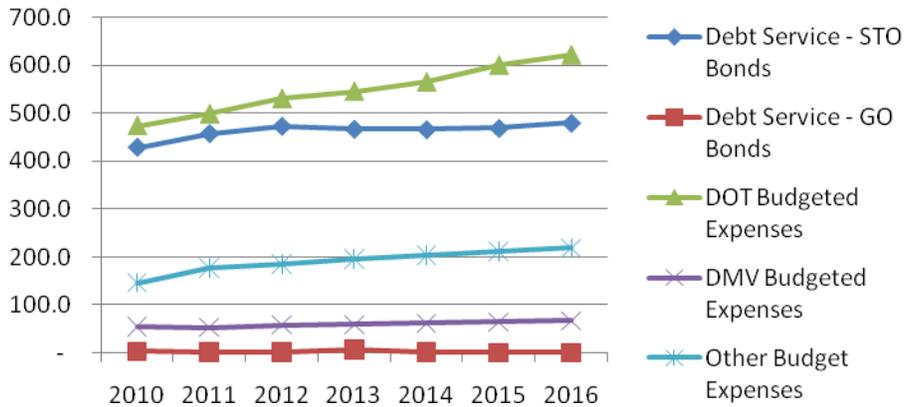
Significantly, over the same period, STF expenses are expected to rise significantly faster than revenues

Expenditures

The Special Transportation Fund pays for:

- Operating expenses of the Department of Transportation;
- bus and rail operations and subsidies;
- debt service on transportation bonding;
- operating expenses of the Department of Motor Vehicles; fringe benefits for staff employed at the Department of Transportation and the Department of Motor Vehicles; and
- Grant programs.

STF Expenditure Projections 2010-2016



One of the issues facing the Special Transportation Fund going forward is the significant difference between the growth in expenditures and the growth in revenues. For a number of years expenditure growth has far outpaced the growth in revenues.

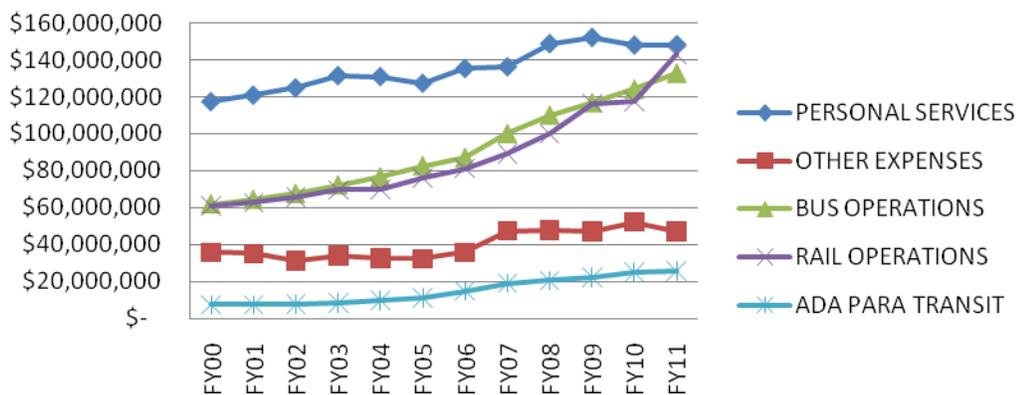
Because of the disparity between the growth in revenues and the growth in expenditures it has been necessary to periodically add additional revenue to the STF in order to keep it in balance. This is been done a number of ways including the transfer of funds and/or revenues from the general fund to the Special Transportation Fund.

DEPARTMENT OF TRANSPORTATION BUDGET

Over the next five years, the Department of Transportation's operating expenses are projected to be the largest, and the fastest growing, line item in the Special Transportation Fund. The following chart shows the trends in DOT spending from FY 2000 to FY 2011. During that period, personnel services have been the largest single expenditure area.

Principal DOT Operating Costs 2000-2010

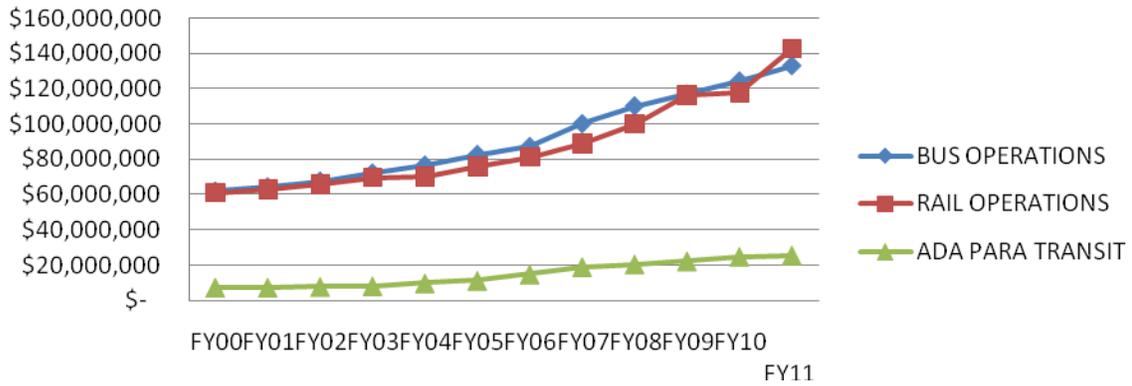
(Other than Debt Service)



However personnel services are not the fastest growing line item. The largest growth has been in public transportation (rail operations, bus operations and ADA para transit) spending, as shown in Table 6. . The growth in transit subsidies has been largely due to the lack of a fare increase since 2005 as well as the addition of some new services such as the extension of Shore Line East rail service to New London.

Between FY 2000 and FY 2011, the subsidy or state cost of bus operations rose from about \$61.8 million to \$132.9 million, with roughly two-thirds of that growth taking place since 2005. During the same period, the cost of rail operations went from just under \$61 million to \$142.7 million. About 80% of that increase has taken place since 2005. In percentage terms the largest cost increase was in ADA para-transit services which increased from slightly under \$7.5 million in FY 2000 to an estimated \$25.5 million in the current fiscal year.

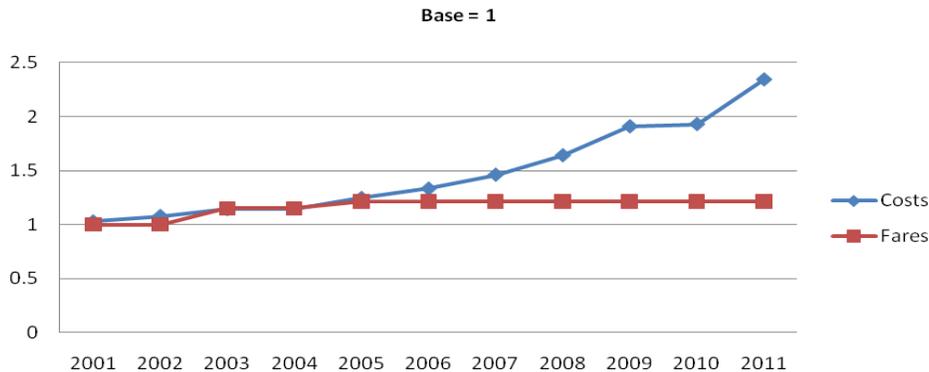
Public Transportation Costs FY 2000-2011



As previously noted, much of the growth in public spending has occurred in the absence of any fare increases. For example, Table 7 shows the relative growth rail operations spending and passenger fares between FY 2001 and FY 2011.

As previously noted, much of the growth in public spending has occurred in large part due to the absence of fare increases. For example, Table 7 shows the relative growth of rail operations spending and passenger fares between FY 2001 and FY 2011.

Relative Growth of Rail Costs and Fares 2001-2011



Debt Service

The second largest line item is the payment of debt service on (1) Special Tax Obligation Bonds; and (2) General Obligation Bonds issued to support transportation projects. Almost all of the debt service is for STO bonds. The line item grew by about 14.1% between FY 2000 and FY 2011.

SPECIAL TRANSPORTATION FUND ISSUES

Expenditure and Revenue Growth Rates

For at least the last decade special transportation fund expenses and expenditures have grown substantially faster than the revenue sources which support the fund. As a result, it has been necessary to periodically increase revenues in order to maintain the fund balance.

In recent years that has been done primarily by increasing transfers of gross receipts tax revenues from the general fund to the special transportation fund. During the fiscal year ending June 30, 2010 \$165.3 million was transferred to the STF. During that same year, about \$108 million in gross receipts tax revenue remained in the General Fund.

While this approach has succeeded in balancing the special transportation fund in the short term, it is problematic in the longer term. First, it is unclear whether the general fund, which is facing a multi-billion-dollar shortfall, can continue to support such transfers. Second, the amount of gross receipts tax revenue available for transfer is limited and the annual revenue from the tax is largely driven by the price of oil and extremely volatile.

Motor Fuels Taxes

Since the Special Transportation Fund was created motor fuel taxes, and the gas tax in particular, have been a major source of revenue for the fund. However, the growth in motor fuels tax receipts was negative from FY 2005 to FY 2009. It grew slightly (less than 1%) in FY 2010 but remains well below the 2005 level.

Significantly, the declines in 2006, 2007 and part of 2008 took place before the start of the current economic downturn. They marked the first time, other than during a recession, that the annual growth in motor fuels tax receipts has been negative since the special transportation fund was created. This trend, plus increases in the fuel efficiency of both passenger cars and commercial vehicles, and the growth in the use and availability of alternative fuels, raises questions about the long-term viability of the motor fuels tax, and the gas tax in particular, as the workhorse of the state's transportation financing system.

Growth in Public Transportation Spending

Since FY 2000 the combined budget line items for bus operations, rail operations and ADA para-transit services have risen from \$130.2 million in FY 2000 to a projected \$301.3 million in the current fiscal year. As previously noted, the largest part of this growth has taken place since the last passenger fare increases in 2005.

Project Delays and the Spike in Debt Service

Several large transportation projects and initiatives have taken longer to implement than originally expected. These include the Pearl Harbor Memorial Bridge (Q Bridge) and related projects, the Moses Wheeler Bridge between Stratford and Milford, the new rail cars and maintenance facilities for the New Haven Line, commuter rail service between New Haven, Hartford and Springfield, the new West Haven rail station, and other projects financed under the 2005, 2006 and 2007 transportation initiatives.

This trend is problematic for several reasons. First, because time is literally money for construction projects, the delays result in higher capital costs. Second, to the extent that special transportation fund revenues were increased in anticipation of funding for those projects, the deferral of bond sales and resulting debt service payments makes the special transportation fund appear financially stronger than it is.

Finally, if debt for many or all of these projects is issued at about the same time it will create a spike in debt service payments that will last for 20 years.

Reliance on Bonding

The special transportation fund relies heavily on the issuance of Special Tax Obligation Bonds to finance the state share of federally funded transportation projects as well as a cost of transportation projects funded solely by the state. In the short term this allows the state to spread the cost of a project over several years and thereby reducing the amount of money required in any single year. However, that benefit comes at a cost in the form of interest payments paid over the life of bonds.

For example, using 20 year STO bonds to pay for a \$10 million project reduces the annual cost of that improvement to about \$1.9 million, a significant short-term savings. But, over the life of the bonds, the State of Connecticut will pay about 9 million in interest, principal and costs, bringing the total cost of that \$10 million project to about \$19 million.

While the use of bonding is necessary and appropriate in many cases, the special transportation fund would benefit, in the long term, if the annual appropriation included funding to allow smaller projects and equipment purchases to be paid for with appropriated funds rather than bonding. For example, if the state appropriated \$20 million a year for ten years, instead of bonding for that work, it would, over a 30 year period, save about \$ 180 million.

CAPITAL NEEDS

The Department of Transportation has identified about \$16 billion in unfunded capital needs over the next twenty years, including \$7.5 billion needed over the next decade. According to DOT, those needs fall into three broad categories: They are: (a) programmatic preservation funds, (b) major preservation projects of strategic importance, and (c) major system enhancement projects of strategic importance.



Programmatic Preservation Funds

The Department estimates that the state needs about \$300 million annually for a basic transit and highway preservation program. This includes \$100 million annually for a basic highway bridge preservation program; another \$100 million per year for road preservation and \$100 million for transit preservation of \$100 million will be needed for basic preservation needs.



This funding will allow the Department to address deferred bridge maintenance, allow the state to reach its goal of repaving or reconstructing 350 miles of road annually and address on-going transit system needs, including as track repair, equipment overhauls, and station maintenance.

Major Preservation Projects of Strategic Importance

The Department of Transportation has identified major preservation projects that are of strategic importance because of their large scale and the critical nature of their function. There are other preservation projects that have the extra benefit of

enhancing system performance and/or supporting strategic goals of livable communities, economic growth, and environment, and improving the environment.

The first category includes major bridge replacement projects such as the Walk, Saga, Devon, and Cos Cob rail bridges on the New Haven Line. All are over 100 years old, and should any of these movable bridges stop functioning, train service would be halted.

The second category includes major highway replacement projects that are primarily preservation projects, but they also include a significant enhancement benefit. These are projects which involve a facility or structure that is at or beyond its design life and needs to be fully reconstructed or replaced. That reconstruction or replacement also provides an opportunity to address the system enhancement needs.

Two examples of this type of preservation projects are: (1) the I-84 viaduct in Hartford, and (2) the I-84 viaduct in Waterbury that includes the Route 8 interchange. Both have the potential to enhance system performance by improving safety and reducing congestion. Both also have enormous potential to enhance economic development and improve quality of life in adjacent neighborhoods and the respective city. They are also opportunities to address safety deficiencies and congestion problems.

The cost of these projects is estimated at \$3 billion⁴⁹ over the next twenty years and \$xx billion over the next decade. Unlike the programmatic preservation funds described above, the need for most of these funds is not immediate. While the planning and design for these projects could be started sooner, the need for construction funds would likely begin in 5-10 years and extend through decade beyond that.

Major System Enhancement Projects

This category includes projects that projects of strategic value which address system enhancement or expansion needs rather than preservation needs. Examples of these include the widening of I-84 from NY to Waterbury, the Route 15/Route 7 interchange in Norwalk, improvement of the Waterbury Branch Line, and improvement of the New Haven-Hartford-Springfield rail line.

The cost of these projects is estimated at \$xxx billion over the next twenty years and \$xx billion over the next decade.

⁴⁹ Transportation Infrastructure Capital Plan 2010-2014, Connecticut Department of Transportation, January 20, 2010.

FINANCING METHODS

This section explores a variety of financing methods which could be used to fund transportation capital investments. These include:

- STF Appropriations;
- Special Tax Obligation Bonds
- GARVEE Bonds
- Federal Funds
- Tolls
- Public/Private Partnerships

STF Appropriations

Special Transportation Fund appropriations are primarily used for operating costs and debt service. In recent years, STF appropriations have not been used for capital projects.

Increased use of appropriated funds to pay for some capital expenses would cost more in the short term, but would substantially reduce the long-term cost of those projects.

For example, using 20 year STO bonds to pay for a \$10 million project reduces the annual cost of that improvement to about \$1.9 million, a significant short-term savings. But, over the life of the bonds, the State of Connecticut will pay about 9 million in interest, principal and costs, bringing the total cost of that \$10 million project to about \$19 million.

Special Tax Obligation Bonds

For almost 30 years, special tax obligation bonds have been the primary means of financing transportation capital projects, including the state share of federally funded projects. Because STO bonds are revenue bonds supported the revenues of the Special Transportation Fund, the state's ability to issue them is directly tied to the financial health (and revenues) of the fund. Any substantial increase in the issuance of STO bonds to support increased transportation funding would require an increase in transportation fund revenues.

GARVEE Bonds

GARVEE (“Grant Anticipation Revenue Vehicles”) bonds come in several forms depending, in part, on whether they support highway or transit programs. Unlike STO

bonds, these bonds are not supported by tax revenues. Instead, they are supported by the pledge of the federal funds which the state expects to receive in the future⁵⁰.

GARVEE bonds greatest attraction is to states, and sometimes regions, which have a limited ability to bond to support capital projects. Because they are supported by future federal funds they are difficult to utilize within the framework of Connecticut's current transportation capital program.

However, they could be used in the right circumstances to expedite a major capital program and thereby avoid inflation related cost increases. For example, the multi-stage Q Bridge project in New Haven was financed, in part, by "banking" available federal funds for several years and not beginning the actual construction until all of the required funding is in place. During the time that the state was accumulating the required funds the cost of the plan continued to rise.

Using GARVEE bonds the state could have bonded for at least part of the cost of the project and started work earlier than it would otherwise have impossible. As a state received the pledged federal funds they would be used to repay the bonds. Because the work was begun earlier inflationary cost increases would have been avoided, resulting in a cost savings to the state.

However, that "savings" would come at a price since future federal funds would be used to repay the principal on the GARVEE bonds as well as interest and costs of issuance. Those funds would be unavailable for future projects.

The Legislature authorized the issuance of GARVEE bonds in 2006 but no bonds have been issued to date.

Federal funds generally come in three forms: (1) formula funds; (2) discretionary funds; and (3) Congressional earmarks.

Each year the state receives about \$650 million in federal transportation formula grants, which are divided over a variety of highway and transit programs. These funds are the principal federal support for the state's transportation capital program.

Formula funds are authorized by Congress every five or six years. The current authorization has expired and is being extended on a month-to-month basis, because negotiators have been unable to agree on the size and funding source for new program. It is expected to take months, if not longer, to resolve the remaining issues. Despite earlier forecasts of a massive increase in federal transportation support, funding under the new legislation is expected to be equal to, or slightly larger than, the current levels.

⁵⁰ This risk of decreased federal funding in the future is borne by the bondholders, not the state.

Discretionary funding programs generally award federal funding on the basis of competitive proposals. The federal high-speed rail program is an example of such a program. Discretionary grants usually require any state or local match, although the requirements vary from program to program.

Earmarks are federal funding awards obtained by members of Congress and included in federal legislation such as the reauthorization bill and various appropriations acts. They make a specified amount of federal funds available to support a specific project and, like other transportation programs, generally include the requirement for a state or local match.

Tolls are typically used to: (1) pay capital and sometimes operating expenses for a specific project; (2) as part of a congestion mitigation strategy; and/or as a source of revenue to support transportation programs.

Project specific tolls are used to pay capital, and sometimes operating, costs associated with a specific transportation improvement. For example, a bridge toll might be imposed to cover the cost of reconstructing or widening that bridge. It might also be used to offset the operating costs of the bridge toll collection system.

Congestion Mitigation. Tolls can also be used as part of an overall highway congestion mitigation strategy. Congestion mitigation tolls may be (1) fixed (the same toll was charged all-times of day to discourage use of the congested facility); (2) variable, in which case the toll changes at various times of day in order to discourage highway use during the most congested periods; or (3) dynamic, in which the toll varies based on actual highway use.

When tolls are used as part of a congestion mitigation strategy the proceeds are often used to support alternative means of transportation, as well as paying for the capital and operating costs.

Finally, tolls can be used as a source of revenue to support other transportation programs and services. Federal law and regulations make it difficult, if not impossible, to use tolls on interstate highways for this purpose. However, some have suggested that, as part of the next transportation reauthorization bill, Congress may loosen those restrictions in order to provide states with more flexibility in funding transportation services.

Public/Private Partnerships

Public/Private Partnerships come in many forms and can involve infrastructure development, tolling, program operations and a variety of other applications. They generally involve the private partner(s) absorbing all of a significant part of the capital cost of a project in exchange for all a long term financial return.

For example, the Department of Transportation has entered into an agreement with a group of private partners who will redevelop the service plazas on the Connecticut Turnpike, Route 15 and I-391. Under that agreement, the private partners will redevelop and, in some cases, replace the service plazas. In return, they get the right to operate the gas, food and other concessions at the plazas for thirty-five years.

POTENTIAL FUNDING SOURCES

The Transportation Strategy Board has not attempted to set forth a specific financing plan for the operating and capital needs identified in this report. It has, however, identified a number of potential funding sources which policy makers can use in developing such a plan. These sources vary substantially in regard to their revenue potential, who they impact, and public acceptability. In addition, some will impact other parts of the State budget.

Identified below are the funding sources that have the best potential to generate a relatively large revenue increase.

Increase Gas Tax (\$14-200 million per year) *the* current state gas tax is 25 cents per gallon and yields about \$375 million per year. Every 1-cent increase in the gasoline tax will yield another \$14-15 million per year. To raise an additional \$100 million per year would require an increase of about 7 cents per gallon.⁵¹ Restoring the previous 14-cent cut in the gas tax would raise about \$200 million.

The advantage of the gas tax is that it is relatively stable in terms of year-to-year fluctuations. The disadvantage is that the volume of gasoline sold is growing very slowly, and could decline in response to market forces, travel choices and federal fuel efficiency standards.

Transfer Petroleum Gross Receipts Tax to STF (about \$120M per year). The petroleum gross receipts tax (GRT) is a tax on petroleum wholesalers that is deposited into the state General Fund rather than the STF. The current tax rate is 7.0 percent and is projected to yield about \$285 million in FY 2012. Of that amount, \$165 will be transferred to the STF to pay bonds on projects funded through the 2005 and 2006 transportation acts. The transfer of \$165 to the STF leaves about \$120 million in the General Fund. If all the GRT revenues were dedicated to or transferred the STF, it would make an extra \$120 million available for transportation investments annually.

The disadvantage of the GRT is its volatility. It is based on the 'price' of petroleum as well as the volume of petroleum sold. Since it is tied to the price of oil, tax receipts fluctuate with every as the price of oil rises and falls. That volatility can make it

⁵¹ Diesel tax is separate and calculated on an annual basis by the Commissioner of the Dept. of Revenue Services. The diesel tax rate effective July 1, 2010 is 39.6 cents per gallon. Every 1-cent increase in the diesel tax will yield approximately \$2.8 million per year

difficult to project and budget revenues and, because a major purpose of the STF is to pay debt service on transportation bonds, may concern the investment community.

Increase Petroleum Gross Receipts Tax (*\$19-38M per year*). In addition to transferring GRT revenues to the STF, the GRT tax rate (and the amount transferred to the STF could be increased to generate higher revenues. A one-half per cent increase in the tax would generate about \$19 million per year⁵².

Transfer Sales Tax on Cars & Car Parts to STF (up to \$300M per year). The current 6% tax on the sale of cars and car parts raises about \$300 million per year. All or part of these revenues could be redirected to the STF.

Possible Increases in Federal Formula Funds. Connecticut currently receives about \$650 million annually in federal transportation funds. Almost all of it is through regular federal formula-based funding programs. Annual increases are typically small (1-2%). Federal programs are reauthorized every 5-6 years and can provide larger increases. However, given federal gas receipts and recent Congressional legislative trends, it is unlikely that Connecticut would realize a major increase. Assume 15 percent or \$100 million increase.

Possible Increase in Federal Discretionary Funds. Future federal transportation programs are likely to include more discretionary or competitive funding. Connecticut could realize an increase in funding through discretionary programs under two conditions: (1) it aggressively pursues discretionary funding and develops the grant writing capabilities required, and (2) if the discretionary programs are focused on the type of infrastructure problems and transportations systems that Connecticut needs to address.

Finance Major Projects with “Electronic” Tolling (*yield: \$25-75M per project per yr*). Connecticut has been reluctant to reinstitute tolling due to safety, congestion, and air quality problems associated with the system of tolling and toll booths it abandoned over 20 years ago. New systems of ‘all electronic’ tolling eliminate those problems and might offer a viable method for financing some of our largest and most expensive infrastructure projects. Not every project is a good candidate for such *project-specific* tolling. For good candidates, it offers an alternate funding mechanism that has been successful in other states both in terms of revenue generation and public acceptance.

Mega-projects such as the replacement of the I-84 viaduct in Waterbury (including the I-84/Rt8 interchange) can cost \$2-3 billion to build. The enormous cost of these projects makes it almost impossible to finance even one of them given Connecticut’s current federal and state revenue streams. However, instituting electronic tolls within the project area could generate \$50-\$75 million annually. This would be enough to finance most of the project cost with toll revenue. Besides replacing an old and deteriorating highway structure, this project would greatly improve

⁵² It should be noted that the rate is already scheduled to rise to 8.1% effective 7/1/2013, as part of the financing plan for the 2006 transportation initiative. That increase is expected to raise about \$38 million per year.

safety, eliminate a major traffic bottleneck, and spur economic growth in the region and state.

The Transportation Strategy Board recommends that the Governor and the General Assembly provide operating and capital funds sufficient to meet the needs identified in this strategy.

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Evaluation



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PERFORMANCE MEASUREMENT AND EVALUATION

The ability to evaluate the needs and performance of Connecticut's transportation system is critical to the management of the system as well as both proposed and future investments in that system. Not surprisingly, performance measurement and evaluation has been a concern since the establishment of the transportation strategy board.

An effective performance measurement and evaluation system needs to measure and evaluate both operations (and operating costs) and capital needs and investments.

Over the last four years, the Department of Transportation has begun developing a comprehensive asset management system as the first step in the development of a comprehensive performance measurement system. As part of that effort a performance measurement unit has been established within its Bureau of Policy and Planning in 2007. The unit was tasked with establishing and tracking performance measures and target goals.



Approximately 30 performance measures, encompassing all six Bureaus, are posted on the DOT website and updated quarterly. The next steps are to provide linkage between Bureaus and utilize these established measures to ensure that decisions are made based on appropriate economic considerations (life-cycle cost, benefit/cost, risk analysis) and data integration from multiple sources.

To date, DOT's performance measurement efforts have focused on asset management systems and data and capital investments. However, the goal is to develop a more robust performance management system which will allow the department, the Governor and General Assembly to evaluate the overall transportation system's

performance and better allocate resources among preservation, operations and capital expansion programs.

The Transportation Strategy Board recommends that the Department of Transportation continue the development of a comprehensive performance measurement and evaluation system for both operations and capital projects and that the Governor and the General Assembly support and utilize that system.

Project Priority List

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<u>Major Mode</u>	<u>Priority</u>	<u>Project</u>	<u>Capitol</u>	<u>Operating</u>	<u>Planning</u>
Rail		Branch Line Improvements	\$ 450.0		\$ 5.0
Rail		Stamford Station Parking	\$ 65.0		\$ 1.0
Rail		NH/Spfld Line Acquisition	TBD		
Rail		Platform Lengthening	\$ 15.0		
Rail		NHHS Trains and Stations	\$ 220.0		
Rail		M-10 Car Development			\$ 5.0
Rail		Waterbury Transportation Center	TBD		
Rail		NHL Stations and Parking	\$ 280.0		
Rail		Maintenance Complex	\$ 330.0		
Rail		SLE Capacity and Power	\$ 190.0		
TDM		State Employee Benefits		TBD	
TDM		Extend Tax Credits Statewide		TBD	
TDM		TDM Evaluation		\$ 0.8	
		* Additional Costs Beyond 2021			
