



Chapter 1

Introduction

The Connecticut Department of Transportation (ConnDOT) has initiated a feasibility study for the implementation of commuter rail service between New Haven, Hartford and Springfield, Massachusetts. The corridor was identified as a key component in meeting the goals of improving and sustaining the regional economic vitality and improving regional livability in the Capitol Region Council of Government's (CRCOG) Regional Transit Strategy (RTS). This was further recognized by the Connecticut Transportation Strategy Board (TSB), which has allocated funding to undertake this implementation study as an important first step in implementing a statewide strategic plan. In addition to serving commuters traveling between the towns and cities along the corridor, the service could provide a connection to:

- Bradley International Airport
- Multiple links to Amtrak Intercity service
- Direct links to the existing Metro North and Shore Line East Commuter Rail in New Haven
- Links to the proposed New Britain – Hartford Busway.

This report highlights the existing conditions identified throughout the corridor. It includes the following chapters:

- Chapter 2 – Project Evaluation Criteria
- Chapter 3 – Existing Rail Corridor Inventory
- Chapter 4 – Existing Infrastructure System Inventory
- Chapter 5 – Socio-Economic Inventory
- Chapter 6 – Environmental Inventory
- Chapter 7 – Ridership, Fare Revenue and Cost Database

As this study progresses, efforts will focus on an evaluation of future alternative build and no-build conditions, the evaluation of rail service alternatives and the publication of a final report summarizing the study process and findings

The remainder of this chapter highlights the study area, the public involvement process, summaries of previous studies in the corridor as well as other relevant studies.



1.1 Project Team

Wilbur Smith Associates, a transportation planning and engineering firm, is leading the study efforts for ConnDOT. In addition, a team of consultants has been assembled to aid Wilbur Smith, including:

- *URS Corporation* – Structural and Architectural Elements
- *Washington Infrastructure Services* – Rail Crossing and Signalization Elements
- *Fitzgerald & Halliday* – Environmental and Social Resource Assessment
- *KKO and Associates* – Bus Transit Connections

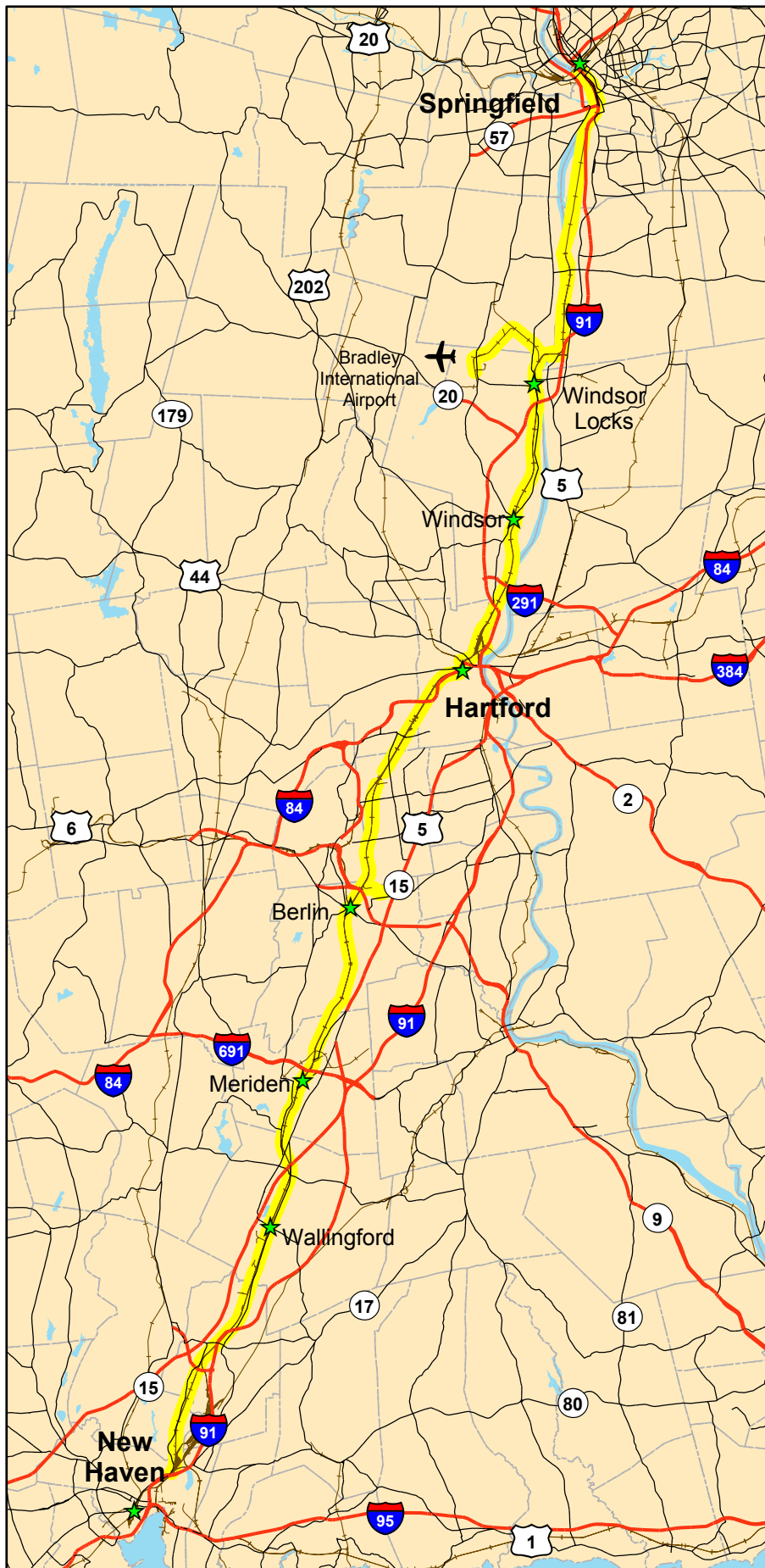
1.2 Study Area Definition

The study area corridor is 62 miles of existing rail line, which is owned and operated by Amtrak. It begins in New Haven at Union Station and continues through several towns and the cities of Meriden and Hartford, ending at Union Station in Springfield, Massachusetts. The line is commonly referred to as the “Springfield Line.” An existing freight spur line to Bradley Airport in Windsor Locks is also included in consideration of passenger connections to that facility. Figure 1.2-1 illustrates the study area.

1.3 Project Steering Committee

A project Steering Committee (SC) was established to oversee the study's development and provide information to key decision makers throughout the process. In addition to appropriate ConnDOT staff, the following groups are members of the project's Steering Committee:

- Federal Transit Administration
- Federal Railroad Administration
- Federal Highway Administration
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- Connecticut Department of Environmental Protection
- Connecticut Office of Policy and Management
- Connecticut State Historic Preservation Office
- Connecticut Department of Economic and Community Development
- Transportation Strategy Board
- I-91 Transportation Investment Area
- South Central Regional Council of Governments
- Central Connecticut Regional Planning Agency
- Capitol Region Council of Governments
- Pioneer Valley Planning Commission
- City of New Haven



Study Area

New Haven - Hartford - Springfield
Commuter Rail Feasibility Study



Legend

- Rail Study Corridor
- Highways
- Major Roads
- Existing Rail Stations

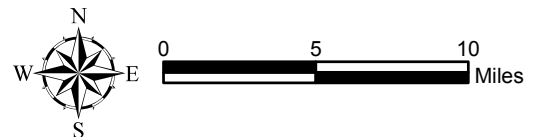


Figure 1.2-1



- Town of North Haven
- Town of Wallingford
- City of Meriden
- Town of Berlin
- Town of Newington
- City of Hartford
- Town of Windsor
- Town of Windsor Locks
- Town of Enfield
- City of Springfield
- Peter Pan Bus Lines
- Connecticut Southern Railroad
- Providence and Worcester Railroad
- Guilford Rail Systems
- CSX Railroad
- Metro North Railroad
- Amtrak (National Railroad Passenger Corporation)

All Steering Committee meetings are open to the public and presentations and minutes are available on the project's website, <http://www.nhhsrail.com>. The first Steering Committee meeting took place on October 16, 2002 at Hartford Union Station. A rail trip for the Steering Committee was held on December 4, 2002 to view the existing conditions and identify potential alternative station locations. The second Steering Committee meeting will take place in conjunction with the draft version of this report.

1.4 Public Involvement

To respond to the large number of communities and stakeholders associated with this study corridor, public outreach is focused on particular issues and particular locations. Public outreach on this project includes meetings in various forms, a website (<http://www.nhhsrail.com>) and electronic and printed mailings and advertisements. Meetings are with the general public, local officials, and other interested stakeholders. The purpose of the meetings is to provide information and solicit input into the development of a recommended action.

A website, <http://www.nhhsrail.com>, has also been developed to provide and obtain information for use in this study. The website provides project background and scope information, a map of the corridor, links to related sites, and study team contact information. As the study progresses, meeting announcements are updated and relevant information added throughout the process. The website is hosted by Rideworks, the rideshare agency in greater New Haven, and updated by Wilbur Smith Associates.



In order to reach out to the public, paid public advertisements in local newspapers and local public access television (when possible) are used to advertise the public information meetings will be used to advertise the public meetings when possible

1.5 Previous Study of the Corridor

The New Haven to Springfield corridor has been studied previously by ConnDOT for potential commuter rail service. Previous studies include:

“The Feasibility of Implementing Hartford – Enfield Commuter Rail Service”, Bureau of Policy and Planning, ConnDOT, January 1992 - This report evaluated the possibility of implementing commuter rail in the northern portion of the corridor between Hartford and Enfield. Using the assumption of half-hour headways, the capital cost for the 17.5 mile corridor was estimated at \$43,640,000 (in year 1992 dollars). This included \$23,180,000 for rolling stock, maintenance and storage facilities, \$19,275,000 for track and right of way costs, and \$1,185,000 in station and parking costs. Operating costs (in 1992 dollars), based on Shore Line East commuter rail service operating costs, were estimated at \$6,642,000 with annual revenues of \$179,000. Ridership of approximately 400 riders per day was projected due to the competing express bus service using the High Occupancy Vehicle (HOV) lanes on I-91. Due to the low expected ridership, the high cost of double-tracking 13.4 miles, and rolling stock purchases needed, the rail service was not recommended.

Office of Rail, ConnDOT, May 1994 - This report evaluated the possibility of implementing commuter rail in the southern portion of the corridor on the 38-mile segment between New Haven and Hartford. The proposal was to offer a minimal amount of service, consisting of only three round trips per day using two train sets. With stations at New Haven Union Station, North Haven, Wallingford, Meriden, Berlin, New Britain / Newington, Capitol Area in Hartford and Union Station in Hartford, the service was expected to generate 2,000 daily trips. Ridership was estimated using a four percent rail capture rate in Hartford and New Haven and a two percent rail capture rate in other station towns. This compares to a capture rate of five percent at start-up on Shore Line East. The total annual operating cost in 1994 dollars was estimated at \$3.5 million with \$1.0 million in revenue. Capital costs in 1994 dollars were estimated at \$4.37 million including reactivation of the North Haven station, construction costs for relocation of the Wallingford and Meriden stations and new stations in New Britain / Newington and Capitol Area in Hartford, right-of-way and parking needs at the Berlin station, and improvements to Union Station in Hartford. Start-up time was estimated at two years and the recommended test period was also two years. The final recommendation was to continue the study with detailed station area plans including location and environmental work and coordination with the Regional Planning Agencies. The report includes an appendix with cost estimates and recommendations from Amtrak.

“Central Connecticut Commuter Rail Service Serving New Haven – Hartford – Springfield”, Office of Rail, ConnDOT, December 2000 - This document is a cost estimate for the implementation of commuter rail on the entire corridor. The assumed



service was daily bi-directional with half-hour peak service and hourly off-peak service. Ridership was estimated to be between 1,800 and 2,000 daily riders (3,600 to 4,000 trips). The total capital cost was estimated at \$249 million including \$121 million for double-tracking 40 miles, \$50 million for upgrading ten stations, \$8 million for adding station parking at eight stations, \$4 million for purchasing right-of-way in station areas, and \$66 million for purchasing required rolling stock. The total operating cost was estimated at \$17 million per year with \$4 million in annual revenue.

“Hartford Line Proposal” Office of Rail, ConnDOT, March 2001 - This proposal revisited the implementation of commuter rail from New Haven to Hartford. The proposal calls for hourly service between the two cities using two new train sets and commuter use of all Amtrak trains on the line except the Vermonter. Start-up requirements included construction of a half-mile of station track in Hartford, reactivating the North Haven Station, adding stations at Wharton Brook in Wallingford and Capitol Area in Hartford, and adding parking in Meriden. Ridership was again estimated at 2,000 daily riders, corresponding to \$1.86 million in revenues (year 2001 dollars). In year 2001 dollars, the annual operating and capital deficit was estimated at \$9.1 million. Future year improvements included double tracking additional segments, an additional station in New Britain / Newington, and additional parking.

1.6 Review of Relevant Reports/Ongoing Studies

In addition to the previous studies within the corridor, a number of other reports were referenced as background information for this study. A summary of these reports is presented below.

Regional Transit Strategy, CRCOG, March 2001 - This document provides a vision for regional transit provided by CRCOG, which aims at restoring balance to the transportation system by reducing dependence on the automobile and increasing transit ridership. The goals for the Regional Transit Strategy (RTS) were to design transit alternatives that would provide basic mobility for all of the Region’s residents; develop innovative approaches to serve new and changing travel markets; and provide high quality, competitive transit services.

These guidelines were used to arrive at CRCOG’s recommended transit system which would offer rapid line haul service for five exclusive corridors. Four of the corridors would be developed for Bus Rapid Transit service in existing rail corridors and include the New Britain - Hartford Busway (currently being designed), the Griffin Busway (being evaluated), the Manchester Busway (being evaluated), and the Rocky Hill Busway. The remaining corridor is the commuter rail service between New Haven, Hartford, and Springfield (being evaluated in this study) with a possible connection to Bradley Airport. The RTS estimates the ridership on the New Haven, Hartford, Springfield Commuter Rail line to be 5,122 average daily riders, however this number does not include potential airport passenger ridership and Metro North and Shore Line East connections. The capital cost of the project was estimated at \$41.5 million and the operating cost was estimated at \$7.3 million.



In addition, the Regional Transit Strategy outlines several key components necessary for the success of the rapid transit facilities. These necessary elements include the creation of a Hartford downtown circulation service, enhancement of local bus service, and creation of transit centers.

The Regional Transit Strategy realizes that the success of the recommended transit improvements hinges on their integration into the surrounding land use. One main goal of the Regional Transit Strategy is going to be to try and use transit to shape urban form. For this to occur, the strategy recognizes certain factors will need to be set in place. The factors outlined include:

- Strong development climate;
- Supportive public policies;
- A clear, long term regional plan with a strong transit component and with transit supportive land use policies; and
- A strong transit agency, reliable transit service, supportive institutions, and a “transit culture.”

In addition to the long term actions outlined in the Regional Transit Strategy’s Proposed Implementation Schedule, several short term actions were recommended to implement the Strategy. These short term steps recommended that:

- Connecticut Transit should examine all the recommended local bus routing and scheduling changes and develop time frames that coordinate with the Statewide Bus Study for implementation.
- CRCOG and Connecticut Transit should monitor transit vehicle technology so that alternate fueled vehicles may be utilized as soon as they become practical.
- Transit information for the current transit system be made more user friendly.
- Transit center development be initiated with development of two prototype centers: one of the four proposed timed transfer centers and a selected station along one of the fixed guideways.

Implementation of the Regional Transit Strategy also calls for a transit governance system that would be responsible for facilitating transit improvements. The goal of this governance system is to connect local issues to a regional operation and motivate the Capital Region to “Put Transit First.” To accomplish this goal, the governing body is expected to:

- Initiate development of services and facilities that meet local and regional needs;
- Create advocacy for transit;
- Create a vision of regional transit that will be supported by the traveling public;
- Encourage land use changes that sustain transit development.



A critical issue to the implementation of the Regional Transit Strategy is how the improvements would be financed. It is estimated that \$485 million in capital investment and an annual operating cost of \$30 million would be required for implementation. While transit in the Hartford region is currently subsidized by the state of Connecticut, new local funding mechanisms would be needed to support the project. Analysis of the tax burden of the Capital Region found that it has some of the lowest tax rates for personal income, combined state, local, sales and use tax, corporate income and car rentals. Furthermore, Connecticut has one of the highest levels of personal income per capita. These findings suggest that a new tax or tax increase may be needed to supplement funding of this project.

Regional Transit Strategy, SCRCOG, Currently Underway – Similar to the Regional Transit Strategy outlined above for CRCOG, the SCRCOG is undergoing a similar effort to develop a strategy for transit in the South-Central Connecticut (New Haven) region. The study effort for that project has recently begun.

Statewide Bus System Study, ConnDOT, July, 2000 – This study evaluated express and local routes in the throughout the state, and made recommendations on how to optimize the transit services that are now offered. While this study did not take into consideration a potential commuter rail service in the New Haven – Hartford – Springfield corridor, it did recommend route changes along such roadways as I-91, Routes 5 and 15 to better serve transit users.

New Britain - Hartford Busway Final Environmental Impact Statement, ConnDOT, December, 2001 - This Environmental Impact Statement (EIS)/Environmental Impact Evaluation (EIE) evaluated the potential impacts associated with the New Britain – Hartford Busway, which will be located in the towns/cities of New Britain, Newington, West Hartford, and Hartford, Connecticut. The project will construct a 9.4-mile Bus Rapid Transit (BRT) facility along inactive and active rail corridors. It will provide an exclusive bus-only roadway, along with 12 busway stations, to offer a transit experience similar to light rail service, but at a significantly lower cost and greater flexibility. Stations will include sheltered platforms, parking areas, bus drop-off areas, and buildings at most locations. While the project will improve the competitiveness of transit for commuters who currently drive to work, it will also greatly improve travel opportunities for transit-dependent members of environmental justice populations to access work, education, healthcare, etc. The Draft and Final EIS/EIE addressed a variety of issues related to the project, including socioeconomic impacts, right-of-way acquisition, air quality, noise impacts, wetlands impacts, cultural resources, hazardous materials, environmental justice, Section 4(f) impacts, etc. Beneficial impacts included rebuilding and revitalizing communities.

The Busway itself will actually parallel (run directly next to) the New Haven Hartford Springfield rail corridor between Newington Junction and Union Station in Hartford. The Final EIS envisioned potential joint busway/rail stations at the Newington Junction, Legislative Office Building and Union Stations.



“Downtown Hartford Circulator Study”, Greater Hartford Transit District, Currently Underway –This study is reviewing potential routes for a downtown bus circulator in Hartford, to improve transit access to many downtown locations. The final design report, which will be forthcoming, will provide recommendations for routes, service frequencies, and estimates of costs. The downtown circulator would serve Hartford’s Union Station and therefore interface with access from Amtrak intercity rail, intercity buses, the New Britain – Hartford Busway, other busways under study, and the New Haven – Hartford – Springfield Commuter Rail service if implemented.

Manchester, Hartford, Vernon Bus Rapid Transit Study, ConnDOT, Currently Underway - This alternatives analysis study is evaluating the feasibility of Bus Rapid Transit (BRT) along the Hartford – Manchester/Vernon corridor. The study corridor includes the Interstate 84 highway mainline, with its existing High Occupancy Vehicle (HOV) facility, and a parallel active freight rail line. Three basic scenarios are being evaluated:

- Using the existing HOV facility on I-84 and I-384;
- Using the freight rail line right-of-way; and
- Combination of the two alternatives where a busway would operate on both the rail right-of-way and the I-84 HOV lanes.

Elements of the analysis include ridership projections, fare revenue projection, station location and busway operations, optimal bus routing for both new and modified existing routes, project financial needs identification, environmental sensitivity documentation, and capital and operating costs. Other issues to be addressed include operations of several at-grade crossings and opportunities for transit oriented development.

This study is also analyzing possible opportunities for such a BRT system, if pursued, to connect to the proposed New Britain Hartford Busway and therefore any New Haven Hartford Springfield rail service.

Griffin Line Bus Rapid Transit Study, CRCOG, Currently Underway - This study is evaluating the feasibility of implementing Bus Rapid Transit (BRT) in a corridor radiating north from the City of Hartford, Connecticut toward Bloomfield, Windsor and Griffin Office Park. The alternatives to be considered likely will consist of some combination of on-road and fixed guideway alignment extending from Union Station in Hartford and terminating at Bradley International Airport. To fully realize the benefits of BRT, the study will explore opportunities to provide priority treatment to buses on surface streets, while maintaining fast and frequent service on the exclusive busway segments. One component of the feasibility analysis will involve coordinating the bus operations with existing freight rail operations within the busway right of way. While bus ridership projections will be largely based on current land use and demographic conditions in the corridor, the study will consider opportunities for economic development in the cities and towns that will be served by the new BRT facility. The study will determine the need and feasibility for planned bus services to better serve the mobility needs of current transit riders, and provide improved opportunities for multimodal travel in the region. A major goal of the study is to identify, for the study



alternatives, environmental benefits (such as reduced use of private vehicles and attendant air pollution; minimizing impacts on water resources and wetlands, parks and open spaces, and historical and cultural resources) as well as social benefits (opportunities to serve transit-dependent populations). Since this facility would terminate at Hartford's Union Station, it could provide a connection to the New Haven Hartford Springfield rail line.

High Occupancy Vehicle Lane Report, ConnDOT, November, 2002 - The data contained in this annual report consists of vehicle and passenger counts taken between the years of 1989 and 2002 for Interstates 91 and 84 taken at 15 minute intervals during the hours of 6:00 a.m. to 9:00 a.m. Key statistics found for the I-91 Southbound HOV lane during the A.M. peak period in 2002 include:

- 1,095 total vehicles (automobiles, vans, and buses) carried 3,630 people
- The above totals include 30 Express buses, which carried approximately 690 people
- 39% of the HOV users commute in vans or buses
- Average vehicle occupancy per automobile was 2.16 persons
- Peak usage occurred between 7:15 a.m. and 8:15 a.m.

Additional traffic counts were also taken on the HOV Lanes to estimate daily HOV usage. These counts were performed on the I-91 HOV lanes for each hour of the day on both weekdays and weekends. The report findings indicate that the survey results reinforce the viability of an HOV facility as a travel alternative for Hartford-bound commuters. The report also notes a significant amount of Single Occupant Vehicle traffic (illegal vehicles) on the restricted access lanes and stresses that access to HOV lanes be strictly enforced to encourage change in commuting habits.

Bradley International Airport Economic Impact Study, ConnDOT, December, 2000 - Bradley International Airport is New England's second largest airport, with more than 300 daily flights to over 40 destinations. In 2000, the airport served 7 million passengers. The airport generates over 26,000 jobs and \$2.5 billion in annual economic activity for the local economy. The study outlines the airport's economic impacts both directly and indirectly as well as airport activity and passenger trends. In terms of direct economic impact, Bradley generates over 5,300 jobs and spends \$344 million from airport employees, airlines, air cargo, concession, and government employees. Indirectly, visitors and businesses that depend on the airport generate \$885 million in expenditures outside of airport related business. In terms of passenger activity, Bradley International Airport ranks as the nation's 51st busiest airport with 20,000 passengers arriving or departing on commercial aircraft daily. In terms of cargo, Bradley ranks 34th nationally with 410 tons of freight being loaded or unloaded daily. That number has tripled since 1987. Passengers were surveyed to determine what type of travelers used the airport. The survey revealed that 42% of the passengers were visitors to the area and of those, 72% report Connecticut as being their primary destination. Half of these visitors were conducting business while 31% were in Connecticut for recreation or to visit friends and family.



Bradley Area Transportation Study, CRCOG, October, 2000 - The focus of this study was to determine whether the transportation system surrounding Bradley International Airport supports a high level of economic development consistent with the ambitions of the local communities. Through technical analysis, the study identifies existing and future surface transportation concerns and suggests potential short and long term improvement strategies for the municipalities of East Granby, Windsor, Windsor Locks, and Suffield. Findings for this existing conditions assessment are based on analyses of traffic volume counts, accident data reviews, speed and delay runs, origin and destination studies, inventory of transportation facilities, inventory of historic and cultural resources, along with input from Local Advisory Committees, the public, and URS Corporation. Analyses revealed limited availability of transportation alternatives to and from the airport, with the primary mode being the automobile. Existing roadway and intersection operations were found to be acceptable at all but three (3) intersections where peak or commuter hour traffic were experienced. Analysis of reported accident history exposed nine (9) isolated high accident locations, with the majority of the study area experiencing relatively minor accident history. Local Advisory Committee assessment of existing issues and deficiencies are provided and ranked as high, medium, or low priority.

Rentschler Airport Area Transportation Study, CRCOG, February, 1999 - This study investigated possible local, regional, and state measures needed to provide adequate transportation access to the Rentschler Airport area in East Hartford as the property is redeveloped for non-airport uses. The provision of adequate transportation access focuses on traffic flow, safety, transit, ridesharing, and bicycle and pedestrian usage. This report, generated through consensus among citizens, the Town of East Hartford, CRCOG, and participating State and Federal agencies, recommends a Corridor Management and Improvement Plan for the Rentschler Airport area based on the notion that major development will occur on the former airport site. To account for increased traffic to this area, future traffic volumes were generated assuming that a theme park would reside on the southern half of the site and a major retail mall on the northern half. Even though the likeliness of the theme park has diminished, the future traffic volumes were carried through in order to make recommendations for the transportation system around Rentschler Airport. Recommendations made in the study are organized into two sections. The first section details roadway recommendations for a proposed East Hartford Boulevard and other existing roadway corridors surrounding the project area (Route 2 Expressway, Brewer Street, I-84, and Silver Lane). East Hartford Boulevard, a proposed north-south connection through the airport site, would serve two purposes for East Hartford. The primary function of East Hartford Boulevard would be to provide access to developable property as well as to the United Technologies Corporation site. The secondary purpose of the roadway would be to provide access to regional expressways such as the Route 2 Expressway and I-84. The second section of the report makes recommendations with regards to transit and transportation demand management (TDM), which offer viable alternative transportation means to the single occupancy vehicle.



Final Environmental Impact Evaluation, The Stadium at Rentschler Field, East Hartford, CRCOG, 2000 - This Environmental Impact Evaluation (EIE) concentrates on existing conditions and potential environmental impacts connected with the construction of a 40,000 + seat stadium at Rentschler Field in East Hartford. The EIE describes how a new football Stadium at Rentschler Field will benefit the University of Connecticut and aid in the revitalization and development of Hartford. Once the need for the stadium is established, the evaluation discusses the various construction sites and alternatives considered before Rentschler Field was chosen as the site for the proposed football stadium. The Traffic Impact Study, which analyzed a sellout football game at the stadium, forecasts that temporary impacts to Level of Service will occur on local roadways. A Traffic Mitigation Plan (TMP) has been created to mitigate these impacts to local roadways. Construction of the new football stadium is near completion and will be hosting games beginning in the 2003-2004 season.

Adriaen's Landing and the Hartford Riverfront Recapture Project, summary report by Daniel P. Fitch and Nicholas B. Weil - In an effort to revitalize the City of Hartford and the surrounding region, construction is currently underway for a \$770 million mixed- use development on the Connecticut River at Adriaen's Landing. The project will incorporate major meeting, lodging, entertainment, retail, cultural and residential elements that will make the site a local, regional, and national destination to live, work, and play. The development plan for Adriaen's Landing includes five main components which include construction of: the Connecticut Convention Center, a Convention Center hotel, residential development, an entertainment and retail district, and some form of attraction. Funding for this project is from state general obligation (GO) bonds (\$355 million), state appropriations (\$99.55 million), revenue bonds and loans through the Capital City Economic Development Authority (\$74.2 million), and private investors (\$242.35 million).