

CENTRAL CONNECTICUT RAIL STUDY

TASK 6: REVIEW OF PREVIOUS STUDIES



CONNECTICUT DEPARTMENT OF TRANSPORTATION
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Table of Contents

Chapter 1. Introduction	2
Chapter 2. 2012-2016 State Rail Plan for the State of Connecticut (DRAFT).....	3
Chapter 3. Waterbury-New Canaan Branch Line Feasibility Study.....	4
3.1 Project Purpose	4
3.2 Summary of Relevant Findings.....	4
3.3 Improvement Options Being Considered by CTDOT for the Waterbury Branch	5
Chapter 4. Busway West: Busway Accessibility Enhancement Plan	8
4.1 Project Purpose	8
4.2 Summary of Relevant Findings.....	8
Chapter 5. Hartford West Major Investment Study	9
5.1 Project Purpose	9
5.2 Summary of Relevant Findings.....	9
Chapter 6. Connecticut CTDOT Statewide Bus System Study	11
6.1 Project Purpose	11
6.2 Summary of Relevant Findings.....	11
6.2.1 Bristol	11
6.2.2 New Britain.....	11
6.2.3 Express Buses	12
Chapter 7. Report of the Feasibility of Implementing Waterbury-Hartford Commuter Rail Service	13
7.1 Project Purpose	13
7.2 Summary of Relevant Findings.....	13
Chapter 8. Hartford-Waterbury Rail Passenger Study	14
8.1 Project Purpose	14
8.2 Summary of Relevant Findings.....	14

List of Figures

Figure 1: TOD Opportunities in Waterbury.....	7
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List of Tables

Table 1: Alternatives (Hartford-Waterbury Rail Passenger Study)	14
Table 2: Projected Ridership (Hartford-Waterbury Rail Passenger Study)	14
Table 3: Projected Costs, Rail (Hartford-Waterbury Rail Passenger Study)	15
Table 4: Projected Costs, Bus (Hartford-Waterbury Rail Passenger Study)	15
Table 5: VMT Reductions (Hartford-Waterbury Rail Passenger Study).....	15

Chapter 1. Introduction

The Study Team has reviewed studies that have been prepared by various agencies to identify and address transportation needs within the study corridor of the Central Connecticut Rail Study (CCRS). These reviews provide a summary of these reports in reverse chronological order of publication, highlighting their relationship to the CCRS.

The following studies have been reviewed:

- 2012-2016 State Rail Plan for the State of Connecticut (DRAFT), 2012
- Waterbury-New Canaan Branch Line Feasibility Study, 2010
- Busway West: Busway Accessibility Enhancement Plan, 2004
- Hartford West Major Investment Study, 2003
- Connecticut CTDOT Statewide Bus System Study, 2000
- Report of the Feasibility of Implementing Waterbury-Hartford Commuter Rail Service, 1992
- Hartford-Waterbury Rail Passenger Study, 1982

Chapter 2. 2012-2016 State Rail Plan for the State of Connecticut (DRAFT)

Completed by: Connecticut Department of Transportation, 2012

The Connecticut Department of Transportation (CTDOT) has developed a draft 2012-2016 State Rail Plan (SRP). The purpose of the SRP is to establish policy involving passenger and freight rail in the state, to present strategies and priorities to enhance rail service that benefits the public, and to serve as the basis for federal and state rail investments within the state. The draft SRP will be reviewed and approved by the Connecticut General Assembly before it is submitted to the federal government and considered final. As such, the recommendations within the SRP are not considered to be final and are subject to change until this approval is granted.

The SRP outlines the process that went into funding the CCRS and identifies the Waterbury-Berlin corridor as one that has potential for future passenger rail service. The SRP describes the existing conditions of the CCRS corridor as follows:

“The Terryville Secondary is the common collective name for the freight-only Berlin Branch (2.6 miles), the New Britain Secondary (4.5 miles), and the Terryville Secondary Line (17.2 miles), which together traverse 24.3 miles between Berlin and Waterbury. The Terryville Secondary, running from Berlin westward through New Britain, Plainville, Bristol, Plymouth, and Waterbury is owned and operated by Pan Am Southern Railway (PAS). The Terryville Secondary connects with Amtrak’s Springfield Line in Berlin, the Canal Branch in Plainville, and with MNR’s Waterbury Branch and Naugatuck Railroad’s Torrington Branch in Waterbury. The line is maintained to FRA Class 2 track standards. There is no passenger service on the line. The Springfield Terminal Railway provides PAS through freight service and local freight service for PAS.”

Chapter 3. Waterbury-New Canaan Branch Line Feasibility Study

Completed by: Parsons Transportation Group (PTG), 2010

3.1 Project Purpose

The Connecticut Department of Transportation (CTDOT), in cooperation with the South West Regional Planning Agency (SWRPA), Greater Bridgeport Regional Planning Agency (GBRPA), Council of Governments of the Central Naugatuck Valley (COGCNV), and the Valley Council of governments (VCOG), prepared a needs and feasibility study for improvements to transit service along the New Canaan and Waterbury Branch corridors of the New Haven Line. The results of this study identified potential service and infrastructure improvements for the 27-mile rail corridor between Milford and Waterbury, and the 7.9-mile rail corridor between Stamford and New Canaan. It also provided decision-makers with the information necessary to determine how the CTDOT-owned New Canaan and Waterbury Branches fit into an overall statewide transportation strategy that balances needs and funding ability.

3.2 Summary of Relevant Findings

This study assessed transit-oriented development (TOD) opportunities around the Waterbury Rail Station, including the following ongoing TOD initiatives (shown on a map on Page 5):

- 226-228 Meadow Street
 - 3 ½- story, 30,000-square foot office building
 - Walking distance to station
 - 0.77 acres
- Freight Street Area Potential Development
 - 20 years of discussion
 - Previous proposals: Class A office space, high-rise apartments, retail
 - Current discussions: major medical facility (in conjunction with Waterbury Hospital or St. Mary's Hospital)
- West Main Street Corridor
 - Several private rehabilitations underway.
 - Ground floor commercial and upper-floor residential uses
- Bender Plumbing Supplies Company
 - 50,000-square foot wholesale and distribution center
 - 3.9 acres
- Loyola Development Project
 - Mixed-use development, including single-family homes, bank, drug store, food establishments
 - 33.7 acres
- 70 Bank Street
 - Four-story, 13,000-square foot building

- 18 residential units
- 0.5 acres
- City of Waterbury Redevelopment Sites (location, size, current use, recommended use)
 - Site 1
 - Judd Street, 0.16 acre (vacant land)
 - One- to three-story apartments
 - Site 2
 - Gilbert Street, 0.04 acres (residential)
 - Two-family residential use
 - Site 3
 - French Street, 0.07 acres (residential)
 - Single-family residential use
 - Site 4
 - French Street, 0.12 acres (residential)
 - Three- to four-family residential use
 - Site 5
 - Willow and Grove Streets, 0.18 acres (residential)
 - One- to three-story apartments
- Other Potential Sites (location, size, current use)
 - Site 6
 - Meadow Street, 1.4 acres (vacant/surface parking)
 - Site 7
 - Meadow Street, 0.3 acres (surface parking)
 - Central Business District (CBD) Zoning
 - Site 8
 - Slate Street, 0.7 acres (surface parking)
 - Central Business District (CBD) Zoning
 - Site 9
 - West Main Street, 0.6 acres (open space)
 - Residential Office/High-Density Residential Zoning
 - Site 10
 - West Main Street, 1.0 acre (vacant/surface parking)
 - Central Business District (CBD)/High-Density Residential Zoning
 - Site 11
 - Judd Street, 0.2 acres (vacant)

3.3 Improvement Options Being Considered by CTDOT for the Waterbury Branch

CTDOT is currently considering the following improvement options for the Waterbury Branch:

- Beacon Falls and Derby Sidings
 - \$40,000,000 (2008 dollars), Categorical Exclusion
- Full Signalization of the Branch
 - \$128,000,000 (2008 dollars), Categorical Exclusion

- By completing the full signalization along with the Beacon Falls and Derby sidings, ridership is forecasted to increase from 1,000 to 1,756 daily rides.
- Waterbury and Milford Sidings
 - \$40,000,000 (2008 dollars), Categorical Exclusion
- An Environmental Assessment would be needed for the following improvements:
 - A new station at the Devon Wye in Milford
 - Derby-Shelton Station Multi-Modal Improvements
 - Waterbury Station Multi-Modal Improvements
 - Relocated Seymour Station
 - Beacon Falls Station and Parking
 - Waterbury Storage Yard

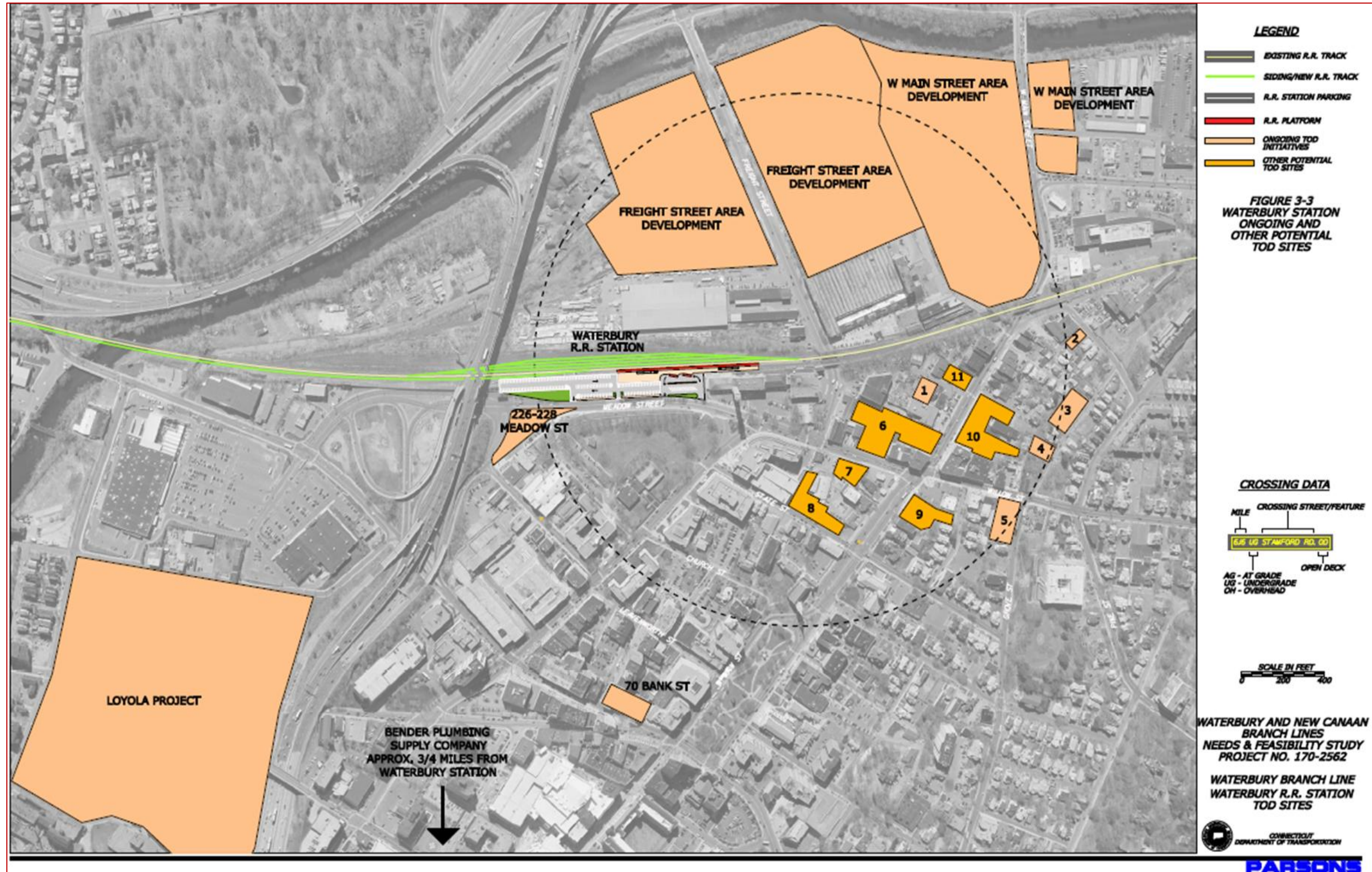


Figure 1: TOD Opportunities in Waterbury

Chapter 4. Busway West: Busway Accessibility Enhancement Plan

Completed by: CCRPA, 2004

4.1 Project Purpose

The Busway Accessibility Enhancement Plan (Busway West Plan) was conceived as an effort to ensure the best possible utilization of the New Britain-Hartford Busway (Busway) for the Central Connecticut region of Berlin, Bristol, Burlington, New Britain, Plainville, Plymouth, and Southington. The purpose of the Busway West Plan was to plan for a transportation system that would provide as much transportation choice, service, and efficiency as possible in order to maximize utilization of the Busway.

4.2 Summary of Relevant Findings

The Busway West Plan recommended a series of local bus service, park-and-ride, bicycle and pedestrian infrastructure, and zoning improvements. Additionally, the Plan recommended the installation of transportation hubs at locations where several modes intersect and an enhanced marketing effort to encourage transit use. Although the Busway West Plan specifically addresses changes to local bus routes, its focus on encouraging transit use and improving connectivity between modes is one that is relevant to the Central Connecticut Rail Study. The following marketing approaches could be used:

- Marketing to Riders:
 - Create and distribute unified schedule booklets.
 - Post large, user-friendly maps at each station.
- Marketing to Potential Riders:
 - Send schedules and newsletters to Chambers of Commerce and major employers.
 - Market the service at post-secondary schools.
 - Market the service in public spaces.

Chapter 5. Hartford West Major Investment Study

Completed by: Wilbur Smith Associates, 2003

5.1 Project Purpose

The Connecticut Department of Transportation (CTDOT), the Capitol Region Council of Governments (CRCOG) and the Central Connecticut Regional Planning Agency (CCRPA) identified peak hour traffic congestion and safety deficiencies as major concerns for the Hartford West corridor between Downtown Hartford and the Fienemann Road interchange in Farmington. To address these concerns and to evaluate the effectiveness of different transportation system improvement alternatives, these agencies undertook a Major Investment Study (MIS) for the Hartford West corridor.

5.2 Summary of Relevant Findings

Of the Reasonable Alternative Packages (RAPs) for this study was fixed-guideway transit in the form of light rail, commuter rail, or busway. Commuter rail was suggested along the existing rail right-of-way largely on existing track between Crooked Street in Plainville and Union Station in downtown Hartford. Under this alternative, station spacing would tend to exceed 10,000 feet between stations. Service would be operated at frequencies of not less than fifteen minutes with off peak service on an hourly (or half-hourly) headway. Taking advantage of the high speed Amtrak track between Newington and Hartford and the longer station spacing, the commuter service would operate at an average velocity in excess of 30 mph. Running time from Crooked Street to Union Station using diesel locomotive equipment would be approximately 25 minutes.

In analyzing this commuter rail RAP, the following performance measures were calculated (costs in 1995 dollars):

- Total Transit Ridership: 26,750
- New Transit Ridership: 6,880
- New Service Ridership: 6,690
- Construction Cost: \$98.3 million
- Vehicle/Facility Capital Cost: \$30.4 million
- Annual Operating Cost: \$21.4 million (\$15.0 bus / \$6.4 rail)
 - Difference from Base: \$9.2 million
- Annual Fares: \$6.2 million
- Subsidy per Rider: \$1.95

After analyzing the RAPs, it was determined that the future needs and deficiencies of the Hartford West corridor make it so that that no single improvement will satisfy all of the Goals and Objectives defined for the study. It was appropriate therefore to formulate a Hybrid Package of improvements that will achieve the best overall performance and support from local, regional, and state agencies. The Recommended Package of Transportation Improvements would consist of elements of some of the higher performing alternatives, including:

- New Britain-Hartford Busway;
- Reconstruction of Flatbush, Prospect, Sisson and Sigourney Avenue Interchanges;
- Reconstruction of Routes 4, 6 and 9 Interchanges;
- Auxiliary Lanes between I-84 Exits 40 and 42;
- Improved Bus Services along I-84/Farmington Avenue;
- Support for Arterial Highways;
- Transportation Demand Management; and
- Land Use Regulation to Support Transit Friendly Design.

Commuter rail was not recommended as a part of this preferred package.

Chapter 6. Connecticut CTDOT Statewide Bus System Study

Completed by: Urbitran, 2000

6.1 Project Purpose

The Connecticut Statewide Bus System Study has been undertaken to ensure that bus transit in Connecticut serves continuing needs in the most efficient manner possible. Because land uses and the transportation demands that are determined by them are dynamic, fixed routes and other services must periodically be evaluated, and where necessary, modified to meet changing demand. The Study has taken a comprehensive look at the state's twenty urban and rural transit systems and the statewide express bus network. It has analyzed how effectively each system operates currently and what opportunities exist for improvements in efficiency and service coverage. The most relevant analyses to the Central Connecticut Rail Study are those for Bristol, New Britain, and Express Bus service.

6.2 Summary of Relevant Findings

6.2.1 Bristol

The Study made the following recommendations for this service:

- Route 1 – Expand the weekday span of service to 7 AM to 6 PM, and the Saturday service from 9 AM to 5 PM, and provide service to Central High School and Eastern High School with one morning and one afternoon run each, and provide several daily trips to Tunxis Community College.
- Route 2 – Modify the route to extend from Downtown Bristol to Connecticut Commons Shopping Center via Route 372 and Route 72, providing connections to downtown.

6.2.2 New Britain

The Study made the following recommendations for this service:

- Arch Street – Extend service to Meriden Square.
- Arch Street – Convert the Corbin Avenue/Shuttle Meadow Avenue loop to “upon request” service.
- Berlin-Kensington – Extend Route to Cromwell to make connection with Middletown Area Transit & extend service to Lowe's on Berlin Turnpike to make a connection with the Berlin Turnpike Flyer.
- Berlin-Kensington – Eliminate the Alling-Harris-Main loop and the Lower-Hudson-Worthington Ridge loop.
- Berlin-Kensington – Eliminate the Bassett Street / Ellis Street loop.
- Oak Street – Eliminate the Eddy Glover Boulevard / Commonwealth Avenue loop and combine this route with the Stanley Street Route to serve the West Farms Mall.

- Stanley Street – Eliminate the Country Club Route, convert the loop on Brittney Farms Road to upon request service, and combine this route with the oak street route to serve the West Farms Mall.
- East Street – Reduce headways to 60 minutes and pair bus with South Street Route.
- South Street – Reduce headways to 60 minutes and pair bus with East Street Route.
- Burritt Street – Add one bus to create 30 minute headways.
- New Route – Provide hourly service to Newington Center via East Main Street and Newington Avenue.

6.2.3 Express Buses

The Study made the following recommendations for express service within the CCRS study area:

- Route 2 – Operate two fewer inbound morning peak period trips from Corbins Corner.
- New Route 72 – Initiate a New Britain-Hartford express route.

Chapter 7. Report of the Feasibility of Implementing Waterbury-Hartford Commuter Rail Service

Completed by: CTDOT Bureau of Policy and Planning, April 1992

7.1 Project Purpose

The Connecticut Department of Transportation (CTDOT) Bureau of Policy and Planning prepared this report in response to Section 3 of Special Act 91-20. This Act required that CTDOT examine the feasibility of implementing commuter rail service between the City of Hartford and the City of Waterbury.

7.2 Summary of Relevant Findings

The Study determined that Waterbury-Hartford commuter rail service is a feasible transportation alternative for possible future implementation. Assuming peak period service on one-half hour headways, the Study calculated the following costs, revenues, and ridership for this rail service:

- Capital Cost: \$95,900,000
 - Track/Right-of-Way: \$50,100,000
 - Rolling Stock, Maintenance, Storage Facilities: \$35,850,000
 - Station/Parking: \$9,950,000
- Annual Operating Cost: \$9,757,000
- Annual Revenue: \$1,107,000
- Annual Operating Deficit: \$8,650,000
- Daily Ridership: 2,490
- Operational Subsidy per passenger: \$13.67 (\$28 if annualized capital costs are included)

The Study showed that the majority of the ridership would be generated between Hartford and Bristol, so it was suggested that the Bristol-Hartford segment of the corridor be built first. The estimated capital cost for this segment would be \$66,430,000 with an annual operating deficit of \$5,189,000.

Although the Study showed that Waterbury-Hartford commuter rail service is a feasible transportation, it did not establish whether this is the best or preferred alternative for the corridor. Prior to any design or construction, an Alternatives Analysis and Environmental Assessment would be required.

Chapter 8. Hartford-Waterbury Rail Passenger Study

Completed by: DeLeuw Cather, 1982

8.1 Project Purpose

The goal of this study was to evaluate the economic feasibility of rehabilitating the rail line to reinstitute rail passenger service from Hartford to Waterbury. The Study developed passenger service alternatives – including commuter rail, light rail – and evaluated ridership potential and assessed the operational and facility requirements associated with each scenario. The Study also developed cost estimates for each alternative.

8.2 Summary of Relevant Findings

The study analyzed ten commuter rail and light rail alternatives. These alternatives are explained in Table 1.

Table 1: Alternatives (Hartford-Waterbury Rail Passenger Study)

Alternative	Technology	Headways	
		Waterbury – New Britain	New Britain – Hartford
1A	Commuter Rail	20	20
1B	Commuter Rail	30	30
1C	Commuter Rail	60	60
1D*	Commuter Rail	60	60
2A	Commuter Rail	20	10
2B	Commuter Rail	30	20
2C	Commuter Rail	60	30
3A	Commuter Rail/Light Rail^	20	10
3B	Commuter Rail/Light Rail^	30	20
3C	Commuter Rail/Light Rail^	60	30

*Alternative 1D assumes two trips in the peak direction during the AM and PM peak periods, two midday round trips, and two evening round trips. This was determined to be the minimal acceptable level-of-service.

^Service from Waterbury to New Britain would be commuter rail, and service from New Britain to Hartford would be light rail.

Table 2 shows the ridership projected by this study.

Table 2: Projected Ridership (Hartford-Waterbury Rail Passenger Study)

Alternative	AM Peak (1995)	Daily (1995)	Opening Day (1987)
1A	2,370	7,992	7,248
1B	1,423	4,799	4,353
1C	434	1,464	1,328
1D*	304	1,179	1,073
2A	3,018	10,177	9,230
2B	1,812	6,110	5,542
2C	813	2,742	2,487
3A	5,820	19,626	17,800
3B	2,808	9,469	8,588
3C	1,677	5,655	5,129

Table 3 shows the projected costs (1979 dollars) for each rail alternative.

Table 3: Projected Costs, Rail (Hartford-Waterbury Rail Passenger Study)

Alternative	Capital Costs (millions)	Annual Operating Costs (millions)	Annual Revenue (millions)	Subsidy/Passenger
1A	\$46.1	\$2.6	\$2.1	\$0.20
1B	\$20.5	\$1.6	\$1.3	\$0.23
1C	\$13.2	\$0.7	\$0.4	\$0.85
1D*	\$12.8	\$0.6	\$0.3	\$0.86
2A	\$47.1	\$2.5	\$2.4	\$0.02
2B	\$21.5	\$1.6	\$1.4	\$0.14
2C	\$13.2	\$0.8	\$0.4	\$0.44
3A	\$92.9	\$3.5	\$4.1	(\$0.11)
3B	\$54.5	\$1.9	\$2.0	(\$0.06)
3C	\$45.9	\$0.9	\$1.1	(\$0.14)

Table 4 shows the projected costs (1979 dollars) for each alternative if buses were used instead of rail technology.

Table 4: Projected Costs, Bus (Hartford-Waterbury Rail Passenger Study)

Alternative	Capital Costs (millions)	Annual Operating Costs (millions)	Annual Revenue (millions)	Subsidy/Passenger
1A	\$17.1	\$2.6	\$2.1	\$0.20
1B	\$11.1	\$1.6	\$1.3	\$0.23
1C	\$5.8	\$0.7	\$0.4	\$0.85
1D*	\$5.8	\$0.6	\$0.3	\$0.86
2A	\$17.8	\$2.5	\$2.4	\$0.02
2B	\$11.8	\$1.6	\$1.4	\$0.13
2C	\$5.8	\$0.8	\$0.4	\$0.44
3A	\$29.8	\$3.7	\$4.1	(\$0.07)
3B	\$17.1	\$2.0	\$2.0	(\$0.02)
3C	\$6.6	\$0.9	\$1.1	(\$0.11)

The Study estimated that each alternative would result in Vehicle Miles Travelled (VMT) reductions, as shown in Table 5.

Table 5: VMT Reductions (Hartford-Waterbury Rail Passenger Study)

Alternative	Rail	Bus
1A	102,009	99,831
1B	61,162	59,768
1C	18,468	17,858
1D*	14,872	14,376
2A	117,462	115,383
2B	70,382	68,991
2C	21,424	20,785
3A	199,543	196,797
3B	95,637	94,163
3C	54,294	53,614

Overall, the study determined that for financial and practical reasons, commuter service between Waterbury and Hartford should be initiated with express bus service.