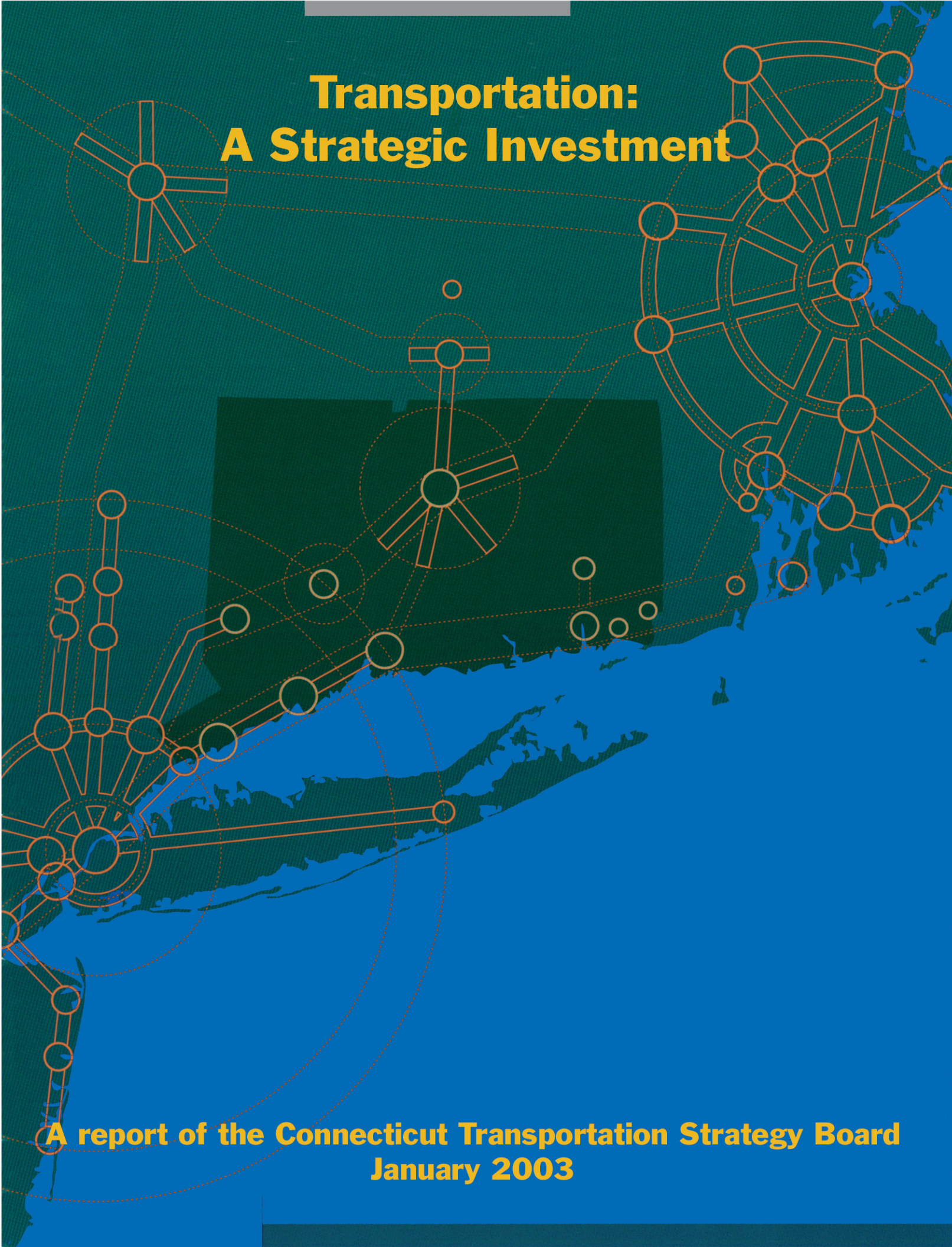
Transportation: A Strategic Investment



A report of the Connecticut Transportation Strategy Board

January 2003

Transportation:
A Strategic Investment

An Action Plan for Connecticut

2003-2023

January 2003

CONNECTICUT TRANSPORTATION STRATEGY BOARD

To: Governor John G. Rowland
Members of the General Assembly

Date: January 6, 2003

From:

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As required by Section 4(a) of Public Act No. 01-5 (June Special Session) which was signed into law on June 30, 2001, the Connecticut Transportation Strategy Board (the "Board") is pleased to submit its proposed transportation strategy to guide the State for the next 20 years along with: a set of actions and tactics to achieve those strategies during the next 10 years, the projected capital and operating investments to implement those actions and tactics; and a set of recommended revenue sources to fund those investments . Unless otherwise noted, this memo and the attached documents refer to all of these items collectively as the Strategy .

Connecticut's transportation system and the investments necessary to support that system are critical to the State's long-term economic competitiveness and vitality. Failure to invest will seriously jeopardize that economic future and increase the risk to our quality of life. The choice is not between investing or not investing; it is between investing smaller amounts on a planned, relatively orderly basis sooner or much greater amounts later on a reactive, crisis-driven basis. The memo also summarizes the key points of the Strategy that support that premise and also describes the Board's areas of focus during 2003.

We first take the opportunity to recognize the exceptional contributions made by all of the members of the five Transportation Investment Areas ("TIAs") and the TSB's five Working Groups during 2002 and emphasize that the TIAs must continue to play an important role in implementing the Strategy. We note that the leadership provided by Regional Planning Agencies, Councils of Governments, the business community, and numerous interested organizations to the TIAs and Working Groups has been exemplary. Indeed, the quality of the Strategy reflects their efforts as well as those of professionals from the Departments of Transportation (hereinafter "DOT"), Economic and Community Development, Public Safety, and Environmental Protection, the Office of Policy and Management (hereinafter "OPM"), the Parsons Transportation Group, and the MetroHartford Alliance. In addition, the meetings of the Board, the TIAs, and the Working Groups included the participation of other interested members of the public, and the Board conducted nine public listening sessions in the TIAs

during November prior to adopting the Strategy. In summary, hundreds of people, many with relevant expertise and all with a genuine concern for the future of Connecticut, helped produce this dynamic and comprehensive Strategy.

The State's Vision and The Transportation Strategies to Support It

The State has a vision of remaining one of the country's most dynamic and attractive areas characterized by a robust economy; strong linkages to regional and global economies; a pristine set of shoreline and rural areas; stimulating urban centers; valued educational institutions; a hot bed for technology, bioscience and other critical industry clusters; and employment opportunities to enable all of its residents to pursue their dreams. The transportation system, as expanded and enhanced by the Strategy, will support the State's efforts to achieve that vision over the next 20 years by:

- employing modern land use planning tools and techniques in conjunction with transportation planning to achieve a smarter approach to the State's economic growth and quality of life;
- mitigating congestion on our highways, especially in the Coastal Corridor, by increasing the quality and quantity of transit options and by improving the safety and traffic flows of the State's highways;
- providing easier access for tourists to reach the expanding attractions of the Southeastern Corridor;
- having transit centers throughout the State serve as magnets for the development of business and housing complexes thereby providing Connecticut residents with more options to link their employment, residences, and leisure activities;
- developing our water ports as sites for increased freight related employment, appropriate business and residential complexes, and for moving both people and goods across Long Island Sound;
- strengthening our airport system, especially at Bradley International Airport (hereinafter "Bradley"), to provide travel and cargo services that are highly valued by businesses, municipalities, residents, and visitors; and
- using the State's fiscal and other incentive programs to link an enhanced transportation system with economic development initiatives to leverage urban-based infrastructure and to preserve targeted open space in a manner that benefits the entire State for generations to come.

To assist in achieving that vision, the Strategy established as its overarching objective the improvement and expansion of all aspects of the State's transportation system during the next 20 years to enhance Connecticut's ability to sustain economic growth appropriate to each of its regions and to preserve the premier quality of life enjoyed in those regions by their residents and visitors. The five elements of the Board's proposed strategy, set forth in greater detail in Section I, are to:

- leverage existing transportation and other infrastructure assets, especially in urban centers;

- expand and market the quality and quantity of options to single occupancy automobile trips to mitigate road and transit congestion throughout the State with an initial focus on the Coastal Corridor;
- expand and coordinate the State's air, rail, road, and water infrastructure to expand the quality and quantity of options for the movement of freight;
- implement a 10 year financing plan with the revenue dedicated to funding the capital component of the Strategy's strategic actions and tactics; and
- ensure adequate and reliable financing of the State's ongoing capital and operating costs of the transportation system.

The strategic actions and tactics for the first 10 years of the Strategy reflect the recommendations of the five TIAs and the five Working Groups as well as the points made in the 1999 Strategic Economic Framework known as the Gallis report and in the Board's initial strategy submitted last January. The Board will refine these actions and tactics each year as additional data becomes available and as facts and circumstances evolve. Accordingly, the strategic actions and tactics recommended for implementation through FY'13 are designed to address opportunities for greater enhancements, and to strengthen the State's foundation to incorporate emerging transportation trends and improvements in the future.

The Board emphasizes that no one action or type of actions will provide the transportation system desired by the State's businesses, residents, and visitors. Accordingly, the Strategy clearly acknowledges that a significant expansion of our transportation capacity and of our other travel options requires a series of integrated and complementary actions and, as importantly, perseverance. Moreover, the Board notes that the reality of economic and fiscal cycles require a disciplined dedication to pursuing the strategies and a flexible approach to the sequencing and timing of implementing the actions and tactics. In other words, the proposed actions and tactics must complement one another so as to achieve the strategic objectives on a cost effective basis and must be regularly reviewed for adjustments so as to provide useful and visible benefits to the public as promptly as possible over the next 10 years.

Land Use Planning

The Strategy emphasizes the critical linkage between land use planning, fiscal and other incentive programs, economic development, and the transportation system. Section VI provides specific recommendations to improve such linkage, including postponing the date to revise the State's Plan of Conservation and Development to late 2004. Such a postponement will provide the time needed to purchase and implement planning tools and techniques that will be invaluable in producing an enhanced revision.

Financial Projections

The strategic actions and tactics, if implemented on the timeline set forth in Attachment 2, are estimated to require incremental capital investments of approximately $4.8 billion, average incremental annual operating costs for DOT of $60 to $70million, and studies and other items of $17 million during the 10 year period of FY'04 – FY'13. Today, Connecticut

spends approximately $1.4 billion per year on its transportation system, $900 million of which is paid by State revenues and $500 million of which comes from Federal sources. The $900 million represents approximately 6.5% of the current State budget of $14 billion.

Funding Sources

The Board clearly recognizes the significant fiscal challenges that are being addressed by the Governor and the General Assembly as well by our President and Congress. We also recognize that these challenges are likely to carry through several budget cycles and may be exacerbated by continuing threats to our domestic security and that of our international allies.

As noted in Section VIII, a key factor in the Board's funding recommendations is the recognition that Federal funds will, at best, stay flat, and, at worst, will decline in real terms during the six year period starting with FY'04. At the same time, existing maintenance and other demands on the transportation system will increase DOT's annual operating costs, while the amounts generated by the State's current Special Transportation Fund are projected to remain essentially flat.

With respect to Federal funds, the Board urges DOT, the Connecticut Congressional Delegation, and the Governor and other State political leaders to remain fully engaged in the debate on the reauthorization of federal transportation (transit, highways and air) legislation and engaged in any other opportunities to deliver federal funding that will achieve the strategic actions or tactics set forth in this report. Such engagement is required of all leaders in the Northeast states to ensure that this region receives both its "fair share" of such federal transportation funds and greater flexibility to use such funds in creative and constructive ways to address the transportation needs of one of the country's most densely populated regions, a region that has global importance from the perspectives of capital markets, communication, democratic principles, and international security.

Nonetheless, if Connecticut is serious about ensuring that its transportation system will support its economic and quality of life objectives, our businesses, institutions, residents, and visitors must bear a greater share of the capital and operating investments. We emphasize that this increased state investment is in Connecticut's self-interest. In addition to improving the State's transportation system and programs, every dollar invested in a state's transportation system returns significant benefits in the form of increased jobs, economic activity and tax revenue. Conversely, the failure to invest puts the State's economic future and quality of life at serious risk, and ultimately leads to much less productive and higher crisis-driven spending at a later time.

In submitting our funding recommendations, which are challenging in and of themselves, the Board emphasizes two points:

- our confidence that the future remains bright for our country and our State; and

- our belief in the obligation of leaders to provide vision, strategy, and resources in difficult times to ensure a vibrant future for today's Connecticut citizens and those who will live here tomorrow.

In short, we are confident that we have provided the transportation strategy component of that vision and that the people of the State, if properly informed, will support investing additional resources to implement that component. Recognizing the extent and duration of the proposed investment, the Board intends to develop evaluation tools and metrics that improve oversight of transportation spending and will better define the significant return on that investment.

2003

Since October, the Board has met weekly in order to synthesize the TIA and Working Group recommendations and to draft the Strategy. The Board will resume meeting monthly in January and will focus during the first six months of 2003 on:

- a plan for public education and involvement to secure the enthusiastic support required for your adoption of the Strategy;
- refining the role of the Board and the TIAs in the Federal and State transportation planning process;
- a quantitative and qualitative evaluation of the projects funded by the FY'02 surplus delineated in Section 16 of the Public Act and those projects for which Section 16 funds have not yet been appropriated;
- the establishment of Task Forces on the topics of Maritime Policy, Feeder Barge Facilities, and Incident Management and reacting to their respective recommendations; and
- the development of evaluation tools and metrics, including a meaningful return on investmentcapability.

We will also continue to work with DOT to prioritize the Plan's strategic actions and tactics (and the projects in DOT's annual capital budget) in light of the conclusion of various studies, evolving facts and circumstances, and your decisions on the funding recommendations.

Legislative Appearances

The members of the Board welcome the opportunity to discuss the transportation challenges facing Connecticut and the steps necessary to address them. Naturally, we will be pleased to appear also before the appropriate committees of the General Assembly to discuss the Strategy in greater detail. We ask that you direct any requests for such appearances, as well as any questions, to Oz Griebel, Chairman of the Board, at 860/525-4451 (x212) or to Bob Hammersley, Manager of the Board, at 860/594-2073.

We thank you for the extraordinary opportunity to serve the State through our efforts during 2002 to develop the Strategy. As importantly, we look forward to working with you and

other Federal, State, and local leaders in implementing the Strategy as a vibrant and vital public policy.

cc: Members of the Connecticut Congressional Delegation
Co-Chairs of the Transportation Investment Areas
Members of the Bradley International Airport Board of Directors

SECTION I

CONNECTICUT'S TRANSPORTATION STRATEGY: 2003 THROUGH 2023

OVERARCHING OBJECTIVE

Strengthen and expand the State's transportation system over the next 20 years to enhance Connecticut's prospects for sustainable economic growth and a premier quality of life in a manner consistent with environmental standards; use evaluation techniques and metrics to support major capital investments and operating in the system; and ensure the proper integration of land use planning with transportation planning and investment decisions to support the intelligent management of the State's projected growth in population densities, commercial development, automobile usage, and freight shipments.

STRATEGIES

- Economic Strategy – Ensure that the State's Transportation Investment Areas 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.

- Movement of People Strategy – 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.

- Movement of Goods Strategy – 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.

- Special Funding Strategy – Implement a comprehensive and dedicated 10 year financing plan, that begins with FY'04 and ends with FY'13, to raise monies

exclusively to fund the recommended capital investments needed to implement the foregoing Strategies.

- Ongoing Funding Strategy– Ensure that the State's biennial budget provides adequate and reliable financial support for the State's annual transportation needs, both capital and operating, including the amounts needed (i) for its public transit system to respond timely and satisfactorily to evolving public needs and (ii) for greater flexibility within the State's annual transportation budget regarding the amount required to service outstanding debt.

SECTION II

AIR

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

I. BRADLEY AIRPORT

A. GENERAL

- Support 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.

- Encourage the Bradley Board of Directors to work with 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 adjacent towns to review their economic development plans for their consistency with Bradley goals and to develop complementary and coordinated multi-town economic development plans.

B. ADDITIONAL FISCAL COMMITMENTS

- Provide funds for the comprehensive marketing of the Bradley with specific efforts to:
    - attract daily commercial air service to Europe and more frequent non-stop commercial air service to West Coast destinations;
    - pursue relevant cargo services; and
    - attract more passengers within the 100-mile radius of Bradley.

- Evaluate the implementation of express bus shuttle service from multi-modal hubs in Bridgeport and New Haven to Bradley.

- Evaluate bus or rail connectivity to Bradley from the Windsor Locks station in any expanded New Haven to Springfield commuter rail service.

II. OTHER STATE OWNED AIRPORTS

- Continue to support the State's other owned airports at Brainard, Danielson, Groton-New London, Oxford, and Windham, including the safety recommendations set forth in each airport's master plan.

III. TWEED-NEW HAVEN AIRPORT

- Support Tweed's ability to serve the travel needs of business and institutional travelers in Southern Connecticut to complement Bradley.

- Support State ownership and management of Tweed but with no purchase price or lease fee paid to New Haven for the airport property.

- Support the implementation of the Safety Improvements described in Phases I and II of the Tweed Master Plan within the planned three to five year period.

- Evaluate Phases III and IV of the Master Plan as Phases I and II are being implemented, including the fiscal and other impacts to adjacent municipalities.

IV. OTHER AIRPORT ACTIONS

- Evaluate DOT's Airport Systems Plan at the Board's February meeting to determine whether to recommend the development of a more comprehensive Statewide Airport Policy.

- Clarify through legislative action and memoranda of understanding with Federal agencies the procedures to enable airport operators to remove obstacles in FAA defined "clear zones" for safety purposes.

- Establish through legislative action the mechanics and the funding needed for landbanking to mitigate the environmental impact of airport development including safety improvements.

- Pursue transit opportunities that facilitate travel for Southern Connecticut businesses and residents to New York metropolitan airports; support continuing dialogue with the Port Authority of NY/NJ on such opportunities.

V. ESTIMATED COSTS FOR IMPLEMENTATION

- Capital - Bradley Road Improvements - $32 million
  Tweed Phases I and II - $2.0 million
  TOTAL: $34 million
- Operating - $1 million annually for three years for Bradley's overall marketing

$2 million annually for three years to attract daily service to Europe
$2 million annually for express bus service from Bridgeport and New Haven to Bradley (subject to study)
$2 million annually for owning/managing Tweed
TOTAL (Annual): $7 million

- Studies: Bus service to Bradley - $50,000 in FY'03
  Connectivity of Windsor Locks Station to Bradley – see New Haven -Springfield rail study
  TOTAL: $50,000

SECTION III

ROAD

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

I. TRANSPORTATION DEMAND MANAGEMENT

- Transportation Demand Management techniques (TDM) represent the lowest cost tactics for congestion mitigation and must therefore be thoroughly investigated in implementing the Plan. DOT will complete its update of its Southwest Corridor Study by the end of the second quarter and will include an analysis of what TDM measures and financial support would be needed to reduce the number of hours of congestion on I-95 in the Coastal Corridor.

- Pending the outcome of the application filed by the Southwest Regional Planning Agency (hereinafter "SWRPA") to the Federal Highway Administration for funding for Phase I of a Value Pricing Pilot Program, provide the State match necessary to fund that study.

II. HIGHWAY OPERATIONAL, SAFETY AND CAPACITY IMPROVEMENTS

A. GENERAL

- Fund a program to identify and implement operational improvements necessary to facilitate the movement of traffic in heavily congested areas.

- Increase available truck rest stop parking spaces to increase the safety of Connecticut's highway system. Specific tactics will:

    - enable through legislative action the use of existing weigh stations for rest areas, where public and private parking is not sufficient;
    - reconfigure existing rest areas to provide additional truck parking spots, including the reconfiguration of existing service plazas as part of the renegotiation of existing concession agreements;
    - seek potential sites for new rest areas, particularly west of the Connecticut River on I-84 and I-95, with an emphasis on public/private partnerships for development and operation;
    - enforce current laws regarding vehicles that are illegally parked on freeway shoulders;
    - encourage DOT to continue its work with logistics managers to identify measures designed to provide rest spaces at their places of business and to modify delivery schedules;

- encourage DOT to develop a map for truck drivers and trucking companies that identifies truck rest stops in Connecticut and the immediate vicinity; and encourage private operators to provide such information to their drivers.

- Encourage municipal and regional officials to work closely with DOT to include expanded bicycle and pedestrian facilities and to enhance ADA accessibility as a part of all roadway projects. As part of the development and construction of Mainline Multimodal Hub Stations and Branch Line Collector Stations, as described in Section IV, ensure that bicycle and pedestrian access is provided and that bike racks are installed at all transit stations.

- Encourage DOT, in future limited access freeway capacity expansion projects, to consider the option of dedicated truck lanes in Connecticut's highway system.

- Encourage DOT, in future limited access freeway capacity expansion projects, to contact private entities about (and investigate) the possibility of developing a privately funded and operated toll roadway, similar in concept to E-470 in Toronto.

B. SPECIFIC ROADWAY SEGMENTS

Coastal Corridor

- Support DOT's current program of safety and operational improvements on I-95 and the Merritt Parkway.

- Following review of the SWRPA Congestion Mitigation study to be completed by the first quarter of 2003, evaluate the following for their potential to improve roadway safety, operations and capacity in the Coastal Corridor:

    - the addition of operational lanes and safety improvements in select areas on both I-95 and the Merritt Parkway;
    - the closure or reconfiguration of specific entrance and exit ramps on I-95 and the Merritt Parkway; and
    - the addition of lanes on either or both I-95 and the Merritt Parkway.

- Following a review of DOT's study on shoulder use to be completed in the fourth quarter of 2003, evaluate whether the use of shoulders as travel lanes on I-95 during peak hours will mitigate congestion in a safe, cost-effective manner.

Southeast Corridor

- Support and fund the capacity expansion of the I-95 corridor in Southeastern Connecticut, consistent with the ongoing Section 16 study of modal options for that corridor.

Interstate 84

- Support and fund the capacity expansion of I-84 from Danbury to Waterbury consistent with DOT's planned environmental study of that corridor.

- Support and fund the feasibility and environmental studies and the construction of safety and operational improvements to the Interchange of Routes 8 and I-84 in Waterbury.

Other State Roadways

- Support the funding and construction of the Route 6 Expressway from Bolton Notch to Windham; endorse the Governor's action to have this project designated as a priority project for environmental streamlining; and urge Connecticut's Congressional Delegation, affected municipalities, DOT, and Federal Resource Agencies to resolve outstanding issues.

- Support the funding and construction of the extension of Route 11 from Salem to I-95, including the proposed greenway; endorse the Governor's action to designate the project as a priority project for environmental streamlining; and urge all parties to resolve outstanding issues.

- Support DOT's planned widening and reconstruction of existing Route 7.

- Support DOT's planned safety and operational improvements on Route 25.

III. TRANSPORTATION SYSTEMS MANAGEMENT

- Expand Incident Management technologies to congested areas of the State's highway system not currently planned for such techniques, with an initial focus on the following corridors:
    - I-84 west of Southbury
    - I-84 east of Vernon
    - I-91 north of Windsor
    - Route 15 in Fairfield County

- Create in January of 2003 an Incident Management Task Force that will be comprised of a member of the Board appointed by the Chairman to serve as the Task Force Chair, representatives from the Departments of Transportation, Environmental Protection, Public Safety and Motor Vehicles, local emergency response agencies, and municipal officials. The Task Force will develop policies and implementation plans related to the following:

    - incident response time standards;
    - diversion plans for serious incidents that close the freeway;
    - jurisdictional issues that affect incident scene management;
    - pre-positioning of tow vehicles;
    - expansion of the State's existing Connecticut Highway Assistance Motorist Patrol (CHAMP) service, including areas of expansion and desired coverage levels; and
    - installation of vision barriers in appropriate areas to reduce "rubbernecking" during incidents.

  The Task Force will provide recommendations to the Board by September 1, 2003.

- Support the expansion and improvement of Automated Traveler Information Systems, and other technologies, that provide more comprehensive and timely information to travelers.

- Encourage DOT to continue to participate with the I-95 Corridor Coalition in the development and implementation of travel information dissemination services focused towards commercial vehicle needs, similar to the Coalition's "Fleet Forward" demonstration project.

- Fund the expansion of the Commercial Vehicle Information Systems and Network project to include Greenwich and Danbury to facilitate the streamlining of commercial vehicle regulatory operations.

- Encourage DOT and commercial entities, in conjunction with the Federal Highway Administration, to work together to make it possible for private rest area owners and operators to inform at their expense truckers of parking availability through the placement of Dynamic Message Signs along limited access highways.

IV. ESTIMATED COSTS FOR IMPLEMENTATION OF STRATEGIC ACTIONS AND TACTICS

- Capital - Operational Improvements - $150 Million
  Truck Rest Stops - $25 Million

I-84 Construction - $600 Million
Route 8/84 Construction - $800 Million
I-95 Southeast Construction - $1 Billion
Route 6 Construction - $460 Million
Route 11 Extension - $410 Million
Incident Management Expansion - $25 Million
CVISN Expansion - $2 Million
TOTAL: $3,472,000,000

- Operating – Additional lane on I-84 - $600,000 (add'l lane Mileage)
  Route 6 - $500,000 (additional lane mileage)
  Route 11 - $300,000 (additional lane mileage)
  Incident Management Task Force - $100,000 Trip Reduction Programs - $12 Million
  TOTAL (Annual): $13,500,000

- Study Costs - Operational Improvements Study - $1 Million
  I-84 EIS – Currently in DOT plan
  Route 8/84 Study - $3.5 Million
  Value Pricing Pilot - $100,000
  TOTAL: $4,560,000

SECTION IV

TRANSIT

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

I. Bus

A. Establish an Integrated Multi-Modal Transit Network

- Recommend that the DOT, the 17 Transit Districts, and the municipalities work together to define and implement an integrated multimodal transit network that uses a common brand identity and that takes into account all forms of bus service.

- Review (for the purpose of making recommendations) DOT's recently completed Bus Governance, management and Funding Study with its proposed performance measurements for transit services and review of governance issues.

- **Improve the Effectiveness and Efficiency of Local Bus Service**
  - Implement the recommendations as appropriate and as summarized in the chart below set forth in the *DOT's Statewide Bus System Study (2000)* designed to improve service for each of the State's bus transit systems.

System Category	Proposed Change In			
	Vehicle Hours		Annual Boardings	
	Efficiency Changes	Enhancements	Efficiency Changes	Enhancements
Urban	**63,336**	**98,166**	**1,604,141**	**2,301,754**
Rural	**5,804**	**5,275**	**32,536**	**16,900**
Express Bus	**(2,226)**	**1,368**	**29,121**	**18,360**
Total Change	**66,914**	**104,809**	**1,667,632**	**2,337,014**
FY 98 State Totals	**1,568,338**		**40,079,521**	
Percent Change	**4.3%**	**6.7%**	**3.9%**	**5.8%**

Efficiency changes refer to reductions or additions in service, while enhancements offer new services or additions to existing services to meet untapped demand or to take advantage of new opportunities. The enhanced services will require $15 million to purchase 50 additional buses over the next 24 months and $5 million for annual operating subsidies for additional services without any fare increases.

C. Develop Bus Rapid Transit Services

- Support the implementation of a dedicated Bus Rapid Transit system in the Hartford Region which will use 9.4 miles of a former rail line between Hartford and New Britain and construct up to 12 stations designed under transit oriented development standards, all as more fully described in the *Final Environmental Impact Statement and Section 4(f) Evaluation: New Britain-Hartford Busway;* encourage DOT to work with Connecticut's Congressional Delegation to obtain Federal funds to offset the total cost of $160 million of capital and $13 million in annual operating costs.

- Encourage the continued evaluation of other bus rapid transit services, whether dedicated or complementary to existing highways, in light of the anticipated results of the New Britain-Hartford busway, including its economic development contributions.

D. Fund the Jobs Access program

- Endorse DOT's continued funding of $8 million for its portion of the Jobs Access program, and encourage the State to maintain the program at least through FY'04 in order to serve over two million riders annually, many with low incomes and no other way to travel to their jobs.

E. Evaluate performance of Section 16 Transit Demonstration Projects

- Section 16 of Public Act 01-5 provided over $8 million in operating funds for FY'02 and FY'03 for bus and other transit services including:

    - the New Haven Line Commuter Connection Bus Service;
    - the expansion of the Coastal Link Service in Fairfield County;
    - the feeder bus service to the Harlem Line;
    - the expansion of Hartford Area express bus service;
    - the expansion of Deduct-A-Ride marketing efforts to state employees; and
    - the extension of Shore Line East services to Bridgeport, Stamford and Greenwich

Support the continuation of $8 million to fund these services during FY'04. During the first quarter of 2003, the DOT will provide data for the Board to evaluate in determining whether funding should continue beyond FY'04.

- The Board is awaiting the Southeastern Intermodal Connection Study being developed by the Southeast Council of Governments. The Board will make funding recommendations regarding the implementation of the concepts based on its review of the study and the level of private investment.

II. Commuter Rail

- **Locomotives and Coaches**

New Haven Line

- Fund the accelerated acquisition over the next two to four years of 12 electric locomotives and 40 coaches to provide 4200 additional seats, to address equipment deficiencies, to improve the frequency of intrastate service, and to lengthen trains running into Grand Central Terminal.

- Support the prompt resolution of the issues related to fleet modernization and configuration, and fund the purchase of as much of the next generation equipment as possible over the next ten years.

- Support and fund the expansion of the rail maintenance facility in New Haven to accommodate the maintenance needs of Connecticut's rail fleet.

Shoreline East ("SLE") Line

- Fund the accelerated acquisition of 8 electric locomotives and 24 coaches to: replace the obsolete portion of the SLE fleet; provide capacity for up to an additional 2,520 passengers and additional single-seat intrastate express service between SLE and Metro-North stations especially during the Pearl Harbor Memorial Bridge construction; and provide equipment capacity to implement the proposed New Haven-Hartford-Springfield corridor commuter rail service described below.

B. Rail Station Capacity

New Haven Line

- Endorse and fund the development of mainline multimodal "hub" stations that possess the following attributes and can generate demand necessary for more express service:
  - facilities for 1000 or more parking spaces;
  - connectivity to feeder bus and other transit systems;
  - opportunity for community revitalization;
  - opportunity for transit oriented development;
  - ease of auto and bus and bicycle and pedestrian access to the station facilities;
  - potential to attract the number of riders needed for additional express trains; and
  - operate under the control of the State.

  The stations at Bridgeport, Stamford, and New Haven stations currently meet the criteria for such development.

- Support and fund the outcome of the current development of an additional rail station in either Orange or West Haven and encourage the development as a public/private partnership.

- Support DOT's inclusion in its annual capital plan of an appropriate amount to continue to lengthen the platforms at 14 metro-north stations to the preferred standard platform length of 850 feet to accommodate 10 rather than 8 coaches.

- Endorse the completion of stations in Clinton, Guilford and Branford as expeditiously as possible with the same ADA accessibility as at Old Saybrook, and encourage DOT, local officials, Connecticut's Congressional Delegation and Amtrak to resolve any issues that impede expansion or construction of SLE station sites.

C. Rail Station Parking

New Haven Line

- Consistent with the recommendation for mainline multimodal hub stations found in Section II-B above, fund the immediate expansion of parking capacity at Bridgeport (approximately 400 additional spaces) and New Haven (approximately 900 additional spaces).

- Support DOT's ongoing studies for capacity and governance (which are set forth in the Background Paper found at Appendix N) as necessary to increase parking capacity at all Metro-North stations.

SLE

- Urge the General Assembly, DOT, Amtrak, and local officials to resolve any outstanding issues related to parking expansion at SLE sites, including the South Central Regional Council of Governments endorsed parking provisions specified in the New Haven Crossing Record of Decision in anticipation of the Pearl Harbor Memorial Bridge construction.

D. Branch Line Collector Stations

- Endorse and fund a study to determine whether the Danbury and Waterbury branches can serve as effective feeders to the main Metro-North line by electrifying (and by constructing adequate parking) on that segment of those branch lines which have the most demand for service with a specific focus on locations between the main line and the area of the Merritt Parkway.

E. Infrastructure

New Haven Line: General

- Support DOT obtaining funding for current programs that will: replace the catenary system on the Metro-North line by 2009; replace sub stations that supply traction power; replace wood ties with concrete ties to achieve substantial operating economies; rehabilitate the Walk (Norwalk) and Saga (Westport) bridges; and replace and enhance the signal system.

New Haven Line: Additional Fiscal Commitments

- Fund, in conjunction with Amtrak support, the installation of an interlocking between the South Norwalk interlocking and the Bridgeport interlocking to add routing flexibility and redundancy for dispatching trains and to support 80 mph operations.

- Fund the installation of an interlocking west of Greenwich to provide route-reversing capabilities for enhanced intrastate train service.

SLE

- Encourage Connecticut's Congressional Delegation to work with Amtrak to resolve issues related to the installation of a new siding in Guilford that would allow more efficient operation of Amtrak and SLE services in that corridor.

F. New Haven – Hartford - Springfield

- Support the planned implementation of regular commuter service in the corridor based on the DOT study to be completed by the third quarter of 2003 which will assess ridership demand, equipment needs, fare structures, schedules, stations, tracks, parking, connectivity to Bradley International Airport, and transit oriented development potential.

- **Contracts**

Metro-North

- Support 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;
  - ensure that the merger of Metro-North and the Long Island Railroad does not adversely affect services, costs and subsidies regarding Connecticut commuter usage of the Metro-North line;
  - 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.

Amtrak

- Support 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.

III. Freight Rail

- Continue to investigate the expansion of rail options for freight movement using Connecticut's north-south connections to the CSX facilities in Massachusetts with a particular focus on connections to the State's three deep water ports; and encourage DOT's participation in any discussions related to expanding and strengthening the north-south freight lines on the Eastern seaboard.

- Encourage public/private partnerships that will improve the efficiency of existing rail freight infrastructure; and endorse the continuation of DOT's current 70/30 Rail Freight Preservation and Gross Receipts tax relief programs.

- Continue to monitor proposals to facilitate rail freight movement across the Hudson River and New York Harbor, noting two major areas of concerns: the capacity of Connecticut's rail infrastructure to support any significant increases in freight traffic; and, as passenger train usage and speeds increase, the exacerbated incompatibility between passenger and freight operations.

IV. Estimated Costs of Implementation

- Capital:

Improve Local Bus Service		$ 15 million
New Britain-Hartford Busway		$160 million
Southeastern Intermodal Connection		$ 9 million
Interlockings		$ 40 million
Rolling Stock Acquisition	$120 million (20 locomotives)	
	$128 million (64 coaches)	
	$250 million (mid-long term- partial)	
New Haven Maintenance Facility		$308 million
Parking Capacity		$ 28.6 million
Platform Lengthening & Rehabilitation		$ 8 million
Branch Collector (Preliminary Engineering)		$ 2.5 million
New Haven-Hartford-Springfield Rail		$100 million (includes rolling stock, parking and station enhancements, sidings)
West Haven/Orange Station		$ 14 million
TOTAL:		$1,238,100,000

- Operating:

Continue Section 16 Projects	$ 4 million
Southeastern Intermodal Connection	$500,000
Jobs Access	$ 4 million
Improve Local Bus Service	$ 5 million
New Britain-Hartford Busway	$ 13 million
Rolling Stock Acquisition	$ 16.2 million
Branch collector Stations	$ 2.1 million
New Haven-Hartford-Springfield Rail	$ 3 million
TOTAL(Annual):	$47,800,000

- Studies:

Other BRT	$ 1.5 million
Branch Collector Stations	$ 2.5 million
TOTAL:	$4,000,000

SECTION V

WATER

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

I. Maritime Policy – Special Task Force

- Establish a special task force (the "Task Force") that will submit to the Board by September 30, 2003 a Statewide Maritime Policy that includes governance and other recommendations ("the Policy") applicable to all ports in Connecticut, including the three deepwater ports of Bridgeport, New Haven, and New London. The Board will evaluate the Policy, which will serve as the governing document for the Board in all maritime matters, to determine whether to recommend any legislative action for funding and authority to the Governor and the Legislature for the 2004 session.

  The Task Force will be chaired by a TSB member to be designated by the Chairman to serve as the Task Force Chair and will include representatives from the:

  - Connecticut Port Authority;
  - Connecticut Maritime Coalition;
  - Department of Economic and Community Development;
  - Department of Environmental Protection
  - Department of Transportation;
  - Office of Policy and Management;
  - Each Port in Connecticut; and
  - Connecticut's Homeland Security Force;

  The Task Force will also seek representatives from the Port Authority of New York – New Jersey, the United States Navy, the United States Coast Guard, the trucking industry, ferry operators, and venture capital companies. As part of the necessary background and analysis, the Task Force will review the various reports done over the years on maritime opportunities and issues.

  The Policy will define the State's role in maritime matters and will specifically recommend whether all ports should come under the jurisdiction of the Connecticut Port Authority, which was created in 1993. In drafting the Policy, the Task Force will consider the role of each port and identify the areas in which a comprehensive and coordinated approach will enhance each such role. Such common areas for the Task Force to evaluate include:

- strategic economic development issues;
- security, including those issues associated with the highly valued presence of the United States Navy at New London;
- pilot licensing;
- dredging and the disposal of dredged materials;
- domestic and international marketing;
- port-related land use, including infrastructure and intramodal connectivity;
- enhancement of feeder barge service;
- the opportunity for intracoastal domestic barge service comparable to the European Shortsea Network;
- the integration steps needed to leverage the State's port and rail infrastructure for freight; and
- the initiation or expansion of high-speed passenger ferry service on both an inter-state and intra-state basis, the integration of such service with ground transportation systems, and the appropriateness of State funding of the construction of any requisite terminal and dock facilities.

The Task Force will also review the current business plans of each of the Ports of Bridgeport, New Haven, and New London that identify each Port's specific niche and how that Port seeks to exploit its particular strengths. With respect to waterborne freight shipments, the Task Force, through a consulting firm, will also evaluate origin and destination and commodity data and projections for truck usage of Connecticut's roads to determine whether the market will encourage the expansion of such waterborne services to reduce truck traffic materially within Connecticut, especially in the Coastal Corridor.

The Task Force will begin work in the first quarter of 2003 and provide its findings and proposals to the Board by the September 30, 2003, with interim status reports to the Board on each of March 31st, May 31st, and July 31st.

II. Section 16 Funds: Feeder Barge Service

- Establish a subcommittee consisting of a member of the Board (to be appointed by the Board Chair and who will serve as the subcommittee Chair) and representatives appointed by the Commissioners of the Departments of Economic and Community Development, Environmental Protection, and Transportation, assisted by with Parsons professionals, to evaluate the feeder barge proposals previously submitted from Bridgeport and New Haven. The subcommittee will begin work by January 13, 2003, and report back to the Board by March 31, 2003 with specific recommendations on how to best use the $7 million allocated in Section 16 to enhance feeder barge capability in Bridgeport and New Haven. Representatives from each of Bridgeport and New Haven will work with the subcommittee to address the following specific issues and amend their respective proposals as appropriate:

- the level of public/private financial partnership with a private and experienced operator responsible for service operations with any such additional costs for such operator to be included in the financial projections;
- the customs, registration, and tracking issues, in terms of whether those functions will be required at each port and how they will be implemented and funded if they are required;
- the collateral economic development issues (e.g. the potential for new or expanded storage and trucking businesses), and any public investments, such as roadway system improvements, that may be necessary to facilitate those businesses;
- the PONY/NJ per box subsidy with specifics on availability, amount and duration of that subsidy;
- how empty containers will be handled and stored, including any additional costs involved;
- the assumed forgiveness of the Harbor Maintenance Tax with a more definite justification for that assumption;
- potential environmental issues and necessary documentation and permits especially if such issues could delay the implementation of the service;
- the anticipated economic benefits for the City and its Region; and
- the societal benefits of each project that would help to justify any requested operating subsidies from Connecticut; and
- security issues.

III. Federal – State Law Conflict

- Request Connecticut's Attorney General to bring an action in Federal Court that seeks a declaratory judgment based on the Public Trust Doctrine that the Marine Protection, Research and Sanctuaries Act ("the "Act") is subordinate to Connecticut's Constitutional right to its continued use of its submerged lands at the Central Long Island Sound Disposal Site (the "Site") within Connecticut's borders and to overrule the decision, to be implemented in February, by the Environmental Protection Agency and the United States Army Corps of Engineers to close the Site to comply with the Act, an action which will significantly raise the cost of the dredging necessary to maintain deepwater port activities at Bridgeport.

IV. Estimated Costs of Implementation

- Capital: $62,500,000
- Operating: $ See Section 16 Funds
- Studies: Special Task Force: $100,000
  Feeder Barge Subcommittee: $ 30,000

SECTION VI

LAND USE AND ECONOMIC DEVELOPMENT

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

I. The Plan of Conservation and Development (C & D)

- Expand the State's land use and economic development planning capability by adding, as staff or consultants, three qualified professionals for the period of July 1,2003 through June 30, 2005 at a total cost, including salaries, benefits, and support not to exceed $750,000.

- Provide, through OPM and under its direction, up to $10 million to be expended during FY'04 and FY'05 (i) to acquire appropriate planning tools such as digital aerial photography and GIS mapping, (ii) to produce a state-wide build out analysis, and (iii) to provide technical assistance and capacity building to municipalities and regional agencies to assist them in establishing plans that comply with the State Plan of Conservation and Development (the "Plan of C & D").

- Establish the State's priorities for conservation and development by legislation.

- Amend State law to:
  - Require that all State governmental planning documents be consistent with the State Plan of Conservation and Development;
  - Establish a mechanism for periodic and expeditious amendment of the Plan of C & D when appropriate or necessary;
  - Require consistency between local plans and their respective zoning and subdivision regulations and for the prior identification of any changes to such plans and regulations that would be inconsistent with the Plan of C & D.

- Delay the revision of the Plan of C & D to September 30, 2004 to allow for the hiring of the three professionals, the acquisition of the planning tools, the implementation of the build-out analysis, and the establishment of planning processes and baselines, all so that the revised Plan of C & D can take into account the following:

- the State's economic and community development needs and patterns of commerce'
-
- providing financial incentives to municipalities and regional agencies for revisions to development plans and zoning regulations to achieve and maintain consistency with the Plan of C & D;
- the need for coordinating the timing of revisions to municipal and regional plans with the Plan of C & D; and
- the linkage of affordable housing objectives and land use planning with transportation systems.

II. Pre-Approved Development Areas

- Provide legislative authority for pre-approved development areas, including processes for
    - establishing site nomination or eligibility processes and evaluation priorities;
    - evaluating such properties in advance of the receipt of specific development proposals;
    - determining the types and size of the activities appropriate for the site;
    - identifying the project specific permits and approvals required in order to utilize the site; and
    - providing grant funding for a significant portion of the cost of site remediation for brownfield sites located near transit hubs.

III. Dispute Resolution

- Designate a single point of contact for all regulatory matters related to each development project.

- Utilize project teams (to include representatives of all involved state agencies) to identify and resolve issues and potential barriers to development projects, and thereby eliminate (or minimize the cost and time associated with) the litigation of land use decisions.

- Encourage the Legislature to evaluate the current mechanics and expertise applicable to resolving land use disputes and the potential for establishing a special court or group of justices or the initiation of other actions that would produce more timely and cost-effective resolutions.

IV. Other

- Ensure that the strategic actions and tactics of the Plan support the goals of the Plan of C & D in a manner that helps to reduce a municipality's need to emphasize the growth of its grand list as the critical objective in its land use decisions.

- Solicit support of the Connecticut Regional Economic Institute for the 21st Century for these recommendations.

V. Estimated Costs for Implementation

- Capital: $10,000,000
- Operating (Annual): $ 750,000
- Studies: $ 0

SECTION VII

EVALUATION AND METRICS

STRATEGIC ACTIONS AND TACTICS: FY'04 – FY'13

- Establish and fund the development of a set of evaluation tools and objective metrics, including those necessary to conduct meaningful cost benefit analyses of alternative strategic actions and tactics that require significant capital investment or ongoing operating support. Such tools and metrics will enable the Board, the Governor, and the General Assembly to evaluate with greater objectivity the absolute and relative effectiveness of existing components of the transportation system and proposed actions to enhance or expand the system. The Board will determine during the first quarter whether such development should be done in conjunction with the University of Connecticut or another academic institution or with a third party consultant.

- Provide $250,000 annually to support the work of the Board and to enable it to authorize and fund activities or studies not identified elsewhere in the Plan.

Estimated Costs for Implementation of Strategic Actions and Studies

- Capital: $ 0

- Operating (Annual): $500,000 annually for evaluation metrics
$250,000 for annual support of the Board

- Studies: $100,000 feasibility study in FY'04

SECTION VIII

FINANCING PROJECTIONS AND FUNDING RECOMMENDATIONS

FY'04 – FY'13

I. Background

The Board's recommendations of strategic actions and tactics are designed to achieve the overarching objective of sustainable economic growth and a premier quality of life. They are presented in a manner to be clearly understood by the public as tangibly strengthening all components of the transportation system (e.g. air, bike, bus, pedestrian, rail, road and water) and thereby provide the reasons for the public to support an increase in Connecticut's share of the cost of the system.

Each Section of the Plan summarizes the capital, operating, and other investments estimated for the implementation of the strategic actions and tactics. Attachment 2 arrays that data over the 10 year period from FY'04 through FY'13 with the assumption that no impediments (other than funding) exist to delay the earliest implementation possible of every such action and tactic.

The Board's most difficult challenge is to recommend revenue sources that will fund such payments in the most equitable way possible. In making its funding recommendations, the Board assumes that the Federal funds received by the State will not increase over recent levels due to a number of factors, notably: the current Federal deficit; the losses of several Congressional seats in the Northeast states (including a few with seniority on key committees); and the effect of the various Homeland Security initiatives on all aspects of the Federal budget, including transportation. Accordingly, the Board believes that, if the State is to have a robust transportation system, it will have to pay a higher percentage of the investment and utilize non-traditional funding sources. In submitting the proposals in this Section, the Board seeks to ensure that all of the State's major transportation constituencies share in the payment of the expanded and improved system: businesses; residents; visitors; and those who use Connecticut's transportation infrastructure in traveling through the State.

Accordingly, the Board sets forth two recommendations to increase the total amount of revenues dedicated to supporting transportation: Special and Ongoing. In submitting the Special and Ongoing funding recommendations, the Board reviewed the matrix of options set forth on Attachment 3 and chose the sales and gasoline taxes because substantial portions of each are paid by businesses, residents, visitors, and those passing through the State. Assuming that the two sources would be leveraged by using bonds and cash in the most effective manner possible, there would be sufficient revenue to fund the strategic actions and tactics. The Board concluded that the projected revenues generated by the recommended sources would be adequate for FY'04 – FY'13 for the following additional reasons:

- past experience indicates that not all of the strategic actions and tactics will progress on the timeline set forth on Attachment 2;
- the Board will continue to work with DOT to prioritize the strategic actions and tactics as well as the activities within DOT's annual capital budget of approximately $500 million;
- the Board will continue to develop appropriate evaluation tools and metrics (including Return on Investment measurements) to support specific capital investments;
- the Board will continue to work with DOT and other agencies to identify statutory and regulatory changes in the decision processes for the Plan that could reduce both study and construction costs; and
- continuing changes in technology, expanded knowledge, and changing circumstances will provide opportunities to use the funding more effectively.

In approving any incremental monies, the Governor, the Legislature, and the Bond Commission should consult each year with the Board to ensure that such expenditures will achieve the Strategic goals in light of the annual requirement that the Board confirm and refine the actions and tactics and ensure that such public expenditures leverage private capital where appropriate. The Board also emphasizes that investments in the system will generate economic benefits to the State that partially offset the cost through additional jobs and private capital that produce incremental tax and other revenues. Moreover, the failure to make such investments will significantly hamper the State's future economic growth and increase the risk to its quality of life.

II. Special Funding: Taxes and Tolls

A. Special 10 Year Tax

Increase the State's sales tax rate of 6.0% by 0.50% to 6.50% for the ten-year period beginning July 1, 2003 and ending on June 30, 2013 with additional revenue to be used exclusively to fund incremental capital investments and operating costs needed to implement the Strategy. Such an increase would generate approximately $250 - $265 million per year. Bonds using these funds as a source of repayment should be issued only after OPM analyzes all alternatives and concludes that such issuance is the most prudent use of available revenues.

Projected Incremental Revenue In 2003 Dollars

YEAR	SALES TAX
FY ’04	$265 million
FY ’05	$265 million
FY ’06	$265 million
FY ’07	$265 million
FY ’08	$265 million
FY ’09	$265 million
FY ’10	$265 million
FY ’11	$265 million
FY ’12	$265 million
FY ’13	$265 million
TOTAL	$2.65 billion

The proposed $2.65 billion of additional revenues would fund the Board’s proposed strategic actions and tactics during that 10-year period. These funds are above and beyond the $7billion of Federal and State funds, which DOT currently expects to receive over the next 10 years to fund the capital component of the existing transit and roads.

B. Tolls

- In order to expedite the construction of any expansion of either I-84 or I-95 during the 20-year Strategy period, DOT should include an evaluation of instituting tolls (and the appropriate collection methodology), in the EIS for these proposed expansion projects. The tolls would be used to pay exclusively for the construction of the proposed expansion projects. Any such monies would flow to the Special Transportation Fund and not to the General Fund.

- The Board requests that DOT provide the Board during the first quarter of 2003 with a comprehensive analysis of the advisability of revisiting the installation of such a dedicated toll to pay for the construction of the ongoing expansion of the Pearl Harbor Memorial Bridge and the related highway improvements.

III. ONGOING FUNDING: TAXES, TRANSIT FARES, AND OTHER ITEMS

A. Taxes

Increase the motor fuels tax of $.25 per gallon by $.03 on July 1st of each of 2003, 2004, 2005, 2006, and 2007 (with the total tax equating $.40 per gallon by July 1, 2007). These incremental revenues will increase the annual resources needed to fund the increased capital and operating investments of the strategic actions and tactics. Funds in excess of those needed to support the strategic actions and tactics would be available, to support the ongoing safety and maintenance requirements of the entire system. In addition, DOT and OPM should use the increased revenue to achieve greater flexibility in DOT's annual budget by reducing the percentage required to service outstanding debt.

Projected Incremental Revenue In 2003 Dollars

YEAR	MOTOR FUELS TAX
FY'04	$ 45 million
FY'05	$ 90 million
FY'06	$135 million
FY'07	$180 million
FY'08	$225 million
FY'09	$225 million
FY'10	$225 million
FY'11	$225 million
FY'12	$225 million
FY'13	$225 million
	$1.80 billion

B. Transit Fares

DOT will provide the Board with a set of recommendations by March 1, 2003 on the possibility of increasing the fares on the Metro-North line (which fares have not been increased since 1998), on Shoreline East, and on designated bus lines. As an example, a 5% increase on Metro-North fares would yield an incremental $5 million annually if such increases were not offset by reducing that portion of DOT's budget allocated to the subsidies of the cost of the public transit systems.

C. Other Items

- The State should evaluate the federal tax benefits of private activity bonding that are available to certain economic development projects and determine whether to request that eligibility for such bonding be expanded to include transportation projects, such as those related to passenger ferry service (e.g. terminals), that create economic development opportunities.

- The Board will adopt and apply the principle that all state funding of the strategic actions and tactics need to include an evaluation of the potential for the public funds to leverage private investment.

- As certain strategic actions and tactics are more fully developed, the Board will review the opportunity for initiating or increasing appropriate user fees. Examples of such opportunities may include the proposed expanded parking capacity at rail stations and the proposed increases in the number of truck rest spots.

IV. Changing Facts and Circumstances

- Over the 10 year period, many of the underlying assumptions of the Plan will undoubtedly be adjusted or refined to reflect changes in the economy, societal norms, and technology. Continued improvements in technology alone will undoubtedly encourage, and may require, the Board to recommend other taxes or fees. For example, if fuel cell technology becomes a commercially viable alternative to the internal combustion engine for automobiles, the Board will be required to evaluate the State's reliance on motor fuels taxes as a primary revenue source for its annual transportation budget.

TIA Top Priorities

Coastal Corridor

1. Increase rail trips on New Haven line
2. Implement feeder barge container service
3. Support new rail freight connection across Hudson River
4. Implement Route 7 Travel Option Study
5. Increase use of TDM strategies

I-91

1. Implement New Haven to Springfield Commuter rail
2. Implement feeder barge container service – New Haven port
3. Construct New Britain to Hartford Bus Rapid Transit facilities
4. Upgrade Metro North passenger rail equipment and parking
5. Improve Tweed-New Haven Airport as a secondary airport

I-84

1. Construct New Britain to Hartford Bus Rapid Transit facilities
2. Implement the Statewide Bus Study recommendations and Jobs Access Program funding
3. Implement Danbury Rail Line recommendations from Route 7 Travel Options
4. Improve I-84 from Danbury to Waterbury
5. Improve access to cargo facilities at Bradley Airport

I-395

1. Complete Route 11
2. Improve capacity and safety of I-95 and I-395 through ITS and physical expansion
3. Implement transit loop services to serve casino and tourist-related traffic
4. Study alternatives for highway connection from Hartford to Providence
5. Expand regional bus services
6. Conduct marketing and feasibility studies of New London to Worcester passenger and freight rail services

Southeast

1. Complete Route 11
2. Widen I-95 from Branford to the Rhode Island line
3. Implement transit loop services to serve casinos and tourist-related traffic
4. Support rail improvements between NY and Boston, and provide passenger fare subsidies to promote travel by rail in Southeastern Connecticut.
5. Support infrastructure and service improvements at New London port

Working Group Recommendations

Movement of People

- Public Transportation
  - Creation of a "Statewide Strategic Surface PT Network"
  - Development of a comprehensive statewide marketing campaign
    - STN
    - Local transit
- Rail
  - New Rail Cars (Immediate)
  - Storage & Maintenance facilities
  - Facilitate electric rail operations east and west of New Haven
  - Acquisition of Amtrak assets
  - Review & development of adequate rail stations
  - Connections to Rail Stations
  - Expanded service
    - New Haven-Hartford-Springfield
    - Reduction of passenger waiting times (New Haven line)
    - Connection to Penn Station and LaGuardia Airport
    - SLE with eventual connectivity to Providence
    - "Turnback points" on Branch Line Hubs (Danbury & Waterbury)
    - Danbury-New Milford service
    - Intrastate service (Greenwich-New Haven)

- Bus
  - Develop service standards
  - Develop financial performance standards
  - Coordination with STN and ferry schedules
  - Improve image
  - Encourage cleaner fuels

- Highways
  - Undertake strategic examination of adding capacity
  - Implementation of Transportation Systems Management (TSM) where appropriate, feasible and not already in place
    - Ramp closures or metering
    - ITS
    - Incident Management/Traffic Enforcement
    - HOV lanes

- Transportation Demand Management
    - Value Pricing pilot program
    - Expand tax credit (statewide/smaller employers)
    - Additional support for commute management organizations

- Water
    - Develop a statewide maritime policy
        - Passenger facilities Stamford to NYC
            - Possible expansion to Bridgeport, New Haven, New London
            - Include in marketing efforts

- Air
    - Support development of a regional (secondary) commercial airport in southern CT
    - Develop a statewide airport strategic master plan
    - Improved access to New York airports
    - Support growth & development of BDL
        - Bradley Board of Directors strategic and tactical goals
        - BDL Area Transportation Study
        - Direct non-stop public transportation linkage

- Pedestrian & Bicycle
    - Include pedestrian/bicycle improvements in future road improvements
    - Develop regional bicycle & pedestrian plans
    - Address bicycle storage deficiencies along STN
    - Equip buses & rail with bicycle carriage

- Governance of Public Transportation
    - Dedicated, stable source of funding for STN services
    - Management, planning & financing STN services in a distinct State entity with appropriate powers
        - Identifying and resolving issues under MetroNorth agreement
        - Improve and enhance cost-effective commuter rail service
        - Setting service and financial standards
    - Implementation a framework for provision of local public transportation which includes all municipalities
    - Coordination of land use and transportation planning

Movement of Goods

- Air
    - Aggressive, pro-active marketing program promoting BDL air-cargo operations
    - Increase truck access (BDL Area Transportation Study)
    - Pre-permitting of private sector cargo facilities

- Rail
    - Improved rail bridges provide 22’ clearance

- Freight rail reconstruction should accommodate 315,000 lbs. Loads
- Designate network of primary rail routes
    - Direct rail access to a feeder barge terminal
- Provide incentives for industries to originate/receive rail freight
- Development of higher-quality rail links to the south and west
    - Commercial structure to provide regional railroads access over the New Haven line
    - Encourage CSX to market rail services via short lines and regionals (to keep shipments on rail as far as possible)
    - Support the proposed New York Harbor Rail Freight Tunnel

- Water
    - Feeder barge service
    - Deepwater Ports
        - Long term planning for maintenance and improvement dredging at the three deepwater ports
        - Adequate long-term financial resources for dredging
        - Prepare a deep water port master plan
            - Identifying appropriate improvements needed for long-term growth

- Highway
    - Freeway traffic management systems on all Connecticut limited-access highways
    - Continue development of CVISN
        - Greenwich, Danbury ASAP
    - Expand and enhance incident management capabilities
        - Standards for response time and classification
        - Identifying model practices
    - Increase safe rest areas
        - I-95 west of New Haven
    - Consistent fixed signage of available public and private truck rest areas
    - Expand coverage of CHAMP to I-84
    - Encourage the development of statewide "logistics cluster"
    - Determine and implement ramp metering effectively
    - Creation of an incident management task force
    - Add capacity
        - I-84 (New York to Middlebury)
        - Supplemental between NY and I-91 (New Haven)*
        - North-South freeway connection between I-95 and I-84 (along approximate route of Rte. 7)
        - Continuous freeway route between Hartford and I-395 (Rte. 6, I-384)

Land Use & Economic Development

- Plan of Conservation & Development
    - Incorporate "over-arching state growth management goals" and specific development goals into general statues

- Require all state governmental planning documents to be consistent with the State Plan of Conservation and Development (the "State Plan")
- Require the State Plan address economic and community development needs
- Provide flexibility to address unanticipated development
- Require consistency of municipal plans of conservation and development and zoning and subdivision regulations
- Require local land use agencies to identify any inconsistency between municipal land use plans or regulations and the State Plan
- Provide incentives for local and region planning consistent with the State Plan
- Develop a coordinated schedule to update municipal and regional plans
- Provide on-going assistance to state, regional and municipal agencies in meeting goals of the State Plan

- Pre-approved Development Areas
  - Establish procedures to approve certain types of development in advance, in order to reduce the time required to develop or redevelop identified areas

- Bradley
  - Maximize the development opportunity of the area around BDL

- Regulations and Dispute Resolution
  - Incorporating current project-based methods for addressing issues to all major transportation projects
  - Establishment of statutory timetables on administrative and land use appeals

COST OF TSB RECOMMENDED STRATEGIC ACTIONS AND TACTICS
2004 to 2013
(ASSUMES ALL PROJECTS GO FORWARD AS DESCRIBED IN STRATEGY)

Costs reported in the $ millions, 2003 Dollars

Attachment No. 2

Strategic Actions and Tactics	Total Capital	Annual Oper.	Study Cost	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Beyond 2013
				Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	
Air Based Solutions																								
Operating Cost, Tweed New Haven Airport		$2.00			$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00	
Tweed Master Plan																								
Phase 1	$1.00			$0.20		$0.60		$0.20																
Phase 2	$1.00					$0.20		$0.30		$0.30		$0.20												
Implement Bradley Area Access Improvements (See Note 1)					.																			
Connector from RT 159 to RT 75	$27.00	$0.20	$2.00	$1.00		$1.00		$2.00		$2.00		$13.00		$10.00	$0.20		$0.20		$0.20		$0.20		$0.20	
Bradley Park Road	$5.00					$0.30		$4.70																
Overall marketing at Bradley		$1.00			$1.00		$1.00		$1.00															
Marketing for European service from Bradley		$2.00			$2.00		$2.00		$2.00															
Express shuttle from So. CT to Bradley	$2.65	$2.00	$0.05	$0.05		$2.65			$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00	
Connection to NHAV/Spfld. Rail (See Note 2)	$0.60	$0.20		$0.60			$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Safety Improvements at Groton Airport	$0.50			$0.50																				
Subotal	$37.75		$2.05	$2.35	$5.00	$4.75	$5.20	$7.20	$7.20	$2.30	$4.20	$13.20	$4.20	$10.00	$4.40	$0.00	$4.40	$0.00	$4.40	$0.00	$4.40	$0.00	$4.40	$0.00
Subotal Operating Costs (10 year total)		$47.80																						
Evaluation Group Initiatives																								
Ongoing TSB Operations		$0.25			$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25	
Development and Implementation of Evaluation Metrics		$0.50	$0.10	$0.10	$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50	
Subotal	$0.00		$0.10	$0.10	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00	$0.75	$0.00
Subotal Operating Costs (10 year total)		$7.50																						
Land Use and Economic Development Initiatives																								
State assistance for municipal/regional plan develom.		$0.38			$0.38		$0.38																	
State assistance for GIS mapping & analytical capabilities	$10.00			$10.00																				
Subotal	$10.00		$0.00	$10.00	$0.38	$0.00	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subotal Operating Costs (10 year total)		$0.76																						
Roadway Based Solutions																								
Marketing and funding for trip reduction programs		$12.00			$12.00		$12.00		$12.00		$12.00		$12.00		$12.00		$12.00		$12.00		$12.00		$12.00	
Operational Improvements	$150.00		$1.00	$1.00		$20.00		$20.00		$20.00		$20.00		$20.00		$20.00		$20.00		$10.00				
I-95 West of New Haven (See Note 2)																								
Use of Shoulders	$30.00					$1.00		$2.00		$6.00		$10.00		$11.00										
Addition of Operational Lanes	$20.00		$2.00	$1.00		$1.00		$4.00		$4.00		$4.00		$4.00		$4.00								
Ramp Closures during Peak Hours	$1.00	$3.00	$0.50	$0.50		$1.00	$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00	
Increased Truck Rest Stop Capacity	$25.00		$1.00	$1.00				$10.00		$10.00		$5.00	$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Route 8/I-84 Interchange	$800.00		$3.50	$1.00		$1.50		$1.00		$4.00		$3.00		$3.00		$300.00		$300.00		$190.00				
Additional lane on I-84	$600.00	$0.60				$2.00		$2.00		$2.00		$200.00				$200.00	$0.30		$0.30	$194.00	$0.60		$0.60	
Hartford to I-395, Including Route 6 (See Note 3)	$460.00	$0.50		$2.00		$2.00		$100.00		$100.00		$100.00		$156.00	$0.50		$0.50		$0.50		$0.50		$0.50	
Route 11	$410.00	$0.30		$2.00		$2.00		$80.00		$80.00		$100.00		$146.00	$0.30		$0.30		$0.30		$0.30		$0.30	
Additional lane on I-95 East of Branford	$1,000.00	$1.30	$2.00	$1.00		$1.00		$2.00		$2.00		$2.00		$200.00			$0.20	$200.00	$0.40		$1.00	$200.00	$1.00	$394
Incident Management Expansion	$25.00			$5.00				$5.00				$5.00				$5.00		$5.00						
Connecticut Highway Assistance Motorist Patrol	$0.30	$1.40		$0.30	$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40	
Value Pricing Study			$0.10	$0.06																				
Incident Management Task Force		$0.10			$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10	
Commercial Vehicle Applications	$2.00	$0.20		$2.00	$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Subotal	$3,523.30		$10.10	$16.86	$13.70	$31.50	$16.70	$226.00	$16.70	$228.00	$16.70	$449.00	$16.90	$540.00	$17.70	$529.00	$18.20	$525.00	$18.40	$394.00	$19.30	$200.00	$19.30	$394.00
Subotal Operating Costs (10 year total)		$173.60																						
Transit Based Solutions - Bus/Rail																								

COST OF TSB RECOMMENDED STRATEGIC ACTIONS AND TACTICS
2004 to 2013
(ASSUMES ALL PROJECTS GO FORWARD AS DESCRIBED IN STRATEGY)

Costs reported in the $ millions, 2003 Dollars

Attachment No. 2

Strategic Actions and Tactics	Total Capital	Annual Oper.	Study Cost	2004 Cap.	2004 Oper.	2005 Cap.	2005 Oper.	2006 Cap.	2006 Oper.	2007 Cap.	2007 Oper.	2008 Cap.	2008 Oper.	2009 Cap.	2009 Oper.	2010 Cap.	2010 Oper.	2011 Cap.	2011 Oper.	2012 Cap.	2012 Oper.	2013 Cap.	2013 Oper.	Beyond 2013
Continue Section 16 Projects		$4.00			$4.00		$4.00																	
Provide Reliable Funding for Jobs Access		$4.00			$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00	
BUS																								
Improve Effectiveness & Efficiency of Local Bus Service	$15.00	$5.00			$5.00	$7.50	$5.00	$7.50	$5.00		$5.00		$5.00		$5.00		$5.00		$5.00		$5.00		$5.00	
Support New Britain Hartford Busway	$160.00	$13.00		$160.00			$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00	
Southeastern Intermodal Connection (See Note 4)	$9.00	$0.50				$9.00	$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50	
Other Bus Rapid Transit			$1.50	$1.50																				
RAIL																								
Track Structure																								
New Greenwich Interlocking	$20.00							$1.00						$19.00										
CP248 (New Interlocking)	$20.00			$20.00																				
Rolling Stock Acquisitions																								
Immediate term:																								
Electric locomotives - 20	$120.00	$16.20		$120.00			$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20	
Coaches (locomotive-drawn) - 64	$128.00			$128.00																				
Redplace 60 M2 Rail Cars	$250.00											$10.00								$120.00		$120.00		
Maintenance Facility - New Haven	$308.00			$28.00				$280.00																
Station/Parking Space Expansions	$28.60			$2.60				$26.00																
Station Platform Lengthening and Rehabilitation	$8.00			$1.50				$6.50																
Branch Collector Station Study/Prelim Eng			$2.50	$2.50																				
Branch Collector Stations - 2	$40.00	$2.10												$24.00		$4.00		$4.00	$2.10	$4.00	$2.10	$4.00	$2.10	
New Haven/Hartford/Springfield Rail	$100.00	$3.00		$20.00	$3.00	$55.00	$3.00		$3.00		$3.00		$3.00		$3.00		$3.00	$25.00	$3.00		$3.00		$3.00	
Orange/West Haven Station	$14.00					$14.00																		
Subotal	$1,220.60		$4.00	$484.10	$16.00	$85.50	$45.70	$321.00	$41.70	$0.00	$41.70	$10.00	$41.70	$43.00	$41.70	$4.00	$41.70	$29.00	$43.80	$124.00	$43.80	$124.00	$43.80	$0.00
Subotal Operating Costs (10 year total)		$401.60																						
Water Based Solutions																								
Special Task Force			$0.10	$0.10																				
Feeder Barge Subcommittee			$0.03	$0.03																				
Stamford High Speed Ferry Facility (See Note 5)																								
Dredge Spoils Removal	$50.00			$50.00																				
Rail and Rdwy Improvements at New Haven Harbor	$12.50			$12.50																				
Subotal	$62.50		$0.13	$62.63																				$0.00
Subotal Operating Costs (10 year total)		$0.00																						
TOTAL CAPITAL EXPENDITURES (Excludes studies)	**$4,854.15**			**$576.04**		**$121.75**		**$554.20**		**$230.30**		**$472.20**		**$593.00**		**$533.00**		**$554.00**		**$518.00**		**$324.00**		**$394.00**
TOTAL OPERATING EXPENDITURES		**$631.26**			**$35.83**		**$68.73**		**$66.35**		**$63.35**		**$63.55**		**$64.55**		**$65.05**		**$67.35**		**$68.25**		**$68.25**	
TOTAL STUDY COST			**$16.38**																					

Note 1: Bradley improvements costs do not included transit or local road improvements discussed in the report.
Note 2: Final recommendation and costs are pending the outcome of ongoing studies.
Note 3: Includes only Bolton to Windham section
Note 4: Final cost will depend on level of private involvement.
Note 5: Section 16 Funded Improvements

Recommendations in Bold represent potential public/private partnership initiatives.

CT Transportation Strategy Board
Potential Revenue Sources

Sources	Revenue Yield	Equity Issues	Tie to Transportation	Administration & Collection
Major Taxes				
Gas Tax	1 cent yields approximately $15m per year	Recently reduced. Potential boundary issues.	Direct tie to transportation	Collection mechanism in place
Sales Tax	¼% yields approximately $134m per year	Somewhat regressive. Potential boundary issues.	No direct tie to transportation	Collection mechanism in place
Personal Income Tax	1/10th of 1% rate increase = $100 million	Graduated impact. Significant deductability on federal tax liability would reduce impact on CT taxpayers.	No direct tie to transportation	In place
Minor Taxes & Fees				
Diesel & Motor Carrier Taxes	1 cent yields approximately $3 million per year	Raised by 10 cents/gal. in 2002	Direct Tie in	In place
Corporate Tax	1% tax rate generates $70M	Federal Corporate tax deductibility	No direct tie in	In place
Real Estate Property Tax	1% statewide increase=approx $50 million	Already heavily burdened. Federal deductibility.	No direct tie in	Essentially in place
Personal Property Tax	1% statewide increase=approx $8.6 million	Already heavily burdened. Federal deductibility.	No direct tie in	Essentially in place
Real Estate Transfer Tax	Generates between $90M - $120M		No direct tie in	In place
Hotel Tax	10% surcharge=$6 million	Paid by business & vacation travelers	No direct tie in	In place
Used Car Sales Tax	Generates $60M		Indirect tie in	In place
Sales Tax Increase: New & Used Veh.	1% tax rate generates $9M		Indirect tie in	In place
Rental Car Tax	$5M @ $1/day		Indirect tie in	In place
MV Title Tax	Generates $22M		Indirect tie in	In place
Oil Co. Tax	6%= $21M in STF		Limited tie	In place
MV Registration	10% increase=$16 million		Indirect tie in	In place
MV License	10% increase=$2.7 million		Indirect tie in	In place
STF Licenses, Permits & Fees	5% increase=approx. $6million		Close Tie in	In place

CT Transportation Strategy Board
Potential Revenue Sources

Sources	Revenue Yield	Equity Issues	Tie to Transportation	Administration & Collection
Other				
Tolls	Potential impact on federal aid	Geographic equity issues. Potential safety issues	Direct tie	May require huge capital investment
Congestion Pricing	Federal gov't may be interested	Geographical equity issues. Potential safety issues	Direct tie	Some difficult collection issues
Rail Fare Increase	5% increase could yield approximately $5 million	Direct benefit relationship	Direct tie	In place
Bus fare increase	25 cent increase could yield approx. $5 million	Direct benefit relationship. Affects many lower income people	Direct tie	In place
New Taxes				
Vehicle Mile Traveled Tax	Unknown		Direct tie	No system in place
Local Transit District Taxes	Undefined	Somewhat regressive. Public may feel this is a state responsibility	Direct tie	Would require district-wide collection system, unless part of state tax collection. e.g. regional sales tax

Appendix A-1

TSB Initial Transportation Strategy

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List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
BIDs	Business Improvement Districts
CEPA	Connecticut Environmental Policy Act
CSS	Context Sensitive Solutions
CVISN	Commercial Vehicle Information Systems
DMV	Department of Motor Vehicles
DOT	Department of Transportation
DPS	Department of Public Safety
FTA	Federal Transit Administration
FY	fiscal year
GARVEE	Grant Application Revenue Vehicles
HPP	High Priority Project
ISTEA	Intermodal Surface Transportation Efficiency Act
LPF	license, permit, and fee
MPO	Metropolitan Planning Organization
MV	motor vehicle
NASTO	Northeast Association of State Transportation Officials
NHS	National Highway System
NYMTC	New York Metropolitan Transportation Commission
OPM	Office of Policy and Management
RPO	Regional Planning Organization
SIB	State Infrastructure Bank
STF	Special Transportation Fund
TEA-21	Transportation Equity Act for the 21st Century
TIA	Transportation Investment Area
TIFs	Tax Increment Financing Districts
TIFIA	Transportation Infrastructure Finance and Innovation Act
TSB	Transportation Strategy Board
USDOT	United States Department of Transportation

Chapter 1INTRODUCTION

In September 2000, Governor John G. Rowland, Speaker of the House of Representatives Moira K. Lyons, and President Pro Tempore of the State Senate Kevin B. Sullivan convened a Transportation Summit. The Summit discussed transportation concerns impacting the state, concerns that were voiced in the *Connecticut Strategic Economic Framework* report, commonly referred to as the "Gallis Report". The Gallis Report was prepared for a coalition of public, private, and institutional leaders (the Connecticut Regional Institute for the 21st Century) in order to develop an understanding of the economic framework and activities in the state.

One result of the Transportation Summit was the establishment of a 15-member Interim Transportation Strategy Board. The Interim Board discussed the issues that were raised at the Summit and submitted a report to the Governor and the Legislative leadership on January 31, 2001 outlining the development and implementation of the Transportation Strategy Board. In response to that report, Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board*, was passed by the Connecticut General Assembly and signed into law by Governor Rowland. The Act created the current 15-member Transportation Strategy Board that is proposing this Initial Transportation Strategy for Connecticut.

This document was prepared by the Transportation Strategy Board to satisfy the requirements of an Initial Strategy. Statewide transportation goals, potential objectives that may achieve the goals, and challenges facing policy makers in implementing the objectives are presented.

Gallis Report

In 1999, the Connecticut Regional Institute for the 21st Century, a coalition of public, private, and institutional leadership, was formed to develop a framework for understanding the economic activity and organizations of the State of Connecticut. The Institute prepared a study defining the issues, relationships, and resources of Connecticut that were necessary to compete in a global economy. This study, *Connecticut Strategic Economic Framework*, discussed three areas of concentrated economic activity in the state – the Coastal Corridor (extends from the I-287 belt in New York through Westchester County, and in Connecticut between Stamford, Bridgeport, and Greater New Haven), the I-91/Connecticut River Valley Corridor (extending from New Haven through the Hartford/Springfield metro region to Amherst and Northampton, Massachusetts), and the Southeast Corridor (extending from the greater New London area to Rhode Island). The Gallis Report presented a number of specific recommendations within the context of economic development initiatives:

- establish a mechanism for the state's three economic regions to develop more detailed strategies for meeting their collective economic challenges;
- adopt a multi-modal transportation strategy for the state (in conjunction with the five other New England States, New York State, and the Maritime Provinces) that ensures the movement of people and goods in a cost-competitive and environmentally

responsible manner including more effective connection to the New York area markets;

- adopt a plan to increase the number of engineering and other technical degrees granted by our higher education institutions, and a plan to ensure workforce development training that allows employees to acquire the skills necessary for the state's businesses and institutions to flourish within their respective marketplaces; and
- support the commercialization of technology created through the region's institutional and private research activities.

With respect to the movement of people, goods, and information, the Gallis Report states "Although Connecticut's three economic regions are located close to major global and continental transportation and logistics hubs, they are difficult to access." Indeed, the report warns that "the area east of the Hudson is in danger of becoming a giant cul-de-sac, or dead-end, in the global network."

The Gallis Report makes the following observations regarding the state's transportation network and associated economic influences:

- both the Coastal Corridor and the Southeast Corridor depend on the I-95 corridor for their primary access;
- the I-91 Corridor, having an interstate highway, rail line, airport, and seaport has opportunities to build its distribution and logistics functions in the northern Atlantic region;
- the freight transportation structure of the north Atlantic region is shifting as northern New Jersey emerges as the best place for global freight to connect with the continental grid;
- freight rail access for goods destined for Connecticut and New England will remain limited due to continued routing through Albany or via barge across the Hudson and East Rivers to the coastal single stack line;
- the growth of truck traffic on the already congested I-95 corridor will create an even greater barrier to Connecticut's continued economic growth;
- Connecticut's access to the global marketplace is principally through the I-95 corridor – as congestion increases in this corridor and the major global connections move west of the Hudson River, this corridor will not offer the level of access to the economic activities and hubs necessary to support Connecticut's institutions, businesses, and people;
- there is a lack of adequate cross-Hudson River connections by bridge or tunnel to support efficient flows of people and goods; and
- the loss of access to the region will drive up the cost of imported consumer goods and raw materials and will result in continuing increases in the cost of living.

Transportation Summit

A statewide Transportation Summit was convened on September 28, 2000. This Summit, entitled "Strategic Solutions: From Gridlock to Growth", involved leaders from the public, business and academic communities. The participants identified the state's top

transportation priorities for the future, providing a foundation for the Interim Transportation Strategy Board and Legislative Public Act 01-5.

Interim Transportation Strategy Board

The Interim Transportation Strategy Board met between November 1, 2000 to January 31, 2001 in order to develop and implement a transportation strategy for Connecticut. The 15-member Board's recommendations, assembled in a memorandum to the Governor and Legislative leaders dated January 31, 2001, address the following problem statement:

> "Connecticut lacks a single entity with the authority and accountability to establish, monitor, and implement a comprehensive, statewide transportation strategy that enhances Connecticut's economic vitality and overall quality of life. The absence of such a structure and strategy poses a crisis for Connecticut in that its economic vitality and quality of life are at risk, a crisis which must be addressed with a sense of urgency in the current Legislative session."

The Interim Board emphasized the following points in putting forth recommendations to resolve the "crisis", as outlined in their problem statement:

- the ever worsening congestion on the State's roadways and the status of other transportation issues that, if left unaddressed, will both choke economic growth and weaken the State's quality of life;
- the lack of a comprehensive transportation strategy, especially one linked to an even more comprehensive strategy for the Northeast quadrant of the continent, and the absence of an entity with the authority and accountability to develop and implement that strategy, places Connecticut in the high risk position of losing future investments in its targeted clusters of economic growth; and
- as illustrated by the September 2000 Transportation Summit, there exists a growing public will to think and act differently about transportation and to support a new entity with the responsibility to: supply the missing strategy; establish a set of project priorities within that strategy; and act in the best interests of the state as a whole. The Transportation Strategy Board believes that this public will must be seized now, during the current legislative session, in order for the state to preserve and strengthen its economic vitality and quality of life over the next two decades.

The Interim Board noted that an underlying premise of their recommendations was the creation of five Transportation Investment Areas (TIAs). The five TIAs include: Coastal Corridor, Southeast Corridor, I-395 Corridor, I-84 Corridor, and I-91 Corridor. The Metropolitan Planning Organizations (MPOs), Regional Planning Organizations (RPOs), and other established organizations (businesses, interest groups, labor unions, and trade associations) engaged in transportation planning within each TIA would draft and submit a TIA transportation plan to the Transportation Strategy Board (TSB) for evaluation and inclusion in the Strategy.

The Interim Board anticipated that the implementation of the Strategy would require a multi-billion dollar investment over a 10 to 15 year period to "achieve a transportation system that will be a dependable means to attaining our objectives of sustainable

economic growth and a premier quality of life. Funding such an investment will require both creativity and a willingness, when appropriate, to reallocate resources and to prioritize actions in a fiscally prudent manner." The January 31, 2001 memorandum included a series of possible recommended projects regarding the use of a requested $50 million of the projected FY '01 surplus. Finally, the Interim Board urged the statutory establishment of the Connecticut Transportation Strategy Board.

The Mission Statement of the TSB was stated as follows:

> "The Board will formulate a comprehensive, statewide transportation strategy that is based on creative, multi-modal solutions and that looks out initially to the year 2020. The Strategy will spur economic vitality and sustainable growth, connect the State to regional and global markets, serve the needs of a diverse population, promote intrastate and interstate planning and cooperation, and enhance Connecticut's overall quality of life. In submitting the Strategy to the Governor and the Legislature, the Board will include projections for the capital investments necessary to implement the Strategy and recommendations on the sources of such capital funds."

The January 31, 2001 memorandum stated that the Strategy must be driven by the Mission Statement and must produce tangible outcomes consistent with the Strategy's essential characteristics. Key outcomes of the Strategy include improved mobility, connectivity, and safety and security.

Public Act 01-5

The June 2001 Special Session of the Connecticut Legislature approved Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board* (House Bill No. 7506). Public Act 01-5 created the Connecticut Transportation Strategy Board, whose members shall consist of: five members from the private sector who have expertise in transportation, business, finance, or law; one member from each of the Transportation Investment Areas; the Commissioners of Transportation, Environmental Protection, Economic and Community Development, and Public Safety; and the Secretary of the Office of Policy and Management.

Public Act 01-5 also created the following Transportation Investment Areas (TIAs): Coastal Corridor TIA, I-84 Corridor TIA, I-91 Corridor TIA, I-395 Corridor TIA, and the Southeast Corridor TIA. On or before November 15, 2001, each TIA Board shall prepare an initial TIA Corridor Plan to be delivered to the TSB. Each TIA Board is to prepare full TIA Corridor Plans biennially thereafter, beginning on November 15, 2002.

Public Act 01-5 built on the January 31, 2001 memorandum of the Interim Transportation Strategy Board and required an Initial Transportation Strategy, the subject of this document, by January 15, 2002. In developing the Strategy, Section 4(b) of the legislation directs the Board to take the following into account:

- the strategic concerns associated with movement of people and goods;
- the technological options and multi-modal options that are available;

- the relationship of concerns and options to sustainable economic growth, environmental quality, urban development, open space, open space preservation, access to employment by residents of the state, and public safety;
- that transportation is the cornerstone of the state's economic vitality and overall quality of life and therefore inextricably linked to other key policies that deal with the state's future including, but not limited to land use planning, environmental quality, urban vitality and access to quality jobs and services for the state's residents;
- the connectivity of the state to the northeast, continental and international economies - and the mobility of people and goods within the state are critical to vibrant and sustainable economic growth;
- the benefits of leveraging existing transportation assets and infrastructure, especially in urban centers, and the reduction of automobile-oriented demands, are highly desirable;
- the integration of brownfields remediation and affordable housing and access to employment that should occur as a result of implementing the strategy;
- the need to engage local planning agencies and other relevant constituencies;
- the need to engage representatives of the state's major transportation assets and of the transportation industry to ensure that the strategy is multi-modal and integrated;
- the benefits of technology to expand capacity, enhance safety, provide information, and access funding alternatives;
- the need to fully explore the sources and methodologies for funding investments in transportation infrastructure, and for annual operating and maintenance costs and the regulations applicable to the expenditure of federal and state funds;
- the development of appropriate metrics, methodologies and standards is essential for determining customer needs, for evaluating the return on transportation investments and for the prioritization of specific projects;
- the state needs to play a leadership role with the other northeastern states and the eastern Canadian provinces in developing and advocating a transportation strategy for the northeast region of the continent;
- the analyses and decision-making related to transportation initiatives needs to be done expeditiously within the existing statutory and regulatory framework and that any amendments to the general statutes or to the Regulations of Connecticut State Agencies that are needed to achieve such objectives should be identified;
- the development, renovation, and expansion of Bradley International Airport;
- the state conservation and development plan, established pursuant to section 16a-24 of the general statutes; and
- the role, including the role of financial incentives, of private sector companies, public agencies, and institutions needs to be clearly defined.

The TSB was directed to design the Strategy to achieve public benefits; ease of mobility of people and goods; connectivity in access to regional, national, and global economies; and safety and security.

The TSB was also directed by the Legislation to:

- include the criteria by which the TSB, the Commissioner and the Department of Transportation will evaluate and prioritize existing and proposed transportation projects;

- identify the strategy tools and measures by which it intends to assess transportation system performance and analyze the value of projects proposed to implement the strategy, including their overall value to the state as a public investment;
- include in the strategy a projection of the required capital investments and operating costs over the next succeeding ten years and the recommended sources of such funds; and
- include in the strategy a distinction between transportation costs for operations and maintenance and transportation investments.

Public Act 01-5 directed the TSB to submit an Initial Strategy no later than January 15, 2002 and submit a status report on the implementation of and any needed revisions to the Strategy and the quarterly report provided by the Department of Economic and Community Development on June 30, 2002 and each December 31st and June 30th thereafter. The TSB was directed by the Legislation to update or revise the Strategy, if necessary, and submit a report on implementation of the Strategy to the Governor and the General Assembly on December 15, 2002 and every two years thereafter.

Transportation Strategy Board

The members of the Connecticut Transportation Strategy Board:

Private Sector Members

Chairman – R. Nelson Griebel, President/CEO, MetroHartford Regional Economic Alliance (Term expires June 30, 2005)

Michael J. Critelli, Chairman/CEO, Pitney Bowes, Inc. (Term expires June 30, 2003)

George L. Giguere, President, Giguere Associates (Term expires June 30, 2003)

Joseph P. Maco, Vice-President, Sound Pilots (Term expires June 30, 2002)

Michael P. Meotti, President, Connecticut Policy and Economic Council (Term expires June 30, 2004)

State Agency Members

Hon. James F. Abromaitis, Commissioner, Department of Economic and Community Development

Hon. Arthur J. Rocque, Jr., Commissioner, Department of Environmental Protection

Hon. Marc S. Ryan, Secretary, Office of Policy and Management

Hon. Arthur L. Spada, Commissioner, Department of Public Safety

Hon. James F. Sullivan, Commissioner, Department of Transportation

Transportation Investment Area (TIA) Members

Hon. Stephen T. Cassano, I-91 Corridor TIA (Term expires June 30, 2003)

John Markowicz, Southeast Corridor TIA (Term expires June 30, 2002)

Jeffrey J. O'Keefe, Coastal Corridor TIA (Term expires June 30, 2004)

John Sarantopoulos, I-395 Corridor TIA (Term expires June 30, 2005)

Michael J. Sullivan, I-84 Corridor TIA (Term expires June 30, 2005)

Chapter 2 STATEWIDE GOALS

Connecticut, like many other states in the industrial northeast, has some significant challenges ahead in maintaining and expanding its transportation infrastructure. It already owns and maintains an expensive inventory of transportation assets, yet faces demands from a range of sectors for expanded capacity across all modes: air, freight, highway and bridge, and transit. Like other states with densely populated urban areas, the state has a high demand for transit and highly congested transportation corridors which impact the state's ability to move people and goods freely both within and across state borders.

Connecticut, like other states in the northeast, has an older infrastructure that is expensive to operate and maintain and, like its counterparts in the northeast, Connecticut must bear burdens of winter. This occurs in two respects: first, freeze thaw cycles and the use of salt shorten the life span of the assets, forcing expensive capital maintenance and/or replacement to occur at shorter intervals than states which are not burdened by winter; and second, winter snow and ice operations and spring cleanups place a significant burden on its annual operating budget. Shortened intervals for capital maintenance and/or facility replacement reduce the availability of funds for new projects; the budgetary impacts of winter reduce the revenues available to provide operational subsidies for transit and to fund other pay-as-you-go capital projects.

The state's highways bear the further burden, along with those in a number of other highly developed states, in that they are more intensively used and more tightly constrained. The ability to expand the capacity of its transportation infrastructure is constrained largely by the geographic location of that infrastructure. Its major highway and transit capacity, at least in the southern part of the state (the I-95 and Route 1 highways and Metro North rail line) share a physically constrained corridor. In Connecticut, the volume of traffic per lane mile is far higher than that of its larger neighboring states. At the same time, the state's ability to increase capacity is constrained by environmental, economic and other factors. Connecticut's ability to finance such increases is further hampered by its declining share of the Federal program, as well as the burden of operating and maintaining its existing system. Also, all requests for project financing must go through either the federal or state legislative process for review and approval.

Rail assets in the state face similar challenges. Three decades of public investment in commuter rail services have reversed most of the effects of a long history of bankruptcies and neglect that have plagued railroads in the Northeast. However, this history still affects intercity passenger service, to some degree, and rail freight service to a critical extent. Connecticut faces the dual challenge of making rail operations more cost-effective, while at the same time fully re-integrating its rail assets into the national system. This is essential if the rail assets of the state are to function efficiently and effectively in a truly integrated transportation system.

Recent investments by the Connecticut General Assembly and the Governor have begun to address the issues of updating, modernizing, and maintaining our rail structure. While this represents a significant start to addressing this problem; if we conclude that rail service is an integral piece of the Connecticut transportation system, a continued long-term substantial investment will be required. Similarly, we must apply the same level of examination and debate regarding other modes of public transportation.

Public transportation, too, is being called upon to bear a greater share of the load. Here, too, the challenge is both operational and capital in nature. Foundational work in developing ridesharing and commuter lots have helped transit services shed the old "city bus" image, and become more attractive for localized markets. However, more work remains in order for transit service to become an integral element of a statewide transportation system.

Connecticut has made substantial recent investments in its transportation infrastructure, but still faces significant challenges associated with expanding sources of revenue to fund new projects and/or expand services; to continue to provide a high level of maintenance on its existing infrastructure and assure that new assets are properly maintained; and to contain and reduce the costs of service.

Statewide Goals

One of the first steps in developing a comprehensive transportation strategy is to define the goals to be met by the strategy, to define objectives that provide a means to attaining the goals, and to identify the opportunities, challenges and issues involved in implementing the objectives. Goals, objectives and challenges identified by the TSB are based on their collective experience, as well as input from the TIAs and the public. Refer to the Appendices for the Initial TIA Corridor Plans.

For the purposes of this report, the following definition of terms is provided:

Goals refer to general intentions that the transportation strategy will attempt to fulfill. The five overall goals established by the TSB are:

Goal 1: Improve Personal Mobility within and through Connecticut

Goal 2: Improve the Movement of Goods and Freight within and through Connecticut

Goal 3: Integrate Transportation with Economic, Land Use, Environmental and Quality of Life Issues

Goal 4: Develop Policies and Procedures that will Integrate the State Economy with Regional, National and Global Economies

Goal 5: Identify Policies and Sources that Provide Adequate and Reliable Funding Necessary for a Quality Multi-Modal Transportation System

Objectives refer to more specific actions, the results of which should be quantifiable where possible, which achieve goals.

Challenges refer to specific issues that must be addressed to achieve a specific goal.

In addition to identified, specific goals and objectives, the TSB believes there are four underlying principles that are absolute to the development of their Comprehensive Statewide Strategy. Those guiding principles are:

- *Connecticut's transportation system must have a **"customer"** orientation.*

- *Connecticut's transportation system must always operate at its most **efficient** level.*

- *Connecticut's transportation system must be **multi-modal and inter-modal**.*

- *Connecticut's transportation system must provide a **safe, secure, and well-maintained** means of moving people and goods within and through the State, including during times of threatened homeland security.*

Specific initiatives and programs that are currently ongoing and serve as a start to implementing objectives, as well as projects from Section 16 of Public Act 01-5, are identified on the following pages.

Several Section 16 projects deal directly with one or more of the underlying principles or overall goals, and can therefore be considered to be "cross-cutting". Examples of these cross-cutting projects include:

- Improving and further developing and Accident Clearance Policy to minimize the number of accidents on Interstate Route I-95 and the Merritt Parkway and enhancing hours of truck safety stations

- Safety and operational improvements at Interstate I-84 interchanges from Danbury to Newtown

- Funding a safety and capacity study of Route 8 from Seymour to Waterbury

These types of projects deal with safety and efficiency, can be considered to aid in the movement of people and goods, and are related to land use and funding issues. Cross-cutting projects and initiatives are not included in the following tables in order to avoid excessive repetition.

GOAL 1 – Improve Personal Mobility within and through Connecticut

Objectives

Air

Objectives dealing with Bradley International Airport will be coordinated with the Bradley Board of Directors.

- improve airport access
- improve air service regionally and internationally
- actively support the Bradley International Airport expansion plans
- evaluate the feasibility of international air service at Bradley International Airport
- determine the role of other airports in the State

Rail/Bus

- provide adequate levels of parking for transit service
- provide adequate station locations for transit service
- provide sufficient transit vehicles and facilities
- provide improved and expanded dedicated busway transit service
- provide improved and expanded bus transit service
- assure Connecticut's relationship with Metro North supports optimum rail services

Roadway

- provide options to single occupancy vehicle use
- manage traffic congestion to improve effective capacity of roadway systems
- resolve issues relating to "gaps" in state expressways, such as Routes 6 and 7
- complete Route 11 and the associated greenways
- evaluate use of highway shoulders for incident management
- improve bottleneck hotspots and main feeder systems on the highway system
- expand police patrols and enforcement operations to ensure more safety

Water

- evaluate the need for ferry services to lower Manhattan and Kennedy Airport
- integrate ferry services with other passenger transportation systems
- evaluate intra-state ferry service

Other

- ensure a variety of modal options are available
- ensure that travelers are informed about trip-making options
- improve connections to regional, national, and international networks
- work with businesses to expand telecommuting options
- improve bicycle and other pedestrian facilities

Challenges

Air

- market forces that determine services in a corridor
- local opposition to airport expansion
- minimal transit services to airports

Rail / Bus

- incomplete infrastructure for north/south commuter rail passenger service
- inadequate perception of the true cost of transit services
- public attitude towards transit systems traversing neighborhoods
- poor public perception of bus travel (image, convenience)
- lack of adequate equipment for desired service levels
- aging infrastructure
- the future of intercity rail
- labor issues that affect rail operations
- difficulty in providing adequate and cost effective transit service in low-density population areas

Roadway

- public's attachment to single occupancy trips
- inadequate perception of the true cost of auto usage
- impacts of incidents on traffic flow
- shared use of road right-of-way by trucks and passenger vehicles
- aging infrastructure
- inadequate roadway shoulder pavement for heavy traffic volumes during incidents
- federal requirements for the restricted use of shoulders in incident management
- identifying bottleneck hotspots and evaluating options for improvement of traffic control

Water

- lack of effective intermodal connections at ports
- lack of passenger terminal-area infrastructure

Other

- lack of adequate transit parking facilities
- agreements with partner agencies in other states, including the Metro North agreement

GOAL 1 – Improve Personal Mobility within and through Connecticut

Active Initiatives/Programs

Air

- airport Master Plan update, Phase II, Bradley International Airport
- update of the Statewide Airport System Plan
- creation of the Bradley Board of Directors

Rail/Bus

- discussions with AMTRAK to provide an additional peak period train for a two-year trial period and to promote monthly tickets from Connecticut to Penn Station*
- study of the infrastructure cost and operating characteristics of rail commuter services from New Haven to Springfield, including Bradley International Airport*
- a design study for an Orange / West Haven rail station with parking for one thousand commuters*
- discussions with AMTRAK, Metro-North and rail labor unions to allow Shore Line East trains to run through New Haven to Bridgeport, Stamford, and Greenwich for a two-year trial period*
- developing (A) operational and fiscal plans for the expansion of local and regional bus services to coordinate with rail and ferry schedules for service to area attractions, and (B) a single ticket fare structure for such services in the Southeast Corridor*
- providing funding to expand bus services connecting with rail services in the Coastal Corridor*
- expanding Fairfield County inter-regional service by purchasing ten new buses and providing funding for additional local bus service*
- expand express bus service in the Hartford area*
- providing operating funding to expand bus services for existing and new western Connecticut commuters to utilize Metro-North's Upper Harlem Line for commuting to New York City and White Plains*
- funding the Jobs Access program which provides later evening bus service route extensions and customized paratransit services for residents in the cities of Bridgeport, Hartford, New Haven, and Waterbury*
- New Haven Line rail maintenance facility feasibility*
- purchase of additional bus and van stock
- design of Hartford to New Britain Busway
- ongoing improvements at existing commuter rail stations, including Madison, Clinton, Westbrook, Guilford and Branford, among others
- ongoing evaluation of the Metro North agreement
- anticipated appropriations to purchase additional rail equipment

Roadway

- ongoing enhancements of the State's Incident Management System
- improvements and further development of a State Accident Clearance Policy*
- complete replacement of the Pearl Harbor Memorial Bridge
- ongoing maintenance of the State's highway system
- increased attention by DPS in highway patrols and enforcement operations
- completion of Route 11 EIS and associated greenway studies

Water

- support the development of a high speed ferry from Bridgeport to Stamford to New York*

Other

- marketing an employer-sponsored pretax commuter benefit program known as "Deduct-A-Ride" in both public and private sectors*
- expanding existing commuter parking lots state-wide*
- continuing the efforts of the Capitol Regional Council of Governments to support transit-oriented development initiatives along the Hartford to New Britain Busway*
- study to refine the traffic and transportation needs and modal options of the Southeast Corridor*
- ongoing DOT enhancement projects, including the Farmington Canal Linear Trail and the New London Vista Walkway, among others

* Projects included in Section 16 of Public Act 01-5

Applicable TSB Working Group

Movement of People Working Group

GOAL 2 – Improve the Movement of Goods and Freight within and through Connecticut

Objectives

Air

Objectives dealing with Bradley International Airport will be coordinated with the Bradley Board of Directors.

- improve airport access
- improve air service
- improve airport freight facilities
- enhance Bradley International Airport freight services

Rail/Bus

- ensure adequate rail freight infrastructure
- ensure adequate rail freight facilities
- address the lack of a rail crossing over the Hudson River

Roadway

- facilitate movement of goods and freight to reduce roadway congestion
- evaluate technological options to facilitate the movement of trucks
- resolve truck parking issue
- evaluate use of highway shoulders for incident management
- evaluate a policy to limit truck traffic to the use of specific travel lanes
- evaluate truck safety inspection program

Water

- provide improved port facilities
- integrate Long Island Sound barge services with the freight transport system
- define niche markets for State ports
- evaluate the use of ferry service for the movement of goods

Other

- provide critical missing links connecting Connecticut to regional and international markets
- improve connections to regional, national, and international networks
- provide intermodal integration of freight transport systems

Challenges

Air

- lack of storage facilities at Bradley International Airport

Rail

- lack of east/west rail corridors for through and local freight movement
- connectivity of rail freight system over the Hudson River
- control of rail lines is split among different private companies
- infrastructure constraints along the Northeast Corridor, including catenary height and rail maintenance requirements
- scheduling conflicts between rail freight and rail passenger services

Roadway

- shared use of road right-of-way by trucks and passenger vehicles
- type of freight being transported not suitable to rail mode
- allowable hours of operation for truck traffic on some roads
- inadequate perception of true cost of truck usage
- land use and development policies preventing increase in truck rest stop facilities
- through freight movements impact on State traffic
- inadequate roadway shoulder pavement for heavy traffic volumes during incidents
- examine need for additional weigh station hours

Water

- difficulty of expanding port capacity and improving port access
- ownership / control issues at some ports
- dredging of harbors

Other

- "just in time delivery" priorities
- required services for freight transport driven by private market

GOAL 2 – Improve the Movement of Goods and Freight within and through Connecticut

Active Initiatives / Programs

Air

- assistance and support to private sector development at Bradley International Airport
- construct taxiway to cargo center, Bradley International Airport

Rail

- construct miscellaneous freight improvements
- construct a bulk transfer facility, Housatonic RR
- tax credit program for freight rail improvements
- capital assistance for Middletown North Freight Rail project

Roadway

- improvements and further development of a State Accident Clearance Policy*
- ongoing support and enhancement of the Commercial Vehicle Information Systems (CVISN) program
- increased hours of weigh station operations
- increased attention by DPS and DMV in commercial vehicle enforcement operations

Water

- evaluation of a freight Feeder Barge Service in Long Island Sound from the port facilities of New York and New Jersey*
- completion of the development of the State Pier Warehouse, New London

* Projects included in Section 16 of Public Act 01-5

Applicable TSB Working Group

Movement of Goods Working Group

GOAL 3 – Integrate Transportation with Economic, Land Use, Environment and Quality of Life Issues

Objectives

- improve effectiveness of the State Plan of Conservation and Development
- focus on maximizing operational efficiency, use, and life of existing transportation and other infrastructure
- provide incentives to encourage economic growth in areas of transportation infrastructure
- preserve and protect the quality of the natural environment
- provide incentives to encourage residential development in areas of transportation infrastructure
- encourage redevelopment of Brownfield areas
- expand inter-agency (local, state, federal) coordination regarding transportation decisions, land use policies, environmental issues and economic development on all levels
- encourage the development of a mechanism to influence the location of large development projects that have unsustainable, significant local and regional impacts before they reach the development proposal stage
- improve the effectiveness of the Connecticut Environmental Policy Act (CEPA)

Challenges

- unanticipated accelerated growth of the tourism industry in the Southeast and I-395 TIAs
- suburban sprawl and urban issues
- potential for continued deterioration of the area's natural and cultural environments, as urban areas continue to grow and increased transportation system needs are met
- lack of coordination between State, Regional and local planning efforts
- home rule authority regarding quality of life, environmental protection and economic development decisions
- large projects that can overwhelm an area's capacity and potentially degrade the environment

Active Initiatives / Programs

- significant investment in Statewide greenway, recreational trail, and open space programs
- multi-agency involvement in the update of the state Plan of Conservation and Development
- Department of Transportation active support of Access Management Studies undertaken by Regional Planning Agencies and Municipalities
- Department of Transportation advocacy of Context Sensitive Solutions (CSS) development, including ongoing development of CSS guidelines and training for engineers
- Department of Transportation support of Corridor Management Studies
- Department of Economic and Community Development incentives for Brownfield redevelopment
- ongoing initiatives for business clusters
- ongoing strengthening of Enterprise Zone / Corridor programs
- enhanced communication between State Agencies
- Department of Economic and Community Development Industrial Parks Program
- adoption of Brownfields and urban economic development legislation
- multi-agency involvement in the streamlining of CEPA

Applicable TSB Working Group

Land Use and Economic Development Working Group

GOAL 4 – Develop Policies and Procedures that will Integrate the State Economy with Regional, National and Global Economies

Objectives

- work with the surrounding States and Northeast region towards coordinated planning efforts regarding air, rail and road services and issues
- develop effective coalitions designed to obtain funding for transportation projects and programs with multi-state significance, particularly the TEA-21 reauthorization
- establish intra and interstate coalitions to educate the public, states, towns and businesses on regional economic development issues

Challenges

- decisions based on small geographic priorities
- decisions based on short-term timeframe considerations
- need for legal framework to create multi-state institutions on certain issues
- limitations of the Metro North agreement
- fragmented decision making framework
- competition among regions/states

Active Initiatives / Programs

- Department of Transportation personnel actively involved in:
  - I-95 Corridor Coalition
  - Northeast Association of State Transportation Officials (NASTO)
  - New York Metropolitan Transportation Commission (NYMTC)
  - Transportation Research Board
  - Regional Plan Association
  - Committee on Trade and Globalization of New England and Eastern Canada
  - American Association of State Highway and Transportation Officials (AASHTO)
  - American Public Transportation Association
  - Northeast TEA-3 Coalition
    - New England Association of Regional Councils

- Department of Transportation continuing involvement with the following studies of projects with multi-state significance:
  - New York Port Authority Feeder Barge Studies
  - Poughkeepsie River Bridge
  - Cross Harbor Tunnel Study in New York
  - New Jersey Transit study for access to Penn Station

- Federal Transportation Planning Process

- Multiple State Agencies actively involved in:
  - Coalition of Northeast Governors
  - New England Council of Governors
  - National Governors Association
  - Republican Governors Association

- Governors Council on Economic Competitiveness

Applicable TSB Working Groups

Movement of People Working Group
Movement of Goods Working Group
Funding / Finance Working Group

GOAL 5 – Identify Policies and Sources that Provide an Adequate and Reliable Flow of Funding Necessary for a Quality Multi-Modal Transportation System

Objectives

- fully investigate all potential public and private funding sources to determine their compatibility with the Connecticut strategy
- identify potential changes in transportation policies or operating procedures that may provide funding opportunities
- work closely with legislative leaders to develop support for alternative funding mechanisms
- develop a cost / benefit set of metrics to use in recommending funding proposals
- work towards renewal of TEA-21 with special regional projects funding
- fully investigate all public and private funding sources

Challenges

- insufficient resources for significant new investment in transportation infrastructure
- highly variable public infrastructure budgets due to competing demands on state and federal monies
- public understanding of benefits / costs comparisons
- more balanced sharing of financial burdens in interstate rail operations
- DOT operating budget primarily tied to automobile user fees
- Federal mandate on Driving Under the Influence Standards

Applicable Initiatives / Programs

- developing (A) operational and fiscal plans for the expansion of local and regional bus services to coordinate with rail and ferry schedules for service to area attractions in the Coastal Corridor TIA and (B) a single ticket fare structure for such services in the Southeast Corridor TIA*
- Department of Transportation active involvement in TEA-21 reauthorization coalitions of American Association of State Highway and Transportation Officials (AASHTO), Northeast Association of State Transportation Officials (NASTO), and American Public Transportation Association (APTA)

*Projects included in Section 16 of Public Act 01-5

Applicable TSB Working Groups

Funding / Finance Working Group
Evaluation Working Group

Chapter 3 PRELIMINARY FINANCIAL PROJECTIONS

Since the TSB has yet to develop the definitive strategy and the specific tactics and projects needed to implement it, any projections of the capital and operating funds needed to implement such strategy would be premature. This Chapter summarizes the current sources and uses of transportation funds, as well as prior revenue and expense history.

Revenue

Special Transportation Fund

Revenue to fund Department of Transportation (DOT) capital improvements and operations is provided through a combination of Federal and State funds.

State funds for transportation investments come from the Special Transportation Fund (STF). Sources of revenue for the STF have varied over its nearly 18 year history, but motor fuel taxes, motor vehicle receipts, and license, permit and fee (LPF) revenue have been three constant sources. Motor fuel taxes have consistently provided the largest percentage of revenue, but, as the tax rates have decreased, that percentage has correspondingly decreased.

Figure 3-1 illustrates the revenue components of the STF in 1997, with their respective percentages.

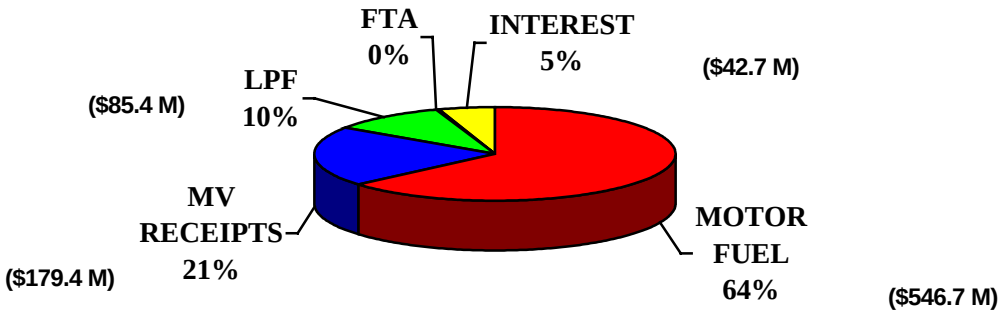


Figure 3-1
FY 1997 STF Revenue = $854.2 Million

Figure 3-2 illustrates the composition of revenue sources for the STF in FY 2002.

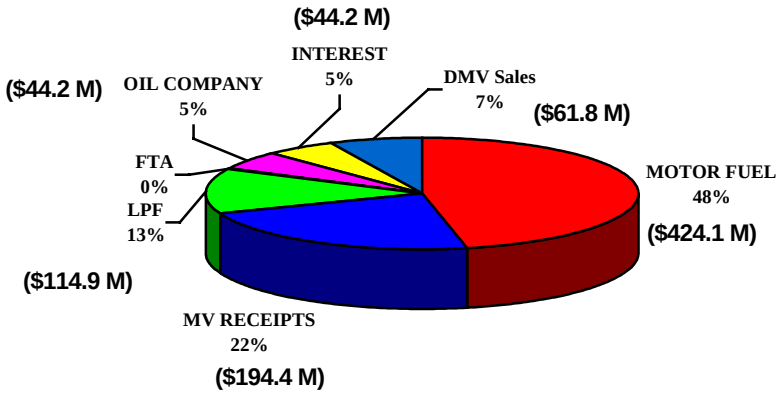


Figure 3-2
Estimated FY 2002 STF Revenue = $883.6 Million

These figures illustrate that, although the total amount of revenue has increased by approximately 3.4%, the percentage of that revenue provided by motor fuel taxes had decreased by nearly 25%.

The motor fuel tax rate is predicted to remain relatively flat for the next several years, which will certainly impact the STF revenue. Figure 3-3 illustrates the history of motor fuel tax rates in Connecticut over the life of the STF, and estimated through 2002. The differing shades indicate changes made during different legislative years.

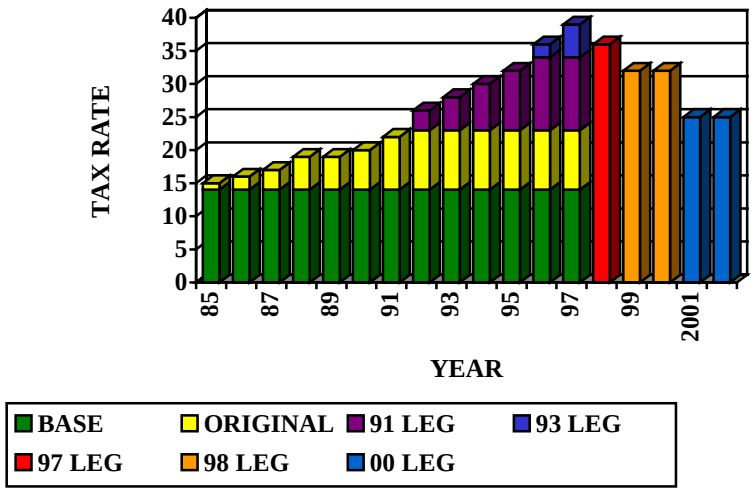


Figure 3-3
STF Gasoline Tax Rate Schedule

Federal Funds

Since TEA-21 was passed in 1998, Federal funds have varied between a low of approximately $415 Million in 1998 to an estimated high of approximately $580 Million in 2002. This represents a slight increase in actual dollars over funding received under the original ISTEA legislation (1992 – 1997), but a smaller percentage of the total available Federal funds.

Expenditures

Special Transportation Fund

The STF historically has been used to pay debt service on bonds for DOT capital projects and to fund DOT operations. In 1989, pension and fringe benefits for DOT employees was added to the expenditures, and in 1992, Department of Motor Vehicle operations was added. Other components have been added and then eliminated over the history of the fund.

Figure 3-4 illustrates the estimated expenditures of the STF in 2002.

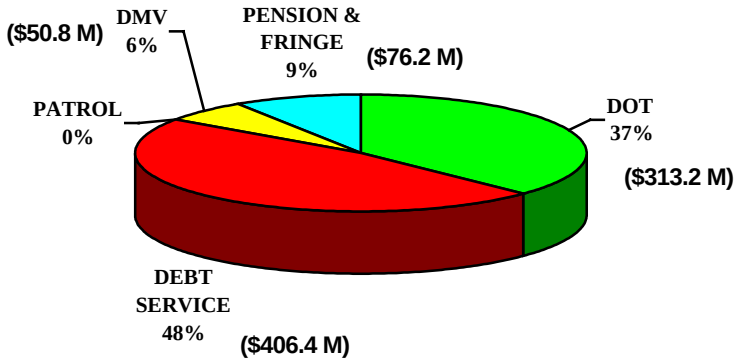


Figure 3-4
FY 2002 Estimated STF Expenditures = $846.6 Million

The DOT portion of those expenditures funds all operations, including transit service operating subsidies, personal services, equipment and other state funded programs. Figure 3-5 illustrates expenditures from the DOT portion of the STF.

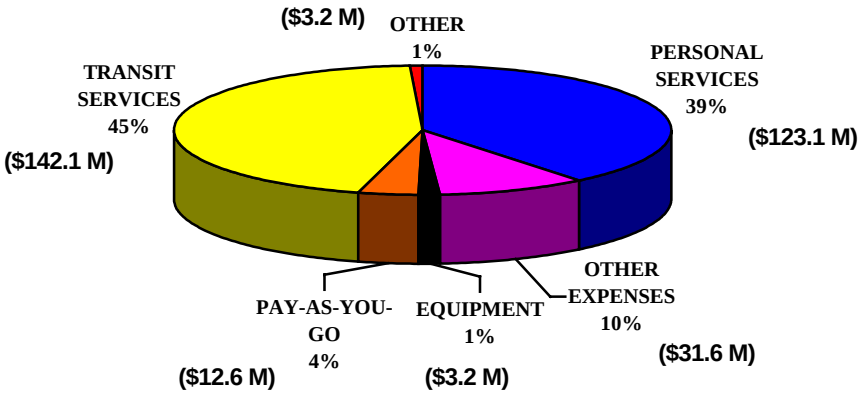


Figure 3-5
FY 2002 Estimated DOT Expenditures = $315.7 Million

Transit service operating subsidies are split nearly equally between bus subsidies and commuter rail subsidies.

The Debt Service portion of STF expenditures funds debt service on bonds issued for capital projects. Bonds are issued to match the Federal dollars and finance projects not eligible for federal participation. Figure 3-6 illustrates the sources of funds for the DOT capital program.

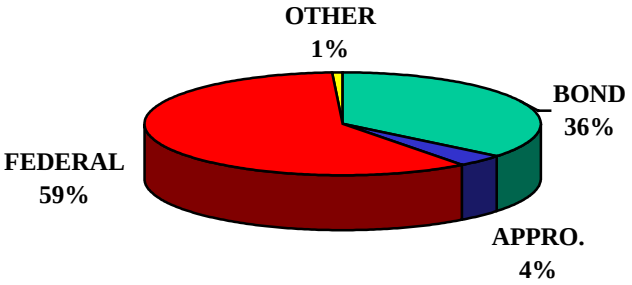


Figure 3-6
Capital Program
FY 1985 – FY 2002 Sources of Funds
18 Year Total = $12.9 Billion

Federal funding generally requires a State match, usually in the amount of 20% of the total project cost (for some funding categories, the State must match only 10%). If funds for the State match cannot be found, available Federal funds could be in jeopardy. The DOT has been, historically, been able to leverage all available Federal funds, and has done so, for the most part, through bonding.

The DOT Master Plan represents projects that are programmed based on expected funding for the next 10 years. The total of these projects represents an investment of approximately $8 Billion over that 10 year period. Included in the Master Plan are several projects of major significance to the State, such as:

Project	Estimated Cost
Replacement of the Pearl Harbor Memorial Bridge	$800 M
Improvements to I-84 between Southington and Waterbury	$170 M
New Haven Line Catenary Replacement	$300 M
Overhaul of New Haven Line Rolling Stock	$180 M
Purchase of 250 new buses	$87.5 M

Many of the projects in the Master Plan, such as the five projects specifically listed above, are actually maintenance and rebuilding of the existing transportation system. They represent little in terms of added capacity.

During the development of Public Act 01-5, a list of projects (referred to as the Section 16 Projects) was proposed for study and / or implementation. The projects included in the list represent projects that were generally agreed to be important to the State and the Region. They represent only a small portion of the projects identified by the public and transportation planners as desirable to achieve economic growth and quality of life goals.

If the projects in the Master Plan and Section 16 are to be fully implemented, a significant amount of money, over and above the currently programmed $8 Billion, will be required. And yet, at the same time, the motor fuel tax rate, the major component of the STF, is predicted to remain flat. This flat motor fuel tax rate will certainly affect the ability of the State to issue additional bonds. In fact, the level of annual bond authorization is also predicted to remain flat for at least the next five years.

Clearly, in order for the transportation program in Connecticut to grow, new sources of funds must be identified.

Chapter 4 OTHER FUNDING OPTIONS

Consistent with Section 4(b)11 of our enabling legislation, for the purposes of this initial strategy, this chapter presents a brief list of funding options that have been used in other states to fund transportation projects, and that will be evaluated during the detailed planning to take place in 2002. This document makes no recommendations, and the inclusion of a particular funding option in this list should not be interpreted to represent an endorsement of that option, or to imply that the funding option will be endorsed by the Transportation Strategy Board at a later date.

Traditional Sources of Funding

In general, sources of funding for public transportation projects and programs vary from revenues that are directly related to the use of transportation systems, such as gas taxes or registration fees, to revenues with no relationship to transportation, such as sales tax receipts. In some cases, general revenues, such as income and property taxes have been used for transportation funding due to the broad public benefits of economic development, environmental enhancement, and safety and mobility, that transportation projects create.

The Federal government, states and some local governments rely principally on revenues generated by a broad range of “user fees” receipts to fund transportation programs and projects. Most states, including Connecticut, rely substantially on “indirect” user fees such as motor fuels taxes and license and registration fees; other states also take advantage of "direct" user fees, such as tolls to fund the construction and maintenance of certain highway, bridge and tunnel projects. Connecticut also relies on some “direct” user fees, particularly in the form of transit fares, to fund a portion of its transit operations.

Transportation funding is unique in this way; revenues derived from the use of transportation assets are easily identifiable. The challenge facing all three levels of government has been to dedicate these related sources of revenue to benefit the sector from which they came and not to be used to fund the general expenditures of government. Recently, the Federal government and several states have legislatively restricted the use of transportation revenues to funding transportation projects. Some states have followed the federal example and have placed these revenues in “trust” or otherwise dedicated them to be used solely for that purpose. Connecticut is one of the leaders in this regard and, since July 1, 1984, has maintained the Special Transportation Fund (STF) as a dedicated fund with specific State revenues pledged to its transportation program.

Federal Funding

Federal funding for highways began in 1911. The Federal-Aid Highway Program has evolved over the past five decades as a grant reimbursement/line of credit program where Federal funds are made available to the states to reimburse a percentage of expenditures

on different types of federally-approved projects and programs in accordance with eligibility criteria.

Highway funds are apportioned by formula in a number of program categories, including specific categories such as interstate maintenance, bridge rehabilitation and replacement, and congestion mitigation and air quality; and more flexible programs such as national highway system and surface transportation program funds. Funds are also made available for projects that meet certain criteria, such as technology advancement, or are experimental in nature. From time to time, Congress will also "earmark" funds for specific projects for various reasons. One example of earmarking contained in the Transportation Equity Act for the 21st Century (TEA-21), the current transportation authorizing legislation, is the High Priority Project (HPP) program, which provided specific amounts of funding to 1,450 Congressionally designated projects.

Federal eligibility criteria also provide that the states must "match" Federal funds with funds of their own. With respect to projects on interstate highways, states must fund ten percent of project costs; states must fund twenty percent of the costs on most other Federal-aid projects.

Federal highway funding is derived primarily from the Federal motor fuels tax, in addition to other related excise taxes, the receipts of which are deposited into the Federal Highway Trust Fund. Federal motor fuels taxes are collected at the state level and remitted by the states into the trust. The funds are then redistributed to the states through the Federal-aid Highway Program. TEA-21 revised the redistribution to guarantee that each state would receive at lease 90.5% of the amount it contributes to the Highway Trust Fund. TEA-21 also provided for full distribution of the motor fuels tax revenues collected annually for the Highway Trust Fund. The Act created a “firewall” which prevented Congress from allocating Highway Trust Fund monies to areas other than transportation. The Highway Trust Fund receipts are divided approximately 85% to highway projects and 15% to mass transit.

Federal funding for transit began as a grant-in-aid program with the passage of the Urban Mass Transportation Act of 1964. Transit funds are apportioned in part by formula to metropolitan areas that rely upon transit. Allocated funds are also made available for specific projects under the Federal Transit Administration's "new starts" program. From time to time, Congress will also fund groups of "earmarked" transit projects for various reasons. States must also match Federal transit funds, 80% federal to 20% local for most programs. Some special projects, to fund ADA compliance, Clean Air Act compliance or access for bicycles, for example, may be funded on a 90/10 split. Federal transit projects are also funded from general fund revenues, which are not subject to the firewall restrictions of the Highway Trust Fund. Funds for mass transit are provided both on a formula and project basis.

Recent Changes in Federal Funding. Beginning in 1991 with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA), and subsequently with the passage of the National Highway System Designation Act (NHS Act) and TEA-21, the Federal funding program has been enhanced by providing innovative Federal credit products, in addition to traditional grant reimbursement. These products are designed to afford states the ability to secure additional revenues for their programs but, unlike grant funds, must be repaid to the Federal government with interest.

In addition, while a body of eligibility rules that are specific to each program category has traditionally governed the use of Federal highway funds, ISTEA and TEA-21 expanded the traditional structure of project eligibility criteria to include certain types of non-highway improvements. They include publicly owned bus terminals, infrastructure-based intelligent transportation system capital improvements, bicycle paths and natural habitat mitigation.

TEA-21

TEA-21 expanded Federal funding of transportation and enhanced local flexibility in the utilization of Federal transportation revenues. It also expanded the conditional ability of the states, begun under ISTEA, to transfer funds among certain categories, as well as to transfer limited amounts of funds among highway and transit programs.

TEA-21 also established new Federal credit mechanisms, among them the Transportation Infrastructure Finance and Innovation Act (TIFIA), which institutionalized the Federal transportation credit program that had been provided to three projects, the San Joaquin Hills and Foothill-Eastern toll road projects and the Alameda Corridor rail project. The program is designed to use Federal credit, rather than grants, to advance surface transportation projects of national significance. It authorizes the Federal government to provide direct subordinated loans, loan guarantees and/or lines of credit to project sponsors (both public and private) for up to one-third of project costs.

TIFIA's purpose is to address project finance risks by providing favorable credit for the last one-third of project costs, and by providing favorable repayment provisions, including the ability to defer repayment for up to five years after project completion and spread the repayment up to thirty years. Project costs must exceed $100 million ($30 million for projects using new technology); projects must be of regional or national significance; and each project must have a dedicated source of revenue to fund costs of debt service for senior and subordinated (TIFIA) debt. Projects may be developed on either a public or private basis.

In addition to TIFIA, TEA-21 granted the states a limited and conditional ability to collect tolls on Federal-aid highways, tunnels and bridges that are part of the National Highway System. Section 129 of Title 23 authorizes states to use tolls to match the federal share of project costs. In addition, Section 1216 of TEA-21 established a pilot program that authorized the placement of tolls on up to three interstate highways "for the purpose of reconstructing and rehabilitating Interstate highway corridors that could not otherwise be adequately maintained or functionally improved without the collection of tolls." Section 1216 also expanded an ISTEA-created value pricing program to 15 pilot projects to encourage an evaluation of the effect of value pricing, through the use of tolls and variable toll rates, to manage congestion on non-Interstate highways.

Estimated Effects of 2003 Reauthorization

The Transportation Equity Act for the 21st Century comes up for reauthorization in 2003. As in 1997, when the ISTEA reauthorization debate began, funding issues will be at the fore. Highway Trust Fund fuel tax revenues, the principal source of Federal transportation funding, is likely to grow modestly. As highway and transit systems age, particularly in the Northeast and Midwest, maintenance demands and the impacts of winter will continue to grow, leaving little funding for system capacity expansion. In an effort to provide for new capacity, the Federal government will likely continue its trend toward increased flexibility in the use of Federal dollars and in leveraging Federal funds. A recent glimpse of potential future Federal transportation policy may be the increase in TIFIA credit funding contained in the proposed Economic Stimulus Package.

With Federal transportation dollars growing modestly and needs being significant, further debate over funding formulas is highly likely. States in the Southeast, Southwest and West may be fighting for a bigger piece of the pie that could potentially occur at the expense of the Northeast and Midwest as it did with the passage of TEA-21. Unfortunately, it is the aging infrastructure of the Northeast and Midwest that suffers heavy

use and more severe weather, requiring more maintenance and as a result requires more maintenance.

Flexibility has been a key focus of both Congress and transportation officials within the administration. In fact, Transportation Secretary Norman Mineta was instrumental in moving several innovative provisions through Congress during his tenure in Congress. These provisions are now part of transportation funding policy. One area, which may be become more flexible, is the body of project eligibility criteria. A number of states have targeted greater flexibility in the use of funds across categories as an important change that can be made in Reauthorization.

Given current economic circumstances and the impact on the Federal budget, the firewall created around transportation funds might be reconsidered. The reconsideration of the firewall provisions could jeopardize the annual funding levels of the Federal transportation program, further aggravating the impact of Connecticut's declining apportioned share of the Federal program. It will be extremely important that Connecticut's congressional delegation engage with those of its neighbors, and other states that are similarly situated, to maintain and grow the regional share of the national transportation pie. Also, Connecticut and its neighbors should continue to cooperate to secure greater flexibility for the use of Federal funds on an "interstate" or interregional basis, and to assure the continued expansion of innovative financing tools.

Opportunities within Traditional Sources

The Connecticut Department of Transportation has been highly effective in maximizing the value of its existing State and Federal revenues. Since the inception of the STF in 1984, over $12.2 billion in projects has been funded and an additional $3.4 billion in project funding is planned for FY2002-2006. The STF is well managed and every dollar of Federal funds is spent. The State's Special Tax Obligation bonding program carries high bond ratings and has provided substantial funding for the statewide transportation program. It will be important for the State to continue to manage the program in the best manner possible, and to look for new opportunities to further control capital and operating costs, particularly with respect to transit.

Emerging and Non-Traditional Sources

Several states have authorized their departments of transportation to implement innovative financing and project procurement methodologies designed to speed delivery, to reduce project costs while establishing greater cost certainty, and to take advantage of particular funding streams so that the economic and environmental benefits may be realized in a timely manner. The list below summarizes many of those funding and procurement techniques utilized in other states. **This list is for informational purposes only and is not meant to infer that any of these techniques are necessarily applicable to Connecticut. Nor should their inclusion be interpreted to represent a current or pending endorsement or recommendation by the TSB.**

Asset management and Joint development

The Department of Transportation's capital assets make it one of the largest landowners in the State. Its holdings include miles of right of way along State highways and rail facilities, large parcels located at major highway interchanges, and property in and adjacent to airports, ports and rail stations. The DOT also owns a substantial fleet of

buses and trains. Many states, including Connecticut, have begun to evaluate their properties for income purposes. Some transit agencies have begun to sell advertising space on their rolling stock. Some highway departments have leased space within the right of way for the installation of fiber optic cable and the location of cellular telephone towers. Such leases have produced both cash and in-kind contributions, including full connectivity of communications for the agency without the need for cash outlay.

States have also begun to evaluate the commercial value of their real estate holdings. The DOT has taken advantage of some of these programs, particularly at service plazas on Interstate 95 where it generates approximately $11 million per year form such sources. In addition to the traditional approach to the lease or sale of property, some states have looked for opportunities to pursue joint development with private partners including programs to expand commuter parking capacity at rail and transit stations by leasing a portion of a parking lot for commercial development and using the proceeds to supplement daily parking fees to finance the construction of parking garages.

Competitive Outsourcing of Functions

A handful of states and a number of cities have implemented cost savings measures by introducing competition for the provision of services traditionally performed by state and municipal labor forces. Examples include the outsourcing of routine highway maintenance functions such as pothole repair, line striping, catch basin cleaning, street sweeping and grass mowing. Connecticut currently outsources some of these services, including major design and construction activities, a portion of snow removal services and pavement striping. Such outsourcing can generate substantial savings in annual operating expenses and allow such funds to be redirected to other program needs.

GARVEE Bonds

Many states currently fund transportation programs through the sale of general and/or special obligation bonds. Connecticut currently issues special tax obligation bonds to fund its programs, including a large portion of the State's match for its expenditure of Federal funds. Several states have also taken advantage of the authorization contained in 23 U.S.C s. 122 to finance major projects, or a series of projects, through the issuance of GARVEE bonds. GARVEE bonds, or Grant Anticipation Revenue Vehicles, enable states to finance the costs of large projects in order to expedite their design and construction. GARVEE bonds are secured by the state's pledge of a portion of expected future Federal highway or transit revenues to pay debt service obligations over a period of years.

It is important to note that when a state decides to issue GARVEEs to finance a particular project, it must understand that the Federal funds it commits to the debt service will not be available to fund other projects during the finance term. States that have successfully used this approach consider the time frame necessary to implement a project or program using traditional funding approaches, and the cost of financing through GARVEEs to implement the project or program in a much shorter time frame. These states have determined that the public benefits of rapid project delivery and the cost savings attributable to reduced impacts of inflation outweigh the costs of borrowing. The savings generated can then be spread to a larger number of projects.

The States of Mississippi, Arkansas, Massachusetts, Ohio, New Mexico, Virginia, and Colorado have issued GARVEE bonds for highway projects. New Jersey Transit and San Francisco Bay Area Rapid Transit District have sold GARVEE bonds for mass transit projects. In some states, GARVEE bonds are backed by a secondary pledge of state

motor fuels taxes, while others (New Mexico) have provided no such pledge. New Mexico, however, purchased bond insurance to secure favorable bond ratings (AAA).

The USDOT has developed materials concerning the history of the Federal aid program which have alleviated the concerns of rating agencies and bondholders regarding the likelihood that Federal funds may not be available to the states to meet debt service obligations beyond the end of TEA-21 authorizations. In fact, the DOT has developed a standard insert to Official Statements which traces the nearly 50-year history of Federal funding, particularly the fact that transportation funding has grown consistently over that term, and the importance of delivering Federal dollars to fund projects in Congressional districts.

State Infrastructure Banks

A number of states have taken advantage of the State Infrastructure Bank (SIB) program initiated under the NHS Designation Act of 1995 and carried forward on a limited basis under TEA-21. Several states have funded SIBs as financing tools for projects. The SIB can be used to provide loans and other credit products to transportation projects. Federal law has previously allowed the use of 10% of a state's Federal funds to be used to capitalize the SIB, however, with the exception of four states, SIBs may now be capitalized with only state funds**.**

Once established, the SIB becomes a revolving fund to support a range of projects through direct low interest loans, lines of credit and other forms of credit enhancement. It can also issue debt backed by dedicated revenue streams, particularly on behalf of private and municipal sponsors. Examples of projects include privately or municipally developed parking facilities, local roadway improvements, and projects designed to mitigate the impacts of private development on transportation systems.

Tax increment financing

Some states have taken advantage of tax increment financing districts ("TIFs") and/or business improvement districts ("BIDs") to finance transportation improvements that are targeted for certain economic purposes. Examples include new and/improved access to industrial parks to enable economic expansion within them. Such projects can help to foster expansion in already developed areas as alternatives to greenfield development that may be more difficult to permit in other locations. TIF projects are financed through bonds backed by a municipal pledge of a portion of the incremental increase in property tax receipts resulting from the rise in property values that arise directly or indirectly from the improvements. Connecticut law provides for the use of TIFs, and several municipalities have taken advantage of them to fund transportation improvements associated with development.

The Transportation Corridor Agencies of Orange County, California established an area of benefit through which the Agency's new highways would be constructed. State law allowed development impact fees to be levied on residential and commercial development in the area of benefit to provide equity for the projects and to be used to repay bonds issued to finance the projects.

The City of Portland, Oregon established a tax increment financing district to finance a portion of the costs associated with the extension of a light rail transit line from downtown Portland to the Portland International Airport.

Direct User Fees

Some states (including Massachusetts, Texas, Colorado and New Jersey) have solicited competitive design-build-finance proposals to accelerate projects and lower costs. Others, (like California, Virginia, South Carolina and Washington) have enacted legislation that allows the private sector to submit unsolicited, non-competitive proposals to privately finance and develop, operate and maintain new facilities on the state's behalf. Projects submitted under these proposal programs have traditionally been funded with toll revenues and other user fees. In the case of State Route 91 in California, tolls have been used to finance the costs of new through lanes within an existing highway. The new lanes are tolled, while the existing lanes continue to be free of charge. Motorists can choose whether to ride free or pay a toll and enjoy shorter travel times. The State benefits because it was able to expand through capacity of a major highway without allocating traditional State and Federal funds to pay for it. In essence, it was able to "peel an expensive project" out of its program and use those funds to pay for other projects which could not pay for themselves.

Connecticut has used direct user fees, specifically tolls, as a means to pay the cost of major highway construction, having funded the development of the Connecticut Turnpike (I-95) in this way. While tolls can be politically unpopular as a funding mechanism, they may also serve as a means of managing congestion on major highways and bridges through value pricing. The use of new electronic toll collection technologies, such as E-Z Pass and Fast Lane, makes toll collection easier and safer, eases congestion at toll plazas (and may ultimately eliminate toll plazas altogether) and enables toll rates to be adjusted based on traffic volumes, time of day, number of passengers and other factors. Special project financing, backed by a pledge of toll receipts, is reemerging as creditworthy means of program expansion.

Toll roads have long been an alternative to funding highway expansion from taxes or other general revenues. Recently, several states have authorized toll road projects on a private basis (Virginia, California, Washington and South Carolina). These states have authorized the award of franchises to private consortia to design, build, operate and maintain toll roads and bridges for a period of years under contracts with their DOTs. The introduction of electronic toll collection systems has simplified toll collection and bolstered public support in these states for toll projects.

There are a range of issues which must be evaluated before any recommendation could be made to reintroduce tolls in Connecticut. They include the impact of existing State agreements regarding Federal highway funds; the costs of toll collection; right-of-way and environmental impacts; and safety.

User fees in the form of parking charges are another source of direct revenue to finance facility expansion. States like Massachusetts and Rhode Island have introduced daily parking charges to finance garage construction to increase parking capacity at transit and commuter rail stations.

Mapping Sources to Project Types

The various revenue sources identified in this Chapter will be analyzed and, if applicable, "mapped" to particular projects and programs. Such mapping will also include an analysis of procurement methods to take advantage of new sources, particularly for projects that could take advantage of dedicated revenues to secure project financing. The goal is to provide policymakers with a menu of funding and procurement options for project delivery. The ultimate choice of which funding or procurement method to implement, if any, should and can only be made by those policymakers.

Chapter 5 NEXT STEPS

Public Act 01-5 requires that all TIAs develop a comprehensive strategy for their Areas and submit it to the Transportation Strategy Board by November 15, 2002. The TSB must then develop a Comprehensive Statewide Strategy for submission to the Governor and the General Assembly by December 15, 2002.

The first steps towards developing that Comprehensive Statewide Strategy have been taken with the identification of Initial Statewide Goals, some of the challenges faced to meeting those goals, and some opportunities that have the potential to overcome the challenges. The next steps include developing a more comprehensive understanding of existing conditions, local and statewide priorities, and technical issues related to specific options that may be available. Additionally, the TSB will need to develop an understanding of issues and planning activities ongoing in the larger, Northeast region, as well as potential changes to funding issues that are being discussed at the Federal level.

The following sections present discussions of work that will be undertaken during the next 11 months to develop the Comprehensive Statewide Strategy.

1. Working Groups

Working Groups will be responsible for undertaking research and analysis on specific topics, and making recommendations to the Board relative to their working topic. In general, they will gather information on existing conditions related to their topic, compare the capacity of the existing condition to accommodate current and projected use, and identify promising directions to overcoming any identified shortcomings in the system. For example, based on available existing infrastructure and estimated projected demand, a working group may determine that an opportunity for improved transit service exists in a particular corridor. The Group will not undertake the detailed planning to determine which type of service, service levels or operating strategies should be implemented, but may recommend to the Board that the Comprehensive Statewide Strategy include an objective to develop a transit service, or enhance an existing transit service in that corridor.

The Statewide Goals and Objectives presented in Chapter 2 provide direction for the Working Groups' efforts. Each Group will concentrate its efforts towards developing strategies and initiatives that will meet as many of the listed objectives as possible, or any additional identified objectives, that will achieve the overall goal related to that particular group.

Working Groups will be chaired by a member of the Strategy Board, and will have an assigned liaison at the Consultant and appropriate State Agencies. Members will be interested parties, with an attempt made to include persons with backgrounds relevant to the working topic. Each TIA will have one representative on each Working Group.

A listing of the Working Groups, with their TSB Members and TIA Representatives is presented in the following table, Table 5-1.

Table 5-1
WORKING GROUPS

Working Group	TSB Members	TIA Representatives
Movement of People	Steve Cassano George Giguere Jeffrey O'Keefe Commissioner Arthur Spada	I-395: Barbara Buddington Southeast: Stanley Mickus I-91: Mike Doyle Coastal: Franklin Bloomer I-84: Bernie Lynch
Movement of Goods	George Giguere Joseph Maco John Sarantopoulus	I-395: Mary Lou DeVivo Southeast: Diana Atwood-Johnson I-91: Lee Osborne Coastal: James Wang I-84: Tom Maziarz
Land Use and Economic Development	Commissioner James Abromaitis John Markowicz Commissioner Arthur Rocque Michael Sullivan	I-395: Jefferson Davis Southeast: James Butler I-91: John Shemo Coastal: Bruce Heyl I-84: Carl Stephani
Funding / Finance	Michael Critelli Secretary Marc Ryan Commissioner James Sullivan Michael Sullivan	I-395: Jane Dauphinais Southeast: Ron LeBlanc I-91: Rick Porth Coastal: Karen Burnaska I-84: Ted Scheidel
Evaluation	John Markowicz Michael Meotti Commissioner Arthur Rocque	I-395: John Filchak Southeast: Linda Krause I-91: Judy Gott Coastal: Diane Farrell I-84: Peter Dorpalen

The **Evaluation Working Group** will function somewhat differently from the other groups. No specific goal is associated with this group; rather, it will work with the other groups to evaluate the impacts of the actions and initiatives under consideration by them.

The focus of this group will be:

- to assist the Board in developing general Measures of Effectiveness (MOEs), quantitative where possible, that can be used to assess the extent to which different initiatives attain established goals;
- to prepare the inputs needed to perform impacts analysis of specific initiatives; and
- to the extent possible, to evaluate the impacts of specific initiatives based on the defined MOEs and other standard evaluation measures.

As initiatives are being identified and evaluated, it will be important to compare them to several factors to determine whether they represent realistic, desirable options. Some of those factors include:

- Plan of Conservation and Development. In Connecticut, proposed transportation improvements are required to be in conformity with the Plan of Conservation and Development. Since the Plan is currently being reviewed for a scheduled update, there is an opportunity to work with the Office of Policy and Management to provide input to develop a plan that will further the goals of the Statewide Transportation Strategy.
- Regional Realities. One of the goals articulated in Public Act 01-5 is to provide improved connectivity between Connecticut and the overall Northeast Region and the global economy. Therefore, it will be critical to be aware of issues surrounding Connecticut to be sure that, where appropriate, proposed improvements either compliment, or are complemented by, existing or planned conditions in adjacent states.
- Existing Master Plan. ConnDOT's Master Plan represents a list of projects that are programmed for implementation based on expected levels of funding. A comparison of proposed objectives to the Master Plan may reveal that some of the objectives can be realized by currently planned projects.

Additional, appropriate factors will be determined and evaluated as the work progresses.

2. TIA Role

The focus of the work for the TIAs in 2002 will be to establish specific objectives that can be implemented and evaluated, and will achieve the goals established in their Initial Plans and identified as Statewide Goals. The TIAs will use their involvement on the Working Groups to assist them in developing their plans. It is expected that the TIA representatives will take this information back to their respective groups for evaluation based on regional priorities. The results of that regional evaluation will then be provided to the Working Group, again through the TIA representative, for consideration in developing recommendations. TIAs may develop their priorities through Public Information Sessions, or other means. Consultant and State Agency Liaisons will provide technical and historical background, and guidance as necessary on technical issues, to the TIAs.

3. Future TSB Meetings

It is expected that Working Groups will meet roughly one to two times a month, depending on the topic and the schedule for completing their specific topic reports.

The Strategy Board has developed a meeting schedule that includes half-day meetings, every other month between January and September. After September, meetings may be held more frequently, depending on the level of effort necessary to complete the work. A tentative schedule for meetings is presented below:

January 8

March 5

May 14

July 9

September 10

October 29

November 12, 19, and 26

December 3 and 10

December 13, if needed

December 17

At the meetings, the Board will hear progress and issues being considered by TIAs and Working Groups. The Board will be expected to provide feedback and direction and begin to work towards an overall consensus of the recommendations they will support in the December 2002 report.

4. Schedule

A proposed schedule for major milestones over the year 2002 is presented in Table 5-2.

Table 5-2
SCHEDULE OF MAJOR MILESTONES

Milestone / Event	Target Date
TSB Meeting, Formation of Working Groups	January 8, 2002
Submission of Initial Strategy to Legislature	January 15, 2002
Begin Working Group Meetings, Continue TIA Meetings	January 2002
First Draft of TIA Complete Plans provided to TSB	September 15, 2002
First Draft of TSB Comprehensive Statewide Strategy reviewed.	November 15, 2002
TIA Complete Plans provided to TSB	November 15, 2002
Second Draft of TSB Comprehensive Statewide Strategy reviewed.	December 1, 2002
TSB Comprehensive Statewide Strategy to Legislature	December 15, 2002

Chapter 6 SECTION 16 PROJECTS

The TSB originally requested a total of $50 million to implement the projects included in Section 16 of the enabling Legislation, Public Act 01-5, and were successful in receiving an appropriation of $47 million. Due to changes in budget estimates, this amount was reduced to $32 million, with authorization to bond an additional $12 million during the November 2001 Special Session of the Legislature. Additionally, due to budget constraints, further reductions may be forthcoming.

Based on projected funding, Table 6-1 reports the current status of the projects included in the Public Act 01-5 (June Special Session). Several of the projects, shown in bold, were recommended by the DOT and approved by the TSB in November to be implemented based on an allocation of $15.64 million from OPM. These 12 specific projects were recommended because of the timeliness with which they could be implemented.

Table 6-1 also highlights the current status in the implementation of these projects. Additional information regarding the status of all Section 16 Projects may be obtained from Bob Hammersley, Manager of the Transportation Strategy Board.

Appendix A-2

Cover Letter

CONNECTICUT TRANSPORTATION STRATEGY BOARD

To: Governor John G. Rowland
Members of the General Assembly

Date: January 15, 2002

The Connecticut Transportation Strategy Board (the TSB) is pleased to submit this initial transportation strategy as required by Section 4(a) of Public Act No. 01-5 (June Special Session) which was passed by the General Assembly and signed into law by the Governor on June 30, 2001. This transmittal memo also serves as the executive summary of the initial strategy and highlights: our actions to date; the key aspects of our strategic focus; our preliminary financial forecasts and funding concepts; and our method of conducting business during 2002.

As you know, we are required by Section 4(k) to submit a "revised" strategy to you by December 15, 2002. That "revised" strategy and the accompanying financial projections will include more concrete recommendations and relevant supporting data. This initial submission is more general and directional in nature due to our limited time to date and the need to use the next 11 months to define issues, gather and evaluate data and trends, solicit ideas from Connecticut residents and businesses, and seek the advice and counsel from transportation and business leaders, as well as other experts from around the country and the world. We are confident that we will present in December a comprehensive and coherent strategy, a set of realistic financial projections, and politically acceptable funding sources to provide the State with a blueprint for a transportation system that will sustain our economic growth and enhance our quality of life during the first half of this century.

Actions to Date

The TSB's five private sector members and its five members appointed from the Transportation Investment Areas (the TIAs) were in place by mid-October, joining the five ex-officio members from their respective State agencies. Since October 1st, we have held five plenary sessions of the TSB, all open to the public, which have been complemented by numerous working sessions with executives of the Office of Policy and Management (OPM), the Connecticut Department of Transportation (DOT), the TIA leaders, and others. The TSB members have also reviewed the material summarized in Chapter 1 of this initial strategy so as to be well grounded in several facets of the effort including: the overall international and regional contexts in which the TSB must develop the strategy; the aspirations of the residents and businesses of the State; and the principles and concerns which the Act requires us to consider in developing the recommended definitive transportation strategy, to be submitted in December.

In accordance with the procedures of DOT, the TSB has engaged Parsons Transportation Group, Inc. (PTG), an international consulting firm based in Washington, D.C. with Connecticut offices located in Glastonbury. To date, PTG has provided the TSB with basic organizational support necessary to produce this initial strategy. PTG will now focus its efforts on providing the technical expertise needed by the TIAs, the working groups described below, and the TSB to develop the definitive transportation strategy.

We take this opportunity to recognize formally the efforts of the TIAs over the past six months. The leadership provided by the 15 Regional Planning Agencies, the business community, and the

numerous interested organizations which comprise the membership of the five TIAs has been exemplary. Indeed, the quality of this initial strategy directly reflects their efforts as well as those of Jim Boice, Bruce Garrett, Bob Hammersley, and Bill Messner of DOT and Dave Russell of OPM. These efforts of the TIAs, the DOT and OPM professionals, and the PTG team have produced a dynamic procedural framework for developing and implementing a coherent and reliable transportation strategy for the State for the next 10-20 years.

Five Areas of Strategic Focus

The most important section of this initial strategy, the five strategic goals, is found in Chapter 2. As we developed this initial strategy and identified its five principal goals, we took into account the concepts and concerns enumerated in Section 4(b) of the Act with a special focus on clause 4(b)(4) which urges the TSB to recognize "that transportation is a cornerstone of the state's economic vitality and overall quality of life and therefore inextricably linked to other key policies…" With that specific principle in mind, we established the following five strategic goals on which we will build the December submission:

- Improve Personal Mobility Within and Through Connecticut
- Improve the Movement of Goods and Freight Within and Through Connecticut
- Integrate Transportation With Economic, Land Use, Environmental and Quality of Life Issues
- Develop Policies and Procedures that will Integrate the State Economy with Regional, National and Global Economies
- Identify Policies and Sources that Provide an Adequate and Reliable Flow of Funding Necessary for a Quality Multi-Modal Transportation System

In addition to these five goals, we believe there are four underlying principles that are absolute to the development of this strategy. Those four principles are:

- *Connecticut's transportation system must have a **"customer"** orientation.*
- *Connecticut's transportation systems must always operate at its most **efficient** level.*
- *Connecticut's transportation system must be **multi-modal and inter-modal.***
- *Connecticut's transportation system must provide a **safe, secure, and well-maintained** means of moving people and goods within and through the State, including during times of threatened homeland security.*

Within each of the five goals, we identified the several objectives (which will undoubtedly be expanded during 2002) that illustrate the specifics of the goal and the challenges and issues that must be addressed to achieve each one. We have also identified recent or current initiatives designed to achieve the goal, including the applicable Section 16 projects. The December submission will provide greater specificity regarding: the leveraging of the accomplishments to date and those authorized projects in the queue; the issues or challenges that must be addressed to achieve the goals; and the other initiatives, projects, and tactics needed to achieve the goals during the remainder of this decade.

Preliminary Financial Projections

Since the TSB has yet to submit the definitive strategy and the specific tactics and projects needed to implement it, any projections of the capital and operating costs needed to implement such strategy would be premature. Accordingly, Chapter 3 summarizes the current sources and uses of transportation funds as well as the prior five years of revenue and expense history. We have also included the current capital estimates for transportation projects that are either in construction or design as well as the very rough estimates for the cost of the full implementation of the Section 16 projects.

We believe that the historical trends and the capital estimates are a reasonable directional indicator of the amount of increases in operating costs and capital investments that will be needed to maintain the State's transportation system. We do not believe, however, that merely replicating such trends will be sufficient to allow Connecticut to strengthen its transportation system so as to support the economic vitality and quality of life that we seek. Never the less, we emphasize that the recommendation and authorization by the Congress, the USDOT, DOT, the TSB, the Governor, and the General Assembly of any such additional spending and capital investment will require the type of rigorous cost-benefit analysis and justification of the five strategic goals which will be a critical component of the December submission. It is because of this needed analysis that we have not included specific recommendations in our Initial Strategy Report. It is our firm belief that our development of a recommended Strategy should drive the financial needs of the Strategy, not vice versa.

In submitting the 10-year financial projections in December, we will have spent more time in evaluating the likely economic and inflation trends for the future as well as the evolving technological and cultural changes of a dynamic society. We will also have had the time to explore any organizational and process alternatives.

Funding Sources

We have submitted a summary in Chapter 4 of the extensive funding options that we will analyze during 2002 and emphasize that the December recommendations on funding sources will flow from, and not lead, the strategy. Nonetheless, it is important to emphasize two points at this juncture. First and foremost, Connecticut must be fully engaged in the debate surrounding the reauthorization of federal funding currently set forth in the legislation known as TEA-21. Such an engagement will require the Governor, our State legislators, and our Congressional delegation to lead a vibrant, vocal, and effective coalition of leaders in the Northeast states to ensure that the region receives both its "fair share" of such federal transportation funds and the authorization and flexibility to use such funds in creative and constructive ways to address the transportation needs of one of the most densely populated regions – a region that has global importance from the perspectives of capital markets, communication, democratic principles, and international security.

Second, while federal funding is the most critical capital component of a State strategy, the TSB also recognizes that Connecticut will continue to bear the primary responsibility for DOT's annual operating costs at a time when the Special Transportation Fund (which is primarily supported by auto user fees) has recently been, and is predicted to remain, relatively flat. In addition, the current prognosis is that the bulk of our share of future federal funds will also remain flat and will be designated primarily for maintenance purposes. Accordingly, to the extent that we allocate state generated revenue to capital investments, we will increase the likelihood of implementing particular aspects of the strategy.

We emphasize that Chapter 4 does not contain any specific recommendations regarding such funding sources and that we will tie any such recommendations in December to specific goals desired by Connecticut citizens, businesses, visitors, and neighbors and thereby enhance the public's support of specific funding vehicles. Naturally, the decisions on these recommendations will be made by you and other public policy leaders.

Working Groups

We have established five working groups that will drive our process for the balance of the year. These are: Movement of People; Movement of Goods and Freight; Land Use and Economic Development; Evaluation; and Funding and Finance. Each group will be led by one or more members of the TSB and will include representatives from each of the TIAs. The working groups will also involve specific industry or other experts from within the State, as well as from other parts of the country and the world to ensure the broadest and most knowledgeable foundation for the ultimate TSB strategy.

Each working group will be responsible for gathering data, soliciting ideas, identifying best practices, proposing evaluation metrics, making specific infrastructure and other recommendations, as well as providing estimates for the costs to implement such recommendations. Each of the working groups will coordinate their activities with the TIAs so that each takes into account the work of the others. The goal is for the five TIAs and the five working groups to submit their respective plans and recommendations to the TSB between September 15th and October 1st so that we have time to review and synthesize the totality of these recommendations, to ask for any additional information, and to draft the recommended definitive transportation strategy and its financial projections and funding recommendations for submission to you by December 15th.

Public Involvement

Public involvement has been a vital component of the workings of the TSB and the TIAs all through 2001. That involvement will remain a major contributor as we develop the definitive strategy in 2002. We expect to consider a public involvement and education plan at our March meeting to strengthen that public engagement in order to increase the likelihood that we will have identified all ideas and issues as part of the December submission.

We have included a copy of the current 2002 meeting schedule of the TSB. Amendments to that schedule, as well as the respective agendas, will continue to be posted on the TSB website at www.tsb.state.ct.us. The Initial Transportation Strategy, accompanying this letter is also posted on the TSB website.

Legislative and Other Interested Parties

We would be pleased to appear before the Transportation Committee or other legislative committees during the upcoming session to discuss this submission. We ask that you direct any requests for such appearances, as well as any questions, to Oz Griebel, Chairman of the TSB, at 860/525-4451 (x212) or to Bob Hammersley, Manager of the TSB, at 860/594-2073. We look forward to delivering the definitive strategy on December 15, 2002 and to working with you and other State, Federal, and Regional leaders in implementing it so that Connecticut has a transportation system that will sustain both economic growth and a premier quality of life for the coming generations.

Respectfully submitted this 15th day of January, 2002 by the members of the Connecticut Transportation Strategy Board.

James Abromaitis
Stephen T. Cassano
Michael J. Critelli
George Giguere
R. Nelson Griebel
Joseph P. Maco
John Markowicz
Michael P. Meotti
Jeffrey J. O'Keefe
Arthur J. Rocque, Jr.
Marc S. Ryan
John Sarantopoulos
Arthur L. Spada
James F. Sullivan
Michael Sullivan

cc: Members of the Connecticut Congressional Delegations
Co-Chairs of the Transportation Investment Areas

Appendix A-3

Section 16 Table

Table 6-1
CURRENT STATUS OF SECTION 16 PROJECTS
(this data continues to be evaluated and updated)

DRAFT

PROJECT	ORIGINAL ESTIMATE	PROGRAMMED FROM INITIAL $15 MILLION	NEEDED TO CONTINUE SECOND YEAR	BOND CANDIDATE	COMPLETED ACTIONS	IMPLEMENTATION ACTION – SCHEDULE
Jobs Access Program – Bus Service Experiment	**$4,700,000**	**$1,200,000**	**$3,500,000**		**Project listing developed work orders for $1.14 M**	**$850,000 to be spent by 6/30/02**
Market "Deduct-A-Ride" Commuter Benefit Program	**$500,000**	**$250,000**	**$250,000**		**Prepare letter to Comptroller Met with Comptroller**	**Seek Legislation Implement program**
Orange / West Haven Station Design Study	**$2,000,000**	**$2,000,000**			**Regional decision supporting West Haven site**	**Evaluate Design-Build-Lease Back vs. ConnDOT Design-Build**
New Haven Line Rail Maintenance Facility Feasibility	**$1,200,000**	**$1,200,000**			**Completed surveys, maps & environmental studies**	**Additional environmental studies**
Experimental Expansion – New Haven Line Commuter Connections	**$640,000**	**$320,000**	**$320,000**		**Developed service prioritized list**	**Initiate service beginning 1/20/02**
Extend Shore Line East To Run Through New Haven to Bridgeport, Stamford, and Greenwich	**$2,800,000**	**$1,500,000**	**$1,300,000**		**Complete negotiations w/ Metro North & Amtrak for one train**	**Initiate first service 12/17/01 Second train April, 2002**
Fairfield County Interregional Bus Service Expansion Trial	**$5,900,000**	**$1,200,000**	**$1,200,000**	**$3,500,000 Bus Purchase**	**Develop prioritized service list**	**Initiate service beginning 2/4/02**
Danbury Area Feeder Bus to Rail Service	**$500,000**	**$250,000**	**$250,000**		**Service design completed**	**Start date on March 2002**
I-95 Corridor Plan – Branford to Rhode Island	**$1,500,000**	**$1,500,000**			**Request to retain Consultant**	**Complete need and feasibility 9/13/03**
Expansion of Express Bus Service in the Hartford Area	**$6,000,000**	**$1,200,000**	**$1,200,000**	**$3,600,000 Bus Purchase**	**Developed prioritized list**	**Initiate service beginning 2/4/02**
Commuter Rail Study – New Haven to Springfield	**$1,000,000**	**$1,000,000**			**Request to retain Consultant**	**Complete feasibility study 3/31/03**
Feeder Barge Service (Bridgeport / New Haven)	**$7,000,000**	**$906,000**		**$1,500,000 Port Construction**	**Draft letter to two regions – offer funding to complete operations plan**	**Receive operations plans 1/31/02; Select port 3/1/02; Initiate service 9/1/02**
Expand Key Commuter Parking Lots	$2,200,000					
Incident Management Clearance Pilot	$500,000					
Study of I-95 Peak-Period Ramp Closures	$2,000,000					
Provide Peak-Period Amtrak Train to Penn Station	$1,200,000					
Intermodal Tourism Service – Southeastern CT	$500,000					
Study Development Opportunities Along Hartford – New Britain Busway	$800,000					
I-84 Improvements – Danbury to Newtown	$3,400,000			$3,400,000 Construction		
Route 8 Safety and Capacity Study	$1,000,000					
Bridgeport to Stamford to NYC High Speed Passenger Ferry Facility Service	$4,650,000					
Totals	$49,990,000	$12,526,000	$8,020,000	$12,000,000		
Programmed for Administration, RPOs, etc.		3,114,000				
		$15,640,000				

Appendix A-4

TIA Maps

Figure A-1
Coastal Corridor
Transportation Investment Area

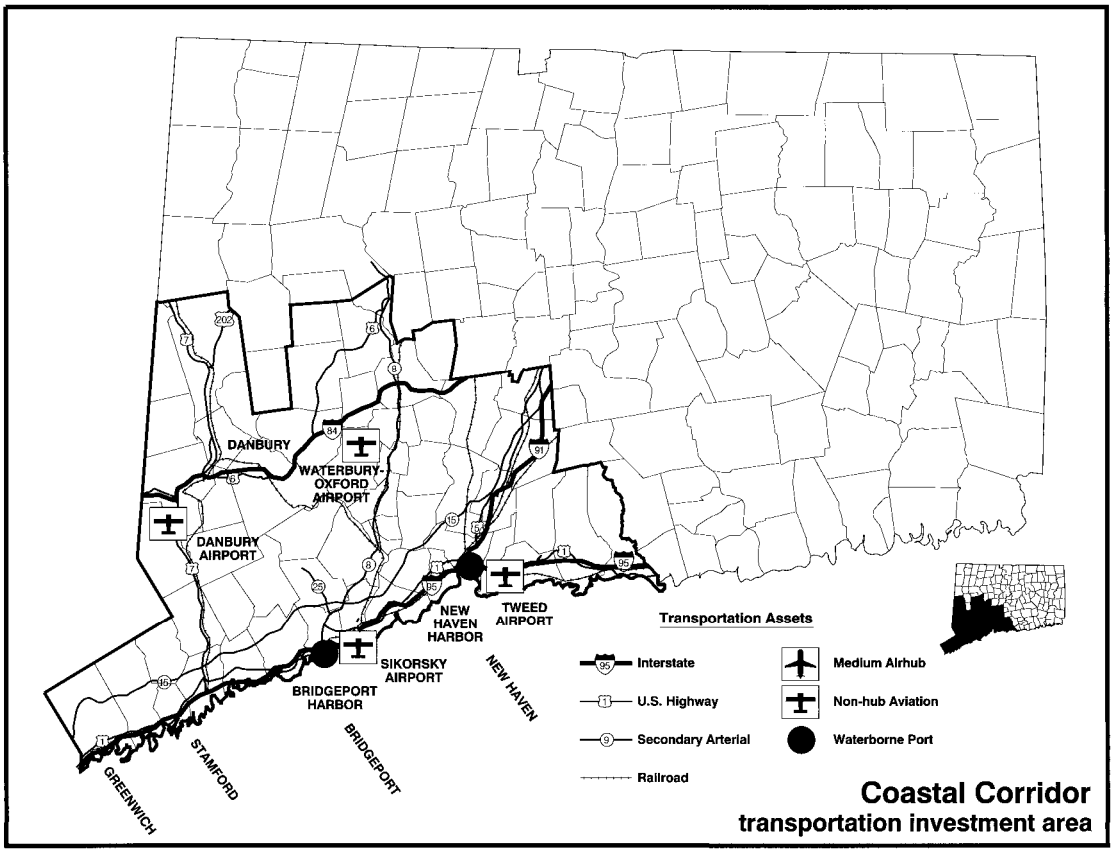


Figure A-2
Southeast Corridor
Transportation Investment Area

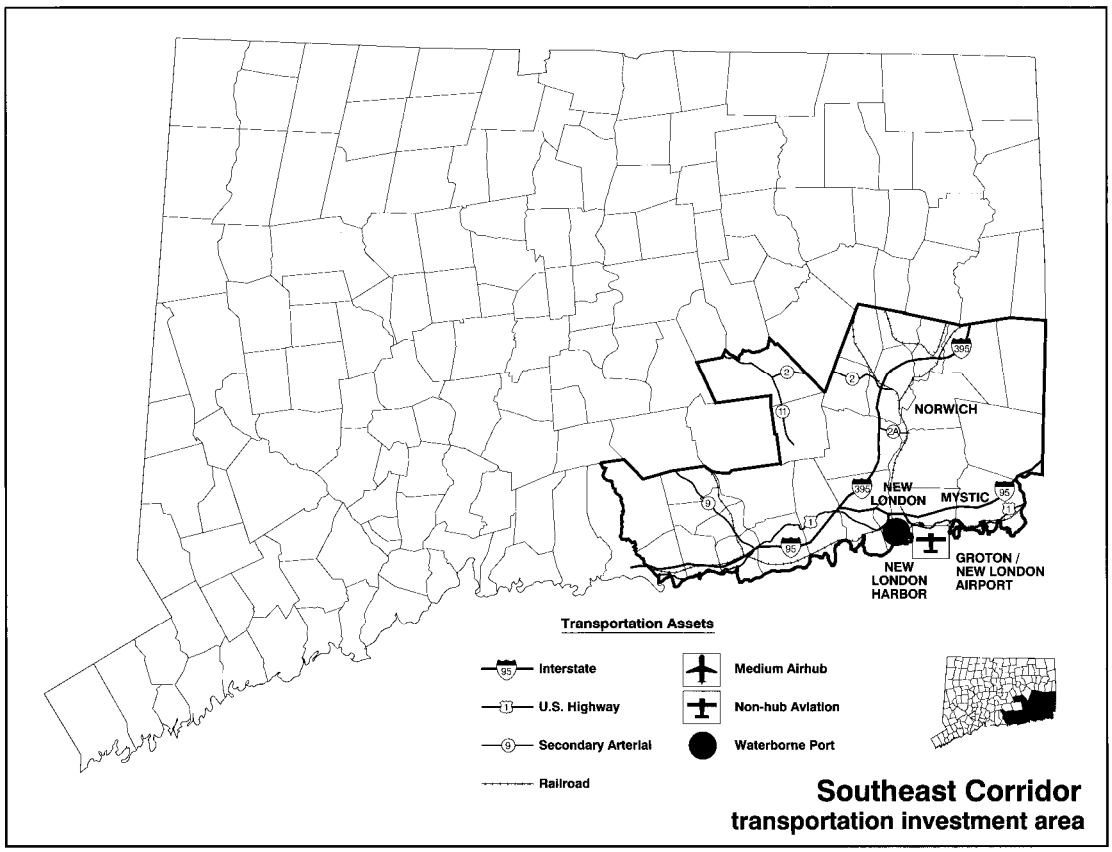


Figure A-3
I-395 Corridor
Transportation Investment Area

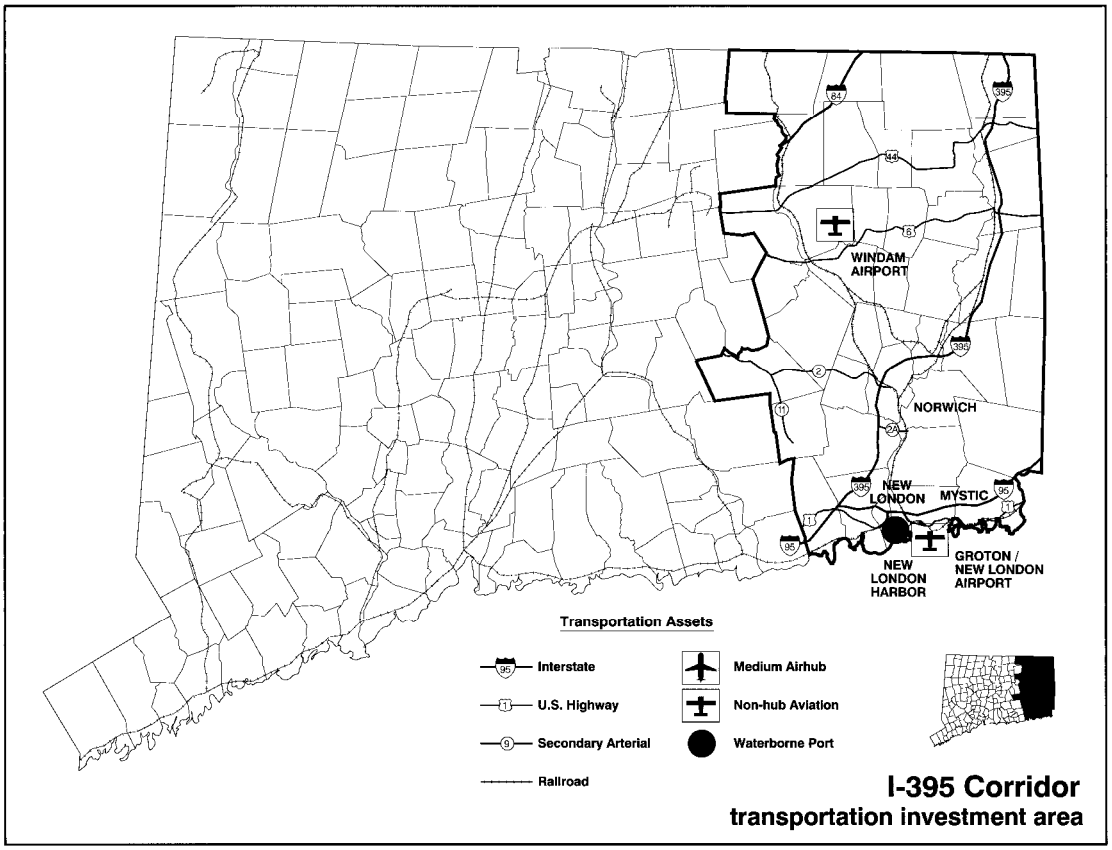


Figure A-4
I-84 Corridor
Transportation Investment Area

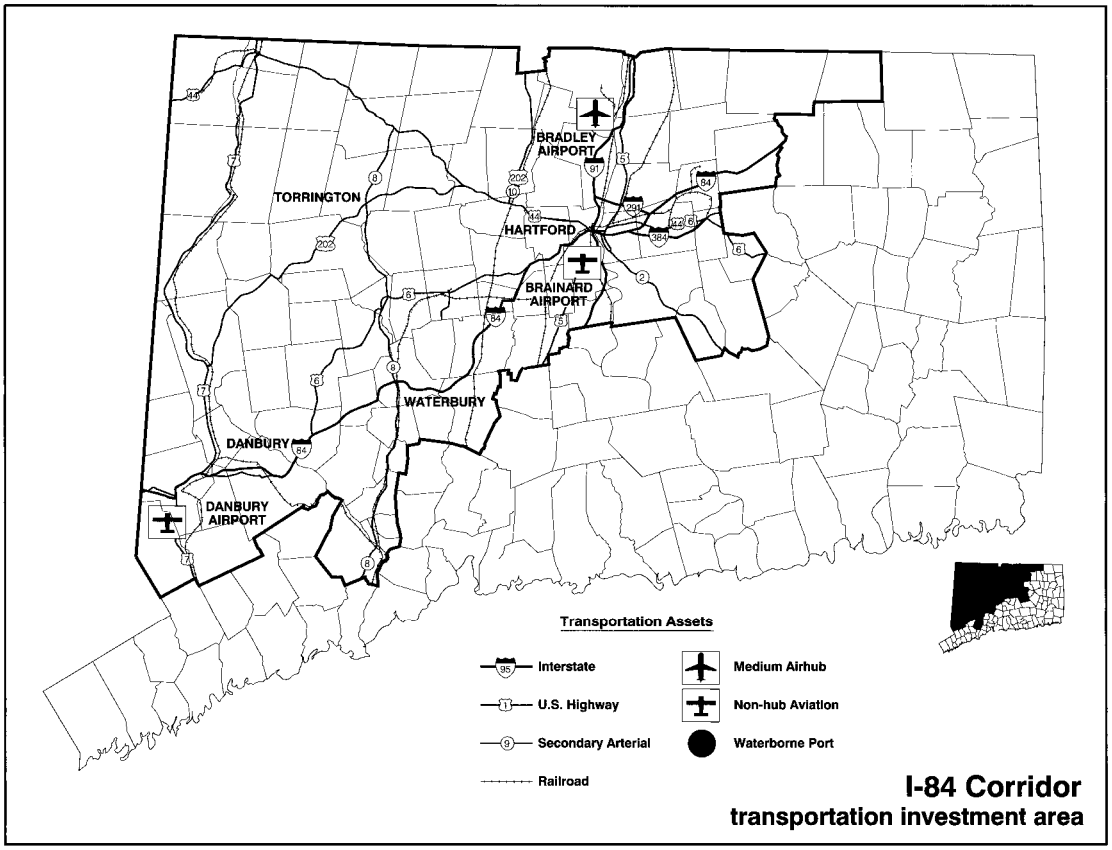
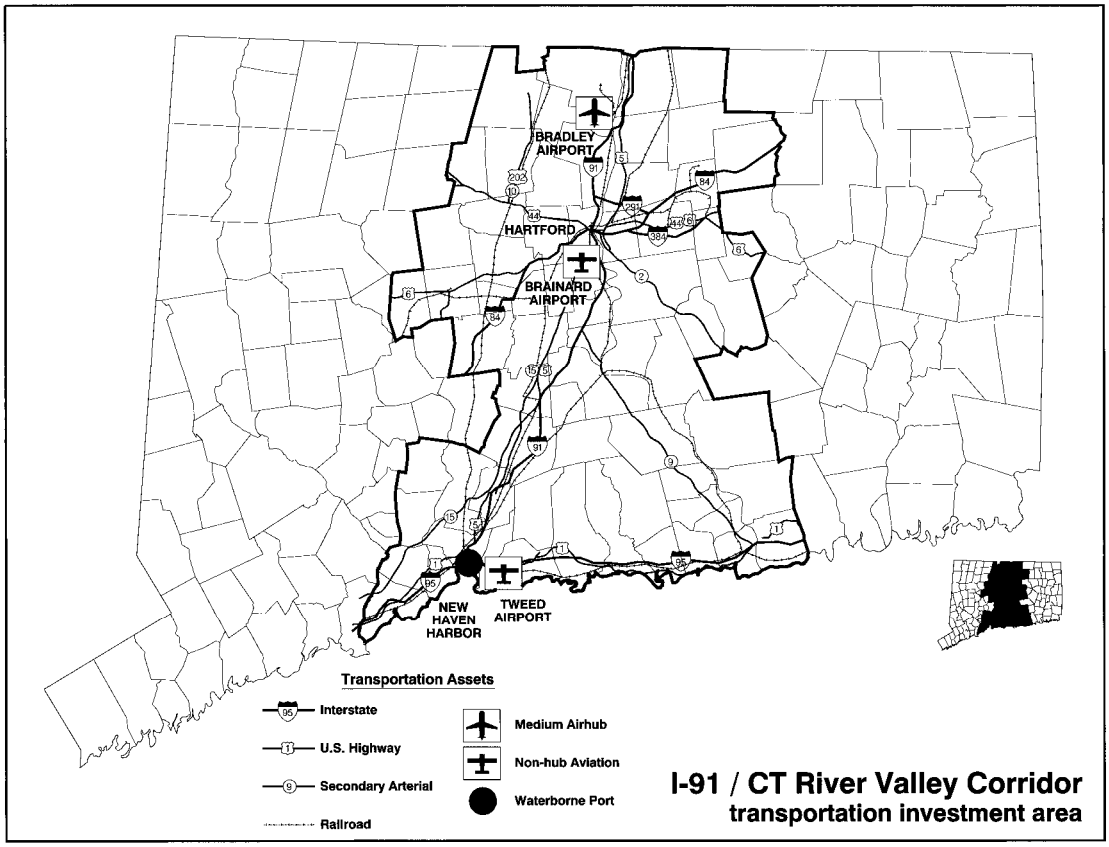


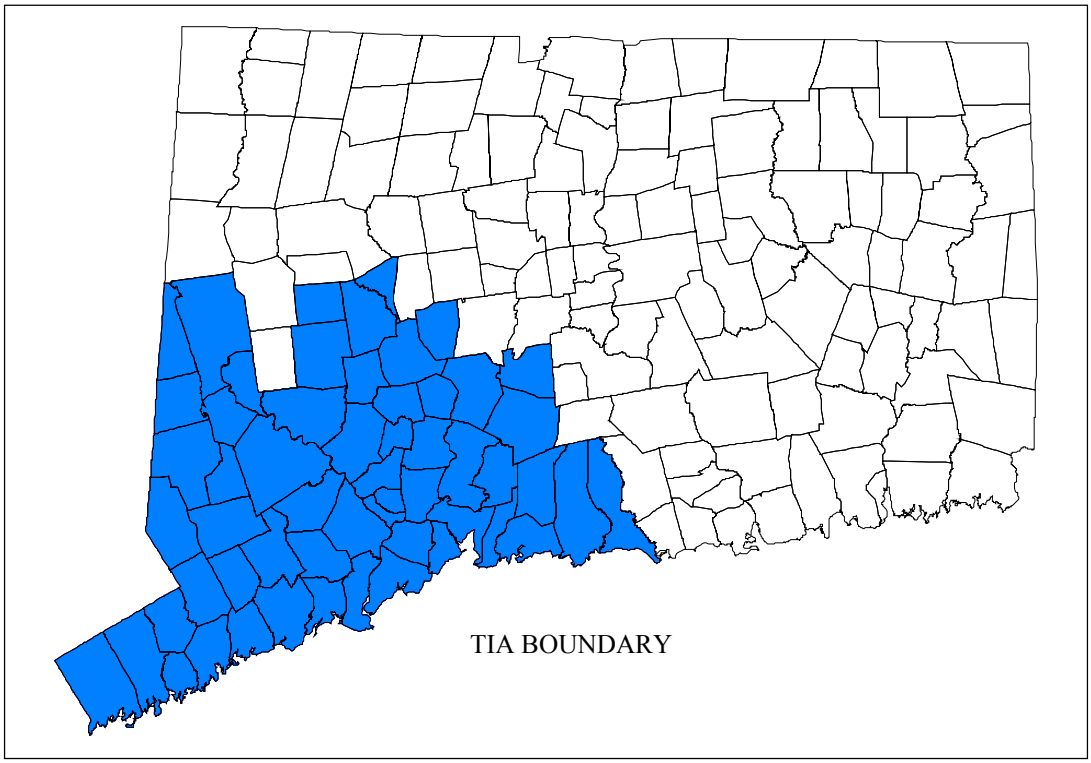
Figure A-5
I-91 Corridor
Transportation Investment Area



Appendix B

CCTIA Full Plan 2002

Twenty-Year Strategic Plan for Transportation in the Coastal Corridor Transportation Investment Area



November 6, 2002

Submitted to the Connecticut Transportation Strategy Board

Coastal Corridor TIA Board Members

Council of Governments of the Central Naugatuck Valley (COGCNV)

RPO Representative:	Peter Dorpalen, Executive Director, COGCNV
Alternate:	Laurel Stegina, Senior Planner, COGCNV
Public Representative:	Carolann Belforti, Joblinks, Rideworks

Greater Bridgeport Regional Planning Agency (GBRPA)

RPO Representative:	Honorable Karen Burnaska (co-chair), Former Selectman, Town of Monroe
Alternate:	James Wang, Executive Director, GBRPA
Public Representative:	Jeffrey J. O'Keefe, General Manager, Greater Bridgeport Transit Authority
Alternate:	John Neary, Board Member, GBRPA

Housatonic Valley Council of Elected Officials (HVCEO)

RPO Representative:	Jonathan Chew, Executive Director, HVCEO
Alternate:	George Walker, Manager, Office Park
Public Representative:	Vacant
Alternate:	George Walker, Manager, Office Park

South Central Regional Council of Governments (SCRCOG)

RPO Representative:	Judy Gott, Executive Director, SCRCOG
Alternate:	Honorable William Dickinson, Mayor, Town of Wallingford
Public Representative:	Dan Lorimier, Connecticut Fund for the Environment
Alternate:	Vacant

South Western Regional Planning Agency (SWRPA)

RPO Representative:	Honorable Robert F. Harrel, First Selectman, Town of Darien
Alternate:	Honorable Diane Farrell, First Selectwoman, Town of Westport
Public Representative:	Franklin Bloomer (co-chair), Greenwich Safe Cycling
Alternate:	Vincent DeMarco, Automotive Business

Valley Regional Planning Agency (VRPA)

RPO Representative:	Honorable Mark A. Lauretti, Mayor, City of Shelton
Alternate:	Honorable Marc J. Garofalo, Mayor, City of Derby
Second Alternate	Richard Eigen, Executive Director, VRPA
Public Representative:	Edward Houghton, Executive, Pitney Bowes
Alternate:	William Purcell, President, Greater Valley Chamber of Commerce

At-Large Members

Jim Cameron, Vice Chairman, Metro-North Commuter Council
Bruce Heyl, Principal, Heyl Associates
Denis K. Pope, Association of Commuter Rail Employees
Martin Tristine, President, Logistec Conn. Inc.

At-Large Alternates

Richard Carpenter, Retired Executive Director, SWRPA
Joe McGee, Vice President, SACIA

Ex-Officio Members

Congressman James Maloney, represented by State Rep. Lew Wallace
Congressman Christopher Shays, represented by Peter Barhydt

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TWENTY-YEAR STRATEGIC PLAN FOR TRANSPORTATION
in the
COASTAL CORRIDOR TRANSPORTATION INVESTMENT AREA

Executive Summary

The Board of the Coastal Corridor TIA (CCTIA) has prepared a twenty-year strategic plan for transportation in the CCTIA (the Plan) pursuant to House Bill No. 7506/Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board* (the Act).

Background

Congestion is endemic throughout the CCTIA. It is acute on the primary highways, Interstate Routes 95 and 84, and U.S. Route 1 and CT Route 15, and particularly acute on the westerly portion of Interstate Route 95.

This congestion, together with the movement west of the Hudson River of major global connections, limits access to economic activities and hubs necessary to support Connecticut's institutions, businesses and people and effectively blocks economic activity from extending farther east than Stamford. Employers increasingly see long commutes on congested roads as threats to productivity. Congestion also contributes to the status of much of the CCTIA as a "severe non-attainment area" in terms of air quality. Other consequences are less certain but longer travel times, increased transportation costs, wasted fuel, higher risk of crashes, road rage and a reduced quality of life.

The Plan sets as its goal the development, within twenty years, of a multimodal transportation system that offers persons and goods a choice of safe, convenient and integrated modes of transportation that both stimulate sustainable economic growth and enhance quality of life.

Recommended Strategies

The following are the major recommended strategies of the Plan. Specific actions to implement these recommendations are described in the main body of the Plan.

1. **Increase number of trips using alternative modes of transportation.**

Significant increase in road capacity in the CCTIA would be very expensive and would have negative environmental impacts. Moreover, adding capacity to highways induces additional traffic, as people take additional automobile trips and new development creates even more demand. It is now generally accepted that states cannot build their way out of congestion. However, the CCTIA's existing roadway system must be maintained in good working order, because it will continue to accommodate the majority of trips by persons and goods.

By contrast, public transportation (rail, bus and waterborne) and non-motorized transportation (bicycling and walking) not only provide relief from congested roads, they make a lesser or no negative contribution to the CCTIA's air quality or to the safety hazards of traffic (especially congested traffic). Where people can reach their destinations only by

road, they are trapped in the congested conditions found there and can only contribute to that congestion when traveling. But where choices exist, some will choose another mode of travel and in so doing will make no contribution to road congestion.

Better than other areas of the state, the situation in the CCTIA offers considerable scope for the development of alternative modes of transportation.

Railroad: Commuter rail holds out the greatest possibility of a significant shift from the roads. Rail lines extend throughout the CCTIA. Indeed, the region developed around the railroad, which served commercial and industrial uses as well as passengers. To replace the existing rail network today would cost billions of dollars. It has the capacity to move many more passengers, although it is in urgent need of significant capital investment.

More frequent service would make commuter rail a more attractive alternative to the automobile. Offering trains, say, every 15 or 20 minutes would be more convenient, less like traveling on "someone else's schedule".

Service to additional destinations would also make commuter rail more attractive. Service on the line over the Hell Gate Bridge could provide access to LaGuardia Airport and Penn Station and enable residents of the Bronx and Queens to reach jobs in the CCTIA. Other destinations to which service should be extended are Hartford, Bradley Airport, Springfield, MA, Providence, RI and intermediate destinations. Service to these destinations would permit travelers to choose between commuter rail and the more expensive Amtrak.

The demand appears to be there. Even with insufficient rolling stock and station parking, use of Metro North has increased. Overall, ridership is up by 41% since 1984 and by nearly 100% since 1970, and reverse and intra-state commutes were up 47% between 1995 and 2000. Nonetheless, until quite recently no new rail cars had been added to the New Haven fleet in almost a decade. The bulk of the passenger cars used on the New Haven line are nearly 30 years old, well past their anticipated useful life.

Sufficient new equipment both to maintain the existing level and reliability of service and to increase service should be ordered immediately. To accommodate increased service, communities along the railroad must develop additional station parking and other station access facilities (shuttle bus service and improved bicycle and pedestrian facilities).

Bus: Many residential areas in the CCTIA are not dense enough to support bus service. For example, only downtown New Haven and Bridgeport are sufficiently dense to support 10-minute bus service. Nonetheless, statewide almost twice as many trips are made by local bus transit as by rail. Based on return from the farebox, Connecticut's public bus system is one of the most productive in the country, suggesting that there is potential for increased ridership. However, a funding "containment" philosophy has limited development of the state's bus system.

Waterborne: Long Island Sound should be viewed as a huge sheet of underutilized transportation infrastructure. It could be used, as it once was, for the movement of both

persons and goods. Ferries and cargo vessels operate without subsidy, and hence the state's investment, if any, would be in the interface between the land-based and waterborne modes. Persons and goods traveling along the Sound would, of course, bypass I-95. Several operators have indicated an intention to commence service by high speed ferry from Bridgeport and Stamford to LaGuardia Airport, 34th Street, Wall Street and the World Financial Center.

Non-Motorized Modes: Particularly along the coast, the closeness of the origins and destinations of many trips suggests that there is considerable potential for travel by bicycle and on foot. Based on data from the 2000 Census, travel on foot is down across the country, as sprawl development disperses the population and road design focuses in movement of motor vehicles, but travel by bike is up nationally and in all neighboring states while remaining flat in Connecticut.

Roads: In addition to preserving the existing roadway system, the state should make increasing use of Transportation Systems Management strategies and Transportation Demand Management strategies, including consideration of the institution of congestion or value pricing on one or more limited access highways in the CCTIA. However, the CCTIA opposes expanding vehicular capacity on I-95 west of New Haven and on Route 15, and the construction of an expressway along Route 7 between I-95 and I-84, unless and until all reasonable alternative modes of transportation and strategies have been explored and put in place.

Airborne: A study of statewide airport resources and needs should be performed.

2. Study the best practices in managing public transportation to determine how best to enhance focus on, accountability for, marketing of, and commitment to, public transportation in Connecticut.

At present, Connecticut is one of a distinct minority of states that has its public transportation system operated by the same agency that maintains its highways. A separate authority responsible for commuter rail, buses and ferries with its own dedicated funding source may be preferable.

3. Develop cost-effective, efficient alternatives to trucks for the movement of goods.

The CCTIA is heavily dependent on trucks for the movement of goods into, out of and through the region. While truck transport is efficient, it makes a disproportionate contribution to safety and environmental concerns as compared to rail and waterborne alternatives.

Rail: At present there is no rail crossing of the Hudson River usable by freight trains south of Albany. What is needed is one or more crossings of the Hudson River in the vicinity of New York City. The state should support the proposed tunnel across New York Harbor. Improvement in overhead and side clearances would be necessary to allow certain types of modern rail freight equipment to operate on the New Haven line, but other types can operate with the existing clearances.

Waterborne: Connecticut's ports are "niche" ports, handling a limited range of commodities, but they have opportunities for growth. Port Elizabeth, the main container port for the Port of New York, expects a huge increase in imports of containers. At present those destined for Connecticut must be trucked across the George Washington Bridge and up I-95. The state should support the proposed "feeder barge" service, by which containers would be discharged onto barges and transshipped to Bridgeport and New Haven before being transferred onto trucks.

4. Integrate land use and transportation planning.

Transportation and land use decisions often are made separately, even though each profoundly affects the other, and both have strong impacts on the local and regional quality of life. This disjoined decision-making is contributing to the consumption of much of the CCTIA's land while its mobility deteriorates. Moreover, affordable housing for the work force of many employers is not available in proximity to places of employment. Connecticut must think beyond specific disciplines to create a "multi-modal" approach and managed land use planning for municipal and regional development.

5. Identify new, stable sources of funding to support a multi-modal transportation system.

Connecticut can no longer rely largely on federal funding for the vast majority of its transportation capital and operating needs. Implementation of a multi-modal transportation strategy will require substantial financial investment in addition to current sources of support and greater flexibility in the use of current funding sources. New state and local revenue sources including user fees, fuel taxes and sources that charge beneficiaries of good transportation access, such as drivers, developers and retailers should be developed. Local, state, regional and federal officials should coordinate efforts in connection with reauthorization of TEA-21 to seek additional funding, greater flexibility and funding of special regional projects.

Top Five Initiatives/Recommendations

The following are five initiatives that the CCTIA recommends be undertaken and funded promptly to implement the strategies of the Plan. These initiatives are part of the broad, overall strategy recommended by the CCTIA and should not be viewed as a complete strategic plan intended to meet the objectives of the Act.

1. Mitigate congestion on I-95 by increasing the number of trips by rail by ordering new rail cars immediately, developing additional storage and maintenance facilities as needed for a larger commuter rail fleet and improving rail station access.

Increasing the number of trips by commuter rail will require not only enlarging and modernizing the fleet of rail cars used in Connecticut, it will also require additional storage and maintenance facilities and improved station access. Each of these elements requires specification, design, manufacture or construction and delivery, all of which take time. For commuter rail to assume the role contemplated by this Plan within its 20-year time frame, action to implement these recommendations must begin immediately.

- The configuration of the fleet to be used on Connecticut's commuter rail lines must first be determined. The fleet must both (i) maintain the existing level and reliability of service and (ii) increase service (as recommended in this Plan). The fleet configuration and size needed should be based on projections of growth in ridership in existing service that take account of the rate at which ridership has increased in recent years despite overcrowding and poor station access, as well as the needs of increased service. The Connecticut Department of Transportation (ConnDOT) has based its projections of growth in ridership on an assumed 1.5% annual growth[1], but ridership has grown at twice this rate over the last four years[2]. Increased service will result in increased growth in ridership.

- To properly maintain and store the new equipment and overhaul the existing fleet, new storage and maintenance facilities will be required and must be operational before delivery of new equipment.[3]

- The lack of sufficient parking and other station access facilities has inhibited greater use of commuter rail, particularly along the New Haven main line. To make travel by rail more attractive and to minimize travel by road, parking should be provided at stations convenient to the place of origin of trips by rail commuters. Proposed new stations at Orange or West Haven and at Fairfield are recommended. Following a review of commutation and residency patterns, a fair distribution of additional parking and other access facilities at rail stations needed to meet demand, both existing and anticipated, should be determined. On the basis of this review, a strategy should be devised to construct the additional facilities needed, and to offer consistent access and pricing to all motorists using parking facilities. Station access facilities should include strategies other than the automobile, including bus, jitney, walking and bicycling.

The South Western Regional Planning Agency (SWRPA) has estimated the unfunded *capital* funding needed to meet ConnDOT's projected 1.5% growth in ridership on the New Haven main line, rehabilitation, replacement and expansion of the fleet used on the Danbury and Waterbury branch lines and Shore Line East and new maintenance facilities. The estimate assumes that self-propelled electrical multiple unit cars will purchased to meet future fleet needs on the New Haven main line[4] and that diesel locomotives and push-pull coaches will continue to be used on the Danbury and Waterbury branch lines and Shore Line East. The estimate does not include *operating* funding that will be required, the more rapid growth in ridership being experienced, expanded service, the cost of additional station parking and other station access strategies and new stations at Orange/West Haven and Fairfield. The SWRPA estimate is as follows: [5]

Total Estimated Un-funded Rail Capital Funding Needed: <u>$2.9 billion</u>
$1.8 billion 2003-2015
$1.1 billion 2016-2023

The major rail capital elements and funding needed are:

Rehabilitation of self-propelled rail fleet:

- <u>Additional $72 million is needed (2002-2009)</u> to complete rehabilitation.
- $70 million is already funded.
- $27 million state funding needed to complete M2 fleet rehabilitation (2002-2007)
- $45 million state funding needed to initiate and fund M4 and M6 fleet rehabilitation (2008 - 2009)

Fleet replacement and expansion: $431 million is needed

- New Haven and New Canaan Lines - $171 million is needed, $96 million to purchase coaches and $75 million to purchase locomotives *(The total CT share will depend on the allocation between the New Haven Line which requires 65% state share, and the New Canaan Line which is 100% state share.)*

- Danbury and Waterbury Lines - $141 million is needed to overhaul coaches and locomotives, and purchase new equipment. *(100% state funding)*

- Shoreline East - $119 million is needed to overhaul existing fleet and purchase new coaches and locomotives. *(100% state funding)*

Future Rail Fleet Needs 2008 – 2023: <u>$1185 million</u>

- $275 million (65% state share of $350 million) for 100 self-propelled units in 2008 to meet demand through 2016
- $910 million (65% state share of $1.4 billion) to replace existing fleet in the 2016 – 2023 time period

Maintenance Facilities Design & Construction 2003 – 2011: $354 million

As noted above, the SWRPA estimate addresses only a part of the recommended strategy to increase commuter rail trips. Thus the estimate of $2.9 billion should be increased to take into account more rapid growth in ridership, increased service, additional rail cars to provide expanded service, two new stations, additional parking and other station access strategies and operating costs. The CCTIA does not have the resources to estimate the additional funding that would be required.

2. Mitigate congestion on I-95 by providing alternatives to trucks for the movement of goods by creating a container barge feeder port(s) and service.

As the global shipping industry changes, more Asian cargo is coming to the east coast of North America to a few central ports (including New York/New Jersey port). Without an economical alternative, containers destined to (and from) Connecticut and other New England ports will travel by truck along the I-95 corridor.

A cost-effective, reliable container barge service between New York/New Jersey port and a Connecticut port or ports could remove over 300 trucks a day. In addition to providing a viable transportation alternative, a successful container barge service would create jobs and be a catalyst for the development of container-related businesses that provide value-added services to both import and export supply-chain processes.

Benefits

1. Provide Connecticut businesses with a reliable, long-term, cost competitive shipping option as import demand continues to grow — while the highways leading to and from New York become increasingly more congested, making container movement via the highway progressively more difficult and expensive — thereby promoting a more competitive Connecticut business environment.
2. Help reduce growth in large vehicle movement on I-95 between the Connecticut feeder barge port(s) and northern New Jersey by capturing a major share of Connecticut's moderately sized container market and enabling a significant penetration into the vastly larger Worcester-Framingham, MA market
3. Entice follow-on business opportunities such as container yard / depot operations [*e.g.,* container and chassis maintenance], container route optimization, overweight container handling [e.g. stripping (imports) and stuffing (exports)] and value-added warehousing.
4. Based on a conservative business plan, the barge service would initially carry 60-80 containers per day from New York/New Jersey Port, or 15,600/20,800 containers a year. After the startup period, 41,600 containers would be carried annually, growing to 83,200 by 2020. Each container carried by the feeder barge service would be one less truck on I-95.
5. Fewer trucks on I-95 would decrease pollution from truck emissions, which is particularly significant for the CCTIA, all of which is currently in "non-attainment" with federal air pollution standards.

Bridgeport

The port of Bridgeport is one of eight feeder ports that were designated by the Port Authority of New York and New Jersey (PANY-NJ) as the Containerized Trade Market Area. The Greater Bridgeport Regional Planning Agency (GBRPA) and the Bridgeport Port Authority (BPA) have been finalizing plans for a container shipping service and operation to link Bridgeport with the New York/New Jersey Port.

The location of the Bridgeport feeder barge terminal would be the Carpenter Technology Site which is connected to Seaview Avenue, 2/10 of a mile from the I-95 interchange. The site consists of approximately 25 acres of land with an additional 50 acres available. In addition, there is a 60,000 square foot warehouse and a six-acre paved and fenced parking lot.

The proposed Bridgeport operating service includes barge service five days per week. The daily operating schedule is as follows: barge will arrive at NY/NJ Terminal at 6:00 p.m., and will allow five hours to load and discharge at two terminals and deport NY/NJ by 11:00 p.m. Containers will have 8 hours to transit to Bridgeport by 7:00 a.m. Cargo will be discharged and loaded for 3 hours and deport Bridgeport at 10:00 a.m. Barges will return to NY/NJ by 6:00 p.m. as scheduled. Bridgeport's Roll On/Roll Off operation is expected to be less expensive than current cost of trucking.

GBRPA proposes public sector participation and capital finance. Public assistance would be only limited to one-time capital assistance, for example, infrastructure improvements, barge ramps, leased barge, and necessary equipment for startup period.

Bridgeport service would be managed and administered by BPA. Based on the proposed plan, BPA would require $906,000 for the first year and $500,000 for the second year for installation of ramps, leasing a barge, and obtaining necessary equipment. If the first two years of the service meet TSB/ConnDOT projections, it would receive $5.6 million for full capital equipment and improvements during the third year. Four months after receiving approval from funding agency, it would provide BPA with a letter to proceed with the proposed services. No special permits or zoning approvals are needed.

New Haven

New Haven is situated at the crossroads of I-95 and I-91. This geographical location maximizes the landside congestion and air quality benefits. The nautical distance from Port Elizabeth (the container terminal for New York/New Jersey port) enables a 24-hour round trip operation, thereby maximizing cost efficiencies for a chartered tug operation. Existing New Haven based marine terminal operator and trucking company can launch service quickly, with no time-consuming permit or construction issues.

New Haven's proposed Lift On /Lift Off (LOLO) container operation is the same system as utilized in the PANY-NJ, and therefore no additional equipment (*e.g.,* such as container chassis' for a Roll On/Roll Off [RO/RO] operation) or labor agreements, are necessary. In addition, a LO/LO operation facilitates nearly three times the volume of containers per one-

way movement (*i.e.,* the movement of at least 200 containers per one-way voyage, as compared to approximately 65 via a RO/RO operation).

New Haven proposes establishing a public/private partnership between the State of Connecticut (administered by the South Central Regional Council of Governments) and existing New Haven-based private businesses (Westchester Motor Lines and Logistec). To attract shipping customers away from the existing all-truck service, the barge connection has to not only match the all-truck price, but beat it by a minimum of 5%. Success will require a shared public-private investment in start-up capital costs, but less than half of this amount would come from the State of Connecticut. The public investment would be structured in a manner which fully recognizes the public nature of the dollars and the need for parallel investment and risk:

Period	Proposed Public Investment
Pre-Operations	$1.0 million (equipment)
Pre-Operations	$5.0 million (working capital loan)
Year 1	$2.4 million (equipment)
Year 5	$0.7 million (equipment)
Total	$9.1 million

The equipment purchased with public funds would be owned by the South Central Regional Council of Governments, or other appropriate government agency, and leased to the private company for $1 per year. The working capital loans would be repaid with interest commencing in year 10.

3. Mitigate congestion on I-95 by providing alternatives to trucks for the movement of goods by supporting and participating in activities advocating a new rail freight connection across the Hudson River at New York City.

The greater New York area (including the CCTIA) is the nation's largest consuming region, and New York/northern New Jersey metropolitan area is host to the largest port and rail infrastructure on the East Coast. Despite the presence of these facilities, less than 1.7% of goods shipped across the Hudson River move by rail (as compared with 8.7% west of the Hudson). There is no active rail freight crossing of the Hudson River south of Albany, NY. Rail freight must travel by limited car float service across New York Harbor, or travel a circuitous route using the crossing at Selkirk (approximately 140 miles north of New York City), requiring three times as much time as the Northeast Corridor rail line.

Even after crossing the Hudson River barrier, freight trains bound for Connecticut must compete with passenger rail service for limited operating windows, and travel on rights of way that cannot accommodate all types of modern rail freight equipment. As a result, trucks carry the majority of the freight moving into and out of the CCTIA. This reliance on trucks contributes to the traffic congestion in the CCTIA, particularly on Interstate Route I-95 and to its poor air quality, results in excessive wear on major transportation infrastructure and

imposes time and cost penalties on the delivery of goods to regional businesses and consumers.

The lack of a viable long-haul alternative to the trucking of goods hampers the CCTIA's economic strength — both directly through chronic congestion and higher consumer prices, and indirectly through reduced attractiveness to new businesses. Trucking companies currently charge a premium for bringing goods into the CCTIA due to the heavy congestion they encounter. This added cost is passed on to consumers in the form of higher prices for the goods they buy. High freight costs and degraded levels of service also cause freight-dependent businesses (and the jobs they create) to forego the CCTIA region in favor of regions with lower cost and more reliable service.

A competitive alternative to trucking would not only translate into savings for consumers, it would decrease pollution from truck emissions, which is particularly significant for the CCTIA, all of which is currently in "non-attainment" with federal air pollution standards. Reduced roadway deterioration and decreased highway maintenance costs are additional benefits from greater investment in rail infrastructure.

The New York City Economic Development Corporation, together with the Federal Highway Administration and the Federal Railroad Administration, are preparing an Environmental Impact Statement (EIS) for selected alternatives for the movement of rail freight across New York Harbor, including a rail freight tunnel and associated rail improvements. The goals of the EIS are to:

(1) examine the ability of these alternatives to improve mobility of goods,
(2) create a more modally balanced goods movement system in the region,
(3) improve environmental quality by diverting freight movements to less polluting modes of transport,
(4) enhance the region's competitive position through a more efficient goods movement system and
(5) provide the flexibility to respond to possible service disruptions (strategic system redundancy).

Public hearings on the draft EIS will be conducted in Fall, 2002, and the final EIS is expected in May 2003.

The proposed rail freight tunnel would connect, via the Bay Ridge and Fremont Secondary lines in Brooklyn and Queens, with the Hell Gate line which, in turn, connects with the New Haven line in New Rochelle, NY. This would permit restoration of fast, truck-competitive rail freight by using the most direct rail line along the I-95 corridor. Improvement in overhead and side clearances would also be necessary to allow certain types of modern rail freight equipment, such as double stacked containers on flatcars. However, single containers on flatcars, 13'6" highway trailers in "well" cars, Road Railers, modern boxcars and mechanical refrigerator cars all can operate on the New Haven line without these improvements.

Freight traffic across New York Harbor is expected to increase more than 30% by 2020.[6] Reduction in highway freight congestion along the I-95 between New York and New Haven

will require shifting truck freight to surface alternatives (waterborne and rail freight). Shifts are unlikely to occur if they require additional transhipment (or transloading) of goods, *i.e.,* from one mode to another. The greatest potential is for extending the non-highway portion of shipments arriving or leaving New York via water or rail, *e.g.,* by feeder barge services between the New York area deepwater ports and Connecticut ports (discussed above) or by rail shipments continuing through New York.

The cross harbor rail tunnel would be a foundation project — by removing the Hudson River barrier, it would permit development of transportation options not otherwise possible. Without it, rail freight is unlikely to become a viable, truck-competitive mode for the transport of goods in the CCTIA. It has been estimated that the tunnel would reduce 11,793 annual "commodity" truck trips on I-95 at Greenwich (a 2.9% reduction) and 49,470 trips at New Haven (a 5.9% reduction).[7]

Its cost has been estimated to be $1.5 billion for a one-track tunnel and $2.5 billion for a two-track tunnel.[8] Little or no part of this cost would be borne by Connecticut, although costs would be incurred if investments were made in overhead and side clearances in order to accommodate additional types of rail freight equipment. The CCTIA does not have the resources to estimate the funding that would be required.

4. Mitigate congestion on Route 7 by implementing the recommendations of the Route 7 Travel Options Study.

IMPROVED COMMUTER RAIL SERVICE. Prioritized rail service expansion projects would assist north-south commuter movement in the congested Route 7 and I-95 corridors from Greater Danbury-New Milford area communities and Wilton to Norwalk, Stamford, NYC, etc. and visa versa. All recommendations herein are from the Route 7 Travel Options Study by Vanasse Hangen Brustlin, Inc. (VHB), funded by ConnDOT and undertaken jointly by HVCEO and SWRPA.[9]

Improvement of rail service on the Danbury branch line is dependent upon the completion by ConnDOT of the long planned CTC "Centralized Train Control" Branch Line management system, which is needed for higher speeds and closer spacing of trains. Travel times on the Branch with CTC can be reduced by 18%. The estimated cost is $16.65 million, and is proposed to be accomplished during the first three years of a 13-year rail improvement program. Conn DOT currently expects to advertise this project in May of 2003.

PHASE 1. Occupying year three of the HVCEO-SWRPA Danbury Branch Line improvement plan, the Phase 1 service expansion adds additional peak hour shuttle service, additional midday service, and an additional reverse commute train. This phase calls for more intensive use of the two shuttle trains currently in service on the Danbury Branch Line and the purchase of one additional shuttle train.

In Phase 1, total daily train trips rises from 20 to 31. This investment is estimated to attract 400+ daily new riders. Estimated costs are $5.3 million for capital and $1.3 million for annual operations. To allow for ridership growth, there is then a gap of three years before the Phase 2 Branch Line service expansion is implemented.

PHASE 2 Danbury Branch service expansion, scheduled for year 7, builds directly upon Phase 1. It calls for one new through roundtrip to NYC, additional midday service and an additional reverse commute. This phase is projected to attract 242+ daily new riders, in addition to the 400+ attracted by Phase 1.

In this phase the number of train trips rises from 31 to 38, accomplished via more intense use of the three existing shuttles and the purchase of one additional equipment set for the through train. Estimated Phase 2 costs are $12.9 million for capital and $0.9 million for annual operations.

Service Level	Weekday Through Trains	Weekday Shuttle Trains	Total Trains	Weekday Seats
Existing	6	14	20	9,172
Phase 1 Danbury	6	25	31	12,435
Phase 2 Danbury	8	30	38	15,750
Phase 3 New Milford	6	14	20	9,696
Phase 4 New Milford	6	25	31	12,435
Phase 5 New Milford	8	30	38	15,750

PHASES 3 to 5. Three additional expansions, Phases 3 to 5, would extend rail passenger service to a new station near I-84 in northern Danbury, then further north to New Milford, CT. Estimated new ridership is 559.

By restoring service to New Milford, the Norwalk to Danbury Branch track mileage of 23.6 would be extended another 14.3 miles, to 37.9 track miles. Of critical importance, this would restore rail service in a region of rapidly growing commuter flows.

These northerly additions would be phased in slowly, from as early as year 3 (alongside Danbury-Norwalk expansion), to year 13, the last year of the expansion program. There is a minimum two year wait between each of these later phases as ridership builds. Estimated total costs for these last three phases is $33.95 million for capital and $3.51 for annual operating.

Phase 3 calls for a new station in New Milford, track improvements there to support 50 mph, and the extension of just some peak hour trains to New Milford. The estimated new ridership

is 160. There is no additional equipment required. Capital costs are $13.6 million and the additional annual operating cost is $1.8 million.

Phase 4 calls for two new stations, at Danbury North, and Brookfield, additional track and bridge improvements, extension northward of two additional peak shuttles, and the addition of midday service. Again, no additional equipment is required.

Instead, the proposal makes more intensive use of the three shuttle trains assigned to the Danbury-Norwalk Phase 1 expansion. This fourth phase yields a hefty 355 new riders. Estimated capital cost is $6.3 million, and estimated annual operating cost is $0.7 million.

For Phase 5, the CTC signal system is extended to New Milford and additional Danbury to New Milford service is offered. There is still no additional equipment required. Capital cost is $14.1 million and annual operating cost is $1.0 million. Because additional ridership is only 44, Phase 5 may be delayed indefinitely until the cost-benefit improves.

Cost Summary (Phases 1-4 Only): Approximately $38.1 million for capital and $4.7 million for annual operations.

Regarding the Danbury to New Milford extension, a 1996 rail report by HVCEO offers some interesting additional perspective. A parking lot survey of Connecticut-registered motor vehicles conducted along the Harlem Line in New York State indicated an interest in commuter rail service if provided at both the proposed Brookfield and New Milford stations. In addition, a restoration of service to New Milford is likely to produce ridership substantially in excess of that projected by ConnDOT, for a variety of technical reasons documented in great detail in the 1996 report.

OTHER ACTIVITIES. Please note that other activities are part of the Route 7 Corridor Travel Options Implementation Plan. These include the development of transportation management associations, more carpooling in the corridor, and bus transit service. One key recommendation, the establishment of commuter bus service between the cities of Danbury and Norwalk, has already been implemented.

TRAFFIC IMPACT. Implementation of various phases of the proposed rail enhancements described above has the potential to reduce traffic volume on Route 7 by almost 2,000 vehicles per day. This reduction represents the estimated total number of vehicles no longer traveling on Route 7, not the estimated traffic reduction in any specific location.

Assuming that a large percentage of this potential reduction, say 80 percent, is concentrated at the southern end of the corridor, then almost 1,600 daily vehicles per day could potentially be reduced from Route 7 just north of I-95. This represents over a two percent daily traffic reduction at the southern end of the corridor when compared with projected 2015 traffic volumes.

5. Mitigate congestion on major arterial highways by increasing use of TDM strategies through the marketing of the benefits of alternative modes of transportation and offering employee and employer incentives.

Transportation Demand Management (TDM) strategies are designed to encourage commuters to modify their travel patterns and behavior in such a way as to reduce single-occupant vehicle traffic and, by extension, traffic congestion. TDM strategies (1) encourage commuters to use train, bus, ferries, carpools, vanpools, bicycling and walking, (2) link northern areas to commuter rail and (3) promote flexible work arrangements including telecommuting, compressed work schedules and staggered hours. Many TDM strategies are currently in place to one degree or another in the CCTIA.

Set forth below are specific TDM strategies that should be introduced or increased in the CCTIA on a short-, medium- and long-term basis.

Short-term Strategies (1-3 years)

Employer Incentives, Services

1. Provide turn-key commuter mobility program design and implementation support
2. Implementation of DeduCT-A-Ride programs at additional employer sites
3. Carpool, vanpool, shuttle formation and support
4. Guaranteed Ride Home programs
5. Program implementation tools
6. Employee commute surveys
7. Employer workshops and networking opportunities
8. Promotional and custom materials
9. Ridematching Services
10. Commuter Information Center kiosks
11. On-site promotional events
12. Company relocation services
13. Direct Commuter Services
14. Telecommuting program support through TelecommuteCT!

Information Dissemination

1. Transportation information websites
2. Intranet links to ridesharing websites
3. Coordinated statewide marketing campaigns: vanpooling, DeduCT-A-Ride, TelecommuteCT!
4. Coordinated regional campaigns to promote connections between transit services
    a. Southern Connecticut Transportation Guides (expand concept to other regions in state)
    b. Home based direct mail to promote commuter shuttles
    c. Promote single brand identity for all ConnDOT-supported commuter services
5. Targeted localized marketing to commuters to support specific services; provide free trial rides where available
6. Targeted localized marketing to employers to support specific services, identify unique business needs of certain industry groups, areas
7. Recruitment of information “agents” (Chambers of Commerce, libraries, other groups) to assist in disseminating information
8. Personalize image of using transit through press outreach (commuter profiles), etc.

9. Support placement of carpool and vanpool listings in major daily newspapers classified advertising section; recruit newspapers as partners in fighting traffic congestion.
10. Provide average speed along with length of rush hour delay on electronic highway signs

Commuter Incentives, Services

1. Promote DeduCT-A-Ride program through participating worksites
2. Provide free carpool, vanpool, and transit matching via computer and over the telephone
3. Provide personalized commuter consultation at on-site events

Medium-term strategies (3-8 years) Begin development now for early implementation

Employer Incentives, Services

1. Expansion of Voluntary Trip Reduction Tax Credit program to employers statewide; corporate park developers; employers with 20 or more employees
2. Established service-based Guaranteed Ride Home program
3. Provide support for employers to establish train station shuttles
    a. Focus on natural gas vehicles (environmental benefit)
    b. State-funded fueling infrastructure near major train stations served by shuttles
    c. Employer rebate on vehicle cost
    d. Allow corporate park developers/groups of employers to participate in program
4. Parking space relief in exchange for commitment to commuter mobility programs (reduction in spaces required for new construction)
5. Bike lockers and/or rack facilities on employer property or in central downtown areas close to work areas, either state-subsidized or with tax credits to employers who install them
6. Incentive for participation in Parking Cash Out program
    a. Set minimum cost per space
    b. Employees who choose transit or vanpool receive state-subsidized fare
    c. Employees who choose taxable cash do not pay state sales tax on cash received
7. Establish statewide commute option registration program to track participation in employer programs and provide verification for tax/incentive purposes
8. Statewide recognition program
    a. Designate a point of contact within the organization who deals with commuting issues
    b. Provide in-person and virtual training session on basic services available and implementation ideas
    c. "Employer of the Year" statewide award for excellence, high participation in commuting programs
9. Preferred parking programs at rail stations for carpoolers

    a. Establish consortium of parking authorities to establish common policies and maximize use of available spaces (sharing of waiting lists for promotion by sites with capacity, etc.)

10. Promote flex time and telecommuting to employer sites; offer interest free loans to employers for set up of home offices, purchase of equipment, etc.

Information Dissemination

1. Establish a comprehensive web site that will provide both information and services to commuters
    a. General transit information
    b. Trip planning
    c. Purchase of bus, train tickets
    d. Online ridematching
    e. Parking information and monthly parking reservations
    f. Traffic cameras
    g. Interactive chat with customer service rep
    h. Wireless access component
    i. Opt-in email messaging
2. Central contact for email inquiries; disseminated automatically to local service bureau, transit operators

Commuter Incentives, Services

1. Online purchase of bus, train tickets
2. Self-service online ridematching
3. State tax credit or deduction for using transportation alternative; registration into statewide database required for verification
4. Provide state income tax credit or deduction for employees who live less than five miles from their worksite
5. Promote employer or state-sponsored location efficient mortgages to encourage purchase of homes near the worksite

Long-term (9-20 years)

Employer Incentives, Services

1. Low interest loans, direct financial support for building satellite work centers outside central business districts
2. Require all new building construction to commit to comprehensive commuter mobility program with target of 25% employee participation
3. Incorporate bike and pedestrian facilities into all local road improvements

Information Dissemination

1. PDA / wireless access to notify commuters of next bus, train
2. Continuous improvement of web site to incorporate latest technology

Commuter Incentives, Services

1. Low / no interest loans or property tax rebates for natural gas and electric vehicles to be used for vanpooling
2. Universal transit pass for use on all systems and for parking; also for use at newsstands and convenience stores; tied in to DeduCT-A-Ride account or other incentive programs

The State is currently funding a wide range of TDM strategies within the CCTIA, and funding of these strategies should continue. However, full implementation of the program outlined above would require a considerable increase in such funding. The CCTIA does not have the resources to estimate the additional funding that would be required.

TWENTY-YEAR STRATEGIC PLAN FOR TRANSPORTATION in the COASTAL CORRIDOR TRANSPORTATION INVESTMENT AREA

1. INTRODUCTION

Purpose of Plan

Section 3(d) of House Bill No. 7506/Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board* (the Act) mandates that the participants in each Transportation Investment Area (TIA) prepare a "full" TIA Corridor Plan for submission to the Connecticut Transportation Strategy Board by November 15, 2002. Section 1(5) of the Act defines a TIA Corridor Plan as a "twenty-year strategic plan for transportation in the TIA."

This plan was developed to provide an overview of the Coastal Corridor TIA (CCTIA) and its primary regional and inter-regional transportation concerns, and to describe a twenty-year strategy for enhancing the CCTIA's transportation system.

Development of the Plan

This plan has been developed with reference to the transportation needs, strategies and objectives stated in the following regional plans:

- 2001–2021 HVCEO Regional Transportation Plan, prepared by the Housatonic Valley Council of Elected Officials, April 2001.

- Long-Range Regional Transportation Plan 2000, prepared by staff and endorsed by board members of the Council of Governments of the Central Naugatuck Valley, January 10, 2001.

- Mobility: A Transportation Plan for the Year 2020, prepared by the South Central Regional Council of Governments, January 2001.

- Regional Transportation Plan for the Greater Bridgeport Planning Region, prepared by the Greater Bridgeport Regional Planning Agency with the endorsement of the Greater Bridgeport and the Valley Metropolitan Planning Organization, February 2001.

- South Western Region Long Range Transportation Plan, 2001–2025, prepared by the South Western Regional Planning Agency, June 22, 2001.

- Regional Transportation Plan for the Valley Planning Region, prepared and endorsed by the Valley Regional Planning Agency, February 2001, endorsed by the Greater Bridgeport and Valley Metropolitan Planning Organization.

Maps of the Coastal Corridor TIA

Thematic maps of the CCTIA are attached as Appendices (Maps 1–4).

Vision Statement

A strategic plan is essentially a method or technique for achieving some end. This plan has established a vision statement describing the end it seeks to achieve, *i.e.,* the transportation system that should be in place in the CCTIA at the end of twenty years. Section 4(c) of the Act describes in broad terms what the strategy should achieve, and the balance of Section 4 provides further guidance. The vision statement is drawn from Section 4 and is not intended to replace it but rather to provide the focus necessary to develop a strategy. The vision statement constitutes a template against which specific proposals are measured.

The following is the vision statement:

The Coastal Corridor TIA will have a transportation system that offers people and goods a choice of safe, convenient and integrated modes of transportation including (a) roads, (b) waterborne, (c) airborne, (d) rail and other modes of public transit and (e) facilities that make walking and bicycling viable transportation options so as:

- to stimulate sustainable economic growth by ensuring mobility of people and goods within the CCTIA and connectivity of the CCTIA's economy to the state, regional, national and global economies; and

- to enhance quality of life by ensuring mobility of all residents of the CCTIA, including those unable to drive, while protecting the CCTIA's environmental, cultural and community resources.

Projects Outside the Scope of This Plan

Projects in the FFY 2003-2005 Statewide Transportation Improvement Program (STIP) that are already in design, right-of-way acquisition or construction should go forward and should not be de-funded in order to fund priorities identified in this plan.

2. PUBLIC INVOLVEMENT

The CCTIA has solicited public comment by inviting the public to its meetings and including public comment as an agenda item at each meeting, by holding a "public input session" in Bridgeport on June 19, 2002 specifically to receive public comment and by inviting written comment on this. A list of persons who provided specific information to the Board is attached as Appendix I. The Board has established a speakers bureau, and members have appeared as speakers at meetings of various public and private groups, been interviewed by

the media and written articles that have appeared in regional publications. Appended is a list of the individuals who attended CCTIA Meetings and presented information and ideas. Their specific comments are included in the minutes of the meetings.

3. MOVEMENT OF PEOPLE

GOAL: To improve personal mobility within and through the CCTIA.

3.1 OBJECTIVES	3.2 CHALLENGES
Air • develop a statewide airport strategy, including improvements to smaller regional airports • improve airport access	*Air* • local opposition to airport expansion • environmental constraints to expansion of airports • minimal transit services to airports
Rail/Bus • increase commitment to public transportation • study best practices in managing transit, including consideration of establishment of public transit authority • provide more frequent commuter rail service to more destinations • improve and expand bus transit service • acquire equipment and upgrade infrastructure as needed to support improved transit service • improve access to transit facilities	*Rail/Bus* • local opposition to added parking at rail stations • aging infrastructure • disjointed ownership of rail track • disjointed operation of rail services • terms of the Metro North agreement • uncertain future of intercity rail • difficulty in providing cost effective transit service in low-density population areas
Roadway • reduce dependence on the automobile • implement operational improvements to improve system efficiency and safety • implement Transportation Systems Management strategies where appropriate • support ConnDOT's intelligent transportation systems initiative • support Transportation Demand Management strategies • evaluate institution of congestion or value pricing on limited access highways	*Roadway* • congestion • adding capacity to road system induces additional traffic • public's attachment to single occupancy automobile travel • public opposition to paying a greater share of the cost of automobile usage, *e.g.,* motor fuel tax, tolls • aging infrastructure • impact of incidents on traffic flow • shared use of roadways by trucks and passenger vehicles

Water • develop infrastructure for high speed ferry services that interfaces with other passenger transportation systems	*Water* • desire of ferry operators to locate terminal facilities near open water, away from other passenger transportation systems • local opposition to placement of waterborne transportation facilities • potential conflicts with recreational boating and commercial fishing
Bike/Ped • improve bicycle and pedestrian facilities	*Bike/Ped* • inadequate perception of potential for shifting trips from automobile to bicycling and walking • current roadway design standards

Discussion

In its report to the Connecticut Regional Institute for the 21st Century (the Gallis Report), Michael Gallis & Associates summarizes the situation of the CCTIA in the following terms:

> Connecticut's access to the global marketplace is principally through the Route I-95 corridor. This corridor, with interstate and transit lines, provides access to the very dynamic New York metro region and access to the continental grid.… While the Connecticut to New York commute is largely transit-oriented, there is very little inter-city transit within Connecticut. As congestion increases in this corridor and the major global connections move west of the Hudson [River], this corridor will not offer the level of access to the economic activities and hubs necessary to support Connecticut's institutions, businesses and people. Congestion effectively blocks economic activity from extending farther than Stamford in the [Coastal Corridor TIA].

Congestion is endemic throughout the CCTIA. It is acute on the primary highways, Interstate Routes 95 and 84, and U.S. Route 1 and CT Route 15, and particularly acute on the westerly portion of Route I-95. The increased congestion in the CCTIA is mirrored throughout the country. Employers increasingly see long commutes on congested roads as threats to productivity. Congestion also contributes to the status of much of the CCTIA as a "severe non-attainment area" in terms of air quality.

Significant increase in road capacity in the CCTIA would be expensive and would have negative environmental impacts. Moreover, adding capacity to highways induces additional traffic, as people take additional automobile trips and new development creates even more demand. It is now generally accepted that we can't build our way out of congestion.[10]

By contrast, public transportation (rail, bus, airborne and waterborne) and nonmotorized transportation (bicycling and walking) not only provide relief from congested roads, they lessen the negative impact on air quality and the safety hazards of traffic (especially congested traffic). Moreover, public transportation contributes to the economy; it has been found to create savings to business operations and to increase business sales, household incomes and tax revenues.[11]

If safe, convenient and integrated alternative modes of transportation were in place, there would be considerable potential to switch trips from the automobile. The opportunity to develop the following alternative modes of transportation exists in the CCTIA:

- Rail lines extend throughout the CCTIA. They are not being utilized to the extent of their capacity, although they are in urgent need of significant capital investment.

- Based on return from the farebox, Connecticut's public bus system is one of the most productive in the country, suggesting that there is potential for increased ridership.

- The CCTIA has a potential air passenger market that would appear to support a secondary airport if it had an airport with a runway sufficient for small, narrow-bodied jets.

- The proximity of Long Island Sound offers the possibility of the development of high speed ferries.

- Particularly along the coast, the closeness of the origins and destinations of many trips suggests that there is considerable potential for travel by bicycle and on foot.

3.3 Initiatives/Recommendations

Increase Commitment to Transit

- Study the best practices in managing public transportation to determine how best to enhance focus on, accountability for, and commitment to, public transportation in Connecticut. Consider establishment of a separate authority responsible for transit throughout the state and a separate funding source for public transportation, such as a dedicated mass transit operating account in the state budget. Identify transit authorities that have been particularly successful in advancing public transportation in their respective regions. *[Priority]*[12]

- Commuter rail, local and inter-regional bus services, ferry service, bicycle facilities and pedestrian connections should be used in combination to link housing, employment, retail and transportation centers to encourage use of public transportation.

A. ROADS

Issues/Problems

Congestion in the CCTIA affects the movement of people. Where they can reach their destinations only by road, people are trapped in the congested conditions found there and can only contribute to that congestion when traveling. But where choices exist, some will choose another mode of travel and in so doing will make no contribution to congestion on our roads. Development of alternatives to single-occupancy vehicles must be our priority. Nonetheless, the automobile will remain the dominant mode by which people travel in the CCTIA, even as alternative modes are developed. This will require further investment in our road system.

Most importantly, the road system, including local roads, must be maintained in a state of good repair.

Poor or outdated engineering contributes to the inefficient movement of vehicles and gives rise to public safety concerns. Many of the CCTIA's roadways were built neither to handle the volume of traffic that currently exists nor to accommodate the types of travel common today. Engineering designed to improve system efficiency such as intersection improvements, coordinated signalization, turning lanes and emergency shoulders are important elements to facilitating traffic flow through a given spot and enhancing safety.

Facilitating economic growth is a major goal of this plan, but growth that is dependent on motor vehicles could be counter-productive to that goal. Moreover, expanding vehicular capacity on Route I-95 and/or Route 15 would likely result in greater congestion on these highways in the long term and add traffic volume on local roads, which are already congested. Added traffic volume would also contribute to the region's air quality problems and have an adverse effect on quality of life generally in the region.

Initiatives/Recommendations

Roadway Improvements

- Undertake road capacity expansion projects only after a comprehensive review that takes into consideration, at a minimum, the following factors: environmental impact; all reasonable alternatives and options; impact on community character; impact on roadways in adjacent regions, even if those adjacent regions are located outside Connecticut; and impact of the proposed project on the transportation system as a whole. *[Priority]*

- Evaluate operational improvements to Route I-95 and Route 15 to relieve congestion and improve access in the corridor.

- Improve capacity and safety on existing Routes 7 and 25 between Routes I-95 and I-84.

- Implement the recommendations of the two most recent improvement studies of Route I-84 by the Connecticut Department of Transportation (ConnDOT), which together assessed congestion and safety on the 32 miles from Waterbury to the New York State line, including upgrading interchanges to accommodate projected traffic growth, a detailed engineering study for upgrading the interchange between I-84 and Route 8 and

the addition of a general purpose lane in each direction, following the investment priorities included in the studies.

- Fund ConnDOT's statewide intelligent transportation systems initiative.

- In recognition of the importance of local roads to the state's road system, increase funding levels for Town Aid to Roads.

- The CCTIA opposes expanding vehicular capacity on I-95 west of New Haven and on Route 15, and to construction of an expressway along Route 7 between I-95 and I-84, unless and until all reasonable alternative modes of transportation and strategies have been explored and put in place (other than projects in the regional transportation plans referred to on page 18 of this Plan).

Transportation Systems Management Strategies

Transportation Systems Management (TSM) is a strategy designed to maximize the efficiency of existing highway capacity through various operational and administrative mechanisms. A variety of TSM strategies have been implemented within the CCTIA including incident management teams, construction management programs and highway advisory radio. Few of these strategies, however, have been implemented consistently throughout the Coastal Corridor and, as a result, the benefits are fragmented.

Following a study of existing regional systems, the following TSM strategies should be implemented (on a permanent or pilot basis) **where appropriate, feasible and not already in place,** and appropriate benchmark data should be established:

- Entrance closures to discourage local travel on limited access highways, but only in conjunction with action to alleviate the added burden on local roads.

- Signalization improvements.

- Incident management programs to clear accidents quickly from roadways.

- Improved inter-agency communications and training.

- Construction management practices that minimize the impact on traffic flow.

- Ramp metering to regulate the entry of vehicles into the traffic stream on limited access highways. *[Priority]*

- Enhanced traffic enforcement.

- Highway informational radio to alert motorists to problems in time for them to alter their routes.

- Dedicated high occupancy vehicle (HOV) lanes.

B. TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Issues/Problems

Transportation Demand Management (TDM) strategies are designed to encourage commuters to modify their travel patterns and behavior in such a way as to reduce single-occupant vehicle traffic and, by extension, traffic congestion. TDM strategies support and encourage the use of transit, carpooling, vanpooling, telecommuting, compressed work schedules, staggered work times, and bicycling and walking, all of which are currently in place to one degree or another in the CCTIA.

A potentially effective TDM measure that is not currently in place anywhere in the State is *value pricing.* Referred to in some sources as either "congestion pricing" or "lane use management", the underlying principle is to monetize and capture the "consumer surplus" benefit of decreased travel times. Value pricing can apply to roads, transit and/or transit support facilities, for example, with a higher price charged during peak periods on a congested highway while a lower price is charged for the use of alternative transit modes at the same time along the same corridor. Travel demand modeling conducted as part of SWRPA's CMS 2020 study indicates that the benefits of congestion pricing are greatest when implemented across all modes.[13]

Initiatives/Recommendations

- Evaluate the institution of congestion or value pricing on one or more limited access highways in the CCTIA. *[Priority]*

- Evaluate the introduction of congestion or value pricing on transit or transit support facilities, either complimentary to or independently of congestion pricing on roads.

- Implement intelligent transportation systems technology for transit operations as well as highways, *e.g.,* automatic vehicle locator systems, electronic ticketing and traveler information services.

- Support telecommuting.

- Continue and expand support of existing commuter incentive programs.

- Fund marketing of the *Deduct-a-Ride* program.

- Develop "commuter connections" with guaranteed rides between transportation hubs, residential areas and employment centers. *[Priority]*

- Continue promoting and supporting employer-based TDM programs at major employment centers in the CCTIA, and continue to expand TDM programs to smaller employers where appropriate. *[Priority]*

- Increase availability of commuter information and services (*e.g.,* parking availability, transit ticket purchases) on the Internet through consolidation and coordination of existing transportation web sites and improved user utility.

- Increase funding for marketing of all transportation alternatives and coordinate marketing under a single brand identity (while allowing for local customization by transportation organizations). *[Priority]*

- Consider expansion of existing employer trip reduction tax credit and other incentives.

C. COMMUTER AND INTERCITY RAIL

Issues/Problems

There are 575 route miles of railroad track in Connecticut owned by eleven separate entities. Passenger service over this patchwork of rail ownership is provided by three entities. Pursuant to a contract among ConnDOT, New York State's Metropolitan Transportation Authority (MTA) and the Metro North Commuter Railroad, Metro North provides service on the New Haven main line from New York City to New Haven and over the three branch lines: New Canaan branch, Danbury branch, and Waterbury branch. Under contract with ConnDOT, Amtrak operates the Shore Line East service east of New Haven over the trackage it owns. In addition, Amtrak provides intercity service from New York to Boston via New London and from New York to Hartford and Springfield, using ConnDOT trackage west of New Haven and its own trackage north and east of New Haven.

Commuter service over the former New York, New Haven and Hartford (NYNH&H) line has long been a vital transportation amenity in the CCTIA. Traditionally this link has primarily provided access by Connecticut residents to jobs in New York City, but increasingly it is being used by so-called reverse commuters, New York City residents who work in Connecticut, and intra-state Connecticut commuters. Overall, ridership has increased by 41 percent since 1984 and by nearly 100 percent since 1970, and reverse and intra-state commutes were up 47 percent between 1995 and 2000.[14] Unfortunately, this increase in ridership has resulted in a shortage of seats, but until recently no new rail cars have been added to the fleet used to service the New Haven line in almost a decade. The bulk of the passenger cars owned by ConnDOT and used on the New Haven line are M-2 type electrical multiple unit rail cars and are nearly 30 years old, which is past their anticipated useful life.

More frequent service to more destinations will make the railroad a more attractive alternative to the automobile. During off-peak hours, existing stops between New Haven and Stamford is hourly and between Stamford and New York is half-hourly. A "subway/shuttle" service, offering customers trains every 15 or 20 minutes would make train service more convenient and thus more comparable to use of the automobile.

Initiatives/Recommendations

Order New Rail Cars Immediately

- In light of the lengthy time required for specification, manufacture and delivery, first priority must be given to determining fleet configuration and ordering the new equipment necessary both (i) to maintain the existing level and maintain reliability of service and (ii) to increase service (as recommended below) in order to reach the region's congestion mitigation goals. The fleet configuration and size needed should be based on realistic projections of growth in ridership in existing service and anticipate increased service.[15] *[Priority]*

Infrastructure

- To properly maintain and store the new equipment and overhaul the existing M-2 fleet, the site selection and acquisition and the design of new storage and maintenance facilities should begin as soon as possible, as new facilities must be completed before delivery of new equipment. *[Priority]*

- To reduce the likelihood of service delays on the Metro North main line, to reduce maintenance/repair costs for Metro North/ConnDOT and to permit Amtrak's Acela trains to operate at higher speed, the replacement of the obsolete catenaries should be accelerated.

- Either change the electrical current used east of New Haven to the same current used west of New Haven or modify Metro North electrical rail cars to use the current east of New Haven. This will permit Metro North electrical rail cars to operate east of New Haven.

- With the objective of preserving long-term options for passenger rail service, a determination should be made of the Amtrak assets that the State might wish to acquire if they became available.

- Any construction of limited-access busways should include provision for their conversion to rail or light-rail as future demand warrants.

Stations

- To make travel by rail more attractive and to minimize travel by road, parking should be provided at stations convenient to the place of origin of trips by rail commuters. Proposed new stations at Orange or West Haven and at Fairfield should be built. Following a review of commutation and residency patterns, a fair distribution of additional parking and other access facilities at rail stations needed to meet demand, both existing and anticipated, should be determined. On the basis of this review, a strategy should be devised to construct the additional facilities needed, and to offer consistent access and

pricing to all motorists using parking facilities. Station access facilities should include strategies other than vehicular, including bus, jitney, walking and bicycling. Public/private partnerships that may result in private financing and operation of facilities should be explored. *[Priority]*

- A strategy should be devised to ensure the availability of shuttles or taxis at the arrival and departure times of trains throughout the day (not just at peak commuter hours) at the principal railroad station in each town served by Metro North and Shore Line East. *[Priority]*

Expanded Service

- Increase service on Metro North by offering more frequent service which, along the main line, should have "subway/shuttle" frequency. *[Priority]*

- Integrate the services offered by Metro North and Shore Line East into a single, seamless service.

- Implement the improvements in the Danbury Branch Line from Norwalk to New Milford proposed by the Route 7 Travel Options Implementation Plan. *[Priority]*

- Update the study of expansion of service on the Waterbury Branch Line.

- Operate more trains from and to east of Stamford to and from Greenwich without requiring a change in Stamford. To facilitate this service, availability of an interlocking system west of Greenwich station should be considered.

- Expand destinations served by Metro North to include Penn Station in New York City, Hartford (including Bradley Airport), Springfield, MA, Providence, RI, and intermediate destinations. This would permit rail customers to choose between Metro North and Amtrak to many destinations.

- Support an alternative stop by Amtrak's Acela train at Bridgeport.

Metro North Operating Agreement

- Use all available means under the existing service agreement among ConnDOT, the MTA and Metro North to improve Connecticut rail transit including, if possible, obtaining a seat on the MTA board.

D. BUS TRANSIT

Issues/Problems

Connecticut's local bus system is one of the most productive systems in the country, with an average return from the farebox of 36 percent and with some districts returning over 40 percent. This compares with an industry average of 35 percent.[16] This high productivity suggests that there is potential for increased ridership.

While buses are nonetheless a major provider of public transit in Connecticut, investment in bus transit in Connecticut has remained relatively flat. This funding "containment" philosophy has limited Connecticut's bus system from enjoying a much larger market share and prevented it from contributing to its fullest extent to the reduction of congestion and air pollution. Connecticut must move from an incremental or "containment" funding philosophy and invest new dollars in both operating and capital for bus operations.

Connecticut's bus system was faced with a $2.5 million projected operating deficit in fiscal year 2001.[17] To address this deficit, several thousand hours of revenue bus service were cut, and some transit districts had to raise fares just to make ends meet. As with our rail service, we are failing to provide our bus system with the funding it needs.

Initiatives/Recommendations

Consolidation of Bus Services

- Study whether consolidation of agencies that operate buses in the state and/or the CCTIA would enhance operating and planning efficiency. *[Priority]*

Expanded Service

- Implement recommendations for more bus service contained in the "Connecticut DOT's Statewide Bus System Study" (July 2000). *[Priority]*

- Where the demand exists, provide for more inter-district, inter-town, inter-regional bus routes like the Coastal Link, including routes linking rural communities.

- Improve bus services for the elderly and the disabled.

- Consider extension of the Hartford to New Britain Busway to and from Waterbury.

- Develop a single ticket fare and fare media structure for rail, bus and ferry services, which should be integrated with a statewide Deduct-A-Ride program and be compatible with the fare media used in New York and adjacent regions.

- Consider the introduction of Bus Rapid Transit projects in the CCTIA similar to the Hartford Bus Rapid Transit project, including the feasibility of using state or interstate routes for Bus Rapid Transit Demonstration projects.

Job Access

- Support the Jobs Access Program that provides later evening bus service route extensions and customized paratransit services for residents in the cities of Stamford, Norwalk, Bridgeport, New Haven and Waterbury. Incorporate all effective Job Access Program services now funded from grants in the operating budgets of transit districts.

- Where demand exists, provide service to all major job centers, including retail centers on Saturdays and Sundays.

Marketing

- Develop a comprehensive, regional or statewide bus marketing campaign, taking advantage of the national efforts to enhance poor public perception of public transportation. *[Priority]*

- Improve buses' image by making buses more attractive and user-friendly.

Miscellaneous

- Provide both funding and incentives to transit operations to use cleaner fuels like compressed natural gas. *[Priority]*

E. WATERBORNE

Issues/Problems

The state has funded a comprehensive study to explore utilizing Connecticut's waterway system further to expand the potential for movement of people within the CCTIA. The infrastructure (Long Island Sound) has been in place for thousands of years, and its capacity for ferry service is infinitely expandable. There is an existing ferry service between Bridgeport and Port Jefferson. Several private ferry operators have indicated an interest in providing service on high speed ferries, so that the service may require no operating subsidy from the state. While there are land access and parking issues, such an operation would require minimal capital investment from the state.

Recommendation

- Make infrastructure improvements (*e.g.*, dredging, bulkheading, and passenger facilities) to insure that a ferry operation interfaces with the Bridgeport Intermodal Facility. *[Priority]*

F. AIRBORNE

Issues/Problems

Six airports — Danbury Municipal Airport, Waterbury-Oxford Airport, Sikorsky Airport, Tweed-New Haven Airport, Meriden Markham Airport and the Griswold Airport — are

located in the CCTIA, but only Tweed-New Haven provides commercial air service. However, commercial service is available from Westchester County Airport which is located immediately adjacent to the southwestern border of the CCTIA.

A significant percentage of the persons who live and work in the CCTIA rely on New York airports to meet their commercial air travel needs, thereby contributing to road congestion. However, a significant market exists for expanded commercial air travel in Connecticut and the economic impacts of expanded commercial air travel opportunities would boost Connecticut's economy.

Initiatives/Recommendations

- Support development of a regional (secondary) commercial airport in southern Connecticut, able to attract regional passenger air carriers serving destinations up to 1,000 miles away. Based on market information and input from the Connecticut Department of Environmental Protection to date, Tweed-New Haven appears to be the most feasible site for such an airport. The state should immediately assess the commercial and environmental feasibility of Tweed's Master Plan, and if feasible, begin to resolve any impediments or obstacles to its development. If Tweed is not feasible, alternative sites should be considered.

- Conduct a study of statewide airport resources and needs, including airports owned by the state, municipalities and private interests.

- Improve access to metropolitan area airports by means other than single-occupancy vehicles.

- Expand the State Airport Master Plan to include airports owned by municipalities and private entities, as well as by the State, and update it with more regularity.

G. PEDESTRIAN AND BICYCLE FACILITIES

Issues/Problems

With the adoption of the federal *Intermodal Surface Transportation Efficiency Act of 1991* (ISTEA), Congress recognized that bicycling and walking should be integral parts of a multi-modal approach to transportation and made funding available for bicycle and pedestrian facilities. This support continues in the *Transportation Equity Act of the 21st Century* (TEA-21).

Despite the availability of this funding, little has been done in the CCTIA to improve conditions for cyclists and pedestrians. However, ConnDOT acknowledges that bicycle and pedestrian trips in Connecticut have been below the national average and that a significant number of trips could be switched from the automobile.[18] The close proximity within the CCTIA of many residential areas, businesses and shopping areas and recreational facilities makes bicycling and walking viable travel options. Although both are short-range

transportation choices, when used in conjunction with public transit or rideshare lots, the range can be much greater.

Initiatives/Recommendations

- The cost of developing bicycle and pedestrian facilities is low as compared with the cost of development of road or rail facilities. A cost-efficient way to integrate bicycling and walking into the transportation infrastructure would be for ConnDOT, in respect of state roads, and MPOs, in respect of local roads that are part of regional Transportation Improvement Projects, routinely to include bike/ped improvements in all projects involving such roads. The U.S. Department of Transportation has adopted a policy statement to this effect which is designed for adoption at the state and local levels, and this policy statement should be both adopted and followed by ConnDOT and the MPOs in the CCTIA. *[Priority]*

- Each regional planning agency of the CCTIA should adopt a Bicycle and Pedestrian Plan for its region.

- Greater funding should be provided for bicycle and pedestrian facilities, particularly greenway projects incorporating multi-use paths where such greenways extend through well-traveled transportation corridors.

- Establish a pedestrian set-aside in ConnDOT's local aid program that would provide municipalities with moneys to construct sidewalks and implement traffic-calming projects. *[Priority]*

- Equip buses and commuter trains for the carriage of bicycles.

H. Recommendations Common to Movement of People and Goods

In addition to several of the recommendations in this chapter relating to roads and airports, the following recommendations are common to the movement of both people and goods.

Travel Forecasting

- ConnDOT has a statewide computer forecasting model. Upgrading the forecasting system statewide would help insure that optimal decisions are made as to transportation investments.

Enhance North-South Connectivity

- North-south connectivity in the CCTIA should be enhanced to alleviate congestion along east-west routes and to improve quality of life.

- To enhance north-south connectivity, relieve congestion along I-95 and I-84, and to enhance economic development, examine the feasibility of designating Route 8 as an

Interstate Highway from Waterbury to Bridgeport.

- Improve capacity and safety on existing Routes 7 and 25 between Routes I-95 and I-84.

4. MOVEMENT OF GOODS AND FREIGHT

GOAL: To improve the Movement of Goods and Freight within and through the CCTIA.

4.1 OBJECTIVES	**4.2 CHALLENGES**
Air • develop a statewide airport strategy, including improvements to smaller regional airports • improve airport access *Rail* • encourage rail freight operations within the CCTIA and upgrade infrastructure as needed to support rail freight • address lack of rail crossing of Hudson River south of Albany *Roadway* • reduce dependence on trucks • implement operational improvements to improve system efficiency • implement Transportation Systems Management strategies where appropriate • support ConnDOT's intelligent transportation systems initiative • address lack of adequate rest areas for truckers • evaluate truck safety inspection program and additional weigh station hours • evaluate institution of value pricing on limited access highways *Water* • develop a State maritime policy that better incorporates waterborne freight into State planning and economic development	*Air* • local opposition to airport expansion • environmental constraints to expansion of airports *Rail* • aging infrastructure • disjointed ownership of rail track • disjointed operation of rail freight services • shared use of New Haven line trackage by rail freight and rail passenger services • infrastructure constraints, including overhead and lateral clearances • lack of east/west rail corridors for through and local rail freight movement • lack of direct access to Connecticut ports by any major rail freight carrier *Roadway* • congestion • adding capacity to road system induces additional traffic • some goods are not suitable for transport by alternative modes • industry opposition to paying a greater share of the cost of truck usage of roads, *e.g.,* motor fuel tax, tolls • aging infrastructure • impact of incidents on traffic flow • shared use of roadways by trucks and passenger vehicles

• implement port zone concept • establish a feeder barge service linking Connecticut and New York ports *Other* • develop infrastructure integrating all freight transport modes	*Water* • environmental and local zoning constraints to expansion of port capacity and efficiency *Other* • "just in time" priorities • required services for freight transport driven by private market

During the past several decades, significant changes in the logistics of the freight distribution process have resulted in smaller and more frequent freight shipments and less inventory stored in warehouses, a process known as "just in time" delivery. This, together with the absence of viable rail or air freight and extremely limited use of waterborne modes within the CCTIA, has had a massive effect on the amount of truck travel on its highways.

According to national statistics, freight volume doubled between 1975 and 1995, and forecasts predict the volume will double again by 2025. Air cargo into 21 airports between Maine and North Carolina grew by 28% between 1995 and 2000, and nationally is expected to increase from 12 billion to 44 billion ton-miles by 2025. During the 1990's, container traffic at seven ports in the same region increased by 47%.[19] Projected container shipments into New England alone have been estimated at 386,000 by 2010 and 609,000 by 2020.[20]

Seventy-four percent of the volume of commodities that travel into, out of, and through Connecticut travel by trucks, including 38% of the traffic destined for Connecticut and 44% of the traffic passing through the state. This mode of transport carries with it a disproportionate level of safety and environmental concerns as compared to rail and waterborne alternatives.[21] Commodities carried cover the range of all the products necessary for human life and economic well being.

Over the next decades, a new generation of megaships could double the amount of intermodal container traffic and create surges of demand on the CCTIA's transportation systems. Port operations, intermodal connections, and surface transportation operations all must be dramatically improved to deal with these expected volume increases or road congestion will significantly worsen.[22] Reducing the State's dependence on trucks by developing alternatives such as waterborne and rail modes would provide choices for shippers and receivers which, in turn, would improve the flow of goods into, out of, and through Connecticut while improving highway safety and air quality.

4.3 Initiatives/Recommendations

Implementation of many of the initiatives and recommendations in Chapter 3 above, including those relating to roads, rail, ferry service, and air service, will contribute to the

creation of alternatives to trucks for the movement of goods.[23] The following initiatives and recommendations are intended specifically to create such alternatives.

- Create and market shipper alternatives such as improved rail, efficient intermodal rail and waterborne routes. Shippers must be convinced there are cost-effective, efficient alternatives to our highways. *[Priority]*

A. RAIL

Issues/Problems

Connecticut shares heavy truck traffic on Route I-95 with other interstates from Virginia to Maine. Its existing "cul-de-sac" or dead ended rail freight system must be promptly and effectively transformed so as to provide a rail freight option with intermodal connections. To be competitive with trucks, this new rail freight service must operate on the fastest, most direct rail lines along the Route I-95 corridor.

Operating track capacity on the New Haven Line was dramatically increased in the 1980s as the result of signal improvements and even with an increase in commuter rail service there will be hours in the 24-hour "day" when rail freight trains could operate.

Expansion of rail freight in Connecticut is limited by the following factors:

(1) Track occupancy — each expansion of commuter rail and high speed passenger service reduces availability of rail freight, but other than during morning and evening peak hours a fast, intermodal freight train could be accommodated each hour, permitting 15 daily trains in both directions.

(2) Vertical clearances — while the Housatonic and P&W can accommodate 17' clearance, the New Haven line can only accommodate rail cars with a 15'3" clearance, such as single containers on flatcars, 13'6" highway trailers in "well" cars, Road Railers, modern boxcars and mechanical refrigerator cars.

(3) Weight limits — Connecticut's maximum freight weight limit is 263,000 pounds while the majority of the nation accommodates 286,000 pounds and new cars are being constructed to carry 315,000 pounds. Consequently, Connecticut shippers and receivers incur increased costs due to special light loading requirements.

(4) Speed limits — Amtrak limits freight trains to 30 MPH over its trackage.

(5) User Fees — Amtrak has increased from $0.30 per car mile to $0.991 the fee it charges for use by P&W and other freight railroads for use of its trackage.

Intermodal rail in Connecticut is also at a disadvantage compared to neighboring states since there are no major carriers with direct access to Connecticut ports. Port access spurs are owned and operated by short line operators. Consequently any rail shipments through our ports require interline charges, which are not incurred in any of the major ports such as New York, Baltimore or Philadelphia.

Initiatives/Recommendations

- As soon as possible, start directing rail freight operations through Penn Station tunnels during off-peak hours for perishable shipments (such as an extension northward to New England of the CSX "Orange Blossom Special"), RoadRailer, mail and express and high priority container-on-flat-car trains. *[Priority]*

- Actively advocate and support a new, direct, rail freight connection across the Hudson River and/or New York Harbor at New York City. The feasibility of the New York Cross Harbor rail tunnel has been proven, and environmental and planning studies are well under way. Connecticut should support and encourage this bold and timely capital investment in our national rail freight network. *[Priority]*

- In addition, added cross-Hudson rail capacity is needed at Penn Station. Connecticut should get involved and work for freight as well as passenger use of any additions to track and tunnel capacity at this vital point. *[Priority]*

- Encourage consideration of additional Hudson River rail crossings.

- Encourage, rather than discourage, high speed off-peak truck-competitive rail freight usage of the New Haven Line, the Springfield Line and the New Haven to Boston Northeast Corridor.

- Work with ConnDOT, Amtrak and major and short line railroads to achieve higher speed limits for freight trains and lower user fees on Amtrak trackage and more competitive access (as compared with major ports outside Connecticut) by major railroads to Connecticut ports.

- Resume the past policy of improving rather than disinvesting in rail overhead and side clearances to accommodate modern rail freight equipment. Actively consider the cost benefit of improving such clearances as well as the economic and environmental penalty for failing to do so.

- Design all bridges being rebuilt on the New Haven Line to accommodate 286,000 or, preferably, 315,000 pounds.

- Act now to preserve valuable and difficult to replace rail freight yard and terminal space, especially at New Haven (Cedar Hill Yard), at Hartford (North Meadows) and, working with Rhode Island, at Providence (Northrup Avenue Yard).
.
- Seek reversal or reduction in the recent increase in the "per car mile" charge Amtrak is levying for use of its trackage by rail freight to levels that will encourage rail freight within the State.

- The issues relating to rail freight in Connecticut are poorly understood. This is especially true in terms of the geographic relationships between freight haulers and potential changes to East Coast service routes as may affect Connecticut. A clearly written

inventory report, to serve as a base for all freight planning and possible public investment, is immediately needed.

B. TRUCKS

Issues/Problems

- The U.S. has an extremely comprehensive and efficient highway system which has reached capacity. In order for Connecticut to deal with the current level of traffic congestion, the state must find ways to get more out of its existing assets by making it more efficient. This is, in fact, a goal of the U.S. Department of Transportation.

- ConnDOT has determined that truck-only routes are more cost effective than other transportation modes for shipments less than 500 to 1,000 miles.[24]

- ConnDOT has found that trucks make up only 8 to 15 percent of peak hour traffic at the New York/Connecticut border and, while trucks are equivalent to as many as four passenger vehicles, they also are more likely to be traveling longer distances than the passenger cars.[25]

- Diesel trucks account for a disproportionate amount of the state's greatest non-point source of air pollution — traffic — thereby contributing to the region's status as a "severe non-attainment area" in terms of air quality.[26]

Initiatives/Recommendations

Strategies/Policies

- Address the severe shortage of areas where tired truckers can rest along state highways. Explore a public-private partnership with commercial truck stop owners to build and operate facilities to provide safe and secure areas for truckers to rest. *[Priority]*

- Work with local interests to encourage non-peak movement of goods where it does not conflict with quality of life issues. *[Priority]*

- Encourage establishment of warehousing, distribution and cargo transportation facilities located on the basis of a corridor/cluster model, *e.g.,* "freight villages" along rail corridors.

- Become an active participant in the discussions and decision-making concerning any new east coast port development or expansions, in order to affect decisions as to cargo routing options.

- Re-invest in staff and facilities to strengthen Connecticut's legal weight, safety and diesel truck emissions testing, including ITS systems such as the "weigh-in motion" facilities

planned for the Greenwich weigh station that will permit trucks to be pre-cleared and bypass the station.

Projects/Studies

- Conduct detailed origin and destination studies on all freight moving into, out of, and through Connecticut, on all transportation modes. Include surveys of all businesses in the state to determine flexibility of shipping and receiving activities, types of products or supplies transported, schedule requirements and proximity to intermodal facilities.

C. WATERBORNE

Issues/Problems

- The Port Authority of New York and New Jersey has established a Port Inland Distribution Network (PIDN) system due to overcrowded port facilities and capacity.

- Two feasibility studies were conducted by Greater Bridgeport Regional Planning Agency (GBRPA) and South Central Regional Council of Governments (SCRCOG) in 2000 for the shipment of containers by barge over the 70 miles of water to and from the ports of Bridgeport and New Haven and New York/New Jersey port. If implemented, that container service could reduce trailer trucks in the highly congested 33-mile stretch of Route I-95 from Greenwich to Bridgeport or the 53-mile stretch to New Haven.

- The creation of a container facility in Bridgeport or New Haven could eliminate up to 83,200 tractor trailer trucks annually from this section of Route I-95 by 2020.[27] With a diminished number of trucks on the road, air quality and highway safety will improve.

Initiatives/Recommendations

- Establish a container barge feeder port and service between the New York/New Jersey port and Connecticut. *[Priority]*

- Support and enhance Connecticut Port Authority's responsibility for development of a statewide niche markets strategy and provide it with funding as needed to accomplish this.

- Create "port zones" around our deep water ports to restrict non-water dependent uses and to make our port areas more efficient and more secure. *[Priority]*

- Improve highway and local access to all designated port zone areas.

- Establish more efficient dredge permit procedures and seek affordable dredge disposal alternatives to insure the smooth functioning of our maritime commerce and which results in the least damaging environmental impact or a net positive environmental gain.

- Accelerate restoration of rail connection to marine terminals in the Port of New Haven, and until this is accomplished continue reimbursement by ConnDOT of extra costs occasioned by lack of this connection.

5. ECONOMIC, LAND USE, ENVIRONMENT, AND QUALITY OF LIFE ISSUES

GOAL: To integrate transportation with economic, land use, environmental and quality of life issues.

5.1 OBJECTIVES	5.2 CHALLENGES
• Establish a statewide planning agency. • Improve the effectiveness of the State Plan of Conservation and Development. • Improve effectiveness of the Connecticut Environmental Policy Act (CEPA). • Encourage development of affordable housing stock in proximity to places of employment and transit service. • Encourage "Smart Growth" and "Transit-oriented" development. • Establish "Transportation Zone" areas of development. • Encourage "infill" development in urban areas and brownfields. • Preserve and protect the quality of the natural environment.	• The State Plan of Conservation and Development has little influence on realities of municipal planning. • Reliance on property tax at local level results in policies based on enhancement of local "grand list". • Strong "home rule" sentiments run counter-current to regional/state planning. • ConnDOT planning models not integrated with State Plan of Conservation and Development. • Inter-regional planning efforts potentially hampered by shift to municipal acquisition of transportation related rights-of-way • Urban brownfields are often least desirable sites for development due to the costs associated with reuse. • Local zoning regulations often preclude intensive "mixed-use" development. • Duplication of effort in regulatory process.

When the New York, New Haven and Hartford Railroad Company built the New Haven line in the 1840s, it was built to serve commercial and industrial uses as well as passenger needs in the urban centers of six regions of the CCTIA. The post-World War II development of interstate highways and increased use of private automobiles, as well as a shift in commercial

uses away from central cities, allowed people to reach farther out into the suburbs to find places to live and work. There is considerable consensus that the resulting separation of home and work has led to greater congestion on local and regional road networks, declining air quality, and creation of a "placeless" landscape that have affected all of the municipalities in the CCTIA and the state. A recent study of sprawl in America ranked the Bridgeport-Stamford-Norwalk-Danbury NECMA, all of which falls within the CCTIA, as the seventh most sprawling of 83 metro areas studied.[28]

Transportation and land use planning should have similar end-goals in mind: efficient use of a limited resource (land) that allows for efficient movement of goods and people and creation of strong communities. However, in Connecticut, transportation and land use decisions are often made separately, even though each profoundly affects the other, and both have strong impacts on the local and regional quality of life. As a result of this disjoined decision making, the CCTIA is consuming much of its land without improving its mobility.

Another key issue for transportation, of severe proportions in much of Connecticut, is the fact that affordable housing for the local work force is not available in proximity to places of employment. Policy in many towns supports this mismatch by encouraging fiscally positive (business and industry) and discouraging fiscally negative (moderate income housing) land uses in order to enhance the local property tax. Other towns limit commercial development, making it difficult to live and work in the same community. Thus, the journey to work becomes longer and longer as affordable housing recedes over the miles to the next region. There needs to be a stronger link between affordable housing and transit services.

The challenge facing the CCTIA today is to think beyond specific disciplines to create a "multi-modal" approach and managed land use planning for municipal and regional development. A starting point may be found in discussion of the following general questions:

- What incentives exist to create synergistic transportation and land use plans?
- What incentives exist to assure greater consistency in, and adherence to, plans prepared at the local, regional and state levels?
- What common assets do the suburban communities share with central cities and how can transportation and land use linkages make the highest and best use of those assets at the local, regional, and state levels?

Issues/Problems

- Strong "home rule" sentiments are counter-current to regional transportation/land use planning efforts in southwest Connecticut.
- The Connecticut Plan of Conservation and Development has little effect on the realities of municipal planning processes.

- ConnDOT relies on traditional planning models rather than integrating transportation strategies with goal-oriented plans of conservation and development.

- As the Transportation Strategy Board seeks to promote inter-regional efforts to improve Connecticut's transportation services delivery system, ConnDOT proposes to shift responsibility for the acquisition of rights-of-way and land for transportation projects from the state to municipalities. This policy change may result in barriers to the development of inter-municipal transportation projects such as increased legal costs, increased cost of land and project delays.

- Local zoning regulations do not contain consistent requirements for sidewalks and other pedestrian facilities or bicycle facilities.

5.3 Initiatives/Recommendations

- Establish a statewide planning agency responsible for comprehensive statewide growth management planning, including coordination and monitoring of various short- and long-range plans, *i.e.,* the Conservation and Development Policies Plan for Connecticut, the Master Transportation Plan, the Statewide Transportation Improvement Program (STIP), various regional plans of conservation and development, various regional long-range transportation plans, and town and city plans of conservation and development, with direct liaison with the Governor and the State legislature. *[Priority]*

- Seek greater consistency among plans developed at local, regional and State levels and, assuming such consistency, strengthen adherence to the Conservation and Development Policies Plan for Connecticut.

- Evaluate, formulate and implement state subsidized incentives to encourage increased land use clustering, mixed-use development, transit accessibility and pedestrian-oriented development. *[Priority]*

- Establish state recognized "Transportation Zone Areas of Development" with associated incentives to encourage their development and use. *[Priority]*

- Avoid highway and road expansion projects in areas that the Conservation and Development Policies Plan for Connecticut classifies as "Preservation Areas" wherever possible.

- Evaluate, formulate and implement incentives to encourage "Transit-Oriented Development."

- Evaluate, formulate and implement incentives to encourage development of "Freight Villages" which cluster freight customers with good rail and road access, enabling multiple users to share rail spur infrastructure, car staging areas and car switching equipment.

- Evaluate, formulate and implement incentives to encourage "infill" development in urban areas and existing transportation corridors.

- Evaluate, formulate and implement changes in eligibility requirements for various "brownfield" programs and implement new incentive programs specifically encouraging "brownfield" redevelopment in urban areas and existing transportation corridors.

- Evaluate, formulate and implement incentives to encourage the development of new housing stock in areas with demonstrated job demand as well as adjacent to newly established "Transportation Zones." *[Priority]*

- Evaluate, formulate and implement incentives to encourage the re-drafting of local and municipal zoning regulations to allow for more intensive "mixed-use" development.

- Institute a program by which ConnDOT will develop the requisite skills and capacity to consider and model the impacts different transportation policies will have on environmental, land use and "quality of life" issues.

- Streamline existing environmental review and approvals processes to eliminate duplication of efforts and enhance coordination among local, state and federal agencies.

- Develop and implement a project-ratings scale that prioritizes state funding for projects located in transportation corridors and transportation zones.

- Require that all municipalities (a) include a transportation element in their plans of conservation and development, including bus, commuter rail, bicycle and pedestrian modes, and (b) include specific congestion mitigation plans (including funding sources) to mitigate the increased burden of congestion from any new or proposed development project.

6. INTEGRATION OF THE CCTIA ECONOMY WITH STATE, REGIONAL, NATIONAL, AND GLOBAL ECONOMIES

GOAL: Develop Policies and Procedures that will Integrate the CCTIA Economy with State, Regional, National and Global Economies.

6.1 OBJECTIVES	6.2 CHALLENGES
• Improve the CCTIA's connections to state, regional, national and global economies through the development of a seamless multi-modal transportation network that	• Non-highway freight transportation infrastructure is either fragmented and underdeveloped or underutilized. • Existing transit infrastructure and

efficiently moves both persons and goods. • Support extension of the Mid-Atlantic Rail Operations Study northward into New York, Long Island and New England. • Actively participate in new east coast port development cargo routing options. • Identify new and emerging routes of commerce — including movement of human capital — and develop appropriate transportation linkages.	services provide linear commuter connections from cities to suburbs, but do not provide suburb-to-suburb connections. • Jurisdictional and political boundaries must be overcome to ensure coordinated planning, financing and implementation. • Need to overcome strong public preference for moving persons and goods by automobile and truck. • Uncertainty as to whether post-9/11 commutation patterns are temporary or permanent. • Lack of effective interface between Connecticut and New York Metropolitan Transportation Council.

Issues/Problems

Traffic congestion poses a real threat to future economic growth and development in the CCTIA. Nearly 150,000 cars and trucks pass through major interchange points on Route I-95 each day.[29] This figure represents a more than twice the traffic volume recorded in 1983 and 7 ½ times the traffic volume recorded in 1958, the year Route I-95 opened.

Past development practices, a historical lack of investment in non-highway infrastructure — particularly for moving freight — and an "intra-state" mindset have contributed to the congestion problem facing the CCTIA today.

As noted above (p. 8), the Gallis Report states that congestion in the CCTIA, together with the movement west of the Hudson River of major global connections, limits access to economic activities and hubs necessary to support Connecticut's institutions, businesses and people and effectively blocks economic activity from extending farther east than Stamford. In order to ensure the CCTIA's future economic vitality, efforts must be made to **create new gateways for moving goods and persons in and through the CCTIA** for the purpose of improving connectivity between the CCTIA and the state, regional, national and global economies.

6.3 Initiatives/Recommendations

Implementation of many of the initiatives and recommendations in Chapters 3, 4 and 5 above, including those addressing rail (passenger and freight), ferry service, feeder barge service, air service (passenger and cargo), development incentives (transportation zones, land use clustering), and integrated land use and transportation planning, will contribute to the

integration of the CCTIA with state, regional, national and global economies. The following initiatives and recommendations are intended specifically to contribute to such integration.

- Connecticut state agencies should reinforce collaboration both within the state and with appropriate agencies in neighboring states to ensure coordinated and compatible development of transportation and other infrastructure.

- Establish a mechanism for resolving conflicts among competing policy considerations at the local, state and federal level, *e.g.,* sharing of rail infrastructure, waterborne transportation, energy transmission facilities, shellfish and other aquaculture issues, species and natural habitat, development choices.

- Connecticut should play an active role in efforts to reorganize and restore access to Manhattan in a post-9/11 world.

- Evaluate policies regarding overhead and side clearances on rail lines to identify changes necessary to increase opportunities for use of the state's rail infrastructure.

- Extend the Mid-Atlantic Rail Operations Study through New York and Connecticut into New England.

- Develop public and political support for construction of the Cross Harbor Tunnel or another Hudson River rail crossing. *[Priority]*

- Connecticut should participate in planning efforts related to the Tappan Zee Bridge replacement project.

- Connecticut should continue to be proactive in its coordination with the New York Metropolitan Transportation Council, the planning agency for metropolitan New York City.

7. FUNDING ISSUES

GOAL: Identify Policies and Sources that Provide an Adequate and Reliable Flow of Funding Necessary for a Quality Multi-Modal Transportation System

7.1 OBJECTIVES	7.2 CHALLENGES
• Reduce state's dependence on federal funding for the vast majority of its transportation capital and operating needs. • Take greater advantage of the	• The amount of money needed to correct previous disinvestment in state's commuter rail system — to upgrade and maintain the system, improve service quality, maintain

ability to utilize federal highway funding for non-highway purposes. • Develop and maintain stable state and local revenue sources to finance transportation, including user fees, fuel taxes and public/private partnerships. • Develop new funding sources that charge direct beneficiaries of good transportation access, such as drivers, developers and merchants, for construction and maintenance of transportation system. • Maintain fares at levels that encourage use of public transportation.	present level of service and institute needed new service — is enormous. • Currently available resources are inadequate to meet the state's transportation capital and operating needs. • Reliance on property tax at local level limits contribution towns can make to transportation needs. • Decrease in motor fuel tax rates and expected flat revenue from this tax may cause Special Transportation Fund to incur a deficit. • Innovative and privatization options, while promising, can be unreliable and less predictable than broad based tax sources. • The state spending cap on operational spending substantially limits the potential to increase transportation spending. • Limitations under Federal law to use of highway user fees

Connecticut can no longer rely largely on federal funding for the vast majority of its transportation capital and operating needs. Currently available funding sources are inadequate to meet those needs, and additional state and local funding will be required.

Issues/Problems

- Connecticut's need to maintain its existing transportation infrastructure, and additionally to plan and implement a new transportation strategy, will require funding sources substantially in excess of those currently available for that purpose.

- The amount of money needed to correct previous disinvestment in state's commuter rail system alone — to maintain the system in good repair, maintain present level of service and institute needed new service — is enormous.

- Both to meet operating costs and to support long range capital planning, funding sources for transportation must produce stable, secure revenue streams. Innovative and privatization options, while promising, can be unreliable and less predictable than broad based tax sources.

- Funding for transportation should be equitable, both in respect of charging those who benefit most directly from good transportation access, such as drivers, developers and

merchants, and in recognizing all costs incurred in supporting particular modes of transportation.

- Reliance on property tax at local level limits the contribution towns can make to meeting transportation needs.

- The active participation of the business community is critical in order to gain the support of public policymakers and the general public for a new strategic plan for transportation and the necessary funding.

- Although the state spending cap does a good job in ensuring that state government does not spend above the means of the growth of our economy, the cap on operational spending substantially limits growth potential in transportation spending. Transportation spending must vie each year with other state spending needs.

- Revenue projections indicate motor fuel tax revenue will not increase and the Special Transportation Fund will incur a deficit.

7.3 Initiatives/Recommendations

Federal Funding

- Connecticut's federal, state and local elected and community delegations must create a unified approach to obtaining more funding from the federal government as reauthorization of TEA-21 approaches. In addition, Connecticut needs to work with other northeastern states to obtain additional funding and funding flexibility and to identify earmarked projects. A comprehensive strategy to communicate this unified message should be developed. *[Priority]*

- Take greater advantage of the ability to utilize federal highway funding for non-highway purposes.

- Evaluate value pricing and/or congestion pricing programs as recommended in the "Movement of People" section of this plan. To avoid repayment of past federal highway funding, this may require modification of TEA-21 or other action at the congressional level.

New Financing Sources

- Create enabling legislation allowing municipalities or regions to develop transportation related tax incentives and impose impact fees.[30]

- Create Benefit Assessment Districts.

- Explore the use of Tax Increment Financing.

- Explore innovative financing options:
  a) State Infrastructure Banks
  b) Turnkey Procurement
  c) Advance Construction Authority
  d) Leasing Rights of Way

Public Transportation

- Provide adequate funding for public transportation by utilizing a stable, dedicated funding source. *[Priority]*

- Maintain transit fares at levels that encourage use of mass transit modes, and adjust subsidies to cover operational and maintenance deficits. *[Priority]*

- Develop a formula-based allocation of operating funding for all transit districts. The formula may be driven by such variables as vehicle miles traveled (VMT), revenue generation/units, local community contributions, ridership, service to elderly and handicapped populations, demographics, population, revenue per passenger, cost per hour, population density (etc.).

- Create an incentive program that would encourage local communities to contribute more to public transportation programs in their regions.

- Consider establishment of a separate authority for transit, as recommended in the "Movement of People" section of this plan.

- Evaluate the feasibility of converting Connecticut Transit bus contracts from "management" contracts to "service" contracts, thus creating a "shared risk" in bus transit financial performance.

Other Financial Strategies

- Reward companies with job access policies and programs that help to limit traffic congestion.

- Where appropriate, utilize revenue bonding at the state and local levels for capital projects.

- Provide separate funding of the Connecticut Port Authority. *[Priority]*

- Examine procurement policies and practices to ensure that competitive bidding, based on the highest and best value criteria, is used as a tool for containing costs and maximizing level and quality of service, particularly with long-term service contracts.

8. CCTIA PERSPECTIVE ON SECTION 16 PROJECTS

The CCTIA supports all of the transportation projects listed in Section 16(a) of the Act as eligible to receive a portion of the $50 million in funds appropriated in the fiscal year 2001–2003 budget for projects endorsed by the Transportation Strategy Board other than the proposal to partner with Amtrak to provide an additional peak period train from Connecticut to Penn Station (Sec. 16(a)(9)). As stated in Chapter 8.C above, the CCTIA recommends expanding the destinations served by Metro North to include Penn Station but does not believe that the proposed single daily Amtrak train is a meaningful step in establishing commuter rail service to Penn Station.

Appendices

Appendix I

Persons who provided information at CCTIA meetings and subject matter

Charles Barone, ConnDOT, Reauthorization of TEA-21

Jack Condlin, Stamford Chamber of Commerce, Transportation and Economic Development

Alice Cheng, NY Economic Development Corporation. Inc, Cross Harbor Rail Freight Tunnel Proposal

The Honorable Jackie Cocco, State Representative, TEA 21 Reauthorization

Michael Doyle, Association of Commuter Rail Employees

Stephen Glick, State Chamber of Commerce, Pre-tax Transportation Vouchers

John Harrington, Fairfield Attorney, Bridgeport Rail Tunnel

Harry Harris, ConnDOT, Cross Harbor Rail Freight Tunnel Proposal

Peggy Hetherington, MetroPool, TDM Strategies

Richard Maher, Fairfield Resident, I-95 Bypass Road

Michael Mahoney, CCTIA resident, Suggestions to Alleviate Congestion on the Merritt Pkway, Route 1, and Route 25

Michael Morehouse, Wilbur Smith Associates, SWRPA's Vision 2020

Sue Prosi, SWRPA, Stamford Improvements

John Ricci, Sikorsky Airport, Bridgeport

Joseph Riccio, Bridgeport Port Authority, High speed ferry and feeder barge proposals

Mike Riley, Motor Transport Association, Importance of I-95 and I-84 to the Trucking Industry

Bob Rush, New Milford Resident, Passenger Rail Service

Louis Schulman, Administrator, Norwalk Transit Authority, Importance of bus service and state subsidy

Michael Sanders, CoonDOT, Public Transportation Bureau

Tom Schulze, New York Metropolitan Transportation Council

Van Selden, Tweed-New Haven Airport/Let's Improve the Future of Tweed

Tim Sorenson, Wilbur Smith Associates, Value Pricing

Jean Stimolo, Rideworks, Transit Vouchers

John Tierney, Transit Center, Transit Vouchers

Paul Timpanelli, Bridgeport Regional Business Council, Bridgeport Projects

Steve Tyliszlzak, City of Bridgeport, Office of Planning and Economic Developoment, Bridgeport Intermodal Transportation Project

Susan VanBenschoten, Vanasse Hangen Brustlin, Inc., Route 7 Travel Options Study

ENDNOTES

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[1] *ConnDOT, New Haven Line Fleet Configuration Analysis, Task 5: Lifecycle Cost Analysis (October 2001), p. 5. At page xi, the Analysis states: "Changing service orientation to improve mobility for less well served market segments such as "intermediate" [intra-Connecticut] or "reverse" commuters would likely increase overall fleet requirements. These considerations were outside the scope of this analysis."*
[2] *ConnDOT, Southwest Corridor Report: Year Four (January 2002), p. 13.*
[3] *For the purpose of the estimate described in note 5, maintenance facilities are assumed to include the following: a wheel mill service and inspection building; electric locomotive shop; layup yard trackage; car wash; running repair and support shops; heavy damage and paint shops; wheel true building; and blow shed.*
[4] *SWRPA notes that if a non-self-propelled fleet configuration or a mixed fleet is selected the number of cars to be purchased and the unit costs may decrease. ConnDOT and Metro-North are working together to determine the optimal combination of locomotive-hauled and self-propelled consists to balance operational considerations and cost-effectiveness.*
[5] *Estimate prepared by SWRPA for SWRMPO 9/02, using information from ConnDOT's presentation to SWRMPO 6/27/02, New Haven Line Car Fleet Study (2002), M-2 CSR Project Status Report (June 2002), and discussions with ConnDOT staff. The funding needed for the major rail capital elements is less than the total estimated un-funded capital funding needed due to unitemized miscellaneous costs and contingencies.*
[6] *New York City Economic Development Corporation, Cross Harbor Freight Movement Major Investment Study, (May 2000), p. 1-1.*
[7] *Presentation by the New York City Economic Development Corporation to the Connecticut Transportation Strategy Board, September 6, 2002.*
[8] *Estimate provided by William B. Galligan, Chief of Staff, East of Hudson Rail Freight Operations Task Force, in telephone conversation with Richard C. Carpenter, CCTIA Board Member.*
[9] *Vanasse Hangen Brustlin, Inc., Route 7 Travel Options Implementation Plan (June 2000).*
[10] *Surface Transportation Policy Project, Easing the Burden: A Companion Analysis of the Texas Transportation Institute's Congestion Study (July 25, 2002), Executive Summary, p. 2.*
[11] *Cambridge Systematics, Inc., Public Transportation and the Nation's Economy (October 1999).*
[12] *Those initiatives and recommendations within topics that should be given priority have been identified. See also the top five recommendations described in the Executive Summary above.*
[13] *Wilbur Smith Associates, CMS 2020 – Draft Evaluation Technical Memorandum (September 2002), pp 78-80.*
[14] *ConnDOT, Analysis of the Amended and Restated Service Agreement for the Operation and Subsidization of the New Haven Rail Line (May 2001).*
[15] *Ibid., pp. 25–6; Wilbur Smith Associates, Vision 2020: Congestion Mitigation Study, Task 3: Existing Conditions Technical memorandum (January 25, 2002), p. 4-22; ConnDOT, Southwest Corridor Report: Year Four (January 2002), pp. 13-5.*
[16] *APTA Transit Fact Book (1999); ConnDOT, Connecticut Statewide Bus System Study (July 2000), Executive Summary.*
[17] *Connecticut Transit 2001–02 budget; Greater Bridgeport Transit District 2001–02 budget; Greater Waterbury Transit District 2001–02 budget.*
[18] *ConnDOT, Master Transportation Plan, p. III-113.*
[19] *I-95 Corridor Coalition, Strategic Plan (2002), p. 6*
[20] *Port of New London: Can New London be a Transit Container Port? Management & Transportation Associates (January 2001), p. 12.*
[21] *ConnDOT, Southwest Corridor Commodity Study (May 2000)*
[22] *I-95 Corridor Coalition, Strategic Plan (2002), p. 6*
[23] *See also the recommendations common to movement of people and goods, as set forth in subchapter 3.3H above.*
[24] *ConnDOT, Southwest Corridor Commodity Study (May 2000)*
[25] *Ibid.*
[26] *Hall and Gordon, Greening Freight: Preliminary Research on Heavy Duty Trucks in Southwestern Connecticut (October 1998), p. 6.*
[27] *Frederic R. Harris, Inc., Coastal Barge Feeder Study, South Central Connecticut (February 2001), p. 63.*

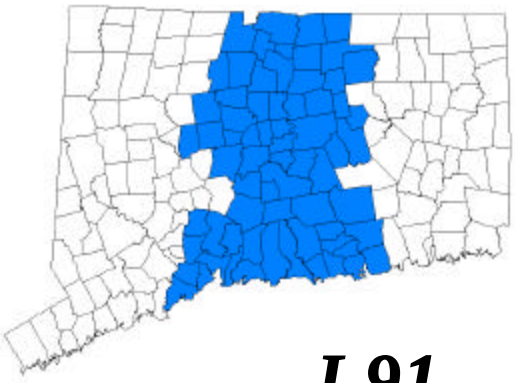
[28] *Smart Growth America, Measuring Sprawl and Its Impact (October 2002). An NECMA (New England County Metropolitan Area) is a metropolitan area defined by the U.S. Office of Management and Budget. See http://www.census.gov/population/www/estimates/aboutmetro.html.*

[29] *ConnDOT has calculated the capacity of Route I-95 at 5,750 vehicles per hour. Assuming that I-95 operated at capacity 24 hours per day, the facility's total capacity is 138,000 vehicles per day at a given point.*

[30] *This recommendation is not supported by the South Central Regional Council of Governments.*

Appendix C

I-91 Full Plan 2002



I-91 Transportation Investment Area Corridor Plan

Adopted: September 26, 2002

I-91 Transportation Investment Area (TIA)
Final Corridor Plan
September 26, 2002

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Executive Summary – Policy and Project Priorities

This final corridor plan is a product of the combined knowledge, experience, and understanding of the fifteen-member I-91 Transportation Investment Area (I-91 TIA) Board. It is based on information provided to the Board by members of the public, as well as other information collected by the TIA Board members themselves.

The I-91/Connecticut River Valley corridor is important to the future of the state because it includes the I-91 corridor, an important transportation and logistics corridor with an interstate freeway, rail line, seaport and airports. The transportation and logistics resources found in this corridor can be utilized to create a foundation for numerous economic activities, which will have long-term benefits to the state and the region.

The I-91 corridor has the potential "to develop as a significant transportation and logistics corridor, linking port, road, rail and air facilities into a network that can provide world class support to manufacturing, research, information and finance-based industries" (see p. 19, *The Connecticut Strategic Economic Framework,"* aka "Gallis" Report).

The I-91 TIA Board strongly urges aggressive implementation of the initiatives presented in this Plan. The TIA Board particularly supports the development of a methodology for doing cost/benefit analyses of alternative modes of transportation.

The I-91 TIA went through a careful process to establish its top five project priorities. As with our TIA's initial corridor plan, the process of establishing project priorities made it clear that there are overarching policies without which real progress cannot be made. Policy initiatives such as significantly increasing revenue for transportation investments and integrating transportation, land use and economic development planning are pre-requisites for success in implementing specific projects. In addition, some projects, while important to the I-91 TIA corridor, are also important to the entire state. Therefore, we have recommended both statewide projects and broad policy initiatives, just after the list of the I-91 TIA's five region-specific project priorities.

<u>Top Five Project Priorities, in order of priority</u>

1. **New Haven to Springfield Commuter Rail**
   Implement New Haven to Springfield commuter rail with a link to Bradley International Airport. The first step in this, a study on the infrastructure costs and operating characteristics of expanded commuter rail in this corridor, has just begun. This project is seen as an important way to connect the Hartford and Springfield areas to New Haven and New York. In particular, it will provide better access to northeast corridor Acela service in New Haven and to Bradley Airport for people in this corridor.

The current study will provide details needed to implement this project including costs, capital requirements and operating characteristics. The study should analyze the cost-benefit of electrification of the New Haven to Springfield line. The State should aggressively pursue the acquisition of the right-of-way in this corridor now.

2. Feeder Barge Service - Port of New Haven

Establish container barge service for the port of New Haven including the purchase of two cranes as recommended by the *Coastal Barge Feeder Service Study – SCRCOG* (Final Report dated March 2001). Support barge to truck and train intermodal transfer facilities at the New Haven port. This can help strengthen our TIA's ties to the rest of the northeast and remove over 300 trucks a day from our highways. This project will have the added benefit of becoming a catalyst for job creation and economic development in the Greater New Haven area.

The public investment in what will eventually be a public/private partnership will consist of $4.1 million for equipment costs and $5 million as a working capital loan. Private investment will approximately match that amount. The equipment purchase with public money will be leased to a private company or companies for $1 per year. The loan will be repaid with interest commencing in Year 10. Implementation is possible immediately upon funding.

3. Hartford – New Britain Bus Rapid Transit

Construct the bus rapid transitway connecting Hartford and New Britain. This facility will be a bus only roadway that provides a rapid transit service, with convenient stations, frequent service, state of the art passenger information, and trip times that are competitive with the private automobile. The State must insure that its operating characteristics and amenities are the same as other forms of rapid transit. This project will provide a less expensive way to deal with congestion in the Hartford region. As importantly, it will serve as a prototype for a new form of rapid transit elsewhere in Connecticut and across the nation.

The New Britain-Hartford BRT will require the construction of 9.4 miles of exclusive bus roadway connecting New Britain, Newington, West Hartford and Hartford; 12 stations varying in size and description; and a multi-use trail through much of the corridor. Approximately 28 new buses will be procured. The current total estimated cost to construct the busway is $160 million. Expected operating costs for the first year of operation are $6.3 million. (Source: *Final EIS and Section 4(f) Evaluation New Britain – Hartford Busway*, December 2001. Additional details are available in that document; updated construction needs, operating characteristics and related costs will become available as the design is developed.) Construction is expected to be underway in April 2004, with operation of the service expected to begin in January 2006.

4. **Metro North Passenger Rail Equipment and Parking**
   Upgrade trains, maintenance facilities, parking facilities, and feeder bus services for passenger rail service in the state, particularly along the MetroNorth line, which provides an important link from the I-91 corridor to New York. Upgrades should not be at the expense of other existing services, such as the Shoreline East commuter service. Specifically, we should fund needed commuter rail equipment on the New Haven line and provide additional parking for commuters at an Orange or West Haven rail station. The cost for providing new commuter parking is estimated to be between $12 and 20 million.

5. **Bradley International Airport and Tweed New Haven Airport**
   Adopt a statewide airport strategy that recognizes Bradley's role as the primary commercial airport and the need to invest in Tweed as the secondary airport, serving southern Connecticut.

   Endorse and implement the Tweed New Haven Airport Master Plan. The four-phase modernization program (including a 600-foot runway extension and navigation-aid improvements) will cost an estimated $60 million over five years.

   Provide the forum for state policy makers to resolve conflicts between environmental, economic development and transportation policies to clear the way for the modest expansion envisioned by the Plan. Support state legislative changes necessary to accommodate implementation of the Plan.

<u>Statewide Project Priorities, in order of priority</u>

The following projects are important to the I-91 TIA, but will also benefit residents throughout the state.

1. **Deduct-A-Ride Program**
   Expand employer participation in the Deduct-A-Ride program throughout the state and provide other monetary or tax incentives for transit commuters in the corridor. The state has concentrated most of its marketing efforts for Deduct-A-Ride on employers in Fairfield County. It is important that employers and employees in the I-91 corridor be encouraged to use transit and that other transit incentives be provided here and elsewhere in the state. Vanpooling and carpooling should be encouraged in a similar manner, as an additional effort to reduce the number of vehicles on our highways

2. **Jobs Access Program**
   Continue support for the Jobs Access Program, which has allowed thousands of Connecticut residents, particularly low-income people, to get to work. This program is a proven transportation investment that benefits workers and employers. Reverse commute services, route extensions, and customized paratransit services need a stable, dedicated

funding source. The annual cost to the State for this program in FFY2003 is estimated at $3.50 million, matched by $5.38 million in Federal Transit Administration funds.

3. **Local Bus Services**
   Improve transit services by implementing the recommendations of the statewide bus study. While we have made progress in coordinating transit service within and between urban areas in the corridor, more needs to be done. Additional funding will be needed to implement many of the recommendations of the bus study. The estimated additional annual operating cost of the efficiency measures and operating enhancements proposed in the study is $5.8 million: $8.6 million in operating costs less $2.8 million in additional revenue. (Source: *Connecticut DOT Statewide Bus System Study, Executive Summary,* July 2000; additional details are available in that document and in the individual system reports.) Consideration should also be given to creating a statewide transit authority.

Top Policy Recommendations

If we are to make real progress in achieving connectivity, stimulating economic vitality and improving our quality of life, the following policy initiatives should be implemented:

- **New Revenue Sources**
  We must identify one or more significant new revenue sources for transportation investments. These sources must be stable and dedicated solely to capital and operating costs for transportation. Special attention should be given to the use of electronic tolls, not toll booths, on Connecticut highways. This is a promising way to generate significant revenues without inconveniencing highway users.

- **Better Decision-making and Planning**
  We must develop procedures to more closely link transportation, land use and economic decision-making and planning in the state. The goal should be fostering livable communities and environmentally-sound economic development.

- **Integrated Transportation Facilities**
  We must pursue opportunities to integrate transportation facilities, whether transit, freight, highways or rail. Intermodal strategies should be given priority.

- **Regional Cooperation**
  We must work more closely with neighboring states and all states in the northeast to find solutions to many of our most important needs including improved rail freight service, improved commuter rail, and feeder barge service.

I-91Transportation Investment Area
Corridor Plan

Chapter 1: Introduction

"The I-91/Connecticut River Valley Corridor is important to the future of the state. The state has never had a 'Silicon Valley,' or a 'Route 128,' as a focus for its technology sector. The I-91 corridor could become a location of that type. Commercialization of research is one of the most promising initiatives that can impact the state's economy. The future of Connecticut will be strongly influenced by the utilization of educational, medical, and research resources found in the I-91/Connecticut River Valley. However, the I-91 corridor appears isolated and difficult to access from global and continental markets. A fundamental issue is how to get these resources to world markets and how to get world markets to these resources" (p. 16, Gallis).

Enactment of Public Act 01-5, which established the Transportation Strategy Board and this Transportation Investment Area Board, signals a new direction in transportation policy development for the State of Connecticut. Implementation of this new law allows a fundamental shift in the state's approach to Transportation – tying the expenditure of state transportation resources to land use and economic development policy. The TIA Board strongly supports this new direction and urges aggressive implementation of the initiative represented by enactment of Public Act 01-5. Our vision for the I-91 corridor stresses the connectivity between transportation, economic development and land use policy and multi-modal solutions to such transportation-related issues as congestion, over-reliance on trucks for freight movement, environmental degradation, and urban decay. We urge the use of commuter rail, bus, and rapid transit and the development of an airport strategy that serves all the state's population centers.

If significant highway-based infrastructure improvements are pursued, they will take at least ten to twenty years to implement. Quite early during that time frame many of our existing highways will have approached or actually reached complete shutdown due to gridlock; significant interim relief for Connecticut will be non-highway solutions that can be implemented in a much shorter time frame.

Chapter 2: Public Involvement

This Final Plan was developed following considerable deliberation by the fifteen members of the I-91 Corridor Transportation Investment Area Board. The board itself was constituted so as to provide a broad representation of the different constituencies and transportation interests within the I-91 corridor. Five members were selected to represent the five planning regions in the corridor. Five members were elected at meetings of the general public within those five regions. And five members were specifically selected to insure that businesses, transit advocacy groups, the rail industry, the trucking industry, environmental interest groups, labor unions, and trade associations would be represented. A list of the I-91 TIA board members and the constituencies they represent is provided in Appendix A

Each board member brought to the table significant expertise in one or more aspects of concern regarding the transportation challenges in the I-91 corridor. In sharing this expertise, all members grew in their understanding of those challenges and together they developed first the objectives, then strategies, and finally projects to meet the transportation challenges of the corridor.

They were assisted in this effort by listening to comments from members of the general public, by receiving information from professionals working in various transportation-related fields, and by reviewing the five adopted Regional Transportation Plans. This Final Transportation Plan was revised and refined in response to information gleaned through this process.

All I-91 TIA board meetings were open to the public. Meeting notices and agendas were sent to the town clerks of all municipalities covered by the I-91 TIA before each meeting with a request that the meeting notice be posted in the town hall. In addition, individuals who requested this service were sent personal notification of each meeting by fax or email. Meeting times and places were posted on the Transportation Strategy Board and the Capitol Region Council of Governments websites. Minutes of the meetings were also posted on the web, as were various drafts of the Plan itself.

In addition, members of the I-91 TIA board reported back to their individual constituencies and solicited input. Requests for comment were also posted on several internet news groups, including misc.transport.rail.Americas, misc.transport.road, misc.transport.urban-transit, and ne.transportation. Responses that were received were distributed to board members. The Branford Electric Railway Association (operator of the Shoreline Trolley Museum) and other organizations published notes in their member newsletters asking for public input, and comments were received and shared with I-91 TIA members. Several area chambers of commerce were also informed of and commented upon the deliberations of the I-91 TIA board.

As the Plan was nearing completion as a written document, two public information meetings were held to obtain more focused comment. Again, notices were sent to the town clerks in the TIA and posted on the TSB and CRCOG websites. In addition, legal notices were published in

the Hartford Courant, the Journal Inquirer, and the Bristol Press, and news releases were mailed or faxed to area media throughout the corridor.

The first public information meeting was held at Union Station in Hartford on August 22, 2002. Four written comments were also received. One comment at the meeting cited the importance of integrating existing and future bus systems; all of the remaining comments received requested the inclusion of projects and programs that would meet the needs of bicyclists and pedestrians in the area.

The second public information meeting was held in New Haven's Union Station on September 19, 2002. In addition, four written comments were received. Again, the focus of most of the comments at the meeting was on improving the bicycle/pedestrian environment of the area. Other comments cited the need for increasing and improving service on the Metro-North rail line, extending commuter bus and rail service to include weekends, adding parking at the New Haven train station, increasing and improving local bus service. One citizen expressed opposition to expansion of the Tweed New Haven Airport.

A summary of the comments received at the two public information meetings and summaries of each written comment are included at the end of this document as Appendix B.

Finally, the Plan has been discussed with members of the five Regional Planning Agency policy boards during their regular meetings. These meetings are open to the public, agendas are distributed to town clerks for posting, notices and agendas are mailed to extensive mailings lists representing interested parties throughout the regions, and opportunities for public comment are made available at each of these meetings.

In response to the comments received, the members recognized that they had omitted reference to the needs of bicyclists and pedestrians and subsequently revised the Plan to include support for meeting those needs. Other comments essentially supported the Plan as it was written, except for the comment in opposition to the expansion of Tweed Airport. After careful consideration, the I-91 TIA board members reaffirmed their support for this project.

Chapter 3: Movement of People

3.1 Corridor Objectives

3.1.1 Develop a statewide airport strategy.

3.1.2 Provide feasible, competitive alternatives to automobile and truck use.

3.1.3 Promote greater safety and courtesy among the driving public.

3.2 Corridor Challenges

3.2.1 Inability of the existing primary road networks to adequately handle an increasing volume of traffic.

3.2.2 Traffic congestion on I-91, especially at intersections with I-95 in New Haven, and I-84 in Hartford.

3.2.3 Inadequate and poorly integrated transit systems throughout the TIA.

3.2.4 Lack of a statewide airport strategy to facilitate potentially significant growth in passenger traffic and economic activity.

3.2.5 Lack of supporting transit systems to distribute airport passengers to their destinations.

3.2.6 Inadequate infrastructure for north/south commuter rail passenger service.

3.3 Corridor Initiatives/Recommendations

3.3.1 *New Haven to Springfield Commuter Rail*

Implement New Haven to Springfield commuter rail with a link to Bradley International Airport. The first step in this, a study on the infrastructure costs and operating characteristics of expanded commuter rail in this corridor, has just begun. This project is seen as an important way to connect the Hartford and Springfield areas to New Haven and New York. In particular, it will provide better access to northeast corridor Acela service in New Haven and to Bradley Airport for people in this corridor.

The current study will provide details needed to implement this project including costs, capital requirements and operating characteristics. The study should analyze the cost-benefit of electrification of the New Haven to Springfield line. The State should aggressively pursue the acquisition of the right-of-way in this corridor now.

3.3.2 *Hartford – New Britain Bus Rapid Transit*

Construct the bus rapid transitway connecting Hartford and New Britain. This facility will be a bus only roadway that provides a rapid transit service, with convenient stations, frequent service, state of the art passenger information, and trip times that are competitive with the private automobile. The State must insure that its operating characteristics and amenities are the same as other forms of rapid transit. This project will provide a less expensive way to deal with congestion in the Hartford region. As importantly, it will serve as a prototype for a new form of rapid transit elsewhere in Connecticut and across the nation.

The New Britain-Hartford BRT will require the construction of 9.4 miles of exclusive bus roadway connecting New Britain, Newington, West Hartford and Hartford; 12 stations varying in size and description; and a multi-use trail through much of the corridor. Approximately 28 new buses will be procured. The current total estimated cost to construct the busway is $160 million. Expected operating costs for the first year of operation are $6.3 million. (Source: *Final EIS and Section 4(f) Evaluation New Britain – Hartford Busway*, December 2001. Additional details are available in that document; updated construction needs, operating characteristics and related costs will become available as the design is developed.) Construction is expected to be underway in April 2004, with operation of the service expected to begin in January 2006.

3.3.3 *Passenger Rail Service*

Upgrade trains, maintenance facilities, parking facilities, and feeder bus services for passenger rail service in the state, particularly along the MetroNorth line, which provides an important link from the I-91 corridor to New York. Upgrades should not be at the expense of other existing services, such as the Shoreline East commuter service. Specifically, we should fund needed commuter rail equipment on the New Haven line and provide additional parking for commuters at an Orange or West Haven rail station. The cost for providing new commuter parking is estimated to be between $12 and 20 million.

3.3.3.1 Rail passenger cars should be well-maintained and provided in adequate numbers to meet all demands with excess capacity.

3.3.3.2 The State should be served by a single rail transit passenger service.

3.3.3.3 The Hartford Division should be purchased from AMTRAK.

3.3.3.4 The management of all rail-based facilities in the state (including AMTRAK, Metro-North, Shoreline East and the freight lines) should be integrated to optimize passenger and freight interaction between

systems, and to eliminate existing restrictive agreements and inefficiencies, and increase the utilization of inter-modal opportunities.

3.3.4 *Statewide Airport Strategy*

3.3.4.1 In recognizing that Bradley International Airport is of vital economic interest to Connecticut and the entire region, the State should adopt a strategy to support the future needs of this transportation facility, which currently generates over $2.5 billion annually in economic activity and has the potential to contribute significantly more. The State should further support the expansion of Tweed airport, Connecticut's secondary airport, as a vital transportation facility in a key area for future economic growth. These efforts should be coordinated through a statewide airport strategy that recognizes the importance of both assets and their importance to the efficient movement of people and goods as well as their contribution to economic activity.

3.3.4.1.1 An airport strategy should be developed with the goal of determining how the State will manage growth related directly to these facilities. Particular attention should be paid to how the two airports could become complementary in a two-tier statewide airport strategy.

3.3.4.1.2 These two airports should be intermodally linked for efficient freight and passenger transport. The importance of efficiently managing air passenger and freight traffic cannot be overemphasized and should be managed under a coordinated system that is customer driven and marketed for economic development purposes.

3.3.4.1.3 In its statewide airport strategy, Connecticut should more actively promote new commercial and freight service to these facilities, recognizing that it will oftentimes take resources to initiate service that is not immediately sensed in the market by operators. Initiation of international service out of Bradley to Europe should be a priority to serve the needs of the marketplace, to contribute significantly to the regional economy and to enhance the general attractiveness of this airport.

3.3.4.2 Endorse and implement the Tweed New Haven Airport Master Plan. The four-phase modernization program (including a 600-foot runway extension and navigation-aid improvements) will cost an estimated $60 million over five years.

3.3.4.3 Provide the forum for state policy makers to resolve conflicts between environmental, economic development and transportation policies to clear the way for the modest expansion envisioned by the Tweed New Haven Airport Master Plan. Support state legislative changes necessary to accommodate implementation of the Plan.

3.3.5 *Local Bus Services*

Improve transit services by implementing the recommendations of the Statewide Bus Study. While we have made progress in coordinating transit service within and between urban areas in the corridor, more needs to be done. Additional funding will be needed to implement many of the recommendations of the bus study. The estimated additional annual operating cost of the efficiency measures and operating enhancements proposed in the study is $5.8 million: $8.6 million in operating costs less $2.8 million in additional revenue. (Source*: Connecticut DOT Statewide Bus System Study, Executive Summary*, July 2000; additional details are available in that document and in the individual system reports.) Consideration should also be given to creating a statewide transit authority.

3.3.6 *Alternatives to the Single Occupancy Vehicle*

Support incentives to increase automobile occupancy levels. Employer-sponsored programs such as flextime, telecommuting, car/vanpooling, and compensation for transit use should be encouraged.

3.3.6.1 Employer participation in the Deduct-A-Ride program in the I-91 corridor should be expanded and other monetary or tax incentives should be provided for transit commuters in the corridor. The state has concentrated most of its marketing efforts for Deduct-A-Ride on employers in Fairfield County. It is important that employers and employees in the I-91 corridor be encouraged to use transit and that other transit incentives be provided here and elsewhere in the state.

3.3.6.2 As an additional effort to reduce the number of vehicles on our highways, encourage vanpooling and carpooling with monetary incentives, similar to those cited in 3.3.6.1.

3.3.6.3 Provide monetary incentives for cyclists and transit commuters in the form of state income tax credits and/or employer subsidies.

3.3.7 *Jobs Access Program*

Continue support for the Jobs Access Program, which has allowed thousands of Connecticut residents, particularly low-income people, to get to work. This program is a proven transportation investment that benefits workers and employers. Reverse commute services, route extensions, and customized paratransit services need a stable dedicated funding source. The annual cost to the

State for this program in FFY2003 is estimated at $3.50 million, matched by $5.38 million in Federal Transit Administration funds.

3.3.8 *Highway Incident Management*

Manage highway traffic incidents through a comprehensive highway Incident Management System (IMS) that minimizes traffic delays regardless of the type of incident.

3.3.9 *Seamless Transit Services*

Integrate rail and bus transit, and bus and rail rapid transit services throughout the I-91 TIA corridor and the State.

3.3.10 *Interstate 91*

Maintain Interstate 91 as a limited access highway with additional lanes in urbanized areas where required for safety and congestion mitigation.

3.3.11 *Port Facilities*

Operate the corridor's port facilities in a coordinated manner and improve them so to make them adequate to meet all anticipated demands with excess capacity.

3.3.12 *Interstate Cooperative Connectivity*

Engage other New England states, the State of New York, federal agencies, and the eastern Canadian provinces in the process of addressing critical corridor issues, such as commuter rail, feeder barge and rail freight services (e.g. an additional Hudson River rail crossing, the West Springfield rail yard and the Cedar Hill rail yard).

Chapter 4: Movement of Goods and Freight

4.1 Corridor Objectives

4.1.1 Adopt policies and provide facilities that allow freight and passengers to be moved by the most efficient and environmentally sound means.

4.1.2 Avoid making decisions to improve freight movement by rail in the corridor that would preclude or impede the use of the same rail corridor for passenger movement.

4.2 Corridor Challenges

4.2.1 Underutilization of the port facility in New Haven, which could spur economic activity and provide part of the solution to freight movement problems.

4.2.2 Lack of east/west rail corridors for through and local freight movement.

4.3 Corridor Initiatives/Recommendations

4.3.1 *Feeder Barge Service – Port of New Haven*

Establish container barge service for the port of New Haven including the purchase of two cranes as recommended by the by the *Coastal Barge Feeder Service Study – SCRCOG* (Final Report dated March 2001). Support barge to truck and train intermodal transfer facilities at the New Haven port. This can help strengthen our TIA's ties to the rest of the northeast and remove some truck traffic from our highways. Implementation is possible immediately upon funding.

Feeder Barge Service's Role

The global shipping industry is changing. More Asian cargo is coming to the east coast of North America by water, and it is coming to a few central ports. Without an economical alternative, containers destined to (and from) Connecticut and other New England destinations will travel via truck along the I-95 corridor.

A cost effective, reliable container barge feeder service between the New York – New Jersey docks and Connecticut could remove **over 300 trucks a day**, thereby generating additional roadway capacity while enhancing air quality and reducing the requirement for annual highway maintenance. In addition to providing a viable transportation alternative, a successful container barge feeder service can be the catalyst for job creation and economic development. Job creation and the resulting economic development in New Haven would consist of a concentration of container-related businesses that provide value-added services to both import and export supply-chain processes.

Benefits

1. Provide Connecticut businesses with a reliable, long-term, cost competitive shipping option as import demand continues to grow – while the highways leading to and from New York become increasingly more congested, making container movement via the highway progressively more difficult and expensive — thereby promoting a more competitive Connecticut business environment.
2. Help reduce, or at least arrest, growth in large vehicle movement on I-95 and I-84 – between New Haven, CT and Northern NJ – by capturing a major share of Connecticut's moderately sized container market and by enabling a significant penetration into the vastly larger Worcester-Framingham, MA market
3. Entice follow-on business opportunities such as container yard / depot operations [e.g. container and chassis maintenance], container route optimization, overweight container handling [e.g. stripping (imports) and stuffing (exports)] and value-added warehousing.

Recommended Priority

The place to start is New Haven because:

1. New Haven is the closest Connecticut port, in geographical terms, to the Connecticut and Northeast Shippers while also situated at the crossroads of I-95 and I-91. This geographical location maximizes the landside congestion and air quality benefits.
2. New Haven's nautical distance from the Port of New York and New Jersey (PONY&NJ) enables a 24-hour round trip operation, thereby maximizing cost efficiencies for a chartered tug operation.
3. Existing New Haven based marine terminal operator and trucking company can launch service quickly, with no time-consuming permit or construction issues.
4. The City of New Haven, the surrounding communities and the South Central Regional Council of Governments stand behind a New Haven service 100%.
5. New Haven's proposed Lift On / Lift Off (LOLO) container operation is the same system as utilized in the PONY&NJ, therefore no additional equipment (e.g. such as container chassis' for a RO/RO operation) or labor agreements, are necessary. In addition, a LO/LO operation facilitates nearly three times the volume of containers per one-way movement (i.e. the movement of at least 200 containers per one-way voyage, as compared to approximately 65 via a Roll-on / Roll-off operation).
6. A cooperative agreement between labor (Coastline Terminals), marine terminal operator (Logistec) and trucker (Westchester Motor Lines) will enable the New Haven service to effectively load and discharge containers directly from barge to and from the upland processing area.

What is the Approach?

1. Establish a public / private partnership between the State of Connecticut (administered by the South Central Regional Council of Governments) and existing New Haven based private businesses (Westchester Motor Lines and Logistec).
2. To attract shipping customers away from the existing all-truck service, the barge connection has to not only match the all-truck price, but beat it by a minimum of 5%.
3. Based on a conservative business plan, the barge service would start at approximately 12,500 containers a year, "ramping up" to 50,000 by Year 9. The hump – Years 1-5.
4. Success will require a shared public-private investment in start-up capital costs. Less than half of this amount would come from the State of Connecticut.

The Proposed Public Investment

The public investment would be structured in a manner which fully recognizes the public nature of the dollars and the need for parallel investment and risk:

Period	Proposed Public Investment
Pre-Operations	$1.0 million (equipment)
Pre-Operations	$5.0 million (working capital loan)
Year 1	$2.4 million (equipment)
Year 5	$0.7 million (equipment)
Total	$9.1 million

The equipment purchased with public funds would be owned by the South Central Regional Council of Governments, or other appropriate government agency, and leased to the private company for $1 per year.

The working capital loans would be repaid with interest commencing in year 10.

4.3.2 *Improved Port Facilities*

Improve the New Haven port facilities to allow freight to pass seamlessly from the rail, highway and port facilities throughout the corridor and through Springfield with minimal legal, political, and physical constraints.

4.3.3 *Integrated Transportation Facilities*

Pursue opportunities to integrate transportation facilities, whether transit, freight, highways or rail. Intermodal strategies should be given priority, especially with regard to movement of goods.

4.3.4 *Late Night Truck Deliveries*

Find incentives for late night truck deliveries.

4.3.5 *Preservation of Physical Assets*

Publicly acquire and preserve existing physical assets to enable future port, rail and bus, passenger and freight infrastructure to be developed, as the State has done historically with abandoned rail lines. Examples of such physical assets include properties in the New Haven rail yards and abandoned port structures in New Haven and New London.

4.3.6 *Rail Freight Management*

Integrate the management of all rail-based facilities in the state (including AMTRAK, Metro-North, Shoreline East and the freight lines) so as to optimize passenger and freight interaction among systems, to eliminate existing restrictive agreements and inefficiencies, and to increase the utilization of inter-modal opportunities.

4.3.7 *Interstate Cooperative Connectivity*

Engage other New England states, the state of New York, federal agencies, and the eastern Canadian provinces in the process of addressing critical corridor issues, such as commuter rail, feeder barge, and rail freight services (e.g. an additional Hudson River rail crossing, the West Springfield rail yard, and the Cedar Hill rail yard).

Chapter 5: Economy, Land Use, Environment, and Quality of Life

5.1 Corridor Objectives

5.1.1 Implement policies that will integrate transportation planning strategies with land use, economic development, and environmental goals and objectives.

5.1.2 Restore, maintain, and enhance the vitality, diversity and economic and cultural health of the corridor's urban areas.

5.1.3 Encourage future development to allow the most efficient and environmentally sound use of resources.

5.1.4 Encourage the most efficient and environmentally sound use of transportation resources to enhance the economic development and quality of life of the Corridor.

5.2 Corridor Challenges

5.2.1 Potential for continued deterioration of the area's natural and cultural environments as increased transportation system needs are met.

5.2.2 Inadequate state and area policy guidance to reduce the continued spread of suburban sprawl and urban decline.

5.2.3 Insufficient resources for significant new investment in transportation infrastructure (capital and operating).

5.2.4 Over-reliance on property tax in Connecticut encourages wasteful competition and poor land use decisions that work against economic, efficient and environmentally responsible transportation systems planning.

5.3 Corridor Initiatives/Recommendations

5.3.1 *Better Decision-making*

Develop procedures to more closely link transportation, land use and economic decision-making and planning in the state. The goal should be to foster livable communities and sustainable economic development.

5.3.1.1 Encourage, through transportation investments, the preservation of community character, the revitalization of urban centers, and increased utilization of transit services.

5.3.1.2 Promote the most efficient use of existing transportation facilities and infrastructure with an emphasis on service integration, safety and connectivity.

5.3.1.3 Utilize technology to improve the management of existing transportation facilities.

5.3.1.4 Integrate transportation and land use planning in setting transportation strategies and priorities for the State, including development of State policies to increase the population densities of the corridor's core cities.

5.3.2 *Alternatives to the Single Occupancy Vehicle*

Support incentives to increase automobile occupancy levels. Employer-sponsored programs such as flextime, telecommuting, car/vanpooling, and compensation for transit use should be encouraged.

5.3.2.1 Expand employer participation in the Deduct a Ride program throughout the state and provide other monetary or tax incentives for transit commuters in the corridor. The state has concentrated most of its marketing efforts for Deduct a Ride on employers in Fairfield County. It is important that employers and employees in the I-91 corridor be encouraged to use transit, and that other transit incentives be provided here and elsewhere in the state.

5.3.2.2 As an additional effort to reduce the number of vehicles on our highways, encourage vanpooling and carpooling with monetary incentives, similar to those cited in 5.3.2.1.

5.3.2.3 Provide monetary incentives for cyclists and transit commuters in the form of state income tax credits and/or employer subsidies.

5.3.3 *Pedestrian and Bicycle Initiatives*

5.3.3.1 Adopt the USDOT Policy on Integrating Bicycling and Walking into the Transportation Infrastructure.

5.3.3.2 Complete long distance multi-use paths, such as the East Coast Greenway and the Farmington Canal Greenway.

5.3.3.3 Support continued and expanded bicyclist access to mass transit systems.

Chapter 6: Integration of the Corridor Economy with State, Regional, National, and Global Economies

6.1 Corridor Objectives

6.1.1 Improve the corridor's connections to the state, regional, national and global economies through the development of a seamless multi-modal transportation network that efficiently moves both people and goods.

6.1.2 Identify new and emerging routes of commerce, including movement of human capital, and develop appropriate transportation linkages.

6.2 Corridor Challenges

6.2.1 Non-highway freight transportation infrastructure is either fragmented and underdeveloped or underutilized.

6.2.2 Existing transit infrastructure and services provide linear commuter connections from cities to suburbs, but do not provide suburb-to-suburb connections.

6.2.3 Jurisdictional and political boundaries which make it difficult to ensure coordinated planning, financing and implementation of transportation system improvements.

6.2.4 Uncertainty as to whether post-9/11 commutation patterns are temporary or permanent.

6.2.5 Lack of effective interface between Connecticut and the New York Metropolitan Transportation Council.

6.2.6 Past development practices including a historical lack of investment in non-highway infrastructure, particularly for moving freight, and a lack of interstate coordination and cooperation have contributed to the congestion problems facing the corridor today.

6.2.7 Over-reliance on property tax in Connecticut encourages wasteful competition and poor land use decisions that work against economic, efficient and environmentally responsible transportation systems planning.

6.3 Corridor Initiatives/Recommendations

6.3.1 *Coordinated and Compatible Development*

Encourage Connecticut state agencies to reinforce collaboration both within the state and with appropriate agencies in neighboring states to ensure coordinated and compatible development of transportation and other infrastructure.

6.3.2 *Resolution of Competing Policies*

Establish mechanisms for resolving conflicts among competing policy considerations at the local, state and federal level, e.g., sharing of rail infrastructure, waterborne transportation, energy transmission facilities, shellfish and other aquaculture, species and natural habitat, development choices.

6.3.3 *Overhead and Side Clearances on Rail Lines*

Evaluate policies regarding overhead and side clearances on rail lines to identify changes necessary to increase opportunities for use of the state's rail infrastructure.

6.3.4 *Mid-Atlantic Rail Operations Study Extension*

Seek to have the Mid-Atlantic Rail Operations Study extended through New York and Connecticut

6.3.5 *Infrastructure Investment*

Invest in transportation infrastructure that strengthens linkages to the NAFTA Corridor and to the rest of the northeastern United States (e.g. Bradley International Airport, New Haven Sea Port, New Haven-Hartford-Springfield Intercity Rail, Hudson River rail crossing (passenger and freight).

6.3.5 *Interstate Cooperative Connectivity*

Engage other New England states, the state of New York, federal agencies, and the eastern Canadian provinces in the process of addressing critical Corridor issues, such as commuter rail, feeder barge, and rail freight services (e.g. an additional Hudson River rail crossing, the West Springfield rail yard, and the Cedar Hill rail yard).

Chapter 7: Policies and Sources to Provide Funding for a Quality Multi-Modal Transportation System

7.1 Corridor Objectives

Goal 5 in the State Transportation Strategy Board's initial plan calls for identifying an adequate and reliable flow of funding for a quality transportation system. Achieving this goal is fundamental to the overall success of the State Transportation Strategy Board in its efforts to carry out its charges as outlined in Public Act 01-5, the law that created the TSB.

The I-91 TIA identifies four objectives in the area of funding and finance for transportation:

7.1.1 Provide the necessary resources to maintain the current transportation system in good repair.

7.1.2 Provide a dedicated funding source that enables significant expansion of transit services (especially for operating costs).

7.1.3 Identify innovative financing tools and cost-effective strategies to enhance system capacity and improve operations.

7.1.4 Maximize funding from the federal government for transportation and secure funding from other sources (federal, state, and regional).

7.2 Corridor Challenges

As stated in the Transportation Strategy Board's initial plan, the I-91 TIA and regions throughout the state face these challenges:

7.2.1 Insufficient resources for significant new investment in transportation infrastructure.

7.2.2 Instability in budgets and revenue sources due to competing demands on state and federal funds.

7.2.3 The reliance of the DOT operating budget (including for transit) on automobile user fees—almost entirely from one revenue source, the gasoline tax.

However, the I-91 TIA would add these additional challenges to that list:

7.2.4 Lack of an independent and reliable funding source for public transportation.

7.2.5 The lack of authority at the regional and local level to voluntarily generate additional revenues to invest in transportation (from sources other than the property tax).

7.3 Corridor Initiatives/Recommendations

7.3.1 *Study Potential Revenue Sources*

In order for state leaders to make informed decisions on potential new revenues for transportation investment, a careful analysis of the options and the costs and benefits of each must be provided. A report that reviews how funds/revenues are generated for transportation investment in other comparable states would help in this.

The report should include the location/state, the revenue source, the amount of the levy or fee, the revenue yield from this source, the method of collection, revenue growth/stability, administrative and/or legal considerations, and political considerations.

A study showing overall effort or burden for taxes and fees, etc. in Connecticut compared to other comparable states might show that given our rank as first in the nation in per capita income there is an opportunity to raise more revenues from specific sources in Connecticut without putting us at a competitive disadvantage with other states.

While there are other worthy uses for new public funds in our state, this report could help TSB and state leaders have a better understanding of the most prudent options for new and increased revenue sources, especially during this difficult budgetary period for the state. KPMG and Parsons Brinckerhoff prepared reports similar to these for the Capitol Region Council of Governments Regional Transit Strategy.

7.3.2 *Maximize Federal Funds*

Work to maximize federal funds for Connecticut especially through the reauthorization of TEA 21; however, given sectional shifts in power in Congress out of New England and the northeast, we must assume that this is not the ultimate answer to Connecticut's funding needs.

7.3.3 *Identify Benefits*

In promoting new funding sources, it is important to tie the proposal to tangible benefits and projects, which are very visible and clearly beneficial to the people of Connecticut.

7.3.4 *Enlist Champions*

Public champions such as the Governor, business and community leaders, mayors, and state legislators must be enlisted to communicate the benefit of any new revenue proposal.

7.3.5 *Foster Acceptance of New Funding*

Prospects for acceptance of new taxes or fees may improve when:

7.3.5.1 The tax and proposed use present a coherent and compelling transportation policy and investment.

7.3.5.2 An existing revenue source can be utilized (i.e. no new taxes).

7.3.5.3 The tax is not perceived as an undue public burden.

7.3.5.4 The tax is not perceived as creating an imbalance among towns or groups of people.

7.3.6 *Explore Electronic Toll Collection*

Explore the use of existing electronic toll collection systems that do not require the use of tollbooths. In addition, utilize these systems to charge for, manage, selectively subsidize and collect statistics about all aspects of transportation including HOV lanes, capacity pricing, buses, trains, parking, ridesharing, van pools, etc. Monthly "passes" under this system should be able to cover almost any possible mix of resources from home to work with appropriate incentives or disincentives applied as required.

7.3.7 *Allow Local Funding Generation*

Careful consideration should be given to providing permissive authority for municipalities and/or regions to generate funding from sources other than the property tax for transportation investments.

CONCLUSION

If Connecticut is to sustain its economic standing in the global economy and its high quality of life, now is the time to invest strategically and aggressively in our transportation infrastructure. The resources required to improve mobility (especially, alternatives to single occupant vehicles) and to strengthen connectivity to the rest of New England, the northeast, and the world are substantial. Some estimates put this investment in the range of $5 to $10 billion over the next 20 years. This will not be accomplished without identifying one or more significant new revenue sources that remain reliable for the foreseeable future. Success in this will lead to success in the rest of the TSB's transportation objectives.

Chapter 8: Corridor Perspective on "Section 16" Projects

The TIA supports completion of existing ConnDOT projects already in design, r-o-w acquisition, or construction. The TIA also supports completion of the following additional projects which are listed in Section 16(a) of House Bill No. 7506/Public Act 01-5, and which will impact this Area:

8.1 A study of the infrastructure cost and operating characteristics of rail commuter services from New Haven to Springfield, including Bradley International Airport.

8.2 Implementation of a demonstration project for a freight Feeder Barge Service in Long Island Sound between the port facilities of New York and New Jersey and Bridgeport Harbor in Bridgeport and New Haven Harbor in New Haven.

8.3 Continuation of the efforts of the Capitol Region Council of Governments and the Central Connecticut Regional Planning Agency to support the Hartford to New Britain Bus Way.

8.4 A design study for an Orange/West Haven rail station with parking for one thousand commuters. *Note: The I-91 TIA supports a design study of a rail station for Orange/West Haven. We believe a design study should be consistent with the goals of community development, reducing auto dependency, increasing intra-state ridership and reducing congestion. The study should also examine ways to improve access to all Metro North stations by foot, bike and feeder bus service with the goal of reducing parking demand.*

8.5 The Jobs Access program, which provides reverse commute bus service, route extensions and customized paratransit services for residents in the cities of Bridgeport, Hartford, New Haven and Waterbury.

8.6 Expansion of express bus service in the Hartford area.

8.7 Marketing of an employer-sponsored pretax commuter benefit program to be known as the "Deduct-A-Ride" program.

8.8 A site selection study for the expansion of the New Haven Line rail maintenance facilities' capacity, and purchase of land for a new rail service maintenance facility.

8.9 Expansion of existing commuter parking lots statewide.

Appendix A: I-91 TIA Board Membership

CoChair: Judy Gott, (203) 234-7555
Cornelius P. O'Leary, (860) 832-3008

Capitol Region Council of Governments (CRCOG)

RPO Representative:	Stephen T. Cassano, Mayor of Manchester
Alternate:	Richard J. Porth, Executive Director, CRCOG
Public Representative:	Norman Garrick, All Aboard!

Central Connecticut Regional Planning Agency (CCRPA)

RPO Representative:	Carl Stephani, Executive Director, CCRPA
Alternate:	Theodore C. Scheidel, First Selectman of Burlington
Public Representative:	Morgan Seelye, Retired Town Engineer

Connecticut River Estuary Regional Planning Agency (CRERPA)

RPO Representative:	Linda Krause, Executive Director, CRERPA
Alternate:	N/A
Public Representative:	T. Gerald Dyar, Financial Consultant

Midstate Regional Planning Agency (MRPA)

RPO Representative:	W. Lee Osborne, Architect (Secretary, MRPA)
Alternate:	N/A
Public Representative:	Michael Doyle, Association of Commuter Rail Employees

South Central Region Council of Governments (SCRCOG)

RPO Representative:	Judy Gott, Executive Director, SCRCOG
Alternate:	William Dickinson, Mayor of Wallingford
Public Representative:	Denis Pope, Association of Commuter Rail Employees

At-Large Members:

John J. Leone, President, Bristol Chamber of Comm.
Cornelius P. O'Leary, Associate Vice President, Central Connecticut State University
Robert Santy, President, Regional Growth Partnership
John Shemo, Vice President, Connecticut Capitol Region Growth Council
David Titus, Mattabeseck Audubon Society

Towns represented by the I-91 TIA Corridor: Andover, Avon, Berlin, Bethany, Bloomfield, Bolton, Branford, Bristol, Burlington, Canton, Chester, Clinton, Cromwell, Deep River, Durham, East Granby, East Haddam, East Hampton, East Hartford, East Haven, East Windsor, Ellington, Enfield, Essex, Farmington, Glastonbury, Granby, Guilford, Haddam, Hamden, Hartford, Hebron, Killingworth, Lyme, Madison, Manchester, Marlborough, Meriden, Middlefield, Middletown, Milford, New Britain, New Haven, Newington, North Branford, North Haven, Old Lyme, Old Saybrook, Orange, Plainville, Plymouth, Portland, Rocky Hill, Simsbury, Somers, South Windsor, Southington, Suffield, Tolland, Vernon, Wallingford, West Hartford, West Haven, Westbrook, Wethersfield, Windsor, Windsor Locks, and Woodbridge.

Appendix B: Public Comment

TIA BOARD PUBLIC INFORMATION MEETING
AUGUST 22, 2002, 6:00 P.M.
MEETING REPORT

Attendance:

RPO Representatives:
Judy Gott
W. Lee Osborne
Richard Porth

At Large Representatives:
Cornelius O'Leary
John Shemo
David Titus

Public Representatives:
T. Gerald Dyar
Norman Garrick
Denis K. Pope

Others:
Karen Olson, CRCOG
Mark Phillips, ConnDOT
Grayson Wright, ConnDOT
Dr. Robert Painter, Hartford City Council
Gene Kennedy, Parsons
Bob Hammersley, TSB
David Hiller, CT Bicycle Coalition
Jim Platts, East Hartford CBC
Kevin Lange
Kari Watkins, Wilbur Smith Associates
Thomas Smart, CT Bicycle Coalition

The public information meeting was called to order at 6:15 p.m. Con O'Leary, as chair of the meeting, offered a brief introduction to the work of the I-91 TIA. This was followed by self-introductions made by the I-91 TIA committee members present. Comments were then received from the public as follows.

1. David Hiller, CT Bicycle Coalition: Mr. Hiller complimented the committee on the work done to date, but pointed out the needs of pedestrians and bicyclists were essentially ignored in the draft plan. He suggested that the committee add to the plan the following recommendations:

    a. that the USDOT policy on Integrating Bicycling and Walking into the Transportation Infrastructure be adopted;

    b. that the East Coast Greenway and the Farmington Canal Greenway, both long-distance multi-use paths, be completed; and

    c. that Transportation Demand Management projects and programs be given a high priority in addressing automobile congestion problems.

Mr. Dyar asked if Mr. Hiller's group recommended bicycle paths as a priority over on-road bicycle routes; Mr. Hiller stated that bicycle routes were supported as long as they were well designed and followed the geometric design guidance provided by the USDOT. He offered as an example CRCOG's policy of adding points for highway project proposals that addressed the needs of bicyclists and pedestrians. Mr. O'Leary pointed out the development on Route 75 near Bradley Airport as a missed opportunity to provide accommodations for pedestrians: a busy roadway with lots of commercial activity and no sidewalks.

Ms. Gott noted that Hamden had recently awarded the bid for another section of the Farmington Canal Greenway. She also stated that the City of New Haven was very supportive of completing the bicycle path through the City. In response to a question by Mr. Dyar, Mr. Hiller stated that the CBC supports bicycle access to railcars.

Mr. Hiller also stated that he supported the proposed New Haven-Hartford-Springfield commuter rail service.

Mr. Hiller will submit written commentary for consideration by the committee.

2. Mr. Porth reported that he had received written commentary from two bicycle enthusiasts: Janet Valine and Carol Ann Tyler. Both of these letters are attached to this report.

3. Thomas Smart, CT Bicycle Coalition: Mr. Smart stated that he supported Mr. Hiller's comments. As a full-time bicycle commuter, he stated that safety improvements in the design of intersections are very important. Mr. Dyar commented that automobiles and trucks making right turns in front bicyclists was a serious safety problem and that accident statistics do not accurately reflect this problem since State police reports show this as the bicyclist running into the vehicle.

4. Dr. Robert Painter, Hartford City Council: Dr. Painter commented on the importance of integrating existing bus systems with each other as well as with new systems such as the proposed Hartford Downtown Circulator.

5. Jim Platts, East Hartford resident: Mr. Platts suggested that the needs of bicyclists should be given a higher priority in the draft plan. He cited Quebec City as an example of a community that made good provision for bicyclists traveling into and through the City.

6. Thomas Smart: Mr. Smart commented that the shoulders along a roadway seemed to disappear when a roadway was widened. He stated that suburban connector routes in particular needed wider shoulders to accommodate bicyclists and pedestrians.

The meeting adjourned at 7:50 p.m.

TIA BOARD PUBLIC INFORMATION MEETING
SEPTEMBER 19, 2002, 6:00 P.M.
MEETING REPORT

Attendance:

RPO Representatives:
Judy Gott

Public Representatives:
T. Gerald Dyar

At Large Representatives:
Cornelius O'Leary
David Titus
Robert Santy

Others:
Karen Olson, CRCOG
Mark Phillips, ConnDOT
Robert Haramut, MRPA
Gary Christopher, WQUN News
Dave Bonan, Danbury / Hat City Free Press
Victorya McEvoy
Michael Criscuolo, Branford
Bill Meier, Meriden
Bill O'Grady, New Haven
Elaine Lewinnek, New Haven
Jason Schwaber, New Haven
David Hiller, CT Bicycle Coalition

The public information meeting was called to order at 6:10 p.m. Judy Gott, as chair of the meeting, offered a brief introduction to the work of the I-91 TIA. This was followed by self-introductions made by the I-91 TIA committee members present, and by others around the room. Ms. Gott also reviewed the top priorities of the I-91 TIA as included in the draft Transportation Plan. Comments were then received from the public as follows:

1. There are no places to leave a bicycle at the train station. The few bike racks are full. How does this plan address the needs of people using non-motorized transportation?
2. The needs of bicyclists should be addressed as part of the top five priorities for the TIA. The airport expansion proposal will not help with the congestion problem.
3. Increased service on Metro-North is important. Priority number 5 should be eliminated and bicycle access added as a replacement. Biking needs to be made safer. There are no bike lanes.
4. There is a lot to like in this plan. Improving port facilities and investment in the airport are important. Commuter buses and rail service should run on weekends. $5 lifetime pass on MetroNorth for bicycles during off peak hours is a good thing. Bike racks are being placed on buses in Stamford. When will this service be available elsewhere? When will the Farmington Canal Greenway be completed?
5. Parking at the New Haven train station needs to be addressed. Residents are forced to take the train from New Haven if they expect to return after the MetroNorth trains stop running. The area around the train station is unsafe at night.
6. Let the State build the parking garage.
7. Bike racks at the train station could help with the parking problem.
8. The train station needs a bus system map. The individual route maps are too difficult to figure out without a companion system map.
9. There is a great need to strengthen the multi-modal transfer opportunities.

10. Buses will go right by a passenger if they are not standing in the right place. Stops need to be better identified.
11. Three different buses run on parallel routes. If you put all three on one roadway, you could triple headways for no additional cost.
12. Smaller buses should be operated in off peak hours to safe money. By offering these smaller buses at greater frequency, ridership will increase.
13. Bicycling is unsafe. There are no bike lanes, no bike paths, no place to safely leave a bicycle. Every public building should have bike racks near the front door. Private business should be encouraged to offer bike racks as well. There should be tax breaks for employers who have many employees taking mass transit, biking and walking to work. The bike trails should be finished. I will volunteer to help raise money to pay to finish the trails. The trolley is great.
14. There is an extensive lack of uniformity of speeds on the highways. Speed limits should be enforced.
15. Recreation bike trails are packed on weekends. If the trails went into the cities, to places of employment, you would soon see them well used by commuters.
16. The Q bridge will be filled as soon as it is opened. High speed ferries are needed. Bicycles should be allowed on ShoreLine East. There needs to be pedestrian/bicycle access on the Tomlinson Bridge.
17. Buses don't run late enough.
18. The cost of transportation is too high for the average wage earner. The cost of installing bike racks is peanuts compared to the cost of other transportation investments. Biking has changed my life, my personal economy and my health.
19. On-road bike routes need to be identified.
20. The CT Bicycle Coalition does not support highway widening projects, even when bike paths are included in the project.
21. HOV lanes should not be separated from the regular travel way as they are in the Hartford area. This discourages use by persons who believe they might get trapped behind a slow driver. HOV lanes should be designated for peak hour use only.
22. We are opposed to expansion of Tweed New Haven Airport because many other airports in the State have shorter runways, but host many more general aviation aircraft including jets. If it were economically viable, the aircraft would already be at Tweed. If airlines could make money at Tweed, they never would have left. Airlines are cutting back now, not expanding service. The land should be used for a higher valued use. The land is worth $700,000 per ½ acre.
23. What is the frequency of trips proposed for the New haven-Hartford-Springfield railroad service?
24. It is impossible to get around this State on public transportation.
25. When the train spur to TF Green Airport is activated, a lot of people will go to TF Green rather than Tweed or Bradley.
26. The trains are not comfortable. The seats are too narrow and crowded together.

The meeting adjourned at 7:45 p.m.

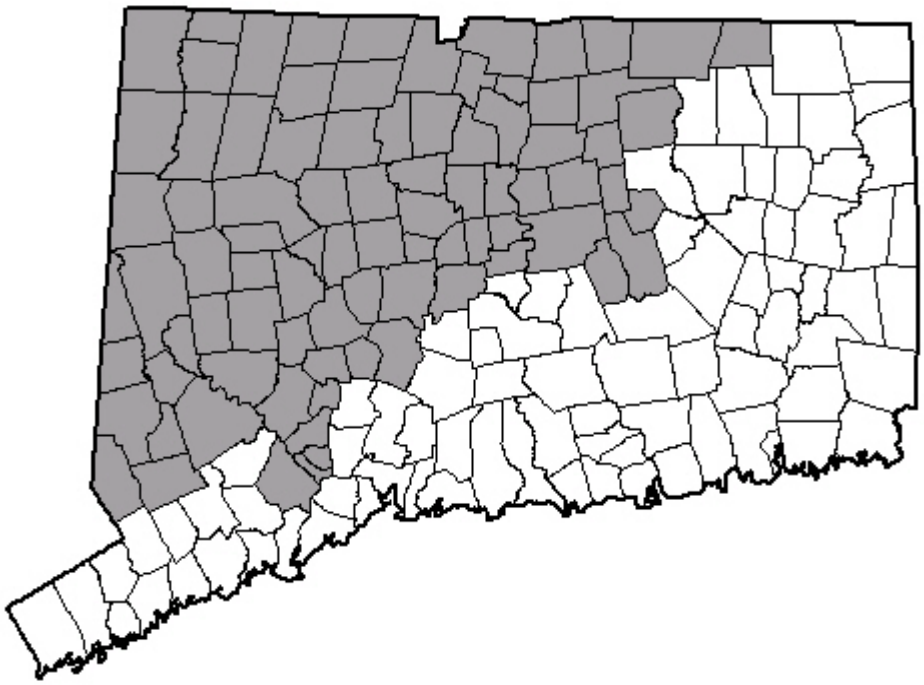
Summary of Written Comments:

1. Janet Valine, Danbury: support for needs of bicyclists. Request for information about public information meetings in Danbury area.
2. Kevin Lange, Enfield: support for rail from Enfield to Springfield, Hartford, Foxwoods casino, and New York City.
3. Jean Jakoboski, North Windham: support for walking and biking paths.
4. Carol Ann Tyler, address unknown: support for walking and cycling paths, with an emphasis on safety.
5. David Lee, CT Transit: support for the I-91 TIA priorities, especially the New Britain-Hartford BRT, the Deduct-A-Ride program, the Jobs Access program, and the Statewide Bus System recommendations.
6. Jeffrey Beadle and Gloria Mills, CT Association for Community Transportation: support for the New Britain-Hartford BRT, the Statewide Bus System recommendations, the Deduct-A-Ride program and the Jobs Access program
7. William O'Grady, New Haven: support for container port in New Haven, trans-Hudson rail-freight bridge, New Haven-Springfield rail service, expansion of airport service, as well as meeting the needs of bicyclists.
8. Elaine Lewinnek, New Haven: support for barge and commuter rail plans, more bike racks to existing parking, bikeracks on buses, emphasis multimodal and nonmotorized transport, and completion of the Farmington Canal Bikepath and East Coast Greenways.

Appendix D

I-84 Full Plan 2002

Interstate 84 Corridor Transportation Investment Area
Final Corridor Plan



November 8, 2002

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Executive Summary

This corridor plan was developed by the Interstate 84 (I-84) Transportation Investment Area (TIA) Board to meet the requirements of Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board,* which created the statewide Transportation Strategy Board (TSB). This plan is intended to provide the TSB with an overview of the I-84 TIA, its primary transportation objectives and challenges, and a set of recommended initiatives to guide its future. The I-84 TIA Corridor includes seven of the state's 15 regional planning areas. It includes two of the state's major cities, Hartford, the state capital, and Waterbury, as well as several other cities and a number of the state's smaller and historic urban centers. Bordering on the states of New York and Massachusetts, it includes almost the entire length of Interstate 84 in Connecticut.

Top Five Transportation Investment Area Corridor Initiatives for Transportation Strategy Board Action (in Priority Order)

1. **Implement the Bus Rapid Transitway between Downtown New Britain and Downtown Hartford** — This facility will be a bus-only roadway that provides a rapid transit service, with convenient stations, frequent service, state-of-the-art passenger information, and trip times that are competitive with the private automobile. The state must ensure that its operating characteristics are the same as other forms of rapid transit. This project will provide a less expensive way to deal with congestion in the Hartford region. As importantly, it will serve as a prototype for a new form of rapid transit for Connecticut and the nation. The New Britain–Hartford Bus Rapid Transit (BRT) project will require the construction of 9.4 miles of roadway, exclusively for bus traffic, connecting New Britain, Newington, West Hartford, and Hartford; 12 stations varying in size and description; and a multi-use trail through much of the corridor. Approximately 28 new buses will be procured. Expected operating costs for the first year total $6.3 million. (Additional details are available in *Final EIS and Section 4(f) Evaluation New Britain–Hartford Busway*, December 2001.) Updated construction needs, operating characteristics, and related costs will become available as the design is developed. **Total estimated capital cost is $160,000,000.**

2. **Implement the Recommendations for Service Expansions and Transit Facilities detailed in the 2000 *Connecticut Department of Transportation Statewide Bus System Study*** — In this landmark study, all publically funded bus routes in the state were evaluated by the same methodology at the same time. As a result, improvements to routing efficiency and justifiable service expansions were recommended statewide. This plan is the technical base for expanding local bus services in a systematic and logical way. The total statewide cost of implementing the recommended service expansions is $58,000,000; therefore, given that the Interstate 84 Transportation Investment Area includes approximately 50 percent of Connecticut's population, the estimated cost for implementation in the I-84 TIA is estimated at $29,000,000. In addition, this priority calls for the state to provide stable, dedicated, and secure funding for the Jobs Access and Reverse Commute Programs (specific costs as yet undetermined). **Total estimated capital cost is $29,000,000.**

3. **Increase Rail Passenger Service on the Norwalk to Danbury–New Milford Branch Line** — This set of prioritized projects would assist north-south commuter movement in the congested Route 7 and Interstate 95 (I-95) corridors from Danbury to Norwalk and Stamford. Phase I has the potential for over 400 new daily riders. Costs are $5.3 million for capital and $1.3 million for annual operating. Phase II has the potential for over 250 new daily riders, in addition to the 400-plus riders attracted by Phase I. Estimated Phase II costs are $12.9 million for capital and $.9 million for annual operating. An additional three phases would extend rail passenger service to a new station near I-84 in northern Danbury, then farther north to New Milford. These costs are documented in detail in the 2000 *Route 7 Corridor Travel Options Implementation Plan* prepared by the Housatonic Valley Council of Elected Officials (HVCEO) in cooperation with the South Western Regional Planning Agency (SWRPA). The phases are designed to proceed in priority order. Total cost for Phase I and Phase II is $20,400,000. The total cost for Phases III-V is $33.95 million for capital and $3.51 for annual operating. **The grand total capital cost for Phases I-V is $52,150,000.**

4. **Implement the Interstate 84 Waterbury to Danbury Area Improvements** — This series of projects, recommended by recent Connecticut Department of Transportation needs and deficiencies studies and plans, would upgrade interchanges and main lines to accommodate projected traffic growth. Prioritized improvements and associated cost estimates for projects in the Central Naugatuck Valley Region and the Housatonic Valley Region are: $23,526,000 for Phase I, the most immediate, small-scale interchange improvements; $15,146,000 for Phase II, the remaining small-scale interchange improvements; $83,180,000 for Phase III interchange expansions; and $430,790,000 for Phase IV mainline widening. **Total capital cost $552,642,000.**

5. **Implement Access Improvements to Cargo Facilities at Bradley International Airport** — This project would involve construction of a new $15.5 million, 4.3-mile two-lane roadway from the north end of the airport to the Route 190 bridge over the Connecticut River to the north side of Bradley International Airport to serve the planned expansion of cargo and related facilities. It would also involve $3.5 million in roadway construction improvements on the existing Bradley Park Road which leads to the cargo facilities on the west side of Bradley International Airport, and for extending Bradley Park Road approximately 2,500 feet to Russell Road. These projects assumed added importance when a section of the airport perimeter road near the Air National Guard facility was closed after the September 11, 2001, attack. **Total capital cost is $19,000,000.**

Top Five Statewide Initiatives for Transportation Strategy Board Action

1. Promote statewide smart growth policies by re-establishing a state planning office to coordinate and provide technical assistance to local, regional, and state planning agencies.

2. Provide incentives for higher-density commercial and residential development around transit facility locations.

3. Provide funding for an analysis of the need, feasibility, location, and design of an additional cross-Hudson rail facility.

4. Revise state policies on sidewalks to do more to encourage bicycle–pedestrian movement.

5. Require that all rail facility improvements be made to meet the 286,000 pound standard for rail cars and that railroad bridges be required to meet the evolving 315,000 pound car standard.

Chapter 1 Introduction

The Interstate 84 (I-84) Corridor Transportation Investment Area (TIA) includes approximately 50 percent of the state's population. It includes Hartford and Waterbury, as well as the cities of Bristol, Danbury, East Hartford, Manchester, New Britain, and West Hartford. It includes a number of the state's smaller and historic urban centers such as Torrington, Naugatuck, and Shelton. It includes many comfortable suburban towns and some of the most beautiful and historic of the state's rural areas. The character of its towns ranges from the most dense to the most rural, and from some of the wealthiest to some of the poorest populations.

Connecticut is in a transportation crisis. The I-84 TIA Board believes that the transportation system is overburdened and unbalanced, threatening both the economic health and the quality of life of the state's residents. Over dependence on highways has created a level of traffic congestion that is a barrier to the movement of goods and people and that precludes adequate connection to regional and global economies. That over dependence has contributed to a sprawling pattern of land development that empties our cities, overcrowds our suburbs, despoils the beauty and open space of our countryside, and, at the same time, pollutes our air and increases the gap between the rich and the poor.

Congestion relief, primarily by highway widening, can no longer solve these problems; we cannot build our way out of this crisis. Instead, transportation investments, as perhaps one of the most powerful forces shaping growth, must become a deliberate and strategic component of our overall economic development and land use planning if we are to deal successfully with this crisis. That is our challenge in crafting this plan.

Improving mobility and enhancing connectivity requires a balanced transportation system and a corresponding realignment of investment priorities and resources. We need to reassess our public policies and investment priorities to develop a balanced transportation system that gives people and businesses more choices for traveling and moving freight.

Chapter 2 Public Involvement

This plan is the product of the combined knowledge, experience, and understanding of multimodal transportation and its comprehensive environment brought to the Interstate 84 (I-84) Transportation Investment Area (TIA) Board by its 19 members. References used in the development of the plan include Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board,* which established the Transportation Strategy Board (TSB); the long-range regional transportation plans of each of the seven regional planning organizations within the TIA; preliminary recommendations of the Transportation Strategy Board; *Connecticut: Strategic Economic Framework*, commonly referred to as the "Gallis Report," which describes the transportation crisis in Connecticut; Connecticut's *Master Transportation Plan;* Connecticut's *State Plan of Conservation and Development;* and various other technical and policy documents.

The I-84 Corridor TIA's twenty-year strategic plan was prepared through a process that encouraged regular exposure to the public by providing opportunities for public comment at each of the I-84 TIA Board's monthly meetings. Notices of Board meetings were posted in the municipal offices of each of the cities and towns within the I-84 Transportation Investment Area and on the Internet. In addition, a public hearing, which was advertised in newspapers serving the TIA (including the Hartford Courant, the Bristol Press, the New Britain Herald, and the Waterbury Republican American), was held by the TIA Board on September 10, 2002, in Waterbury. Copies of all written comments that were submitted to the TIA Board related to that hearing are on file in the offices of the Central Connecticut Regional Planning Agency, which served as the Secretariat for the I-84 TIA Board.

Copies of early drafts of the Corridor Plan, as well as the agendas and minutes of the TIA Board meetings were available on the internet, along with the names, addresses, and telephone numbers of the members of the TIA Board to provide public access to them individually.

Finally, each of the boards of the seven Regional Planning Organizations (RPO) within the TIA reviewed the work of the TIA Board, and discussed drafts of the TIA corridor plan at their regular board meetings, which were open to the public. Comments made by members of the public were recorded in the minutes of these various meetings and passed on to the TIA Board by the several RPO representatives on the TIA Board, as well as by RPO staff. Progress reports and invitations to comment were also extended to the public in numerous other community forums.

Chapter 3 Economic, Land Use, Environment, and Quality of Life Issues

3.1 Corridor Objective

3.1.1 Provide safer, more efficient transportation systems, to reduce dependence on the automobile.

3.2 Corridor Challenges

3.2.1 Change land use policies that favor auto-centric development and which consequently degrade our urban core areas and older suburbs.

3.2.2 Change the way we develop our communities to prevent aggravating the congestion problems on our highways, which is due, in large measure, to our sprawling, energy inefficient development patterns.

3.3 Corridor Initiatives/Recommendations

The TIA Board supports smart growth policies that would make the land development process more predictable and help maintain the quality of life in the Interstate 84 (I-84) Transportation Investment Area (TIA). Land use policies adopted in the I-84 corridor should direct growth to areas with existing public infrastructure; they should also preserve limited open spaces, and create incentives for mixed-use developments. Land development policies should promote regional cooperation, collaboration, and governance.

3.3.1 *Encourage Smart Growth.* Support efforts, at all levels of government, to promote smart growth policies which foster higher "transit-supporting densities."

3.3.1.1 Urge strong state leadership for smart growth policies, which would provide for an enhanced open space acquisition program, policies and programs to support the redevelopment of brownfields, and establishment of urban growth boundaries. Expedite the acquisition of valuable open space properties that would help direct development toward more energy efficient locations.

3.3.1.2 Provide incentives, at all levels of government, for proposed developments inside urban growth boundaries.

3.3.1.3 Establish regional smart growth pilot initiatives where smart growth policies should be implemented.

3.3.1.4 Analyze local property tax issues and develop effective techniques for counteracting the sprawl-inducing affect that higher urban area taxes have on development patterns.

3.3.2 *Strengthen Land Use Planning.* Re-establish a state planning office and integrate the Connecticut Department of Transportation (ConnDOT) *Master Transportation Plan* with the *State Plan of Conservation and Development.*

3.3.2.1 Update the *State Plan of Conservation and Development* in a manner that allows for interaction among the municipalities, the regions, and the state.

3.3.2.2 Enhance the applicability of the *State Plan of Conservation and Development* to guide all state, regional, and municipal plans and regulatory decisions. Currently, the state requires consistency among municipal, regional, and state plans only when granting funds through state agencies for public works projects.

3.3.2.3 Establish a state smart growth council, supported by the state planning office and other key state agencies, to oversee the implementation of an enhanced state plan of conservation and development process, and to serve as a forum to study, debate, and resolve conflicts regarding conservation, development, transportation, and energy issues of statewide significance.

3.3.2.4 Incorporate statewide goals and objectives for smart growth, conservation, and development directly into the state statutes, and commit resources of the state by Executive Order to the pursuit of these goals and objectives.

3.3.2.5 Require consistency between municipal plans of conservation and development and municipal zoning and subdivision regulations.

3.3.2.6 Require municipal, regional, and state plans of conservation and development to be updated on a coordinated statewide schedule.

3.3.3 *Strengthen Statewide Planning Resources*

3.3.3.1 Complete a statewide aerial survey of land use and prepare digitized statewide mapping to support coordinated land use and transportation planning.

3.3.3.2 Provide state-of-the-art planning tools to state, regional, and municipal agencies, such as digital aerial photography and Geographic Information System (GIS) mapping and analytical capabilities (e.g., build-out analyses).

3.3.3.3 Provide state funding for ongoing technical planning assistance to regional and municipal agencies.

3.3.3.4 Provide funding for state staff liaisons to regional and municipal agencies.

3.3.3.5 Provide grant funding to regional and municipal agencies over a two- to three-year period to enable them to prepare enhanced plans of conservation and development and make corresponding changes to applicable land use regulations.

3.3.4 *Reinforce Urban Centers*. Redirect investment, employment, and housing opportunities to historic urban centers by creating, for example, multimodal transportation centers.

3.3.4.1 Pursue the designation of Route 8, from Bridgeport to Waterbury, as an interstate highway to assist Waterbury and the Central Naugatuck Region in their efforts to promote economic development.

3.3.4.2 Support the rehabilitation and re-use of existing historic buildings as part of a smart growth strategy.

3.3.4.3 Provide incentives, at all levels of government, to locate new public buildings — and to relocate existing buildings — in urban core areas, near transit services, preferably, in restored historic buildings.

3.3.5 *Redevelop Brownfields*. Clean up and redevelop brownfields, which are often located in our older urban centers adjacent to major transportation facilities.

3.3.6 *Jobs and Housing*. Seek a better jobs-housing balance, not only for social equity reasons, but also to help reduce the increasingly long commutes residents are forced to make.

3.3.7 *Encourage Transit-Oriented Development.* Revise our land-use policies to recognize and encourage transit-oriented development patterns.

3.3.8 *Encourage Environmental Preservation.* Periodically monitor air quality near highways and major transportation routes and prioritize programs designed to mitigate the impact of air and water pollution from impervious surfaces and runoff.

3.3.9 *Encourage Transportation System Efficiency.*

3.3.9.1 Increase the utilization of high-occupancy vehicle (HOV) lanes by allowing their use by high-mileage and alternative-fuel vehicles, and develop the HOV lane separation areas as additional travel lanes.

3.3.9.2 Continue to maintain existing highways, and to correct safety and operational problems where they exist, as opposed to building new highways; and, make future highway investment decisions consistent with the goals of this TIA plan.

3.3.9.3 Provide direct monetary incentives to commuters who participate in carpooling.

Chapter 4 Movement of People

Moving people efficiently must be one of the primary goals of our state's transportation policy. One particular mode of transportation should not automatically be assumed to be the preferred mode and the one that drives our transportation policy. The I-84 TIA Board believes that a paradigm shift is needed from a predominant focus on investment in roads and automobiles to one that places people and their communities at the center of transportation policy and funding. Once discussion shifts to moving people, rather than moving automobiles, then decision makers can focus efforts on developing a comprehensive intermodal transportation policy that plans for pedestrians and bicycles, transit, and automobiles.

While the I-84 TIA Board acknowledges that our current highway infrastructure has maintenance, upgrading, and repair needs, these legitimate concerns should not be addressed at the expense of, or come before, re-balancing our transportation options. To prevent perpetuating an auto-centric transportation system, highway "improvements" should be balanced with investments in pedestrian, bicycle, rail, bus, paratransit, and ridesharing alternatives. We can no longer afford business as usual, in which transportation alternatives are merely discussed, while spending on roads continues unabated, because if we do we will not achieve the balanced transportation network that we seek.

4.1 Corridor Objectives

4.1.1 *Promote Public Transportation*. Expand and strengthen bus and rail passenger services to achieve a balanced transportation system that reduces congestion, improves access to employment opportunities and essential services, and provides people with more travel choices.

4.1.2 *Maintain Funding*. Establish and ensure an improved, equitable, and stable source of operational transit funding, which is critical to maintaining existing services and encouraging more and better bus and rail services.

4.1.3 *Make Infrastructure Improvements and Promote Safety.* Improve transportation safety by adequately maintaining infrastructure and equipment and by enforcing safe operations and use of the transportation system by customers and operators.

4.1.4 *Make Existing Transit Services More Attractive and Convenient*.

4.1.4.1 Support informational marketing to raise awareness of available transit services. Such efforts need to be widespread, frequent, and long-term. The objective is that, eventually, people will know as much about their transit options as they know about their driving options.

4.1.4.2 Develop financial incentive programs that encourage people to use alternate means of transportation. Opportunities include private-public partnerships to enhance and expand transit in certain areas. Targeted employers can demonstrate how transit can benefit the company, and, perhaps, even save it money.

4.1.4.3 Develop internet sites with transit information that provide convenient, user-friendly trip planning, fare information, and ticket purchasing services.

4.1.5 *Develop Safe Walking and Biking Options.* Provide more and better opportunities for people to walk or bike safely to their destinations.

4.1.6 *Improve Airports*. Improve our major regional airports, such as Bradley International Airport, and our system of smaller airports, which provide important links to the national and global economies.

4.1.7 *Improve Access to Transit Facilities and Airports.* Improve access to transit facilities and airports, particularly intermodal access, where possible.

4.1.8 *Implementation of and Consistency within This Plan*. Maintain existing highways, correct safety and operational problems where needed, and make future highway investment decisions that are consistent with the goals of this plan.

4.1.9 *Encourage Alternative Transportation*. Encourage and provide incentives for carpooling and vanpooling in order to reduce the number and use of single occupancy vehicles.

4.2 Corridor Challenges

According to the 2000 Census, while the state's total workforce dropped by more than 32,600 people since 1990, 12,000 more people drove to work alone. Analysis of the 2000 Census data reveals that approximately 80 percent of the workforce is driving solo, topping Connecticut's 1990 figure of 78 percent. This trend does not position the people of Connecticut to make substantial progress on traffic congestion and its impact on the natural environment, sustainable economic growth, open space preservation, urban revitalization, and personal and public health.

Although reflecting regional and national trends, Connecticut, when compared to its neighbors, lags behind in advancing transportation choice and creating the conditions for a sustainable and balanced transportation future. We must examine and determine the ways that other states have increased their use of alternative transportation modes and consider introducing and implementing them within Connecticut. We must also identify the existing challenges that will serve as obstacles in achieving our aforementioned objectives so that we can proceed in an informed manner. With these challenges in mind, we believe that the primary transportation challenges for the I-84 TIA are as follows:

4.2.1 *Highway Congestion and Constraints to Expansion.*

4.2.2 *Inadequate Funding for Existing Public Transit Systems and Needed Highway Improvements.*

4.2.3 *Imbalance in Funding Priorities.* Since real transportation choice has not been achieved, most people are unwilling to forego the convenience of driving alone.

4.2.4 *Policy and Practice of Moving Automobiles Rather Than People.* Transportation policy and funding are overwhelmingly focused on moving automobiles rather than people.

4.2.5 *Cultural Constraints.* A common belief is that road spending is an investment, but spending on public transportation is a subsidy. People in our culture have been conditioned to believe that automobile ownership and use is the essence of freedom.

4.2.6 *Difficulty in Achieving Consensus on Needed Improvements and Priorities.*

4.2.7 *Balancing the Environmental, Economic, and Social Impacts of Transportation Improvements.*

4.2.8 *Building Consensus on a New Paradigm and Changing the Often-Negative Perceptions of Alternative Modes of Travel.*

4.3 Corridor Initiatives/Recommendations

<u>Bus and Rail Services</u>

Single occupancy vehicle (SOV) use in Connecticut grew during the 1990s. However, perpetuating this trend is not inevitable. In fact, our neighbors in Massachusetts, New York, and New Jersey experienced

SOV use decreases. Moreover, while use of public transportation remained at about four percent in Connecticut, it increased to ten percent in Massachusetts (up 19 percent), increased to 11 percent in New Jersey (up 27 percent), and increased to 27 percent in New York (up eight percent).

The progress demonstrated by Connecticut's neighbors illustrates that we can do better in reducing SOV use, as well as enhancing and strengthening Connecticut's bus and rail services. The I-84 TIA Board recommends that the following actions be pursued (or at least planned for) immediately:

4.3.1 *Ensure That More Equitable and Stable Operational Funding for Bus Service is Maintained and Expanded.* This action should be taken to attract new riders and better serve existing users. As a critical transit option in the I-84 TIA corridor, action must be taken to:

4.3.1.1 Improve marketing of all bus and commuter rail system services.

4.3.1.2 Provide permanent and stable funding, statewide, for the Jobs Access and Reverse Commute programs for low-income people.

4.3.1.3 Implement the recommendations of the *ConnDOT Statewide Bus System Study.*

4.3.1.4 Increase funding and service areas for elderly and disabled transportation programs, which are critical to these transit-dependent populations.

4.3.1.5 Investigate new technologies, such as the use of optically guided buses along the shoulder or median of I-84.

4.3.2 *Develop Bus Rapid Transit Systems.* Aggressively pursue the development of the bus rapid transit system from Hartford to New Britain to Waterbury, as well as from Hartford to points east (Manchester) and north (the Griffin Line).

4.3.3 *Improve Passenger Rail Services.* Improve the Metro North and Amtrak passenger rail services on the New Haven Line (and potentially the Harlem line) from the branch lines in the Greater Waterbury area and the Danbury–New Milford area.

4.3.4 *Provide Commuter Rail Services from New Haven to Springfield, including Bradley International Airport.*

4.3.5 *Support and Develop Multimodal Transportation Options in Downtown Waterbury and Downtown Torrington.*

4.3.6 *Support Ridesharing Programs.* Support existing as well as new initiatives (i.e., Telecommute CT) to reduce the number of single-occupancy vehicles.

4.3.7 *Consider Creating a Statewide Public Transportation Corporation or Authority.* Provide this entity with the resources and the authority to develop and implement a bold statewide vision for public transportation.

4.3.8 *Encourage Major Employers to Provide Parking "Cash-outs."* Encourage major employers, including state agencies, to provide parking "cash-outs" as an alternative to the use of SOVs.

<u>Airport Services</u>

4.3.9 *Create a Strategy for Developing the Interrelationships between Bradley International Airport and the State's Smaller Airports.* In particular, the state should address the role of municipally-owned

airports in relation to other large aviation facilities outside of Connecticut. This strategy should include:

4.3.9.1 Conducting a comprehensive study of existing airport facilities within Connecticut. The study should discuss ownership and operation, role, based aircraft, capacity, development potential and constraints, financial plans, and available services. In addition, the study should include a comparison of the master plans of each of the state's major airports: Bradley, Waterbury-Oxford, Danbury, Groton-New London, Tweed-New Haven, Sikorsky Memorial, and Hartford-Brainard.

4.3.9.2 Examining ownership issues and studying the possible state take-over of major municipal airports such as Danbury, Sikorsky Memorial, and Tweed-New Haven.

4.3.9.3 Assessing opportunities for assuring the continued existence of private airports such as Mountain Meadows in Burlington–Harwinton.

4.3.10 *Create Improved Linkages to Bradley International Airport with Other Modes of Transportation.*

4.3.10.1 Provide passenger rail service from the state's larger cities to Bradley International Airport.

4.3.10.2 Expand and enhance bus service from the state's larger cities to Bradley International Airport.

4.3.10.3 Stimulate improved commuter air service from regional cities.

4.3.11 *Implement Appropriate Practices and Procedures to Ensure Passenger Safety and Homeland Security.*

4.3.11.1 Encourage all airports to adopt the homeland security advisory system currently in use by state-run airports.

4.3.11.2 Create procedures for quick and thorough dissemination of threat information, through interagency agreements, to all affected airport operators.

4.3.12 *Protect and Maintain All Existing Airport Facilities in Connecticut*.

4.3.12.1 Create a board of industry experts to rewrite antiquated sections of the Connecticut General Statutes, as they relate to Titles 13b and 15 covering aeronautics.

4.3.12.2 Create a state master plan for Connecticut airports.

4.3.12.3 Improve zoning regulations to better protect airports and airspace.

Pedestrian/Bicycle Network

In addition to the lack of growth in the use of public transportation in Connecticut, the 2000 Census reported that the pedestrian commuting share decreased by 27 percent in Connecticut (from 3.7 percent to 2.7 percent). This trend occurred in neighboring states as well, with the pedestrian share of commuting down between approximately 11 percent and 29 percent: down 20 percent in Massachusetts (from 5.4 percent to 4.3 percent), down 24 percent in New Jersey (from 4.1 percent to 3.1 percent), and down 11 percent in New York (from 7.0 percent to 6.2 percent).

According to the 2000 Census, the transportation mode that experienced the largest increase during the 1990s was bicycling. However, Connecticut lagged behind in this national trend. Nationally, bicycle

commuting was up by nine percent. Connecticut's neighbors experienced major growth in bicycle commuting with increases of 38 percent in Massachusetts (from .38 percent to .52 percent), 57 percent in New York (from .25 percent to .38 percent), and 94 percent in New Jersey (from .24 percent to .47 percent). Connecticut's bicycle commuter use remained essentially flat, increasing approximately 5 percent (from .17 percent to .18 percent).

To create a truly multimodal transportation system that provides for reduced impacts on the environment, Connecticut must learn from its neighbors and consider bicycling and walking as integral components to our transportation system. Appropriate policies must be formulated and implemented and significant funds must be allocated to make biking and walking viable transportation choices for a much broader range of people. Our transportation system must support appropriate combinations of facilities, publicity, education, and planning to encourage a shift to biking and walking from other transportation modes. The following actions would help to facilitate this shift:

4.3.12 *Adopt as Regulation and Vigorously Enforce the U.S. Department of Transportation's Guidelines on Pedestrian and Bicycle Accommodation.*

4.3.13 *Promote Access for Pedestrians and Bicycle Riders.* Institute State policies that set an example of promoting pedestrian and bicycle access by creating adequate and visible bicycle and pedestrian accommodations, including bicycle parking at all CTTransit stops and stations, and state office buildings.

4.3.14 *Spend a Greater Percentage of Road Safety Funds on Improvements for Pedestrian and Bicycle Safety.*

4.3.15 *Provide Parking "Cash-outs" to Promote and Encourage Biking and Walking as Alternatives to the Use of Single Occupancy Vehicles.*

4.3.16 *Create State Incentives for Municipalities.* Provide state incentives for municipalities to require a certain number of easily accessible and visible bicycle parking spaces in new parking lots or structures.

4.3.17 *Provide a Non-Motorized Transportation Bureau within the Connecticut Department of Transportation.* Develop a fully staffed, non-motorized transportation bureau within ConnDOT that can provide municipalities and regional planning organizations with professional, community-oriented advice on relevant infrastructure and engineering.

4.3.18 *Revise State Policies on Sidewalks to Do More to Encourage Bicycle and Pedestrian Movement.*

4.3.19 *Establish a Set-aside Program for Federal Hazard Elimination Funds.* This program should specifically address pedestrian and bicycle safety in areas of high demand (e.g. traffic calming projects, sidewalk construction)

4.3.20 *Prioritize Safe Walking Routes to Schools.* Give priority in the selection of local transportation aid to "Safe Routes to School" projects, and pass legislation that would make safe walking routes to school eligible for high priority status.

4.3.21 *Create and/or Strengthen Pedestrian and Bicycle Linkages to All Transit Connections.* Include the installation of bicycle racks on buses, where appropriate.

4.3.22 *Support the Development, Enhancement, and/or Completion of Greenways and/or Bicycle Routes Throughout the State.* Give priority to the following:

4.3.22.1 Development of a bicycle route along Route 7 and the Still River Valley in Danbury, Brookfield, and New Milford.

4.3.22.2 Completion of the East Coast Greenway (including the Farmington Canal Linear Trail) throughout Connecticut).

4.3.22.3 Planning and development of a multiple use greenway along the Naugatuck River from Derby through Waterbury to Torrington, connecting existing trails, paths, and river walkways.

Highways

4.3.23 *Reduce Highway Traffic Volumes.* Undertake serious consideration of this task and the associated task of reducing the number of vehicle miles traveled.

4.3.24 *Pursue Widening of Existing Highways as a Last Resort.* Widen highways only after a thorough evaluation of land use impacts, sprawl inducement potential, cost–benefit analysis, and alternative courses of action.

4.3.25 *Expand Commuter Parking Lots to Encourage Ridesharing.* Expansions to commuter parking lots should occur only where they are needed.

4.3.26 *Construct Additional Truck Rest Areas on and near Interstate 84 for Safety.* Construction of additional truck rest areas should occur only where they are needed.

4.3.27 *Increase Town Aid for Roads Funding for Local Road Maintenance.*

4.3.28 *Address Critical Deficiencies on Interstate 84 to Maintain Existing Capacity and Modernize Interchanges.* The following are priorities:

4.3.28.1 Develop a detailed plan for improvements to the Interstate 84 and Route 8 interchange.

4.3.28.2 Expedite the design of Interstate 84 improvements from Waterbury to Danbury, in accordance with the recommendations of ConnDOT's two recent Interstate 84 needs and deficiencies studies.

4.3.29 *Address the Needs along Route 8.*

4.3.29.1 Research the feasibility of re-designating Route 8, from a limited access state highway to an interstate collector.

4.3.29.2 Examine access from Route 8 to downtown areas for the purposes of improving quality of life and planning for economic development from Interstate 95 in Bridgeport through the Central Naugatuck Valley Region to Route 44 in Winsted.

4.3.30 *Conduct a Study of the Intersection of Route 202 and Route 800 in Downtown Torrington to Enhance Vehicular and Pedestrian Movement.*

Chapter 5 Movement of Goods and Freight

Freight transport is critical to the economic vitality of Connecticut and the Interstate 84 (I-84) corridor. Our economic well being is dependent on having good access to the national and international freight transport networks including rail, water, truck, and air transport. *The Connecticut: Strategic Economic Framework,* also known as the "Gallis Report," recognized the evolution of a "New Atlantic Triangle" as a major economic region bounded by the New York, Boston, and Albany metropolitan areas, and primarily linked to the national and international transport networks through major gateways at these three points of the triangle. In the context of the Gallis Report and its concept of the New Atlantic Triangle, the elements of the national freight transport system that are important to the I-84 corridor are 1) **New York–New Jersey ports,** which are among North America's primary sea hubs and a link to the global shipping system, 2) **the Albany rail hub,** a major rail hub with links to the national network and the North American Free Trade Agreement (NAFTA) corridor, 3) **Bradley International Airport,** the state's only significant air cargo facility, and 4) **Interstate 84,** a major truck route and one of the five principal transportation corridors the Gallis Report identified as part the New Atlantic Triangle.

Since the I-84 corridor has no water ports and underutilized rail services (mainly short line operators), the primary means to move goods in and out of the corridor is truck transport. The corridor does benefit from the presence of Bradley International Airport and its air cargo functions, but air freight serves a special market for high-value–low-bulk goods that comprise only a small portion of the total volume of freight in any region. This means that trucks, and the major highways they depend on, are responsible for serving most of the goods movement needs of the corridor. Bradley International Airport serves the needs of the special air freight market, and the corridor's short line rail operators serve some of the area's need for the movement of low-value–high-bulk goods.[1]

If the I-84 corridor is to continue to compete effectively in a global economy, the goods movement system that serves the region and connects it to the national transport network must be improved. Therefore, we must continue to maintain and improve the existing truck transport system. Furthermore, we must improve our regional rail system, improve our access to the national rail system, improve our access to port facilities, and maintain and improve the air cargo functions at Bradley International Airport.

5.1 Corridor Objective

5.1.1 Since truck transport is the primary means of goods movement in the corridor, we need to maintain and improve truck transport. However, we also recognize the need to reduce our reliance on truck transport by improving our access to rail, air, and water freight transport.

5.2 Corridor Challenges

5.2.1 *Challenges to Developing a Multimodal System.*

5.2.1.1 *Incomplete Understanding of System Needs*. The goods movement system and goods movement flows in Connecticut are not fully understood, and we are not able to provide good forecasts of how the system and its flows will change if investments in new system infrastructure are made.

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[1]Connecticut ships in primarily nonmetallic minerals (29 percent), primary metal products (14 percent), lumber (13 percent), paper (12 percent), chemicals (10 percent). Connecticut ships out nonmetallic minerals (54 percent — example: crushed stone), waste and scrap materials (35 percent), and chemicals (6 percent).

5.2.1.2 *Over reliance on Trucks*. The I-84 corridor is overly reliant on truck transport for meeting its goods movement needs. We need to develop more options for other modes of freight transport.

5.2.2 *Rail Freight Challenges.*

Infrastructure Challenges

5.2.2.1 *Vertical Clearance Problems*. Many lines in the corridor lack sufficient vertical clearance (17 feet) to accommodate even the standard Plate F rail car.

5.2.2.2 *Weight Restrictions*. Some lines in the corridor have bridges or sections of track that restrict axle loads to less than the industry standard 286,000 pounds. Many do not meet the evolving industry standard of 315,000 pounds.

5.2.2.3 *Loss of Existing Shippers*. As the rail industry shifts to bigger and heavier rail cars, Connecticut risks losing rail service to existing industries. The inability to move the newer cars over existing Connecticut tracks, means existing Connecticut receivers will no longer be able to be served by rail.

5.2.2.4 *Need to Maintain Existing Facilities*. Most of Connecticut's rail infrastructure is in need of upgrading to accommodate heavier axle loadings.

Access Challenges

5.2.2.5 *No Class 1 Carriers*. The I-84 corridor is not served directly by any major national Class 1 rail carrier.

5.2.2.6 *No East-West Routes*. The regional and local rail lines in the I-84 corridor are oriented north-south. There is no significant east-west service.

5.2.2.7 *Only Two Hudson River Crossings*. Freight rail access to the ports of New York and New Jersey and to points south of New York is limited to two crossings of the Hudson River: New York City and Selkirk (Albany). The opportunities for freight rail crossing in New York City are limited to a barge service and off-peak use of passenger rail tunnels. The passenger rail tunnels have limited vertical clearance due to the electric catenaries used for passenger rail service. The Selkirk crossing serves Massachusetts and northern New England well, but adds 200–300 miles to trips to the Danbury and Waterbury areas.

5.2.3 *Water Freight Challenges.*

5.2.3.1 *No Good Access to Major Shipping Ports*. The I-84 corridor does not have good access to major shipping ports. Access to the major international ports of New York and New Jersey is limited by roadway congestion and by the lack of a direct rail connection. Truck transport to the ports is limited by severe congestion in the New York/New Jersey area. Rail access is hindered by limited rail crossings over the Hudson River, limited freight rail capacity on the New Haven line, and the extra trip length required to send trains via the Selkirk (Albany) crossing.

5.2.4 *Air Freight Challenges.*

5.2.4.1 *Need to Further Develop Bradley International Airport's Capability*. Most of the I-84 corridor has relatively good air freight service via Bradley International Airport. However, Bradley's air cargo potential has not been fully realized, and steps need to be taken to assure that Bradley improves its competitiveness in the air cargo market.

5.2.5 *Trucking Industry Challenges.*

5.2.5.1 *Inadequate Number of Rest Areas*. More rest areas are needed to serve truckers who arrive in Connecticut late at night, or very early in the morning, to assure that they can meet the early morning delivery times of Connecticut businesses. (The Connecticut Department of Transportation estimates that demand for truck parking spaces exceeds supply by 1,200 on most nights.) I-84 between Danbury and Hartford is especially deficient in the number of available truck parking spaces at public rest areas. There are sections of I-84 where truckers pull off to the side of the highway to rest prior to their early morning deliveries. The state should review the April 2001 final report from the *Truck Stop and Rest Area Parking Study* and pursue implementation of ways to increase truck parking along the corridor.

5.2.5.2 *Need Faster Implementation of Pre-Clearance System*. Pre-clearance systems for truck inspection stations are a proven method of reducing truck delays. Connecticut is a leader in this field with its operation at the Union rest area. The state needs to accelerate the expansion of this system to all other permanent stations in the state.

5.2.5.3 *Need for More Flexible Delivery Times*. The unwillingness of many businesses to schedule deliveries outside of the normal business day means trucks need to use roads during the heaviest traffic periods.

<u>Highway Challenges</u>

5.2.5.4 *Critical Problems on I-84.* As the primary east-west route through the northern half of the state, and as a key gateway into New England, I-84 is critical to the economic vitality of the corridor. Recent studies have identified safety, operational, and capacity problems between Danbury and Hartford that could affect future economic growth if not addressed in a timely manner.

5.2.5.5 *I-84 as an Alternate Truck Route for I-95.* I-84 is a primary alternative for truckers seeking to avoid congestion on I-95.

5.2.5.6 *Hilly Terrain from Southington to Southbury on I-84.* Lack of climbing lanes on some sections of I-84 in western Connecticut creates problems, especially in winter.

5.2.5.7 *Routes 7, 8, and 25 Are Key Connections to I-95*. Routes 7, 8, and 25 are important connecting routes between I-95 and I-84.

5.2.5.8 *Route 8 and I-84 Interchange*. This interchange has serious operational problems resulting from its left-side ramps, tight horizontal ramp curvatures, and weaving sections between ramps.

5.3 Corridor Initiatives/Recommendations

5.3.1 *Develop a Multimodal Freight System.*

5.3.1.1 *Promote Alternative Modes of Freight Transport*. State policy should encourage the development of alternate modes of freight transport via rail, water, and air. While we need to continue to invest in the truck transport system, we also need to reduce our reliance on trucks by promoting alternative modes when time, cost, and cargo characteristics allow for viable options.

5.3.1.2 *Conduct a Freight Study.* Complete an analysis of all freight movement within and through the state.

5.3.1.3 *Develop a Goods Movement Model.* Develop a goods movement forecasting model for Connecticut.

5.3.2 *Improve the Rail Transport System.*

<u>Upgrade the Infrastructure of Connecticut's Existing Rail System</u>

The state's first priority should be to improve the ability of its existing short-haul rail operators to serve existing customers. As the nation's rail industry evolves to larger and heavier rail cars, Connecticut risks losing its ability to serve existing rail customers since the bigger and heavier rail cars cannot travel over Connecticut's older rail system. Of particular concern are bridges and track that cannot accommodate the heavier rail cars, and bridges that cannot accommodate the taller rail cars.

5.3.2.1 *State Support for Rail Infrastructure Improvements*. The state should continue to expand its current programs to support rail infrastructure repair. The current small capital funding program administered by ConnDOT should be increased, and the state should define funding criteria that will give preference to improvements most critical to systemwide performance. The state should also continue its program of supplying rail freight operators with capital equipment removed from the state-owned New Haven Line. While the equipment might no longer meet the demands of the high-speed service on the New Haven Line, it is still usable equipment on many of the slower-speed, lower-volume freight lines.

5.3.2.2 *Rebuild Rail to a Heavier Axle Load Standard.* Many of Connecticut's rail lines and bridges were built to a lower axle loading standard than the standard currently used by the industry. Tracks should be rebuilt to accommodate at least the current industry standard of 286,000 pounds per car. Since bridges are a much longer-term investment, when they need to be rebuilt they should be designed to meet the evolving industry standard of 315,000 pounds per car.

5.3.2.3 *Rebuild Bridges with Adequate Vertical Clearance.* Due to the large number of bridges with substandard vertical clearance, it is not economically feasible to correct all of the deficient bridges over railroads. The recommended approach to addressing the problem is to correct the problems on: (1) an "as needed" basis, and (2) an "as opportunities allow" basis. The most critical locations should be corrected on an "as needed" basis. In some cases rail operators can achieve adequate clearance by lowering the track. In other cases the road bridge over the railroad has to be rebuilt to gain adequate clearance. The "as opportunities allow" approach involves taking advantage of planned bridge reconstruction projects to increase vertical clearance. ConnDOT already has a policy of rebuilding bridges to a standard vertical clearance of 22 feet. This policy needs to be continued with as few exceptions as possible. When exceptions are allowed, ConnDOT

should permit no less than a 17-foot vertical clearance for at least the standard Plate F-type rail car to pass.

5.3.2.4 *Special I-84 Corridor Concerns.* During the course of this planning effort, several special concerns arose about maintenance of physical facilities that warrant mention here. The Terryville Tunnel is a key rail link to Bristol that needs maintenance. The track north of Waterbury to Torrington is not being actively used for freight service, but should remain available for potential restoration of service in the future.

Improve Access to the National Rail System

5.3.2.5 *Access to Major Continental Routes*. Access from the I-84 corridor to major continental or east-west rail lines is fairly good. The corridor has four rail lines that run north into Massachusetts and link with the CSXT Railroad, which is a Class 1 railroad. The Housatonic Railroad provides freight service along the so-called "Maybrook" Line west of Danbury to Beacon, New York, where it can access the CSXT service via Metro-North's Hudson Line on the east side of the Hudson River with connections to Albany and Long Island. North of New Milford, the ownership of the rail right-of-way changes from Housatonic Railroad to the State of Connecticut. The second connection to CSXT is provided by CSO Railroad, which operates over the Amtrak Line between New Haven and Springfield. This connection could be improved if better trackage fees could be negotiated with Amtrak. The current fees are high and tend to discourage rail freight transport there.

5.3.2.6 *Access to New York City and Points South.* Moving freight by rail from Danbury to New York City typically requires that a train travel north to Albany to cross the Hudson River and then turn south. This circuitous route adds time and cost. Better options for freight rail service to the ports of New York and New Jersey, as well as destinations south of New York are needed. This need was emphasized in the Gallis Report. However, the best option for improving access has not yet been determined. The available options include:

(a) Cross-Harbor Tunnel. Connecticut could support the cross-harbor tunnel proposal that is being studied by the New York City Economic Development Corporation.
(b) Cross-Harbor Rail Car Barge. New York City is studying the option of a new barge service to float rail cars across the Hudson River.
(c) Tappan Zee Bridge. New York is considering a rail crossing at the Tappan Zee Bridge.
(d) Container Barge Service to Connecticut Ports. (See section on ports.)

Connecticut needs to work with New York to determine which of the New York proposals benefit Connecticut. Connecticut also needs to determine if, and how, it should support any option that benefits Connecticut. Support need not be financial, but could be political support in Congress to help New York access the necessary federal funds.

5.3.2.7 *Support a New York–New England Rail Operations Study.* Ask the I-95 Coalition to undertake a rail operations study of New York and New England as soon as possible. This coalition has completed the Mid-Atlantic Operations Study; a similar effort is needed in this region to determine the best system solutions to our rail access problems.

5.3.3 *Improve Access to Port Facilities.*

5.3.3.1 *Implement Container Barge Service*. Support the development of container barge service from the New York and New Jersey ports to the ports of New Haven and Bridgeport. The primary difficulties with Connecticut access to the major international ports at New York and New Jersey are the extreme congestion that restricts truck access, and the lack of a good rail connection for freight transport. Shipping containers directly from the New York and New Jersey ports to Bridgeport or New Haven would allow them to bypass the congestion problem, and would remove trucks from Connecticut roadways. It is generally agreed that start-up of a feeder barge service is viable at only one port initially; therefore, a choice must be made between Bridgeport and New Haven. Either location benefits the I-84 corridor. Access to the Bridgeport facility would be primarily via Route 8 to Waterbury. Access to the New Haven facility would be primarily via I-91 to Hartford (and I-691 to Waterbury). New Haven is also studying the possibility of extending rail service to the port.

5.3.4 *Improve the Air Freight System.* Bradley International Airport is an important air freight facility and the only significant such facility in the state. It handles about 140,000 tons of air freight each year and ranks thirty-third among all airports in the United States for air freight handled. The major steps needed to maintain and improve Bradley International Airport's air freight functions are listed below.

5.3.4.1 Improve Marketing of Air Freight Capabilities. Connecticut needs to make a more aggressive effort to market Bradley International Airport's air cargo facilities and services.

5.3.4.2 *Expedite Facility Development Procedures.* Cargo facility expansion has been hampered in the past by delays experienced by private firms which have sought to build new facilities at the Airport. The state needs do more to coordinate and expedite the efforts of its various regulatory and development agencies to facilitate these developments.

5.3.4.3 *Improve Ground Access.* Bradley International Airport's primary advantage as an air cargo facility is its easy ground access. To maintain good ground access to the airport, the state needs to make improvements to serve the west-side cargo facilities and the planned north-side cargo facilities.

5.3.5 *Improve the Truck Transport System.*

<u>Trucking Industry</u>

5.3.5.1 *Expand and Add Rest Areas*. Address the severe shortage of rest areas for trucks along state highways.

5.3.5.2 *Promote More Flexible Delivery Times*. Encourage Connecticut businesses to schedule deliveries outside the normal business day to reduce truck traffic during peak traffic periods.

5.3.5.3 *Accelerate Implementation of Pre-Clearance System*. Accelerate the implementation of Connecticut's state-of-the-art electronic pre-clearance system for truck inspection stations.

<u>Highway System</u>

Interstate-84 is a major truck route that needs to be maintained and upgraded to serve the heavy truck traffic that uses it on a daily basis. It is the primary truck route for trucks delivering goods to towns and cities in the I-84 corridor. It is also an important route for trucks destined for other parts of New England,

and a primary alternative for trucks seeking to avoid I-95 when congestion on that route gets especially bad.

5.3.6 *Address Critical Problems on I-84.* Recent studies have identified safety, operational, and capacity problems that could affect future economic growth along the corridor if not addressed in a timely manner. While the problems between Danbury and Southington appear to be the most critical, the recommendations in the following four studies should be assessed and prioritized from a corridor-wide perspective: 1) Danbury–Newtown Study, 2) Southbury–Waterbury Study, 3) Plainville–New Britain Study, and 4) Farmington–Hartford Study.

5.3.7 *Provide Climbing Lanes*. Provide climbing lanes on I-84 in western Connecticut where hilly terrain hinders truck operations, especially during winter weather conditions.

5.3.8 *Assess the Needs and Deficiencies on Routes 7, 8, and 25.*

5.3.9 *Improve the Route 8 and I-84 Interchange*. The Route 8 and I-84 interchange has serious operational problems that need to be corrected by interchange reconstruction.

Chapter 6 Integration of the Corridor Economy with Regional, State, National, and Global Economies

6.1 Corridor Objectives

6.1.1 Stimulate sustainable economic growth in Connecticut by establishing more and better transportation connections to the key economic centers and transportation facilities in the northeastern United States, the North American Free Trade Agreement (NAFTA) corridor, the nation, and the globe.

6.1.2 Develop policies and procedures that will integrate the I-84 corridor's economy with state, regional, national, and global economies.

6.1.3 Improve the I-84 corridor's connections to the state, regional, national, and global economies by developing a seamless multimodal transportation network that efficiently moves both people and goods.

6.1.4 Identify new and emerging routes of commerce, including movement of human capital, and develop appropriate transportation linkages.

6.2 Corridor Challenges

6.2.1 Non-highway freight transportation infrastructure is either fragmented and underdeveloped or underutilized.

6.2.2 Existing transit infrastructure and services provide linear commuter connections from cities to suburbs, but do not link suburbs-to-suburbs.

6.2.3 Jurisdictional and political boundaries must be overcome to ensure coordinated planning, financing, and implementation of transportation system improvements.

6.2.4 A strong public preference for moving people and goods by automobile and truck needs to be overcome.

6.2.5 Uncertainty exists as to whether post-September 11, 2001, commutation patterns are temporary or permanent.

6.2.6 Traffic congestion poses a real threat to future economic growth and development in the I-84 corridor.

6.3 Corridor Initiatives/Recommendations

6.3.1 *Coordinated Planning.* Work with neighboring states, the federal government, and the Eastern Canadian provinces to coordinate planning on transportation issues, or facilities of common interest; for example, strengthen relationships with the New York Metropolitan Transportation Council.

6.3.2 *Reinforce Collaboration.* Connecticut state agencies should reinforce collaboration, both within the state and with appropriate agencies in neighboring states, to ensure coordinated and compatible development of transportation and other infrastructure.

6.3.3 *Hudson River Rail Crossing and Tappan Zee Bridge Projects.* Develop public and political support for construction of another Hudson River rail crossing and participate in planning efforts related to the Tappan Zee Bridge replacement project.

6.3.4 *Conflict Resolution.* Establish a mechanism for resolving conflicts among competing policy interests at the local, state, and federal level (e.g., sharing of rail infrastructure, waterborne transportation, energy transmission facilities, shellfish and other aquiculture facilities, species and natural habitat, development choices).

6.3.5 *Evaluate Rail Policies.* Evaluate policies regarding overhead and side clearances on rail lines to identify changes necessary to increase opportunities for effective use of the state's rail infrastructure.

Chapter 7 Policies and Sources of Funding for a Quality Multimodal Transportation System

The jurisdictions that exist in the Interstate 84 (I-84) Corridor Transportation Investment Area (TIA) depend on state and federal sources of funding for the development and the operation of a quality multimodal transportation system. The TIA Board supports measures taken by the state and federal governments to direct additional resources to meet the transportation needs of the state. These measures include such things as changes in the gasoline tax structure and congestion pricing. The TIA Board also supports federal legislation that would allow congestion pricing without federal penalties on federally funded interstate highways.

Chapter 8 Interstate 84 Transportation Investment Area Corridor Perspectives on Section 16 Projects

The Interstate 84 (I-84) Transportation Investment Area (TIA) supports the completion of existing Connecticut Department of Transportation (ConnDOT) projects already in design, right-of-way acquisition, and/or construction. The I-84 TIA also supports completion of the following additional projects, which will impact the I-84 TIA, and which are listed in Section 16(a) of House Bill No. 7506, Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board*:

1. **Jobs Access Transportation.** Fund the Jobs Access and Reverse Commute program, which provides bus-service-route extensions and customized paratransit services for residents in the cities of Bridgeport, Hartford, New Haven, and Waterbury.

   Objectives: 1) To provide funding to continue a program that provides transportation to jobs for low-income people and present and former welfare recipients, 2) to assure that this program is fully funded through the end of state fiscal year 2003, 3) to expand the level of public transit services, previously not accessible due to geographic limits or limited hours of service of pre-existing transit services, 4) to give employers access to a larger labor pool, and 5) to remove transportation as a barrier for potential workers, and 6) to support state and federal welfare reform.

   Cost: $1.2 million for state fiscal year 2002, and $3.5 million for state fiscal year 2003.[2]

2. **Expand Express Bus Service in Hartford.**

   Objectives: 1) To build upon the already successful express bus services into downtown Hartford with additional services, 2) to add to the number of viable alternatives to the automobile and increase the financial attractiveness of the express bus commute through a fare buy-down.

   Cost: $2.4 million (operating) and $3.6 million (capital).

3. **Private Sector Participation in the "DeduCT-A-Ride" Program.** Marketing an employer-sponsored pre-tax commuter benefit program to be known as the "Deduct-A-Ride" program.

   Objectives: 1) To take advantage of the federal tax code, which allows employers to deduct certain costs related to parking and transit subsidies from taxable income, 2) to allow employers to provide transit passes or vouchers to their employees and use that cost as an eligible business expense, 3) to provide marketing funds to the ConnDOT for the purposes of expanding the marketing of this program to companies.

   Cost: $500,000 ($250,000 per each of two years).

4. **Commuter Parking Lots Expansion.** Expand existing commuter parking lots statewide.

   Objectives: To expand the number of available commuter parking spaces for a total of 360 spaces at six existing commuter parking facilities.

   Cost: $2.2 million.

5. **New-Britain–Hartford Busway and Transit-Oriented Development: Making the Land Use Connection.** Continue the efforts of ConnDOT, the Capitol Region Council of Governments, and the Central Connecticut Regional Planning Agency in support of the Hartford to New Britain busway.

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[2](Figures derived with the assumption that the Department of Social Services funding will continue at the full $3.2 million annual level; funding estimates depend on securing Federal Transit Administration grants.)

Objectives: To encourage transit-oriented development at station locations. The project scope includes: 1) designing station facilities, 2) developing proposals and conceptual plans for one or more small transit hubs, 3) identifying development opportunities in the corridor, 4) maximizing development potential in the vicinity of Central Connecticut State University, 5) identifying actions which can be taken by municipalities (e.g., changes to subdivision and zoning regulations, land banking, development incentives), and 6) implementing best management practices, and 7) serving as a model for other regions.

Cost: $800,000.

6. **Interstate 84 Danbury–Newtown Short-Term Improvements.** Complete safety and operational improvements at Interstate I-84 interchanges from Danbury to Newtown.

   Objectives: To implement the short-term recommendations of the I-84 corridor study.

   Cost: $3.4 million.

7. **Route 8 Deficiencies and Needs Study from Beacon Falls to Waterbury.** Fund a safety and capacity study of Route 8 from Beacon Falls to Waterbury.

   Objectives: 1) To conduct a deficiencies and needs assessment of approximately ten miles of the Route 8 corridor between Beacon Falls (from town line with Seymour) and Waterbury (to the interchange with Interstate 84), 2) to enhance safety, provide mobility, and provide economical solutions to existing and future traffic needs, 3) to enhance operations and support economic development along the corridor, 4) to focus on interchange improvements and intersection improvements on abutting state roads, 5) to assess geometric alignment and compare to AASHTO standards, 6) to develop, within approximately 18 months, a prioritized list of recommendations for short-term (two to five years) and long-term (ten to twenty years) improvements.

   Cost: $1 million.

Appendix Interstate 84 Corridor Transportation Investment Area Board Members

Capitol Region Council of Governments (CRCOG)
RPO Representative: Rick Porth, Executive Director, CRCOG
RPO Alternate: Tom Maziarz, Transportation Director, CRCOG
Public Representative: Joseph Barber, All Aboard!

Central Connecticut Regional Planning Agency (CCRPA)
RPO Representative: Theodore Scheidel, First Selectman, Town of Burlington (TIA Chair)
RPO Alternate: Carl Stephani, Executive Director, CCRPA
Public Representative: Morgan Seelye, Retired Town Engineer
Public Alternate: Anthony Ferraro, Public Works Director, Berlin

Council of Governments of the Central Naugatuck Valley (COGCNV)
RPO Representative: Peter Dorpalen, Executive Director, COGCNV
RPO Alternate: Laurel Stegina, Senior Planner, COGCNV
Public Representative: Lisa Kolodziej, Waterbury Chamber of Commerce

Housatonic Valley Council of Elected Officials (HVCEO)
RPO Representative: Dennis Elpern, Planning Director, Danbury
RPO Alternate: Jon Chew, Executive Director, HVCEO
Public Representative: Stephen Bull, President, Greater Danbury Chamber of Commerce

Litchfield Hills Council of Elected Officials (LHCEO)
RPO Representative: Rick Lynn, Executive Director, LHCEO
Public Representative: Stephen Dunn, Retired Transit Planner

Northwestern Connecticut Council of Governments (NWCCOG)
RPO Representative: Dan McGuinness, Executive Director, NWCCOG
Public Representative: Robert Bass, General Manager, Housatonic Railroad

Valley Regional Planning Agency (VRPA)
RPO Representative: James Della Volpe, Mayor, Town of Ansonia
RPO Alternate: Scott Barton, First Selectman, Town of Seymour
Public Representative: Ronald Skurat, Secretary, VRPA
Alternate: Richard Eigen, Executive Director, VRPA

At-Large Members
Cathryn Addy President, Tunxis Community College
Tim Moynihan Retired President, Greater Hartford Chamber of Commerce
Michael O'Donnell Manager, Waterbury-Oxford Airport
Ellen Rosenberg Connecticut Chapter of Regional Plan Association
Katharine Zatkowski Employer Service Coordinator, RideWorks

At-Large Alternates
Toni Gold All Aboard!
Gene Eriquez Mayor, City of Danbury

Ex-Officio Member
Congressman James Maloney represented by Sheila O'Malley, Special Projects Coordinator, Congressman Maloney's Office

Appendix E

I-395 Full Plan 2002

FULL CORRIDOR PLAN

I-395 CORRIDOR TRANSPORTATION INVESTMENT AREA

Adopted: 22 October 2002

Submitted to the Connecticut Transportation Strategy Board
15 November 2002

I-395 CORRIDOR TIA COMMITTEE

Members

Barbara Buddington, Co-Chair
Executive Director, WINCOG
TSB Movement of People Working Group

Charlene Cutler, Co-Chair
Executive Director, QSHC

Jefferson B. Davis
Representative, 50th District
TSB Land Use and Economic Development Working Group

John Filchak
Executive Director, NECCOG
TSB Evaluation Working Group

John Markowicz*
Executive Director, seCTer
TSB Evaluation Working Group
TSB Land Use and Economic Development Working Group

John Sarantopoulos*
Secretary-Treas., Teamsters Local 493, Retired
TSB Movement of Goods Working Group

James S. Butler
Executive Director, SCCOG
TSB Land Use and Economic Development Working Group

Jane Dauphinais
District Director, Congr. Simmons
TSB Funding and Finance Working Group

Mary Lou DeVivo
Owner, Willimantic Waste Paper Co.
TSB Movement of Goods Working Group

Jane Haney
Owner, C.C. Lounsbury, Inc.

Peter Roper
Owner, Three R's Company
Town of Groton Planning Comm.

** Transportation Strategy Board Representative*

Alternate Members

Roger Adams
Executive Director,
The Chamber of Commerce, Inc.
Willimantic

Dale P. Clark
First Selectman, Sterling
Chairman, NECCOG

Nicholas H. Mullane, II
First Selectman, North Stonington
Chairman, SCCOG

Christine Crugnola Petruniw
Citizen, Canterbury, CT

Adella Urban
First Selectman, Columbia
Vice Chairman, WINCOG

FULL CORRIDOR PLAN
I-395 TRANSPORTATION INVESTMENT AREA

I. INTRODUCTION

A. Purpose of the Plan

Public Act 01-5, "An Act Implementing the Recommendations of the Transportation Strategy Board" created the Connecticut Transportation Strategy Board (TSB) and five Transportation Investment Areas (TIAs) for the purpose of formulating a statewide transportation strategy.

In accordance with the requirements of Section 3 of the Act, the I-395 Corridor TIA Committee was formed and prepared an Initial TIA Plan, which was submitted to the TSB in November, 2001. The Initial Plan was intended to provide the TSB with an overview of the I-395 TIA, outline the inter-regional transportation challenges and opportunities that the TIA faces, and present the strategies and priority projects for addressing the TIA's transportation needs. The information in this Initial Plan was used by the TSB in the preparation of its first report to the General Assembly in January, 2002, as required by Section 4 of the Act.

Section 3 of the Act further requires that each TIA submit a Full Corridor Plan by November 15, 2002, and biennially thereafter. The purpose of the Full TIA Plan is to assist the TSB in its requirement to update/revise its strategy recommendations by December 15, 2002, and biennially thereafter (Section 4).

This document, the first Full Plan for the I-395 Corridor TIA, has been prepared in response to the requirement of the Act.

B. Plan Development

1. Overview of TIA Meetings

Following the submission of the Initial Plan, the I-395 Corridor TIA Committee met 10 times between January and November, 2002. Reports at each meeting from the I-395 TIA representatives to the working subcommittees of the TSB kept the TIA informed of the work of the subcommittees. Issues of particular concern to the TIA were likewise carried back to the TSB subcommittees by these

representatives. Because of some overlap of geography, issues and staff, the I-395 Corridor TIA held several of its meetings jointly with the Southeast Corridor TIA. Public hearings on the draft Plan were held on September 23 in Willimantic, September 24 in Norwich, and September 26 in Dayville.

2. TIA Vision

The vision of the I-395 Corridor TIA is the development of the most efficient multi-modal transportation system to move people and goods while preserving and improving the unique character and quality of life within eastern Connecticut. *This vision statement was adopted by the I-395 Corridor TIA at their June 25, 2002 meeting.*

3. Process Used in Determining and Prioritizing TIA's Objectives

The Full Plan presented here reflects the combined knowledge and experience of the TIA's 16 regular and alternate members. The Plan, its strategy, and the priority projects contained herein are based on the purpose and goals of the Act, input from transportation providers and users, public input, and the Regional Transportation Plans of three involved regional planning organizations.

During the Plan's preparation, the TIA has not considered the specific cost of any strategy or project. It is understood that the process created under Public Act 01-5 was intended to identify critical transportation initiatives regardless of cost. The I-395 TIA does recognize that prioritizing and funding the projects identified by the five TIAs will be an issue for the TSB, and ultimately new sources of revenue to fund transportation projects in the state will need to be found.

A draft list of six priority projects was adopted by the TIA at a publicly noticed regularly scheduled meeting on July 23, 2002. This list was forwarded to the TSB as a preliminary submission on July 25, 2002, as requested by the TSB.

C. Public Involvement

1. Meeting Dates

Following submission of the Initial Plan in November 2001, the I-395 Corridor TIA Committee met on the following dates:

January 29, 2002	April 23, 2002	July 23, 2002	October 22, 2002
February 26, 2002	May 28, 2002	August 6, 2002	
March 26, 2002	June 25, 2002	August 27, 2002	

2. Synopsis of Meetings

Meetings in the late winter and fall of 2002 focused on coordinating information with the TSB's five working groups. Representatives from the I-395 Corridor TIA served on each working group, and gave reports at TIA meetings on the major issues being discussed and progress made by their respective committees. These representatives also reminded the working groups of those issues of particular concern to the I-395 Corridor TIA. The meetings reflected an ongoing concern by TIA members that the transportation needs and priorities of eastern Connecticut would receive little attention at the state level. Subsequent meetings focused on the adoption of a vision statement, of a list of priority projects, and the format and content of the final plan.

3. Public Comment

All regular monthly I-395 Corridor TIA meetings were noticed as public meetings. At the request of the TSB Chairman, the TIA Co-Chairs arranged a tour of eastern Connecticut in late June for interested TSB members. Local media joined the tour, interviewed participants, and published/aired related new stories. Public hearings on the draft plan were held in each of the three planning regions on September 23 (Windham Region), September 24 (Southeastern CT Region), and September 26 (Northeastern CT Region).

D. Area Profile

The I-395 Corridor TIA includes three regional planning organizations: Northeastern Connecticut Council of Governments, Southeastern Connecticut Council of Governments, and Windham Region Council of Governments. There are 41 municipalities within the TIA, twenty-six of which are also part of the Quinebaug and Shetucket Rivers Valley National Heritage Corridor, designated by Congress as a region of significant natural, historic, cultural and scenic resources. The TIA also includes the only two federally recognized Native American Tribes in Connecticut. A third tribe, also in eastern Connecticut, (Paucatuck Eastern Pequot and Eastern Pequot, jointly) received recognition in June, 2002; this decision may be appealed.

The I-395 Corridor TIA has a population of 413,911 (2000 Census) and covers approximately 1,404 square miles, or 27.5% of the total area of the state. It encompasses both the predominantly rural Northeastern Connecticut and Windham Regions, as well as the more developed Southeastern Connecticut Region, through which this TIA overlaps with the Southeast Corridor TIA. Interstate 395 runs north/south through the eastern portion of the TIA and links the New London/Norwich area with Worcester, MA and intersects I-95 in East Lyme.

The economy of the I-395 Corridor TIA is comprised of several core industry clusters. These include: defense technology/engineering and advanced manufacturing; tourism and entertainment; warehouse distribution; healthcare and biotechnology; and marine education and research. Tens of thousands of jobs in defense-related industries were lost during the last decade of the twentieth century, while a comparable number of new positions were created in the tourism and entertainment sector, primarily at two of the world's largest gaming casino/resorts. As a result, critical transportation networks and transit systems designed to accommodate major employers in urban locations have incompletely adapted to new employment/visitor sites in rural locations.

D. Major Transportation Assets

Highways: In addition to I-95 and I-395, which serve the southern and eastern portions of the TIA, I-84 also cuts across the very northwest corner of the region. The most significant state routes include Routes 1, 2, 6, 11, 12, 32, 44, 85, 164, 169, and 195. Route 169 is one of only two National Scenic Byways in the state.

Air: The TIA has three state-owned airports: Danielson, Groton/New London, and Windham. The Danielson and Windham Airports, while state-owned, are privately operated and are used for general aviation. The Groton/New London Airport is state-operated and classified as a commercial service-primary airport. It is used for general aviation, military, and air taxi service, with one major airline providing limited service to Philadelphia. For passenger air service, residents of the region use either Bradley International Airport in Windsor Locks or T. F. Green Airport, depending on proximity and fare differences.

Rail: Both the Providence and Worcester and the New England Central Rail lines pass through the region. The P&W connects Groton/New London with Worcester; the NE Central connects the port of New London (NE Central Railroad Pier) with Palmer, MA. These lines provide freight rail service; passenger rail on these lines has been limited to occasional excursions. The only regular passenger rail service runs parallel to the coastline - AMTRAK and Shoreline East, serving New London and points west; commuter service along this line is extremely limited.

Bus Transit: The TIA has three Transit Districts: The Northeastern CT Transit District (NCTD); Southeast Area Transit (SEAT); and the Windham Region Transit District (WRTD). NCTD provides fixed-flex route bus service in the towns of Brooklyn, Killingly, Pomfret Putnam and Thompson. SEAT offers fixed route and paratransit service in nine towns: East Lyme, Griswold, Groton, Ledyard, Montville, New London, Norwich, Stonington, and Waterford. The Windham Region Transit District provides fixed route service in Windham and Mansfield, and paratransit service in Ashford, Chaplin, Columbia, Coventry, Hampton, Lebanon, Mansfield, Scotland, Willington, and Windham. The only links between the transit districts are through the Jobs Access Program, which

connects both Willimantic and Danielson to SEAT with limited, targeted commuter services.

Waterways: New London is the site of the TIA's most important commercial marine facilities - the New England Central Railroad Pier and the adjacent Admiral Shear State Pier and ferry service to Block Island, Fishers Island, and Long Island.

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II. GOALS

A. Goals of the TSB Legislation

Section 4(c) of Public Act 01-5 requires that the TSB's Transportation Strategy must be designed to achieve certain results including:

1) stimulate economic growth and enhance the quality of life for residents of the state
2) develop and upgrade analytical tools to demonstrate the link between transportation and public benefits
3) ease mobility of people and goods by reducing traffic congestion, enabling inter-corridor movement, and enabling access to employment opportunities and essential services and expanding modal choices for passenger and freight
4) create connectivity in access to regional, national, and global economies
5) insuring safety and security by maintaining infrastructure and enforcing safe operations and use of the transportation systems

B. Goals/Challenges of the I-395 Corridor TIA

The I-395 Corridor TIA concurs with the broad goals of the TSB legislation, and in addition, has identified the following goals and the challenges to those goals as being of particular importance to this TIA's future.

1) Balance Economic Development with Quality of Life.

Challenges/Issues

a. Statewide support for statewide land use planning is lacking. The State's Plan of Conservation and Development is advisory only. There is not required review process for projects of "regional significance" other than at the local level. The inter-relationship between transportation planning, land use planning, and zoning must be recognized. This problem has resulted in urban sprawl throughout the TIA and results in large numbers of people commuting long distances from their homes to their place of employment by automobile. An important factor driving urban sprawl is Connecticut's over-reliance on the property tax to fund local services.

b. While Southeastern Connecticut is home to densely populated areas and commercial/industrial centers, much of the I-395 Corridor TIA is rural in character. Such low rural densities make difficult the provision of, and does not attract, significant investment in public transportation.

c. The I-395 Corridor TIA is home to two federally recognized tribal nations and their financially successful casinos. Approximately 100,000 patrons and employees travel to and from the casinos daily. The casinos are open twenty-four hours a day, seven days a week and thus neither patrons nor employees exhibit normal commuting patterns. In addition, the southeastern Connecticut region within the TIA has become the most popular tourist destination within the state. The tourism industry within the I-395 Corridor TIA has contributed billions of dollars and thousands of jobs to the state's economy, but has created significant transportation impacts.

d. The TIA also faces the challenge of efficiently and safely providing for the transportation needs of employees who commute to its large employers at the Foxwoods Resort Casino (12,500), U.S. Naval Submarine Base in Groton (10,000+), the Mohegan Sun Resort (13,000), Electric Boat in Groton (9,000), the state universities in the Storrs/Willimantic area (6,000+), and Pfizer in Groton and New London (6,000).

e. The two interstates and state routes within the TIA serve dual and oftentimes competing functions: they carry both through and local traffic. Traffic along I-95 is at or exceeding capacity; traffic along I-395 is increasing significantly. State highways that have segments that are at, and in some cases exceeding capacity include Routes 2, 6, 32, 44, 82, and 85.

f. The I-395 Corridor TIA encompasses "the last green valley" between Boston and Washington, D.C. Over 50% of the land area of the I-395 TIA is part of the Quinebaug and Shetucket Rivers National Heritage Corridor (QSHC). Existing transportation and land use practices do not always reinforce the conditions that warranted this federal designation. (According to the QSHC's enabling legislation, the QSHC shall be consulted on all projects funded by federal agencies in order to minimize adverse impacts on the National Heritage Corridor. *PL 103-449, as amended by PL 106-149*).

2. Provide a More Balanced Transportation System.

Challenges/Issues

a. Options are severely limited for the movement of people.

<u>Highways:</u> Lack of viable alternatives results in reliance on single-occupied automobiles as the predominant mode of travel.

Transit: Three transit districts are located within the TIA: WRTD in the Windham/Mansfield area, NECTD in the Putnam/Danielson area, and SEAT in the Norwich/New London area. Service levels are inadequate due to limited schedules and long headways. There is generally no bus service before 6:30 a.m. or after 7:00 p.m. When it exists, Saturday service is severely limited; there is no Sunday service. In addition, optional municipal participation/membership in regional transit districts results in fragmented service.

Rail: The only passenger rail service is located at the southern end of the TIA parallel to the coastline (AMTRAK, and Shoreline East which serves New London and points west). Commuter service along this rail line is extremely limited.

Air: The I-395 Corridor TIA's only state-operated airport (Groton/New London) has a single air carrier serving only one hub (Philadelphia).

Pedestrian/Bicycle: Most major roads in the I-395 Corridor TIA do not safely support pedestrian and bicycle travel. Sidewalks and bicycle lanes are rare along major roadways.

b. Options are limited for the movement of freight.

Rail: Impediments to increased use of rail freight service include: need for construction of new sidings and other track structure improvements; weight and vertical clearance restrictions on the new electrified AMTRAK line, and throughout New England, prohibit the use of double stack containers and heavier freight cars; the condition of the rail line between Willimantic and Plainfield limits the connection between the Providence and Worcester Railroad and the New England Central Railroad; lack of a viable crossing of the Hudson River between Connecticut and New York.

Maritime: Admiral Shear State Pier in New London is underutilized because there is no infrastructure and insufficient storage for containerized freight movement.

Highway: The congestion on the interstates and other state highways in the TIA results in inefficient and unsafe movement of freight by motor transport.

3.) Improve Intra-TIA, Inter-TIA, and Interstate Connectivity.

Challenges/Issues

Transit:

a. With the exception of a new Route 32 commuter service between Willimantic and Norwich (four round trips per day), the population/employment centers of Norwich/New London, Willimantic, Putnam, Plainfield, and Killingly, as well as Worcester MA and Providence, RI are not well connected by public transportation. Improvement of these connections is essential for future promotion of economic development, for access to jobs and educational opportunities, and for the provision of social services throughout the TIA.

b. There is no commuter bus service from UCONN to Hartford. While there is a commuter bus from Willimantic to Hartford, the reverse-commute from Hartford to Willimantic is not available.

Rail:

a. Lack of an adequate rail connection between Willimantic and Versailles prohibits rail traffic using the Providence & Worcester line from reaching New London.

b. Lack of a viable crossing of the Hudson River inhibits freight rail usage throughout the state.

c. There is no passenger rail connection from New London through the northeastern corner of the state to Worcester that would link the labor markets of the I-395 Corridor TIA to both the Worcester and Boston labor markets. It would also improve tourism access from the greater Boston area to the I-395 TIA and would reduce traffic.

Highways:

a. Portions of the I-395 Corridor TIA lack good connecting highways to the Capitol Region. The northern area of the I-395 TIA also lacks good connections to Providence. Projects that would have constructed limited access expressways along both the Route 11 (Hartford to New London) and Route 6 (Hartford to Willimantic) corridors stalled decades ago and have never been completed.

III. RECOMMENDED PRIORITY PROJECTS AND STRATEGIES

The I-395 Corridor TIA's goal is to reduce dependence on the automobile. It is recognized that we are dependent on highways for much of our personal travel and freight movement. The I-395 Corridor TIA Committee believes that we need to continue to maintain the highways that exist, correct safety and operational problems where needed, and make future highway investment decisions that are consistent with the goals of this Corridor Plan.

The I-395 Corridor TIA Committee voted at their meeting on July 23, 2002, to recommend as its highest priority the following six projects. As noted, several of these projects are endorsed in Section 16 (a) of Public Act 01-5.

1. Complete Route 11 from its terminus in Salem to the I-95/I-395 intersect, and required compensatory mitigation including greenway purchases.

2. Improve the capacity and public safety of both I-95 and I-395, in the short-term through the implementation of the planned Intelligent Transportation System (ITS), through the improvement of exits/entrance ramps and by addition of breakdown/service lanes, and in the long-term by the expansion of lanes as needed. *Note: A study of this corridor was included in Section 16(a) of Public Act 01-5. This recommendation incorporates the implementation of actions promulgated by the study being conducted.*

3. Meet the specialized demand placed on the TIA's highways by casino and tourist related traffic. Develop and implement a transit service that would connect bus, rail, and ferry service at New London, allowing visitors and employees to travel without the need for an automobile to tourist destinations and employment centers throughout the TIA. *Note: A business/marketing study for this program was included in Section 16(a) of Public Act 01-5. This recommendation incorporates the implementation of actions promulgated by the study being conducted.*

4. Conduct a feasibility study for a limited-access divided highway and associated greenway from Hartford to I-395 and possibly Providence. Consideration should be given to improving east-west travel opportunities for the movement of people and goods, to the protection of the character of eastern Connecticut, and to the prevention of sprawl. Strategies may include minimizing pavement width, purchase of land along the corridor to preserve open space, and limitations of access on and off the highway.

5. Expand the frequency of service, number of runs, and inter and extra regional connections of the three existing regional bus transit services.

6. Conduct a marketing and feasibility analysis for a north-south passenger and freight rail service between New London and Worcester.

Additional projects and strategies, which the I-395 Corridor TIA views as integral to a statewide transportation strategy include the following:

A. Develop Real Solutions to the Impact that Connecticut's Land Use, Zoning, and Property Tax Policies Have on Transportation

For a statewide transportation strategy to be successful, Connecticut needs to become a smart growth state. The State Plan of Conservation and Development must become more than an advisory document. State agencies should be required to adhere to the Plan for all investment decisions. Legislation should be reviewed and noted for its consistency with the State Plan and possible consequences of deviation should be addressed. The Regional Plans of Conservation and Development should drive the ultimate formation of the State Plan. This work, prepared by the respective Regional Planning Organizations, should be uniform in terms of format and scope of issues. OPM's role would then be to bring these documents together in conjunction with the legislative oversight committee to formulate the five-year State Plan. A stronger linkage between state, regional, and local plans of development must also be required. Finally, property tax reform must be initiated to lessen local reliance on the property tax to fund local services and/or towns and regions should be provided other funding options. Toward this end, the I-395 Corridor TIA recommends the following:

- Provide regional reviews of projects of regional significance with authority to compel local commissions to demonstrate that they have sought to minimize any adverse regional impact.
- Create incentives for revenue sharing ventures across town boundaries.
- Place a major investment priority and incentives on infill and rehabilitation of existing/commercial areas and brownfield redevelopment.
- Increase State funding to Regional Planning Organizations to better assist municipalities in making sound land use decisions.
- The State should purchase the recently completed statewide aerial survey to support effective planning.
- Earmark a percentage of both casino slot revenue and the hotel room tax, over and above what is currently channeled to local municipalities and tourism districts respectively, to fund regional transit.

B. Expand and Enhance Multi-Modal Transportation Options

It is obvious that the solution to Connecticut's worsening transportation crisis cannot simply be highway-oriented. The State needs to embrace a comprehensive transportation strategy that provides transportation options and choices. The following recommendations would expand multi-modal opportunities within the I-395 Corridor TIA.

- Expand the frequency of service, number of runs, and regional interconnections of the three existing regional bus transit services.
- Explore the integration of and cooperative use of resources among public and private transportation providers.
- Support the State's efforts to improve service at and to attract air carriers to the Groton-New London Airport.
- Increase the level of service and encourage the use of passenger rail (Shoreline East and AMTRAK).
- Continue and expand the Jobs Access program or provide a similar service. *Note: This project was included in Section 16 (a) of Public Act 01-5.*
- New road construction and improvements to existing roads should include sidewalks/bikeways.
- Initiate passenger excursions on the Providence and Worcester and New England Central rail lines as a means to generate interest in and the potential use of these rail lines for future passenger service.

C. Address Capacity and Safety Problems on Existing Highways

As noted under the Transportation Assets section, the I-395 Corridor TIA has a well-developed transportation system. However, much of the system is carrying traffic far in excess of its design capacity. For the system to function efficiently and safely, upgrades and improvements must be made to accommodate the ever-increasing demand.

- Study policy alternatives for a limited access divided highway connection from Hartford to Providence that would protect the character of Eastern Connecticut and prevent sprawl. Strategies may include minimizing pavement width, purchase of land along the corridor to preserve open space, and limitations of access on and off the highway.
- Implement the multi-modal solutions to the traffic problems within the Routes 2/2A/32 corridors which will be promulgated in the soon-to-be completed Final Environmental Impact Statement. .

- Fully utilize the capacity of State Pier in New London, including the potential for containerization, to provide alternative modes, including rail, to ship freight to, from, and through the TIA.
- Upgrade the freight rail link from Plainfield to Windham to enable freight on the Providence and Worcester line to reach Willimantic and the Port of New London. This would provide an alternative to the movement of freight by motor transport along I-95 and I-395.
- Encourage and fund access management along the state's highways.
- Fully fund Town Aid Roads.

Appendix F

Southeast Full Plan 2002

FULL CORRIDOR PLAN

SOUTHEAST CORRIDOR TRANSPORTATION INVESTMENT AREA

Adopted: 22 October 2002

Submitted to the Connecticut Transportation Strategy Board
15 November 2002

SOUTHEAST CORRIDOR TIA COMMITTEE

Members

James S. Butler, Co-Chair
Executive Director, SCCOG
TSB Land Use and Economic Development Working Group

Jane Dauphinais, Co-Chair
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First Selectman, East Lyme
Immediate Past Chairman, SCCOG

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FULL CORRIDOR PLAN
SOUTHEAST CORRIDOR TRANSPORTATION INVESTMENT AREA

PURPOSE OF THE PLAN

Connecticut Public Act 01-5 established a statewide Connecticut Transportation Strategy Board (TSB) and created five regional Transportation Investment Area (TIA) committees organized around the major transportation corridors within the State. Under the Act, each TIA was required to prepare an Initial Corridor Plan for submission to the TSB by November 15, 2001. The Initial Corridor Plan was intended to provide an overview of the Southeast Corridor TIA, its regional and inter-regional transportation concerns, and objectives and strategies for strengthening the transportation system within the TIA. The TSB then submitted its State Transportation Strategy to the General Assembly in January, 2002.

Section 3 of the Act requires each TIA to submit a Full Corridor Plan to the TSB by November 15, 2002, and biennially thereafter. The purpose of the Full TIA Plan is to assist the TSB in its requirement to update/revise its strategy recommendations by December 15, 2002, and biennially thereafter.

This document, the first Full Plan for the Southeast Corridor TIA, has been prepared in response to this requirement of the Act.

DEVELOPMENT OF THE PLAN

This Full Plan has been prepared during public meetings by the eight members of the Southeast Corridor TIA committee, who represent various interests within the Southeastern Connecticut and Connecticut River Estuary Planning Regions. After submission of the Initial TIA Corridor Plan, the Southeast Corridor TIA Committee met 9 times between January and November, 2002. At each meeting, public comment was invited. A public hearing on the draft Plan was held on September 24, 2002. Reports were made at each TIA meeting from those members who served on the working groups of the TSB. The Full Plan is based on several sources including information provided by interested individuals and groups, on existing Long Range Transportation Plans for the two regions, on the regional Transportation Improvement Programs, and on other studies and research reports conducted for specific aspects of the transportation system within the two regions.

The Southeast Corridor TIA has not considered the costs of specific projects. It is understood that the mission of the Transportation Strategy Board is to identify critical transportation needs and initiatives for the State of Connecticut regardless of cost. It is further understood that cost will be an issue for implementation of the TSB recommendations. The members of the Southeast Corridor TIA believe that new sources of revenue to fund transportation improvements, including the imposition of various forms of user fees, are essential to the development and operation of an adequate transportation network.

AREA PROFILE - SOUTHEAST CORRIDOR TIA

The Southeast Corridor TIA includes the 27 towns and three boroughs within the Southeastern Connecticut and Connecticut River Estuary planning regions. The TIA includes a population of 302,810 people, according to the 2000 Census. Southeast Connecticut's economic base has long been dependent on federal defense spending. Over the past decade, as defense expenditures in the region have declined, biotech research, led by substantial investment by Pfizer, and regional tourism, stimulated by the construction of two large casinos in addition to other area attractions, have become major segments of the economy. As a result of this change in economic base, transportation needs have shifted from the demands of a concentrated workforce at Electric Boat and the Submarine Base to a more decentralized demand throughout the region. This shift has led to a new set of issues, including the following:

- an unacceptable level of congestion resulting from inadequate vehicular access to major attractions, especially the new casinos;

- a lack of accessibility and connectivity for tourists who arrive in the region on public transportation and wish to visit several attractions;

- an increase in the frequency with which Interstate 95 and local state roads are overwhelmed by traffic volume, and disrupted by accidents and highway maintenance; and

- a continuing need for a direct connection between the New London-Groton population center and the Hartford metropolitan area.

PRIMARY TRANSPORTATION ISSUES IN THE SOUTHEAST CORRIDOR TIA

Strengths and Challenges

The Southeast Corridor TIA's transportation network is diverse. I-95 is the major east-west highway, running along the shore, with major north-south connections in East Lyme, along Interstate 395, and Route 9 in Old Saybrook. The area is served by the Northeast Corridor of AMTRAK and freight rail lines heading north from New London and Groton. New London Harbor is one of the State's three deepwater ports. New London hosts ferry service to four destinations including year-round vehicle, passenger, and high-speed passenger service to Orient Point, Long Island, year-round service to Fishers Island, and seasonal service to Block Island and Montauk, Long Island. New London's Multi-Modal Transportation Center is currently the only such center in the country to link high-speed ferry and high-speed rail service. However, a planned pedestrian overpass, linking an existing parking garage to the multi-modal center must be completed. Two Transit Districts, Southeast Area Transit (SEAT) and the Estuary Transit District, provide bus service on either side of the Connecticut River. The State-owned Groton-New London Airport and two small private airports in the Estuary region serve primarily private air traffic.

The *"Connecticut Strategic Economic Framework"* Report of the Connecticut Regional Institute for the 21st Century (the "Gallis Report") noted that each principal economic region in Connecticut has its own unique combination of strengths and challenges. The report identifies the following issues of concern to the Southeast Corridor.

- *The recognition of the need for a unified economic regional identity to give visibility to the collective strengths of the entire region.*

- *The focus on the region's unique and special historic resources that give it significant opportunities in heritage and cultural tourism.*

- *The growing strength of the region in the biotech field, providing an opportunity for significant growth in a booming sector of the economy.*

- *The recognition and careful use of the region's natural beauty and low population density to provide a special attraction to high quality economic development that seeks areas with significant quality of life amenities in which to locate.*

Issues and Concerns

The principal transportation concerns identified in this Full Corridor Plan are those of a regional or inter-regional nature.

- Emerging transportation demands, created by the shifting regional economy, and incomplete highway projects, such as Route 11, which require an infusion of new funding into the region's transportation infrastructure.

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- Increasing traffic volume on I-95, the region's primary arterial highway, and associated accidents, causing frequent congestion for both local and through traffic. Public safety is at risk and viable alternatives to road travel for the movement of people and goods are very limited.

- Lack of public transit connectivity within and beyond the Southeast Corridor, including a lack of connections spanning the Connecticut River. Train traffic across the Connecticut River, the Niantic River, and the Thames River is constrained by the recurring failure of the railroad bridge lifting mechanisms.

- Lack of adequate financing for local bus services inhibiting the ability to expand local routes, increase hours of operation, and introduce additional inter- and intra-regional services.

- The need to meet increased transportation demands without significant adverse impacts on land, water and natural resources, including the quality of life amenities which draw visitors and new businesses to the region.

- Underutilization of existing rail freight and port facilities.

- The importance of planning future land use and transportation improvements as interrelated subjects. Present land use development patterns do not foster the density necessary for public transit.

- The need to study and identify a statewide air strategy, including the role of Groton-New London Airport and small private airports.

- As the result of the incidents of September 11, there is a heightened awareness of the need to provide defense access and capacity into and out of southeastern Connecticut because of the region's concentration of strategic assets (U.S. Naval Submarine Base, Electric Boat, U.S. Coast Guard Academy, Millstone Power Station).

RECOMMENDED PRIORITY PROJECTS

The Southeast Corridor TIA voted at their meeting on July 23, 2002, to recommend as its highest priority the following five projects. As noted, several of these projects are endorsed in Section 16 (a) of Public Act 01-5.

- Increase capacity on I-95 by supporting the construction of a third lane from Branford to the Rhode Island border. *Note: A study of this corridor was included in Section 16(a) of Public Act 01-5. This recommendation incorporates the implementation of actions promulgated by the study being conducted.*

- Complete Route 11 and associated greenway to connect with I-95, thus directly connecting the southeastern Connecticut region with the Hartford Capitol Region and Bradley Airport and providing a direct evacuation route out of the region in the event of an emergency.

- Support the creation of the regional Intermodal Connections transit system to move visitors from New London's Multi-Modal transportation center linking ferries, buses, rail and parking garage to the area's major tourist attractions and hotels. This system will also have the ability to transport employees of these major attractions and hotels to work. *Note: A business/marketing study for this program was included in Section 16(a) of Public Act 01-5. This recommendation incorporates the implementation of actions promulgated by the study being conducted.*

- Support rail improvements to increase passenger rail service between New York City and Boston, having adequate local stops, and provide passenger fare subsidies to promote travel to and from southeastern Connecticut via rail.

- Support infrastructure improvements to the port of New London and to State Pier to accommodate increased passenger and cargo shipments and create incentives for commercial truck movement via ferry between Long Island and New London.

Additional projects and strategies, which the Southeast Corridor TIA views as integral to a statewide transportation strategy include the following:

- Improve employee and visitor accessibility to regional employment and casino/tourism sites with multi-modal solutions including:

  - Expanded and linked local and regional bus service including public transit across the Connecticut River.

- Identify multi-modal solutions to the traffic issues within the casinos-served Routes 2/2A/32 corridors.

- Utilization of existing railroad systems between Groton/New London and Norwich, and possible expansion from Westerly to Norwich to create a passenger rail loop connecting three urban centers and Native American resort/casinos.

- Continue to support identified needs, including adequate funding for maintenance and improvement of local roads (i.e. Town Aid Road); adequate funding for other modes, including buses (SEAT buses, Shoreline Shuttle) and trains (Shoreline East).

- Seek transportation solutions, which maximize energy efficiency and protect natural and cultural resources. Review standards for roads to assure that they are consistent with special character of area that creates quality of life amenities.

- Make extra effort to integrate transportation with land use in next State Plan of Conservation and Development, scheduled to begin next year. Provide stronger linkage between state, regional, and local plans of developments. The State Plan of Conservation and Development must become more than an advisory document. State agencies should be required to adhere to the Plan for all investment decisions. Legislation should be reviewed and noted for its consistency with the State Plan and possible consequences of deviation should be addressed. The Regional Plans of Conservation and Development should drive the ultimate formation of the State Plan. This work, prepared by the respective Regional Planning Organizations, should be uniform in terms of format and scope of issues. OPM's role would then be to bring these documents together in conjunction with the legislative oversight committee to formulate the five-year State Plan.

- Continue to fund the Jobs Access Program.

Appendix G

Evaluation Work Group Final Report

Evaluation Working Group
Connecticut Transportation Strategy Board

Recommendations Adopted on 11.1.02

Background

The Evaluation Working Group as charged with the task of reviewing tools that could be used by the full Transportation Strategy Board (TSB) and other working groups to review projects for inclusion in the 2002 Report and subsequent work of the TSB. The Working Group spent a considerable amount of time exploring how Connecticut currently evaluates projects in its planning process, the requirements imposed by federal law, practices in other comparable states and new approaches in development around the country.

This Report presents our Findings and Recommendations for the development of a system that better integrates public input, project evaluation and performance measurement. Such an approach could improve both our transportation system and increase public involvement in shaping the decisions to lead to that improvement.

Findings

At the initial stages of the Transportation Strategy Board's work, there appeared to be an expectation that some evaluation process or "high tech" modeling software existed in some other place that would enable us to plug proposed projects into a formula that would then spit out all the possible impacts on mobility, land use, economic development and the environment. While this may arrive some day, the Evaluation Work Group could not find this "holy grail" in any other state or nation.

Our specific findings are as follows:

1. Connecticut's current travel demand forecasting model for highway and transit use is technically sound, but requires additional capability to fully support comparative evaluation of competing projects.
2. There are no currently available models that project intermodal or freight movement at a level of sophistication that warrants adoption in the near term.
3. There is a lack at the state or national level in the development of comprehensive comparative evaluation tools and metrics.
4. It is difficult for the public to meaningfully participate in the current planning process due to the lack of measurable objectives clearly linked to broader system goals.
5. Public participation in the development of the state's Long Range Plan and Master Transportation Plan should be expanded.

Our research into evaluation techniques did reinforce our belief that a strong commitment to evaluation tools and processes is the only way to achieve success in our effort to improve Connecticut's transportation system. Having clearly defined goals and the tools to measure progress towards those goals are the hallmark of almost all successful organizations. Such an effort defines and maintains focus and creates a strong framework for accountability.

Summary of Recommendations

Connecticut must define the specific results to be achieved in order to meet the broad goals identified by the Governor and General Assembly for its transportation system. These results must be measurable, based in a timeframe, incorporate user satisfaction levels and be understandable to elected officials, the media and interested citizens. Future transportation decisions should be based on an assessment of the likelihood of these investments or policies to achieve the identified results. The state should consider funding university research within the state of Connecticut to fill some of the gaps in evaluation tools.

Citizens should have an opportunity to voice their opinions before decisions are made and should have access to tools that enable them to see how proposed investments are related to specific goals. An open and transparent decision-making process should include all levels of policy-making from regional planning organizations to the Department of Transportation and the Governor and General Assembly.

The overall performance of our transportation system, and its operations and capital investments, must be continually monitored. Results should be measured using the same goals and outcomes that are used to prioritize planning and capital investment decisions. The most significant outcome measures should be combined in an ongoing "scorecard" of system performance that is widely communicated to Connecticut citizens.

The Transportation Strategy Board

The Transportation Strategy Board (TSB) should play the lead role in achieving the vision set forth in its authorizing legislation for results-oriented transportation investment decisions. This report will set forth specific recommendations that could form the basis of an amendment to the Board's authorizing legislation (P.A. 01-05), which would empower the TSB to play this role. However, many of the recommendations do not require that an independent entity exist. The value of the specific activities we recommend can be judged separately from the need for an independent body to administer them.

The Evaluation Working Group believes that an autonomous board can make a significant contribution to building a results-oriented decision-making process. The job

of translating general goals into specific outcomes and managing evaluation tools is not inherently intertwined with the role of managing the construction and operation of a transportation system. In fact, the day-to-day responsibilities of managing transportation infrastructure can distract attention from the longer-term strategic perspective.

If the TSB were focused on the duties we set forth below, it would face the continuing challenge to prove that this results-oriented evaluation approach creates value for the state and its transportation system. That would be a powerful incentive to succeed that cannot be matched in a large agency responsible for all facets of the transportation system. The benefits provided by an entity, like the TSB, outweigh the disadvantages of having an additional player in the mix. The key challenge will be to design a system that encourages, and even compels, coordination between the TSB and the Department of Transportation. We think our recommendations do just that.

The current TSB should revisit the current structure of the Board to determine if it is appropriate for this role. The Evaluation Working Group does not consider these governance issues to be within its purview or necessarily the most critical issues in reshaping the role of the Board. We do believe that our vision for the TSB does require that the Board have its own small staff independent of the Department of Transportation. This should be consistent with boards in other states where the staff size is quite modest.

Redefined Duties of the TSB

The first duty of the TSB will be to translate the transportation system goals articulated in its enabling legislation (Public Act 01-5) into a set of outcomes. These outcomes should be specific, measurable and tied to the goal from which they arise. The Board should concentrate on high-level outcomes that are meaningful to the public and will set the stage for later performance measurement that will attract the attention of elected officials, the media and the public.

Examples of Transportation System Outcomes

Highway	• Maintain average speed on I-95 in southwest corridor during peak period • Limit growth in average trip time on Hartford I-84 west corridor to less than 7% over ten years
Rail Transit	• Increase ridership on MetroNorth by an annualized rate of 5% over five years
Bus Transit	• Increase ridership on Southeast Area Transit service during peak period by 6% per year

Delaware: Strategies Connected to Goals

A number of states around the country have introduced outcome- or performance-based approaches into their transportation planning and project development procedures.

In Delaware, the twenty-year long-range transportation plan (LRTP) identifies a number of goals and strategies for reaching them. The LRTP identifies specific performance measures that are used to evaluate the progress toward meeting the strategic goals. Every three years the Department formulates and publishes short-term objectives based on these goals and strategies. In the 2001—2003 period, these objectives included (among many others):

- Maintain at least 85% of state pavements in good/excellent condition
- Keep at least 90% of state bridges in structurally sufficient condition
- Provide transit service to at least 68% of the population of New Castle County as an alternative to the use of personal vehicles
- Providing paratransit and regular transit services that achieve at least 90% on-time performance
- Striving to reduce the accident rate below .81 injury accidents per 1,000,000 VMT annually

This is likely to be a phased process given the complexity and reach of Connecticut's transportation system. The Board will have to assess the time frame for this effort so that it can integrate this work into its other duties (many of which flow from, but do not require the existence of, a detailed outcomes statement). At some point, the goals and outcomes should be presented in a report fashion for approval by the Governor and General Assembly similar to the process used for the State Plan of Conservation and Development.

Once a first phase of outcomes are defined, the TSB's ongoing duties can be divided into two distinct categories: investment planning and performance measurement. In order to perform these duties, the TSB will take on certain responsibilities that fall into one category or the other. But the tools that the TSB will bring to these tasks – quantitative and qualitative evaluation, customer satisfaction measurement, public outreach and others – can be used in both activities where appropriate.

Transportation Investment Planning

The TSB should approve the state's Long Range Transportation Plan (LRP) and the Master Transportation Plan (MTP). The LRP is a federally mandated document that sets forth construction priorities over 20 years. The MTP is mandated by state statute and serves a similar purpose for a time frame of 10 years. Should federal requirements restrict the ability of the TSB to approve the LRP, we recommend that the State implement a process that complies with federal law but requires the intervening state

authority to specifically state the reasons for any variation from the plan approved by the TSB.

Approval authority for the LRP will give the TSB a key role in major transportation capital projects. Federal law restricts the use of federal funds for large projects that are not in the LRP, so that this creates the opportunity for the TSB to initiate new projects while ruling out projects it considers ill-advised or low priority.

The TSB should seek to integrate the LRP and the MTP into one document if possible, or restructure the MTP to reduce any duplication of effort. We do not have any recommendation regarding the TSB's role in adoption of the State Transportation Improvement Plan (STIP). The new Board may want to consider this issue as it works on the integration of the LRP and the MTP.

The TSB should also play a role in the development and/or adoption of the state's Plan for Conservation and Development. This Plan both shapes transportation investment decisions and should, in turn, be shaped by the transportation goals and strategies advanced by the TSB. This is a necessary step to achieve full integration of state goals into both the plan for C&D and the transportation planning documents such as the LRP and the MTP.

The TSB should approve a scoring methodology based on the criteria contained in the goals/outcomes set forth in its authorizing statute and further refined by its own work. This scoring methodology would be used by metropolitan and rural planning organizations as they develop their regional long-range plans and their regional transportation improvement plans. The TSB and the DOT would also be required to score all projects subject to their review (for both the LRP and the STIP) using the same scorecard. The scorecard should include a weighting scale for different outcomes. Regions may seek TSB approval for a variation in the weighting scale to reflect regional priorities that may differ from statewide needs. The Board should also consider differential weights for preferred outcomes such as intermodal connections, etc.

Oregon and Delaware: A Consistent Scoring Approach towards Project Prioritization

A number of states apply procedures that incorporate numerical scoring methodologies as part of the project selection process. Delaware's potential projects are assessed against a set of approximately 25 evaluation factors that are derived from the goals stated in the Long Range Transportation Plan. Each candidate receives a score between –5 and +5 for each applicable factor, and these are weighted to give a total project score. The score is one aspect among several that DelDOT uses to select projects for inclusion in its capital improvement program.

In Oregon, local organizations called Area Commissions on Transportation (ACTs) develop their project proposals based on project eligibility and prioritizing factors that are established by the Oregon Transportation Commission. Project eligibility criteria define

characteristics that a project must possess in order to be considered for inclusion in one of the Oregon DOT's work programs (e.g. system modernization, pavement preservation, bridge replacement or rehabilitation, etc.) Project prioritization criteria are applied to rank the various candidates under consideration within a specific work program. The ACTs may use additional criteria to select and rank projects, but must clearly indicate when and why they do so.

The TSB should also provide the financial guidance to the regions for the development of their LRP's. Federal law requires that these plans be "fiscally constrained." That means that they must be based on a reasonable projection of funding that will be available over the life of the plan. The DOT currently provides these estimates to the regions using a weighted scale based on the region's vehicle miles traveled and congested highway miles. The TSB should officially approve this document for use by the regions.

The Office of Legislative Research of the General Assembly should include in its review of legislation proposing new capital transportation investment a determination if the legislation conforms to the LRP in place at that time. This will increase the value of the LRP in informing legislative deliberations.

In summary, the new TSB would undertake the following duties with regard to transportation investment planning:

- Develop specific outcomes tied to the strategic goals identified by the state for its transportation system,
- Approve the state's Long Range Plan and Master Transportation Plan,
- Develop a project scoring methodology for use by all parties with decision-making roles in capital projects (MPO's, DOT and TSB),
- Approve the projection of capital funds on a regional basis for purposes of meeting federal planning requirements that LRP's be "fiscally constrained."

Performance Measurement

Playing a strategic leadership role in the state's decisions on transportation construction projects is halfway to building a results-oriented decision-making environment. The TSB should also serve as the leader and focal point for efforts to measure and report on the performance of our transportation system. The TSB should be responsible for identifying important measures and setting goals for those measures. Most importantly, the criteria used to assess performance should be aligned with those used to evaluate capital investment and operational spending decisions.

Performance measurement will take general goals and translate them into specific tasks that can drive the effectiveness of the state's work in improving its transportation system. General goals, such as "reduce highway congestion" or "improve intermodal connections," do not create the necessary direction or momentum for organizations to succeed. Turning the goal of "reducing highway congestion" into measurable outcomes that are appropriate for the transportation mode and location and placed in an achievable time frame will drive success.

For example, the specific outcomes associated with reducing congestion in lower Fairfield County may be very different from those for southeastern Connecticut. The outcomes will also vary by mode. Within Fairfield County, the "congestion reduction" goal should drive distinct outcomes for the highways versus MetroNorth commuter rail. In southeastern Connecticut, there may be a need to base outcomes on seasonal or non-rush hour congestion.

A well-developed system of goals and outcomes will contain various layers that will become more specific as they "drill down" into a goal. Continuing with the goal of reducing highway congestion in Fairfield County, it is easy to see how a goal for increased rush hour riders on MetroNorth should be a part of that strategy. However, increasing riders on a transit system is a complex task that will be achieved only if many sub-tasks can be successfully performed.

In order to fully flesh out this critical system goal, the TSB will have to consider various components such as New York-bound versus intrastate commuters, station parking capacity, ease of north-south commute to get from home to a train station or from the train station to place of employment, frequency of service, user perceptions of the quality of service, etc.

In southeastern Connecticut, reducing congestion during the summer beach season may include outcomes for days of the week less relevant to other regions of the state. A complete set of measurable outcomes should reflect the range of issues that will lead to success in achieving the more general goals.

The TSB should not be expected to develop these goals alone or in some unrealistic timetable, such as its first year of work in this area. The regional planning organizations should be deeply involved in this process in order to capture regional goals and priorities. The DOT staff that currently works on these issues will continue to be the source of expertise and staff to help the TSB get the job done. This will be an ongoing task that will require some phasing in order to reasonably achieve the geographic specificity and layering that a full set of performance measures requires.

In order to succeed, the TSB's goals and outcomes must be based on an understanding of the needs and perceptions of its customers: the residents and businesses who use our state's network of roads, buses, trains, boats and planes. Given the geographic and environmental limits on Connecticut's ability to build more system

capacity, it is obvious that changing user behavior offers more potential for solving transportation problems than virtually any other approach.

Some of these new goals and performance measures should be actual measures of customers' perspectives, and almost all of them need to be informed by an understanding of what customers want. The TSB could blaze new management ground by attempting to define quantitative measures that underpin the judgmental aspects of customer satisfaction.

Rather than relying on riders' general responses alone about the comfort or cleanliness of transit buses or rail cars, the TSB should build a knowledge base of what specific factors shape customer satisfaction. For example, what are the specific items -- such as windows, bathrooms, seats or floor conditions – that shape riders overall judgment of cleanliness on a MetroNorth rail car and what are the relative priorities among such conditions. Similar conditions on buses and at highway rest stops could be determined. Once these specific factors that contribute to customer satisfaction are identified, the TSB and DOT could quantitatively measure these conditions.

Conclusion

The value of such an approach is even more important in an environment where many organizations must play a role across many different subsystems. Vague goals cannot help the many players in our transportation decision-making process get on the same page. Unfortunately, too many actors in this process may not even know the "page" exists, let alone that they may have had an opportunity to shape what is said there.

The fact that transportation is a public policy matter in a democracy makes "evaluation tools" even more important. If we cannot be clear about our goals and specific about our desired outcomes, how can the public play a meaningful role? In a state where most elected officials are "citizen legislators" rather than government experts, the lack of specific goals and outcomes may disenfranchise even state legislators.

The Evaluation Working Group believes that creating a decision-making process driven by defined outcomes and continual performance measurement can have more long-term impact on our transportation system than any individual construction project we could contemplate. The need for such a public decision-making process is so significant that it calls for a high-level body focused on just that to make it happen. We believe that this should be the mission for a restructured Transportation Strategy Board or a new Transportation Commission.

Appendix H-1

Funding and Finance Work Group
Final Report

Funding & Finance Working Group
CT Transportation Strategy Board

Final Report

December 2002

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Special Transportation Fund – History and Status

SPECIAL TRANSPORTATION FUND

HISTORY AND STATUS

The Special Transportation Fund (STF) was fully established by the Connecticut General Assembly on July 1, 1984, to provide a dedicated fund for the financing of investment in the State's transportation system and to cover the cost of operating the Department of Transportation and all the services it provides. The Fund does not support Bradley International Airport. The Bradley Enterprise Fund finances the airport's operating and capital program costs. The Enterprise Fund resources come from revenues generated at the airport.

Fund Revenues

The revenues that are pledged to the STF are listed in **Figure I-1**. The Motor Fuels Tax is the primary source of income for the fund. When the program started in 1984 the gasoline tax was 13 cents. The gasoline tax reached a high of 39 cents per gallon on January 1, 1997. The legislature reduced the tax by 3 cents per gallon, effective July 1, 1997, reduced it by 4 cents per gallon effective July 1, 1998, and further reduced it by 7 cents on July 1, 2000. Today the tax is 25 cents per gallon. The tax on gasohol is one cent less than the tax on gasoline. The tax on diesel fuel had been held constant at 18 cents per gallon since September 1991, until it was raised to 26 cents in August of 2002. It is estimated that the Motor Fuels Tax will generate over $450 million in fiscal year 2003.

SPECIAL TRANSPORTATION FUND
SOURCES OF REVENUE (% of Revenue)

- **MOTOR FUELS TAX (51%)**
- **MOTOR VEHICLE RECEIPTS (23%)**
- **LICENSE, PERMIT, AND FEE (LPF) (14%)**
- **FTA OPERATING ASSISTANCE GRANTS (0.5%)**
- **INTEREST INCOME (3%)**
- **OIL COMPANY TAX (Beginning FY99) (2%)**
- **DMV COLLECTED VEHICLE SALES TAX (7%) (Beginning FY2000)**
- **GENERAL FUND TRANSFERS (0%)**

Figure I- 1. Special Transportation Fund Sources of Revenue

The License, Permit, and Fee (LPF) income is generated from fines imposed for motor vehicle infractions, permits and fees imposed by the Department of Transportation, other fees collected by the DMV, late fees imposed under the Emissions Inspection Program, and a portion of the Clean Air Act fee.

Federal Transit Administration (FTA) grants for transit operating assistance are deposited in the Fund. These grants are provided to the State to aid in financing the subsidy required to maintain bus and rail passenger services throughout the State. For FY2003, it is estimated that FTA grants will reimburse $3.3 million of the $152.7 million that the State will expend on transit services.

Interest income comes from interest earned on the deposits made to the Fund and primarily from interest earned on the Debt Service Reserve Account. Every time a Special Tax Obligation Bond is sold, an amount equal to the funds required to meet the principal and interest payments for the highest maturity year of the bond issue is deposited in the Debt Service Reserve Account to provide added security for the bondholders.

In the early years of the program, the Legislature desired to implement more projects than could be supported by Fund revenues; and, therefore, legislation was enacted to transfer General Fund Revenues to the STF. These transfers only occurred in FY86 and FY87, when $25 million and $10 million, respectively, were transferred. Each transfer included a listing of specific projects to be financed with the transferred resources. Also, $18.3 million was transferred from the Parkway Toll Fund to the STF in FY86, to finance the removal of tolls and associated highway work. In FY95, a one-time credit of $14.3 million was posted to the Fund as the result of bond defeasance for bonds that were issued in 1984. In FY98 and FY2000 respectively, $3.0 million and $16.8 million were transferred from the Debt Service Refund to the STF due to bond refunding activities.

Two major new pledged revenues have been incorporated into the STF revenue streams recently. During the 1997 legislative session, a portion of the receipts, from the oil company tax were pledged. This would contribute $20 million in FY99 and $36 million annually thereafter. In 1998, legislation was passed to pledge a portion of the DMV collected sales tax on vehicle sales. This would contribute $10.0 million in FY2000, $20.0 million in FY2001, $30.0 million in FY2002, and $40.0 million annually thereafter. During the 2000 legislative session these two provisions were modified; so that, effective July 1, 2000 all DMV collected sale tax on vehicle sales and $46.0 million annually from the Oil Company tax would be deposited in the STF. During the 2002 legislative session, the transfer from the Oil Company tax was decreased to $20 million for FY2003 and $21 million each year thereafter. This was offset by the $25 million estimated additional revenue generated as a result of the increased diesel fuel tax.

A unique feature of the Fund was that when it was established, not only were existing revenues from certain taxes and fees dedicated to the Fund, but rate increases scheduled throughout a ten-year future period were also enacted. This ensured that the pledged revenues would be sufficient to sustain the substantial transportation investments that were planned and to meet the operating cost of the Department and all the services it provides. This multi-year philosophy has been continued in all the revenue changes that have been enacted.

Revenues have grown from $362.9 million in FY85, the first year of the Fund, to an estimated $900.7 million for FY2003. This is an increase of $537.8 million or 148**%** in nineteen years. These revenues have been necessary to finance the expenses assigned to the Fund.

Fund Expenditures

Just as the revenue picture has changed with time, so has the expense side of the equation. **Figure I-2** lists the major expense categories that are assigned to the Fund. The first call on all resources of the STF is Debt Service, i.e., principal and interest payments, on Special Tax Obligation Bonds (STO) issued for transportation infrastructure purposes. To date, over $5.3 billion in bond authority has been enacted by the legislature. Of this amount, almost $4.8billion has been issued. STO Debt Service has grown from $12.6 million in FY85 to over $397.3 million in FY2003. Even if no new authorizations were provided, STO Debt Service would continue to grow until all of the authorized bonds are issued.

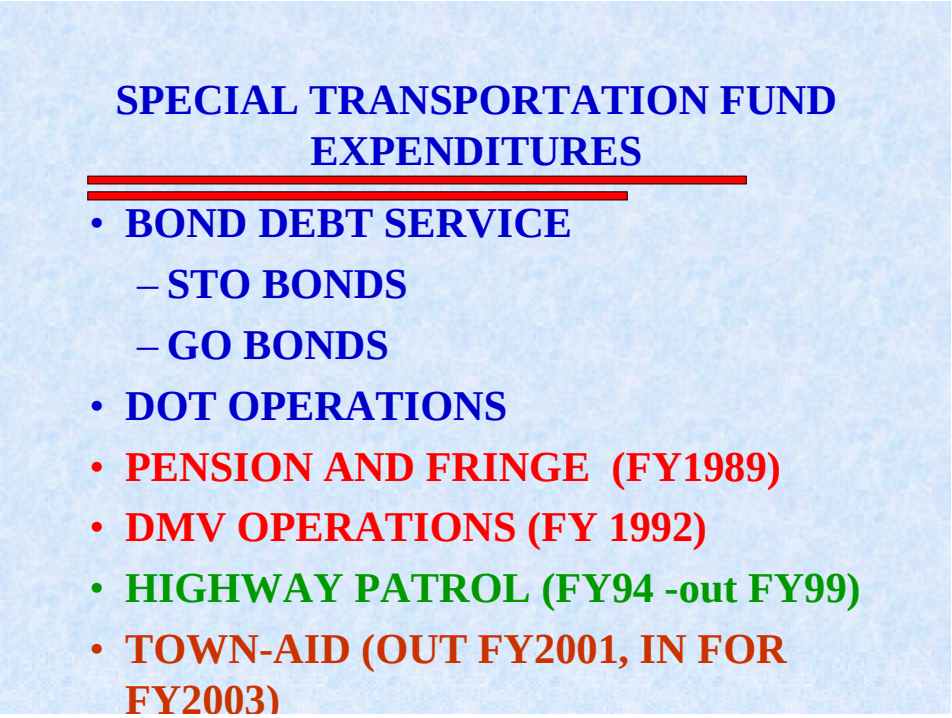

Figure I-2. Special Transportation Fund Expenditures

When the Fund was established on July 1, 1984, all debt service on outstanding and still to be issued General Obligation (GO) transportation-related bond authorizations were assigned as an expense against the STF. In FY85, the transportation-related GO Debt Service was $105.3 million. For FY2003 it is estimated to be $17.3 million. The FY2003 estimated total cost of debt service equals over $414.6 million or 46% of the STF appropriations for the year.

The operating cost of the DMV was not originally assigned to the STF. However, for FY92, the General Assembly passed legislation transferring the financing of the DMV from the General Fund to the STF. In FY92 the cost was $35.7 million and in FY2003 it is estimated to be $54.7 million.

The operating cost for the Department of Public Safety's Highway Patrol function was not originally assigned to the STF. However, for FY94, the General Assembly passed legislation transferring the financing of the operations for the Highway Patrol function from the General Fund to the STF. In FY94, the cost was $37.5 million, and in FY98, the cost was $46.0 million.

In FY89, the General Assembly transferred the cost of Department of Transportation employee pension and fringe benefits from the General Fund to the STF. In FY89, pension costs were $29.7 million and fringe benefits including health insurance, social security tax, and group life insurance, cost a total of $17.5 million. In FY92, when the DMV was added, its employee pension and fringe benefit costs of over $12.4 million were also assigned to the Fund. In FY94, the pension and fringe benefit costs for the Highway Patrol function were also assigned to the Fund. When the General Assembly enacted the gasoline tax reduction in 1997, they also passed legislation to remove the direct costs for Highway Patrol as an expense of the STF effective FY99 and deleted the associated pension and fringe benefit costs effective FY2000.

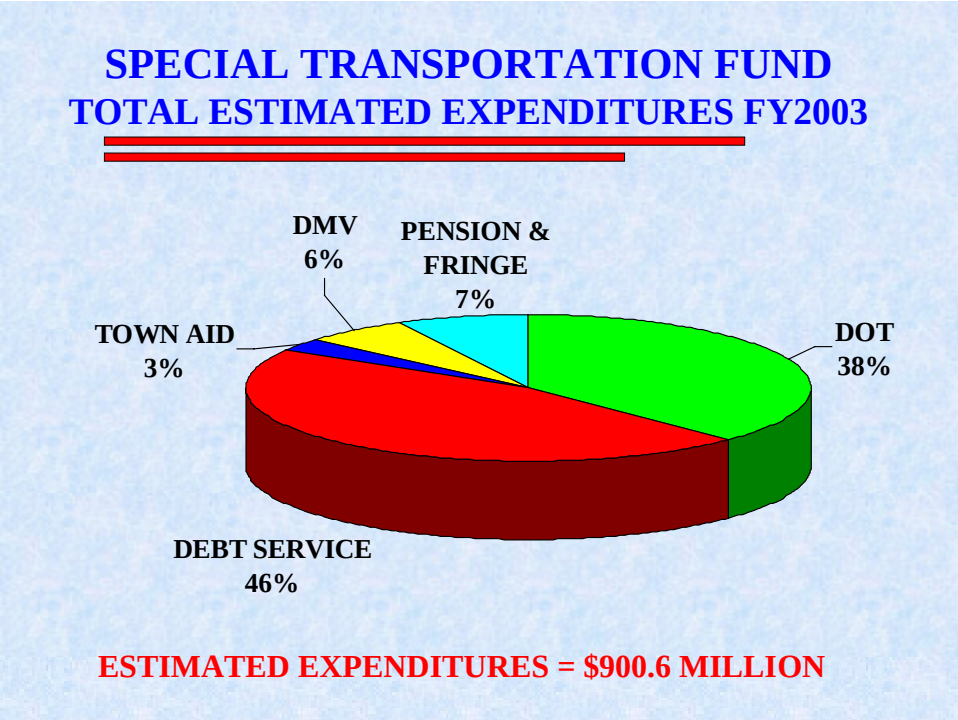

Figure I-3. Special Transportation Fund Total Estimated Expenditures FY2002

Of the estimated $ 900.6 million of STF total expenditures for FY2003, $363.5 million will be used to support the operations of the Department of Transportation and all the services it provides. Of the $363.5 million, about $152.7 million will be used to operate the New Haven Line rail passenger service, the Shore Line East rail service, the fifteen urban bus services, the five rural bus services, to support Dial-A-Ride services, and to provide the financial support required for Americans with Disabilities Act (ADA) services. This represents 42 % of the Department's STF appropriation.

The Personal Services cost of the Department for FY2003 is estimated at $131.5 million. This covers the salaries of the 3,629 positions authorized for the Department; all overtime including overtime for snow and ice removal, paid vacation, holidays, and sick leave for all employees. This represents 36% of the Department's appropriations.

The category "Other Expenses" includes the following costs: the Department's utility and operations costs for its 106 occupied buildings and additional 210 structures, the cost of salt and sand for snow and ice removal, the cost of contracting for 257 private contractor trucks and drivers to augment the Department's fleet of 632 trucks for snow and ice removal, the cost of repair parts for the Department's 2,260 pieces of highway maintenance equipment, the cost of vehicles used by Department personnel to perform their assigned duties and responsibilities, the cost of software licenses and general office operating costs. For FY2003, these costs are estimated at $ 33.8 million.

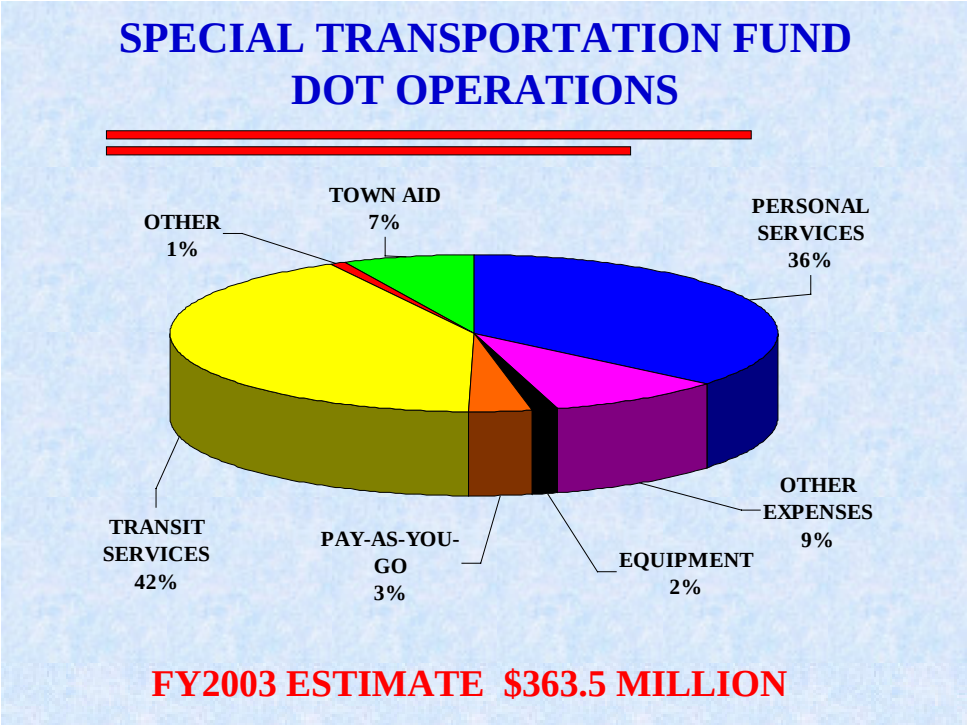

Figure I-4. Special Transportation Fund DOT Operations

Town Aid provides grants to towns and unconsolidated cities and boroughs for unimproved roads, improved roads, and maintaining public transit services. The grants are distributed based upon a formula that has evolved through the legislative process since the 1940's. Town-Aid was financed from the STF since the Fund was established. Beginning with FY2001, Town-Aid became a General Fund appropriation to the Department. For FY2003, Town-Aid was transferred back to the STF. $25.0 million will be distributed in two equal payments in July and January. No STF funding for Town-Aid is included in the outyear projections.

The Highway and Bridge Renewal funding provides for the financing, on a pay-as-you-go basis, of safety projects, highway liquid surface treatment projects, bridge painting, and highway maintenance activities like: mowing, line painting, road sweeping, pot hole patching, guide rail replacement, crack sealing, tree trimming and other activities.

Summary of Expenditures

In FY85, total expenditures were $360.4 million; for FY2003 they are estimated at $ 900.6 million. This is an increase of $540.2 million. Total debt service has grown from $118 million at the beginning of the program to $414.6 million in FY2003, an increase of $296.6 million or 251%. Subsidy requirements for the State's bus and rail passenger operations have increased by $87.5 million, from $65.2 million to $152.7 million, or a 134**%** increase. With Town-Aid and transit costs removed, the balance of the Department's annual operating budget has only increased by $35.2 million in nineteen years. With the exception of the

increase in transit funding, the Department's budget has had very little growth over the nineteen -year period. The Pay-As-You-Go program has been reduced from $33.5 million to $12 million, a reduction of $21.5 million or 64**%**.

Cash Position of the Fund

Although revenues and expenses have changed over time, the Fund has always been managed to ensure that it stays in a positive cash position. **Figure I-5** identifies the Cumulative Fund balance for each year of the Fund. When the Fund had the capacity to do more, the program was expanded or took on expenses that previously were in the General Fund. Any time that revenues began to decline, expenses were trimmed. For FY97 – FY99, the cumulative Fund balance in excess of $20.0 million was transferred to the Treasurer for STF debt service reductions.

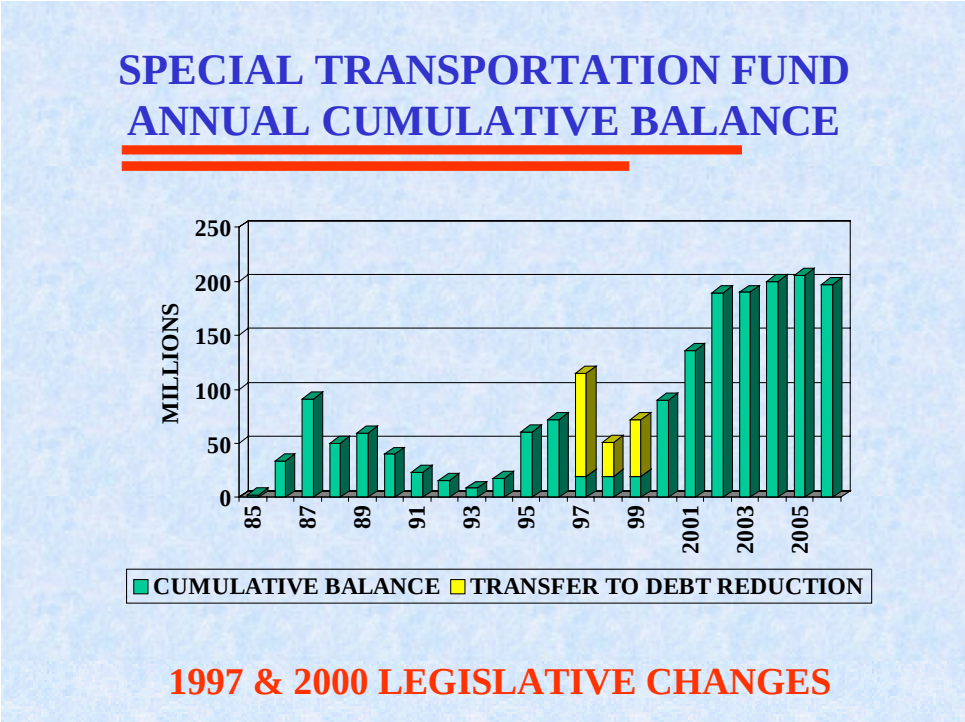

Figure I-5. Special Transportation Fund Annual Cumulative Balance

As shown previously, STO Debt Service has experienced the greatest growth since the establishment of the Fund. This growth has allowed the State to make a $13.7 billion investment in restoring and improving all elements of the transportation infrastructure. The capital program is composed of 17 program elements that are listed in **Figure I-6**.

CAPITAL PROGRAM CATEGORIES

1. **INTERSTATE (16%)**
2. **INTRASTATE (16%)**
3. **INTERSTATE TRADE – IN (8%)**
4. **STATE BRIDGE (20%)**
5. **LOCAL BRIDGE (2%)**
6. **ORPHAN BRIDGE* (1%)**
7. **NOISE BARRIERS* (<1%)**
8. **TRANSIT (14%)**
9. **AVIATION (<1%)**
10. **RESURFACING (11%)**
11. **DEPT. FACILITIES (<1%)**
12. **SAFETY (<1%)**
13. **STP/URBAN SYST (5%)**
14. **OTHER RD & BRDG (4%)**
15. **HAZ WASTE* (<1%)**
16. **SPECIAL PROJ* (1%)**
17. **WATERWAYS* (<1%)**

***PROGRAMS ADDED**

The total investment for the nineteen-year period equals $13.7 Billion. This was financed from four sources.

Federal funds provided $8.2 billion, STO bonding equaled $4.8 billion, appropriations were $518.8 million, and other matching funds equaled $110.5 million. **Figure I-7** shows the Annual Capital Program funding level for each year of the program.

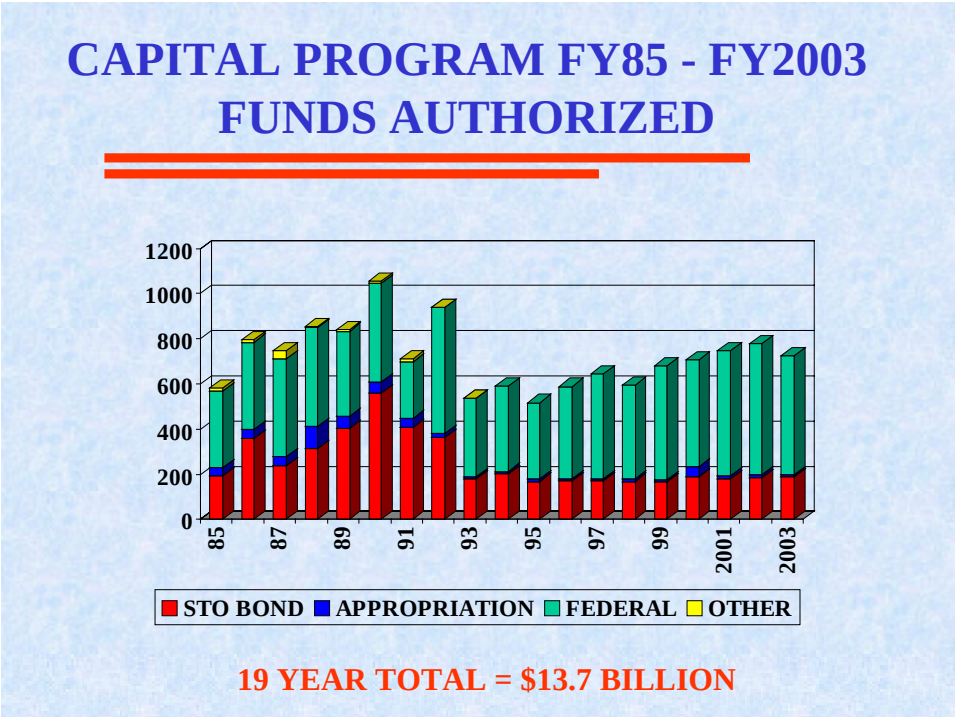

Figure I-7 Capital Program FY85–FY2003: Sources of Authorized Funds

Federal Funding – History and Future

Federal Funds Discussion

History of ISTEA and TEA-21

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a new vision for surface transportation in America. It provided federal authorizations for highways, highway safety, and mass transportation for a six-year period. ISTEA was enacted for the renewal of the Nation's surface transportation programs and to address the need of reducing congestion, rebuilding the infrastructure and maintaining mobility. In the passage of ISTEA the completion of the Interstate System was recognized and ISTEA reflected a number of important policy goals. Following are some of the major features:

- A National Highway System (NHS), consisting primarily of existing Interstate route and a portion of the Primary System, was established to focus Federal resources on roads that are the most important to interstate travel and national defense, and roads that connect with other modes of transportation and are essential for international commerce.
- State and local governments were given more flexibility in determining transportation solutions, whether transit or highways, and the tools of enhanced planning and management systems to guide them in making the best choices.
- New technologies, such as intelligent vehicle-highway systems and prototype systems, were made eligible for funding to push the Nation forward into new approaches in providing 21st Century transportation.
- The private sector was tapped as a source for participation in funding transportation improvements. Restrictions on the use of Federal funds for toll roads were relaxed and private entities may even own such facilities.
- The Act continued discretionary and formula funds for mass transit.
- Highway funds were made available for activities that enhanced the environment, such as wetland banking, mitigation of damage to wildlife habitat, historic sites, activities that contribute to meeting air quality standards, bicycle and pedestrian projects, and highway beautification.
- New programs which further enhanced highway safety.

In June of 1998 The Transportation Equity Act for the 21st Century (TEA-21) authorized highway, highway safety, transit and other surface transportation programs for the next six-year period. TEA-21 built on the initiatives established in ISTEA, which was the last major authorizing legislation for surface transportation. The new legislation, TEA-21, combined the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety, protecting and enhancing communities and the

environment, and advancing economic growth and competitiveness domestically and internationally through efficient and flexible transportation. Following are significant features of TEA-21:

- Assurance of guaranteed level of Federal funds for surface transportation through FY 2003 and an annual floor for highway funding keyed to receipts of the Highway Trust Fund (HTF). Transit funding was guaranteed at a selected fixed amount. All highway user taxes were extended at the same rates when the legislation was enacted.
- Extension of the Disadvantaged Business Enterprises (DBE) program, providing a national 10 percent goal for participation of disadvantaged business enterprises, including small firms owned and controlled by women and minorities, in highway and transit contracting undertaken with Federal funding.
- Strengthening of safety programs, new incentive programs with potential for savings of life and property, and promoting the enactment and enforcement of .08 percent blood alcohol concentration standards for drunk driving.
- Continuation of the proven and effective program structure established for highways and transit under ISTEA. Flexibility in the use of funds, emphasis on measures to improve the environment, focus on a strong planning process as the foundation of good transportation decisions were continued and enhanced by TEA-21. New programs such as Border Infrastucture, Transportation Infrastructure Finance and Innovation, and Access to Jobs were introduced to target special areas of national interest and concern.
- Investing in research and its application to maximize the performance of the transportation system. Special emphasis was placed on deployment of Intelligent Transportation Systems to help improve operations and management of transportation systems and vehicle safety.

Connecticut's ISTEA and TEA-21 Appropriations/Discretionary Funds
(millions of dollars)

ISTEA	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Highways	325.4	376.7	350.4	388.7	355.3	397.6
Transit	59.2	56.9	70.2	71.8	63.7	67.3
TEA-21	1998	1999	2000	2001	2002	2003
Highway	362.0	394.0	442.3	501.9	478.8	404.4
Transit	77.4	88.0	95.8	109.6	118.3	127.9

	ISTEA	TEA-21	Increase
Highway	2,194.1	2,583.4	17.7%
Transit	389.1	617.0	58.6%

Federal Reauthorization Legislation

The current authorizing legislation for the Federal highway, transit and safety programs expires on September 30, 2003. A new authorization or "reauthorization" must be enacted by that date in order to continue funding for the National surface transportation program. During TEA-21, federal funds accounted for approximately seventy-two percent of Connecticut's Capital Program for highways and transit.

This reauthorization is significant because it will set the course for the roles of federal, state and local governments in maintaining and improving state highways, roads, bridges, transit facilities and safety programs over the next several years. The level of funding provided in the authorizing legislation could very well determine the dept and extent of Connecticut's transportation program. There are many and varied significant and not so significant issues associated with reauthorization of the national surface transportation program. This would include the timely passage of the Act, the desires of the many players for changes that would benefit their particular mission or objective, new and/or expanded eligibility and flexibility for use of funds, and creation of new set-a-side programs, as well as emerging State pressure to re-examine State share on the return of Highway Trust Fund (HTF) dollars.

Officials of the Federal Highway Administration and other transportation organizations have expressed that it is highly unlikely that the new Federal surface transportation act

will provide a substantial increase in funds to States as was experienced from the ISTEA to TEA-21. This, despite numerous studies and reports that have clearly indicated national transportation needs far exceed available funding. It has been suggested that a two percent annual increase growth rate in Federal transportation funds would be reasonable to expect.

While the average federal transportation apportionment funding to states increased over 40 percent from ISTEA to TEA-21, Connecticut's increase was about 17 percent. This was due principally to the Donor / Donee question, where State contributions to and the return from the HTF became an issue during the last reauthorization process. Those States that were receiving less than what they sent to Washington in highway user fees were considered Donor States, and those State receiving more than what they sent to Washington were considered Donee States. Connecticut was and still is a Donee State. The final out come of this debate was that under TEA-21, all States would receive no less than 90.5 percent of what was distributed to States. As a result, Connecticut's percent share of the HTF dollars went down but because the significant increase in the amount of funds being distributed, actual dollars received has increased modestly.

Unless Congress and the President agree to provide new or additional revenues to the HTF, states should expect the level of Federal funds distributed to the states would only have modest growth. As to Connecticut, the current formula in TEA-21 must be maintained as to not experience an actual reduction in federal funds. If the Donor/Donee debate intensifies and a larger percent minimum guarantee, over the current 90.5 percent, Connecticut will certainly lose Federal funds.

Barring any large influx of additional resources at the National level into the HTF or a significant change in the state distribution formula, an estimation of Federal transportation funds to Connecticut is provided below.

- **Next Reauthorization**

Estimated Appropriations/Discretionary Funds

	2004	2005	2006	2007	2008	2009	2010
Highways	412.5	420.7	429.2	437.7	446.5	455.4	464.5
Transit	78.9	80.5	82.1	83.7	85.4	87.1	88.9

The RABA Issue

In the later half of FFY 2002, the Revenue Aligned Budget Authority (RABA) provision emerged as an issue that would possibly cause reductions in the federal highway program in FFY 2003. The reduction was estimated at $9.1 billion or more than 28 percent from

the FFY 2002 level to $22.7 billion for FFY 2003. This would equate to a $102 million reduction in the Connecticut highway program from the FFY 2002 level.

This reduction in highway funds was not a change in federal law but a result of applying the existing provisions of TEA-21. The RABA provision of TEA-21 provides for adjustments (up or down) in highway funds for each fiscal year apportionment based on actual and projected income to the highway trust fund. The US Treasury had estimated the reduction in highway trust funds. USDOT had indicated three (3) major factors that have impacted the estimated reductions:

- 50 percent drop in new truck and trailer sales
- 25 percent increase in sale of gasohol
- Commercial traffic growing at a slower rate

Congress has since been reactive to the RABA projection in a positive manner. In the House Appropriations Bill, the appropriation level has been set at $27.7 billion and the Senate has set their appropriation level at $31.8 billion. Since Congress has not passed the 2003 Transportation Appropriation Bill, they have continued the federal transportation program through Continuing Resolutions (CR). The latest resolution had set an obligation limitation of $31.8 billion. However, the CR contains language that keeps the overall highway funding cap of $27.7 billion for FFY 2003 unless that is later changed by passage of a FFY 2003 Transportation Appropriations bill. This is not expected until sometime in February 2003. If set at the $31.8 billion level, Connecticut would not experience a reduction in highway appropriations in FFY 2003.

Amtrak

- The future funding and operation of Amtrak has become a major issue in Washington. The FFY 2003 federal appropriations will also focus on how the Amtrak funding issue is addressed. The Senate Transportation Appropriations Subcommittee included $1.2 billion for Amtrak before the August recess, this is in contrast to the President's budget request of $521 million. The House Appropriations Committee set an Amtrak funding level at $726 million dollar level, well below the $1.2 billion annual federal grant the railroad says it needs to stay in business. There could be amendments offered in the full committee markup session to increase the Amtrak funding to the $1.2 billion level, which Senate appropriators have already approved in their version of the FFY 2003 Transportation Appropriations bill.

- Movement on a longer-term authorization bill addressing Amtrak's future is not likely in the near term, as Congress must complete its work on FFY 2003 appropriations early next year. Congressional staff have speculated that an Amtrak authorization bill could likely be combined next year with the larger TEA-21 reauthorization effort.

Northeast States, however, have a lot at stake if Congress decides that Amtrak states will have to pickup some or most of the burden on infrastructure or capital side of Amtrak balance sheet. Since Congress is also due to take up the highway and transit reauthorization bill next year, not to mention a reauthorization of aviation trust fund programs, states may be presented with the need to make tough choices as to how they will address total transportation needs out of limited total federal transportation assistance.

Water

Federal programs for assistance in water transportation are somewhat limited. Federal regulation and law permit the use of FHWA Congestion Mitigation and Air Quality Program (CMAQ) funds, where an air quality benefit can be documented, for ferry service infrastructure projects. The Ferryboat and Ferry Terminal Facility discretionary program through FHWA also provides federal assistance through a competitive process for ferry boats and terminal projects. The CMAQ program is under considerable programming demand to fund highway and transit (rail and bus) air quality beneficial projects, and the Ferryboat and Terminal Facility discretionary program is limited in funds and normally provides a portion of the funds required for project completion.

AIR – 21

The Federal Aviation Administration (FAA) administers the Airport Improvement Program (AIP). This program is funded through the *Wendall H. Ford Investment and Reform Act for the 21st Century (AIR 21)* which was signed into law in April 2000. This three-year reauthorization act covers FFY 2001 through FFY 2003, enabling the FAA to provide funds for the AIP, airport facilities and equipment, airport operations, and research.

As of November 2002, Congress had not yet passed the USDOT budget. As such, the USDOT operates on continuing resolutions. The AIP has not been funded and, until so, airports are unable to finance federally-assisted improvements.

Connecticut's allotment of Airport Improvement Program (AIP) funds is separated into two categories; Entitlement Funding and Apportionment Funding. Entitlement Funding, which is based on enplanements (passengers flying from Connecticut's commercial airports), is currently programmed for various improvements at Bradley International Airport and Groton-New London Airport. Apportionment Funding, which is based on the population and land area of Connecticut, is currently programmed for capital improvements at Hartford-Brainard Airport, Waterbury-Oxford Airport, Windham Airport, Danielson Airport, Sikorsky Memorial Airport, Danbury Municipal Airport, and Meriden-Markham Municipal Airport.

AIP funds can be used over a 3-year period with carryover balances used in the next fiscal year. Groton-New London Airport, however, has 4 years to utilize its AIP allocation. Tweed-New Haven Airport receives its allotment of AIP funds directly from FAA. These funds are used to fund capital improvements at the airport, which meet federal/AIP regulations. After exhausting all AIP funds for any given fiscal year, Discretionary AIP funds can be made available based upon National priority.

TEA 3 – Program Renewal

The Department of Transportation strongly supports the TEA-21 Reauthorization Principles adopted by the Northeast Association of State Transportation Officials (NASTO). Connecticut DOT is a member of NASTO and was fully involved in the development of these Principles. The Principles are as follows:

- **Maintain** the course set by ISTEA and sustained in TEA-21. It represented a revolutionary change from past transportation legislation and was the result of a truly bipartisan effort that recognized how interdependent the state's economies are and, thus, designed sound programs that benefit the nation as a whole. The 40-year Interstate Highway construction era has shifted to a new era of highway and transit system management, increasing efficiency of existing networks, improved intermodal integration to support efficiency and a sound economy, and national defense needs.

- **Reauthorize/Retain** the existing structure of TEA-21. While improvements can be made, its fundamental structure is sound and should be preserved. Modifications to the existing structure of TEA-21 should be limited to simplifications and refinements. States, regional and local governments have invested heavily in making TEA-21 work. This investment should be preserved.

- **Authorize** the maximum level of federal investment possible in our nation's multi-modal transportation system. All sources of revenue that currently flow to the highway trust fund should be maintained and maximized. Mechanisms, including guaranteed funding levels and annual adjustments to those levels, should be continued to achieve the congressional intent that all available funds be invested in transportation improvements. Recognize the crucial link between investments in transportation and our ability, as a nation, to compete globally. The return on these investments is unparalleled in government.

- **Retain** the federal government's role as a key transportation partner to invest and fund highway, bridge, transit, and ferry projects and to assure that a national focus remains on mobility, connectivity, uniformity, integrity, safety and security, environmental stewardship, and research. Our nation's transportation programs should also continue to recognize and support related national goals such as improved air quality, economic competitiveness, revitalization of existing communities, improved quality of life, energy, national defense and security.

- **Preserve** the partnerships among federal, state and local governments and between the public and private sectors that were formed under ISTEA and reaffirmed in TEA-21. Shared responsibility for national transportation interests, encouraging public participation in the planning process, building national coalitions, the promotion of environmentally friendly intermodal transportation projects, transit, and national defense are beneficial and must be retained. The current program for metropolitan areas with more than 200,000 populations and the state role in the metropolitan planning process should also be retained.

- **Retain/Continue** current needs based programs. Due to the varying conditions and problems from state to state and mode to mode, TEA-21 should also allow greater flexibility between programs and eligibility within programs. In addition, discretionary funding programs should be continued in order to meet extraordinary and emergency needs.

- **Minimize** prescriptive federal regulations by recognizing the value of state transportation departments and to allow for a more efficient and effective transportation program and eliminate federal/state duplication. Reauthorized TEA-21 should continue to reduce time-consuming federal reviews, onerous mandates and sanctions, and allow self-certification at the state level.

- **Permit** greater flexibility between programs and eligibility within programs and promote innovative financing solutions as additional options to address the growing transportation financing gap. However, innovative financing should not replace but should complement adequate federal funding for surface transportation.

- **Continue** to support research, development and deployment of ways to improve quality and efficiency. This should include new technology such as ITS, as well as new materials, designs and practices.

- **Promote** TEA-21 reauthorization in the context of adequate federal funding for all modes of transportation. As rail, water and aviation programs will be authorized during the same period, opportunities will exist to strengthen intermodalism.

- **Urge** that there be coordination between congress and state DOTs on the matter of project earmarks. Given that congress is exercising its prerogative to assign a portion of federal transportation funds to specific projects both in authroization and appropriation bills, cooperation is needed to select the best possible projects.

Matching Practice

Federal Highway Program funds are required, in general, to be matched with state/local funds at a 80 percent federal and 20 percent state/local matching ratio for highway and transit projects and programs. There are, however, a few exceptions to this requirement. Projects on the Interstate System are allowed to be matched at 90/10 except for Bridge Program funds which must be matched 80/20 even on the Interstate System. Congestion

Mitigation and Air Quality Program (CMAQ) are allowed to be used at 100 percent federal for signalization projects that can be shown to have an air quality benefit. The Transportation and Community and System Preservation Program also allows 100 percent federal aid for certain projects. Discretionary, Ear-marked, and High Priority Projects do not normally fund a high percentage of a project, but it is allowed to supplement project cost through state and local funds and/or other eligible federal funding categories (with appropriate state/local match). The Department of Transportation programs projects as to utilize all available federal funds.

Role of Local/Regions in Decision Making

Decisions about how state and federal transportation funds are to be used on a variety of proposed rail, roadway, transit and bicycle transportation projects are made through a highly structured transportation planning process. This process corresponds to the demands of the federal government, receives input from regional entities and the public, and is coordinated and lead by the Connecticut Department of Transportation (ConnDOT). Described below are the elements, products and public participation components of a planning process that is designed to take long-term transportation plans and turn them into specific improvement and maintenance projects.

FEDERAL REQUIREMENTS

Federal law and regulation dictate many facets of transportation planning including the players, the time frames and the funding. Federal funding, one of ConnDOT's principal sources of capital for transportation improvements, is dependent on periodic federal authorizations. The Transportation Equity Act for the 21st Century (TEA-21), which superseded the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA), contains a number of funding sources with each having specific eligibility requirements, funding ratios, and other limitations. It is a comprehensive act which requires each state to develop and implement a continuing, comprehensive, and intermodal statewide planning process for surface transportation (rail, bus, and highways).

While regional involvement has been a feature of transportation planning in Connecticut since 1959, TEA-21 serves to formalize relationships and assign responsibilities among the state and Regional Planning Organizations (RPOs). RPOs consist of a number of member municipalities and are responsible for conducting planning activities for specific geographic areas within the state. They work extensively to assist municipalities with planning and administrative services, and to cope with the ever more complex municipal management and planning practices. RPOs also provide a forum for addressing inter-municipal concerns and representation in relating to state and federal programs. The State of Connecticut has 15 RPOs that are governed either by a Regional Planning Agency (RPA), a Regional Council of Elected Officials (CEO) or a Regional Council of Governments (COG). The RPOs located in urbanized areas having a population of more than 50,000 have been designated by the Governor to serve as Metropolitan Planning

Organizations (MPOs). Ten of Connecticut's RPOs fall into this category. These MPOs have an explicit role in the conduct of regional planning and programming activities, as specified in the federal legislation. The TEA-21 requires them to have a continuing, cooperative, and comprehensive transportation planning process that results in plans and programs that consider all transportation modes and supports metropolitan community development and social goals. The five other RPOs, called Rural RPOs, conduct similar planning activities in cooperation with the Department.

Transportation planning is also defined and influenced by federal mandates. Federal Environmental Justice (E.J.) mandates (Executive Order 12898, U.S. Department of Transportation Order 5610.2 and FHWA Order 6640.23) direct the U.S. DOT and the FHWA to incorporate E.J. principles in all FHWA programs, policies, and activities. The three basic principles of Environmental Justice are:

1. To ensure public involvement of low-income and minority groups in decision making;
2. To prevent "disproportionately high and adverse impacts of decisions on low-income groups and minority groups: and
3. To assure low-income and minority groups receive a proportionate share of benefits.

PLANNING PROCESS

Title 23 United States Code (U.S.C.), as amended by TEA-21, requires that the regional agencies develop two primary transportation-planning products. These products, are the Regional Long-Range Transportation Plan (LRP) and the Transportation Improvement Program (TIP). The LRP must ensure the existing system is being adequately operated and maintained, and expanded and improved, as appropriate, over a twenty-year time horizon. This plan must also consider the full range of modal choices (e.g., highways, transit, and rail), and be "financially constrained." This means the plan must be consistent with the amount of funding that can reasonably be expected to be available. Projects from the LRP are selected by ConnDOT for inclusion in the State-mandated Master Transportation Plan. The TIP is a subset of the long-term plan that specifies the projects that will be advanced over a three-year time frame. All of the TIPs are integrated into a Statewide Transportation Improvement Program (STIP), along with projects located in the rural areas of the state.

The LRP and the TIPs are developed by the regional organizations with input from ConnDOT and the public. Some of the information the regional entities may consider includes the condition of roads and bridges as assessed by ConnDOT, congestion management reports generated by the Department, and Major Investment Studies.

When developing the STIP and TIPs, ConnDOT prepares and distributes to each RPO a list of the projects proposed for the region. The regional agencies review the projects, consider their own needs, and provide to the Department their comments for the draft TIPs. Any disagreements are worked out between the Department and the region before the draft TIPs and statewide program are completed. Federal regulations provide that the

metropolitan TIPs be included in the Statewide Transportation Improvement Program without modification. However, the TIPs must have received approval from the MPO and the Governor prior to STIP inclusion. The five Rural PROs do not have formal approval authority for their regions' TIPs under federal law. ConnDOT, however, uses essentially the same process for the rural areas to identify transportation priorities.

Once the regions have reviewed the proposed projects, the draft STIP is assembled. The draft STIP is checked for fiscal constraint, consistency with the long-range plans, and conformity to air quality plans. A conformity report is required by the federal Clean Air Act Amendments of 1990 (CAAA). The Department and the MPOs cooperatively work to develop and endorse the Air Quality Conformity Statement, which demonstrates that the TIP conforms to the requirements of the CAAA. The Department gathers all regionally significant projects from the MPOs' LRP and the draft TIPs and models them. The final results of the modeling process are submitted to the MPOs for their evaluation and endorsement. The conformity statement certifies to the federal government that the projects in the STIP (and LRP) will "conform" to the State Implementation Plan (SIP). The SIP, required for "non-attainment areas" where certain types of pollutants do not meet federal standards, is a plan to reduce the emissions of volatile organic compounds, nitrogen oxides, and carbon monoxide. Most of Fairfield County is classified as a "severe non-attainment area" and the rest of the state is a "serious non-attainment area."

Both the draft TIPs and the draft STIP are made available to the public for review and comment. The RPOs address all comments provided by the public concerning the draft TIP, while ConnDOT addresses comments on the draft STIP. The draft STIP is open to public comment for a minimum of 30 days. After consideration of public comments, a final edition of the STIP is prepared and submitted to the FHWA and FTA for their approval.

In addition, the MPOs complete a Unified Planning Work Program (UPWP) every state fiscal year. The UPWP is a statement of proposed work and estimated costs that document the eligible activities to be undertaken with FHWA and FTA planning funds. The UPWP discusses the planning priorities facing the metropolitan area and describes all metropolitan transportation and transportation-related air quality planning activities anticipated within the area during the fiscal year. This UPWP is developed in coordination with ConnDOT, FHWA and FTA.

For planning purposes, a twenty-year allocation of expected highway funds by Connecticut planning regions was made in 1999 so that each RPO, MPO and the Department could better plan and develop fiscally constrained long-range plans. The allocation of funds was based on vehicle miles of travel, congested vehicle miles of travel and lane miles within each region, weighted for system improvement and preservation type projects. System Improvement projects are projects which enhance safety, improve mobility, increase system productivity or promote economic growth. System Preservation projects are projects such as repaving roadways, bridge repair or replacement, and any other form of reconstruction in place.

PUBLIC PARTICIPATION

The TEA-21 mandates and emphasizes public participation in the transportation planning process. It is ConnDOT's responsibility to provide government agencies, citizens, affected public agencies, private providers of transportation, and other parties (collectively identified as stakeholders) information and the opportunity to participate in the development of proposed transportation actions. The Department meets this responsibility through its "public outreach" efforts.

Public Outreach is the process implemented to inform and offer to the public the opportunity to participate in determining transportation deficiencies, identifying and analyzing alternative improvement strategies, and planning studies and in the development of a selected transportation action. In this process the emphasis is on developing transportation decisions as a product of partners' collaborative work. It is a result of debate and choices made jointly by a variety of government and non-government parties working through an on-going, interactive process.

In November 1995, ConnDOT published a "Guide For Public Outreach" (Guide). This Guide was prepared for use by ConnDOT, and is intended to provide a menu for implementing an effective process for informing the public and for community participation throughout the development of transportation actions (study, program or project), and during the Planning, Facility Design/Rights-of-Way/Program Development, and Construction/Implementation/Maintenance phases. A copy of this Guide was sent to the 15 Regional Planning Organizations and the main public library in each town.

The ISTEA and the TEA-21 also require that the metropolitan transportation planning process include a proactive public involvement process. This process must provide complete information, timely public notice, full public access to key decisions, support early and continuing involvement of the public in developing plans and TIPs, and meet the requirements as specified in 450.316(b). Each MPO has developed its own public involvement process consistent with the ISTEA legislation. This process was put out for public review by each of the MPOs for a 45-day comment period and subsequently endorsed.

System in Good Repair

Unfunded Current Needs

Definition:

The "State of Good Repair" for the transportation system is defined as the acenario that maintains the system's physical condition and prevents further system degradation. The goal is to "get the most out of the existing system" by maintaining and optimizing the existing infrastructure, facilities, equipment and rolling stock.

The Situation:

Funding for transportation purposes has been constrained for a number of years as competing service needs in the state budget restrict amounts that are allocated for all needs. As such, longer-term replacement and reconstruction schedules have been stretched out, and some maintenance efforts have had to be curtailed or delayed. Over time, the accumulation of these reductions and delays results in pent up needs and requirements, as well as additional costs both for ongoing maintenance and replacement of facilities that have gone beyond the state where they can be repaired at lower costs.

At the request of the Transportation Strategy Board, the Department of Transportation has identified the unfunded needs of the existing transportation infrastructure. These unfunded needs represent the costs beyond programmed DOT expenses, over the next ten years, that are required to maintain the present system "in a state of good repair".

The following charts show the current capital programs and the additional needs for the next decade for both highway and transit infrastructure. They reveal a highway program with anticipated funding of $5.2 billion and additional needs of $1.74 billion, and a transit program with anticipated funding of $1.12 billion and additional needs of $1.53 billion.

TSB Recommendations

1. Strategy Cost Estimates

2. Potential Funding Mechanisms

(In Process)

Strategy Cost Estimates

The spreadsheet that follows shows the various projects to be proposed by the TSB to implement its transportation strategy over the next ten years. It is divided in several ways, including:

By Type	10 Year Cost Est.
Capital Costs	$4.85 billion
Operating Costs	$517 million
Study Costs	$ 17 million

By Mode **(millions)**	**Capital**	**Operating**	**Study**
Air	$37.75	$47.8	$2.05
Evaluation	---	$ 3.5	$0.10
Land Use	$10.0	$0.76	----
Roadway	$3523.3	$63.6	$11.06
Transit	$1220.6	$401.6	$4.0
Water	$62.5	----	$0.13

By Year **(millions)**	**Capital**	**Operating**
2004	$577.04	$24.43
2005	$121.75	$57.33
2006	$554,20	$54.95
2007	$230.30	$51.95
2008	$472.20	$52.15
2009	$593.00	$53.15
2010	$533.00	$53.65
2011	$554.00	$55.95
2012	$518.00	$56.85
2013	$324.00	$56.85

Potential Funding Mechanisms

The Finance and Funding Working Group is submitting its report to the Transportation Strategy Board after having taken the following steps:

- Getting an assessment from the Connecticut Department of Transportation ("ConnDOT") as to what it believes is necessary to maintain the Connecticut transportation network in a "state of good repair" over the next ten years;
- Getting a summary of the strategic initiatives and recommendations made by the other Working Groups, and ConnDOT's estimate of the cost to implement those recommendations and to maintain system enhancements in the future;
- Getting an assessment of the future levels of Federal transportation funding;
- Getting an assessment of what kinds of financing and funding vehicles are workable;
- Getting an inventory of financing and funding techniques used in other parts of the country to address transportation needs; and
- Assessing different revenue sources and their potential revenue yields.

The Working Group has considered a variety of options for funding the initiatives adopted by the Board as part of the overall transportation strategy. Consideration has included the broad array of taxes presently collected by the state, including those related and those unrelated to transportation services. Other revenues such as fees and taxes not now levied in Connecticut were also discussed. In addition, the group analyzed user fees such as rail and bus fares and highway tolls. A matrix, Figure IV-1, shows these potential sources and various key features about them.

As parts of the overall analysis, funding sources in other states were studied to determine if other "best practices" existed. In general, it was found that states use most of the same sources of revenue for transportation purposes, with a heavy emphasis on the motor fuels (gas) tax. Three sources used elsewhere that are not part of the revenue mix in Connecticut are the sales tax, tolls, and local or regional taxes.

Metropolitan areas in several states, including California, Ohio and Texas have dedicated portions of sales taxes to supplement more traditional transportation-related revenues.[1] These dedications allow a general, broad-based tax to be added to the revenue mix providing both stability and major dollars from a single, already existing source.

Tolls

Other states, mostly in the Northeast U.S., including New Jersey, Massachusetts, New York, Maryland and Delaware have toll systems on some of their major highways and bridges. It is generally acknowledged that in places where tolls have been well established, they are substantial net revenue suppliers. A factor in favor of tolls often strongly argued also is that they derive revenues from out-of-state motorists who use the state's roads. In each case, the states are willing to forego potential federal revenues for the tolled roads in order to retain the toll revenues.

All of these states are pursuing newer technologies such as "Easy Pass" lanes in order to improve safety and roadway operations. New methodologies are constantly being developed to move tolling away from the traditional toll booths toward a time when vehicles need not be stopped, or even slowed, in order to levy a toll fee.

Connecticut abandoned the tolls it previously had on several major highways and bridges in the 1970s and 1980s, with the final determining factor being a multiple-fatality truck-auto accident at a toll plaza. It appears clear that Connecticut citizens remain very negative to reestablishing tollbooths on any state facility, and that new, non-invasive technologies would likely have to be available before tolling would receive any serious consideration. The potential revenue gains (including the estimated 20% of tolls that would be paid by out-of-state vehicles) and the potential of using tolling as a value pricing mechanism do, however, continue to keep tolls in the mix of consideration for long term revenue sources.

In addition, any proposal would need to address existing federal law and regulations that, with limited exceptions, prohibit new tolls on interstate highways.

Substate Taxes

Levying taxes at the substate level in Connecticut is difficult due to the lack of governmental structures at any level between the state and the towns. While multi-town Transit Districts function in many parts of the state, their only revenue sources outside of state aid and fares are from town contributions. The districts have neither the authority nor the capacity to raise taxes on their own, and increasing contributions from local governments would require the funds to be raised through the property tax, the only authorized source of local taxation. There is little support for increasing the burden of the property tax.

[1] CT Capitol Region Council of Governments, Regional Transit Strategy, 2001.

State General Fund Dilemma

In looking at state sources of funds for TSB-proposed projects, the Working Group has been aware of the particularly difficult issues facing the State's General Fund in the current fiscal year and, at least, for the near future. The current 2002-03 budget is facing a deficit of approximately $500 million, and the upcoming 2003-04 budget shortfall could be in the range of $1.5 billion. In such an environment, it is unrealistic to anticipate that any current revenues or expenses will be available for re-programming into the Special Transportation Fund. Consequently, the Finance and Funding Working Group's recommendations center on increases in current taxes to provide the bulk of the funding, coupled with potential fare increases and the investigation of tolling (when tollbooth-free technology is available to work in a Connecticut roadway situation) in order to assure that transportation facility users pay at least a part of the costs of their benefits.

The Group's fundamental observations and conclusions are these:

- There is no single "magic bullet" finance and funding solution that keeps the current transportation network in a "state of good repair" or enables the state to fund the recommended enhancements.
- Federal funding will, at best, remain level in current dollars, and, more likely, will decrease over the next several years because of competing priorities for Federal dollars. This is problematic because Federal funding comprises well over 50% of the funding for state transportation capital expenditures. For an expanded discussion of this issue, see Section II of this report.
- The state's ability to continue to finance its capital projects through issuance of bonds is limited because of bond covenants that limit debt expense service to no more than 50% of revenues of the Special Transportation Fund.
- The cost of maintaining the network in good repair and of adding capacity is very high for a number of reasons unique to our region:
  -Because our New Haven rail line is run on three different power systems between New London and New York, a single rail car usable for the entire system is likely to cost 2 to 2 ½ times the cost of a rail car operating on a single power system. This cost could exceed $3.5 million and will limit the ability to relieve congestion by purchasing additional rail cars.
  -Over half of the rail car fleet is nearing 30 years old (about 240 M-2 rail cars) and will need to be replaced or overhauled in the next 10 years to forestall significant increases in annual maintenance and repair expenses. Because of new Americans with Disabilities Act requirements, the passenger capacity of each car will be reduced by approximately 5%, which means that 15 more cars at $3.5 million a car will need to be added to serve the same number of passengers as are served by the current fleet of 240 M-2 rail cars.
  -The overhead catenary system, which is over 100 years old, is being replaced.
  -Construction work on our roads, bridges, and highways tends to be prohibitively expensive because of the very high cost of living here in Connecticut, and because

the daytime congestion on our roads, bridges, and highways necessitates significant work being done only at off-peak hours at substantial wage premiums. In addition, Connecticut's climate and weather present challenges (and expenses) not found in some parts of the country. As was noted by DOT officials, lower construction costs could be achieved if roads, bridges, and highways could be closed for the duration of a project, but the strain on the overall system capacity that would result makes this option unacceptable.

- Because of the need to fund an additional cash outlay of over $490 million a year, an increase of over 50% from the 2003 fiscal year state transportation budget, the funding mechanisms from taxes or user fees would mean either significant increases in existing funding mechanisms or the use of new funding mechanisms. To put this into perspective, the two most popular funding mechanisms used by other states for transportation improvements are the gas tax or the sales tax. The impact of using these taxes are as follows:
  -To provide $500 million of increased revenues, the gas tax would have to be increased by a minimum of 33 cents per gallon, since each penny of increase would add about $15 million a year in revenue.
  -To provide $500 million of increased revenues, the sales tax would have to be increased by about 1%, since each ¼% would add about $134 million.

- Tolls, if used to fund transportation improvements on the interstate highways (I-95, I-84), would not only create public acceptance, political and operational issues, but would result in the loss of significant amounts of Federal funds. To recoup the loss of these revenues as well as the costs of collection and a reasonable amount toward the costs of the improvements, the tolls would have to be set at a high rate per mile for every trip on any one of these highways.
- Many good ideas for financing of transportation improvements have been considered. Among them are the following:

  -Increasing advertising and marketing on the transportation rolling stock or in the stations and platforms;
  -Using public-private partnerships for design-build-operate-maintain programs;
  -Increasing a number of tax rates, such as the diesel fuel tax or the motor vehicle registration tax;
  -Increasing local participation through local taxes; and
  -Redeploying spending from under-utilized transportation assets, such as bus lines or branch rail lines with low ridership.

While some or all of these ideas may have merit, their cumulative impact is relatively minor, and, therefore, their revenue yield does not make it practical to devote significant resources to them.

Recommendations

Accordingly, the Working Group sets forth two recommendations to increase the total amount of revenues dedicated to supporting transportation: Special and Ongoing. In submitting the Special and Ongoing funding recommendations, the Group reviewed the matrix of options set forth on in Figure IV-1 and chose the sales and gasoline taxes because substantial portions of each are paid by businesses, residents, visitors, and those passing through the State. Assuming that the two sources would be leveraged by using bonds and cash in the most effective manner possible, there would be sufficient revenue to fund the actions and tactics. The Group concludes that the projected revenues generated by the recommended sources will be adequate for FY'04 – FY'13 for the following additional reasons:

- past experience indicates that not all of the strategic actions and tactics will progress on the timeline set forth by the plan;
- the TSB will continually work with DOT to prioritize the strategic actions and tactics as well as the activities within DOT's annual capital budget of approximately $500 million;
- the TSB will develop appropriate evaluation tools and metrics (including Return on Investment measurements) to support specific capital investments;
- the TSB will work with DOT and other agencies to identify statutory and regulatory changes in the decision processes for the Plan that could reduce both study and construction costs; and
- continuing changes in technology, expanded knowledge, and changing circumstances will provide opportunities to use the funding more effectively.

In approving any incremental monies, the Governor, the Legislature, and the Bond Commission should consult each year with the TSB to ensure that such expenditures will achieve the Strategic goals in light of the annual requirement that the TSB confirm and refine the actions and tactics and ensure that such public expenditures leverage private capital where appropriate. The TSB should also emphasize that investments in the system will generate economic benefits to the State that partially offset the cost through additional jobs and private capital that produce incremental tax and other revenues. Moreover, the failure to make such investments will significantly hamper the State's future economic growth and increase the risk to its quality of life.

The Working Group recommends that the first step toward mitigating congestion on our roads be to maximize the potential of options that would result in reduced demand. Demand management is extremely important in that it reduces the strain on the system, and it is a far less costly way to produce a more viable transportation network than capacity enhancement. There are many ways to use funding to reduce demand, including:

- Programs that stimulate telecommuting and ridesharing and other approaches that reduce the number of vehicle trips;

- Land use strategies that reduce the incidence of high traffic-generating development projects in locations where the infrastructure is inadequate to support them;

- Stimulation of private sector actions that reduce the distance workers have to travel, even if they are required to commute in single-occupant vehicles.

Special Funding: Taxes and Tolls

A. Special 10 Year Tax

Increase the State's sales tax rate of 6.0% by .50% to 6.5% for the ten-year period beginning July 1, 2003 and ending on June 30, 2013 with the additional revenue to be used exclusively to fund the incremental capital investments and operating costs needed to implement the Strategies. Such an increase would generate approximately $250 - $265 million per year. Bonds using these funds as a source of repayment should be issued only after OPM analyzes all alternatives and concludes that such issuance is the most cost effective use of the additional revenue.

Revenues raised through this tax would be limited to the ten-year period. The life of any bond issue supported by the sales tax revenue would be limited to the same ten year period. This would allow the tax to be sunsetted after 2013 and assure the citizens who agree to be taxed during this decade that a finite end to the tax burden has been established.

Projected Incremental Revenue In 2003 Dollars

YEAR	SALES TAX
FY '04	$265 million
FY '05	$265 million
FY '06	$265 million
FY '07	$265 million
FY '08	$265 million
FY '09	$265 million
FY '10	$265 million
FY '11	$265 million
FY '12	$265 million
FY '13	$265 million
TOTAL	$2.65 billion

The proposed $2.65 billion of additional revenues would fund the Plan's strategic actions and tactics during that period. DOT currently anticipates receiving $7 billion of Federal and State taxes over the next 10 years to fund the capital component of the transit and road projects that are programmed.

B. Tolls

- In order to expedite the construction of any expansion of either I-84 or I-95 during the 20 year Plan period, DOT should include in the EIS of each of the current I-95 corridor study and the completed I-84 corridor study an evaluation of instituting tolls (and the appropriate collection methodology) on I-95 from Branford to the Rhode Island border to pay exclusively for the construction of any expansion of I-95 in that area and on I-84 from Waterbury to the New York border to pay exclusively for the construction of any expansion of I-84 in that area. Any such monies should flow to the Special Transportation Fund and not to the General Fund.

- Request DOT to provide the TSB during the first quarter of 2003 with a comprehensive analysis of the advisability of revisiting the installation of such a dedicated toll to pay for the construction of the ongoing expansion of the Pearl Harbor Memorial Bridge and the related highway improvements.

ONGOING FUNDING:TAXES, TRANSIT FARES, AND OTHER ITEMS

A. Taxes

Increase the motor fuels tax of $.25 per gallon by $.03 on July 1st of each of 2003, 2004, 2005, 2006, and 2007 (with the total tax equating $.40 per gallon on and after July 1, 2007). Any funds in excess of those needed to support the strategic actions and tactics will be used to increase DOT's annual resources to support the ongoing safety and maintenance requirements of the entire system. In addition, DOT and OPM should use the increased revenue to achieve greater flexibility in DOT's annual budget by reducing the percentage required to service outstanding debt.

Projected Incremental Revenue In 2003 Dollars

YEAR	MOTOR FUELS TAX
FY'04	$ 45 million
FY'05	$ 90 million
FY'06	$135 million
FY'07	$180 million
FY'08	$225 million
FY'09	$225 million
FY'10	$225 million
FY'11	$225 million
FY'12	$225 million
FY'13	$225 million
	$1.80 billion

The proposed annual incremental revenue up to $225 million would augment DOT's annual operating budget of approximately $900 million that includes $140 million to subsidize mass transit costs.

B. Transit Fares

DOT should provide the TSB with a set of recommendations by March 1, 2003 on the possibility of increasing the fares by July 1, 2003 on the Metro-North line (which fares have not been increased since 1998), on Shoreline East, and on designated bus lines. As an example, a 5% increase on Metro-North fares would yield an incremental $5 million annually if such increases were not offset by reducing that portion of DOT's budget allocated to the subsidies of the cost of the public transit systems.

C. Other Items

- The State should evaluate the federal tax benefits of private activity bonding that are available to certain economic development projects and determine whether to request that eligibility for such benefits be expanded to include transportation projects, such as those related to passenger ferry service (e.g. terminals), that create economic development opportunities.

- The TSB should adopt and apply the principle that all state funding of the strategic actions and tactics need to include an evaluation of the potential for the public funds to leverage private investment.

- As certain strategic actions and tactics are more fully developed, the TSB should review the opportunity for initiating or increasing appropriate user fees. Examples of such opportunities may include the proposed expanded parking capacity at rail stations and the proposed increases in the number of truck rest spots.

Changing Facts and Circumstances

- Over the 10 year period, many of the underlying assumptions of the Strategy will undoubtedly be adjusted or refined to reflect changes in the economy, societal norms, and technology. Continued improvements in technology alone will undoubtedly encourage, and may require, the TSB to recommend other taxes or fees. For example, if fuel cell technology becomes a commercially viable alternative to the internal combustion engine for automobiles, the TSB will be required to evaluate the State's reliance on motor fuels taxes as a primary revenue source for its annual transportation budget.

Metro North Railway Financing

History and Issues

METRO NORTH OPERATING AGREEMENT

Background

In 1965, with the New York, New Haven and Hartford Railroad in bankruptcy, the states of Connecticut and New York began subsidizing operating deficits on the New Haven Line. Four years later the two states entered into an interstate compact with the stated purpose of maintaining essential rail service. In 1970 the states[2] and the Penn Central Transportation Company, which had become the operator of the New Haven Line, entered into a series of service agreements.

The 1970 agreements built upon the basic agreement which Governors Dempsey and Rockefeller first worked out in 1965. Each state would be responsible for 50% of the operating deficit and 50% of the cost of any new rolling stock acquired for the railroad. Each would be responsible for the cost of any fixed capital improvements within its boundaries.

Penn Central continued to operate the service until 1973 when Congress, in an effort to deal with problems in the rail freight industry created the Consolidated Rail Corporation (ConRail) to assume the operations of a number of failing railroads, including Penn Central. One provision of that legislation[3] required ConRail to assume the responsibility for the commuter rail services (including the New Haven line) which had been operated by Penn Central. That arrangement would continue for almost seven years.

Late in 1980 the federal government resolved the claims and litigation related to the 1973 takeover of the Penn Central. The following year Congress relieved ConRail of the responsibility for operating commuter rail services[4]. Commuter agencies (in Connecticut's case ConnDOT) were given the choice of operating the service themselves or contracting with a new commuter rail corporation created by the legislation.

On December 31, 1982 the two states entered into a new service agreement, which, with some changes, is still in effect. The following day Metro-North began operating the service. During the negotiation of the service agreement MTA demanded a change in the

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[2] Connecticut acted through the former Connecticut Public Transportation Authority, New York through the MTA.

[3] Regional Rail Reorganization Act of 1973

[4] Northeast Rail Services Act (1981)

50-50 cost allocation that Governors Dempsey and Rockefeller agreed to in 1965. The issue eventually went to arbitration before a panel chaired by Archibald Cox.

Finding that Connecticut residents "enjoy at least 66 per cent and perhaps 75 percent of all the transportation services furnished"[5] by the New Haven Line, the Cox panel sided with New York. Under the new formula Connecticut would pay 100% of the Danbury, New Canaan and Waterbury branch line deficits; 53 per cent of the New Haven Line's share of "the net operating deficit of Grand Central Station"; and a share of the New Haven line deficit (later set at 56.29%) determined according to a formula set forth in the award.

In 1994 the State of Connecticut sought to amend the deficit allocation to reflect the fact that, unlike New York, it had raised rail fares (and New Haven line revenues) several times since the Cox arbitration decision. That issue eventually went to arbitration.

On September 8, 1998 the arbitration panel ruled in Connecticut's favor on the fare differential issue. It ordered the states' respective deficit shares adjusted to reflect the impact of past and future fare increases. However, it proved to be a hallow victory. The same panel increased Connecticut's share of the New Haven main line deficit from 56.29% to 65% (minus the fare differential, if any)[6].

The service agreement and its impact on New Haven line service continues to be of concern to the General Assembly. In 2000 it enacted Public Act 00-129. Section 2 of that act provided that:

> "The Commissioner of Transportation, within available appropriations, shall conduct a comprehensive analysis of the Metro North Rail Operating Agreement between the Department of Transportation and the Metropolitan Transportation Authority. The analysis shall examine ridership, costs, service, scheduling, marketing, capital investment and other related issues and shall recommend how the state may better exercise its legal rights under said agreement to increase rail ridership and maintain affordability of rail fares for Connecticut commuters as part of a
> transportation strategy to reduce highway congestion in southwestern Connecticut. The commissioner shall report the findings and recommendations of said analysis to the joint standing committee of the General Assembly having cognizance of matters relating to transportation on or before February 1, 2001." Public Act 00-129, Section 2

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[5] *In the Matter of Arbitration Between Connecticut Department of Transportation and the Metropolitan Transporttaion Authority*, decided September 7, 1984, at 5.

[6] *In the Matter of Arbitration Between Connecticut Department of Transportation and the Metropolitan Transporttaion Authority,* decided September 8, 1998 at 23.

ISSUES

Over the years ConnDOT and others have identified a number of specific issues related to the Metro North Service agreements:

1.) Connecticut is not represented on the MTA and has no voice in decisions which affect both the cost and quality of New Haven Line service even though it is paying almost two-thirds of the cost of that service.

2.) Because the New Haven line operates largely in Connecticut, it does not get the same degree of attention and resources as the Harlem and Hudson Lines, the Long Island Railroad and the New York City subway, all of which are operated by MTA.

3.) Connecticut plays only a limited role in Metro-North labor issues and negotiations. It is allowed to sit in on the labor negotiations, but negotiating, entering into and administering the labor agreements is the sole responsibility of MTA, even though those actions can have a dramatic impact on Metro-North deficits and the subsidies paid by Connecticut taxpayers. Meanwhile, the unions have a non-voting seat on the MTA Board.

4.) MTA and its unions engage in "pattern bargaining". That means that Metro-North's labor agreements are often driven by the labor agreements for the Long Island Railroad, the New York City subway and even New York buses.

5.) MTA contends that it must approve all changes in schedules and service on the New Haven mainline even if those changes only affect Connecticut. This limits ConnDOT's flexibility in responding to intrastate rail needs and opportunities.

6.) MTA contends that under the agreement it must consent to the extension of Shore Line East trains west of New Haven on the theory that they could take revenue away from the New Haven Line.

7.) Connecticut essentially acts MTA's banker paying for service before it is provided (subject to adjustment for actual costs). Only payments for "administrative assets" are made after the costs are incurred.

8.) In the 2001 report to the General Assembly ConnDOT stated that it had been "frustrated by its inability exert control in the (Metro North) budget process". However, it expressed the hope that a new Memorandum of Understanding between ConnDOT and MTA, entered into in April 2001, would lead to an improved budget process. It is unclear whether it has done so.

9.) The Service Agreement relies on GAAP Accounting Principles. ConnDOT believes that the Agreement should incorporate a more detailed cost allocation system. It believes that a more detailed system, such as the standards promulgated by Cost Accounting Standards Board and used by the federal government would eliminate many of the cost allocation issues which have arisen in the past.

10.) ConnDOT has challenged Metro North's method of allocating its indirect costs among the Harlem, Hudson and New Haven Lines. It told the General Assembly that:

> "This model treats most costs as allowable and presumes the Service, and Connecticut's riders, benefit proportionately to the Harlem and Hudson Lines from all of Metro North's activities.
>
> "ConnDOT has taken exception to that presumption, particularly, but not exclusively, with respect to the activities of Metro North's Legal Department, Property Management Office, Marketing, MTA Police and station administration and maintenance. In addition, ConnDOT has requested a more equitable allocation of DC power costs (in the areas where the New Haven, Harlem and Hudson lines all operate)" *Analysis of the Amended and Restated Service Agreement for the Operation and Subsidization of the New Haven Rail Line* (2001) at 12.

DOT RECOMMENDATIONS

Public Act 00-129 required the Commissioner of Transportation to recommend how the state could better "exercise its legal rights under said agreement to increase rail ridership and maintain affordability of rail fares for Connecticut commuters as part of a transportation strategy to reduce highway congestion in southwestern Connecticut". DOT's report, dated May 3, 2001 included the following recommendations:

1. "That the Commissioner of Transportation and key managers on his staff work at maintaining an improved working relationship with their counterparts at MTA with the goal of ensuring ConnDOT's meaningful participation in the development of annual operating budgets and the establishment of future policies and strategies for the Service".
2. "That ConnDOT and Metro-North continue ongoing negotiations to modify the manner in which specific costs are allocated to resolve current and future first step down allocation issues; to improve administrative practices; demonstrate value for subsidy; and eliminate wasteful practices and spending".

3. "That ConnDOT exercise more fully all of the provisions of the (agreement), including arbitration, financial arbitration, and/or the renegotiation of specific articles of the (agreement) with MTA and Metro-North."

Term of Agreement

The current term of the Service Agreement runs until January 1, 2005 when it is scheduled to renew for another five year term. Section 12.03 of the Agreement provides that:

> "At least one year prior to the expiration of the initial term or any successive renewal term, MTA and CDOT shall have the right to request renegotiation of the ***Allocations***[7]**.** In the event that such a request is made, MTA and CDOT shall meet promptly in an attempt to adjust the allocations in a fair and equitable manner for the next term."

If the parties can not agree on new allocations they are subject to binding arbitration.

Either party retains the right to terminate the agreement at any time by notifying the other parties "at least 18 months prior to the desired termination date".

[7] Defined as MTA and ConnDOT's "respective shares of the operating deficit and capital costs of the Service"

Appendix H-2

ICGR – Funded Roads

HIGHWAYS - CURRENT CAPITAL PROGRAM

(Millions - 2003 Dollars)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Grand Total
Current Program											
Bridge Improvements	112.0	114.9	126.9	100.0	95.9	104.4	96.3	95.0	95.0	95.0	1,035.4
Pavement Resurfacing	105.0	58.4	97.5	95.0	99.0	105.0	99.0	95.0	99.0	99.0	951.9
Preventive Maintenance	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	186.0
Roadway Reconstruction	163.0	221.0	190.0	223.4	208.5	173.4	187.5	192.8	188.8	188.8	1,937.2
Small & Local	128.4	114.1	94.0	90.0	105.0	125.6	125.6	125.6	125.6	125.6	1,159.5
Total Current Program	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**527.0**	**5,270.0**
Anticipated Funding	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	5,270.0

Total Ten Year Shortfall **0.0**

Appendix H-3

CGR – Unfunded Roads

HIGHWAYS - STATE OF GOOD REPAIR

(Millions - 2003 Dollars)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Grand Total
State of Good Repair - Additional Rrequirements											
Bridge Improvements	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	346.0
Pavement Resurfacing	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	120.0
Preventive Maintenance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	50.0
Roadway Reconstruction	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	836.0
Small & Local	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	386.0
Total State of Good Repair - Additional Cost	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**173.8**	**1,738.0**

Total Ten Year Shortfall **1,738.0**

Appendix H-4

CGR – Funded Transit

TRANSIT - CURRENT CAPITAL PROGRAM

(Millions - 2003 Dollars)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Grand Total
Current Capital Program											
Bus Rolling Stock	19.6	4.4	4.9	29.0	9.7	10.0	14.5	28.3	16.4	28.5	165.4
Bus Maintenance Facilities	1.1	40.3	24.3	3.2	4.2	0.0	5.0	1.0	0.0	0.0	79.1
Bus Subtotal	**20.7**	**44.7**	**29.2**	**32.2**	**13.9**	**10.0**	**19.5**	**29.3**	**16.4**	**28.5**	**244.5**
Rail Rolling Stock	15.4	6.0	3.0	15.0	0.0	53.6	40.8	41.9	0.0	39.0	214.7
Rail Comm. and Signals	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	14.9
Rail Power	47.6	8.6	42.5	33.0	0.0	5.4	0.0	18.0	18.0	0.0	173.1
Rail Line Structures	23.0	31.1	35.9	24.0	92.5	34.7	49.4	21.1	74.5	32.4	418.7
Rail Maintenance Facilities	0.0	2.8	0.5	7.0	3.7	7.0	0.0	0.0	0.7	0.0	21.7
Rail Parking and Stations	3.6	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0
Rail Freight Program/Planning	0.2	0.2	0.4	0.2	1.3	0.9	1.9	1.2	1.9	1.2	9.3
Rail Subtotal	**94.3**	**70.1**	**82.3**	**79.3**	**97.6**	**101.5**	**92.0**	**82.2**	**95.1**	**83.0**	**877.3**
Total	**115.0**	**114.8**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**1,121.8**
Anticipated Funding	**115.0**	**114.8**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**111.5**	**1,121.8**

Total Ten Year Shortfall **0.0**

Appendix H-4a

CGR – Unfunded Transit

TRANSIT STATE OF GOOD REPAIR - ADDITIONAL COSTS

(Millions - 2003 Dollars)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Grand Total
State of Good Repair Projects											
Bus Rolling Stock	0.0	14.0	18.6	0.0	18.8	0.0	0.0	5.4	0.0	11.7	68.5
Bus Maintenance Facilities	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	15.0
Bus Subtotal	**0.0**	**14.0**	**23.6**	**0.0**	**18.8**	**5.0**	**0.0**	**5.4**	**5.0**	**11.7**	**83.5**
Rail Rolling Stock	0.0	0.0	33.0	40.0	50.0	0.0	0.0	0.0	240.0	240.0	603.0
Rail Comm. and Signals	0.0	0.0	0.0	15.0	0.0	0.0	150.0	0.0	0.0	0.0	165.0
Rail Power	10.0	28.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	53.0
Rail Line Structures	31.0	17.5	25.5	90.0	10.0	10.0	10.0	10.0	10.0	10.0	224.0
Rail Maintenance Facilities	28.0	0.0	30.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0	308.0
Rail Parking and Stations	1.5	16.0	6.5	7.0	9.0	0.0	4.0	0.0	4.0	0.0	48.0
Rail Freight Program/Planning	2.3	0.8	0.6	40.0	0.0	1.0	0.0	0.7	0.0	0.7	46.1
Rail Subtotal	**72.8**	**62.3**	**95.6**	**442.0**	**69.0**	**11.0**	**179.0**	**10.7**	**254.0**	**250.7**	**1,447.1**
Total State of Good Repair Cost	**72.8**	**76.3**	**119.2**	**442.0**	**87.8**	**16.0**	**179.0**	**16.1**	**259.0**	**262.4**	**1,530.6**

Total Ten Year Shortfall **1,530.6**

Appendix H-5

Project Spreadsheet

ASSUMES ALL PROJECTS GO FORWARD AS DESCRIBED IN RECOMMENDATIONS

TSB Recommendations - Cost Matrix

Costs reported in the $ millions, 2003 Dollars

Costs do not include DOT "Additional Needs" amounts
Costs reconciled with DOT Program

				2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Comments
Strategic Actions and Tactics	**Total Capital**	**Annual Oper.**	**Study Cost**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	**Cap.**	**Oper.**	
Air Based Solutions																								
Operating Cost, Tweed New Haven Airport		$2.00			$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00	
Tweed Master Plan																								
Phase 1	$1.00			$0.20		$0.60		$0.20																Tweed Master Plan
Phase 2	$1.00					$0.20		$0.30		$0.30		$0.20												Tweed Master Plan
Implementation of Bradley Area Access Improvements*																								
Connector from RT 159 to RT 75	$27.00	$0.20	$2.00	$1.00		$1.00		$2.00		$2.00		$13.00		$10.00	$0.20		$0.20		$0.20		$0.20		$0.20	
Bradley Park Road	$5.00					$0.30		$4.70																
Overall marketing at Bradley		$1.00			$1.00		$1.00		$1.00															
Marketing for European service from Bradley		$2.00			$2.00		$2.00		$2.00															
Express shuttle from So. CT to Bradley	$2.65	$2.00	$0.05	$0.05		$2.65			$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00		$2.00	
Connection to NHAV/Spfld. Rail	$0.60	$0.20		$0.60			$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Safety Improvements at Groton Airport	$0.50			$0.50																				Draft Master Transportation Plan
Subotal	$37.75		$2.05																					
Subotal Operating Costs (10 year total)		$47.80		$2.35	$5.00	$4.75	$5.20	$7.20	$7.20	$2.30	$4.20	$13.20	$4.20	$10.00	$4.40	$0.00	$4.40	$0.00	$4.40	$0.00	$4.40	$0.00	$4.40	
Evaluation Group Initiatives																								
Ongoing TSB Operations		$0.10			$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10	
Funding for development of modeling software		$0.25	$0.10	$0.10	$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25		$0.25	
Subotal	$0.00		$0.10																					
Subotal Operating Costs (10 year total)		$3.50		$0.10	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	$0.00	$0.35	
Land Use and Economic Development Initiatives																								
State assistance for municipal/regional plan develom.		$0.38			$0.38		$0.38																	
State assistance for GIS mapping & analytical capabilities	$10.00			$10.00																				
Subotal	$10.00		$0.00																					
Subotal Operating Costs (10 year total)		$0.76		$10.00	$0.38	$0.00	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Roadway Based Solutions																								
Marketing and funding for trip reduction programs		$12.00			$1.00		$1.00		$1.00		$1.00		$1.00		$1.00		$1.00		$1.00		$1.00		$1.00	
Operational Improvements	$150.00		$1.00	$1.00		$20.00		$20.00		$20.00		$20.00		$20.00		$20.00		$20.00		$10.00				
I-95 West of New Haven																								Awaiting ongoing studies
Use of Shoulders	$30.00					$1.00		$2.00		$6.00		$10.00		$11.00										Exit 8-18, Study Funded
Addition of Operational Lanes	$20.00		$2.00	$1.00		$1.00		$4.00		$4.00		$4.00		$4.00		$4.00								
Ramp Closures during Peak Hours	$1.00	$3.00	$0.50	$0.50		$1.00	$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00		$3.00	
Increased Truck Rest Stop Capacity	$25.00		$1.00	$1.00				$10.00		$10.00		$5.00	$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Route 8/I-84 Interchange	$800.00		$3.50	$1.00		$1.50		$1.00		$4.00		$3.00		$3.00		$300.00		$300.00		$190.00				Feas+ EA then PE Design
Additional lane on I-84	$600.00	$0.60				$2.00		$2.00		$2.00		$200.00				$200.00	$0.30		$0.30	$194.00	$0.60		$0.60	PE Design
Hartford to I-395, Including Route 6***	$460.00	$0.50		$2.00		$2.00		$100.00		$100.00		$100.00		$156.00	$0.50		$0.50		$0.50		$0.50		$0.50	
Route 11	$410.00	$0.30		$2.00		$2.00		$80.00		$80.00		$100.00		$146.00	$0.30		$0.30		$0.30		$0.30		$0.30	
Additional lane on I-95 East of Branford	$1,000.00	$1.30	$2.00	$1.00		$1.00		$2.00		$2.00		$2.00		$200.00			$0.20	$200.00	$0.40		$1.00	$200.00	$1.00	$394 after year 2014
Incident Management Expansion	$25.00			$5.00				$5.00				$5.00				$5.00		$5.00						
Connecticut Highway Assistance Motorist Patrol	$0.30	$1.40		$0.30	$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40		$1.40	
Value Pricing Study			$0.06	$0.06																				
Operational Improvements Study			$1.00	$1.00																				
Incident Management Task Force		$0.10			$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10		$0.10	
Commercial Vehicle Applications	$2.00	$0.20		$2.00	$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20		$0.20	
Subotal	$3,523.30		$11.06																					
Subotal Operating Costs (10 year total)		$63.60		$17.86	$2.70	$31.50	$5.70	$226.00	$5.70	$228.00	$5.70	$449.00	$5.90	$540.00	$6.70	$529.00	$7.20	$525.00	$7.40	$394.00	$8.30	$200.00	$8.30	
Transit Based Solutions - Bus/Rail																								
Continue Section 16 Projects		$4.00			$4.00		$4.00																	
Provide Reliable Funding for Jobs Access		$4.00			$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00		$4.00	Assumes entire cost borne by State
BUS																								
Improve Effectiveness & Efficiency of Local Bus Service	$15.00	$5.00			$5.00	$7.50	$5.00	$7.50	$5.00		$5.00		$5.00		$5.00		$5.00		$5.00		$5.00		$5.00	
Support New Britain Hartford Busway	$160.00	$13.00		$160.00			$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00		$13.00	$10 in current prog. Remainder UFN

Strategic Actions and Tactics	Total Capital	Annual Oper.	Study Cost	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Comments
				Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	Cap.	Oper.	
Southeastern Intermodal Connection****	$9.00	$0.50				$9.00	$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50		$0.50	Section 16 Funded Study
Other Bus Rapid Transit			$1.50	$1.50																				
RAIL																								
Track Structure																								
New Greenwich Interlocking	$20.00							$1.00						$19.00										
CP248 (New Interlocking)	$20.00			$20.00																				Unfunded Additional Need
Rolling Stock Acquisitions																								Unfunded Additional Need
Immediate term:																								Unfunded Additional Need
Electric locomotives - 20	$120.00	$16.20		$120.00			$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20		$16.20	
Coaches (locomotive-drawn) - 64	$128.00			$128.00																				
Mid-to-long term (M2 Replacement)	$250.00											$10.00								$120.00		$120.00		
Maintenance Facility - New Haven	$308.00			$28.00				$280.00																CTDOT Share - Unfunded Add. Need
Station/Parking Space Expansions	$28.60			$2.60				$26.00																ConnDOT Share
Station Platform Lengthening and Rehabilitation	$8.00			$1.50				$6.50																
Branch Collector Station Study/Prelim Eng			$2.50	$2.50																				
Branch Collector Stations - 2	$40.00	$2.10												$24.00		$4.00		$4.00	$2.10	$4.00	$2.10	$4.00	$2.10	
New Haven/Hartford/Springfield Rail	$100.00	$3.00		$20.00	$3.00	$55.00	$3.00		$3.00		$3.00		$3.00		$3.00		$3.00	$25.00	$3.00		$3.00		$3.00	Await Study Results for final rec.
Orange/West Haven Station	$14.00					$14.00																		
Subotal	$1,220.60		$4.00																					
Subotal Operating Costs (10 year total)		$401.60		$484.10	$16.00	$85.50	$45.70	$321.00	$41.70	$0.00	$41.70	$10.00	$41.70	$43.00	$41.70	$4.00	$41.70	$29.00	$43.80	$124.00	$43.80	$124.00	$43.80	
Water Based Solutions																								
Maritime Task Force			$0.10	$0.10																				
Feeder Barge Subcommittee			$0.03	$0.03																				
Dredging of Bridgeport Harbor	$50.00			$50.00																				
Rail and Rdwy Improvements at New Haven Harbor	$12.50			$12.50																				
Subotal	$62.50		$0.13																					
Subotal Operating Costs (10 year total)		$0.00		$62.63	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
TOTAL CAPITAL EXPENDITURES	**$4,854.15**			**$577.04**		**$121.75**		**$554.20**		**$230.30**		**$472.20**		**$593.00**		**$533.00**		**$554.00**		**$518.00**		**$324.00**		
TOTAL OPERATING EXPENDITURES		**$517.26**			**$24.43**		**$57.33**		**$54.95**		**$51.95**		**$52.15**		**$53.15**		**$53.65**		**$55.95**		**$56.85**		**$56.85**	
TOTAL STUDY COST			**$17.34**																					

*Bradley improvements costs do not included transit or local road improvements discussed in the report.
*** Includes only Bolton to Windham section
****Final cost will depend on level of private involvement.

$4,477.49

NOTE: Recommendations in Bold represent potential public/private partnership initiatives.

Appendix H-6

Funding Matrix-Rev4

CT Transportation Strategy Board
Potential Revenue Sources

Sources	Revenue Yield	Equity Issues	Tie to Transportation	Administration & Collection
Major Taxes				
Gas Tax	1 cent yields approximately $15m per year	Recently reduced. Potential boundary issues.	Direct tie to transportation	Collection mechanism in place
Sales Tax	¼% yields approximately $134m per year	Somewhat regressive. Potential boundary issues.	No direct tie to transportation	Collection mechanism in place
Personal Income Tax	1/10th of 1% rate increase = $100 million	Graduated impact. Significant deductability on federal tax liability would reduce impact on CT taxpayers.	No direct tie to transportation	In place
Minor Taxes & Fees				
Diesel & Motor Carrier Taxes	1 cent yields approximately $3 million per year	Raised by 10 cents/gal. in 2002	Direct Tie in	In place
Corporate Tax	1% tax rate generates $70M	Federal Corporate tax deductibility	No direct tie in	In place
Real Estate Property Tax	1% statewide increase=approx $50 million	Already heavily burdened. Federal deductibility.	No direct tie in	Essentially in place
Personal Property Tax	1% statewide increase=approx $8.6 million	Already heavily burdened. Federal deductibility.	No direct tie in	Essentially in place
Real Estate Transfer Tax	Generates between $90M - $120M		No direct tie in	In place
Hotel Tax	10% surcharge=$6 million	Paid by business & vacation travelers	No direct tie in	In place
Used Car Sales Tax	Generates $60M		Indirect tie in	In place
Sales Tax Increase: New & Used Veh.	1% tax rate generates $9M		Indirect tie in	In place
Rental Car Tax	$5M @ $1/day		Indirect tie in	In place
MV Title Tax	Generates $22M		Indirect tie in	In place
Oil Co. Tax	6%= $21M in STF		Limited tie	In place
MV Registration	10% increase=$16 million		Indirect tie in	In place
MV License	10% increase=$2.7 million		Indirect tie in	In place
STF Licenses, Permits & Fees	5% increase=approx. $6million		Close Tie in	In place

CT Transportation Strategy Board
Potential Revenue Sources

Sources	Revenue Yield	Equity Issues	Tie to Transportation	Administration & Collection
Other				
Tolls	Potential impact on federal aid	Geographic equity issues. Potential safety issues	Direct tie	May require huge capital investment
Congestion Pricing	Federal gov't may be interested	Geographical equity issues. Potential safety issues	Direct tie	Some difficult collection issues
Rail Fare Increase	5% increase could yield approximately $5 million	Direct benefit relationship	Direct tie	In place
Bus fare increase	25 cent increase could yield approx. $5 million	Direct benefit relationship. Affects many lower income people	Direct tie	In place
New Taxes				
Vehicle Mile Traveled Tax	Unknown		Direct tie	No system in place
Local Transit District Taxes	Undefined	Somewhat regressive. Public may feel this is a state responsibility	Direct tie	Would require district-wide collection system, unless part of state tax collection. e.g. regional sales tax

Appendix I

Land Use & Economic Development Work Group Final Report

RECOMMENDATIONS OF THE LAND USE AND ECONOMIC DEVELOPMENT WORKING GROUP

TRANSPORTATION PLANNING, ECONOMIC DEVELOPMENT AND LAND USE

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.

Whenever possible, transportation policy should encourage development concentrated in areas where the infrastructure exists, where jobs, employees and markets are close to each other and where distressed urban areas can be revitalized. Development should also be focused on areas where the natural infrastructure of air, water and habitat resources can be preserved for future generations. In this context, appropriately sited and designed highway and transit facilities and services reduce congestion and improve mobility while addressing environmental concerns. They can attract economic growth by increasing access to workers, customers and development sites, while ports and airports can serve as important “engines” of economic development. Conversely, the lack of transportation facilities and services can seriously constrain economic development.

For these reasons it is essential that economic development be better integrated into the state’s transportation planning process. Specifically, DOT, working with DECD and regional and local entities and business clusters, should include economic development issues and considerations in the Long Range and Master Transportation Plans, as well as corridor and major investment studies and individual project plans.

The Land Use and Economic Development Working Group recommends that the Transportation Strategy Board’s strategic effort include a more comprehensive look at the relationship between transportation, economic development and land use. In particular, the State's transportation planning and investment should be closely tied to the State Plan of Conservation and Development, which should help to guide municipal and regional development planning and regulation.

The following recommendations recognize the importance of a comprehensive, coordinated planning approach to State transportation strategy. They attempt to incorporate a broader view of planning, analysis, and state assistance as they mesh with transportation issues.

PLAN OF CONSERVATION AND DEVELOPMENT

Chapter 297 of the Connecticut General Statutes provides for the preparation, adoption and periodic revision of State Plan of Conservation and Development. The Office of Policy and Management is currently preparing a revised plan. The Land Use and Economic Development Working Group recommends that consideration be given to delaying revision of the State Plan to allow for the deployment of planning tools and processes, as discussed below, to establish a common local baseline for the Plan.

The Working Group believes that several steps can be taken to enhance the usefulness of the plan and to allow it to better inform and guide transportation planning. These include:

- Incorporate over-arching State growth management goals as well as more specific development policies directly into Chapter 297 of the general statutes in order to specify priority statewide objectives for conservation and development. These statutory goals and policies would be sufficiently specific so as to make the plan a concise prescriptive management tool, but neither so restrictive nor detailed that they preclude site or project accommodations. These goals and policies would not be the basis for a challenge to the actions of an agency or agencies under Section 22a-16 or any other provision of the general statutes

.

- Require that all State governmental planning documents be consistent with the plan of Conservation and Development.

- Require that the Plan address economic and community development needs and patterns of commerce.

- Provide flexibility and specific mechanisms to allow the expeditious amendment of the Plan to address unanticipated development types and/or locations.

- Require consistency between municipal plans of conservation and development and municipal zoning and subdivision regulations.

- Require local land use agencies to identify, on the record, proposed zoning regulations, zoning amendments and provisions in the local plan of conservation and development which are inconsistent with the State Plan of Conservation and Development.

- Update municipal, regional and State Plans of Conservation and Development on a coordinated schedule statewide.

- Provide on-going assistance to State, regional and municipal agencies to assist them in meeting the goals of the Plan. Expand the State's comprehensive planning capability, including necessary staff, to allow it to provide adequate support for those activities.

- Provide or assist local and regional entities to obtain, state-of-the-art planning tools such as digital aerial photography, GIS mapping and analytical capabilities. Provide for a state-wide build out analysis.

- Provide modest short-term funding to State, regional and municipal agencies to support the development of enhanced plans of conservation and development as well as any necessary changes in land use regulations.

- Provide incentives for local and regional planning, regulation and development consistent with the State Plan and develop a process to review and evaluate the effectiveness of those incentives.

PRE-APPROVED DEVELOPMENT AREAS

One method to help guide development consistent with the goals established by the plan of Conservation and Development is to designate pre-approved development areas. Locating new commercial and industrial developments on brownfields or in other areas served by existing transportation infrastructure can reduce sprawl and reduce or eliminate the need for new roads and other infrastructure. However, the time required obtaining necessary state and federal permits and zoning and other regulatory approvals often deters potential developers from utilizing such sites.

In order to reduce the time required to redevelop these properties, the working group recommends that Department of Economic and Community Development, and the Department of Environmental Protection, OPM, and local agencies work together to establish a procedure under the framework of the plan of Conservation and Development for (1) establishing site nomination/eligibility processes and evaluation priorities ; (2) evaluating such properties in advance of the receipt of specific development proposals; (3) determining the types and size

of the activities appropriate for the site; (4) identifying the project specific permits and approvals required in order to utilize the site; and, (5) providing grant funding for a significant portion of the cost of site remediation for brownfield sites located in Regional Centers (as identified in the State Plan of Conservation and Development) near transit hubs.

Legislative approval for the process, if necessary, should be sought during the 2003 legislative session.

BRADLEY INTERNATIONAL AIRPORT

Sound economic planning and development at and near Bradley International Airport is important to the economic vitality of the region and the entire state. In order to facilitate development of this important economic resource, the working group recommends that:

1.) The Bradley Board of Directors, in consultation with the Community Advisory Board and its economic development subcommittee, should adopt economic development goals and priorities for the airport.
2.) The state should utilize a mechanism similar to the Municipal Development Plans adopted under Chapters 132 and 588l of the general statutes to prepare and adopt an economic development plan for the airport. The planning process should be coordinated by the Department of Economic and Community Development and should include all relevant state agencies, including the Bradley Board of Directors, the Community Advisory Board and the Departments of Transportation, Economic and Community Development and Environmental Protection.
3.) Establish a procedure for pre-approving development sites on the airport property as outlined in the previous section on pre-approved development areas.
4.) The towns near the airport should be encouraged to review their development plans for areas near the airport and to make them consistent with the goals and priorities adopted by the Bradley Board of Directors.
5.) The state should assist the towns in adopting one or more complimentary Municipal Development Plans covering areas near the airport. The Department of Economic and Community Development should identify and seek to eliminate legal or other obstacles to the development of a multi-town MDP for the airport area.

While this process is focused on the development at Bradley International Airport it could potentially serve as a model for addressing development issues at other airports and ports.

MAJOR RAIL HUBS

In order to assure recognition of the development opportunities at all rail hubs in the Regional Centers identified on the State Plan of Conservation and Development:

1. The Regional Planning Organizations, in cooperation with the DECD and Transportation Strategy Board, should prepare strategies for developing these sites; and,
2. Municipalities should be encouraged to revise their Plans of Conservation and Development to take advantage of rail hubs as sites for intensive future development.

REGULATORY REQUIREMENTS AND DISPUTE RESOLUTION

Both work groups and individual members of the Transportation Strategy Board have expressed concern about the potential impact of regulatory requirements on transportation projects, including those recommended by the TSB. Suggested responses have included establishment of a dispute resolution board, special court sessions to handle legal challenges and outright waiver or repeal of some regulatory requirements.

State agencies have developed a number of project-based methods for addressing interagency issues, including the designation of a single initial point of contact for all regulatory matters related to a project and the creation of project teams, which include representatives of all state agencies involved in the project. Project teams attempt to identify and resolve issues and potential barriers to the project, and. The Working Group believes that other state projects can benefit from these approaches and recommends that they be utilized, as appropriate, on major transportation projects in the future.

Finally, statutory timetables should be established to insure the prompt consideration and resolution of administrative and land use appeals.

FISCAL ZONING

During the course of the working group's deliberations concern has been expressed about the impact of the state's reliance on the property tax on the choices that towns make concerning development proposals. It is generally acknowledged that local land use agencies often feel the need to make plans and decisions based on improving the local tax base rather than on planning and quality of life concepts. To an extent, transportation infrastructure and programmatic decisions also influence land use and tax base patterns. We should resist making transportation system improvements that are not supported by and supportive of balanced growth and conservation plans, and we should work to lessen the impact of the property tax system on land use and transportation decisions.

Appendix J

Movement of People Work Group
Final Report

Working Group on the Movement of People

Final Report & Recommendations to the TSB

October 2002

Connecticut Transportation Strategy Board
Draft Report of the Working Group on Movement of People

GOAL: To improve personal mobility within and through the Connecticut.

OBJECTIVES	**CHALLENGES**
Air • Develop a regional airport for southern Connecticut, if commercially feasible • Support continued growth and development of Bradley Airport • Improve access by non-SOV means to all airports used by Connecticut residents	*Air* • Local opposition to airport expansion • Environmental constraints on expansion of coastal airports • Minimal or inconvenient transit services to in-state and NY area airports
Statewide Transit (Rail/Bus) • Increase commitment to public transportation • Develop a seamless statewide Strategic Transportation Network (STN), including both bus and rail elements. • Establish a 'Network Services Entity' (NSE) to develop and operate the STN, with a dedicated stable funding source. The NSE would plan, manage, and finance the services, and would resolve issues arising under existing service agreements. • Establish a statewide framework for funding and supporting local transit services, incorporating best practices in service and performance management. • Develop and implement a comprehensive statewide approach to transit marketing and Automatic Traveler's Information Systems (ATIS).	*Statewide Transit (Rail/Bus)* • At a statewide level, existing rail and bus services are uncoordinated and inconsistent. • Many towns are not able to benefit from inclusion in the state's designated transit districts • The present arrangements for funding transit make long-term planning and substantial improvement very difficult.

Rail • Obtain needed equipment and related support facilities to provide required service at a high degree of reliability. • Review statewide commuter rail station access requirements, and devise a strategy to increase the parking supply and station access by non-auto modes. • Develop new electrified regional rail service turnback points on the Danbury and Waterbury branches to avoid congestion in the I-95 corridor. • Add regional rail service between New Haven and Springfield, MA. • Support MTA initiative to add regional rail service on the Hell Gate line.	*Rail* • Local opposition to added parking at rail stations • Aging infrastructure • Multiple ownership of rail infrastructure • Multiple parties responsible for operation of rail services • Terms of the Metro North agreement • Uncertain future of intercity rail
Bus • Develop service standards for local transit service. • Develop financial performance standards for local transit service, as a basis for allocating operating support. • Support development of new local bus services to coordinate with STN services and ferries. • Improve the attractiveness and user-friendliness of local buses.	*Bus* • Difficulty in providing cost effective transit service in low-density population areas
Highway • Reduce dependence on the automobile by offering effective alternatives. • Implement operational improvements to improve system efficiency, including Intelligent Transportation Systems (ITS) technology. • Implement Transportation Systems Management (TSM) strategies where appropriate, including traveler's advisories and incident management (IM).	*Highway* • Congestion will reach levels which will threaten mobility • Limited ability to expand existing highways • Adding capacity to road can induce additional traffic • Public's attachment to automobile travel • Public opposition to paying a greater share of the cost of automobile usage, *e.g.*, motor fuel tax, tolls

• Support Transportation Demand Management strategies. • Examine the feasibility of expanding limited access highway capacity in critically congested corridors. *Waterborne* • Develop high speed ferry services that interface with other passenger transportation systems • Establish a statewide policy for maritime passenger services addressing all Connecticut ports *Bicycle/Pedestrian* • Adopt a policy of providing improved bicycle and pedestrian features with highway and other improvements • Require development of regional bicycle and pedestrian plans • Provide for the implementation of regional plans • Identify and remedy bicycle storage deficiencies on the Strategic Transportation Network.	• Aging highway infrastructure • Impact of incidents on traffic flow • Shared use of roadways by trucks and passenger vehicles *Waterborne* • Desire of some ferry operators to locate terminal facilities near open water, away from other passenger transportation systems • Uncertainty on State's role in a wide range of service characteristics and operating arrangements *Bicycle/Pedestrian* • Inadequate perception of potential for shifting trips from automobile to bicycling and walking • Inadequate knowledge of modern bicycle and pedestrian design guidance

Discussion

Highway congestion is endemic throughout Connecticut but is particularly acute in the southwestern portion of the State. As congestion increases in southwestern Connecticut and the major global connections move west of the Hudson River, this corridor will not offer the level of access to the economic activities and hubs necessary to support Connecticut's institutions, businesses and people.[i] The increased congestion in the Connecticut is mirrored throughout the country. Employers increasingly see long commutes on congested roads as threats to productivity. Congestion also contributes to poor air quality throughout the State.[ii]

Significant increase in highway capacity in Connecticut would be expensive, would have negative environmental impacts and would likely encounter strong public opposition. Adding highway capacity also induces additional traffic, as people take longer or additional automobile trips and new development occurs in locations made more accessible by the additional capacity. Notwithstanding these undesirable effects, total

vehicle-miles traveled (VMT) in the state continue to increase, primarily as a result of longer trip lengths (rather than growth in population or automobiles per capita), to the extent where some additional highway capacity may be warranted in the long term.

By contrast, public transportation (rail, bus, airborne and waterborne) and non-motorized transportation (bicycling and walking) not only provide relief to congested highways, but also reduce the negative impact of congested highway traffic on both air quality and safety. In the traditional framework of transportation finance, these three very substantial benefits (what is technically called 'consumer surplus', the reduction in emission of air pollutants, and improved safety) are not 'monetized', contributing to a perception that public transportation does not 'pay its own way'. But these benefits are important components of quality of life. Modern economic assessments[iii] of transportation projects almost universally consider them, and the formulation of a transportation strategy for Connecticut should do so as well.

Public transportation also contributes to the economy; it has been found to create savings to business operations and to increase business sales, household incomes and tax revenues.[iv]

If safe, efficient, convenient and integrated alternative modes of transportation were more universally available, there would be considerable potential to divert passenger travel from the automobile. The opportunity to develop the following alternative modes of transportation exists in Connecticut:

- Rail lines extend throughout the State. They are not being utilized to the extent of their capacity, and are in urgent need of significant capital investment.

- In terms of return from the farebox, Connecticut's local public bus systems compare favorably to their peers, suggesting that there is potential for increased ridership.

- Southern Connecticut has a potential air passenger market that would appear to support a secondary airport if it had an airport with a runway sufficient for regional jets. The State is continuing to evaluate this potential.

- The proximity of Long Island Sound offers the possibility of the development of additional high-speed ferry operations.

- Particularly in more densely populated areas, the closeness of the origins and destinations of many trips suggests that there is considerable potential for increased travel by bicycle and on foot. This potential can be realized to some extent even in newer, less dense developments, provided that design guidelines for pedestrian- and bicycle-friendly environments are followed.

Initiatives/Recommendations

The Working Group recognizes the broad strategies that have been advanced for addressing the mobility problem[v]: providing more travel options; adding capacity; improving efficiency, and managing demand. None of these strategies will by itself attain the state's goal; a significant investment will be required on each strategy:

- *More Travel Options:* Connecticut's travelers need an improved framework of statewide surface transit and waterborne passenger services, and a structure that will strengthen and encourage local transit services and non-motorized transportation. Sections A (Statewide Public Transportation), B (Commuter and Intercity Rail), C (Bus Transit), F (Waterborne), and H (Pedestrian and Bicycle Facilities) address these options.

- *Adding Capacity*: In some corridors, a strategic improvement to the State's highway system should be considered. These strategies are addressed in Section D (Highways).

- *Improving Efficiency:* Statewide benefits could be achieved by implementation of a variety of Transportation System Management (TSM) techniques; these are also discussed in Section D.

- *Managing Travel Demand*: A large number of Transportation Demand Management (TDM) techniques are applicable in Connecticut. These are discussed in Section E (Transportation Demand Management).

A. STATEWIDE PUBLIC TRANSPORTATION

Issues/Problems

Connecticut needs a more comprehensive statewide approach to providing and financing public transportation. Existing services are disjointed and uncoordinated, and many of the State's municipalities fall outside the boundaries of established transit districts or service areas. In terms of total financial support, public transportation does not receive full 'credit' for the important contribution to the state's welfare that it makes.

Initiatives/Recommendations

Statewide Strategic Surface Public Transportation Network

The state should be served by an integrated network of surface public transportation services (Strategic Transportation Network, STN) by appropriate modes (rail or bus) as discussed below and in Sections B and C. Rail services should form the backbone of strategic links in the Coastal Corridor and I-91 TIAs, and should be used or reserved for future use in that role in the Southeast Corridor TIA. Highway services would employ highway motor coaches or similar vehicles offering a high level of comfort, at fares similar to commuter rail. The statewide Deduct-A-Ride program would apply to the entire STN.

The Strategic Transportation Network's services should:

- Have timetables showing all services between the stations;
- Have a single visual identity as far as the traveling public is concerned;
- Have a consistent universal fare structure and at least one common form of convenient, universal fare payment;
- Have coordinated service schedules allowing most passengers a single-seat ride from a convenient station, minimizing the number of changes of vehicle required, and minimizing the waiting times required to change vehicles;
- Be operated at or better than a 'basic express' level of service. The 'basic express' services would:

  a) Provide five to ten weekday trips in each direction along each route, including two to four in each direction in peak hours and at least one early morning, mid-day, and late evening trip.

  b) Where not provided by commuter rail, be routed on uncongested freeways and major arterials, with stops limited so as to attain average operating speeds of 40-50 mph end-to-end.

Strategic Transportation Network service should initially be established on at least the following routes, with service requiring the minimum number of passengers to change vehicles:

- New York-New Haven;
- Danbury Branch Line Hub (see Section D) – Danbury (continued service on the Danbury branch line could be expanded to 'basic express' or operate as a combined rail/bus service as an alternative);
- Danbury-New Milford (until or unless local BRT or commuter rail is introduced);
- Waterbury Branch Line Hub – Waterbury (continued service on the Waterbury branch line could be expanded to 'basic express' or operate as a combined rail/bus service as an alternative);
- New Haven-Springfield, MA via Hartford (see Section D);
- Waterbury – Danbury;
- Waterbury – Hartford (possibly via Hartford-New Britain BRT when constructed; connecting with New Haven-Hartford-Springfield rail at Hartford);
- Hartford – Norwich (via Manchester BRT if constructed);
- Norwich – New London;
- Norwich – Worcester, MA;
- New London – Rhode Island (provide a connection to planned RIDOT service to Kingston or Westerly until commuter rail is introduced); and
- New Haven – New London (continued Shore Line East service could be expanded to 'basic express' or operate as a combined rail/bus service as an alternative).

Marketing and Customer Information

- Develop a comprehensive statewide marketing campaign for both the STN services and for local transit service, taking advantage of the national efforts to enhance the public perception of public transportation.

- Implement a statewide transit Automatic Traveler's Information System (ATIS) covering both the STN (bus and rail) and local transit services. The ATIS would offer real-time schedule status and transit travel planning information to customers and information service providers (ISPs).

B. COMMUTER AND INTERCITY RAIL

Issues/Problems

There are 575 route-miles of railroad track in Connecticut owned by eleven separate entities. Passenger rail service over this patchwork of ownership is provided by three entities. Pursuant to a contract among ConnDOT, New York State's Metropolitan Transportation Authority (MTA) and the Metro North Commuter Railroad, Metro North provides service on the New Haven main line between New York City's Grand Central Terminal (GCT) and New Haven and over the three branch lines: the New Canaan branch, the Danbury branch and the Waterbury branch. Under contract with ConnDOT, Amtrak operates the Shore Line East service east of New Haven over the trackage it owns with two trains a day each way west of New Haven. Amtrak also provides intercity service between New York and Boston via New London and between New York and Springfield via Hartford, using ConnDOT trackage west of New Haven and its own trackage north and east of New Haven.

Commuter service over the former New York, New Haven and Hartford (NYNH&H) line has long been a vital transportation amenity in the State. Traditionally this link has primarily provided access by residents of southwestern Connecticut to jobs in New York City, but increasingly it is being used both by so-called reverse commuters, New York residents who work in Connecticut, and by intra-state Connecticut commuters. Overall, ridership has increased by 41 percent since 1984 and by nearly 100 percent since 1970, and reverse and intra-state commutes were up 47 percent between 1995 and 2000.[vi] This increase in ridership has resulted in a shortage of seats, but until very recently no new rail cars have been added to the fleet used to service the New Haven line in almost a decade[vii]. The bulk of the passenger cars owned by ConnDOT and used on the New Haven line are M-2 type electric multiple unit (EMU) railcars and are nearly 30 years old, which is past their anticipated useful life.

During peak hours, frequent service in the peak direction is offered on the main line and through service is offered to and from GCT on the New Canaan and Danbury branch lines. During off-peak hours, existing stops between New Haven and Stamford is hourly and between Stamford and New York is half-hourly. Several trains to and from GCT originate or terminate in Bridgeport. Service on the Danbury and Waterbury branches is provided by diesel trains (including the through trains on the Danbury branch). On weekdays, there are ten trains in each direction on the Danbury branch, seven of which require a connection at South Norwalk, and there are six trains in each direction on the Waterbury branch, all of which require a connection at Bridgeport.

Initiatives/Recommendations

Order New Rail Cars Immediately

- In light of the lengthy time required for specification, manufacture and delivery, first priority must be given to ordering the new equipment necessary both: (i) to maintain

the existing level and maintain reliability of service; and (ii) to increase service as recommended herein to achieve the State's congestion mitigation goals. The equipment needed should be based on realistic projections of growth in ridership in existing service and anticipate increased service.[viii]

Infrastructure

- To maintain and store the new equipment and overhaul the existing M-2 fleet, the site selection, acquisition, design and construction of needed new storage and maintenance facilities should begin as soon as possible, as these facilities must be completed before delivery of new equipment.

- Take steps to facilitate through operation of electric rail equipment (EMUs or locomotive-hauled consists) east and west of New Haven, especially if service is introduced between Penn Station and New Haven Line points.

- With the objective of preserving long-term options for passenger rail service, a determination should be made of the Amtrak assets that the State might wish to acquire if they became available.

Stations

- Review commutation and residency patterns to determine what additional parking and other access facilities at rail stations will be needed to meet demand, both existing and anticipated as the new services recommended below are brought on line. On the basis of this review, devise a strategy to construct the additional facilities needed, and to offer consistent access and pricing to all motorists using parking facilities. To make travel by rail more attractive and to reduce travel by road, parking should be provided at stations convenient to rail commuters' places of origin. Station access facilities should accommodate access modes other than automobiles, including bus, jitney, walking and bicycling.

- Develop a strategy should to ensure the availability of shuttles or taxis in coordination with the arrival and departure times of trains throughout the day (not just at peak commuter hours) at the principal railroad station in each town served by commuter rail.

Expanded Service

- Provide new rail service in the New Haven-Hartford-Springfield corridor as part of the Strategic Transportation Network. The service should provide connections to and from the Bradley Airport.

- To make the railroad a more attractive alternative to the automobile, reduce passenger waiting times by offering more frequent service on the New Haven main line.

- Provide commuter rail service over the Hell Gate Bridge line linking the New Haven Line with New York's Penn Station, with intermediate stops to facilitate reverse commuting and access to/from LaGuardia Airport.

- Extend commuter rail service east of New Haven to meet planned commuter rail service provided by Rhode Island south of Providence, allowing through travel between New Haven and Providence at fares typical of commuter rail. Initial stages of the New London-Rhode Island link might be appropriate for bus service, as discussed in Section A.

- The Funding and Finance Working Group should examine the consistency of the fare structure of present rail services and should recommend a consistent policy for the STN services.

- Develop new commuter rail service to turnback points (Branch Line Hubs) on the Danbury and Waterbury branch lines served by electric trains operating through from New York with zoned express and local service, thereby providing a one-seat train ride to/from New York without contributing to highway congestion near I-95 while requiring a relatively moderate investment in branch line track and electrification. The Branch Line Hubs would be located sufficiently north of the main line to: 1) provide convenient 'interceptor' park-and-ride capacity for travelers accessing them via the Merritt and Wilbur Cross Parkways; and 2) bypass local highway congestion on north-south roads. Regular direct service between the Branch Line Hubs and New York would be provided throughout the day, permitting convenient non-work and 'reverse commute' travel opportunities. Peak period through train operation between New York and outlying branch line points would continue to be offered by dual-mode trains operating as diesels north of the Branch Line Hubs. Connecting diesel multiple unit (DMU) trains and/or highway coaches would provide off-peak services north of the 'branch line hubs'. The Branch Line Hubs would form key nodes in the Strategic Transportation Network.

- Improve service on the Danbury branch line between the 'branch line hub' (e.g. Wilton) and New Milford in stages to provide travel times and convenience similar to that contemplated by the Route 7 Travel Options Implementation Plan. Initial stages of the Danbury-New Milford link might be appropriate for bus service, as discussed in Section C.

- To encourage intrastate commutation to Greenwich by rail, operate more trains from and to east of Stamford to and from Greenwich without requiring a change in Stamford. To facilitate turning trains at Greenwich, interlocking modifications west of Greenwich station and/or platform modifications at Greenwich should be considered.

- Encourage development of through rail services across traditional service boundaries. An example is the recent extension of Shore Line East express service to Bridgeport and Stamford.

C. BUS TRANSIT

Issues/Problems

Buses provide local public transportation services in urban areas across the state, and service on intercity routes, most of which originate or terminate at points outside the state (primarily Springfield and Boston, MA; Providence, RI; and New York City). Coordination between these classes of service, and between these bus services and the state's rail services, is not achieved to a significant extent, with the result that:

- Convenient connections for intra-state public transportation between many of the state's urban areas are not available;
- 'Door-to-door' travels times between locations which are served are very long when compared to automobile travel; and
- Opportunities to exploit the advantages of both rail services' freedom from highway congestion, and bus services' lower operating costs for lower travel volumes, are lost.

Approximately 70% of Connecticut's person-miles traveled by local public transportation are concentrated in and towards the Coastal Corridor TIA, and most of this share is carried by commuter rail. In the remainder of the state, local transit systems rely on buses; roughly 0.6% of person-miles outside the Coastal Corridor are carried by local urban bus systems.

In all the urban areas where they are available, local bus services provide an important service to persons who do not have access to automobiles, and in both the Hartford and New York metropolitan areas offer auto-competitive services to and from some destinations. Because they move on the same congested highways as other traffic and make three to six local stops per mile, their average speed in service usually only ranges between eight and 14 mph. To attract more riders and relieve highway congestion, the state's transit systems must offer both improved local transportation and an effective statewide network of express transit services.

Notwithstanding their limitations, the Connecticut's local bus systems are generally superior to their peers of similar size elsewhere in New England in terms of their average return of operating costs from the farebox, with some districts returning over 40 percent, compared with an industry average of 35 percent.[ix] Farebox recovery ratios exhibit a fairly wide range but are generally higher for larger urban areas. This suggests that uniform statewide standards for service and for financial performance may not be appropriate.

Although buses are a major provider of public transit in Connecticut, funding for bus transit has remained relatively flat, over time preventing the state's bus systems from increasing market share and from contributing more to the reduction of congestion and air pollution. Funding limitations have also caused inequities in local transit fares across the state. The lack of longer-distance regional transit links, against a trend towards longer journeys to work, is another lost opportunity. Connecticut should widen its focus from

local services, and should invest new resources in both operating and capital for both local and regional bus operations.

Funding and investment decisions for transit should not be looked at solely in terms of traditional farebox ratios and absolute subsidy levels. The true economic value of these services to the state should be accounted for, including factors such as: consumer surplus, delay savings to highway users, and reductions in emissions of air pollutants.

Initiatives/Recommendations

Governance of Local Bus Services

- Develop service standards (*e.g.*, frequency, service coverage) for local transit systems, tailored as appropriate to the nature and size of each metropolitan area, incorporating recommendations for local bus service contained in the "Connecticut DOT's Statewide Bus System Study" (July 2000). The service standards should also address standards for services for the elderly and the disabled and should provide guidelines for the provision of Saturday and Sunday service.

- As a basis for allocating operating support, develop financial performance standards for local transit services, appropriate to the size and nature of each.

- Implement a program to support the development of new local bus services to coordinate with the STN and ferry schedules to provide service to area attractions, off-network communities, commuter parking lots and (as recommended in Section B) commuter rail stations.

Marketing and Customer Information

- Improve local buses' image by making buses more attractive and user-friendly.

Miscellaneous

- Encourage local transit operations to use cleaner fuels.

D. HIGHWAYS

Issues/Problems

Congestion on Connecticut's roads affects the movement of people. Where they can reach their destinations only by road, people are trapped in the congested conditions found there and can only contribute to that congestion when traveling. But where choices exist, some will choose another mode of travel and in so doing will avoid contributing to congestion on our highways. Development of alternatives to single-occupancy vehicles (SOVs) must be a priority. Nonetheless, the automobile will remain the dominant mode by which people travel in Connecticut, even as alternative modes are developed.

Most importantly, the highway system, including local roads, must be maintained in a state of good repair.

The design standards of the State's older highways contribute to the inefficient movement of vehicles and gives rise to public safety concerns. Many of the Connecticut's roadways were built neither to handle the volume of traffic that currently exists nor to accommodate the types of travel common today. Engineering designed to improve system efficiency such as intersection improvements, coordinated traffic signal operation, turning lanes and emergency shoulders are important elements to facilitating traffic flow and enhancing safety.

Facilitating economic growth is a major goal of this plan, but growth that is located and developed so as to depend on motor vehicles could be counter-productive to that goal. Moreover, added volume on highways that are already congested, contributes both to a degradation of quality of life and to the State's air quality problems.

Initiatives/Recommendations

Roadway Improvements (Adding Capacity)

- Undertake a strategic examination of the ability to provide additional limited access highway capacity in the corridors expected to be critically deficient in the long term, even when allowing for improved alternatives, TSM, and TDM:

  a) New York state line to greater Hartford, via I-95/I-91, I-84, or some combination thereof;
  b) Greater Hartford to Massachusetts state line via I-91;
  c) Greater Hartford to Tolland via I-84;
  d) Greater Hartford to Providence (US Route 6 corridor); and
  e) State route 11 between Hartford and New London.

  The strategic examination should establish:

a) the extent of economic growth likely to be lost to other states by not providing additional highway capacity in each corridor, after taking into consideration all reasonable alternatives;
b) the total economic costs of congestion expected in the corridor if additional capacity is not provided;
c) the ability of, and the benefits associated with, providing capacity increases dedicated to personal vehicles or trucks;
d) the environmental impacts of achieving the improvements;
e) the impact on communities through which the highway passes, including changes in local road traffic and level of service; and
f) the impact of additional capacity on roadways in adjacent regions and on the transportation system as a whole.

- Undertake other road capacity expansion projects only after a comprehensive review that takes into consideration, at a minimum, the following factors: environmental impact; all reasonable alternatives and options; impact on community character; impact on roadways in adjacent regions, even if those adjacent regions are located outside Connecticut; and impact of the proposed project on the transportation system as a whole.

- The recently-funded study of the capacity and feasibility of widening Route I-95 east from New Haven to the Rhode Island state line should consider: the environmental and sprawl impact of any widening; the additional traffic that would be induced on Route I-95 west of New Haven; and the relative value of increasing capacity in this corridor versus the deficient corridors identified above.

Transportation Systems Management Strategies

Transportation Systems Management (TSM) is a strategy designed to maximize the efficiency of existing highway capacity through various operational and administrative mechanisms and enhance safety. A variety of TSM strategies have been implemented within Connecticut including incident management teams, construction management programs and highway advisory radio. Few of these strategies, however, have been implemented consistently throughout the State and, as a result, the benefits are fragmented.

Following a study of existing systems, the following TSM strategies should be implemented (on a permanent or pilot basis) **where appropriate, feasible and not already in place,** and appropriate benchmark data should be established:

- Entrance closures or entrance ramp metering to manage mainline flow and to discourage local travel on limited access highways, but only in conjunction with action to alleviate the added burden on local roads.

- Traffic signal improvements, including coordinated control systems.

- ConnDOT's statewide Intelligent Transportation Systems (ITS) initiative.
- Incident management programs to clear accidents quickly from roadways.
- Construction management practices that minimize the impact on traffic flow.
- Enhanced traffic enforcement.
- Variable message signs (VMS) and highway advisory radio (HAR) to alert motorists to problems in time for them to alter their routes.
- Dedicated high occupancy vehicle (HOV) lanes, or HOV priority features such as queue-jumpers at specific points.

E. TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Issues/Problems

Transportation Demand Management (TDM) strategies are intended to encourage commuters to modify their travel patterns and behavior in such a way as to reduce single-occupant vehicle traffic and, by extension, traffic congestion. TDM strategies include the support and encouragement of: the use of alternative travel modes (transit, carpooling, vanpooling, bicycling, and walking); rescheduling of travel to avoid congestion (compressed work weeks and staggered work hours); and substitutes for travel (telecommuting). All of these are currently in place to one degree or another in Connecticut, and should be further encouraged.

A potentially effective TDM measure that is not currently in place anywhere in the State is *value pricing.* Referred to in some sources as either 'congestion pricing' or 'lane use management', the underlying principle is to monetize and capture the 'consumer surplus' benefit of decreased travel times.

Initiatives/Recommendations

- Evaluate the institution of a Value Pricing pilot program on one or more existing limited access highways in the State.

- Consider expanding existing employer trip reduction tax credit to a statewide basis, and extending it to smaller employers.

- Increased marketing of TDM programs and the Deduct-a-Ride program.

- Provide additional support to the State's commute management organizations to:

  a) Develop "commuter connections" with guaranteed rides between transportation hubs, residential areas and employment centers.

  b) Continue promoting and supporting employer-based TDM programs at major employment centers, and continue to expand TDM programs to smaller employers where appropriate.

  c) Increase availability of commuter information and services (*e.g.*, parking availability, transit ticket purchases) on the Internet through consolidation and coordination of existing transportation web sites and improved user utility.

  d) Coordinate marketing of transportation alternatives under a single brand identity (while allowing for local customization by transportation organizations).

F. WATERBORNE

Issues/Problems

The state has funded a comprehensive study to explore utilizing Connecticut's waterway system further to expand its potential for movement of people. Long Island Sound has unlimited capacity for moving vessels between ports on each side; there are existing ferry services between Bridgeport and Port Jefferson and between New London and eastern Long Island, Block Island, and Fishers Island. A privately owned high-speed ferry is currently operating between New London and Orient Point, utilizing its own piers. Several private ferry operators have indicated an interest in providing service on high speed ferries on western Long Island Sound. Although there are land access and parking issues, this service would require no operating subsidy and modest capital investment from the State.

Initiatives/Recommendations

Develop a statewide maritime policy including a definition of the role of conventional and high-speed ferry services in the provision of passenger and vehicle transportation. The policy would determine required infrastructure improvements (*e.g.*, dredging, bulkheading, and passenger facilities) at Long Island Sound ports so that ferry operations would be able to divert more highway traffic and be able to interface better with land-based transportation modes.

- Develop public landside passenger facilities at Stamford to support the earliest practicable implementation of privately operated high-speed ferry service between Stamford and points in New York.

- Depending on the recommendations of the statewide maritime policy, support the introduction or expansion of intra-state or interstate high-speed and conventional ferry service out of New London, New Haven, and Bridgeport.

- Provide assistance to ferry operators by: including them in statewide marketing and ATIS efforts for the STN services (bus and rail); coordinating operations with the strategic services, and facilitating cooperation with New York State agencies.

G. AIRBORNE

Issues/Problems

Commercial air service is available from three airports in Connecticut. Its largest and only international airport is Bradley International Airport (BDL), located in Windsor Locks in the north-central part of the State. Extremely limited short-range commercial service is available from Tweed-New Haven and New London airports. Commercial service is also available from Westchester County Airport, which is located immediately adjacent to the southwestern border of the State. A significant fraction of the persons who live and work in Connecticut rely on New York area airports, Providence (T.F. Green) and/or Boston (Logan) airports to meet their commercial air travel needs, thereby contributing to highway congestion.

Expanded commercial air travel opportunities would benefit Connecticut's economy. Moreover, the consensus in the industry is that the air travel market will triple over the next 20 years and that much of the growth will come from more frequent point-to-point flights, rather than through big hubs.[x] A significant market for expanded commercial air travel may already exist in the southern tier of the State. A significant population in the State's southeast is not within easy reach of air transportation.

Tweed-New Haven seems best positioned to capitalize both on the existing market and industry trends. There are three airports along the State's coast; expansion of each of them faces environmental constraints, but those facing Tweed-New Haven seem the most manageable. It benefits from its central position and the road and rail connections that can be made there. Of the three coastal airports, it is the most distant from competing airports outside the State, Westchester and T.F. Green in Providence.

Initiatives/Recommendations

- Support development of a regional (secondary) commercial airport in southern Connecticut, able to attract regional passenger air carriers serving destinations up to 1,000 miles away. Based on market information and input from the DEP to date, Tweed-New Haven appears to be the most feasible site for such an airport. The state should immediately assess the commercial and environmental feasibility of Tweed's Master Plan, and if feasible, begin to resolve any impediments or obstacles to its development. If Tweed is not feasible, alternative sites should be considered.

- Develop a statewide airport strategic plan addressing the roles of all airports, including those owned by the state, municipalities and private interests.

- Support the continued growth and development of Bradley International Airport. This support should include:

a) Resources to make necessary improvements to achieve the Bradley Board of Directors' strategic and tactical goals, including landside transportation elements of the Bradley International Airport Area Transportation Study, to the extent not inconsistent with the statewide transportation strategy developed by the Transportation Strategy Board; and

b) Provision of direct non-stop public transportation linkage between Strategic Transportation Network services and Bradley airport .

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- Improve access by means other than single-occupancy vehicles to all airports used by Connecticut residents, including those outside the State, *e.g.*, by encouraging high-speed ferry service from southwestern Connecticut to LaGuardia Airport or local transit route extensions.

- Expand the State Airport Master Plan to include private and municipally owned airports, and update it more regularly.

H. PEDESTRIAN AND BICYCLE FACILITIES

Issues/Problems

With the adoption of the federal *Intermodal Surface Transportation Efficiency Act of 1991* (ISTEA), Congress recognized that bicycling and walking should be integral parts of a multi-modal approach to transportation and made funding available for bicycle and pedestrian facilities. This support continues in the *Transportation Equity Act of the 21st Century* (TEA-21).

Connecticut should increase its efforts to improve conditions for cyclists and pedestrians. However, ConnDOT acknowledges that bicycle and pedestrian trips in Connecticut have been below the national average and that a significant number of trips could be diverted from the automobile.[xi] According to the "journey to work" data from the 2000 census, bike commuting has increased by nearly 9% nationally, by 62.5% in New York and by 97% in New Jersey, while in Connecticut the increase was only 1.1%.[xii]

The close proximity in many parts of Connecticut of residential areas, businesses and shopping areas and recreational facilities makes bicycling and walking viable travel options. Although both are short-range transportation choices, when used in conjunction with public transit or rideshare lots, the range can be much greater. The use of both modes can be significantly facilitated in new developments by the application of guidelines for pedestrian and bicycle accessibility.

Initiatives/Recommendations

- The cost of developing bicycle and pedestrian facilities is low as compared with the cost of developing road or rail facilities. A cost-efficient way to integrate bicycling and walking into the transportation infrastructure would be for ConnDOT, in respect of state roads, and MPOs, in respect of county and local roads that are part of regional Transportation Improvement Projects, routinely to include bicycle/pedestrian improvements in all projects involving such roads. The U.S. Department of Transportation has adopted a policy statement to this effect which is designed for adoption at the state and local levels, and this policy statement should be both adopted and followed by ConnDOT and MPOs throughout the State.

- Each regional planning agency in the State should develop and adopt a Bicycle and Pedestrian Plan for its region.

- Support should be provided for bicycle and pedestrian facilities, particularly:

  a) greenway projects incorporating multi-use paths where such greenways extend through well-traveled transportation corridors.

  b) access routes to/from key nodes of the STN.

- Develop and adopt national guidance on pedestrian and bicycle accessibility for new developments, and encourage its dissemination through the MPOs.

- Construct sidewalks, implement traffic calming projects and provide other facilities meeting the pedestrian accessibility guidelines.

- Identify existing bicycle storage deficiencies at existing points on the STN.

- Remedy bicycle storage deficiencies and provide other facilities meeting the bicycle accessibility guidelines.

- Equip buses and commuter trains for the carriage of bicycles.

I. GOVERNANCE OF PUBLIC TRANSPORTATION

The Working Group on Movement of People recognizes that the Working Groups on Funding and Finance, and the Working Group on Land Use, have primary responsibility for the development of recommendations in these areas. Addressing some of the challenges of improving Connecticut's public transportation will, in the opinion of the committee, require coordination between Working Groups to develop the best recommendations. From the perspective of the Working Group on Movement of People, for example, the following recommendations would appear to be an appropriate starting point for such cooperation:

- Establishment and operation of the Strategic Transportation Network (STN) services described above in Section A should be provided with a dedicated and stable source of funding on an ongoing basis. Consideration should be given to relating the funding to a full economic assessment of the total benefits of public transportation to the State.

- Responsibility for planning, managing, and financing STN services should be vested in a distinct State entity (for the purposes of further discussion in this section, the 'Network Services Entity) with appropriate powers.

- The Network Services Entity should be charged with identifying and resolving issues arising under the existing service agreement among ConnDOT, the MTA, an Metro-North that impede improved, enhances, or more cost-effective commuter rail service.

- The State should implement a framework for the provision of local public transportation service that includes all the State's municipalities, regardless of whether such service is presently operated in them.

- The study should determine the optimal governance arrangement for local transit services in the state, as may be most appropriate to:

  a) Improve planning efficiency
  b) Assure that the service standards can be maintained;
  c) Attain desired values of financial performance standards;
  d) Assure effective coordination with regional rail and bus services (e.g. STN services); and
  e) Assure that there is an effective framework for making major local transit improvements such as light rail transit (LRT) or bus rapid transit (BRT) in the State's metropolitan areas.

- The State should conduct a study of best public transportation management practices to determine whether the Network Services Entity would be the most appropriate for this role, or a more distributed form such as transit districts. Notwithstanding its ultimate form, the framework should provide for:

a) Setting standards for both service and financial performance that are appropriate for specific metropolitan areas or municipalities; and

b) Establishing clear understanding of responsibilities and expectations for presently unserved communities desiring to initiate service.

- Present land use and development trends are leading to both longer trips and to more trips to and from points that are hard to reach by public transportation. In coordination with the initiatives of the Land Use Working Group, commuter rail, local and inter-regional bus services, ferry service, bicycle facilities, and pedestrian connections should be used in combination to link housing, employment, retail, and transportation centers to encourage use of public transportation.

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[i] *Michael Gallis & Associates, Report to the Connecticut Regional Institute for the 21st Century (1999), p. 12.*

[ii] *As reported in Greenwich Time, May 2,2002, p. 1, the American Lung Association assigned a failing grade for ozone pollution to all of the six Connecticut counties that it tested in its report "State of the Air: 2002". Fairfield County is a "severe non-attainment area" in terms of air quality generally.*

[iii] Highway Research Board, *Special Report 92: Evaluation of Mutually Exclusive Design Projects*, 1967; Department for Transport, Local Government and the Regions (UK), *Multi-Criteria Analysis: A Manual*, February 2001.

[iv] *Cambridge Systematics, Inc., Public Transportation and the Nation's Economy (October 1999).*

[v] Texas Transportation Institute, *2002 Urban Mobility Study*, 2002.

[vi] *ConnDOT, Analysis of the Amended and Restated Service Agreement for the Operation and Subsidization of the New Haven Rail Line (May 2001).*

[vii] As of June, 2002, ten new cars and four locomotives had been delivered to ConnDOT.

[viii] *Ibid., pp. 25–6; Wilbur Smith Associates, Vision 2020: Congestion Mitigation Study, Task 3: Existing Conditions Technical memorandum (January 25, 2002), p. 4-22; ConnDOT, Southwest Corridor Report: Year Four (January 2002), pp. 13-5.*

[ix] *APTA Transit Fact Book (1999); ConnDOT, Connecticut Statewide Bus System Study (July 2000), Executive Summary.*

[x] *"Towards the Wild Blue Yonder", The Economist, April 27, 2002, p. 67.*

[xi] *ConnDOT, Master Transportation Plan, p. III-113.*

[xii] *"New Jersey, New York Leaders in U.S. Bike Commute Boom", Mobilizing the Region (Tri-State Transportation Campaign), issue 360, April 8, 2002.*

Appendix K

Movement of Goods Work Group
Final Report

Working Group on the Movement of Goods

Final Report & Recommendations to the TSB

October 2002

Connecticut Transportation Strategy Board
Draft Report of the Working Group on Movement of Goods

GOAL: To improve the mobility of goods within and through Connecticut.

OBJECTIVES	**CHALLENGES**
Air • Develop a continuing coordination process for Bradley International Airport (BDL), including communities and state agencies. • Support a more aggressive and pro-active marketing program for air cargo services out of BDL. • Develop and implement a long-term program to provide adequate truck access to and around BDL. • Establish a process to permit pre-planning and pre-permitting of facilities at BDL. • Examine and define the air cargo role (if any) for any regional airports which may be expanded.	*Air* • BDL is losing air cargo market share to competitors (Logan, JFK) • Potential shippers look at ground access and at the time required to develop landside facilities. • Interest in, and limitations on, airport expansion in southern Connecticut
Rail • Reconstruction projects should upgrade railroad and clearances to modern standards • Designate a primary statewide network to be brought up to modern standards • Provide direct rail access to any feeder barge services introduced as part of the waterborne freight system. • Provide the State's regional railroads improved access over the New Haven Line to NYC and Long Island. • Encourage CSX to market rail services via the State's regional railroads. • Support the proposed New York Harbor Rail Freight Tunnel.	*Rail* • Rail freight has a low market share of total freight movement in and out of Connecticut • Much of the state's freight railroad infrastructure is below modern vertical clearance and load-carrying standards (22 feet and 315,000 pounds) • Rail freight access to the west and south is limited

Highway	*Highway*
• Expand and enhance the State's Incident Management (IM) capabilities, bringing them to a uniform level across the State. • Complete the development of the State's Freeway Traffic management System (FTMS) to a high performance standard for all limited-access highways in the State. • Continue the development of the State's Commercial Vehicle Information Systems and Networks (CVISN) framework. • Increase the supply of safe roadside rest areas for trucks, and provide signage indicating its availability. • Expand coverage of the Connecticut Highway Assistance Motorist Patrols (CHAMP) to I-84 between Hartford and the New York line. • Complete the widening of I-84 to three lanes in each direction west of Hartford to the New York state line. • Complete the Route 6 Expressway and I-384 to the Rhode Island state line. • Determine the effectiveness of ramp metering on the most congested sections of I-95, and implement it where it would be effective. • Provide supplemental limited access highway capacity between I-91 and the New York state line to relieve congestion on I-95 and I-84. Where capacity is added to I-95, consider using an elevated highway over the existing roadway where horizontal widening in not feasible. • Provide additional limited access highway capacity between I-95 and I-84 in the US Route 7 corridor and on I-95 east of New Haven.	• The most congested limited access highway sections in the state (4 hours or more of congestion in each direction per day) affect over 20 percent of the state's truck-miles. • By 2020, more than 40 percent of the state's truck-miles are expected to occur in this level of congestion or worse. • Connecticut does not have enough safe truck rest areas for present or future needs. • Many motorists are concerned about sharing congested highways with heavy flows of truck traffic.

Waterborne • Support development of a container feeder barge service between the Port of New York and New Jersey (PONYNJ) and Bridgeport or New Haven. • Complete and implement a long-term plan for dredging Long Island Sound ports that provides capacity for both maintenance dredging and improvements at Connecticut's deepwater ports. • Prepare a deepwater port master plan for the state, resulting in appropriate improvements for each port to attain long-term growth.	*Waterborne* • Most of the waterborne cargo to/from Connecticut (and much of the rest of New England) comes via the PONYNJ, and moves by truck over some of the state's most congested roads. • Long-term growth of the state's three deepwater ports (Bridgeport, New London, and New Haven) is hampered by uncertainties regarding dredging, market niches, and landside facilities.

A. AIRPORT CARGO SYSTEM

Issues/Problems

Bradley International Airport

Bradley International Airport (BDL) is the primary air cargo airport in Connecticut, handling 90 percent of the state's air cargo. In terms of air freight tonnage, Bradley is ranked 33rd largest in the U.S., and 48th largest in passenger enplanements. Prior to September 2001, passenger traffic at Bradley was growing at an annual rate of 14 to 15 percent, while air cargo growth at BDL was flat versus national and global trends in the range of 8-10 percent; this means that Bradley has been losing market share against its competitors. The Bradley Board of Directors' draft Strategic and Tactical goals of April 18, 2002, established a goal of exceeding the national air freight growth rate at BDL, and supported the use of Bradley as a major freight hub.

Regional Airports

In addition to Bradley Airport, the Bureau of Aviation and Ports of the Connecticut DOT owns five regional airports. These include the Hartford-Brainard Airport, Groton-New London Airport, Waterbury-Oxford Airport, Windham Airport, and Danielson Airport. There are also four municipally owned regional airports in the state: Danbury Municipal, Igor I. Sikorsky Memorial, Meriden Markham Municipal, and Tweed-New Haven. Connecticut's regional airports have a relatively small air cargo role. Unless some unforeseen event occurs in aviation design that would allow larger planes to land on short runways, or some of our regional airports are able to expand, this situation will likely not change.

Tweed New Haven Airport's recently approved Master Plan includes a proposed expansion that would provide jet passenger service to cities in the thousand-mile range. Passenger service of this range presents opportunities for increased cargo services, as cargo carriers often use the "bellies" of passenger planes to transport their commodities.

State Airport System Master Plan

The Connecticut DOT's Airport Master Plan will presumably identify whether a 'second airport' for southern Connecticut is appropriate. Because the ability to attract air freight operations requires an assurance of long-term accessibility by trucks, coordination with the highway mode is imperative.

Initiatives/Recommendations

To accomplish the goals for BDL, the Working Group recommends that:

- A continuing coordination process for Bradley Airport development be established among the Bureau of Aviation and Ports, Bureau of Policy and Planning, the Bradley

Airport Board of Directors, the Bureau of Engineering and Highways, the Bradley Development League, and other relevant agencies. The process should provide for monitoring progress on, and making updates to the Airport's strategic plan, and should include surrounding communities as envisioned in the Bradley Board's Strategic and Tactical Goals.

- The state support a more aggressive and pro-active marketing program--supported by an increased marketing budget--to promote Bradley Airport for air cargo operations, with the specific aims of attracting major transatlantic shipments and expanding the size of FedEx and UPS operations. This program should:

  a) Emphasize both BDL's advantages, such as low landing fees, and its competitors' shortcomings, such as Logan Airport's rejection of cargo flights and Kennedy Airport's ground access difficulties. Specific geographic areas and market sectors where BDL has a clear advantage over Logan or Kennedy should be targeted. Reasons identified in prior studies as obstacles to increased cargo use of BDL, include: limited international flight availability, early closeouts for outbound freight, lack of cold storage facilities, and limited federal inspection services other than U.S. Customs. A program to counter these obstacles should be implemented as part of the overall marketing program.

  b) Provide resources to continuously monitor and regularly assess the quantity of traffic moved, BDL's air cargo market share, and user satisfaction.

- Preparations should be made for increasing truck access to the airport beyond those now in the planning stages. A key issue for shippers' decisions to use Bradley Airport is confidence in the long-term adequacy of truck access to the airport's cargo facilities. A long-term program to provide highway capacity for truck access to and around the airport should be created to keep pace with Bradley air cargo growth, including cargo-related elements of the Bradley International Airport Area Transportation Study as well as the study undertaken by CRCOG. This program should include budgets and procedures for such preparatory steps as roadway right-of-way land banking.

- A process should be established to permit pre-planning and pre-permitting of facilities. The intent would be to allow private interests to initiate cargo development projects within six months of their requests.

With respect to regional airports, the Movement of Goods Working Group recommends that:

- If Tweed Airport is expanded, its air cargo role should be examined and re-evaluated. The Working Group does not foresee a need for a second air cargo facility of national or international scope in the state.

- If Tweed assumes an expanded role for air cargo in conjunction with an increase in passenger operations, consideration should be given to acquisition of this airport by the State of Connecticut.

- The state's Airport Master Plan should determine and specify any appropriate expansion in air cargo for the regional airports.

B. RAIL FREIGHT SYSTEM

Issues/Problems

The existing railroad freight infrastructure in the state should at a minimum be maintained at its present capacity. Opportunities to improve it in conjunction with other projects, and to increase its utilization, should be taken.

The state would benefit from higher-quality railroad links to the south and west. Ultimately, the state should have access to a high-quality direct freight route across the Hudson, with at least moderate capacity. A link of this nature would provide an opportunity to originate or terminate trailer or container (TOFC/COFC) trains in-state. This could both reduce rail transit times in and out of the state, and remove many truck-miles from the state's highways.

The water freight strategy recommended by the Working Group (in Section D) includes a recommendation to institute feeder barge access to the state from the Port of New York and New Jersey. Rail access to the Connecticut terminal would greatly enhance the potential for intermodal activity.

Initiatives/Recommendations

The Movement of Goods Working Group recommends that:

- All new or rehabilitated bridges over freight railroad mainlines constructed as part of highway improvements or other State-sponsored projects should be built to provide 22 feet vertical clearance.

- All mainline freight railroad reconstruction undertaken as part of highway improvements or other State-sponsored projects should accommodate 315,000 pound loads.

- The state should designate a network of primary rail routes in the state, and undertake a program established to bring them up to modern clearance (22 feet) and loading (315,000 pounds) standards. The network improvement should include selective upgrades to track class where the benefits (such as highway delays at crossings or delays to trains) would warrant.

- The State should provide incentives for industries adjacent to existing rail routes to originate or receive rail freight. This could take the form of grants or other assistance for the construction of new turnouts and industrial track, with the level of assistance related to the benefits to the State of the expected reduction in truck traffic.

- Direct railroad access to the Connecticut feeder barge terminal in Bridgeport or New Haven should be part of the designated primary railroad network.

- In the near term, a commercial structure should be developed that would provide the state's regional railroads (Housatonic, Connecticut Southern, Guilford, New England Central, and Providence & Worcester (P&W)) access over the New Haven Line at least to NYC and Long Island (e.g. to the New York & Atlantic Railroad). This would allow these carriers to continue to offer services that would take trucks off the highways. Such access to non-CSX trains is presently limited to carriage of crushed stone by the P&W.

- The state's Class 1 railroad, CSX, should be encouraged by the State of Connecticut to market rail services via the short lines and regionals, to keep shipments on rail as far into the state as possible.

- The State should support the proposed New York Harbor Rail Freight Tunnel. While there are capacity and clearance limitations on the Northeast Corridor, moderate capacity could be made available at night for general merchandise car types (excluding covered tri-levels), RoadRailer equipment, and single-level COFC. The tunnel would: permit a service using the existing Oak Point link to reach the Metro-North Hudson Line, would link New England directly with large intermodal hubs such as Atlanta and Tampa, and complement the infrastructure improvement recommendations of the Mid-Atlantic Rail Operations Study by the I-95 Corridor Coalition.

C. HIGHWAY FREIGHT SYSTEM

Issues/Problems

Role of Highways in Freight Transportation in Connecticut

Trucks operating on the State's highways account for the vast majority of all freight moved to, from, and within the State. In terms of total tons of freight originating in the state[1], trucks account for 79 percent, versus 2 percent for rail and just under 14 percent for waterborne. Air freight accounts for a small fraction of a percent, with the remainder of the originating tonnage (about 4 percent) being multi-modal.

According to the Connecticut Department of *Transportation's 2001 Congestion Screening and Monitoring Report*, estimated year 2000 truck traffic statewide was distributed as follows (as measured by total truck-miles driven in Connecticut):

- I-95 between the New York state line and New Haven: 20.3 %
- I-95 between New Haven and the Rhode Island line: 10.4%
- I-84 between the New York line and Hartford: 15.4%
- I-84 between Hartford and the Massachusetts line: 4.9%
- I-91 between New Haven and Hartford: 8.1%
- I-91 between Hartford and the Massachusetts line: 2.5%
- All other limited access highways in Connecticut[2]: 13.7%

Limited-access highways carry 75 percent of the state's truck-miles on 17 percent of the state's total highway route mileage.

Trucks typically represent 12-14% of total traffic on Connecticut's Interstate highways, and much less (2-6%) on most other highways.

The three primary routes forming the principal freight corridors in the State (I-95, I-84, and I-91) carry over 60 percent of the State's total truck-miles, but represent only about 7 percent of the State's total highway route-miles.

Strategies to reduce truck congestion on these limited-access highways, particularly the three principal Interstates, will therefore have the most effect on truck movements.

Present Highway Freight Congestion in Connecticut (Year 2000)

According to the Connecticut Department of Transportation's *2001 Congestion Screening and Monitoring Report*, all trucks operating in Connecticut incurred a total of

[1] Sources: 1997 US Economic Census Commodity Flow Survey; State Transportation Master Plan; and US Army Corps of Engineers "Leading U.S. Ports in 2000".
[2] I-291, I-384, I-395, I-691, portions of U.S. Routes 6 and 7, and portions of state routes 2, 3, 8, 9, 11, 15, and 25.

almost 16,600 hours of delay on the State's highways on an average day in 2000. The estimated distribution of this statewide truck delay was as follows:

- I-95 between the New York state line and New Haven: 15.4 %
- I-95 between New Haven and the Rhode Island line: 4.0%
- I-84 between the New York line and Hartford: 6.6%
- I-84 between Hartford and the Massachusetts line: 2.1%
- I-91 between New Haven and Hartford: 2.2%
- I-91 between Hartford and the Massachusetts line: 1.2%
- All other limited access highways in Connecticut[3]: 3.8%

The limited-access highways carry 75 percent of the state's truck-miles and account for 35 percent of statewide truck delay, on 17 percent of its highway route mileage.

The three primary Interstate routes (I-84, I-91, and I-95), representing only about 7 percent of the State's highway route-miles, account for over 31 percent of the truck-hours of delay.

Highways with Up to 4 Hours of Congestion

Presently, most of the State's limited-access highway system experiences up to four hours of congested operation in each direction daily. The four-hour criterion is a good index for the point at which both truckers and motorists will experience a significant degree of frustration about traffic delays. At or above eight hours of congestion per direction per day, highway operation will be judged to be totally unsatisfactory by most users.

Highways with 4 to 8 Hours of Congestion

The portions of the limited access highway system estimated to experience more than four hours of congestion per day per direction in 2000 are:

- I-95 between Branford and the New York state line; and
- I-84 between East Hartford and the New York state line.

<u>Future Highway Freight Congestion in Connecticut (Year 2020)</u>

According to the Department's projection of year 2020 traffic, much of the Interstate system in the State will be operating well over capacity by that year, with four or more hours per day per direction of congested operation.

Highways with 4 to 8 Hours of Congestion

[3] I-291, I-384, I-395, I-691, portions of U.S. Routes 6 and 7, and portions of state routes 2, 3, 8, 9, 11, 15, and 25.

Principal segments falling into this category are:

- I-95 between the Norwalk and West Haven[4];
- I-84 between the New York line and Waterbury; and
- I-91 between Hartford and the Massachusetts state line;

Highways with 8 Hours or More of Congestion

Major portions of the state's highway infrastructure, including much of the Interstate Highway system, will be operating at unacceptable levels of service by the year 2020. Specifically, congestion over much of the system will exceed eight hours per direction per day, a level at which political pressure has developed to build additional highway capacity in almost every jurisdiction in which this level has been reached[5].

The following Interstate segments are forecast to be in this category:

- I-95 between the New York state line and Norwalk;
- I-95 between New London and the RI state line;
- I-84 between Waterbury and Tolland;
- I-91 between New Haven and Rocky Hill; and
- I-91 between Windsor Locks and the Massachusetts state line.

Certain non-Interstate north-south principal routes (US Route 7 and State Route 25) between I-95 and I-84 will also reach or exceed eight hours of congestion per day per direction. These sections presently account for less than one percent (0.7%) of statewide truck-miles, but for more than two percent (2.3%) of truck delays.

Operational/Safety Issues

Connecticut has been identified as one of twelve states having a deficiency of roadside rest areas for trucks. In a June 2002 report[6] from the Federal Highway Administration (FHWA), it was estimated that the state's 361 public rest area and 1,243 truck stop and travel plaza spaces are presently less than needed, and will only accommodate about 60 percent of the required safe rest spaces required by 2020. The present need is acute for drivers arriving in the state in late evening early morning hours; the Department of Transportation has indicated that this need is concentrated on I-95 between New Haven and the New York state line. Given the expected growth in truck traffic (1.7 percent per year according to the FHWA study) and the resistance to developing additional roadside rest capacity that has already been encountered, the issue will become more important over time.

[4] The projections assume completion of the I-95 New Haven Harbor Crossing (Q-Bridge) improvements.
[5] The notable exception is New York City, where 12 or more congested hours are accepted on the major arterial highway bridge crossings in and out of Manhattan.
[6] Federal Highway Administration, *Report To Congress: Study of Adequacy of Parking Facilities*, June 2002.

The traveling public has expressed concerns about the safety implications of increasingly heavy trucks operating on congested limited access highways in the State. There also appears to be room for improvement in automobile driver skills relating to trucks; the American Automobile Association has found that as many as three quarters of truck-auto accidents may involve some level of auto driver unawareness of the operating characteristics of trucks.

Although traffic data suggest that trucks do plan to avoid congested conditions when possible, the number of hours of congestion on much of the Interstate system will grow to levels where this will no longer be practical. Based on traffic simulation work that Parsons conducted for the Q-Bridge Environmental Impact Study, the occurrence of 4-6 directional hours of congestion represents a range where the avoidance of peak congestion becomes impractical for trucks. The critical Interstate segments described above are expected to be within or beyond this range by the year 2020.

Economic Development and Access Issues

Some populated sections of the State are not well connected to the State's limited access highway system. Greater Willimantic, for example, is relatively isolated from Hartford and Providence. Although proposals for new warehouses have been advanced in that section of the State, long-term prospects for growth of this nature may be limited by the lack of good highway access.

Initiatives/Recommendations

Operational and Efficiency Improvements

Over the past two decades, considerable progress has been made in technologies and operational techniques to improve the utilization and efficiency of existing highway resources. Because of their cost-effectiveness and near-term availability, the Working Group has developed a number of recommendations not directly related to adding new highway capacity. These include:

- The Working Group considers it urgent that a task force be designated to prepare a statewide Incident management (IM) plan setting standards for incident response time and incident classification, and identifying model practices for: incident scene management (responsibility, command post location, staging areas, dispatch of additional resources), interagency cooperation, removing vehicles, restoring traffic flow and/or re-routing traffic, and media communication. The plan should expand and enhance the State's IM capabilities, bringing them to a uniform level across the State The plan should incorporate national best practices and the experiences of the Capital Region Council of Governments Incident Management Steering Committee and the South Western Regional Planning Agency's Incident Management Team. The plan should provide for provision of accurate estimates of incident-related delay to the FTMS to be accessible to ATIS/CVO. Provide the infrastructure and continuing operating support needed to implement the plan and maintain its elements.

- Complete the installation of freeway traffic management systems (FTMS) on all the State's limited-access highways. Upgrade and expand the State's commitment to Automated Traveler Information Systems (ATIS) technology for commercial vehicle operators (CVOs). Cooperate with transportation agencies in adjoining states as required. Add Highway Advisory Radio (HAR), Dynamic Message Signs (DMSs), and congestion and incident detection as necessary[7] to allow FTMS and ATIS/CVO to support, at a minimum:

    a) Real-time availability of accurate present travel times and reliable estimated times between major Interstate and limited-access highway junctions in the state and at least the first junctions in adjacent states.
    b) Real-time availability of weather and road conditions, load and clearance restrictions, and service directory information (e.g. rest area and plaza locations ahead).
    c) Display (via DMS) or broadcast (via HAR) of travel condition information (item a) information for trucks that are not equipped with ATIS/CVO technology, at points sufficiently far in advance of diverging points for trucks to make a safe choice of route.
    d) Real-time data interface for pre-trip planning capabilities that may be offered by information service providers, along the lines of the I-95 Coalition's "Fleet Forward" project.
    e) Incident detection within two minutes anywhere on the limited access highway system in Connecticut.

- Continue development[8] of the State's Commercial Vehicle Information Systems and Networks (CVISN)[9] technology framework to support Level 1 of the primary CVISN functions:

    a) Software access to centralized safety data at all inspection stations.
    b) Connection to the Safety and Fitness Electronic Record (SAFER)
    c) Electronic screening (automated weigh stations and mobile enforcement)
    d) Automated processing of documentation of International Registration Plan and International Fuel Tax Agreement credentials, and connection to their clearinghouses.
    e) Achieve at least ten percent of transactions by automated means.

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[7] I-95, for example, does not appear to have enough detection hardware to approach the recommended two-minute detection capability.
[8] Connecticut is one of several 'pilot' states designated by the Federal Highway Administration for CVISN.
[9] CVISN is an electronic information infrastructure that links State, Federal, commercial trucking information and other systems and communication networks to support more streamlined, automated commercial vehicle operations. It enhances safety through more timely and accurate information to the roadside enforcement officers, simplifies credentialing and tax administration by providing point of sale services to the carriers, and increases the efficiency of freight movement through electronic screening systems.

- Install electronic pre-clearance at the Greenwich and Danbury weigh stations on I-95 as soon as possible.

- Increase the supply of safe roadside rest areas for trucks. Adding 150-250 spaces along I-95 between New Haven and the New York state line should be a priority.

- Provide consistent fixed signage indicating the availability of public and private truck rest areas sufficiently in advance of their location to allow drivers to make informed choices and safe maneuvers.

- Expand coverage of the Connecticut Highway Assistance Motorist Patrols (CHAMP) to I-84 between Hartford and the New York line.

- In the most congested sections of I-95 in the Coastal TIA, determine the potential effectiveness of ramp metering systems to maintain acceptable traffic flow on the main travel lanes of the highway. Where determined to be effective, and where adequate alternate capacity for short-distance movements exists and ramp queues can be managed without overloading local streets, implement ramp metering.

- Encourage the development of a statewide 'logistics cluster' of shippers, industries, government agencies, and other interested parties that can propose and take actions to coordinate operations to improve the efficiency of transportation.

Adding Capacity

In most of Connecticut, the ability to significantly expand highway capacity at reasonable cost is quite limited. Along the most congested corridors, such as I-95, adjacent developments constrain the ability to widen highways. Where additional right-of-way could be obtained without displacing existing development, it would be very expensive, and would likely result in years of litigation. Even in less dense rural areas, major improvements such as U.S. Route 6 encounter significant environmental obstacles that will increase their costs for mitigating or avoiding environmental impacts. The State owns considerable additional right-of-way along the Merritt Parkway (Route 15), but has not given serious consideration to adding capacity there because of its historic nature. At present, only the I-84 corridor appears to be a candidate for locating additional capacity in the sense of a traditional horizontal widening. The Connecticut DOT has completed feasibility studies for widening I-84 all the way to the New York state line, indicating that the highway could be widened horizontally.

The inability to maintain temporal separation of trucks has led to increased interest in physical separation of truck traffic, and recently to the idea of building new truck-only roadways. Presently, trucks are excluded from the left-hand lanes of six-lane Interstate highways, and from State Route 15 (roughly paralleling I-95) between Berlin and the New York state line[10]. Both truckers and auto drivers have expressed support for the

[10] Trucks are also prohibited on section of the following non-limited access State routes: 42, 67, 136, and 189.

concept of separation[11], including physically separate truck-only lanes or truck-only highways. However, the limited access highways carrying trucks in Connecticut are presently smaller (2-3 mainline lanes per direction) than any on which such separation has been successfully implemented (e.g. on the New Jersey Turnpike, where trucks are prohibited from one set of lanes, while cars are free to choose to use the set of lanes where trucks operate). Highway agencies that have studied the truck-only lanes concept[12] have concluded that it cannot be practically applied on an existing highway when there are three or fewer mainline lanes per direction.

Given the potential magnitude of future freight traffic congestion, the Working Group recommends adding capacity to highways, specifically:

- Complete the widening of I-84 to three lanes in each direction between the New York State line and Waterbury, so that I-84 has three lanes in each direction from the New York state line to the Massachusetts line. Encourage New York State to carry the widening through to I-684.

- Provide additional limited access highway capacity between the New York State line and I-91 to relieve congestion on I-95 and I-84. Because of the restricted right-of-way along I-95, consideration should be given to:

    a) Adding capacity to I-95 in places where horizontal widening is not feasible by using non-traditional means such as an elevated highway over parts of the existing roadway. This approach has been used elsewhere (see Appendix section on value pricing).

    b) Providing selective additions to bypass congested locations, or providing additional capacity along alternative routes such as expansion of I-84 beyond three lanes in each direction so that innovative operational arrangements like car or truck-only lanes with limited exits and entrances, or reversible lanes could be utilized (see Appendix).

    c) Capacity improvements to Merritt Parkway by adding two additional lanes in each direction and possibly mass transit lines (see Appendix).

- Provide a north-south freeway connection between I-95 and I-84 along the approximate route of U.S. Route 7. This would both relieve congestion and improve the flexibility of the highway system to provide alternate routes.

- Complete sections of the Route 6 Expressway and I-384 to form a continuous freeway route between Hartford and I-395. Encourage Rhode Island to cooperate in extending this freeway to greater Providence.

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[11] Koehne, Mannering, and Hallenbeck, "Analysis of Trucker and Motorist Opinions Toward Truck Lane Restrictions", *Transportation Research Record 1560, Safety and Human Performance*, 1996.
[12] Southern California Association of Governments (February 2001) and the British Highways Agency (1998).

- Expand Interstate 95 to a minimum of three lanes in each direction east of New Haven to the Rhode Island state line.

D. WATERBORNE FREIGHT SYSTEM

Issues/Problems

The Working Group supports development of a transportation strategy that would make the best use of Connecticut's ports. This strategy would include improvements to, or expansion of, existing maritime goods movements, as well as a new feeder barge service. Specific projects would be developed as a consequence of the overall strategy, rather than the strategy consisting simply of a list of projects.

The Working Group regards the proposed feeder barge service as an important element of the waterborne freight strategy, but by no means the only one. The group has also discussed the adequacy of dredging and landside access (both road and rail) for Connecticut's ports, and whether there might be an expanded deepwater role for them.

Feeder Barge Service

Feeder barge service would transport cargo containers between deepwater vessels at the Port of New York/New Jersey (PONYNJ) and Connecticut ports, where transhipment to/from ground transportation (primarily trucks) would occur. PONYNJ handles about 13 percent of the nation's container traffic. Of the containers traveling more than 75 miles from the Port, almost 30% are destined to/from trade clusters in southern New England: Hartford, Springfield, and Worcester/Framingham.

Feeder barge service would provide an alternative to transhipment in the congested PONYNJ and would remove many heavy container-hauling trucks from I-95 between the PONYNJ and the initial Connecticut termini of proposed feeder barge services at Bridgeport or New Haven. This diversion would reduce air pollutant emissions, reduce highway maintenance costs, and would likely reduce the number of highway accidents involving trucks. The diversion of truck traffic would also be a clearly visible action that would be received positively by Connecticut residents.

A successful container barge feeder service would bring new jobs to Connecticut (container yard operation), and would create the possibility for new 'value-added' container-related services (e.g. warehousing) to grow in-state.

By developing a project with the PANY&NJ, the state could foster a higher level of co-operation between the states and the various state agencies. Any improved level of co-operation would help in addressing other regional transportation issues. Because the benefits would also be shared by New York, the PANY&NJ has already indicated the possibility of helping with the funding of the operation of the barge feeder service.

Depending on the type of service and the scope and structure of public sector participation, feeder barges could reduce the costs of moving the containers, ultimately contributing to lower prices for retail goods.

A successful service might leverage follow-on funding from the Federal Highway Administration for further improvement of the selected terminal and upland facilities. It could also open other ports (e.g. New London and Quonset Point, RI) to the concept, resulting in removal of additional truck trips from I-95 (Southeast Corridor TIA).

The existence of established feeder barge services out of PONYNJ (Boston and Baltimore), the Port Authority's Port Inland Distribution Network (PIDN) strategy, and the fact that two proposals have been advanced for service to Connecticut, are all indicators of a real potential, particularly in the light of increasing congestion expected on I-95. A private venture subject to market forces would likely result in the most economically efficient service.

Deepwater Ports

The state's three major deepwater ports (New Haven, Bridgeport, and New London) are each strategically positioned for growth in at least one "niche" market. They are well positioned with respect to rail and highway access, and can offer low-cost alternatives to PONYNJ for certain commodities. In calendar 2000, these three ports accounted for 16.6 million tons of Connecticut's total of 19.2 million tons of maritime cargo, up 14% from 1999. New Haven is the largest port by volume, handling 10.6 million tons in 2000.

Initiatives/Recommendations

The Working Group recommends that:

- The State support institution of a feeder barge service between the PONYNJ and either Bridgeport or New Haven. Either an initial public capital investment or some form of public operating assistance at the beginning of the operation might be appropriate, depending on the type of service and the extent of benefits expected. Models of public participation that would allow the State to recover part of any substantial initial investment should be considered.

- The long-term planning for dredged material disposal for ports on Long Island Sound be reviewed to assure that it provides capacity for both maintenance dredging and adequate dredging for improvements at the State's three deepwater ports;

- Adequate Federal and State regulatory relief and funding be provided for maintenance dredging of the three deepwater ports; and

- The State prepare a deepwater port master plan, including: a historical analysis and projection of quantities of the principal commodities destined to Connecticut and New England from offshore points; an analysis of the market share of Connecticut's

deepwater ports, including any obstacles to growth in terms of landside facilities or surface transportation access; and recommendations on appropriate improvements for the ports to attain long-term growth.

APPENDIX. STRATEGIC OPTIONS FOR HIGHWAY CONGESTION

One of the nation's leading traffic congestion authorities, the Texas Transportation Institute (TTI), produces a regular series of reports documenting the extent of traffic congestion in America's metropolitan areas. These reports[13] also provide a convenient framework for classifying broad strategies of responses to expected congestion. The following sections discuss each strategy and its potential applicability to highway freight congestion in Connecticut.

Information in this Appendix that a strategy may be feasible in Connecticut does not constitute a Movement of Goods Working Group recommendation that it be implemented; the group's recommendations are presented in the main body of this document. Similarly, financing measures described in this Appendix are presented for informational purposes. The recommendation and assessment of the means of financing possible transportation improvements are the purview of the Working Group on Funding and Finance.

Provide Alternatives

Shifting truck freight to surface alternatives (waterborne and rail freight) offers a modest potential for reducing highway freight congestion along the most congested highway segment (I-95 between New York and New Haven). Shifts are very unlikely to occur if they require additional transhipment (or transloading) of goods, e.g. from one mode to another. Because New England is at an extreme 'corner' of the continental U.S., the potential to shift goods arriving from or leaving for points west and south of New York is limited. The highest potential is for extending the non-highway portion of shipments arriving or leaving New York via water or rail, i.e. by rail shipments continuing through New York, or by feeder barge services between the New York area deepwater ports and Connecticut points. Recommendations for these modes are presented in their respective sections of the report (B and D).

Manage Demand

Demand management strategies for freight consist chiefly of methods to move truck trips out of congested times of day. Incentives for shippers to originate or receive shipments outside of normal business hours have been advanced as a means of achieving this. Several limitations to this approach preclude its practical application:

- As discussed in Section C of the report, congestion levels are expected to reach a point where avoidance of congested times in the vicinity of the shipper's or consignee's location will be increasingly impractical;

- The length of many shipments is such that significant congestion will likely be encountered elsewhere on the journey if avoided in the vicinity of the shipper or consignee;

[13] Texas Transportation Institute, *2002 Urban Mobility Study*

- Broad-based financial incentives or regulatory restrictions would be expensive to administer and monitor; and

- This type of incentive might not prove effective. In today's competitive environment, carriers will continue to respond to customers' needs, and many customers will be willing to bear additional costs to keep deliveries and shipments within preferred hours.

This concept has reportedly[14] been studied in California, and was not adopted.

Increase Efficiency

Three broad strategies for improving the efficiency of existing highways (sometimes called transportation systems management or TSM) have been applied:

- Intelligent transportation system technology (ITS) such as automated traveler information systems (ATIS), Commercial Vehicle Information Systems and Networks (CVISN), and Freeway Traffic Management Systems (FTMS) to improve system throughput and the level of traveler information about highway system performance to reduce recurring highway congestion (i.e. congestion that occurs regularly).

- Measures to reallocate available highway capacity either over time (such as freeway ramp metering or changes in traffic signal timing) or in space (such as by selective ramp closures or lane use controls). These have been proven to be able to improve total traffic operations on the mainline highway, and even eliminate congestion 'bottlenecks', but can cause considerable political and popular resistance from travelers who are inconvenienced. Prospects for success where reasonable alternative routes do not exist for shorter trips, or where local streets cannot accommodate traffic on-ramp traffic queues, are limited.

- Incident management (IM), the introduction of ITS and other techniques to reduce the delays caused by unusual occurrences or incidents. Incidents cause about as much highway delay as recurring congestion due to the basic characteristics or highways and the demand for travel. IM techniques such as incident detection systems and traffic operations centers (TOC) have been consistently shown to be worthwhile public investments. They benefit both trucks and passenger vehicles.

Roadway Pricing

Recent research and experience have shown that many highway users would be willing to pay to avoid the levels of congestion that they currently experience. In many sectors of the economy, price is an accepted means of allocating fixed resources subject to varying

[14] Puget Sound Regional Council, *Proceedings of Regional Freight Mobility Conference*, September 1994.

demands, such as telecommunications capacity, hotel rooms, and airline seats. This is less evident in highway transportation, where the supply of the commodity is often not directly linked to the willingness to pay. Although the overall system is financed from motor fuel and other taxes, these funds are not sufficient to provide an unlimited supply of 'seats' for everyone to travel without delays when and where they want. As evidenced by opposition to increased motor fuel taxes, the average road user may not be willing to pay the average cost of providing a system with this much capacity, leaving aside the considerable environmental and other societal impacts of doing so. As a result, in most cases where demand exceeds supply, highway users 'pay' by accepting delays rather than building more capacity. The major exceptions are the nation's toll highways, a prime example of the "user pay" principle resulting in construction of high-quality roadways that would not otherwise have been built. In these cases, the tolls paid represent a price paid to avoid delays that would otherwise be incurred on unpriced highways, and in contrast to expressed preferences on paying more for travel in general, many people choose to pay the tolls.

Over the past decade, as traditional highway funding mechanisms have proven inadequate to meet present and future traffic demands for unpriced roads, increasing attention has been paid to roadway pricing and the 'user pay' principle. With the emergence of modern electronic technology that makes it possible to collect user fees automatically without tollbooths, and to vary the fees by time of day or level of congestion, this interest has increased.

In this light, a useful distinction[15] can be made between two forms of roadway pricing:

- *Congestion pricing*, the application of a user charge to an existing congested highway when a competitive unpriced route is not available; and

- *Value pricing*, the application of a user charge for an alternative uncongested highway where congested unpriced alternatives are available.

Although this distinction is not always clearly made in the transportation industry, the collective experience of the industry is generally as follows:

- Congestion pricing (as defined above) experiences considerable political resistance unless congestion is at very high levels (8 or more directional hours of congestion or higher). Proposals for congestion pricing are moving forward in cities like London and New York. When the Intermodal Concepts Development Committee for the Q Bridge project on I-95 in New Haven proposed congestion pricing in the early 1990's, it was rejected by citizens and politicians alike as a return to toll highway operation, which had previously been removed from the Connecticut Turnpike. Congestion pricing in the strict sense changes the 'rules' for existing highways, and is not a generally preferred solution.

[15] Attributed to C. Kenneth Orski, chairman of the Institute of Transportation Engineers (ITE) task force on High Occupancy Toll (HOT) Lanes.

- Many of the successful 'congestion pricing' projects reported in the literature are really 'value pricing' projects by the definitions above: either congestion-dependent user charges on new facilities, or allowing single-occupant vehicles to use lightly-traveled HOV lanes for a fee (HOT lanes). In neither case are user fees imposed on existing general-use highway lanes.

- 'Value pricing' principles have been able to finance new highway capacity that would not otherwise have been built. Among the more notable successes have been:

  a) In 1995 two new lanes in each direction were introduced into the median of California State Route 91, a heavily congested eight-lane freeway. Developed as a franchise by the California Private Transportation Company, the '91 Express Lanes' are tolled at varying levels throughout the day to make sure they remain free-flowing. As of January 1999, tolls for the ten-mile section ranged between a minimum of $0.75 and a maximum of $3.50. All tolls are collected electronically from vehicles equipped with transponders meeting the California Automatic Vehicle Identification (AVI) standard. Enforcement is done via photography at mid-section booths, with citations issued by mail by the California Highway Patrol.

  b) The I-10 (Katy) reversible high occupancy vehicle (HOV) lane extends for 13 miles in metropolitan Houston, TX. Since its opening in 1984, it has both been extended and has experienced several changes in the rules governing its use. Over time, the minimum occupancy had to be raised from 2 persons to 3 because of congestion in the lanes. Because HOV lane vehicle volumes then dropped significantly, the lanes were opened to 2-person vehicles for a $2.00 toll; this allowed for more use of the lanes while avoiding congestion. The basic concept of these high occupancy toll (HOT) lanes is attracting increasing interest, and has also been implemented on I-15 in San Diego, CA.

  c) In metropolitan Toronto, Ontario, Express Toll Route 407 (ETR-407) is a new 66-mile freeway between the province's untolled freeway system at the Queen Elizabeth Way near Hamilton and Highway 48 in Markham. It was built in partnership with Canadian Highways International Corporation, and is now operated by 407-ETR International, Inc. The addition of this new capacity to the province's system would not have been possible under previous highway financing arrangements. Tolls are set at about 10 cents ($US) per mile in peak periods, about 8 cents per mile off-peak, and about 4 cents per mile at night. Although most users of ETR-407 carry and use transponders, this is not required except for vehicles over 5 tons. There are no toll plazas; overhead gantries at entry and exit ramps are equipped with both electronic sensors for transponders and an advanced license plate recognition system. Users without transponders are billed monthly, and may pre-authorize a designated credit card for automatic payment.

d) In France, the private Cofiroute consortium has been responsible for developing and operating much of the nation's "A"-class toll freeways: A10 Paris-Poitiers, A11 Paris-Le Mans, A71 Orléans-Bourges, and A85 Angers-Tours. The consortium is heavily involved in similar ventures worldwide, including California SR-91. South and west of Paris, Cofiroute is developing the A86 connection, consisting of a 6-mile tunnel for light duty vehicles only, and a 5-mile mixed traffic tunnel. Prohibiting trucks in one tunnel will allow additional traffic lanes to be 'stacked' in the auto-only tunnel. Tolls on the A86 connection will vary from about $4.00 in peak periods to about $1.50 in low-traffic periods. Frequent users will be able to obtain discounts of 15 to 35 percent. Toll collection will be by conventional methods; staffed collection booths are viewed as a security benefit in the tunnels.

Adding Capacity

The traditional way of increasing limited-access highway capacity is horizontal widening, i.e. adding new lanes to the existing roadway on the same grade line. The new lanes are usually open to all traffic, and can be accessed from any entrance or exit. When the total number of lanes in each direction reaches four or five, sometimes other approaches are adopted, such as:

- Where the right-of-way permits, building a separate set of express lanes in each direction, with limited ramps. Toronto's Highway 401 is a prime example of this 'collector-distributor' approach.
- Building separate lanes with restrictions on the classes of vehicles that can use it, such as the New Jersey Turnpike, where trucks are restricted from the outer sets of lanes. Both sets of lanes are accessible from all exits and entrances.
- Where right-of-way is restricted, building new lanes on elevated structures above the grade of the highway. This has been done in several locations in Texas (I-10 and I-35 in San Antonio; I-45 in Houston; I-35 in Austin) and on I-5 in Seattle, WA.
- Build new lanes underground, as Cofiroute is doing for the A86 in Paris, described above.

Appendix L

Background Paper – Air

BACKGROUND PAPER ON AIR

INDUSTRY OVERVIEW SINCE SEPTEMBER 11TH:

COMMERCIAL AIR SERVICE

Hub Definitions

The *Federal Aviation Administration* (FAA) classifies commercial service airports into 4 categories based on their passenger enplanement levels. The categories are listed below:

Type of Hub	**Airport Examples**
Large Hub	Boston Logan International
Medium Hub	Hartford Bradley International, Providence T.F. Green
Small Hub	Manchester Airport, Burlington International
Non-Hub	New-Haven Tweed Airport, Bangor International

The New-Haven/Tweed airport is classified by the FAA as a non-hub airport. This means it is a facility with predominantly regional traffic, with limited air carrier service and no passenger connectivity (no connecting or hubbing traffic).

AIR SERVICE AT SMALL AIRPORTS

Changes in Air Service: Since early 2001, the smallest airports (non-hubs) have experienced deeper cuts in air service than their larger counterparts. As of September 2002, non-hub airports saw nearly a 16 percent reduction in scheduled passenger seats from September 2000. This compares to a 9 percent reduction for the larger airports. Airline schedules currently project some improvement by December 2002, with non-hub and larger sized airports down about 10 percent and 7 percent, respectively, from December 2000. Please refer to **Table 1** below.

Table 1
Non-Hub Versus All Other Sized Airports: % Change in Available Seats from 2000

Month	**2001 Non-Hub Airports % Change**	**2001 All Other Airports % Change**	**2002 Non-Hub Airports % Change**	**2002 All Other Airports % Change**
January	-2.20%	3.62%	-15.60%	-9.78%
February	-8.59%	-1.55%	-19.49%	-12.98%
March	-5.96%	0.88%	-16.86%	-9.70%
April	-4.75%	1.69%	-13.60%	-7.77%
May	-5.61%	1.30%	-14.91%	-8.06%
June	-6.20%	1.30%	-14.35%	-6.74%
July	-5.14%	2.60%	-11.83%	-5.35%
August	-5.56%	1.73%	-10.65%	-6.54%
September	-7.52%	0.87%	-15.57%	-9.29%
October	-9.24%	-3.38%	-14.23%	-8.88%
November	-18.47%	-14.45%	-13.25%	-7.92%
December	-15.71%	-14.16%	-9.54%	-7.26%

Source: Federal Aviation Administration (FAA)

Access to 31 Large Airports: Non-hub airports also experienced a greater loss of direct service to and from the 31 largest airports than did other airports. Non-hub airports lost approximately 17 percent of scheduled flights to and from the 31 largest airports between September 2000 and September 2002. In comparison, small, medium and large airports experienced reductions of only 5 percent to 10 percent. Please refer to **Table 2** below.

Table 2
Access to Large Airports, Percent Change in Number of Scheduled Flights: September 2000 versus September 2002

Combinations	% Change 2000 vs. 2002
Large Hub to Large Hub	-10%
Medium Hub to Large Hub	-5%
Small Hub to Large Hub	-8%
Non-Hub to Large Hub	-17%

Source: Federal Aviation Administration (FAA)

NATIONAL AIR SERVICE DEMAND AND CAPACITY

Air Traffic Demand: The September 11 terrorist attacks, combined with the slowing economy, had a major and perhaps, long-lasting impact on air traffic demand. Although air travelers had begun to return form the sharp decline following September 11, passenger enplanements in August 2002 remained 8 percent lower than in August 2000. Please refer to **Table 3** below.

Table 3
Percent Change in Revenue Passenger Enplanements from 2000

Month	2001 (% Change from 2000)	2002 (% Change from 2000)
January	4.14%	-10.63%
February	-3.31%	-14.87%
March	-1.75%	-11.83%
April	-0.48%	-13.52%
May	-2.32%	-12.84%
June	-2.23%	-12.83%
July	0.12%	-10.54%
August	3.19%	-7.84%
September	-34.49%	Not Given
October	-21.52%	Not Given
November	-18.54%	Not Given
December	-13.61%	Not Given

Source: Air Transport Association (ATA)

Capacity versus Demand: Actual domestic capacity as measured in available seat miles (ASMs) has tended to return to pre-September 11 levels at a faster rate than passenger demand as measured by revenue passenger miles-especially during the spring and early summer of 2002. As of August 2002, however, both actual capacity and passenger demand were down 4 percent from August 2000, suggesting that airlines have adjusted their capacity to more accurately reflect demand.

Airline Schedules – Fall 2002: Although airline schedules also showed some initial improvement during the spring and summer months, this improvement may be reversing as the airlines scheduled barely 10 percent fewer flights and passengers seats (as well as 6 percent fewer ASMs) in September 2002 versus September 2000. Whereas October and December schedule data indicate some return of capacity, it is questionable whether this will hold, especially given the recent announcements by several of the major airlines of additional cuts to their flight schedules for the fall.

Loss of Short-Haul Air Service : For scheduled flights less than 250 miles, approximately one in five (or 18 percent) were dropped between September 2000 and September 2002. In comparison, flights of 500 miles or greater saw little or no change.

Low-Fare Carriers Gain Market Share: In contract to most of the major airlines, the low fare airlines have continued to expand, with offered capacity (as measured in passenger seats) increasing 11 percent between September 2000 and September 2002[1]. Low-fare airlines have also seen their share of domestic air service grow from 16 percent to 19 percent during the same period, with two-thirds of the gain occurring in just the last year.[1]

Regional Differences: The Northeast region continues to experience the largest decline in air service as compared to other parts pf the country. For example, between September 2000 and September 2002, the Northeast experienced a 14.6 percent drop in scheduled passenger seats, versus the South (minus 10.1 percent), West (minus 8.7 percent) and Midwest (minus 7.2 percent). The relatively short distances between metropolitan areas in the northeast mostly explain this phenomenon.

AIRLINE FINANCE

Business and Leisure Travel: The drop in higher fare business travelers, which began even before September 11th, has especially hurt the airlines. Although business (first class and full fare coach) and leisure traffic numbers improved significantly in the months following 9/11, both remained persistently down by 10 percent or more for the first 8 months of 2002 versus 2000- with August numbers showing a decline of approximately 12 percent in each category.

Airline Yields: Airline yield is a cost metric that measures the average cents per mile that an airline generates transporting one paying passenger. Airline yields are a general but not exact indication of average airline ticket prices. The loss in business travel significantly affected airline yields, which were down for most of 2001 and into 2002. As of August 2002, airline yields from passenger traffic were down 21 percent from August 2000 and 9 percent from August 2001.

Airline Load Factors: Due to continued limits in capacity and the gradual return of passengers, aircraft load factors for the quarter ending June 2002 have returned to last year's levels of approximately 74 percent. Yet the "break-even" load factor has risen 7 percentage points (76 to 83) during this same time period. Among the major airlines, the "break-even" load factor ranged from a low of 59 percent for Southwest to a high of 90 percent for United.

Aeronautical and Non-Aeronautical Revenue Shortfalls: Following the events of September 11th airports in the U.S. have been struggling with the decrease in both aeronautical (landing fees,

[1] Low fare carriers are AirTran Airways, American Trans Air, Frontier Airlines, jetBlue Airways, National Airlines, Pan American Airways, Southwest Airlines, Spirit Airlines, Sun Country and Vanguard Airlines. Vanguard Airlines declared bankruptcy and suspended service in July 2002.

terminal rentals) and non-aeronautical revenues such as parking and terminal concession revenues. A report by *Airports Council International - North America* (ACI-NA) projected that U.S. airports would suffer the following decreases in revenue for the period of September 2001 to September 2002. Please refer to **Tables 4** and **5** below.

Table 4
Decrease of Total Aeronautical Airport Revenue in the U.S. from September 2001 to September 2002

Aeronautical Revenues	% Decrease	% Decrease of Total Airport Revenue
Landing Fees	-26%	-5%
Terminal Rentals	-8%	-2%
Other Aeronautical	-7%	-1%
Total Aeronautical	-14%	-7%

Source: ACI-NA Estimate of Terrorist Threat on U.S. Airports Survey
Note: Totals will not add due to rounding.

Table 5
Decrease of Total Non-Aeronautical Airport Revenue in the U.S. from September 2001 to September 2002

Non-Aeronautical Revenues	% Decrease	% Decrease of Total Airport Revenue
Parking	-31%	-6%
Concessions	-40%	-4%
Rental Cars	-29%	-3%
Other Non-Aeronautical	-7%	-2%
Total Non-Aeronautical	-23%	-14%

Source: ACI-NA Estimate of Terrorist Threat on U.S. Airports Survey
Note: Totals will not add due to rounding.

To compensate for this dramatic decrease in revenue, airports are struggling to find ways to reduce costs and postpone all but essential capital expenditures. It is uncertain when airport revenues will return to post-September 11th levels but many industry experts predict a gradual recovery over the next few years.

TRAVELER INCONVENIENCE

A major issue contributing to the slump in air travel at the national level is the actual or perceived level of passenger inconvenience. The new security regulations established after September 11th have dramatically impacted the travel decision-making process. Many short-haul flights (less than 500-miles) which used to be convenient day-trips are now becoming uncomfortably long forcing many business people to avoid all but the absolutely necessary trips. The *National Business Traveler Association* (NBTA) who conducted a recent survey on corporate travel, revealed that 46 percent of corporate travel managers believe that security procedures must improve before business travel increases significantly.

The *Transportation Security Administration* (TSA) and airports alike are still implementing many of the most significant changes to the passenger and baggage screening process. Although

passenger-processing times are much improved from the period immediately following September 11th, there is still much room for improvement. With the new baggage screening procedures not yet in place, there is still plenty of skepticism among travelers.

GENERAL AVIATION SERVICE OVERVIEW SINCE September 11th

OVERVIEW

The aftermath of September 11th has presented both challenges and opportunities for business and general aviation ("GA"). Whether the challenges are overcome will depend on how quickly the economy recovers.

Even before 9-11, GA was struggling as the US economy was already showing signs of weakness. Aircraft sales were slowing and financing for new programs was becoming scarce. The aircraft groundings and airspace restrictions following the attacks only made things worse, halting aircraft deliveries and hobbling general aviation operations such as flight training.

Traffic is gradually returning to pre-September 11th levels, despite some airports and airspace remaining closed to private aircraft – but sales continue their downward trend. The *Aerospace Industries Association* estimates US manufacturers will have delivered just over 2,500 business and GA aircraft by the end of 2002, a reduction of almost 9% from 2000 and the first decline after 6 consecutive years of growth.

FALLING SALES

The downturn is most evident in the sales of light aircraft, which had been rising steadily since the *General Aviation Revitalization Act* (which limits manufacturer's product liability) became law in 1994. Here are some of the actions the industry manufacturers have taken:

- ***Cessna and Piper (GA single and multi-engine piston aircraft manufacturers)***: Cut back production for 2002 and laid off workers.

- ***Mooney (GA single engine piston aircraft manufacturer)***: Production is still on hold while the bankrupt aircraft manufacturer seeks a buyer.

- ***Cirrus and Lancair (GA single engine piston and kit aircraft manufacturers)***: Ramping up production of their light aircraft to fulfill order backlogs.

- ***Eclipse Aviation (GA turbo jet business jet manufacturer)***: In plans to restructure their new personal business jet program to reflect the reduced availability of funding.

Business aircraft sales are also tied closely to the economy, but are being isolated from the worse effects of the downturn by the strong order books built up over the last few years as manufacturers launched new models. Business aviation operations, meanwhile, are back to pre-9-11 levels, and could expand rapidly in the coming months as travelers look for alternatives to the airlines.

- ***Honeywell (Avionics systems and components supplier)***: Delivered 750 business jets in 2001, a reduction of 9 aircraft from their pre-September 11th estimate. For 2002, the avionics manufacturer reduced its forecast by 7-8% to around 700 aircraft

deliveries, increasing that number to 730 aircraft in 2003 (4% increase). They foresee a return to pre-9-11 levels and growth in 2004.

- ***Bombardier (Turbo jet and turboprop GA and regional jet manufacturer)***: The Canadian regional and business jet manufacturer believes that an economic recovery will be needed to start the much-anticipated rapid growth of business aviation. While there has been greatly increased interest in aircraft charter and fractional ownership as alternatives to airline travel (especially since September 11th), this has yet to translate into a sustained increase in operator activity which would, in turn, stimulate orders. Following September 11th, fractional operators experienced an immediate increase in business and are continuing to hire pilots at nearly double the rate experienced in 1999.

GENERAL AVIATION FAA FORECAST (2002-2013)

The GA industry was particularly negatively impacted by the events of September 11th. Thousands of GA aircraft were grounded for weeks due to FAA "no-fly zone" restrictions imposed on the operation of aircraft in particularly sensitive areas around the country. Many flight schools curtailed pilot training as new restrictions were imposed on the training of pilots from foreign countries.

For GA activity, the FAA General Aviation and Air Taxi Forecast for the 2002 to 2013 period is attached. The data shows the number of GA aircraft that will be in service by category. For GA activity, total aircraft is a better indicator than total enplanements for future traffic activity levels. Please refer to **Table 6** below.

Table 6
FAA Active General Aviation and Air Taxi Aircraft Forecast, 2002-2013

Year	Piston Engine Aircraft		Turbine Engine Aircraft	
	Single-Engine	Mutli-Engine	Turboprop	Turbojet
Historical				
1999	150,886	21,038	5,679	7,120
2000	149,422	21,091	5,762	7,001
2001(E)	148,000	21,000	5,750	7,150
Forecast				
2002	146,500	20,800	5,650	7,300
2004	146,000	20,700	5,680	7,900
2007	147,750	20,700	5,770	9,300
2010	150,500	20,700	5,860	10,100
2013	152,000	20,700	5,950	10,850
	Average Annual Compound Growth Rates			
1999-2001	-1.0%	-0.1%	0.6%	0.2%
2002-2004	-0.2%	-0.2%	0.3%	4.0%
2004-2007	0.4%	0.0%	0.5%	5.6%
2007-2010	-0.4%	0.0%	-0.5%	-5.3%
2010-2013	0.6%	0.0%	0.5%	2.8%
2002-2013	0.3%	0.0%	0.5%	3.7%

Source: Federal Aviation Administration FAA Aerospace Forecasts 2002-2013

In general, the GA fleet for piston and turboprop aircraft is projected to remain rather flat throughout the FAA forecast horizon. The current forecast, however, also assumes that business use of general aviation aircraft will expand much more rapidly than personal/sport use. This is due largely to the expected continued rapid growth in fractional ownership and is reflected in the changing composition of the general aviation fleet mix. The number of turbojets is projected to increase from 7,300 in 2002 to 10,850 in 2013, an average annual increase of 3.7 percent. This is a significant growth rate based on historical GA activity and for an industry as depressed and downsized as the post-September 11th aviation/aerospace industry.

SOURCES

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2002-2013 Aerospace Forecasts, General Aviation and Air Taxi Forecast, *Federal Aviation Administration (FAA)*, March 2002, pages I-27 and X-29.

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Appendix M

Background Paper - Water

BACKGROUND PAPER ON WATER

I. FREIGHT OVERVIEW

Markets

In the year 2000, the three deepwater ports of Bridgeport, New Haven, and New London handled 17 million tons of primarily bulk commodities. The absence of waterborne access to Connecticut for this tonnage would be the equivalent of adding about 2,300 trucks to the Connecticut highway network, primarily to I-95, each weekday.

According to the Connecticut Center for Economic Analysis, 3 percent of employment in Connecticut is fully port-dependent. Additionally, to the extent that Connecticut's deepwater ports provide low ton-mile costs compared with other modes; businesses, households, and institutions benefit.

Each of the three major deepwater ports in Connecticut has evolved to perform essentially unique logistical functions. Tonnage volumes for the three deepwater ports in recent years are indicated in Table 1, below.

Table 1
Tonnage By Port
1996 - 2000
(millions)

Port	1996	1997	1998	1999	2000
New Haven	8.8	9.6	9.2	8.7	10.6
Bridgeport	4.9	5.3	4.6	4.2	4.3
New London	2.0	1.9	2.0	1.7	2.0
Total	15.7	16.8	15.8	14.6	16.9

Source: US Army Corps of Engineers. Waterborne Commerce of the United States, 2000.

As this table indicates, the Port of New Haven handles the great majority of the tonnage of the three deepwater ports. In the year 2000, New Haven handled nearly two-thirds of the total waterborne freight in Connecticut. Of this two-thirds, petroleum products accounted for nearly 80 percent of the volume, and the port provides nearly 68% of the State's fuel storage capacity. The water mode is a critical, yet nearly invisible, transportation component for this commodity, with much of this movement inland by pipeline. Other significant volumes of commodities at New Haven include steel products, sand & gravel, copper, cement, and non-metallic minerals. All tonnage is handled through the nine private terminals at the Port. The Buckeye Pipeline to Ludlow, MA, is a major extension of the Port's marketing reach for petroleum products, with five inland

terminals in Connecticut and two in Massachusetts. Overall, the Port of New Haven has displayed an upward trend in traffic in recent years.

The Port of Bridgeport handled 4.3 million tons of which two-thirds was petroleum products, providing approximately 12% of the State's fuel storage capacity. Bridgeport is the primary port for the importation of tropical fruit, primarily bananas, handling 235,000 tons in the year 2000. There are eight terminal operators within the port. Traffic at the Port has grown in comparison with the early 1990's, despite the reduction in recent years.

The Port of New London traffic base is relatively stable, although lumber traffic at the rehabilitated State Pier has had excellent growth in recent years. Nevertheless, petroleum and coal lignite remain the principal commodities, along with other hydrocarbon products and copper. Intermodal rail service for general cargo at the State Pier is presently utilized in conjunction with the New England Central Railroad whose 360-mile line links the Port of New London directly with the Canadian National, Canadian Pacific, CSXT, and Guilford, as well as shortline railroads.

Deepwater Ports Infrastructure

Table 2, below, indicates the varying land and water infrastructure characteristics at the three deepwater ports.

Table 2
Infrastructure of Connecticut Deepwater Ports

	Bridgeport	**New Haven**	**New London**
Main channel depth	35 feet	35 feet	40 feet
Main channel width	400 feet	400 - 800 feet	500 feet
Berths - liquid	8	18	3
Berths - dry bulk	2	4	1
Berths - general cargo	2	5	1
Warehousing - sq. ft.			
Standard	100,000	500,000	100,000
Heated	25,000	---	---
Refrigerated	80,000	---	---
Open Storage - acres	20	56	10
Rail - direct	none	P&W (future)	NE Central
I-95 distance	0.5	0.25	1.0

This table indicates the niche marketing opportunities currently available to the respective ports. For example, Bridgeport has unique warehousing assets for foodstuffs, in addition to its bulk liquid handling assets. Bridgeport Harbor

presently has a channel depth of 29 feet at critical locations and has not been dredged since 1983.

New Haven has its Buckeye Pipeline market reach, in addition to the size of its facility and capacity to handle a broader mix of general cargo and break bulk. New Haven also has the potential for capitalizing on rail access through the proximity of the Providence & Worcester line. However, at present, access to freight hauling services provided by P & W is constrained operationally by the level of passenger train activity on the Northeast Corridor, including Amtrak, Metro North, and Shore Line East, as well as the need for investments in rail and road infrastructure south of the Tomlinson Bridge.

New London has the immediate potential to continue increasing both rail intermodal and lumber volumes via the New England Central Railroad, and its relatively seamless intermodal linkage. This rail line is not dependent operationally on the Northeast Corridor for its access, and is a unit of RailAmerica, Inc. RailAmerica, as the largest operator of short line and regional railroads in the world, has significant leverage for negotiating with the large rail carriers, including the Canadian railroads. However, New London is very land-constrained which is a factor in how it defines its market niche.

With the conclusion of maintenance dredging scheduled to begin in the Fall of 2004 in New London, dredging needs will have been met for the Port of New Haven, the New London State Pier, and main channels.

Port Governance

All three ports have different governance structures. The Port of Bridgeport is a "port district", organized by the City of Bridgeport. The Bridgeport Port Authority leases property to Derecktor Shipyard and the Bridgeport & Port Jefferson ferry terminal operator. A five-member Board, selected by the Mayor, appoints the Executive Director.

The Port of New Haven is a group of privately owned terminals, warehouses and backland areas. Oversight and coordination of port operations is currently provided by the New Haven Harbor Cooperative, Inc., although authorization has recently been granted by the Legislature to form a New Haven Port Authority.

The Port of New London is owned and managed by the Connecticut Department of Transportation, who leases the facilities to private operators. The City of New London also owns facilities at the port, which leases them to ferry operators.

Currently Connecticut has a Port Authority, which is empowered to provide planning and marketing services for all ports in the State. The Authority is governed by 17 member Board; three members of the Board are representatives of each of the three deepwater ports in the state, and have no voting authority.

II REGIONAL GROWTH, NEW YORK - CONNECTICUT

The overwhelming challenge mentioned in discussions and interviews with various interested parties is the future congestion in the I-95, I-84 and I-91 corridors.

According to the FHAs' *National Multimodal Freight* study, freight volumes within the U.S. will nearly double by 2020. Further, the Connecticut Department of Transportation's *Congestion Screening and Monitoring Report* indicates that currently more than four hours of congestion occur on I-95 between Branford and the New York state line; and I-84 between East Hartford an the New York state line. The four-hour congestion benchmark is an indicator for the point at which highway users will experience significant frustration at highway delays.

At eight hours or above of congestion, highway users will judge the delay situation totally unsatisfactory. It is estimated that by 2020, the following Interstate segments will have eight hours or more of congestion in each direction per day:

- I-95 between New York state line and Norwalk
- I-95 between New London and the RI state line
- I-84 between Waterbury and Tolland
- I-91 between new Haven and Rocky Hill
- 1-91 between Windsor Locks and the Massachusetts state line.

As the overall economy and international trade grows, additional ways must be found to distribute trucks, and the containers from ports, to locations along the coast.

The decision shippers make for selecting a transportation carrier is based on four variables: rate, dependability, frequency, and commodity condition (loss and damage). The relative importance of each factor to another is based on the individual products. For example, schedules timed to the hour, and schedule frequency are much more important to an express package service than to a lumber shipper. A rate variance of a few cents is more important to a grain shipper than to an express package service. For each product there is a relative balance between each of these four factors. When one factor becomes "unbalanced' adjustments will be made in relation to the other factors.

Congestion will affect shipping rate and service dependability. When these factors become out of balance, alternative shipping will be considered. That is, when the transportation rate and /or schedule dependability becomes unbearable due to congestion, transportation alternatives will be sought. If not found, the business will relocate or close. Conversations with transportation providers indicate that when high volumes of containers are involved, shippers have transferred to alternate carriers for as little a $5.00 per container. Thus, the

economic impact of a lower cost service serves to maintain the economic competitiveness of the region. This can be a very important attribute as the shippers confront the increasing cost of congestion in the region.

III A VISION FOR THE FUTURE

Freight Market Potential of Connecticut Ports

Through their terminal operators, the deepwater ports of Connecticut have displayed vigor and aggressiveness in pursuit of their respective markets. Nevertheless, the markets for commodities handled presently do have limits to growth by nature of the value of the commodity and the amount of inland transportation expense that the commodity can absorb and still be competitive in the marketplace.

Limitations to the future growth of Connecticut deepwater ports include limited access to risk capital by the private terminal operators and limited backland areas dedicated to transportation related functions. All three ports are constrained by the immediate urban areas at their backlands, as well as limited intermodal rail infrastructure, at least in Bridgeport and New Haven.

An unrealized potential for growth at the ports is the handling of international and domestic containers and trailers. All three ports, with adequate investment and development of their respective infrastructure, have the potential to be niche container handling facilities. Such a transportation strategy draws upon Long Island Sound and its deepwater channels as assets that are under-utilized as traffic congestion on I-95 continues to increase. While it is acknowledged that the initial numbers of containers/trucks diverted from the highway network by any barge feeder system is anticipated to be small compared to the overall highway growth totals, that diversion will serve to slow the vehicle rate of growth and, more importantly, will probably provide a lower cost transportation alternative for shippers.

An additional positive aspect of Connecticut's ports is their Foreign Trade Zone designation by the U.S. Government. This designation means that these ports are permitted to receive cargo into their warehouses from foreign sources, store or process the cargo and export the products without paying the duties and fees normally applicable. The FTZ presents the opportunity for value added activities by enterprises in the vicinity of all three ports. The only other FTZ in Connecticut is at the Windsor Locks area, near Bradley International Airport.

Constraints and Possibilities for Each Deepwater Port

New London

The principal constraint for growth at New London is the availability of land adjacent to the Port. Presently, there is only about 17 upland acres available to Logistec. Currently, the former Canadian National (CN) Pier, now state-owned, is used as a temporary storage and staging area for lumber imports at the adjacent State Pier. The former CN Pier is in a state of disrepair and it is estimated between $6 - 12 million, including dredging, is needed to bring it to suitable condition for shipside use. It is quite probable that the general cargo business could be expanded if additional holding space were available. There are about 30 acres adjacent to the state port facilities that are owned by various holders, including the City of New London, the state, and other private interests, that may represent an opportunity to develop a general cargo business, as well as a small container facility in the long term.

The main channel into New London is maintained to a depth of 40 feet, the access channel to the east side of the State Pier will be 35 feet upon completion of dredging scheduled for 2004. Rehabilitation of the former CN Pier and access channel dredging is also needed. Dredging at this pier is constrained by the presence of bedrock, which will likely preclude the possibility of dredging for true “deepwater” capability.

The New England Central Railroad's relatively seamless intermodal access could be a key ingredient in expanding the niche market function of the Port, particularly its Canadian rail connections. An example of this potential is the warehouse for steel transloading now completed. Logistec is now able to compete for the winter steel market when the Saint Lawrence Seaway is closed. The warehouse and efficient rail service could attract about 1,500 rail cars seasonally through the Port. Strengthening the traffic base of the New England Central creates synergy for both the Port and railroad, by permitting improved rail service with through trains, rather than forwarding traffic by means of a series of local trains with intermediate switching. Improved rail service, in turn, facilitates the port's business development activities.

Bridgeport

Channel dredging is an immediate need for terminal operators at Bridgeport so that deepwater vessels can operate at times other than just high tide.

The Port has the potential and capacity to increase its tropical fruit trade through Cilco Terminal. However, a lack of rail access limits its potential for handling significantly increased volumes of general cargo for which rail is an attractive, economical mode.

An intermodal container operation would be an appropriate use of the available capacity. To that end, the Port Authority of Bridgeport has made a strategic transportation commitment by retaining 14 acres of the 52 acres it owns for intermodal facility development, contiguous with the Cilco Terminal. The

remaining acres are dedicated to the Maritime Business Park that includes the Derecktor Shipyard.

New Haven

The City of New Haven is in the process of formally establishing a Port Authority, as authorized by the General Assembly earlier this year. The City is very actively engaged in long term planning for the area about the cluster of privately owned terminals. The possible future disposition of the Williams Energy terminal properties may alter the Port's petroleum storage capacity, as well as provide land for container terminal operations in the long term. The Belle Dock site of Williams Energy, located on the west side of the Harbor, is not considered prime by the City for a general cargo or container terminal, even with environmental remediation. The City considers the Belle Dock site potentially more desirable for a passenger terminal facility.

Container service presents the Port with a market that promises continued high growth rates and permits the Port to be more than a niche entity, successful as it is in that role. The City supports the consortium seeking to initiate a Lift On/Lift Off container barge service as part of the Port of NY&NJ PIDN system. However, for an efficient operation, container service at the Port of New Haven would require a larger contiguous parcel than is presently available on the east side of the Harbor. Relocation of certain petroleum related facilities might be necessary, in the long term, as well as completing rail infrastructure at the Port. Some capacity of the Cedar Hill railroad yard would need to be included in planning the revival of a significant rail presence at the Port for both container and general cargo service, since rail car storage and switching activities at the immediate Port area are likely to be limited.

Permitting for maintenance dredging of the main channel has been approved and is expected to be completed in the Fall of 2002.

IV. PASSENGER FERRY SERVICE OVERVIEW

Markets

In addition to the freight service, Connecticut ports offer important ferry services. Passenger and vehicle ferry service is provided across Long Island Sound and to various islands. Table 3 provides a listing of ferry passenger and vehicle volumes in 2000.

Table 3
Connecticut Coastal Ferry Services Summary
Year 2000

Between	Operator	Passengers	Vehicles	High Speed Ferry Service
New London - Orient Point, NY	Cross Sound Ferry Services	919,983	379,885	215,000
Bridgeport - Port Jefferson, NY	B'port and Port J. Steamboat Co.	800,000	425,000	N/A
New London - Fishers Island, NY	Fishers Island Ferry District	164,000	47,000	N/A
New London - Glen Cove, NY	Fox Navigation	----	----	unavailable
New London - Vineyard Hvn, MA	Fox Navigation	----	----	45,000 (ceased service)

V. A VISION FOR THE FUTURE

Passenger Market Potential of Connecticut Ports

Connecticut has enjoyed the benefits of successful ferry operations, such as the Bridgeport to Port Jefferson, and New London ferry services, and there is a desire to recreate these successes with additional services.

Proposals have been offered for new passenger ferry services linking Stamford and Bridgeport to the New York financial district, mid Manhattan, and La Guardia airport. A proposal offered by Lighthouse ferries would provide 60 minute service between Stamford and Wall Street, 50 minutes to mid-Manhattan, and 40 minutes to La Guardia airport. Catamaran vessels would be used in this service capable of maintaining 30 knots through fog and eight foot seas. Vessels of this type are in use by Lighthouse in New Jersey-New York service. Another proposal offers using very high-speed vessels capable of 70 knots or so; however, this proposal is much more speculative as these vessels have not been constructed.

Issues remain concerning the proposed passenger ferry service. These include terminal location, parking, source of capital funds, and potential operating subsidy.

APPENDIX A

List of reference documents:

Movement of People Working Group Final Report & Recommendations, October 2002

Movement of Goods Working Group Final Report & Recommendations, October 2002

Land Use & Economic Development Working Group report, September 2002

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Intrastate Passenger Commuter Ferry Study, CDOT Office of Intermodal Planning

Appendix N

Background Paper – Rail

BACKGROUND PAPER ON RAIL

The Movement of People and Goods by Rail In Connecticut

The Movement of People

I. OVERVIEW

The 282 weekday trains on the New Haven Line and the Shore Line East (excluding Amtrak trains) constitute the keystone of economic vitality and livability for much of Connecticut. However, the rail system is being asked to perform at a significantly higher level of capacity in response to increasingly worse congestion on the region's road and highway network. With a limited supply of capital available for rail facilities and equipment, difficult choices must be made.

In addition to the maintenance of aging infrastructure, additional seat capacity, parking and station platform capacity are urgently needed in both the New York and intrastate Connecticut markets. Much can be done to reduce single-occupant highway traffic related to rail passengers traveling by automobile to a rail station. Commuting by rail can and must be made more seamless, whether by new parking centers or by more express train service. Where capacity is available, it must be efficiently utilized. Given the long lead times for the acquisition of new equipment and the construction of new station facilities, action is urgent.

II. DESCRIPTION OF COMMUTER LINES

New Haven Line

The New Haven Line from the State Line to New Haven consists of 46 electrified route miles, utilizing an 12.5 Kv alternating current catenary system. The New Haven Line's weekday ridership is 90,000 in the Connecticut portion, including passengers to and from the three branch lines. The New Haven Line operating plan is a combination of express and local trains requiring 342 electric multiple unit cars (EMU's). The weekday morning and evening peak period train density requires a smoothly functioning fixed plant and rolling stock system, as well as adequate seat capacity, to deliver a reliable transportation product to its customers. For example, in a two-hour peak period in the morning, there are thirty westbound train movements through the Stamford station.

There are nineteen stations on the New Haven Line within Connecticut. While the desired platform length is 850 feet (10 cars), only five stations presently meet this standard. These are Stamford, Westport, South Norwalk, Darien, and Noroton Heights.

New Canaan Branch

The 8-mile New Canaan Branch presently has 20 trains per weekday westward and 19 trains eastward. Westward, five morning trains operate through to GCT plus two in the evening. Eastward, there are five through trains in the evening which operate through to New Canaan. The balance of trains require a change at Stamford for other stations.

Platform length at three of the four New Canaan Branch stations limit consists to four EMU cars. New Canaan station accommodates five cars. Platform length is not considered to be a problem at present on this branch. One weekday peak period train in each direction serves only New Canaan Branch stations.

Danbury Branch

The 24-mile, non-electrified Danbury Branch presently has ten trains in each direction. Three peak period trains are run-through to/from Grand Central Terminal (GCT) with dual mode locomotives. Two operate to/from Stamford and the balance operate to/from South Norwalk, requiring a change for other stations.

The principal infrastructure change on the Danbury Branch in modern times (other than the dismantling of the catenary in 1961) was the construction of the Merritt 7 station, with 88 parking spaces. The traffic control system is in need of modernization. A study is presently being conducted of how best to leverage the Branch's infrastructure to increase capacity and single-seat rail trip options.

The seven stations on the Branch have varying platform lengths, ranging between two and five cars.

Waterbury Branch

The 27-mile non-electrified Waterbury Branch has six trains in each direction per weekday. The Branch diverges from the New Haven Line at the east bank of the Housatonic River in Milford. All trains operate between Waterbury and Bridgeport, requiring a change of trains at Bridgeport. Since only one set of diesel-powered equipment is used for the six trains in each direction, there is only one weekday train in each that allows passengers from the Waterbury Branch stations to work in Stamford during normal business hours, e.g. 8:30 a.m – 5:00 p.m. With the exception of Waterbury, all other stations have low level platforms.

Shore Line East

Shore Line East (SLE) service commenced in 1990 between Old Saybrook and New Haven. Two trains in each direction were extended to operate between New London and New Haven in 1996. In December 2001, one and subsequently two peak period SLE trains were extended westward, providing single-seat express service to Bridgeport and Stamford, with two peak period eastbound, as well. In June 2002, service commenced at the new SLE station at State Street in downtown New Haven for the seven peak period

trains in each direction. This station is intended to expand rail transportation alternatives in the region and to reduce traffic congestion, especially that associated with the construction of the Pearl Harbor Memorial Bridge and reconstruction of the I-95/I-91/Route 34 interchange over a 12-year period. Metro-North Railroad also provides limited peak period service at State Street Station.

SLE trains typically account for about 1,200 passenger trips per weekday. No service is operated Saturdays, Sundays or holidays. Presently, all SLE trains are diesel powered and typically operate with three coaches. Amtrak provides the service between New London and New Haven under contract to the Connecticut Department of Transportation (ConnDOT). SLE express service trains from New Haven to Bridgeport and Stamford are crewed by Metro-North employees.

Amtrak also provides 30 – 40 intercity trains on the Southeast Corridor between New Haven and Rhode Island.

New Haven/Hartford/Springfield

Currently, Amtrak operates about six trains per day between New Haven and Springfield, including one to/from Boston and one to/from St. Albans, VT. Much of the line permits passenger train speeds up to 80 MPH. A study entitled *New Haven, Hartford, Springfield Commuter Rail Implementation Plan* is presently underway for this non-electrified, Amtrak-owned corridor having significant segments of single track and local freight service. The study will include an assessment of the corridor and ridership forecasts, as well as capital needs for the rail line.

The future of SLE and other Amtrak intercity service contracting in Connecticut should be closely monitored given the possible restructuring of Amtrak and its decision to withdraw as contractor of the Boston area commuter service.

III. COMMUTER SERVICE ISSUES

Ridership Growth Rates

An average annual ridership growth of 1.5 percent results in a ridership growth of 25 percent in fifteen years. The long lead-time needed for assuring funding and acquiring capital assets requires immediate action in order to meet ridership demand with a level of service quality acceptable to customers.

Ridership between stations other than GCT is the fastest growing market segment, with an average annual growth of 5 percent in the last five years. To increase market share with single-seat rail trip, to the extent possible, requires some major modifications to the New Haven Line operating pattern. Since this rail market must compete with the automobile, rail service must be reasonably convenient in order to divert automobile trips to rail. Parking space availability is essential to the convenience and utilization of the rail mode by a commuter who might otherwise drive in a single occupant vehicle.

Station Parking

Presently, approximately 60 percent of riders drive to a rail station, the balance being either being dropped off by private vehicle or by a shuttle service. The vast majority of riders who drive to the station do so in a single-occupant vehicle.

Rolling Stock Maintenance/Procurement

New Haven Line

To support New Haven Line operations, ConnDOT currently operates a fleet of 342 electric multiple units (EMU), each unit having traction motors for propulsion. In addition, 10 dual mode diesel and 3rd rail capable locomotives and 30 conventional (non-powered) coaches are used to provide service, primarily on the Waterbury and Danbury branches.

The EMU fleet consists of 240 cars manufactured during 1973 –76 (designated M-2 class), 54 cars manufactured in 1978 (designated M-4 class) and 48 cars manufactured during 1993 –95 (designated M-6 class). Thus, 70 per cent of the total EMU fleet is at least 26 years old, and the challenge of total fleet replacement within the next thirty years is evident. Fleet replacement must also consider other factors, such as:

- Use of AC traction motors (becoming an industry standard)
- Flexibility to operate with one set of electric equipment from Grand Central Terminal (GCT) to New London (through three separate power systems – 3rd rail, 12.5 kv, and 25 kv
- Long lead time and cost for designing, prototyping, and testing a AC capable EMU
- Ridership increases
- One time "total fleet replacement" not possible because of numbers involved
- Use of bi-level equipment
- 3rd rail gaps in GCT
- Maximize the use of "off the shelf" components/equipment

Anticipating the fleet replacement challenge, ConnDOT initiated a thorough study of the topic, entitled *New Haven Line Fleet Configuration Analysis* (June 2002). The study evaluated six alternative procurement/equipment strategies, that included single level and bi-level equipment, and high, low, and minimum use of EMU type equipment. The alternative to EMU equipment is locomotive hauled trains having two locomotives, one at each end of the train.

At this writing, no particular procurement strategy is favored by ConnDOT. The use of bi-Level equipment is attractive because of its increased seating; however, the clearance of bi-level cars in GCT and other portions of the route is not confirmed. Studies are in

preparation to address the Bi-level clearance issues and should be completed in about one year. All scenarios include purchase of some amount of EMUs. Since equipment must operate under three modes through Connecticut (3rd rail, 12.5 kv and 25 kv), purchase of new Emus will require the design of a new vehicle (class M-8). The process from design through construction of a prototype, testing, and finally production could take about six to eight years. The final decision regarding the fleet equipment configuration will not be made until after the bi-level clearance issue is resolved.

The new replacement equipment would be phased in over time in conjunction with retirement of the existing EMU equipment. The overall replacement strategy is to rehabilitate the M-2 fleet adding 15 years to the life of each car. This will provide some breathing room and allow the limited procurement of new equipment (locomotives, M-8s, and bi-level cars as applicable) for a trial program. The alternatives for replacing New Haven line equipment over a 30 year period range between a maximum procurement of 602 units and a minimum of 352 units (locomotives, EMUs, coaches).

Shore Line East

Service on the Shore Line East is provided by a pool of eight Diesel locomotives and 21 coaches (non-powered). Six train sets are used, each consisting of a Diesel locomotive and coaches. Current practice is to have three train sets in service, one on standby, and two in for maintenance. An important issue on SLE is the fact that the equipment is old and maintenance is expensive.

Maintenance Facilities

The facilities currently in use by ConnDOT were designed to maintain an EMU fleet of 250 cars; today those facilities are maintaining a fleet of 360 EMUs and other cars. In recognition of this situation, and the necessity to expand operations to accommodate increasing ridership, a Maintenance Facilities Assessment (Task-4) was included as part of the *New Haven Line Fleet Configuration Analysis* report, completed in June 2002. To accomplish this task requirement, a New Haven Line Shops and Yards Working Committee was formed comprising representatives from ConnDOT, Metro North, and the design consultant. This committee helped to define and confirm the overall long-range maintenance needs of the New Haven line. Facilities needs were based on a proposed fleet of about 450 cars in the year 2020.

The need for new maintenance facilities include:

- Main Maintenance Facility (running repair, support shops, store room, etc)
- Service and Inspection Facility (S&I)
- Blow Down Facility
- Wheel True Facility
- Car wash Building
- Heavy Damage Repair Facility

- Paint Facility
- Storage Area
- Lay-up Yard – EMU
- Lay-up Yard – diesel hauled coaches

A site layout plan has been prepared showing the proposed location of the new facilities in the area of the existing shop facilities at New Haven. It is anticipated that the facilities will be built in phases, as the need arises due to fleet expansion. However, high priority is placed on constructing the Wheel truing, and S&I facilities first.

Track Structure

There is a continuing need to maintain and improve the track structure. Improvements include the eventual replacement of wood ties with concrete ties. The use of concrete ties is becoming the standard for high density railroads thought out the world. Use of concrete ties reduces maintenance costs by enabling longer intervals between surfacing programs. In addition, two movable bridges require major rehabilitation. The tie replacement program has stopped because of lack of funds and the bridge rehabilitation program is partially funded.

Catenary/Sub Stations

Approximately seven years of rehabilitation work remains in the catenary program. This program is installing a constant tension system which will allow 100 mph operation and will be much more maintainable than the existing system which was installed circa 1914. In addition, the sub stations that supply power for traction were installed concurrent with the catenary system and remain as-built. New sub stations need to be designed and a program established to replace the existing sub stations. These two programs are critical to increasing the reliability of the entire system.

Signals

The signal system on the New Haven Line is approaching 20 years old. A formal program of unit replacement is needed

<u>Contracts</u>

Metro North Operating Agreement

In late 1982, with ConRail leaving the passenger rail business, the State of Connecticut agreed to the Metropolitan Transportation Authority's plan to create a new subsidiary, Metro-North, to operate the commuter rail service on the New Haven Line. Initially

Connecticut and New York were equal partners, sharing subsidy and capital expenses on an equal basis[1] as they had for almost twenty years.

However, that even partnership did not last. Twenty years and two arbitration awards later the State of Connecticut is paying about two thirds of the New Haven Line subsidy.[2] At the same time a number of aspects of the basic operating agreement between the State and the MTA limit Connecticut's ability to meet customer needs, control costs, and manage the State's operating and capital investment in the New Haven line. These include the lack of representation on the MTA, the state's limited role in labor issues and negotiations, MTA negotiating practices, cost allocations, and the state's inability to control Metro-North's budget and spending.

Recently a new area of concern has arisen because of the MTA's proposed merger of Metro-North and the Long Island Railroad into a single operating subsidiary. In a letter to New York Governor George Pataki, Governor Rowland expressed the state's concern about this proposal:

> "While the announcement speaks to potential savings and efficiencies, which are expected to result, no details are yet available to assure Connecticut that there will not be any detriment to the vital rail services provided on the New Haven Line." *Letter, dated October 16, 2002 from Governor John G. Rowland to Governor George E. Pataki*

Amtrak Operating Agreement

ConnDOT currently contracts with Amtrak to operate the Shore Line East service in Southeastern Connecticut. The contract has a two year term, and is renegotiated at the end of each term.

[1] Under the original agreement each state paid 50% of the subsidy, 50% of the cost of movable capital equipment and 100% of the cost of fixed capital equipment located in their state.
[2] Connecticut also pays almost two-thirds of the cost of movable capital equipment.

The Movement of Goods

I. OVERVIEW

While virtually no freight passes through the state by rail, in the year 2000, a total of 43,000 carloads either originated, terminated, or both, in Connecticut. This equates to approximately 95,000 trucks with either a reduced length or no truck haul in Connecticut. Aggregates, scrap material, metal products, lumber, and chemical products are the principal commodities, in that order. There are eight private freight railroads operating in Connecticut. The primary rail carriers in order of carload volume are Connecticut Southern between Springfield, MA, and New Haven; the Providence and Worcester, and the New England Central between New London and East Alburgh, VT, at the Canadian border. The CSX line between Selkirk Yard, near Albany, and Boston is the principal connection for rail traffic to and from Connecticut, except for seasonal aggregate traffic.

With the existing rail freight infrastructure in New York and New England, there is little opportunity to divert existing truck traffic on I-95 and I-84 to rail intermodal. There is presently no intermodal container rail service in Connecticut. Rail intermodal containers to or from the west and south, with an origin or destination in Connecticut, are transported by highway from rail terminals in northern New Jersey, West Springfield, Palmer, Worcester, and Ayer MA.

Even if the Northeast Corridor, with its overhead catenary height restriction, were to be cleared for intermodal container service, a combination of the lack of either a through rail freight line across New York Harbor or a Hudson River crossing, as well as line capacity limitations west of New Haven, leaves little or no prospect of diverting significant truck volumes to rail intermodal. While the car-less, bimodal technology of RoadRailer® could operate under the existing NEC catenary, service to the Bronx or Queens would not be either economically or operationally practical because of the relatively short haul involved. The presently balkanized rail freight network in New England adds an additional institutional barrier to the application of RoadRailer technology.

Another general infrastructure restriction on both the passenger and freight-only rail lines in Connecticut is their inability to accommodate 286,000 lbs. loaded freight cars. The capacity to handle 286,000 lbs. gross weight on rail (GWR) is gradually becoming an operational necessity, to be compatible with the national rail freight network, and truly high density freight lines are commonly rated at 315,000 lbs. GWR. Operations at 286,000 lbs. GWR on high speed passenger train routes, such as the Northeast Corridor, can result in significant additional maintenance costs for the passenger route, as the heavier weight freight cars have a tendency to “kick” rails out of alignment, especially at interlockings, and to wear rails at a faster rate than do the passenger trains. Required tolerances on rail alignment and surface condition, in order to safely operate high speed passenger service, are such that more frequent maintenance inspections and operations generally result when passenger and freight operations share a line.

Appendix O

Background Paper – Road/Bus

BACKGROUND PAPER ON ROAD

I. OVERVIEW

The Texas Transportation Institute, in their publication *The 2002 Urban Mobility Report* noted that, in general, traffic congestion has increased in every area considered. They also conclude that the Travel Time Index (TTI), defined as the ratio of peak period travel time to free-flow travel time, for urban areas with populations over 1 million is about 1.20. For cities larger than 500,000, the TTI is about 1.15. The report goes on to state that areas with populations over 500,000 should expect to experience at least a 10 percent time penalty in the peak hours, with the average being 15 to 20 percent.[1]

Connecticut is not immune to the effects of congestion. Census data has indicated that car ownership has grown at a faster rate than population in the State, and the Connecticut Department of Transportation predicts that by the year 2020, major portions of the State's highway infrastructure will experience more than eight hours of congestion per direction per day, even after currently planned improvements are implemented.

Methods to deal with the existing and predicted congestion include a mix of physical improvements to highways, in the form of either Capacity or Operational improvements, providing transit services that match demand with markets, Demand Management and System Management strategies. This paper will provide background and descriptions for common approaches in each of these broad categories and describe the current conditions in the State for each of these approaches.

II. HIGHWAY OPERATIONAL, SAFETY AND CAPACITY IMPROVEMENTS

Census data indicates that single occupancy vehicles represent the predominant mode of travel for all trip types, resulting in increased congestion on nearly all roadway systems. Highway capacity improvements are just one of the methods that can be implemented to deal with congestion. However, it is not always possible to add capacity to existing highways due to constrained rights of way, funding or political opposition. Sometimes it is possible to at least improve traffic flow by implementing less costly and less intrusive operational improvements. The following sections describe some operational improvements that have been implemented by Departments of Transportation.

Shoulder Use

One strategy that is frequently discussed to relieve congestion is the use of highway shoulders as additional lanes. This is discussed usually in terms of using the shoulders during incidents, or during peak periods. Sometimes the concept includes restriping the roadway for conversion of the shoulders to lanes as a full-time option.

A decision to use shoulders to relieve congestion must obviously be made taking into account any safety issues that may arise.

[1] Texas Transportation Institute, *The 2002 Urban Mobility Report*, June 2002

If shoulder use is considered, some general guidelines include:

- Consideration of the use of the left shoulder only. Use of the left shoulder will create less conflicts in ramp gore areas, and will maintain at least some emergency vehicle access in the right shoulder.
- Comprehensive incident detection and response systems should be in place prior to implementation.
- Emergency pullouts should be considered, for cars that do breakdown during the time when shoulders are used for traffic.
- Adequate signing and markings must be provided to advise motorists of shoulder use.

Currently, the Massachusetts Highway Department allows shoulder use during peak hours on portions of Route 128 outside Boston, portions of Route 3, and a portion of Route I-95. Although no in-depth analysis has been undertaken, a review of accident rates indicates that overall accident rates (defined as number of accidents per millions of vehicle miles traveled) are roughly the same for freeway sections where shoulders are used and sections where shoulders are not used. However, accident rates during peak periods are slightly higher in those sections where shoulders are used, as compared to sections where shoulders are not used.

Ramp Characteristics

In some cases, ramp geometry creates congestion problems on a mainline.

Typical geometric issues that may contribute to congestion on a mainline include:

- Vertical or horizontal geometry that is difficult for vehicles to negotiate.
- Inadequate storage capacity on the ramp creating queuing problems on the mainline.
- Closely spaced interchanges that create dangerous weave situations as traffic attempts to merge into or diverge out of the traffic flow.
- Left hand exits that force drivers to slow to make the exit while they are in the high speed lane.
- Inadequate acceleration or deceleration lengths.

Modification of these types of deficient ramp geometrics can improve freeway performance through the area and increase safety.

ConnDOT has addressed similar issues in several recent projects, including:

- Addition of operational lanes between exits 10 and 8 on I-95 in Darien and Stamford.
- Extension of acceleration and deceleration lanes at Exits 1 – 11 on I-84.

- Reconfiguration of the Route 6/9/4/84 interchange in Farmington to remove left hand entrances and exits and to provide for missing movements (currently under design).
- Reconfiguration of the Route 7/15 Interchange.

These projects do not add capacity to the freeways they involve, but allow the roadways to operate more efficiently.

III. BUS TRANSIT

Basic transit service for millions of passengers nationwide is provided by either fixed route or express bus service. When express bus service is combined with preferential treatment for buses on roadways, or with exclusive busways, the service can become very attractive to commuters.

Buses are also the most flexible form of transit. They can be re-routed, deviated and/or rescheduled to meet changing demand. They are also more appropriate for diffuse trip patterns. Generally, some relationships that appear to be important considerations in bus service include:[2]

- Off-peak ridership is more sensitive to changes in service.
- Ridership responds more favorably to increases in service than to decrease in travel time.
- One-seat rides are extremely important. In fact, the introduction of transfers to a service is so onerous that planners add a transfer "penalty" to their modeling efforts.

Factors that affect the success of any bus transit service include:

- Frequency
- Reliability
- Convenience
- Comfort
- Safety

Connecticut's bus transit system currently provides nearly 40,000,000 passenger trips annually, through a combination of fixed route service, express service, ADA, Dial-A-Ride, Paratransit and shuttle services. The system includes just under 1,000 vehicles.[3] The majority of service is in major urban areas, and includes fixed route and express bus service. The Connecticut Department of Transportation operates local fixed-route and commuter bus services in the Hartford, New Haven and Stamford areas. Bus service to five other urban areas is provided by private contractors, operating systems for ConnDOT.

[2] "A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility", 1997. Institute of Transportation Engineers, Washington D.C.
[3] "Operations Statistics for the Biennium", Connecticut Dept. of Transportation, Bureau of Public Transportation/SFY 2000/2001

In addition to ConnDOT owned bus services, there are seventeen transit districts that provide remaining urban, rural, ADA and paratransit services. ConnDOT provides funding to cover the majority of operating deficits for all bus services, as well as the non-federal share of capital grants.

In 2000, Urbitran Asssociates, Inc. completed their *Connecticut DOT Statewide Bus System Study* on behalf of ConnDOT. Their overall findings were that the bus system, while performing very well overall, had some areas that could be enhanced by modifications to existing route schedules. Their recommendations are in the form of re-allocation of resources, rather than drastic decreases or increases in service. Some of those modifications have been implemented.

IV. TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is defined as actions implemented to influence people's travel behavior such that congestion is managed and overall mobility is increased. Strategies can be site specific (e.g. designed to influence behavior of a specific group), or can be region wide (e.g. growth policies or region wide information services).

One important factor to keep in mind when developing TDM strategies is that different trip purposes require different strategies. For instance, strategies designed to influence travel behavior for work trips are different than for shopping trips and tourist trips. Since work trips tend to have more concentrated distribution and tend to occur in a more compressed time frame, management of work trips presents a significant opportunity to improve mobility.

Site Specific TDM Strategies

The three most basic tools for managing demand at the site specific level are to:

1. Switch the commuter to alternate modes.
2. Incent the commuter to travel during non-peak hours.
3. Use technology to accomplish the trip purpose.

Alternate Modes

Since rail has been dealt with separately, the alternate modes this paper will consider include Ridesharing and Bicycle/Pedestrian modes.

1. Ridesharing

Ridesharing involves the creation of carpools, vanpools and/or buspools for work trips. Ridesharing can be organized through an employer, a public agency, or a ridesharing service.

Factors that appear to be important influences on the success of ridesharing programs include:

- Employees with consistent work hours.
- A high percentage of employees with long (or difficult) commutes.
- A high percentage of employees with moderate incomes.
- The availability of HOV lanes.
- Constrained parking.
- Financial support by employers or public agencies.

Benefits of increased ridesharing include:

To Society:

- Reduced vehicle miles traveled.
- Improved air quality.
- Improved utilization of highway capacity.

To Employers:

- Reduced need for parking facilities
- Reduced absenteeism.
- "Good citizen" image

To Employees:

- Cost Savings

Census data indicates that use of carpooling/vanpooling is on the decline, with Connecticut data mimicking the national trend. Year 2000 data indicates that 9.4 percent of Connecticut commuters ride to work in a carpool, down from 11 percent in 1990.

Currently in Connecticut, ConnDOT provides financial support for three major ridesharing services that assist employers to set up programs for their employees, and assist commuters whose employers do not have formal programs to become involved in shared rides. Those three services are Metropool (Fairfield County); Rideworks (greater New Haven and greater Waterbury); and The Rideshare Company (greater Hartford and southeastern Connecticut).

All three services offer similar assistance in developing ridesharing programs, including rider matching, guaranteed ride home programs, facilitating the creation of shuttle services from rail stations to work locations, and marketing of all transit and ridesharing options, and newsletters and information services.

Tax incentives and subsidies are also offered to employers and employees interested in ridesharing. Currently, Federal law allows employees to use up to $100 per month of pre-tax income to pay for commuting on public transit and eligible vanpools, and up to $185 for qualified parking. In addition, employers can receive a State business tax credit for up to 50% of qualified expenditures towards promoting commute option programs, up to a maximum of $250 per employee annually, subject to an overall statewide cap of $1.5 million annually.

Additional subsidies exist to support the startup of new vanpools. The subsidies are in the form of support for leasing costs, or to cover the cost of empty seats, and are for limited periods.

2. Bicycle/Pedestrian Commuting

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.[4]
- Physical environment, including terrain, climate, circulation within activity centers and availability of alternative modes.
- Demographics – bicycle commuting generally declines rapidly in the segment of the population over age 45.

There are three major roles the bicycle and pedestrian modes can fill:[5]

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

Benefits of effective bicycle and pedestrian networks relate to the reduction in vehicle trips. Resulting reductions in emissions, need for roadway infrastructure and parking facilities flow from the reduced trips.

Bicycle use in Connecticut as a mode for commuting remained fairly constant between 1990 and 2000, at approximately 0.2 percent of all commuters. Walking to work declined as an option in the State between those same years, from 3.6 percent to 2.7 percent. Compared to national averages, Connecticut has a lower percentage of bike commuters (0.2% vs. 0.4% nationally), and roughly the same percentage of pedestrian commuters (2.7% vs. 3% nationally).

In 1999, the Connecticut Department of Transportation developed a *Connecticut Statewide Bicycle and Pedestrian Transportation Plan*, the focus of which is recreational cycling and walking. The plan discusses current policies and regulations relating to bicycle and pedestrian facilities, presents planning and design guidelines, goals, funding strategies and completed and planned projects. It also includes the bicycle and pedestrian plans of all the Regional and Metropolitan Planning Agencies in the State.

Some specific recommendations presented in the plan include:

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[4] Herman, M. 1993. Bicycle Blueprint: *A Plan to Bring Bicycling Into the Mainstream In New York City*, New York.
[5] Goldsmith, S. 1993. *Case Study No. 1: Reasons Why Bicycling and Walking Are and Are Not Being Used More Extensively as Travel Modes*, Report FHWA-PD-92-041, Federal Highway Administration, Washington D.C.

- Review of the Connecticut Bicycle Map and Long Range Bike Map when evaluating the suitability of providing sidewalks, shoulder widening, etc., and multi-use trails within projects.
- Inclusion of bicycle and pedestrian facility planning in the highway planning and design process.
- Provision for bicycle/pedestrian access in all bridge design and reconstruction process.

ConnDOT has recently provided bike racks on 40 buses in the Stamford area, and has provided bike racks at train stations.

Moving Commuter Trips to Non-Peak Hours

Travel during non-peak hours is a simpler proposition for shoppers and tourists than for commuters, who have traditionally had fixed arrival and departure times. Three major modifications to fixed work schedules are:

1. Staggered Work Hours
2. Flextime Programs
3. Compressed Work Week

Staggered Work Hours programs are most successful for operations where employers can easily control the beginning and ending work times of employees. This type of program has the result of spreading traffic to and from a facility over several hours.

Flextime Programs work best when employees can work independently and exercise some measure of control over the scheduling of their work. As in the Staggered Work Hours, this program has the effect of spreading traffic over a longer time frame.

Compressed Work Weeks have a double impact on travel. Generally, employees work longer hours on less days during the week, and are able to take at least one day off. The longer hours result in pushing more work trips to off peak times, and the additional day off results in the elimination of a segment of the commuter population for that day.

The major benefit from alternative work hours programs is the reduction in peak hour travel. Several studies nationwide illustrate the benefits of these types of programs.

One of the largest demonstrations of a compressed work week program took place in Denver in 1982.[6] About 9,000 federal employees worked four, 10 hour days each week for a period of time. The resulting changes included:

- Maximum percentage of arrivals in a half hour period reduced from 56 percent to 42 percent.
- Maximum percentage of departures in a half hour period reduced from 47 percent to 34 percent.

[6] Atherton, T. 1982. "Transportation-Related Impacts of Compressed Workweek: The Denver Experiment," Transportation Research Board 845, Washington D.C.

- Employees participating in the experiment experienced a 15.3 percent reduction in vehicle miles traveled.

Flextime has been shown to result in similar traffic related benefits by spreading demand on the highway system over a longer period, and also has provided cost savings to employers. Many employers can quantify substantial net savings in reduced sick and personal time for employees who take part in flextime arrangements.

One detrimental effect of alternate work hours some regions have experienced is the resulting increased difficulty of matching commuters for rideshare programs.

The three commuter service companies in Connecticut also provide information and support to companies who are considering the implementation of flexible work hours programs.

Use of Technology to Accomplish Trip Purpose

The advances in computer and telecommunications technologies have made it possible to eliminate some trips altogether by providing access to information and people without travel. Some of the most common uses of technology to eliminate trips include:

1. Telecommuting
2. Teleconferencing
3. Teleshopping
4. Telebanking
5. Tele-education

1. Telecommuting

Telecommuting appears to offer great potential to affect travel demand on an immediate basis. Additionally, over the longer term, telecommuting could affect car ownership and land use patterns as well.[7]

Benefits of telecommuting cited by employers include reduced absenteeism, greater productivity, reduced fixed office costs, and greater retention of employees. Benefits cited by employees include reduced stress, greater productivity, reduced costs, and greater job satisfaction.

Some specific case results are:

- In California, trip-making behavior of 400 state employees was tracked through travel diaries. On days employees worked at home, they made 27 percent fewer personal trips, and their total vehicle miles traveled were reduced by 77 percent.

[7] Sullivan, M., H. Mahmassani, and R. Herman. 1993. *Telecommunications-Transportation-Energy Interaction: The Potential for Telecommuting to Reduce Urban Network-Wide Fuel Consumption*, Center for Transportation Research, University of Texas, Report 60018-1, Austin, TX, November.

A further study of air quality impacts showed significant potential reductions in emissions related air quality impacts.[8]

- In Puget Sound, telecommuting workers averaged 30 percent fewer trips, and a 63 percent reduction in vehicle miles traveled. These factors resulted in a 50 to 60 percent reduction in per vehicle emissions per telecommuting day.[9]

Through the organization TelecommuteCT!, information and assistance to Connecticut employers considering implementing telecommuting programs, and employees wishing to telecommute is provided.

TelecommuteCT! is a program sponsored by ConnDOT and operated by Rideworks in New Haven. Their funding (approximately $500,000 annually) is provided by FHWA Congestion Mitigation and Air Quality (CMAQ) Program funds and State match funds.

In November 2002, TelecommuteCT! reported that their program has directly resulted in 3,327 workers in Connecticut telecommuting. Since detailed breakdowns of the number of days each of these employees telecommute each month were not available, TelecommuteCT! estimated the number based on national averages. Their estimates are shown in the following table

FREQUENCY OF TELECOMMUTING		
HOW OFTEN	**# PEOPLE**	**PERCENT (based on national averages)**
One day/week	998	30%
Two days/week	499	15%
Three days/week	433	13%
Four days/week	166	5%
Five days/week	1231	37%
TOTAL	**3327**	**100%**

Based on the frequency and numbers shown in the table, it can be estimated that approximately 80,000 vehicle trips each month have been eliminated as the result of this group of telecommuters.

Statewide, the year 2000 census reports that just over 51,000 workers in Connecticut telecommute. Assuming the same frequency percentages as in the TelecommuteCT! analysis, telecommuting can be said to have resulted in the elimination of over 300,000 trips per month in the State.

[8] Koenig, B., D. Henderson, and P. Mokhtarian. 1996. "The Travel and Emissions Impacts of Telecommuting for the State of California Telecommuting Pilot Project," *Transportation Research C.*

[9] Henderson, D., B. Koenig, and P. Mokhtarian. 1996. "Using Travel Diary Data To Estimate the Emissions Impacts of Transportation Strategies: The Puget Sound Telecommuting Demonstration Project," *Journal of the Air & Waste Manage4ent Association*, Vol 46, January.

Other uses of technology to replace trips do not have the potential, in and of themselves, to achieve the level of benefit that telecommuting does. However, options such as teleshopping and telebanking can help to reduce the number of SOV commuters, when other options for work trips are available. The availability of other methods to accomplish errands has the potential to keep workers from using their cars for their commute on the odd days when such errands are necessary.

Areawide TDM Strategies

Transportation Demand Management strategies that could be implemented on an area-wide basis include:

1. Growth Management
2. Urban Design
3. Auto Restricted Zones
4. Parking Management
5. Trip Reduction Ordinances
6. Negotiated Demand Management Agreements

Congestion Pricing and Traveler Information Systems are techniques that can be considered either Demand Management or System Management techniques. Since these techniques involve the types of Intelligent Transportation Systems (ITS) associated with other System Management strategies, they will be considered in the Transportation Systems Management section of this report.

1. Growth Management is the use of public policy to regulate the location, density, rate of growth and pattern of development. It is a method used to control the trip generation characteristics in an area.

2. Urban Design strategies include many different initiatives to promote development that enhances personal mobility by providing a balance between housing and employment, increased density of development, and pedestrian and transit friendly components. Transit oriented design principles are a good example of this strategy.

3. Auto Restricted Zones are specific areas where auto traffic is prohibited or restricted through either physical barriers, parking controls or other prohibitions.

Since these three strategies relate more to land use policies than transportation policies, they will not be discussed further in this document.

4. Parking Management

Parking management is accomplished through premium pricing for certain conditions, parking taxes or by control of the parking supply. Each of these strategies can influence drivers to share rides or use alternate modes. Premium pricing at particular periods can influence drivers to travel at non-peak times. Pricing can also be used as an incentive to

ridesharing by providing preferential pricing and parking location to carpools and vanpools.

Policy initiatives include tying potential public funding support for roadway improvements or development projects to parking management actions.

5. Trip Reduction Ordinance

In implementing trip reduction ordinances, an agency uses its regulatory authority to limit trip generations from development sites. Alternate approaches include criteria related to reductions in travel demand from the facility, or increased level of transit use to access the facility. Requirements may include the possibility of public incentives to achieve criteria.

6. Negotiated Demand Management Agreements

Negotiated demand management agreements are similar to trip reduction ordinances, in that final approvals for developments are tied to reduction in travel demand resulting from the facility, but overall goals are specified, with implementation left to the developer.

Connecticut exercises a measure of control over the traffic impacts of development through the State Traffic Commission. Connecticut's State Traffic Commission has the authority and responsibility to review plans for new developments, or modifications to existing developments, that generate large volumes of traffic that may "substantially affect state highway traffic" from the standpoint of safety. Applicants must provide documentation of their plans to adequately serve traffic generated by their development, and must bear all costs of roadway improvements deemed necessary by the State Traffic Commission.

V. TRANSPORTATION SYSTEM MANAGEMENT

Transportation System Management (TSM) is defined as a set of measures implemented to manage the performance and use of the transportation system. For freeways, there are four basic TSM strategies:

1. Incident Management
2. Ramp Control
3. Lane Control
4. Information Dissemination

1. Incident Management

In their 2002 Urban Mobility Report, the Texas Transportation Institute estimates that between 52 and 58 percent of total delay experienced by travelers in all urban areas is the result of incidents. For a freeway operating at or near capacity, all it can take is one

traveler with a flat tire for a total breakdown of the system to occur. Management of incidents is therefore one of the biggest challenges to Transportation Agencies.

There are three major stages to any incident: 1) detection/verification, 2) response/clearance, and 3) recovery/information.

Detection and verification is greatly enhanced by an integrated Intelligent Transportation System. Coordinated closed circuit television cameras (CCTV), in pavement detectors and Doppler radar detectors can be used to monitor traffic and detect and verify incidents. FHWA estimates an average time savings of 5 minutes per incident for major incidents through the use of ITS technologies.

Response and clearance is often coordinated by either fire or law enforcement agencies, but more states are developing Traffic Management Centers (TMC) that have the responsibility to monitor the Incident Management system, and coordinate agency responses to incidents.

Recovery is generally left to local law enforcement authorities. Information dissemination to the traveling public is accomplished through the Traffic Management Center (or other coordinating agency) through the system of Dynamic Message Signs and Highway Advisory Radio.

Connecticut currently has an extensive Incident Management system. In summary, the system consists of the following components:

- Two Traffic Operations (Management) Centers. One is located in the Department of Transportation Building in Newington, and one is co-located with the Connecticut State Police in Bridgeport.
- Ninety-nine closed circuit television cameras. Ninety-six are monitored and controlled from the traffic operations center in Bridgeport. Three cameras are controlled by the traffic operations center in Newington. The Department of Transportation has also recently announced the impending installation of one hundred more cameras.
- Seventy-five Dynamic Message Signs, control of which is split between the Bridgeport and Newington traffic operations centers. The Department of Transportation continues to add Dynamic Message Signs to the system. In addition, the Department of Transportation owns eight portable Dynamic Message Signs that supplement the system.
- Six Highway Advisory Radio transmitters. Three are deployed along I-95 and provide support for State operations as well as the I-95 Corridor Coalition. An additional seven Highway Advisory Radio transmitters are being deployed along I-95 and I-84.
- Ten Roadway Weather Information System sites. Data gathered by sensors is transmitted to the Traffic Operation Centers, and used by highway operations personnel to monitor weather conditions that may affect travel.
- Doppler radar detectors that provide raw data used in incident detection algorithms and to provide map based graphical information for highway

operations personnel and, on the web, for the traveling public. Doppler radar detectors are in the process of being replaced by true presence radar detectors.

- CHAMP vehicles. Connecticut Highway Assistance Motorist Patrol (CHAMP) vehicles patrol the Greater Hartford Area and the I-95 Corridor from New York through Branford. The vehicles provide roadside assistance to motorists, provide emergency information to the Traffic Operation Centers, remove debris from the roadway, and report damaged highway appurtenances to the Department of Transportation.

Connecticut's Freeway Incident Management System (FIMS) on I-95 between Branford and the New York State Line was completed in 1999. In 2001, the Department of Transportation undertook a study to determine the effectiveness of the system by comparing accident data from calendar year 1993 (just before project implementation) to similar data from calendar year 1999 (the first year of full implementation). Significant findings included:[10]

- Time and fuel related savings were calculated to be $22 million annually
- Accident savings were calculated to be $8.5 million annually
- A 41% decrease in daily VOC, CO and NO_x pollution
- A 20% improvement in detection and response times
- A reduction of 1.5 million vehicle hours of delay over the course of one year

Current incident detection time in Connecticut is, on average, less than two minutes. The Incident Management (IM) system, while an important tool in detection, really proves itself in the effective *response* to the incident. Through a coordinated, effective IM system, it is possible to for the traffic management center to inform the relevant agencies immediately of the incident, and ensure that the appropriate equipment is sent to the scene. The traffic management center also has the ability to put messages on the Dynamic Message Signs and Highway Advisory Radio to inform the public of the incident, and potential avoidance routes.

2. Ramp Control

Ramp control consists of installing traffic signals on freeway ramps to control the rate of vehicles entering the freeway system. Ramp metering is primarily a tool to control mainline capacity, but has the secondary effect of discouraging the use of the freeway for short trips. This results from drivers perceiving their short trip to be impacted adversely by a wait at the traffic signal that allows traffic onto the freeway.

Ramp metering has been shown to be an effective method of increasing throughput, travel time, travel time reliability and safety. The Minnesota Department of Transportation (Mn/DOT) had, by the year 2000, 430 ramp meters installed in their freeway system. In response to a Legislative Mandate, all meters were turned off in that

[10] Howard/Stein-Hudson Associates, Inc., 2001. *ConnDOT I-95 Freeway Incident Management System (FIMS) Before-and-After Study*, Boston MA.

year, and the Mn/DOT undertook an analysis of the effectiveness of the program. Their findings included:[11]

- After meters were turned off, there was an average 9% reduction in traffic volume on freeways, and no significant volume change on parallel arterials.
- Peak hour mainline throughput declined by an average of 14% in the "off" condition.
- Without metering, travel time was almost twice as unpredictable.
- Peak period crashes on previously metered freeway segments increased by 26%.
- Ramp metering was calculated to have resulted in a net annual savings of 1,160 tons of emissions.
- Ramp metering resulted in an increase in fuel consumption of 5.5 million gallons annually. This is the only criteria that was worsened by ramp meters.
- Ramp metering was calculated to result in an annual savings of approximately $40 million to the Twin Cities and the traveling public.

Metering can be timed to allow vehicles to enter the traffic flow at pre-timed intervals, or can be dynamic systems that vary timing in response to congestion levels. It is also possible to design a system that reads congestion and speed on the mainline, and sets several meters in a coordinated manner.

While ramp metering can offer substantial benefits, impacts of the metering on local road systems in the area, and on the ramp itself must be fully considered before implementation.

Connecticut has not implemented a true ramp metering approach at any location. In Middletown, at the Route 17/Route 9 Northbound intersection, a traffic signal was installed to reinforce an existing stop sign at the location. The intersection was a high accident location, as sight distance on Route 9 approaching the area is limited, and no acceleration lane exists for cars entering from Route 17. The signal has since been removed, although the stop sign remains.

In August 2000, the South Central Regional Council of Governments undertook an analysis of possible ramp metering in conjunction with other traffic improvements as a means to improve traffic flow on I-95 during the construction of the Pearl Harbor Memorial Bridge. Their analysis showed a distinct benefit to metering one specific location (North High Street), with volumes on the ramp increasing by upwards of 15 percent. Their work illustrated that the metering would mimic national experience with travel time savings.

3. Lane Control

<u>Access Control</u>

[11] Cambridge Systematics, Inc. 2001. *Twin Cities Ramp Meter Evaluation*, Oakland, CA. 2001

The most basic form of lane control is control of access to the lanes, by providing infrequent ramps. Weave patterns created by drivers merging into traffic, or trying to exit the freeway is a frequent cause of congestion and incidents. For an existing highway system, if closely spaced ramps are identified as a contributor to congestion and incident rates, closing ramps can be difficult to accomplish. Additionally, traffic impacts on the local road system as a result of changes in freeway access must be fully understood prior to implementation. Some transportation agencies consider closing selected ramps only during peak hours to control demand.

The Southwestern Regional Planning Agency (SWRPA) is currently acting as the lead agency for a multi-agency Congestion Mitigation Study for the southwestern portion of Connecticut. In their Draft Technical Memorandum, their preliminary recommendations consider the concept of closing of some ramps on I-95, to control access to the highway.

User eligibility

User eligibility is another method of lane control. Eligibility can be based on occupancy, by vehicle type, or by authorization. The most common example of lane control based on vehicle occupancy is High Occupancy Vehicle (HOV) lanes. HOV lanes are most effective in heavily traveled corridors, with major employment centers accessible from the lanes. Data also indicates that more drivers are attracted to the lanes if they are visible from the congested lanes.

HOV lanes have been generally successful in Connecticut. Connecticut Department of Transportation's monitoring of the HOV facilities in the Hartford area have shown that they consistently carry approximately the same number of people in peak hours, but in less vehicles, than the general purpose lanes.

Another form of lane control by user eligibility is to allow lane use based on vehicle type. Examples are truck-only or bus-only lanes. Vehicle-dedicated lanes can be physically separated from general purpose lanes, through barriers; can be located on entirely different alignments, as ConnDOT's New Britain-Hartford Bus Rapid Transit line will be; or can be separated simply through striping. An important consideration in vehicle designated lanes is providing sufficient access to and from the lanes, without impacting general purpose flow.

Pricing

Pricing strategies to manage lane use include High Occupancy Toll (HOT) Lanes, Congestion Pricing and Value Pricing, the latter two of which are closely related.

HOT lanes are basically HOV lanes with a toll. Generally, single occupancy vehicles are allowed to use the HOV lanes, but they pay a toll. In some areas, HOVs also pay a toll, but at a discounted rate compared to single occupancy vehicles.

Congestion pricing (or value pricing) involves levying fees on commuters who drive in congested areas, sometimes also tied to specific time frames.

Some forms of congestion pricing include:

- Parking surcharges in congested areas
- Point pricing at specific areas
- Cordon pricing
- Zone pricing
- Prices based on distance traveled in congested areas
- Prices based on distance traveled and time spent in travel in congested areas

Drivers could react to the pricing by accepting the cost, driving at non-peak times, taking another route, using an alternate mode, including more passengers to share the cost, or forgoing the trip altogether. Generally, attempts are made to set prices at a level where a sufficient "supply" of the transportation facility is available for all drivers willing to pay the cost.

Advances in electronic tolling technology have made it possible to develop truly dynamic pricing schemes. Systems of detectors and closed circuit TV cameras can allow vehicle weight, number of axles and even emissions to be used as a criteria for setting the toll amount an individual driver will pay.

Another very specific application of priced lanes are priced, commercial vehicle lanes. A separate lane or set of lanes is provided for commercial vehicles, which have the choice to either use the reserved lanes, at a price, or use the general purpose lanes. Indications are that commercial carriers are generally supportive of this concept.

For the development of this strategy, pricing issues will be considered as part of the Funding and Finance portion, and not in this section of the document.

4. Information Dissemination

Extensive information services can have the effect of inducing travelers to travel at alternate times, use alternate routes or to use alternate modes. The most familiar of the Traveler Information Services are the Dynamic Message Signs (DMS) and Highway Advisory Radio (HAR). Both systems are controlled by a Traffic Management Center (TMC) that programs messages into the system.

Both technologies are useful in informing the traveling public about varying road conditions; congestion due to construction, incidents or special events; and providing advisories on alternate routes. Quite often, they work together, with the DMS advising motorists to tune into the HAR frequency on their AM radio for information.

Other types of Traveler Information Services include:

<u>Roadway Weather Information Systems (RWIS)</u>

Road/Weather detectors on freeways are used to detect adverse weather conditions such as ice. These systems alert motorists to dangerous conditions and in some applications support the pavement treatment maintenance teams during winter weather emergencies. There are several environmental sensors available today, which include:

- Road condition sensors – measure surface temperature, wetness or dryness, presence of snow and surface moisture conductivity
- Visibility sensors – detect presence of fog, smog, heavy rain, snow or sandstorms
- Thermal mapping – detects presence of ice

Traveler Information Kiosks

Kiosks are usually located at transit stations, and provide riders with real-time schedule information. They work best when transit vehicles are equipped with Automatic Vehicle Locators (AVL), which transmit location and speed information to be displayed on the kiosk. The traveler then has the ability to determine when their expected bus or train will be at the station.

Web Based Information Services

Many Departments of Transportation and transit services provide road condition and schedule information through their web sites. In most cases, the information is nearly real-time. ConnDOT's website provides text reports of incidents as well as live cam pictures when available.

511

In March 1999, the U.S. Department of Transportation petitioned the FCC 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." Information envisioned to be provided is:

- Traffic Congestion Information
- Public Transportation Information
- Special Events
- Travel-Related Weather
- Travel Times
- Link to 911
- Multimodal routing
- Trip routing
- Local information and Points of Interest
- Location Information
- Interregional Information
- Tourist Information
- Incident reporting capabilities

As of March 2002, there were five active deployments of the 511 system. A majority of metropolitan areas and states are expected to have deployed the service by 2005.

Connecticut has received a grant to perform a 511 implementation study, which is expected to be complete within a year. Additionally, they are taking part in a Consortium of New England Colleges that is considering regional implementation issues.

In-Vehicle Navigation and Information Services

In vehicle systems have seen slower growth than originally anticipated. They currently are options on vehicles, and represent a significant additional cost to purchasers. There is also inconsistent coverage and quality of information. These technologies hold promise, but at present are not significantly effective in providing information to travelers.

Commercial Vehicle Applications

Technological transfer of information holds great promise for the more efficient operations of commercial vehicle travel. The three main applications for commercial vehicles include safety information exchange, electronic screening and electronic credentialing.

At roadside safety inspections, the use of safety information exchange technologies can make it possible for enforcement officers to receive complete, up-to-date information on the carrier in a matter of minutes. This significantly reduces delays to the carriers, and allows the enforcement officers to review safety information on more carriers in the same amount of time. The presence of unsafe commercial vehicles on the highway is therefore reduced, to the advantage of the traveling public.

Electronic screening can allow carriers with good safety records to bypass roadside inspections altogether. At the present time, nearly half of the states in the United States and almost 7,000 motor carrier fleets participate in some type of electronic screening program.[12] Using short-range communication technologies, information on safety records can be read by roadside enforcement operations and moving vehicles. Carriers with good safety records are given a "green light" to bypass the inspection station. Effective use of this type of program can reduce queuing of vehicles on the roadside while they wait for inspections, and "rewards" safe carriers by limiting their time spent in inspections.

Electronic credentialing systems allow carriers to perform credentialing tasks, such as interstate registrations and fuel tax payments, electronically, thereby reducing administrative costs associated with these tasks. It is estimated that carriers can save up to 75 percent of their current costs for these tasks by performing them electronically.[13]

[12] Orban, J. "What Have We Learned About ITS for Commercial Vehicle Operations? Status, Challenges, and Benefits of CVISN Level 1 Deployment".
[13] Ibid.

Connecticut is one of eight “pilot” states for the Commercial Vehicle Information Systems and Networks (CVISN) Model Deployment Initiative. ConnDOT is in the process of finalizing contracts to implement Level 1 service at the weigh station on I-84 in Union, and the service is expected to be available by September 2003. Level 1 service includes electronic pre-screening and electronic permit and certification verification.

The next phase of the program will include electronic oversize/overweight permitting, and is expected to be available by April 2004. Further applications include various electronic permit and registration functions, and are tentatively planned for implementation in September 2004.

Appendix P

Listening Session Summary

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Memo

To: **Oz Griebel/Bob Hammersley**
From: **Mike Leahy**
Date: **December 2, 2002**
Subject: **Public Listening Sessions**

Background: Between November 12 and November 25, nine listening sessions were held around the state for the purpose of obtaining public reaction to where TSB was headed in the development of a long-term transportation strategy for the state. Each session consisted of a twenty-minute power point presentation, which outlined TSB principles and TIA strategic recommendations under consideration (see attached) followed by comments and questions from those attending the session. The sessions were scheduled, in coordination with TIA representative, as follows:

November 12	Norwich	3:30 – 5:30PM	Three Rivers Community College
	Groton	7:00 – 9:00PM	Municipal Bldg/Meridian St
November 15	Hampton	2:30 – 4:30PM	EASTCONN
November 18	West Haven	2:30 – 4:30PM	Savin Rock Conference Center
	Hartford	7:00 – 9:00PM	Rensselaer
November 19	Stratford	3:00 – 5:00PM	Town Hall
	Stamford	7:00 – 9:00PM	Government Center
November 25	Danbury	2:30 – 4:30PM	Chamber
	Waterbury	7:00 – 9:00PM	Chamber

What we heard:

The majority of people at the listening sessions feel that highway congestion mitigation will not be achieved by expanding roadways alone. Rather, it will take a combination of solutions with various forms of mass transit linkages being the most often mentioned. Indeed, there were many that recommended against highway expansion feeling that this would only worsen congestion.

There was strong support for removing trucks from the highways via feeder barge and/or rail cargo services.

There was also strong support for the idea of looking to affordable housing proximate to job locations as an important way to achieve congestion mitigation.

A more detailed summary of what we heard is as follows:

- **Norwich**
  - Affordable housing proximate to major employers should be part of congestion mitigation strategy.
  - Transportation needs of disabled and elderly must be taken into consideration.
  - Route 11 completion important for relieving traffic through Salem as well as providing emergency access.
  - 395/95 intersection dangerous.
  - Parking garage in New London underutilized and perceived as unsafe.
  - Area around New London parking garage could be the "melding of mass transit" for the region.
  - Norwich needs to be more "walker friendly" via sidewalks, speed limits and signage.

- **Groton**
  - Barriers on I-95 at Groton Reservoir/Smith Lake need to be improved.
  - Solution to congestion problem is expansion of rail alternatives, highway expansion will only lead to more congestion.
  - Need for more dedicated sources for funding (vs. grants).
  - Affordable housing near jobs will mitigate congestion.
  - Connecticut should be getting more transportation money from the federal government.

- **Hampton**
  - Concern that DOT Hartford to Providence "improvements" would bring more cars to region ("last green valley") travelling at higher speeds.
  - Things are fine the way they are.
  - Use abandoned rail line to Hartford as transportation corridor with vehicles that run on rail as well as off rail.
  - Expand Dial-A-Ride to entire state.
  - Continue support of Job Access program.
  - Need for public transit between Willimantic and UConn.

- **West Haven**
  - Construction of new RR station in West Haven or Orange needs to be expedited for completion by 2005.
  - Feeder barge implementation needs to be expedited.
  - NH/Hartford/Springfield rail service should be implemented immediately.
  - Safety improvements at Tweed should be undertaken.
  - Expansion of Tweed key to Region's economic success.
  - Concern with loss of coastal wetlands associated with Tweed expansion.
  - Management/governance of Tweed should be structured similar to Bradley.
  - Reconstruction of Ferry Street Bridge should be top priority and completed ASAP in order to mitigate congestion associated with Q Bridge and I-95/I-91 construction. Need funding in the amount of $12million.
  - Concern over jurisdiction for removal of emergencies on I-95.

- Disaster coordination plan missing.
- More bus service needed.
- TSB needs to consider impact of strategy on the environment and disadvantaged population.
- Use of breakdown lane won't work, Rte 128 experiment proves this.

- **Hartford**
- Three top priorities: 1) NH to Hartford rail service, 2) Hartford to New Britain transit, 3) improved cargo access to Bradley.
- Job Access program very important, serves more than 2800 people on a daily basis.
- Need improvements for bicycle commuters to travel in safety.
- What is state planning to do about links to UConn in Storrs?
- Alternatives to individual auto travel under promoted.
- HOV lanes open to everyone in non rush hours.
- Equip busses with bike racks.
- NH/Hartford/Springfield rail service with spur to Bradley.
- Shuttle busses in downtown Hartford/buses to Bradley.
- TSB position on raising gas tax?
- Hartford to Providence highway improvements needed.
- TSB must consider land use in overall strategy.

- **Stratford**
- Bridgeport priorities: 1) high speed ferry to Stamford/NYC, 2) container feeder barge service, 3) Sea View Avenue corridor development, 4) intermodal transportation center.
- Need improvements to Rte 25/parking at Fairfield RR.
- Tweed should be expanded, people will come.
- Improved safety for bikers/walkers.
- Improve I-95 by closing selected exits and restricting trucks at certain times.
- Look to increased gas tax to fund expanded bus service.
- Reduce casino traffic on I-95 via non-stop Acela service NYC to New London and extension of Metro North to New London.
- Improved parking in downtown Stratford as well as RR station.
- Use breakdown lanes.
- Job Access program important.
- Increase number of RR trips and connecting bus service.
- Land use and housing important to transportation strategy.
- Bicycles need to be accommodated by trains.
- Driver education to help reduce highway congestion.
- Incentivize car-pooling, use Washington D.C. model for use of HOV's.

- **Stamford**
- Transportation and economic development must be brought together to create a seamless system of moving people and freight and mitigating congestion on the highways.
- Deep-water ports/feeder barge system must be developed.
- Need to provide for getting from train to job.
- Weigh stations should be kept open.
- Need creative new revenue sources aside from transportation fund.
- Coastal Corridor needs to be first priority

- We cannot “drive our way out of the problem”. No expansion of 95/Merritt.
- Motorists are being ignored. We need to improve roads.
- Get people to hubs and provide links from there.
- Need for a bold plan that will make use of auto optional.
- Need for sustained interaction between state and municipalities on transportation issues.
- Smart growth, open space and property taxes need to be considered within context of transportation planning.
- Need to develop a modern rail strategy for the state.
- Affordable housing near jobs will cut down on traffic.
- Better shuttle bus service to/from RR stations would eliminate need to expand parking.
- Mission of DOT relative to mass transit needs to change.
- Concern that TSB will create great plan that gets lost in execution.
- Home rule will have to yield ultimately.
- Five specific recommendations: 1) a larger fleet of RR cars, increased service, better station access, 2) container barge service from Port Elizabeth to CT, 3) rail freight connection across Hudson in NYC, 4) improved service on Danbury branch plus other travel options along Rte 7 corridor, 5) increase use of TDM strategies via marketing and incentives.
- Restore rail freight infrastructure.
- Each municipality should have its own transportation plan.

- **Danbury**
- I-84 (exits 1 – 11) economic engine for the area/traffic bottlenecks hurt productivity. Expansion of this stretch is critical.
- Improved rail service coordinated with bus service to region is crucial.
- Danbury to New Milford rail is a must.
- Affordable housing important to solving traffic congestion.
- We cannot lose sight of the needs of the disabled.
- Job Access service is important.
- There needs to be better education about how to use trains.
- Will TSB coordinate with New York and Rhode Island?
- Congestion pricing (EZ Pass) needs to be considered.
- Widen I-84 to New York.
- May 2000 recommendations for expansion of bus service needs to be implemented.

- **Waterbury**
- Top priorities: 1) Bus rapid transit New Britain to Hartford, 2) Norwalk to Danbury to New Milford rail, 3) improvements to I-84 Waterbury to Danbury, (4 improved cargo access to Bradley.
- Extend Hartford to New Britain bus to Waterbury.
- Priorities: 1) stable/reliable funding for transportation, 2) link to Hartford/New Britain busway, 3) increasing ridership on Metro North Waterbury branch line, 4) add capacity to I-84 Waterbury to Danbury, 5) designate Rte 8 as interstate from Bridgeport to Waterbury, 6) conduct study of public and private airport facilities in Connecticut
- Disabled and elderly needs must be considered.

Appendix Q

Section 16 Projects

TRANSPORTATION STRATEGY BOARD

SECTION 16 PROJECTS

BUREAU	PROJECT	PROJECT NUMBER	ORIGINAL ESTIMATE	REVISED ESTIMATE	PROG. FROM APPROP	BOND CANDIDATE	FEBRUARY BOND	FUTURE BOND
E&H	West Haven/Orange Station Design Study	106-0116	$2,000,000	$2,000,000	$0	$2,000,000	$2,000,000	$0
PLNG	Study - I-95 East Corridor - Branford to RI	170-2295	$2,000,000	$1,500,000	$0	$1,500,000	$1,500,000	$0
PLNG	Rail Study - NH - HTFD - SPRFLD	170-2296	$1,000,000	$1,000,000	$0	$1,000,000	$1,000,000	$0
PLNG	Feeder Barge Service Capital (BPT or NH)	170-2297	$7,000,000	$7,000,000	$0	$7,000,000		$7,000,000
PT	Bus Demo - Add Fairfield County Inter-regional Service	170-2311	$3,800,000	$3,000,000	$0	$3,000,000	$3,000,000	$0
PT	Bus Demo - Expand Hartford Area Express Bus Service	170-2312	$3,800,000	$3,000,000	$0	$3,000,000	$3,000,000	$0
PLNG	Expand Commuter Parking Lots	170-2313	$2,200,000	$2,200,000	$0	$2,200,000	$300,000	$1,900,000
PT	New Haven Line Maintenance Facility -Purchase Site (ROW)	300-0091	$1,200,000	$1,200,000	$0	$1,200,000	$1,200,000	$0
PLNG	Study - I-95 Peak Period Ramp Closures		$2,000,000	$0	$0			$0
E&H	I-84 Improvements - Danbury - Newtown		$3,400,000	$3,400,000	$0	$3,400,000		$3,400,000
PLNG	Study - Route 8 Safety & Capacity		$1,000,000	$1,000,000	$0	$1,000,000		$1,000,000
PT	BPT/STAM/NYC High-Speed Passenger Ferry Service Capita		$4,650,000	$1,700,000	$0	$1,700,000		$1,700,000
PLNG	Develop Intermodal Tourism Service Plan - Southeastern Connecticu	103-0253	$500,000	$500,000	$500,000			
PT	Jobs Access Program	170-2303	$4,700,000	$1,200,000	$1,200,000			
PT	Bus Demo - Additional New Haven Line Commuter Connection Servic	170-2306	$640,000	$640,000	$640,000			
PT	Bus Demo - Add Fairfield County Inter-regional Service - 10 Buses	170-2307	$2,100,000	$2,100,000	$2,100,000			
PT	Bus Demo - Danbury Area Bus Feeder Service to Harlem Line Rail Stations	170-2308	$500,000	$450,000	$450,000			
PT	Bus Demo - Expand Hartford Area Express Bus Service	170-2333	$2,200,000	$2,200,000	$2,200,000			
PT	Study Transit Orientated Development Opportunities - New Britain - Hartford Busway	170-2367	$800,000	$800,000	$800,000			
PT	Jobs Access for SE Conn and Dial-a Ride	170-2377	$0	$1,000,000	$1,000,000			
PT	"Deduct-A-Ride" Commuter Benefit Program	170-2378	$500,000	$250,000	$250,000			
PT	Rail Demo - Extend Shore Line East Service through NH to BPT and Stamford	310-0031	$2,800,000	$2,800,000	$2,800,000			
PLNG	Parkville Hartford Funds		$50,000	$50,000	$50,000			
E&H	Incident Management Clearance Pilot		$500,000	$500,000	$500,000			
PT	Rail Demo - Provide Peak Amtrak Service to Penn Station		$1,200,000	$0	$0			
PLNG	Urban Downtown Traffic Plan		$0	$100,000	$100,000			
PLNG	Adm./Consultant/RPA Grant/RPA TSB Support	170-2267 170-2268		$2,872,000	$2,872,000			
	SUB-TOTAL, BONDS		$34,050,000	$27,000,000	$0	$27,000,000	$12,000,000	$15,000,000
	SUB-TOTAL, APPROPRIATION		$16,490,000	$15,462,000	$15,462,000			
	TOTAL		$50,540,000	$42,462,000	$15,462,000	$27,000,000	$12,000,000	$15,000,000
	ADJUSTED APPROPRIATIONS				$17,480,264			
	UNPROGRAMMED APPROP BALANCE				$2,018,264			

Appendix R

Public Act 01-5

House Bill No. 7506

June Special Session, Public Act No. 01-5

AN ACT IMPLEMENTING THE RECOMMENDATIONS OF THE TRANSPORTATION STRATEGY BOARD.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. (NEW) As used in sections 1 to 4, inclusive, of this act:

(1) "Board" means the Connecticut Transportation Strategy Board;

(2) "Department" means the Department of Transportation;

(3) "Commissioner" means the Commissioner of Transportation;

(4) "Strategy" means a twenty-year strategic plan for transportation in this state and any updates of or other revisions to such plan;

(5) "TIA corridor plan" means a twenty-year strategic plan for transportation in a corridor and any updates or other revisions to such plan;

(6) "Transportation project" means any planning, capital or operating project with regard to transportation undertaken by the state, provided nothing contained in sections 1 to 4, inclusive, of this act shall be deemed to authorize the board to undertake any project other than strategic planning;

(7) "Local planning agency" means a metropolitan planning organization, as provided in 23 USC 134, a regional planning agency, as provided in section 8-31a of the general statutes, a regional council of elected officials, as defined in subsection (b) of section 4-124i of the general statutes or a council, as defined in subsection (f) of section 4-124c of the general statutes;

(8) "TIA" means transportation investment area;

(9) "Coastal corridor" and "coastal corridor TIA" means the following towns and the roads, highways, bridges, waterways, ports and airports in such towns: Ansonia, Beacon Falls, Bethany, Bethel, Bethlehem, Branford, Bridgeport, Bridgewater, Brookfield, Cheshire, Danbury, Darien, Derby, East Haven, Easton, Fairfield, Greenwich, Guilford, Hamden, Madison, Meriden, Middlebury, Milford, Monroe, Naugatuck, New Canaan, New Fairfield, New Haven, New Milford, Newtown, North Branford, North Haven, Norwalk, Orange, Oxford, Prospect, Redding, Ridgefield, Seymour, Shelton, Sherman, Southbury, Stamford, Stratford, Thomaston, Trumbull, Wallingford, Waterbury, Watertown, West Haven, Weston, Westport, Wilton, Wolcott, Woodbridge and Woodbury;

(10) "I-84 corridor" and "I-84 TIA" means the following towns and the roads, highways, bridges, waterways, ports and airports in such towns: Andover, Ansonia, Avon, Barkhamsted, Beacon Falls, Berlin, Bethel, Bethlehem, Bloomfield, Bolton, Bridgewater, Bristol, Brookfield, Burlington, Canaan, Canton, Cheshire, Colebrook, Cornwall, Danbury, Derby, East Granby, East Hartford, East Windsor, Ellington, Enfield, Farmington, Glastonbury, Goshen, Granby, Hartford, Hartland, Harwinton, Hebron, Kent, Litchfield, Manchester, Marlborough, Middlebury, Morris, Naugatuck, New Britain, New Fairfield, New Hartford, New Milford, Newington, Newtown, Norfolk, North Canaan, Oxford, Plainville, Plymouth, Prospect, Redding, Ridgefield, Rocky Hill, Roxbury, Salisbury, Seymour, Sharon, Shelton, Sherman, Simsbury, Somers, South Windsor, Southbury, Southington, Stafford, Suffield, Thomaston, Tolland, Torrington, Union, Vernon, Warren, Washington, Waterbury, Watertown, West Hartford, Wethersfield, Winchester, Windsor, Windsor Locks, Wolcott and Woodbury;

(11) "I-91 corridor" and "I-91 TIA" means the following towns and the roads, highways, bridges, waterways, ports and airports in such towns: Andover, Avon, Berlin, Bethany, Bloomfield, Bolton, Branford, Bristol, Burlington, Canton, Chester, Clinton, Cromwell, Deep River, Durham, East Granby, East Haddam, East Hampton, East Hartford, East Haven, East Windsor, Ellington, Enfield, Essex, Farmington, Glastonbury, Granby, Guilford, Haddam, Hamden, Hartford, Hebron, Killingworth, Lyme, Madison, Manchester, Marlborough, Meriden, Middlefield, Middletown, Milford, New Britain, New Haven, Newington, North Branford, North Haven, Old Lyme, Old Saybrook, Orange, Plainville, Plymouth, Portland, Rocky Hill, Simsbury, Somers, South Windsor, Southington, Suffield, Tolland, Vernon, Wallingford, West Hartford, West Haven, Westbrook, Wethersfield, Windsor, Windsor Locks and Woodbridge;

(12) "I-395 corridor" and "I-395 TIA" means the following towns and the roads, highways, bridges, waterways, ports and airports in such towns: Ashford, Bozrah, Brooklyn, Canterbury, Chaplin, Colchester, Columbia, Coventry, East Lyme, Eastford, Franklin, Griswold, Groton, Hampton, Killingly, Lebanon, Ledyard, Lisbon, Mansfield, Montville, New London, North Stonington, Norwich, Plainfield, Pomfret, Preston, Putnam, Salem, Scotland, Sprague, Stafford, Sterling, Stonington, Thompson, Union, Voluntown, Waterford, Willington, Windham and Woodstock;

(13) "Southeast corridor" and "Southeast corridor TIA" means the following towns and the roads, highways, bridges, waterways, ports and airports in such towns: Bozrah, Chester, Clinton, Colchester, Deep River, East Lyme, Essex, Franklin, Griswold, Groton, Killingworth, Ledyard, Lisbon, Lyme, Montville, New London, North Stonington, Norwich, Old Lyme, Old Saybrook, Preston, Salem, Sprague, Stonington, Voluntown, Waterford and Westbrook; and

(14) "Modal" means a mode of transportation, and "multi-modal" means two or more modes of transportation.

Sec. 2. (NEW) (a) There is created the Connecticut Transportation Strategy Board, the members of which shall be appointed as follows:

(1) Five members from the private sector who have expertise in transportation, business, finance or law as follows: (A) The Governor shall appoint one member, who shall be the chairperson, and whose first term shall expire on June 30, 2005, (B) the president pro tempore of the Senate shall appoint one member whose first term shall expire on June 30, 2004, (C) the speaker of the House of Representatives shall appoint one member whose first term shall expire on June 30, 2003, (D) the minority leader of the Senate shall appoint one member whose first term shall expire on June 30, 2003, and (E) the minority leader of the House of Representatives shall appoint one member whose first term shall expire on June 30, 2002;

(2) One member from each TIA, for which position the chairpersons of the board of the local planning agencies in such TIA, after consulting with the participants in such TIA, shall nominate, for consideration by the appointing authority, three individuals who live in such TIA and who have significant experience in and knowledge of local, regional and state governmental processes, including at least one chief elected official in a town in such TIA, and who shall be appointed as follows: (A) The chairpersons of the joint standing committee of the General Assembly having cognizance of matters relating to transportation shall appoint one member from the southeast corridor TIA, whose first term shall expire on June 30, 2002, (B) the president pro tempore of the Senate shall appoint one member from the I-91 corridor TIA, whose first term shall expire on June 30, 2003, (C) the speaker of the House of Representatives shall appoint one member from the coastal corridor TIA, whose first term shall expire on June 30, 2004, (D) the majority leader of the Senate shall appoint one member from the I-395 corridor TIA, whose first term shall expire on June 30, 2005, and (E) the majority leader of the House of Representatives shall appoint one member from the I-84 corridor TIA, whose first term shall expire on June 30, 2005;

(3) The Commissioners of Transportation, Environmental Protection, Economic and Community Development and Public Safety, and the Secretary of the Office of Policy and Management; and

(b) Upon the expiration of the term of a member of the board who is appointed as provided in subdivision (1) or (2) of subsection (a) of this section, each subsequent appointee to the board shall serve for a term of four years. No person shall serve as a member of the board for more than two consecutive terms. A vacancy in the position of an appointed board member shall be filled by the appointing authority for the remainder of the term.

(c) The board may create subcommittees it deems appropriate and appoint the members of such subcommittees from among its members. Ten members of the board shall be present to constitute a quorum.

(d) The members of the board shall not be compensated for their service as members of the board.

(e) The board may issue guidelines for coordination and organization to the TIAs. These guidelines shall not constitute regulations, as defined in subdivision (13) of section 4-166 of the general statutes.

(f) The staff of the Department of Transportation, the Office of Policy and Management and the Department of Economic and Community Development shall provide staff assistance to the board. Within available appropriations, the board may hire consultants with approval by the Secretary of the Office of Policy and Management and such consultants shall be procured through the Department of Transportation.

(g) The Transportation Strategy Board is a public agency, as defined in section 1-200 of the general statutes, for purposes of the Freedom of Information Act, and is a quasi-public agency, as defined in section 1-79 of the general statutes, for purposes of chapter 10 of the general statutes.

Sec. 3. (NEW) (a) There are created the following transportation investment areas: The coastal corridor TIA, I-84 corridor TIA, I-91 corridor TIA, I-395 corridor TIA and the southeast corridor TIA.

(b) The local planning agencies in each TIA shall select the participants in the TIA, including, but not limited to, businesses, labor unions, trade associations, environmental interest groups and other interest groups whose participation the local planning agency believes would be valuable to the TIA in the development of a transportation plan for the TIA.

(c) The local planning agencies in each TIA shall determine the processes used by such TIA in carrying out its responsibilities under this act. For the purposes of carrying out such responsibilities, each TIA shall report to the chief executive officers of such local planning agencies. Upon request of the local planning agencies, the board shall assist such agencies.

(d) On or before November 15, 2001, the participants in each TIA shall prepare an initial TIA corridor plan and deliver such plan to the Connecticut Transportation Strategy Board, established pursuant to section 2 of this act. Such participants shall deliver full TIA corridor plans biennially thereafter, beginning on November 15, 2002. The absence of a TIA corridor plan submitted by any TIA shall not prohibit said board from proposing a strategy as required by section 4 of this act.

(e) On or before August 1, 2001, the chief executive officers of the local planning agencies in each TIA shall issue notice of an organizational meeting of the participants in the TIA to commence the process of creating a transportation plan for such TIA and to make recommendations for nominations of the board member from such TIA, as provided in subdivision (2) of subsection (a) of section 2 of this act.

Sec. 4. (NEW) (a) Not later than January 15, 2002, the board shall propose to the General Assembly an initial transportation strategy.

(b) In developing the strategy and the revisions, the board shall take into account: (1) The strategic concerns associated with the movement of people and goods; (2) the technological options and multi-modal options, including, but not limited to, transportation by rail, road, air or water, available to address such concerns; (3) the relationship of such concerns and options to sustainable economic growth, environmental quality, urban development, open space, open space preservation, access to employment by residents of the state and public safety; (4) that transportation is a cornerstone of the state's economic vitality and overall quality of life and therefore inextricably linked to other key policies that deal with the state's future including, but not limited to, land use planning, environmental quality, urban vitality and access to quality jobs and services for the state's residents; (5) the connectivity of the state to the northeast, continental and international economies and that the mobility of people and goods within the state are critical to vibrant and sustainable economic growth; (6) that the benefits of leveraging existing transportation assets and infrastructure, especially in urban centers, and the reduction of automobile-oriented demands, are highly desirable; (7) the integration of brownfields remediation and affordable housing and access to employment that should occur as a result of implementing the strategy; (8) the need to engage local planning agencies and other relevant constituencies in developing the strategy; (9) the need to engage representatives of the state's major transportation assets and of the transportation industry in the strategy to help ensure that the strategy is multi-modal and integrated; (10) the benefits of technology to expand capacity, enhance safety, provide information and access funding alternatives; (11) the need to fully explore the sources and methodologies for funding investments in transportation infrastructure, and for annual operating and maintenance costs and the regulations applicable to the expenditure of federal and state funds; (12) that the development of appropriate metrics, methodologies and standards is essential for determining customer needs, for evaluating the return on transportation investments and for the prioritization of specific projects; (13) that the state needs to play a leadership role with the other northeastern states and the eastern Canadian provinces in developing and advocating a transportation strategy for the northeast region of the continent; (14) that the analyses and decision-making related to transportation initiatives in the strategy needs to be done expeditiously within the existing statutory and regulatory

framework and that any amendments to the general statutes or to the Regulations of Connecticut State Agencies that are needed to achieve such objectives should be identified; (15) the development, renovation and expansion of Bradley International Airport; (16) the state conservation and development plan, established pursuant to section 16a-24 of the general statutes; and (17) that the role, including the role of financial incentives, of private sector companies, public agencies and institutions needs to be clearly defined with respect to (A) encouraging and supporting employees to use public transportation, (B) providing employees with appropriate alternatives to the locations at which and during the times they perform their work, including, but not limited to, flexible working hours and telecommuting, (C) developing an effective means for delivering goods within and through the state, and (D) encouraging different sectors to participate with the state in specific initiatives.

(c) The board shall design the strategy to achieve the following results:

(1) Public benefits that consist of (A) stimulating sustainable economic growth and enhancing the quality of life for the residents of the state, and (B) developing and continuously upgrading analytical tools to demonstrate the link between transportation and the public benefits;

(2) Ease of mobility of people and goods within the state and the TIAs, that consists of (A) reducing traffic congestion, (B) enabling inter-corridor movement within the state, and (C) enabling access to employment opportunities and essential services;

(3) Connectivity in access to the regional, national and global economies, that consists of (A) improving access (i) to surrounding states, consisting of the Interstate-95 corridor to New York, the Connecticut River Valley and Interstate-91 corridor to Springfield, Massachusetts and southeastern Connecticut to Massachusetts, New York and Rhode Island, and (ii) to the national and global economies; and (B) expanding modal choices for passenger and freight, consisting of (i) developing an airport system that stimulates growth, (ii) linking the state to international rail grids, (iii) developing water-borne alternatives, and (iv) assuring workable freight access to the ports of New York and New Jersey and the corridor related to the North American Free Trade Agreement; and

(4) Safety and security that consists of (A) adequately maintaining infrastructure and equipment, and (B) enforcing safe operations and use of the transportation systems by customers and operators.

(d) In designing the strategy to achieve the results provided in subsection (c) of this section, the board shall evaluate specific tactics and approaches in the strategy by using the following criteria:

(1) Focusing on people who use transportation systems by (A) involving such people directly in planning and through ongoing market research, (B) creating a seamless interface with state, regional, national and global systems, and (C) developing transportation systems that operate as if they had intelligence, including, but not limited to, systems that provide real-time information to their users;

(2) Oriented to economic growth by (A) responsiveness to general business needs, (B) responsiveness to specific industry cluster needs, and (C) support for state urban development strategies;

(3) Being environmentally responsible by (A) improving air quality, (B) leveraging existing assets to minimize impact on wetlands and open space by directing development to the areas of the state that have the infrastructure to support the development, and (C) reducing energy consumption;

(4) Encouraging and enabling inter-modal links and usage wherever possible, and managing the transportation systems from a multi-modal perspective; and

(5) Involving the TIAs by (A) building upon natural economic and service areas, (B) enhancing connectivity of all population centers in the state, and (C) implementing strategic priorities through TIAs.

(e) The board shall include in the strategy the criteria by which the board, the commissioner and the department will evaluate and prioritize existing and proposed transportation projects.

(f) The board shall identify in the strategy the tools and measures by which it intends to assess transportation system performance and analyze the value of projects proposed to implement the strategy, including their overall value to the state as a public investment.

(g) The board shall include in the strategy (1) a projection of the required capital investments and operating costs over the next succeeding ten years and the recommended sources of such funds, (2) a distinction between transportation costs for operations and maintenance and transportation investments which shall (A) be based on the strategy and evaluated against strategic goals, (B) provide additional benefits that are tangible and attainable, (C) include a range of transportation uses including, but not limited to, transit, airways, highways, waterways and freight, to gain public support, (D) reach as many people as possible throughout the entire community in each TIA, and (E) respond to widely perceived needs.

(h) The board shall review the TIA corridor plan prepared by each TIA, as provided in section 3 of this act, and may incorporate all or parts of such plans in the strategy.

(i) In developing and revising the strategy, the board may: (1) Conduct public hearings; (2) consult and cooperate with officials and representatives of the federal government, neighboring states, interstate commissions and authorities, local agencies and authorities, interested corporations and other organizations concerning problems affecting transportation in the state; (3) request and receive from any agency or other unit of the government, of the state or of any political subdivision of the state, or from any public authority, such assistance and data as may be necessary to enable the board to carry out the board's responsibilities under this section; and (4) to the extent the board may deem appropriate, make use of, and incorporate in the strategy, any existing long-range transportation plan, survey or report developed by any public or private agency or person.

(j) Copies of the strategy and revisions to the strategy shall be kept on file as a public record in the department.

(k) Not later than January 15, 2002, the board shall submit an initial strategy and preliminary projections of the cost necessary to implement the strategy over the first ten years to the Governor and the General Assembly in accordance with section 11-4a of the general statutes. Such strategy shall be subject to approval by the General Assembly. On June 30, 2002, and each December thirty-first and June thirtieth thereafter, the board shall submit a status report on the implementation of and any needed revisions to the strategy and the quarterly report provided by the Department of Economic and Community Development, pursuant to subsection (b) of section 6 of this act to the joint standing committee of the General Assembly having cognizance of matters relating to transportation in accordance with section 11-4a of the general statutes. On December 15, 2002, and every two years thereafter, the board shall update or revise the strategy, if necessary, and shall submit a report on implementation of the strategy to the Governor and the General Assembly, as provided in section 11-4a of the general statutes. All such updates and revisions shall be subject to approval by the General Assembly.

(l) The board shall monitor, for purposes of continued recommendations, the implementation of the strategy by prioritizing transportation projects and the tactics and processes necessary to implement such projects for the purposes of proposed legislative approval.

(m) The board shall annually review the proposed operating and capital budgets of the department as they relate to the implementation of the strategy and shall make recommendations to the commissioner, the Governor and the General Assembly.

(n) The board shall consult with members and appropriate staff of the state congressional delegation and with appropriate representatives of the United States Department of Transportation with respect to federal transportation funding and initiatives.

Sec. 5. Subsection (d) of section 2c-2b of the general statutes is amended by adding subdivision (28) as follows:

(NEW) (28) The Connecticut Transportation Strategy Board.

Sec. 6. (NEW) (a) The Commissioner of Economic and Community Development and the executive directors of the Connecticut Development Authority and Connecticut Innovations, Incorporated shall submit an impact statement for each project new to the state or new construction and seek funding from said entities to the Connecticut Transportation Strategy Board, created pursuant to section 2 of this act, summarizing whether or not such project conforms to the strategy said board submits to the General Assembly in accordance with section 4 of this act.

(b) On or before July 1, 2002, and quarterly thereafter, the Commissioner of Economic and Community Development shall update the board on all project activities occurring during such quarter.

Sec. 7. (NEW) The Commissioner of Economic and Community Development, in consultation with the Commissioner of Transportation, shall collaborate with the towns and cities in the state to promote and market areas of retail sales and services

surrounding rail, bus terminals, airports and ports around the state. The Commissioner of Economic and Community Development may use the services of the Connecticut Economic Resource Center and any other entity it deems necessary.

Sec. 8. (NEW) (a) There is established a Bradley Board of Directors to oversee the operation and development of Bradley International Airport.

(b) The Bradley Board of Directors shall consist of seven members, appointed as follows: The Commissioner of Transportation and the Commissioner of Economic and Community Development, each serving ex-officio, a representative appointed by the speaker of the House of Representatives from the Connecticut Transportation Strategy Board, created by section 2 of this act, a representative appointed by the minority leader of the House of Representatives from among the members of the Bradley International Community Advisory Board, as created by section 11 of this act and three private sector members appointed as follows: (A) The Governor shall appoint one member, who shall be the chairperson, and whose first term shall expire on June 30, 2005, (B) the president pro tempore of the Senate shall appoint one member whose first term shall expire on June 30, 2005, (C) the minority leader of the Senate shall appoint one member whose first term shall expire on June 30, 2005. The term of office of each successor shall be four years.

(c) Each member before entering upon the member's duties shall take and subscribe to the oath required by article XI, section 1 of the State Constitution.

(d) The appointed members shall be senior business leaders or executives who have management experience with corporate or institutional organizations, and shall include individuals who have expertise and experience in one or more of the following areas: Financial planning, budgeting and assessment, marketing, master planning, strategic planning and transportation management.

(e) A member who misses three consecutive meetings shall be deemed to have resigned.

(f) The Bradley Board of Directors shall elect a vice-chairperson annually from among the appointed members.

(g) The powers of the Bradley Board of Directors shall be vested in and exercised by not less than five of its members. Such number of members shall constitute a quorum and the affirmative vote of a majority of the members present at a meeting of the board shall be necessary for any action of the Bradley Board of Directors.

(h) Members of the Bradley Board of Directors shall receive no compensation. The Bradley Board of Directors is a public agency, as defined in section 1-200 of the general statutes, for purposes of the Freedom of Information Act, and is a quasi-public agency, as defined in section 1-79 of the general statutes, for purposes of chapter 10 of the general statutes.

Sec. 9. (NEW) The Bradley Board of Directors shall have the duty and authority to: (1) In consultation with the Commissioner of Transportation, develop an organizational and management structure that will best accomplish the goals of Bradley International Airport; (2) approve the annual capital and operating budget of Bradley International Airport; (3) act in cooperation with the Connecticut Transportation Strategy Board, created pursuant to section 2 of this act; (4) advocate 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; (5) ensure that an appropriate mission statement and set of strategic goals for Bradley International Airport are established and that progress toward accomplishing the mission and strategic goals is regularly assessed; (6) approve Bradley International Airport's master plan; (7) establish and review policies and plans for marketing the airport and for determining the best use of airport property; (8) ensure appropriate independent expertise is available to advise the Bradley Board of Directors, particularly in the areas of strategy and marketing and select consultants as necessary, for purposes related to strategy and marketing, pursuant to procedures established by the board; (9) ensure customer service standards, performance targets and performance assessment systems are established for the airport enterprise; (10) approve community relations policies and ensure that the community advisory board, created pursuant to section 11 of this act, operates effectively to ensure that community comment and information is regularly and fully considered in decisions related to Bradley International Airport; (11) create a code of conduct for the Bradley Board of Directors consistent with part I of chapter 10 of the general statutes; (12) report to the Governor and the General Assembly on an annual basis; (13) establish procedures to review significant contracts, other than collective bargaining agreements, relating to the operation of Bradley International Airport prior to approval, which procedures shall require completion of each such review no later than ten business days after the board receives the contract; and (14) adopt rules for the conduct of its business which shall not be considered regulations, as defined in subdivision (13) of section 4-166 of the general statutes.

Sec. 10. (NEW) For administrative purposes only, the Bradley Board of Directors shall perform its functions within the Department of Transportation. The administrative functions of the board of directors shall be performed by the Department of

Transportation and the costs thereof, including the cost of consultants recommended to advise the Bradley Board of Directors, may be reimbursed by the Enterprise Fund. Consultants recommended by the Bradley Board of Directors shall be engaged by the Department of Transportation but shall report to the Bradley Board of Directors. The selection and engagement of consultants for the Bradley Board of Directors shall be exempt from sections 13b-20b to 13b-20m, inclusive, and sections 4-212 to 4-219, inclusive, of the general statutes.

Sec. 11. (NEW) (a) A Bradley International Community Advisory Board is established to represent the interests of the communities and the region surrounding Bradley International Airport. The community advisory board shall work with the airport administration and issue semi-annual reports to the Bradley Board of Directors. The community advisory board shall utilize the Bradley Board of Directors as a resource to support its development initiatives.

(b) The community advisory board shall consist of the chief elected officials of Windsor, Windsor Locks, East Granby and Suffield.

(c) The community advisory board shall have two core purposes: (1) To provide a regular communication vehicle between airport administrators and nearby towns on issues of concern to residents such as noise and traffic, and (2) to advise the Bradley Board of Directors on issues of transportation, land use, planning, zoning and economic development on land surrounding the airport or in close proximity to it. For the purposes of subdivision (2) of this subsection, there shall be a subcommittee, appointed by the community advisory board, made up of each town's manager or planner, together with representatives from regional organizations including: The Capital Region Council of Governments, Greater Hartford Growth Council, Springfield Regional Planning Agency and the Department of Economic and Community Development. The subcommittee shall work to develop new businesses around the airport and shall report to the community advisory board on a regular basis on its activities.

(d) Members of the community advisory board and the development committee shall be considered members of an advisory board for the purposes of the part I of chapter 10 of the general statutes.

Sec. 12. Section 15-101l of the general statutes is repealed and the following is substituted in lieu thereof:

(a) The State Bond Commission may authorize the issuance of bonds of the state in one or more series and in principal amounts necessary to carry out the purposes of sections 15-101k to 15-101p, inclusive, as amended by this act. [but not in excess of the aggregate amount of two hundred ninety-four million dollars, provided any special obligation bonds issued to finance self-sustaining special facilities payable solely from revenues derived from such special facilities and not payable from gross operating revenues pledged to secure bonds issued pursuant to an indenture of trust dated as of October 1, 1982, as amended from time to time, shall not be included in calculating said maximum aggregate amount of bonds.] Such bonds shall be payable from all or a portion of the revenues of Bradley International Airport, as may be specified in the proceedings authorizing such bonds, and may include, among other types of bonds, special purpose revenue bonds payable solely from revenues derived from special purpose facilities, bonds payable from particular sources of revenues and bonds payable in whole or in part from passenger facility charges to the extent permitted under applicable federal law. The Commissioner of Transportation shall evidence a request to issue bonds by filing with the Treasurer a resolution duly adopted by the board identifying the projects or other improvements to be acquired, constructed and installed at Bradley International Airport and requesting issuance by the state of bonds to finance such projects and other improvements; the Treasurer thereupon shall file a request for the issuance of such bonds with the Secretary of the State Bond Commission. The board of directors may appoint a finance or other committee of the board of one or more officers or employees to serve as the board's authorized delegate in connection with the issuance of bonds pursuant to this section.

(b) Bonds issued pursuant to [subsection (a) of] this section shall be special obligations of the state and shall not be payable from nor charged upon any funds other than the revenues pledged to the payment thereof, nor shall the state or any political subdivision thereof be subject to any liability thereon except to the extent of such pledged revenues. The issuance of bonds under the provisions of sections 15-101k to 15-101p, inclusive, as amended by this act, shall not directly or indirectly or contingently obligate the state or any political subdivision thereof to levy or to pledge any form of taxation whatever therefor or to make any appropriation for their payment. The bonds shall not constitute a charge, lien or encumbrance, legal or equitable, upon any property of the state or of any political subdivision thereof, except the property mortgaged or otherwise encumbered under the provisions and for the purposes of sections 15-101k to 15-101p, inclusive, as amended by this act. The substance of such limitation shall be plainly stated on the face of each bond. Bonds issued pursuant to sections 15-101k to 15-101p, inclusive, as amended by this act, shall not be subject to any statutory limitation on the indebtedness of the state and such bonds, when issued, shall not be included in computing the aggregate indebtedness of the state in respect to and to the extent of any such limitation.

(c) The bonds referred to in [subsection (a) of] this section may be executed and delivered at such time or times, shall be dated, shall bear interest at such rate or rates, including variable rates to be determined in such manner as set forth in the proceedings authorizing the issuance of the bonds, provide for payment of interest on such dates, whether before or at maturity, shall mature at such time or times not exceeding forty years from their date, have such rank or priority, be payable in such medium of payment, be issued in coupon, registered or book entry form, carry such registration and transfer privileges and be subject to purchase or redemption before maturity at such price or prices and under such terms and conditions, including the condition that such bonds be subject to purchase or redemption on the demand of the owner thereof, all as may be [provided] determined by the State Bond Commission. The State Bond Commission shall determine the form of the bonds, including any interest coupons to be attached thereto, the manner of execution of the bonds, the denomination or denominations of the bonds and the place or places of payment of principal and interest, which may be at any bank or trust company within or without the state. Prior to the preparation of definitive bonds, the State Bond Commission may, under like restrictions, [issue] provide for the issuance of interim receipts or temporary bonds, with or without coupons, exchangeable for definitive bonds when such bonds have been executed and are available for delivery. If any of the officers whose signatures appear on the bonds or coupons cease to be officers before the delivery of any such bonds, such signatures shall, nevertheless, be valid and sufficient for all purposes, the same as if they had remained in office until delivery.

(d) Any bonds issued under the authority of sections 15-101k to 15-101p, inclusive, as amended by this act, may be sold at public sale on sealed proposals or by negotiation in such manner, at such price and at such time or times as may be determined by the Treasurer to be most advantageous, subject to the approval of the State Bond Commission. The state may pay from the proceeds of the bonds all costs and expenses which the Treasurer may deem necessary or advantageous in connection with the authorization, sale and issuance thereof, including the cost of interest on any short-term financing authorized under subsection (b) of section 15-101n.

(e) The principal of and interest on any bonds issued pursuant to [subsection (a) of] this section shall be secured by a pledge of the revenues out of which such bonds shall be made payable. They may be secured by a mortgage covering all or any part of the project from which the revenues so pledged may be derived or by a pledge of one or more leases, sale contracts or loan agreements with respect to such project or by a pledge of one or more notes, debentures, bonds or other secured or unsecured debt obligations of any lessee or contracting party under a loan agreement or sale contract or by a pledge of reserve and sinking funds established pursuant to the resolution authorizing the issuance of the bonds and any other funds and accounts, including proceeds from investment of any of the foregoing, established pursuant to this chapter or the proceedings authorizing the issuance of such bonds, and by moneys paid under a credit facility, including but not limited to, a letter of credit or policy of bond insurance, issued by a financial institution pursuant to an agreement authorized by such proceedings.

(f) The proceedings under which the bonds are authorized to be issued pursuant to [subsection (a) of] this section, and any mortgage given to secure the same, may, subject to the provisions of the general statutes, contain any agreements and provisions customarily contained in instruments securing bonds, including, but not limited to: (1) Provisions respecting custody of the proceeds from the sale of the bonds, including their investment and reinvestment until used for the cost of the project; (2) provisions respecting the fixing and collection of rents or payments with respect to the facilities of Bradley International Airport and the application and use of passenger facility charges; (3) the terms to be incorporated in the lease, sale contract or loan agreement with respect to the project; (4) the maintenance and insurance of the project; (5) the creation, maintenance, custody, investment and reinvestment and use of the revenues derived from the operation of Bradley International Airport; (6) establishment of reserves or sinking funds, and such accounts thereunder as may be established by the State Bond Commission, and the regulation and disposition thereof; (7) the rights and remedies available in case of a default to the bondholders or to any trustee under any lease, sale contract, loan agreement, mortgage or trust indenture; (8) reimbursement agreements remarketing agreements, standby bond purchase agreements or similar agreements in connection with obtaining any credit or liquidity facilities including, but not limited to, letters of credit or policies of bond insurance [, remarketing agreements and agreements for the purpose of moderating interest rate fluctuations, and of] and such other agreements entered into pursuant to section 3-20a; (9) provisions for the issuance of additional bonds on a parity with bonds theretofore issued, including establishment of coverage requirements with respect thereto; [and] (10) covenants to do or to refrain from doing such acts and things as may be necessary or convenient or desirable in order to better secure any bonds or to maintain any federal or state exemption from tax of the interest on such bonds; and (11) provisions or covenants of like or different character from the foregoing which are consistent with the provisions of this chapter and which the State Bond Commission determines in such proceedings are necessary, convenient or desirable in order to better secure the bonds or bond anticipation notes, or will tend to make the bonds or bond anticipation notes more marketable, and which are in the best interests of the state. The proceedings under which the bonds are authorized, and any mortgage given to secure the same, may further provide that any cash balances not necessary (A) to pay the cost of maintaining, repairing and operating the facilities of Bradley International Airport, (B) to pay the principal of and interest on the bonds as the same shall become due and payable, and (C) to create and maintain reserve and sinking funds as provided in any authorizing resolution, or other proceedings shall be deposited into [the General Fund of the state at designated intervals, or be deposited in] a Bradley

International Airport working fund to be held in trust by the treasurer and applied to future debt service requirements or other general airport purposes.

(g) In the discretion of the State Bond Commission, bonds issued pursuant to [subsection (a) of] this section may be secured by a trust indenture by and between the state and a corporate trustee, which may be any trust company or bank having the powers of a trust company within or without the state. Such trust indenture may contain such provisions for protecting and enforcing the rights and remedies of the bondholders as may be reasonable and proper and not in violation of law, including covenants setting forth the duties of the state in relation to the exercise of its powers pursuant to sections 15-101k to 15-101p, inclusive, as amended by this act, and the custody, safeguarding and application of all moneys. The state may provide by such trust indenture for the payment of the proceeds of the bonds and the revenues from the operation of Bradley International Airport to the trustee under such trust indenture or other depository, and for the method of disbursement thereof, with such safeguards and restrictions as it may determine. All expenses incurred in carrying out such trust indenture may be treated as a part of the operating expenses of the project. If the bonds shall be secured by a trust indenture, the bondholders shall have no authority to appoint a separate trustee to represent them.

(h) Any pledge made by the state shall be valid and binding from the time when the pledge is made, and the revenues or property so pledged and thereafter received by the state shall immediately be subject to the lien of such pledge without any physical delivery thereof or further act. The lien of any such pledge shall be valid and binding as against all parties having claims of any kind in tort, contract, or otherwise against the state, irrespective of whether such parties have notice thereof. Neither the resolution nor any other instrument by which a pledge is created need be recorded.

(i) The Treasurer shall have power out of any funds available therefor to purchase bonds or notes of the state issued pursuant to this section and section 15-101n. The Treasurer may hold, pledge, cancel or resell such bonds, subject to and in accordance with agreements with bondholders.

(j) Whether or not the notes and bonds are of such form and character as to be negotiable instruments under the terms of the Uniform Commercial Code, the notes and bonds are hereby made negotiable instruments within the meaning of and for all purposes of the Uniform Commercial Code, subject only to the provisions of the notes and bonds for registration.

(k) Any moneys held by the Treasurer with respect to Bradley International Airport, or by a trustee pursuant to a trust indenture, subject to the provisions of such indenture, including proceeds from the sale of any bonds and notes, and revenues, receipts and income from the operation of Bradley International Airport may be invested and reinvested in such obligations, securities, and other investments, including without limitation participation certificates in the Short Term Investment Fund created in section 3-27a, or deposited or redeposited in such bank or banks, all as shall be authorized by the State Bond Commission in the proceedings authorizing the issuance of the bonds and notes.

(l) For the purposes of sections 15-101k to 15-101p, inclusive, as amended by this act, the costs of the project payable out of the proceeds of bonds issued pursuant to [subsection (a)] this section shall include: (i) Expenses and obligations incurred for labor and materials in connection with the construction of the project; (ii) the cost of acquiring by purchase, if such purchase shall be deemed expedient, and the amount of any award or final judgment in any proceedings to acquire by condemnation, such land, property rights, rights-of-way, franchises, easements and other interests in land as may be deemed necessary or convenient in connection with such construction or with the operation of the project, and the amount of any damages incident thereto; (iii) the costs of all machinery and equipment acquired in connection with the project, (iv) reserves for the payment of the principal of and interest on any notes and bonds issued pursuant to this section and section 15-101n, and interest accruing on any such notes, during construction of the project and for six months after completion of such construction, (v) initial working capital, expenses of administration properly chargeable to the construction or acquisition of the project, legal, architectural and engineering expenses and fees, costs of audits, costs of preparing and issuing any notes and bonds pursuant to this section and section 15-101n, and (vi) all other items of expense not elsewhere specified incident to the planning, acquisition and construction of the project or of the placing of the same in operation.

(m) None of the bonds authorized pursuant to [subsection (a) of] this section [,] shall be issued and sold except upon a finding by the State Bond Commission that there has been filed with it a request for such authorization, which is signed by the Secretary of the Office of Policy and Management or on [his] said secretary's behalf and stating such terms and conditions as said commission, in its discretion, may require.

(n) For purposes of sections 15-101k to 15-101p, inclusive, as amended by this act, the term "project" shall refer to the renovations and improvements to be acquired and constructed at Bradley International Airport [described in section 15-101k] as may be specified from time to time by the board in a resolution as contemplated by subsection (a) of this section.

Sec. 13. Section 15-101n of the general statutes is repealed and the following is substituted in lieu thereof:

(a) Any bonds issued under the provisions of [subsection (a) of] section 15-101l, as amended by this act, or to refund any such bonds issued under such section, and at any time outstanding may at any time from time to time be refunded by the state by the issuance of its refunding bonds in such amounts as the State Bond Commission may deem necessary, but not exceeding an amount sufficient to refund the principal of the bonds to be so refunded, any unpaid interest thereon and any premiums and commissions necessary to be paid in connection therewith and to pay costs and expenses which the Treasurer may deem necessary or advantageous in connection with the authorization, sale and issuance of refunding bonds. Any such refunding may be effected whether the bonds to be refunded shall have matured or shall thereafter mature. All refunding bonds issued hereunder shall be payable [solely from the revenues out of which the bonds to be refunded thereby are payable] and shall be subject to and may be secured in accordance with the provisions of section 15-101l, as amended by this act.

(b) Whenever the State Bond Commission has adopted a resolution authorizing bonds pursuant to [subsection (a) of] section 15-101l, as amended by this act, the Treasurer may, pending the issue of such bonds, issue, in the name of the state, temporary notes and any renewals thereof in anticipation of the proceeds from the sale of such bonds, which notes and any renewals thereof shall be designated "Bond Anticipation Notes". Such portion of the proceeds from the sale of such bonds as may be so required shall be applied to the payment of the principal of and interest on any such bond anticipation notes which have been issued. The principal of and interest on any bond anticipation notes issued pursuant to this subsection may be repaid from pledged revenues or other receipts, funds or moneys pledged to the repayment of the bonds in anticipation of which the bond anticipation notes are issued, to the extent not paid from the proceeds of renewals thereof or of the bonds.

Sec. 14. Section 15-101o of the general statutes is repealed and the following is substituted in lieu thereof:

(a) It is hereby determined that the purposes of sections 15-101k to 15-101p, inclusive, as amended by this act, are public purposes and that the state will be performing an essential governmental function in the exercise of the powers conferred upon it hereunder. The state covenants with the purchasers and all subsequent holders and transferees of notes and bonds issued by the state pursuant to sections 15-101l and 15-101n, as amended by this act, in consideration of the acceptance of and payment for the notes and bonds, that the principal and interest of such notes and bonds shall at all times be free from taxation, except for estate and gift taxes, imposed by the state or by any political subdivision thereof but the interest on such notes and bonds shall be included in the computation of any excise or franchise tax. The Treasurer is authorized to include this covenant of the state in any agreement with the holder of such notes or bonds. Any notes or bonds issued by the state pursuant to sections 15-101l and 15-101n, as amended by this act, may be issued on a basis that provides that the interest thereon is intended to be exempt or not to be exempt from federal income taxation, as may be determined by the Treasurer.

(b) Bonds issued under the authority of [subsection (a) of] section 15-101l, as amended by this act, are hereby made securities in which all public officers and public bodies of the state and its political subdivisions, all insurance companies, credit unions, building and loan associations, investment companies, banking associations, trust companies, executors, administrators, trustees and other fiduciaries and pension, profit-sharing and retirement funds may properly and legally invest funds, including capital in their control or belonging to them. Such bonds are hereby made securities which may properly and legally be deposited with and received by any state or municipal officer or any agency or political subdivision of the state for any purpose for which the deposit of bonds or obligations of the state is now or may hereafter, be authorized by law.

Sec. 15. Section 15-101p of the general statutes is repealed and the following is substituted in lieu thereof:

All revenue from the operation of Bradley International Airport shall be paid to the State Treasurer to be held in trust, and the Treasurer shall not commingle such moneys with any other moneys. Such moneys shall be deposited in a separate account or accounts in banks or trust companies organized under the law of the state or in national banking associations doing business in the state, provided that the Treasurer shall have power to contract with the holders of any notes or bonds issued pursuant to sections 15-101l or 15-101n, as amended by this act, or with a trustee acting pursuant to a trust indenture for the benefit of such holders, as to the custody, collection, securing, investment and application of the proceeds of such notes and bonds and of the revenue from the operation of Bradley International Airport, and to carry out such contracts. Such account or accounts shall constitute a separate nonlapsing enterprise fund to be known as the "Bradley Enterprise Fund".

Sec. 16. (a) The sum of fifty million dollars appropriated to the Department of Transportation, in subsection (a) of section 47 of special act 01-1 of the June special session shall be used for the purpose of: (1) Funding the Jobs Access program which provides later evening bus service route extensions and customized paratransit services for residents in the cities of Bridgeport, Hartford, New Haven and Waterbury; (2) expanding existing commuter parking lots state-wide; (3) marketing an employer-sponsored pretax commuter benefit program to be known as the "Deduct-A-Ride" program; (4) a design study for an Orange/West Haven rail station with parking for one thousand commuters; (5) a site selection study for the expansion of

the New Haven Line rail maintenance facilities' capacity and to purchase land for a new rail service maintenance facility; (6) providing funding to expand bus services connecting with rail services in the Coastal Corridor, as defined in subdivision (9) of section 1 of this act; (7) improving and further developing an Accident Clearance Policy to minimize the number of accidents on Interstate Route I-95 and the Merritt Parkway and enhancing hours of truck safety stations; (8) analyzing and recommending the appropriateness of peak hour on-ramp closures on Interstate I-95, located in the Coastal Corridor, as defined in subdivision (9) of section 1 of this act, including how such closures would alleviate traffic congestion; (9) partnering with Amtrak, Metro-North and rail labor unions to allow Shore-Line-East trains to run through New Haven to Bridgeport, Stamford and Greenwich for a two-year trial period; (10) partnering with Amtrak to provide an additional peak period train for a two-year trial period and to promote monthly tickets from Connecticut to Penn Station; (11) expanding Fairfield County inter-regional service by purchasing ten new buses and providing funding for additional local bus service; (12) providing operating funding to expand bus services for existing and new western Connecticut commuters to utilize Metro-North's Upper Harlem Line for commuting to New York City and White Plains; (13) developing (A) operational and fiscal plans for the expansion of local and regional bus services to coordinate with rail and ferry schedules for service to area attractions, and (B) a single ticket fare structure for such services in the Southeast Corridor, as defined in subdivision (13) of section 1 of this act; (14) a study to refine the traffic and transportation needs and modal options of the Southeast Corridor, as defined in subdivision (13) of section 1 of this act; (15) expanding express bus service in the Hartford area; (16) continuing the efforts of the Capitol Region Council of Governments to support the Hartford to New Britain Bus Way; (17) a study of the infrastructure cost and operating characteristics of rail commuter services from New Haven to Springfield, including Bradley International Airport; (18) safety and operational improvements at Interstate I-84 interchanges from Danbury to Newtown; (19) funding a safety and capacity study of Route 8 from Seymour to Waterbury; (20) funding a high speed ferry from Bridgeport to Stamford to New York; (21) funding for the implementation of a demonstration project for a freight Feeder Barge Service in Long Island Sound between the port facilities of New York and New Jersey and Bridgeport Harbor in Bridgeport and New Haven Harbor in New Haven; (22) funding administrative and consulting services for the Connecticut Transportation Strategy Board established by section 2 of this act for the fiscal years ending June 30, 2002, and June 30, 2003, in an amount not exceeding five hundred thousand dollars per year; and (23) such other specific strategic transportation improvements.

(b) Work on the projects and activities set forth in subsection (a) of this section shall commence on or after July 1, 2001.

Sec. 17. Subdivision (27) of subsection (d) of section 2c-2b of the general statutes and sections 15-101r and 15-101s of the general statutes are repealed.

Sec. 18. This act shall take effect from its passage, except that section 8 shall take effect July 1, 2001.

Approved July 2, 2001

Appendix S

TSB Status Report June 2002

Transportation Strategy Board

Room 2309
2800 Berlin Turnpike
Newington, CT 06111

R. Nelson Griebel
Chairman

Board Members

James Abromaitis
James Byrnes
Stephen Cassano
Michael Critelli
George Giguere
Joseph Maco
John Markowicz
Michael Meotti
Jeffrey O'Keefe
Arthur Rocque
Marc Ryan
John Sarantopoulos
Arthur Spada
Mike Sullivan

Staff

Robert W. Hammersley
Manager

June 30, 2002

The Honorable John G. Rowland
Governor, State of Connecticut
State Capitol
Hartford, CT 06106

Dear Governor Rowland:

In accordance with Public Act 01-5 (June Special Session) I am writing to provide you with a status report on the activities of the Transportation Strategy Board (TSB). Our working groups have been meeting on a regular basis and should be completing most of their work by September 2002. At that time, the TSB will consider their recommendations as well as the recommendations of the five Transportation Investment Areas (TIAs) in development of our Comprehensive Statewide Transportation Strategy, which will be submitted to you later this year.

Additionally, the TSB continues to hold regular bi-monthly meetings, to discuss and review more overarching issues. For example, Assistant Secretary for Transportation Policy (USDOT) Emil Frankel will be addressing our Board at our July 9th meeting on the Federal status of the TEA-21 Reauthorization process. In the coming months we will also be holding a panel discussion with business leaders on the effects of transportation on economic development.

The activities of the TSB, Working Groups and TIAs are also available from our web site (www.tsb.state.ct.us).

We look forward to working with you through this process. Please do not hesitate to contact me if you have any additional thoughts.

Very truly yours,

R. Nelson Griebel
Chairman
Transportation Strategy Board

cc: TSB Members
Bob Hammersley
Dave Russell
Phil Smith