FTA ALTERNATIVES ANALYSIS
DRAFT/FINAL ENVIRONMENTAL IMPACT STATEMENT

TASK 6
EXISTING CONDITIONS REPORT

STATE PROJECT 302-008



FINAL REPORT

OCTOBER 2009

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Chapter 1: Introduction

This Existing Conditions Report satisfies the requirement of Task 6.1 of the Phase II Scope of Work for the Danbury Branch Improvement Program. Also, this information will be used in the Purpose and Needs and other appropriate sections of the DEIS and FEIS documents.

This report consolidates and updates information that was originally documented in the Purpose and Needs Report in Phase I. Railroad conditions from South Norwalk to New Milford are further described in a separate Rail Infrastructure Existing Conditions Report. Reference is also made to the Scoping Report (October 2008), which is an integral part of the study.

This Report is complemented by a technical memorandum prepared for Task 5 of Phase II (Environmental Data Collection). The sections of this memorandum discuss Topography, Geology, and Soils; Noise and Vibration; Air Quality; Energy; Biological Diversity; Threatened and Endangered Species; Wetlands; Floodplains and Floodways; Historical Resources; Archaeological Resources; Prime Farmland and Active Farmland; Land Use; Hazardous Contamination; Surface and Groundwater Resources; Public Recreational/4(f)/6(f) Lands; Socioeconomics and Environmental Justice; Scenic Roads; and Visual Resources.

1.1 Study Area Definition

Overview

The study corridor (Figure 1) consists of nearly 38 miles of existing rail between Norwalk and New Milford in western Connecticut.

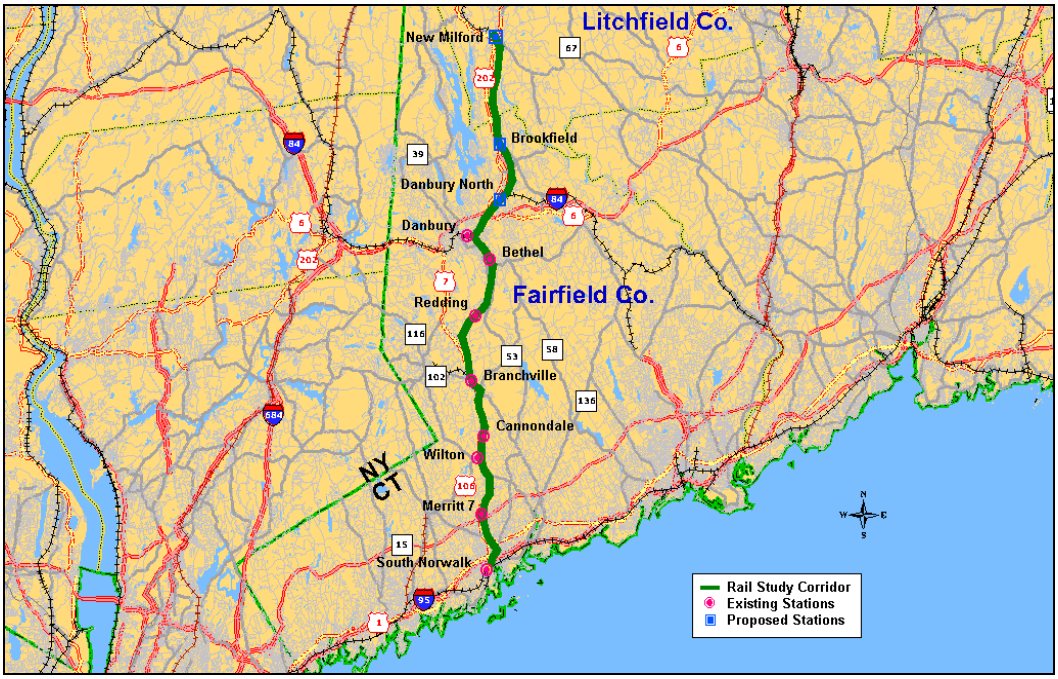


Figure 1: Study Corridor

The 23.6 miles of rail between Norwalk and Danbury is owned by the Connecticut Department of Transportation. This portion of the railroad, the Danbury Branch, is a single track and operates south to north from the Norwalk, into Wilton, Ridgefield, Redding, Bethel, and Danbury. Both passenger service, provided by Metro-North, and freight service, provided on a limited basis by the Providence & Worcester Railroad, operate on this branch.

The 14 miles of rail between Danbury and New Milford is owned by the Housatonic Railroad Company and its subsidiary, the Danbury Terminal Railroad. The three miles between Danbury and Berkshire Junction is part of the Maybrook Branch, which is owned by the Danbury Terminal Railroad. This section is double-tracked and handles only freight traffic. The 11 miles between Berkshire Junction and New Milford is owned by the Housatonic Railroad Company and contains a single track. Again, only freight service operates on this section of the rail line.

Between New Milford (Boardman Bridge Road) and the northern state border, the railroad is owned by the State of Connecticut. The Housatonic Railroad Company provides freight services along this stretch of rail and continues to operate north into Massachusetts.

Towns

The study corridor includes eight municipalities, which, from south to north, are Norwalk, Wilton, Ridgefield, Redding, Bethel, Danbury, Brookfield, and New Milford. The following is a brief description of each town based on information from municipal websites and Plans for Conservation and Development.

Norwalk

Incorporated in 1651, Norwalk is part of Fairfield County and is bounded by New Canaan and Wilton on the north, Long Island Sound on the south, Westport on the east, and Darien on the west. Norwalk, which is the sixth most populous city in Connecticut, is made up of several distinct neighborhoods. These include East Norwalk, South Norwalk, Rowayton, Silvermine, Cranbury, and Norwalk Center, which together offer many opportunities for shopping, dining, and recreation. Norwalk also has an abundance of natural resources, including a harbor, streams, beaches, islands, and marshlands.


Washington Street, South Norwalk

Wilton


Wilton Center

Incorporated in 1802 after having originally been a part of Norwalk, Wilton is part of Fairfield County and is bounded by Ridgefield on the north, Norwalk and Westport on the south, Weston and Redding on the east, and New Canaan and New York State on the west. Wilton is largely a residential community, and 58% of the total land in the town is taken up by residential uses. The town has also preserved nearly

1,000 acres of open space for active and passive recreational use, and this gives Wilton an open and rural feeling. As a result, the town has a limited amount of land remaining for development.

Ridgefield

Incorporated in 1708, Ridgefield is part of Fairfield County and is bounded by Danbury on the north, Wilton on the south, Redding on the east, and New York State on the west. Ridgefield is largely a residential community, and 75% of the total land in the town is taken up by residential uses. Ridgefield is also home to businesses ranging in size from small, local operations to the American headquarters of Boehringer-Ingelheim Pharmaceuticals. As Ridgefield has developed, the town has remained true to its colonial roots, and Main Street, which is more than a mile long, is lined with stately homes, museums, restaurants, churches, and shops.

Main Street, Ridgefield

Redding

Saugatuck Reservoir, Redding

Incorporated in 1767, Redding is part of Fairfield County and is bounded by Bethel and Danbury on the north, Easton and Weston on the south, Easton and Newtown on the east, and Ridgefield and Wilton on the west. Residents of Redding pride themselves on the unique character of their town. Policies in Redding have sought to maintain this character by securing more than a third of the town's land for permanent open space, protecting watersheds and sensitive lands, preserving the view from scenic roads, advancing efforts to protect historic buildings and sites, and adopting Smart Growth policies to create walkable, transit-oriented development.

Bethel

Incorporated in 1855, Bethel is part of Fairfield County and is bounded by Brookfield on the north, Redding on the south, Newtown on the east, and Danbury on the west. Bethel is a partially rural and partially suburban community that features a mixed-use village center. At only 16.8 square miles in area, Bethel is the smallest town within the study corridor. Nearly half of this land (45%) is comprised of residential uses.

Bethel Center

Danbury

Incorporated in 1702, Danbury is part of Fairfield County and is bounded by New Fairfield on the north, Redding on the south, Bethel and Brookfield on the east, and Ridgefield and New York State on the west. In 2008, Mayor Mark Boughton appointed the Main Street Renaissance Task Force. This group was tasked with working in conjunction with the city's Department of Planning and Zoning to prepare a Plan for Downtown Danbury. This Plan will focus on creating policy recommendations that will foster business development, promote community activities, and strengthen linkages within the city.

Main Street, Danbury

Brookfield

Brookfield Commons

Incorporated in 1788, Brookfield is part of Fairfield County and is bounded by Bridgewater and New Milford on the north, Newtown and Bethel on the south, Newtown on the east, and Danbury and New Fairfield on the west. While nearly half (45%) of Brookfield's land is taken up by residential uses, the town is also a significant employment hub. One of the largest employers is the Regional YMCA of Western Connecticut, which has its offices in Brookfield Commons. In 2007, Brookfield had 1.22 jobs for every housing unit, and this was the fourth highest jobs-housing ratio within the study corridor (behind Wilton, Danbury, and Norwalk). This is especially telling about Brookfield's attraction as an employment center considering that at 19.8 square miles in area, Brookfield is the second smallest town in the corridor.

New Milford

Incorporated in 1712, New Milford is part of Litchfield County and is bounded by Kent on the north, Bridgewater and Brookfield on the south, Washington and Roxbury on the east, and Sherman and New Fairfield on the west. New Milford, at nearly 62 square miles in area, is the physically largest of the towns in the study corridor. The town is generally considered to be the gateway to Litchfield County, and it features considerable commercial development. New Milford also has a historic town center, which includes its town hall, library, and town green, as well as restaurants and retail shops.

New Milford Town Green

Population and Demographics

The following is a comparative analysis of the populations and demographics of the municipalities within the study corridor. The data is from 2008 and comes from Town Profiles prepared by the Connecticut Economic Resource Center, Inc. (CERC).

Of the 278,853 residents in the study corridor, nearly 164,000 of them live in either Norwalk or Danbury (Table 1). The least populous town is Redding, with 9,365 residents. Figure 2 shows a breakdown of the corridor population by percent of people who live in each municipality.

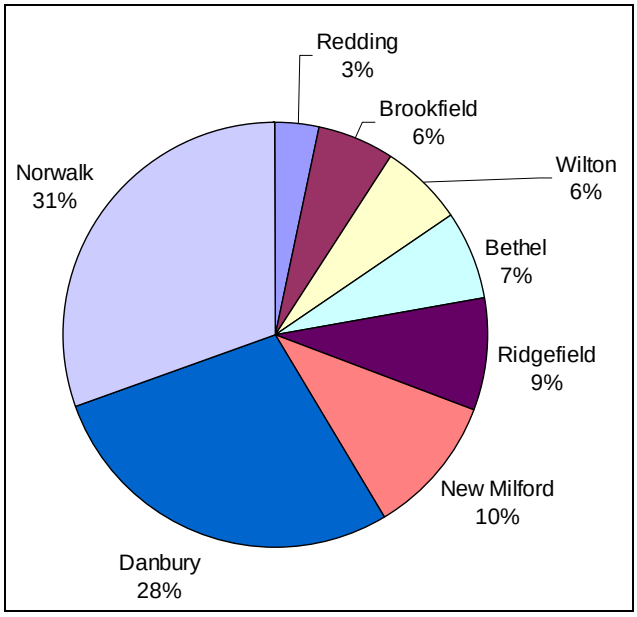


Figure 2: Corridor Population by Municipality

Overall, the study corridor is denser than the state (Table 1). Four municipalities – Brookfield, Bethel, Danbury, and Norwalk – have higher population densities than the state average of 707 people per square mile. Norwalk, with 3,723 residents per square mile, is the densest municipality within the study corridor, and Redding, with only 297 residents per square mile, is the least dense.

Table 1: Population and Population Density, Study Corridor

Town	Population	Land Area (Sq. Mi.)	Population Density
Norwalk	84,877	22.8	3,723
Wilton	17,924	26.9	666
Ridgefield	24,031	34.4	699
Redding	9,365	31.5	297
Bethel	18,481	16.8	1,100
Danbury	78,939	42.1	1,875
Brookfield	16,269	19.8	822
New Milford	28,967	61.6	470
Study Corridor	278,853	256	1,090
Connecticut	3,540,846	5,009	707

While Norwalk and Danbury are more racially diverse than the state as a whole, the other six municipalities are more homogeneous. Overall, this makes the corridor slightly less diverse than Connecticut (Figure 3). Norwalk and Danbury are also the only municipalities in the corridor that have a larger Hispanic presence than the state proportion of 11.7%. It is interesting to note that while Norwalk and Danbury, with populations that are approximately 20% Hispanic, have nearly twice the percentage of Hispanics than the state does, the remaining six municipalities – with percentages ranging from 2.5% to 5.2% – each have less than half of the state percentage.

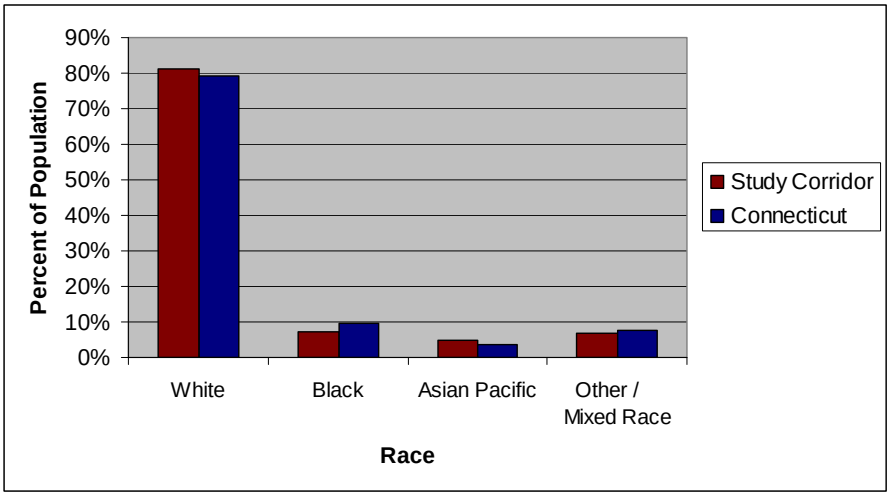


Figure 3: Racial Composition, Study Corridor

Overall, the municipalities in the study corridor have higher educational attainment levels than are generally found in Connecticut (Table 2). In Connecticut, 34.3% of individuals aged twenty-five years or older have completed a Bachelors degree or more, while 10.9% of people in this age bracket have not completed high school. Within the corridor, only Danbury has a lower rate of college completion, and both Danbury and Norwalk have more residents without a high school diploma. With 72%, Wilton has the highest percentage of college graduates, and with 2.3%, Redding has the lowest percentage of residents who have not completed high school.

Table 2: Educational Attainment Levels, Study Corridor

Town	Residents 25-years or older	Less than High School		High School		Some College		Bachelors or Higher	
		#	%	#	%	#	%	#	%
Norwalk	58,768	7,069	12.0%	15,729	26.8%	13,811	23.5%	22,159	37.7%
Wilton	11,967	427	3.6%	1,055	8.8%	1,871	15.6%	8,614	72.0%
Ridgefield	16,083	466	2.9%	1,883	11.7%	2,885	17.9%	10,849	67.5%
Redding	6,411	147	2.3%	898	14.0%	1,235	19.3%	4,131	64.4%
Bethel	12,236	941	7.7%	3585	29.3%	2,856	23.3%	4,854	39.7%
Danbury	52,651	8,490	16.1%	16,045	30.5%	11,220	21.3%	16,896	32.1%
Brookfield	11,010	511	4.6%	2,646	24.0%	2,804	25.5%	5,029	45.9%
New Milford	19,662	1,162	5.9%	5,981	30.4%	5,466	27.8%	7,053	35.9%
Study Corridor	188,788	19,213	10.2%	47,822	25.3%	42,148	22.3%	79,605	42.2%
Connecticut	2,401,464	261,863	10.9%	723,175	30.1%	592,297	24.7%	824,309	34.3%

A telling way to compare educational attainment levels is the ratio of college graduates versus individuals who did not finish high school (Figure 4). In Connecticut, this ratio is 3.2, which means that for every person who has not finished high school there are approximately three individuals who have completed at least a Bachelors degree. Within the study corridor, the overall ratio is 4.1; Danbury has the lowest ratio (2.0); and Redding has the highest ratio (28.1).

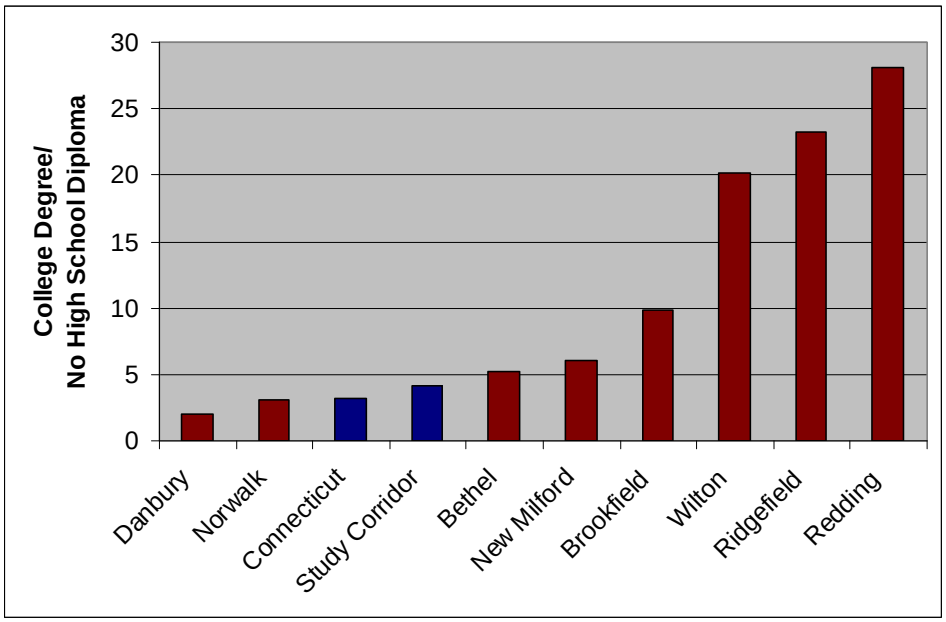


Figure 4: College Graduates versus Residents with no High School Diploma, Study Corridor

Median household income levels within the corridor are also generally higher than the state average (Table 3). In Connecticut, the median household income is $67,236. Within the corridor, only Danbury, with a median household income of $66,997, has a lower income level. With a median household income of $181,187, Wilton has the largest average income within the corridor.

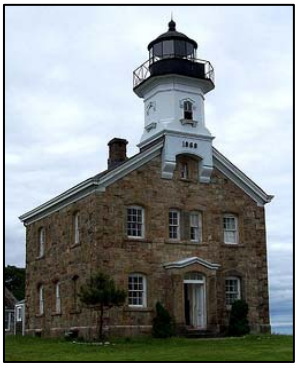
Table 3: Median Household Income, Study Corridor

Town	Median Household Income
Norwalk	$74,475
Wilton	$181,187
Ridgefield	$138,006
Redding	$131,814
Bethel	$86,273
Danbury	$66,997
Brookfield	$102,299
New Milford	$83,564
Study Corridor	**$108,077**
Connecticut	**$67,236**

Activity Centers

Norwalk: Activity centers in Norwalk include beaches (Calf Pasture and Shady Beach), Norwalk State Heritage Park, Maritime Aquarium, Norwalk Islands, Sheffield Island Lighthouse, the Norwalk Museum, and Norwalk Concert Hall, which houses the Norwalk Symphony Orchestra.

Wilton: One of the activity centers in Wilton is Merwin Meadows Park. This 17-acre park offers a swimming pond, athletic field, picnic facilities, playground, and basketball court.



Sheffield Island Lighthouse, Norwalk

Ridgefield: Attractions in Ridgefield include the Ridgefield Playhouse, Aldrich Museum of Contemporary Art, Ridgefield Symphony Orchestra, Ridgefield Guild of Artists, and the Ridgefield Theatre Barn. Ridgefield is also known for its quality restaurants along Main Street.

Ridgefield Playhouse

Redding: Redding offers several recreational opportunities, including Highstead Arboretum, Devil's Den Preserve, Huntington Park, and Putnam Memorial State Park. Redding is also home to the Mark Twain Library, which was endowed by the town's most famous resident.

Bethel: Bethel offers numerous public parks. The town is also home to one of the premier Bicycle Motocross (BMX) tracks in New England

Danbury: For recreation, Danbury offers numerous parks and hiking trails. Among the most popular are Tarrywile Mansion and Park, which is 653 acres, and Candlewood Park, which is 11.1 acres, overlooks Candlewood Lake, and offers swimming, picnicking, and a boat launch. Danbury is also home to several museums and the Danbury Fair Mall, which is one of the largest shopping malls in Connecticut.

Candlewood Lake, Danbury

Brookfield Craft Center

Brookfield: Two of Brookfield's attractions are the Brookfield Center Historic District and the Brookfield Craft Center. The historic district includes 67 properties over 430 acres near the intersection of Route 133 and Route 25. The District represents the town's original settlement. The Craft Center, among other things, offers classes in basketry, beadwork, blacksmithing, ceramics, glass, metalsmithing, weaving, woodturning, and woodworking.

New Milford: In addition to multiple parks, New Milford offers several theaters including the Bank Street Theater and TheatreWorks. From April to November, New Milford is home to the Elephant's Trunk flea market. This weekly market with space for 490 dealers routinely fills the majority of its 1,000-space parking lot.

TheatreWorks, New Milford

Major Transportation Features

The study corridor is served by passenger rail and transit services, as well as a network of significant roadways.

Passenger rail service is provided by Metro-North Railroad. Service is available to New York City, and there is also intra-State commuter shuttle service. Existing rail services will be detailed in Chapter 2.

Existing transit services include Housatonic Area Regional Transit District (HART) bus service, Norwalk Transit District (NTD) bus service, and private shuttles. These transit options include service on the local and regional levels, and they are described in detail in Chapter 3.

Major roadways in the study corridor include Route 7, Interstate 84, Route 202, and Route 25. Chapter 4 details these and other roads and their relationships to stations in the study corridor.

Extension to Massachusetts

In addition to including the study corridor discussed earlier, the Danbury Branch Improvement Program is being considered in the context of extending rail passenger service to Massachusetts in the future.

This extension would run north from New Milford through the towns of Kent, Cornwall, Canaan, Salisbury, and North Canaan in Litchfield County, Connecticut. It would then continue through the towns of Sheffield, Great Barrington, Stockbridge, Lee, Lenox, and Pittsfield in Berkshire County, Massachusetts.

The tracks that would be used for this extension are owned by the State of Connecticut between New Milford and the State border. Freight service is already operated along this corridor by the Housatonic Railroad Company.

Litchfield County, CT

Litchfield County is a largely rural area located in the northwestern corner of

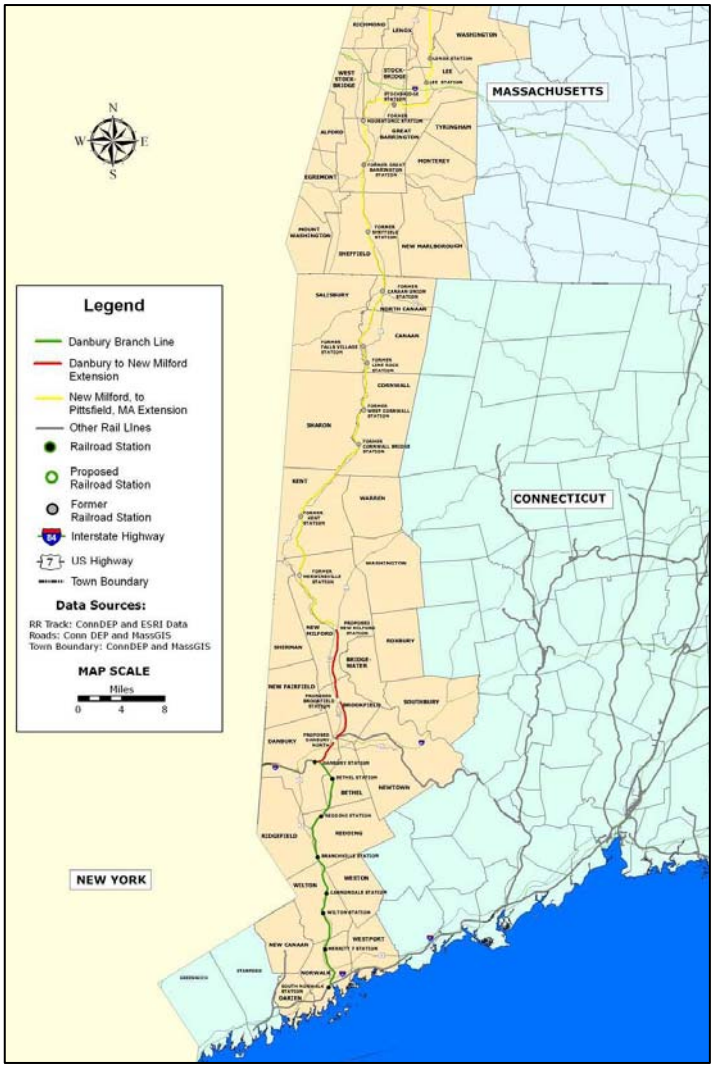


Figure 5: Study Corridor and Extension to Massachusetts

Connecticut. Major attractions include Kent Falls State Park in Kent and Lime Rock Park Racing Track in Salisbury. While there are limited transit services in Litchfield County, along the study corridor there are no existing rail or transit options.


Kent Falls State Park

Berkshire County, MA

Berkshire County comprises the western section of Massachusetts. The southern part of the county boasts numerous attractions. These include Butternut Ski Lodge in Great Barrington, the Prime Shopping Outlets in Lee, and the Red Lion Inn in Stockbridge. Berkshire County has bus service, which is operated by the Berkshire Regional Transit Authority.


Red Lion Inn, Stockbridge

Population and Demographics

The following is a comparison of the demographics of the study corridor, Litchfield County, and Berkshire County. Data for the State of Connecticut and the Commonwealth of Massachusetts is included for reference. The data for Connecticut is from 2008 and comes from Town Profiles prepared by the Connecticut Economic Resource Center, Inc. (CERC). The data for Massachusetts is from 2000 and comes from the US Census.

As noted earlier, the Danbury Branch study corridor is denser in terms of population than Connecticut. This is in contrast to the population densities of Litchfield and Berkshire County, which each have less than a quarter of the density of their respective states (Table 4).

Table 4: Population and Population Density, Extension to Massachusetts

Area	Population	Land Area (Sq. Mi.)	Population Density
Study Corridor	278,853	256	1,090
Litchfield County	192,262	920	209
Berkshire County	134,953	931	145
Connecticut	3,540,846	5,009	707
Massachusetts	6,349,097	7,840	810

Litchfield and Berkshire County are also more racially homogeneous than the study corridor (Table 5). While the study corridor reflects the racial composition of Connecticut, the two counties involved in the extension to Massachusetts have larger percentages of white residents. The populations of Litchfield and Berkshire County are 3.8% and 1.7% Hispanic, respectively. While the populations of most towns in the study corridor are between 2.5% and 5.2% Hispanic, Norwalk (20%) and Danbury (19.6%) have a larger Hispanic presence than the Connecticut average of 11.7%. Hispanic residents make up 6.8% of the population in Massachusetts.

Table 5: Racial Composition, Extension to Massachusetts

Area	Population	White		Black		Asian		Other/Mixed	
		#	%	#	%	#	%	#	%
Study Corridor	278,853	226,841	81.3%	19,985	7.2%	13,220	4.7%	18,807	6.7%
Litchfield County	192,262	181,459	94.3%	1,920	1.0%	3,545	1.8%	5,439	2.8%
Berkshire County	134,953	128,235	95.0%	2,679	2.0%	1,333	1.0%	2,706	2.0%
Connecticut	3,540,846	2,807,439	79.3%	340,407	9.6%	128,690	3.6%	264,310	7.5%
Massachusetts	6,349,097	5,367,286	84.5%	343,454	5.4%	238,124	3.8%	400,233	6.3%

The study corridor has higher levels of educational attainment than the other areas (Table 6). With 42.2%, the study corridor has the largest percentage of individuals aged 25-years or older who have completed a Bachelors Degree or more. Berkshire County, with 26.0%, has the lowest percentage of residents in this age bracket to have achieved this level of education. Litchfield County has the smallest percentage of residents (8.5%) who have not received a high school diploma or equivalent, while Massachusetts has the largest percentage, with 15.2% of its population aged 25-years or older having not completed high school.

Table 6: Educational Attainment Levels, Extension to Massachusetts

Area	Residents 25-years or older	Less than High School		High School		Some College		Bachelors or Higher	
		#	%	#	%	#	%	#	%
Study Corridor	188,788	19,213	10.2%	47,822	25.3%	42,148	22.3%	79,605	42.2%
Litchfield County	136,271	11,632	8.5%	42,527	31.2%	36,804	27.0%	45,308	33.2%
Berkshire County	93,339	13,951	14.9%	31,855	34.1%	23,307	25.0%	24,226	26.0%
CT	2,401,464	261,863	10.9%	723,175	30.1%	592,297	24.7%	824,309	34.3%
MA	4,273,275	651,093	15.2%	1,165,489	27.3%	1,038,398	24.3%	1,418,295	33.2%

As discussed earlier, a telling way to compare levels of educational attainment is to look at the ratio of college graduates versus individuals who did not finish high school. In Connecticut, this ratio is 3.2, which means that for every person who has not finished high school there are approximately three individuals who have completed a Bachelors degree or higher. The study corridor has the highest ratio at 4.1, and Berkshire County has the lowest ratio at 1.7. Litchfield County and Massachusetts have ratios of 3.9 and 2.2, respectively.

The median household income for the study corridor is higher than income levels in the other areas (Table 7). The median household income in Litchfield County ($70,291) is also above the Connecticut average. With $39,047, Berkshire County has a median household income that is lower than the Massachusetts average.

Table 7: Median Household Income, Extension to Massachusetts

Area	Median Household Income
Study Corridor	$108,077
Litchfield County	$70,291
Berkshire County	$39,047
Connecticut	**$67,236**
Massachusetts	**$50,502**

1.2 Review of Previous Studies

A review of previous studies pertaining to the study corridor and relating to current efforts was presented in the Purpose and Needs Report in Phase I. These studies range in age and scope, and they have been reviewed for their applicability to the current study process. Each of the following reports is summarized separately in the following pages:

- Route 7 Corridor Travel Options Implementation Plan
- Danbury Branch Line Shuttle Feasibility Study
- Rail Transit Development Program
- U.S. Census Journey-to-Work
- Danbury Branch Line Service Study
- The Untapped Marked for Rail Passenger Service
- Action Plan for Restoring Passenger Rail Service to New Milford
- Congestion Mitigation Systems Plan "Vision 2020"
- Danbury Branch Electrification Feasibility Study
- Connecticut Department of Transportation Rail Governance Study

Route 7 Corridor Travel Options Implementation Plan

This study, completed in 2000 for the South Western Regional Planning Agency (SWRPA) and the Housatonic Valley Council of Elected Officials (HVECO), was performed by Vanasse Hangen Brustlin, Inc. and KKO and Associates, Inc. The study recommended changes to current transportation systems along Route 7. The study aimed to reduce traffic congestion, increase mobility, and provide travel options for residents of the Housatonic Valley.

The study area was the Route 7 corridor between Norwalk and New Milford. Job growth was concentrated at the southern end of the corridor in Stamford, Greenwich, and Norwalk, and residential growth was concentrated in the northern end of the corridor in Bethel, Brookfield, and New Milford. Strong job growth in New York City and along I-95 was projected and acted as an impetus for the study. In anticipation of this future growth, the result of this project was a list of commuter rail service improvements and bus and shuttle service enhancements, as well as Travel Demand Management and Transit Oriented Service Support strategies.

Commuter Rail Service Improvements

The study recommended two packages of commuter rail service improvements. The first package dealt with enhancing the existing Danbury Line and the second aimed to extend the Danbury Line to New Milford.

The Danbury line enhancement package recommended increasing the maximum speed on the Line to 60 mph by adding a new signal and communication system. The two phases of service improvements would increase service by 55% and by an additional 23%, respectively. The first phase of service improvements was projected to reduce passenger travel time by 18%. The final recommended service product would add the following trips:

- Early morning shuttle (2) Wilton/Danbury – South Norwalk – New York City
- Midday shuttle (3) Danbury – South Norwalk
- Evening reverse (1) Danbury – South Norwalk
- Morning reverse (3) South Norwalk – Danbury
- Midday reverse (5) South Norwalk – Danbury
- Late evening (1) Danbury – South Norwalk
- Early evening (1) New York City – Danbury

The extension to New Milford package would provide commuter service along 14.2 miles of new or refurbished track between Danbury and New Milford. The phased capital improvement program and operating plan was designed to allow for an incremental extension. The new signal and communication system discussed in the enhancement package would also be extended to New Milford. The extension package included track and bridge improvements and service to three new stations: The following additional or extended trips would be added:

- Extended existing AM and PM peak through trains to New Milford (3)
- Additional morning shuttles (2)
- Additional evening peak shuttle (2)
- Additional evening shuttles (2)
- Extended midday roundtrips to New Milford (3)
- Extended morning reverse (3: 2 to New Milford, 1 to Danbury North)
- Extended evening reverse (2: 1 to New Milford, 1 to Danbury North)
- Extended evening shuttles (2)
- Additional evening through (1) New York City – New Milford
- Extended midday roundtrips to Danbury North (3)

Bus/Shuttle Service Enhancements

The study recommended bus/shuttle enhancements to accompany the modifications to rail service. Bus service was recommended between Norwalk's Wheels Hub and Housatonic Area Regional Transit's (HART) Pulse Point in Danbury. The study also recommended adding HART service between the Pulse Point and the Danbury Rail Station and encouraged a commuter connections study to analyze the need for train station connections to major employers.

Travel Demand Management Strategies

The Travel Demand Management (TDM) strategies portion provided several recommendations to increase ridership and provide additional mobility options for current riders. Suggestions were made on a station-by-station basis. Generally, the TDM strategies include:

- Enhance stations (improved security, commuter information kiosks, etc.)
- Evaluate feasibility of new rail stations in Norwalk and Redding/Georgetown
- Conduct an Intelligent Transportation Systems (ITS) Study
- Create linkages within the transit system (shuttle/bus, pedestrian, bicycle)
- Investigate feasibility of Universal Transit Card

- Conduct a Transit Oriented Development Feasibility Study
- Enhance marketing of public transportation resources
- Consider transit fare reduction to further stimulate increased transit ridership

Transit Oriented Service Support Strategies

Several recommendations were made relating to Transit-Oriented Service Support Strategies:

- Establish a "Route 7 Travel Options Coalition"
- Support ridesharing initiatives
- Evaluate costs and cost structure through a service evaluation and governance study
- Pursue extending Danbury Branch to Stamford
- Evaluate feasibility of electrifying branch to Wilton
- Consider formation of Transportation Management Agencies (TMA)

The study included a survey. The most important travel improvements noted by respondents were available and free parking at stations, transit fare reductions and simplified fare collection, additional morning peak hour trains, and extension of service to New Milford. A station-by-station analysis indicated that most survey respondents rated security as the most important station enhancement needed. The survey indicated strong support for express bus service along Route 7 between Danbury and Norwalk. Shuttle services received a high level of support.

The rail service enhancements were projected to increase daily ridership by 649, and the service expansions were projected to net an additional 559 daily riders. The proposed Route 7 bus service was projected to create 208 new daily bus trips. The benefits of the implementation plan would be reduction of traffic volume, improvement of air quality, and maximization of public infrastructure investments. These changes and benefits are important because of the projected growth in population and highway congestion in the near future. The Danbury Line is expected to see a 70% increase in riders between 1999 and 2025 even without any improvements.

Traffic volume was projected to decrease by 2,000 cars per day with 1,600 of those cars removed from the vicinity of the I-95 intersection. These volume reductions were also anticipated to improve east-west corridor traffic along I-95, Route 15, and Route 1.

After the study was completed and the recommendations were made, the final suggestion was to create a Route 7 Travel Options Action Coalition. The purpose of the coalition would be to oversee the implementation of the study recommendations, prioritize projects, identify who will implement the changes, identify sources of funding, and lobby for implementation.

Danbury Branch Line Shuttle Feasibility Study

This study was a continuation of the Route 7 Corridor Travel Options Implementation Plan. The study was completed in 2001 for HVCEO by HART. This study looked at the potential for shuttles to stations and employer vanpools/shuttles between stations and worksites. Traditional bus shuttle services were not recommended due to the low density of passengers in the region.

Alternatively, subscription shuttle services were recommended for curb-to-curb service. The study also looked at the feasibility of electric station cars. The overall goals of the study were to:

- Evaluate each station for bus feeder service feasibility;
- Develop tentative service structures; and
- Identify potential for employer-based van/shuttle services.

Rider Survey

A survey of morning peak period rail riders was competed in September 2000. The survey found that most people walk to their place of employment after disembarking. The percentage of respondents interested in shuttle services varied greatly by station: from 2% in favor of Branchville to 30% in favor of Danbury. In a telephone survey of corridor residents, 22% of respondents were in favor of shuttle service. The rider survey also quantified the preference of Harlem Line stations over Danbury Line stations. The highest percentage of respondents (32%) prefer the Harlem Line Stations, 22% use the Branchville Station, 20% prefer each the Danbury Station and the Bethel Station, and 6% use the West Redding Station.

Recommended Enhancements by Station

Bus shuttle services are generally not recommended, based on low passenger density and lack of potential ridership. Thus, subscription bus shuttle services are recommended. The subscription service would be operated like Dial-A-Ride service and would take passengers from home curb to train station curb. If demand became high enough, passengers could meet at a central location to board the shuttle. Passengers would pay a monthly subscription fare.

The other station connectivity option is an electric station car program. Electric cars would not be owned by users, but would be provided or leased to them. Station cars would be driven to the train station from a user's home, and then the car would be parked and charged at the station. Next, the car would be picked up by a different user, driven to a worksite, and used during the day for work-related travel. While the electric cars have zero emissions and allow for more compact parking, they can only fit two passengers.

Branchville: The Branchville Station is a good candidate for subscription shuttle services because of parking shortages and interest in shuttles. The subscription shuttle should also have a designated stop near Routes 33 and 35 in Ridgefield. Major employers with potential vanpools are ASML and Norco.

West Redding: West Redding riders are supportive of shuttle service, but the numbers do not support fixed-route service. Parking is under capacity, so there is a less active demand. Electric station cars are recommended to be tested at the station and could preclude the need to expand parking. Employers with potential for vanpools are Lee Far Corporate Park, Barden Corporation, BF Goodrich, and Apple Ridge Road Office Park. The Danbury Fair Mall is also located in the area, but its types of jobs and variability of shifts do not make it a good vanpool candidate.

Bethel: A subscription shuttle to the Bethel Station with stops in Newton could be warranted because projections show future parking shortages. Electric cars should anticipate of increased parking demand. Clusters of potential employers for vanpools are located on the Danbury/Bethel line, including the Shelter Rock/Great Pasture Road and the Francis Clarke Industrial areas. Other employers include Eaton Corporation and Fuel Cell Energy.

Danbury: The rider survey showed strong support for a rail shuttle. A HART Pulse Point Connector could fulfill that need. The Pulse Point and the station are less than a mile apart, so the shuttle could be operated on a subscription/fixed-route basis. Electric station cars should only be considered if parking were to become in short supply. Commerce Park, Sealed Aire, and Branson Ultrasonics are potential employers for vanpool services.

Danbury North (Proposed): Ridership at Danbury North is not expected to warrant a feeder shuttle. The station has easy access from I-84, so it is possible that it will attract more Newton and Southbury passengers. Potentially, a shuttle from park-and-ride lots would be useful if the ridership base grew. Electric station cars could also become important because parking space is somewhat constrained. The Berkshire Corporate Park has the potential for an employer vanpool.

Brookfield (Proposed): The potential Brookfield Station already has HART bus service, so no shuttle services are warranted. Electric station cars could be used to enhance parking capacity. UPS, Dade Behring, and businesses in industrial parks on Silvermine and Pocono Roads could be potential vanpool employers.

New Milford (Proposed): The proposed New Milford Station already has HART bus service, so electric station cars are recommended. Kimberly Clark is the largest employer in the area, but it already has HART service, so it is unlikely that vanpool service would be necessary.

Rail Transit Development Program

In 1992, HART completed the Rail Transit Development Study for HVCEO. The study identified the need for long-range planning to promote and advance the use of public transportation. It was also reported that the public expected expanded and augmented public rail service and that ConnDOT was preparing the Danbury Line for future demand.

The study recommended the following capital improvements:

1993	New Danbury Station
1993	New Bethel Station
1994	New stations – northern extension
1994	Centralized train control and grade crossing signals
1996	Engineering/design for maintenance and car storage facilities
1997	Maintenance facility
1998	Car storage facility
1998	Passing sidings
1998-1999	12 new locomotives

The long-range service plan also called for an additional morning and evening peak through train to Grand Central Station, selected main line station stops between South Norwalk and

Greenwich, continued operation of the two peak morning and evening reverse commute trips, and improved off-peak and weekend service frequencies from two hours to one.

Competing Rail Transit Service

The study investigated the competition between Connecticut and New York rail stations that occurs due to the close proximity of the lines and the time savings that can be gained by using one over the other. Stations on the Harlem Line were surveyed to discern the origin of rail riders. More than 15% of the cars parked at the surveyed Harlem Line Stations had Connecticut license plates. The largest percentage of Connecticut plates were found at Dover Plains, Harlem Valley/Wingdale, Brewster, Purdy's, and Brewster North. At least two Harlem stations had significant overflow parking along adjacent highways and roads. The overflow problem was the greatest at Croton Falls, Purdy's, and Goldens Bridge where more than 20% of the overflow cars had Connecticut license plates. According to car counts, more Connecticut residents used Harlem Line stations than used Danbury Branch stations.

A Westchester County report found that 10.9% of the cars parked at Goldens Bridge and 17.2% of the cars parked at Katonah had Connecticut license plates. This report also found that 82.9% of the cars along Route 35 between Ridgefield and Westchester County were from Connecticut. Finally, the Westchester County report included a rail commuter survey that identified significant percentages of Connecticut residents who would use convenient bus service along the Route 35 corridor to the Katonah and Goldens Bridge Stations.

Annual parking fees at Harlem Line Stations ranged from $200 to $500 for nonresidents in 1992. Despite the higher parking fees, Connecticut residents chose to use these stations anyway, likely because the travel times were faster on the Harlem Line.

U.S. Census Journey-to-Work

The following analysis of U.S. Census Journey-to-Work Data from 2000 looks at 11 residence towns (Bethel, Bridgewater, Brookfield, Danbury, New Fairfield, New Milford, Newtown, Redding, Ridgefield, Sherman, and Wilton) and six destination/employment locations (Darien, Greenwich, Norwalk, Stamford, Wilton, and Manhattan).

Table 8 shows the number of people from each origin town who worked in each destination in 2000. Each of the 11 residence towns is on or near the Danbury Branch Line. The six work destinations are all stops along the New Haven line except for Wilton, which is a stop on the Danbury Branch Line. Of the workers who commute between these residences and destinations, approximately 17% of them work in Manhattan. This shows that there are a significant number of workers who do or potentially could use Metro-North service to travel to work.

Table 8: Journey-to-Work: Origins and Destinations

Work / Residence	Darien	Greenwich	Norwalk	Stamford	Wilton	Manhattan	Total
Bethel	89	114	490	484	295	151	1,623
Bridgewater	2	0	15	16	4	37	74
Brookfield	24	156	142	183	172	158	835
Danbury	101	776	873	1,274	740	542	4,306
New Fairfield	29	94	123	270	68	243	827
New Milford	22	113	283	337	130	164	1,049
Newton	116	229	463	449	199	203	1,659
Redding	74	122	270	389	224	237	1,316
Ridgefield	100	418	522	1,246	442	573	3,301
Sherman	11	21	17	33	4	154	240
Wilton	96	344	833	959	2,212	1,110	5,554
Total	664	2,387	4,031	5,640	4,490	3,572	20,784

Source: 2000 Census Journey-to-Work Data

Danbury Branch Line Service Study

Prior to the 1995 Metro-North Danbury Branch Line service addition, there was a two-hour service gap that covered the scheduled ending time of 80% of commuters from the 11 origin towns and employers in the five destination towns. Other problems noted in the report were:

- Limited parking;
- Inconvenient and inadequate service (especially lack of north-bound peak train);
- Need for transfers between trains;
- Inadequate marketing of new train service; and
- Lack of connecting transit.

The study concluded that a large market existed for expanded intrastate service on the Danbury Line. The existing service was sufficient for New York-bound employees but was not optimal for the majority of Connecticut residents. The following recommendations were made:

- Examine rail service enhancements in Wilton and a potential link with commuter connection shuttles and bus service.
- Change the schedule or add a new morning peak train to Danbury from South Norwalk with an emphasis on the Merritt 7 and Wilton Stations.
- Add stops in Stamford and Greenwich on peak Danbury Branch through trains. These are valuable time slots and stop locations for intrastate commuters.
- Continue track and parking improvements.

The Untapped Market for Rail Passenger Service

This report was prepared in August 1983 for HVCEO by SG Associates. The report described the passenger rail service conditions in order to justify improvements to the service.

In 1979, there were 927 daily round trips taken on the Danbury Line, and nearly all riders traveled to New York City. There is a significant untapped market of persons living in the Housatonic Region and working in southwestern Connecticut. Approximately 39% of these potential riders worked within walking distance of a rail station or had access to employer-based shuttle service. Other potential Danbury Line commuters used the Harlem Line to commute.

This study recommended several service improvement options to reach the potential rail commuter markets. The strongest recommendation was electrification. Other evaluated service strategies were express service on the Danbury Line and shuttle service at destination stations.

Electrification was expected to generate savings in energy consumption, reduce maintenance costs, and generate new ridership, but it would require major capital improvements. Electrification was projected to increase ridership from 27 to 300. Ridership of 590 was projected if maximum shuttle service was implemented. Reverse commute options were expected to produce ridership between 36 and 169 depending on if local or express service was chosen. It was also estimated that electrification would sway 70% of the Housatonic Valley residents currently using the Harlem Line to switch to the Danbury Line. Employment growth at Merritt 7 was also noted as a potential area for rail passenger service. If a Merritt 7 Station were created, between 56 and 73 daily rail trips were estimated to be added. Increased ridership would create new parking demands. The worst parking shortfall was anticipated at Danbury, and Bethel also was predicted to have parking shortfalls.

Given the ridership and cost projections, the study listed the following recommendations:

- Electrify service from Danbury with three express and three local peak runs.
- Do not extend service to New Milford.
- Construct the Danbury Transportation Terminal with the maximum number of parking spaces.
- If the local service alternative is implemented, a new station should be constructed between Bethel and Danbury.
- Serve the Merritt 7 Complex only if the Danbury Line is electrified.

Action Plan for Restoring Passenger Rail Service to New Milford

Two 1995 reports, *Extension of Commuter Rail Service* and *Feasibility Report for Extending Rail Passenger Service Beyond Downtown Danbury*, were combined in the *Action Plan* of 1996. The report was prepared for HVCEO by Vanasse Hangen Brustlin, Inc. The report was completed on a recommendation from the 1992 Rail Transit Development Program.

Extension of Commuter Rail Service: Danbury to New Milford and Danbury to Newton

At first, the initial portion of the study was geared to looking at extending passenger rail service to New Milford. Later, however, the town of Newton requested that extension to Newton also be evaluated. The results of this phase were:

- Extension of passenger rail service to Danbury North in conjunction with the implementation of scheduled service enhancements was projected to generate an 80% increase in overall ridership on the Danbury Branch in 1999 and an additional 70% increase in ridership by 2015.
- Extension to New Milford would attract additional boardings and would reduce congestion and pollution along the Route 7 corridor.

Based on these findings, it was recommended that the engineering evaluation create a phased implementation plan for the three-mile extension to Danbury North and the 11-mile extension to New Milford. The Newton alternative was dropped. The Danbury North Extension, the New Milford Extension, and the recommended next steps following the study are discussed below.

Danbury North Extension

Service extension to Danbury North was projected to result in 191 daily boardings in 1999 and 390 boardings in 2015. Three sites were evaluated for the location of the Danbury North Station. The site at the junction of Route 7 and I-84 was chosen because of its vehicular access, the existence of an underutilized parking lot, its lack of impact on freight operations, its potential as a safe, convenient station that is operationally easy to serve, and the availability of land.

The Operations Plan for the Danbury North extension recommended extending the current service from downtown Danbury to the new station with no additional trains. The service recommendation assumed that ConnDOT's programmed improvements to the Danbury Branch Line would be completed before the new station opened. Peak service headways were proposed at 30 minutes. The recommended changes provided little impact on existing service.

Infrastructure improvements necessary for an extension to Danbury North included track reconfiguration near the current Danbury Station, the construction of a station building at Danbury North, the construction of a pedestrian overpass, the installation of a signal and communications system, and the purchase of two additional coaches. Estimated capital and maintenance costs ranged from $9.1 to $9.9 million. The estimated operating cost was $1.3 million. The estimated increase in revenue was approximately $1.5 million per year.

New Milford Extension

Service extension to New Milford would cover 14 miles beyond the proposed Danbury North Station. A new station in Brookfield was also recommended. A ridership projection was not made. The service recommendations made for the Danbury North Extension were also made for the New Milford Extension. The exception would be that one of the 10 trains would not be able to serve New Milford in order to avoid conflict with existing freight traffic.

Infrastructure improvements recommended for the New Milford Extension included track rehabilitation, track reconfiguration, construction of a high-level platform, parking lot rehabilitation, and implementation of a signal and communication system. The cost for capital and maintenance improvements ranged from $5.8 million to $10.7 million. Operating costs were estimated to be $2.9 million annually. Increased revenue was not estimated.

Next Steps

After the study was completed, the New Milford Rail Service Restoration Society completed a survey of Route 7 motorists in New Milford and Brookfield to account for potential riders living in Litchfield County and missed by ridership projections. The survey results showed a significant level of local support for an extension to New Milford. Using the results from the study and the corresponding survey, the following steps were recommended:

- Implement a 24-month Commuter Rail Demonstration Project to determine the actual ridership demand in the region.
- Evaluate intrastate, reverse commute, and midday demand on the Danbury Line.
- Involve Housatonic Railroad Company, HVCEO, representatives from New Milford, Brookfield, and Danbury, and elected officials from the region extensively in further planning efforts.

Congestion Mitigation Systems Plan "Vision 2020"

The Congestion Mitigation Systems Plan "Vision 2020" prepared by Wilbur Smith Associates for the SWRPA in February 2003 developed a vision for southwestern Connecticut (focusing on the I-95 corridor) that sought to reduce congestion, improve air quality, and promote economic growth. The vision built upon existing transportation assets and tried to improve system efficiency by adding transportation choices. In particular, the vision looked to promote transit options and reduce reliance on the automobile.

To generate a set of strategies for mitigating traffic congestion, the plan utilized an intensive public involvement/outreach program, market research, focused goals and objectives, and performance metrics to compare the impacts of transportation improvements and identify constraints on each strategy.

After a thorough analysis of the existing transportation system, transportation strategies were developed. These strategies were evaluated in terms of costs and benefits. Based on the process and criteria defined above, strategies were advanced as recommendations. A brief summary of the recommendations is detailed below:

Immediate Actions (Foundation)

- Public Education – Education must be an ongoing process to inform the public and decision makers of the benefits and costs of transportation strategies. In addition, the importance of the transportation and land use connection needs to be emphasized to local and state officials. Implementation needs to be consensus-driven, and broad-based support must be attained. SWRPA should continue to engage media outlets to keep awareness of transportation issues on the forefront and should continue to work with state and local officials to gain additional support and funding.

- Land Use Review – Local land use boards should review master plans and plans of conservation and development to identify how transportation is supported by local regulations. Municipalities should coordinate with regional planning organizations to

draft local policy that supports the vision. SWRPA should conduct a land use study to evaluate potential for more transportation corridors and transit-oriented development.

- Expand Travel Demand Management Programs (TDM) – TDM programs should be expanded to help reduce the number of single occupant automobile trips in the study area. Examples of programs that can have an impact on peak period trips include:
    - Telecommuting
    - Flexible work weeks
    - Staggered work hours
    - Organized vanpools
    - Voluntary distance-based pricing

Short-Term Actions (Incremental)

- Transit Operational Improvements
    - Provide additional parking at Metro-North Stations in South Norwalk, Noroton Heights, Stamford, and Greenwich.
    - Utilize Intelligent Transportation Systems (ITS) to improve bus service.
    - Reduce rail fares and parking costs for intrastate customers.
    - Implement a universal commuter pass to make transit trips more convenient.
    - Establish intermodal hubs with strong bicycle and pedestrian connectivity.

- I-95 Operational Improvements (focusing on Interchange 6 to Interchange 16)
    - Safety and operational improvements
    - Additional operational lanes
    - Geometric modifications to entrance and exit ramps
    - Consolidation of interchanges
    - Horizontal and vertical alignment modifications
    - Ramp metering or peak period ramp closures
    - Increased ramp spacing
    - Deployment of additional ITS technology

- Traffic Systems Management (TSM) Improvements to major arterial roads
    - Signal timing and coordination
    - Access Management
    - Operational improvements (i.e. turn lanes, shoulders, geometric modification)

- Truck Parking at Rest Area – Expand truck parking at rest areas.

- Changes to Zoning Regulations – SWRPA should work with municipalities to structure zoning regulations to embrace transit-friendly development, walkable communities, increased density, mixed land uses, reduced parking, and access management along transportation corridors and in town centers.

Long-Term Actions (Vision)

- Transit Capacity Expansion
    - Improve Metro-North service for intrastate customers.

  - BRT opportunities should be explored, specifically along the Route 1 corridor.
  - Danbury Branch service should be further evaluated to determine the feasibility of enhanced rail service along the corridor.
  - Inland BRT services should be evaluated once Route 1 service is realized.

- I-95 Capacity Expansion – Two additional lanes should be considered a strategy to help alleviate congestion along the corridor.

Support for Other Strategies

- Interstate Rail – Improvements should be made to fleet configuration, infrastructure, and service to obtain optimum system performance.

- Freight – Opportunities for improved freight service are tied to the following needs:
  - Another Hudson River crossing to access New York City and Connecticut;
  - A rail capacity study to determine actual track capacity compared to existing passenger and freight rail services and schedules; and
  - A market analysis of the viability of Feeder Barge Service from intermodal ports in New Jersey to a deep water port in Connecticut.

- Ferry – SWRPA should continue to monitor the Long Island Sound Waterborne Transportation Plan and other studies of potential passenger ferry services.

- Airport Connections – Opportunities for improving transit connections between southwestern Connecticut and regional airports should be examined.

- Route 7 – Plans to widen Route 7 to a four-lane arterial with full roadside access from Wilton to Danbury should be supported.

- Interstate 84 – Plans to widen I-84 from Danbury to Southington should be supported.

- Merritt Parkway – SWRPA should evaluate the Merritt Parkway and its interchanges for safety and operational deficiencies.

Danbury Branch Electrification Project Feasibility Study, Phase I

ConnDOT undertook this study to identify potential improvements to Metro-North commuter rail branch line service between Norwalk and Danbury. Phase I identified, reviewed, and evaluated preliminary improvement alternatives, including electrification, addition of passing sidings, extension of service to New Milford, and track alignment modifications.

Task 1: Public Outreach and Purpose and Needs Report

Public Outreach Plan

A Public Outreach Plan was developed to underline the importance of public involvement and establish a plan for communication throughout the study. The goals of this Plan were to:

- Establish effective communication with the public;
- Encourage early and continuing pubic participation;
- Present complete information to the public; and
- Determine public sentiment.

A Study Advisory Committee was formed to participate as a steering committee throughout the study. Study Advisory Committee members consist of representatives of the two regional planning agencies in the corridor – SWRPA and HVCEO. In addition, the first elected official or a designated representative from each community in the study corridor was invited to participate, along with representatives of Metro-North Railroad, HART, and local rail freight operators. Five Study Advisory Committee meetings and four public meetings were held during Phase I. A project website (http://www.danburybranchstudy.com), also was established.

Data Collection and Review

As a first step, a review of previous studies in the Route 7 Corridor and an update of rail maps were performed. Data collection focused on schedules, maintenance, crew requirements, and equipment storage. Input also was received from Metro-North Railroad, the Housatonic Railroad, Providence & Worcester Railroad, and ConnDOT's real estate and rail operations divisions.

Purpose and Need

The purpose of Phase I was to develop and evaluate a range of infrastructure and service improvements for the Danbury Branch to determine their potential to enhance the Branch's attraction as an alternative to driving. In addition, Phase I sought to determine whether service improvements on the Branch could attract riders who currently commute on the Harlem Line.

The results of this study will be incorporated into a comprehensive statewide commuter rail and transit plan, which will establish priorities for transit improvements. The plan will identify funding needs and opportunities, as well as potential economic benefits. The future statewide transit plan will include the Connecticut Transportation Strategy Board's study of the Waterbury and New Canaan Branches, the Danbury Branch, and the New Haven-Hartford-Springfield line.

Task 2: Evaluation of Engineering Alternatives

Task 2 developed and examined possible infrastructure and service alternatives that would achieve two objectives: reduce travel times along the Danbury Branch and increase frequency. The three major infrastructure improvements evaluated were track geometry improvements, addition of double tracking, and passing siding improvements. These improvements were evaluated in terms of impacts to existing service between Danbury and South Norwalk, as well as to help determine whether a service extension to New Milford would be sustainable.

Track Geometry Improvements

A review of the current alignment between South Norwalk and Danbury identified three conceptual realignment options, referred to as the Red, Blue and Green alignments, that would

enable a reduction in current running time of approximately 5, 10, and 15 minutes, respectively. The reductions in running time would be accomplished by enhancing superelevation on the existing alignment and constructing new alignments to reduce track curvature. These improvements would allow an increase in maximum allowable speeds.

The study also considered extending commuter rail service northward approximately 14 miles from Danbury to New Milford. The study reviewed the current freight-only railroad alignment between Danbury and New Milford and identified conceptual track improvements that would enable a reduction in current running time. Maximum passenger train track speed limits on the existing freight-only alignment would be 30 miles per hour if no track improvements were made.

Feasibility of Double Tracking

This effort identified engineering and construction issues associated with double tracking from South Norwalk to Danbury and from Danbury to New Milford. The analysis evaluated the construction of a second mainline track adjacent to the existing alignment as well as the conceptual alignments identified with proposed 5, 10, and 15-minute running time reductions.

Feasibility of Passing Sidings as an Alternative to Double Tracking

This effort identified engineering and construction issues associated with locating passing sidings from South Norwalk to Danbury and from Danbury to New Milford. The addition of passing sidings would allow for increased frequency of service and bidirectional service. The analysis evaluated the issues of locating both short or long passing sidings on the conceptual alignments identified with the proposed 5, 10, and 15-minute running time reductions.

Findings of the Task 2 Engineering Evaluation

Preliminary cost estimates were developed for each of the 32 conceptual improvements. The cost estimates included construction, engineering, and third party construction phase services, property acquisition, and contingency. The contingency factor covers items such as demolition, roadway reconstruction, and environmental mitigation. Due to the conceptual nature of the study, the estimates are regarded as order of magnitude rather than detailed engineering estimates.

The number of closely spaced, consecutive curves within the existing alignment between South Norwalk and Danbury precludes the opportunity to achieve any significant reduction in running time; major alignment changes would be required to increase maximum operating speed. The estimates for reducing running time by 10 or 15 minutes are in the hundreds of million dollars. However, upgrading the existing track and increasing the superelevation on most curves could substantially improve the running time between Danbury and New Milford; major alignment changes would not be required.

Environmental Review

The Study Team conducted a field survey and reviewed existing environmental documentation to determine what potential environmental impacts would need to be addressed if various

infrastructure and service improvements were implemented. Potential impacts resulting from construction, operational impacts of service improvements, and impacts to wetlands and other resources were identified. The categories that would be most impacted include: land use, especially in urban and developed areas, and water resources/wetlands.

Improvement Options

The information derived from the Task 2 engineering evaluation should be reviewed in the context of whether the expense to reduce running times by 5, 10, or 15 minutes is justified. This is defined in terms of a cost-benefit relationship, where benefit is defined in terms of how many potential new riders will be attracted to the Branch for each improvement option or combination implemented, with costs allocated to each option.

Task 2 also evaluated the potential of several innovative technology and service modification strategies to reduce train travel times. These include the use of state-of-the-art Diesel Multiple Units (DMU), the use of tilt train equipment to reduce the need for alignment changes, the installation of four quadrant gates to increase train speeds through grade crossings, and the institution of skip-stop and express service to reduce travel times along the Branch.

It was determined that while DMU equipment could successfully operate along the Branch, DMU equipment has implications in terms of its compatibility with existing and planned equipment purchases for the New Haven Line. Similarly, tilt train equipment is generally not efficient or compatible with rail service under 100 miles per hour and therefore is not appropriate. The use of quad gate equipment is generally applied for higher speed train service, but this option could be reconsidered if speeds and service frequency on the Branch were improved. Finally, it was determined that skip stop and express service is generally most effective when frequencies of trains and ridership levels are higher than existing Branch service. Increasing the frequency of service on the Danbury Branch would require additional equipment and crews. Without an overall increase in service frequency, passengers would see skip stop or express service as a reduction in service quality, which could adversely impact ridership levels.

Task 3 Ridership Impacts

Preliminary ridership projections were developed for each of the improvement options identified in Phase I, using ConnDOT's statewide Travel Demand Model. Table 9 shows the potential morning passenger counts of persons boarding trains toward New York on the Danbury Branch. These increases between the years 2000 and 2020 are preliminary examples of the benefits that could be realized if rail electrification and other improvement options were implemented.

Table 9: Morning Passenger Counts, 2000 and 2020

Alternative	Morning Passenger Counts			
	2000	**2020**	**Increase**	**% Increase**
No Build	1133	1591	458	40%
Build – S. Norwalk-Danbury	1223	1691	558	49%
N. Milford Extension	1665	2391	1258	111%

Task 4 Evaluate the Impact of Electrification

Task 4 focused on the costs and impacts of electrifying the Danbury Branch and how electrification impacts other improvement options. This would establish a basis for a cost/benefit analysis that would enable decision makers to determine the most viable options for improving service. This task involved numerous discussions with regional and local planning agencies as well as public officials, commuters, the public, and the state's Transportation Strategy Board.

Findings of Task 4

Preliminary cost estimates were developed for each of the 32 conceptual scenarios that were identified in Task 2. These cost estimates were developed from estimated quantities multiplied by current (4th Quarter 2005) unit costs. Due to the conceptual nature of the study, the estimates should be regarded as order of magnitude estimates rather than detailed engineering estimates.

Table 10 summarizes the estimated costs for the existing running times as well as the various scenarios for reduction in running times, the estimated cost to construct a second main track adjacent to the existing single track, and short and long passing sidings.

Table 10: Electrification Costs

South Norwalk – Danbury Improvements				
Characteristics	**Alignment**			
	Existing	**5-Min. (Red)**	**10-Min. (Blue)**	**15-Min. (Green)**
Trip Time	45 min	41 min	35 min	32 min
Maximum Speed	50 mph	60 mph	60 mph	70 mph
Cost (millions)				
Single Track	$37	$37	$71	$71
Double Track	$94	$94	$117	$117
Passing Siding-Short	$37	$37	$81	$71
Passing Siding-Long	$40	$40	$84	$74
Danbury – New Milford Improvements				
Characteristics	**Alignment**			
	Existing	**5-Min. (Red)**	**10-Min. (Blue)**	**15-Min. (Green)**
Trip Time	39 Min	33 Min	30 Min	23 Min
Maximum Speed	30 MPH	40 MPH	50 MPH	60 MPH
Cost (millions)				
Single Track	$40	$40	$40	$40
Double Track	$68	$68	$68	$68
Passing Siding-Short	$43	$43	$42	$41
Passing Siding-Long	$51	$51	$48	$44

**Costs are in 2005 dollars and include design, Construction Management, Force Account Protective Services, and Construction Contingencies*

These costs assume that there is one construction effort for each scenario; all planned track improvements have been implemented; and catenary is being constructed using the poles that will be installed in ConnDOT's Danbury Branch Signalization Project (#302-0007).

Alternatives Summary Evaluation Report

The primary objective of the Alternatives Summary Evaluation report was to screen the extensive list of improvement options identified in Phase I and reduce the list to include only the most viable alternatives warranting further consideration in Phase II.

The Alternatives Screening Process

A first tier evaluation provided an assessment of the options that were presented in Task 2 and Task 4. The options considered for the Branch were screened against six factors to determine whether or not they should be given further consideration. These evaluation criteria included:

- Operational Impact
- Environmental Impact
- Fleet Equipment Impact
- Travel Demand
- Time Savings
- Capital Cost

A number of options were eliminated from further review based on the effect they would have regarding the above factors. A second tier evaluation was then initiated with the objective of establishing a final list of preferred alternatives for further study in Phase II. The first step in this process was to consolidate the improvement options into viable alternatives resulting from the initial screening using the same assessment factors identified above.

Eight alternatives were identified for further evaluation by the Study Advisory Committee. These alternatives, which are not ranked in any order of preference, were:

- Alternative One
  - No Build/TSM.
- Alternative Two:
  - Extend Diesel Service to New Milford Using Existing Track and Equipment.
- Alternative Three
  - Electrify Danbury Branch From South Norwalk to Danbury.
- Alternative Four
  - Enhance Passing Sidings From South Norwalk to Danbury.
- Alternative Five
  - Electrify and Enhance Passing Sidings From South Norwalk to Danbury.

- Alternative Six
  - Extend Diesel Service to New Milford With Alignment Improvements between Danbury and New Milford.

- Alternative Seven
  - Transportation Strategy Board (TSB) Option to Electrify the South End of the Branch and Establish Feeder Bus/Rail Service.

- Alternative Eight
  - Full Build.

Preferred Phase II Alternatives

Further screening of these eight alternatives was undertaken by Study Advisory Committee members, representatives of ConnDOT, and the Study Team. The consensus was that five preferred alternatives would be further evaluated in Phase II. These preferred alternatives were presented to the public for their input and comment at two public meetings and an open comment period. The five preferred alternatives (listed in no order of preference) are:

- Alternative A
  - No Build

- Alternative B
  - Transportation System Management (TSM)

- Alternative C
  - South Norwalk to Danbury Improvements

- Alternative D
  - Extension of Service to New Milford

- Alternative E
  - Partial Electrification from South Norwalk to Route 15 (TSB Option)

Connecticut Department of Transportation Rail Governance Study

The Connecticut Department of Transportation (ConnDOT) initiated the *Connecticut Rail Station Governance Study* in 2001 to evaluate the condition and operations of stations and parking facilities on the New Haven Line and its three branches. The evaluation included an inventory of existing facilities, a review of current governance practices, a review of governance practices at other commuter rail operations, and a review of operating revenues and expenses.

The purpose of this study was to gather information that could guide ConnDOT in determining whether a change should be made in how stations and parking facilities are governed. Any changes to governance policy would seek to improve serviceability, financial effectiveness, and service quality. The primary goal of this study was to develop a Governance Policy and

Financial Policy that would improve quality of service for riders. The study ultimately identified three options of governance. The study also developed evaluation criteria covering a range of qualitative and quantitative considerations to assist ConnDOT in their selection process.

1.3 Related Projects

Danbury Branch CTC

A Centralized Train Control (CTC) system is a signal system with central control of switches and train movements. For the Danbury Branch there will be Cab Signals and Go-NoGo Signals at switches as is now in use on the New Haven Mainline. Installation of the CTC is expected to begin late in 2009 with completion by the end of 2011.

Danbury Branch Tie Replacements

This project is to replace worn ties on the branch. Work began in Fall 2008 and will be completed in 2009. Minor curve modifications are being incorporated where feasible.

Rt. 7 & 33 Reconstruction in Wilton

This project, which is now under construction, will widen Route 7 and reconstruct the Route 33 intersection at Wilton Station. This project will allow Route 7 to accommodate two travel lanes, both northbound and southbound, for a length of approximately three miles from Wolfpit Road to Olmstead Hill Road. The project is scheduled for completion in April 2010.

Construction on Route 7 in Wilton
(August 6, 2009)

Rt. 7 Bypass in Brookfield

This project, now under construction, will extend the Route 7 expressway to bypass Brookfield Center. It will connect to the recently reconstructed four-lane Route 7 just north of the ConnDOT Maintenance Facility in Brookfield.

Rt. 15 & Rt. 7 Interchange Reconstruction

This project consists of the construction of a full-directional interchange between Route 7 and Route 15 (Merritt Parkway) in Norwalk. The reconstruction will not inhibit access for Main Avenue to and from Route 15.

Wilton Station Parking

As mentioned above, the Route 7/Route 33 Reconstruction Project will alter the pattern of the roads around Wilton Station. This creates space for additional rail commuter parking at the station. This project is currently in the PE/EA Phase. With details including the number of parking spaces yet to be determined.

Chapter 2: Existing Rail Service


The Danbury Branch in Redding

This chapter will review existing passenger and freight rail service in the study area. In terms of passenger rail service, the review provides detail on the current schedules, running times, crew requirements, consists, equipment needs, equipment turns, maintenance requirements, storage requirements, and fares on the Danbury Branch, and a more general overview of the service provided by the Harlem Line, which runs parallel to the Danbury Branch in neighboring New York State. The review of freight service focuses more specifically on schedules and service patterns on the existing Danbury Branch, as well as along the Maybrook and Berkshire Lines.

2.1 Historical Background

A total of four railroad companies were initially responsible for developing rail service within the study area: the Danbury and Norwalk Railroad, the Housatonic Railroad, the New York and New England Railroad, and the New York, New Haven & Hartford Railroad (Figure 6). The following section provides a brief history of each of the railroads, and how their services shaped the rail service that is in place today.

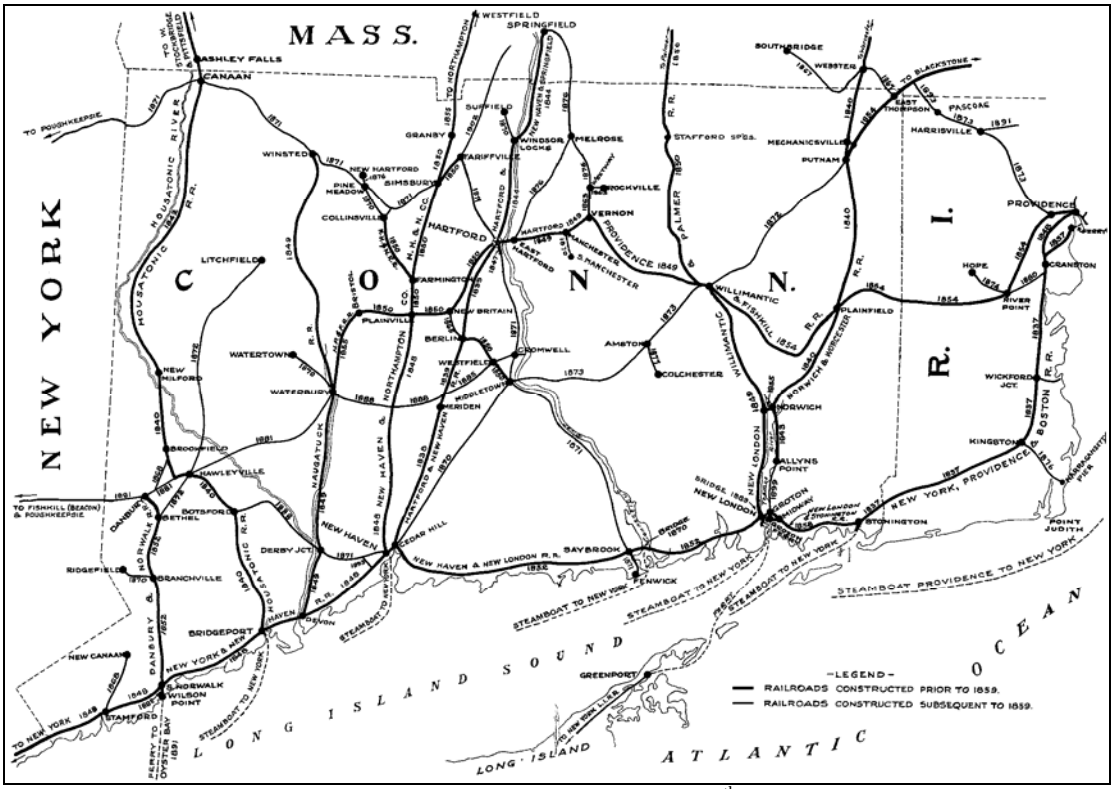


Figure 6: Connecticut Rail Map, Late 19th Century

Danbury and Norwalk Railroad

In 1835 a rail charter was granted to the Fairfield County Railroad Company by the Connecticut legislature to build a railroad from the Massachusetts state line, where it would connect with a proposed east/west line through Danbury, CT, to a port on the Long Island Sound. However, before construction could begin, the Housatonic Railroad (HRR) received a separate charter from the legislature in 1836 to build a rail line from Bridgeport to New Milford and the Massachusetts state line at Canaan, CT, temporarily ending the plans for the Fairfield Railroad.

It was not until almost fifteen years later that the Fairfield County Railroad backers came back to the state legislature with a plan for a railroad between Danbury and Norwalk. Chartered in May of 1850 by the state legislature and renamed as the Danbury and Norwalk Railroad, construction of the 23 mile line began in 1850 with the first train going into operation in February of 1852. Utilizing two steam engines, trains would make two round trips each day, with a one-way trip between Danbury and Norwalk taking 75 minutes.

From the 1850's through the 1870's the line did well financially as its freight and local passenger service was successful. The company sought to strengthen its freight service by developing and intermodal (rail/ferry) connection at Wilson's Pont in South Norwalk in 1882. This connection proved to very profitable, and made the company an appealing business partner for other railroad companies. Accordingly, the overlap in service between the Danbury and Norwalk and the HRR caused the HRR to pursue expansion of its service area. The two companies reached a deal in 1886, whereby the HRR agreed to lease the Danbury and Norwalk for a period of 99 years. In an ambitious move to divert traffic from the New York, New Haven and Hartford Railroad (NYNH&H), the HRR then entered in an alliance with the New York & New England Railroad, where freight service would run between Boston and New York, via Hartford, Waterbury, and the Danbury Branch down to Wilson's Point at which cars would be floated over to Long Island. This traffic bid eventually suffered the wrath of the NYNH&H, which used internal problems to the HRR and NY &NE, as well as threats to build a parallel line to the HRR's New Haven-Derby Line, to purchase stock control of the HRR in July of 1892.

Housatonic Railroad (HRR)

The HRR received a charter from the Connecticut State Legislature in 1836 to build a rail line from Bridgeport to New Milford and the Massachusetts state line at Canaan, CT. HRR backers saw the line as a way to serve the important iron, granite, marble and lime industries located in Litchfield County, as well as a means to form, although somewhat indirect, a water-rail route between New York City and Albany, NY. Construction of the line began in 1837, with the 34.76 mile segment from Bridgeport, CT, via Newtown and Brookfield, to New Milford, CT, completed in 1840. Completion of the remainder of the line to the Massachusetts State line occurred in 1843.

Although the line initially experienced some financial problems in the early 1850's, passenger service and, to a somewhat lesser degree, freight service grew steadily from the 1860's through the 1880's between Bridgeport, CT and Pittsfield, MA. The area around Pittsfield, the Berkshires, had in fact become such a popular vacation spot for New Yorkers, that in 1883, the

HRR introduced the Berkshire Express to provide faster service between New York City and Pittsfield, MA. While the original train route was via Bridgeport, Botsford, Newtown, Hawleyville and Brookfield Junction until 1886, with the leasing of Danbury and Norwalk Railroad by the HRR, the more direct routing to Hawleyville via the Danbury and Norwalk was implemented.

However, financial problems and threats made by the NYNH&H to build a parallel line to the company's New Haven-Derby Line permitted the NYNH&H to obtain stock control of the HRR in July of 1892.

New York & New England Railroad (NY & NE)

The New York & New England Railroad (NY & NE) emerged in 1873 from the reorganization of the Boston Hartford & Erie Railroad (BH&E). Within the study area, the primary contribution of the NY&NE was the construction of the rail connection between the HRR at Hawleyville and the Danbury and Norwalk Railroad at Berkshire Junction in 1881. This connection became part of the NYNE's mainline operation which ran from Waterbury, CT to Fishkill Landing (Beacon), NY, and was originally developed to provide an important link for freight (such as coal) coming into New England from points west, as well as provide direct freight competition to the NYNH&H main line which ran parallel to the south.

While the primary purpose of the NY&NE mainline operation was freight service, the NY&NE also provided passenger service between Hartford through Waterbury to Brewster, NY. To help accommodate this service the NYNE even built three rail stations along the route, in Danbury (at White Street), at the Danbury Fairgrounds, and in Mill Plain. In the late 1880's the NY&NE and HHR teamed together to provide heavy freight service from Derby and New Haven through Danbury, CT and Brewster, NY to Fishkill, NY. The service, which operated on the Danbury-Derby Line owned by the HRR and the track built by the NY&NE in Danbury later became known as the Maybrook Line after 1904. Although this service was very successful, with the acquisition of the HRR by the NYNH&H in 1892, and the subsequent assumption of control of the Derby to Danbury route, the NY&NE could no longer be competitive for freight service, and was forced into being absorbed by the NYNH&H in 1898.

New York, New Haven, and Hartford Railroad (NYNH&H)

Between 1892 and 1910, the NYNH&H began acquiring a number of smaller railroad companies throughout southern New England. These acquisitions, as detailed above, included the Danbury and Norwalk, HRR, and the NY&NE. With the takeover of these smaller lines, the NYNH&H consolidated many of their services, eliminated duplicate lines, abandoned much excess track, and focused the development of service on high traffic routes.

On the former Danbury and Norwalk Railroad (between Norwalk and Danbury), local passenger train service was improved to 10 round trips a day in 1904, as service was shifted from the HRR's original Bridgeport to New Milford route, to the Danbury and Norwalk line (today's Danbury Branch). In fact following WWI, the number of passenger trains on the HRR's original Bridgeport to New Milford route was gradually reduced, with passenger service eventually being

completely terminated in 1931. In addition, following the reorganization of the NYNH&H in the late 1930's, two segments of the route were abandoned altogether including North Bridgeport to Stepney and Hobarts (west of Hawleyville) to Brookfield Junction.

Following the takeover of the HRR in 1892, the NYNY&H also introduced passenger service between New York and Pittsfield, MA (via the Danbury Branch), which was designed to provide service for weekend travelers from New York City who wanted to reach the Berkshires, as well as local service to Brookfield, New Milford and other communities located along what became known as the Berkshire Line. This service was typically provided by two weekday trains, with additional trains on Fridays, Saturdays and Sundays, and in the summer to accommodate vacationers. The NYNH&H maintained this basic service schedule until 1960, when weekday train service was reduced to a connecting rail diesel car (RDC) north of Danbury. From 1960 through 1969, when Penn Central took over, the only remaining through service between New York and Pittsfield, MA, was on Fridays, Saturdays and Sundays. However, with the creation of Amtrak in 1971, which was given the responsibility of operating intercity passenger rail service, the New York to Pittsfield service was designated as a non-core (any route less than 90 miles) or marginal route, and in May of 1971 service north of Danbury was finally eliminated.

In June of 1925, the NYNH&H took the next step to improving passenger service between Norwalk and Danbury both by electrifying the branch (11,000 Volts A.C.), which reduced travel time from Danbury to South Norwalk from 55 minutes to 42 minutes, and introducing commuter service between New York City and Danbury. However, while the NYNH&H continued to improve passenger service along the branch, freight service was marginalized, as the majority of its freight was shipped via the company's mainline.

With the onset of the depression and the acquisition of many unprofitable lines, the NYNH&H fell on hard times. In 1935, the NYNH&H petitioned the bankruptcy court for reorganization under section 77 of the bankruptcy laws to shield the troubled railroad from its creditors. Service on all its lines was cut, the branch and the entire railroad rebounded briefly during WWII due to gas rationing, the company could not complete with government subsidized highways and airlines, high rates of taxation, enormous commuter service losses, and the out-migration of heavy industry from New England to the south and west, as well as its own internal problems, and finally had to file for bankruptcy again in 1961.

While not a direct result of the bankruptcy, the company "de-electrified" the Danbury Branch in 1961, taking down the catenary wire, and began using FL-9 dual diesel electric locomotives. The de-electrification was implemented primarily to eliminate the Danbury engine change for Pittsfield trains, and to sell the copper overhead wires for scrap.

The NYNH&H including the Danbury Branch was absorbed by the Penn Central Transportation Company, the merged New York Central and Pennsylvania Railroads, on January 1, 1969.

1970 to Today

Less than one year after the takeover by Penn Central, the company, which had its own financial problems due to poor management decisions, inherited debt, and poor investments, also was in

bankruptcy court. On June 21, 1970, Penn Central officially filed for bankruptcy and was issued a court order to allow them to operate their trains and conduct business as usual until an alternative solution could be reached.

While Norwalk to Danbury Service continued to operate during this period on a limited basis, down to four round trips per day, the infrastructure along the branch was falling into major disrepair. In addition, freight business also suffered along the branch due to competition from the trucking industry. The state of rail freight was so bad in Connecticut, as well as other states in the region, that Congress attempted to reorganize the Penn Central and force the company to abandon unproductive rail lines. However, a federal study commissioned by Congress concluded that there was in fact enough freight activity between Danbury and Norwalk to continue service.

To allow for the provision of service in 1971, Penn Central agreed to lease for a period of 60 years their lines covering passenger service in the state. Under this arrangement Penn Central would operate the service, but all infrastructure and equipment maintenance would be left to ConnDOT and the Metropolitan Transport Authority.

While Penn Central was operating service under bankruptcy protection, the U.S. Government created the United States Railway Association to develop a way to serve rail services in the East, as the Erie Lackawanna, Jersey Central, Lehigh Valley, Reading and Pennsylvania-Reading Seashore Lines were all in bankruptcy in addition to the Penn Central. The result was Conrail, which took over the above lines on April 1, 1976.

Although Conrail was, at the time, a freight company only, it provided commuter, as well as freight service on the Danbury Branch form 1976 to 1983, when the Metro-North Commuter Railroad was formed to provide commuter rail service in New York and southwestern Connecticut. Conrail did however continue to provide freight service along the Branch, as well as the Maybrook line, until 1988, when Conrail was sold to CSX and Norfolk Southern. In a related development, in 1985, ConnDOT exercised its option to purchase the New Haven Line right-of-way in Connecticut, including the Danbury Branch. This was done to preserve the right-of-way for future use and ensure that infrastructure on the line is maintained.

North of Berkshire Junction in Danbury, what was known as the Berkshire line remained dormant from 1971 until 1983, when John R. Hanlon Jr. chartered the “new” Housatonic Railroad and began restoring much of the abandoned track. The Housatonic became a common carrier in 1989, and by 1992 had purchased the portion of the line between Brookfield and New Milford, and Canaan, CT and Pittsfield, MA, leaving a state-owned segment in between, but with operating rights granted to the Housatonic Railroad. In addition, the Housatonic Railroad also purchased the Maybrook line from Derby Junction to the New York/Connecticut border.


A Housatonic Railroad Train Operating on the Berkshire Line

Today, Metro-North provides commuter rail service along the Danbury Branch, while the Providence and Worcester Railroad,

which had expanded service in Connecticut after Penn Central gave up certain lines in the state, provides freight service to one customer south of Danbury along the branch in Bethel, and one customer in Danbury on the east-west Maybrook line. North and east of Danbury, the Housatonic Railroad provides freight service to some forty customers in Connecticut and Massachusetts.

It should be noted that the idea of re-electrifying the Branch has been considered a number of times over the past thirty-five years. In 1971, re-electrification of the Branch was proposed by ConnDOT in an application to UMTA, but funds were transferred to other projects in need of immediate implementation. In a 1975 grant executed with UMTA, a total of $700,000 was assigned for re-electrification. However, while major electrical components for the project were purchased and the materials were placed in storage, the project was again deferred. There have been numerous improvements to the line, including the addition of high level platforms at most stations, new Bombardier coaches added, rebuilding of FL-9 locomotives, new Genesis locomotives, and new Brookville locomotives for the shuttle trains. Also in 1997 and 1998 welded rail was laid on the branch and a tie renewal project started in fall 2008 and will be completed in 2009.

With support from the two regional planning organizations (the Southwestern Regional Planning Agency and the Housatonic Valley Council of Elected Officials), the idea of electrifying the line is being discussed again, through the undertaking of this study, which is being sponsored by ConnDOT.

2.2 Passenger Rail Service

The following is a review of the existing passenger rail service that is relevant to the Danbury Branch program. This subsection details the schedules, running times, crew requirements, consists, equipment needs, equipment turns, maintenance requirements, storage requirements, and fares on the Danbury Branch. It then offers a more general overview of the service provided by the Harlem Line, which runs parallel to the Danbury Branch in neighboring New York State

Danbury Branch

The Danbury Branch is one of MetroNorth's three branches off of the New Haven Line in Connecticut. The Branch begins in South Norwalk and includes stops at Merritt 7 (Norwalk), Wilton, Cannondale (Wilton), Branchville (Ridgefield), Redding, Bethel, and Danbury.

Passenger Train Schedule

The Danbury branch passenger train schedule consists of 22 weekday trains within a 19-hour (5:33 a.m.-12:16a.m.) time period. The train service consists of thru trains operating between Danbury and Grand Central Terminal (GCT), and shuttle or connecting service operating between Danbury and South Norwalk/Stamford. All trains stop at each of the seven Danbury Branch train stations. The weekday train service is predominantly a uni-directional commuter rail operation, with closely scheduled peak-hour inbound morning service toward Stamford and New York City, mirrored by evening returning outbound peak-hour service. Inbound morning,

outbound evening fleeting of service in this manner is commonly used to maximize service over single-track rail segments. The New Haven Line and Branches weekday morning peak commutation hours are designated for trains and their connections arriving GCT 5:00 a.m.-10:00 a.m. (AM Peak), and the evening departures 4:00 p.m.-8:00 p.m. (PM Peak). The off-peak weekday and weekend train service is synchronized with main line trains.

Thru Train Service to New York City

The weekday schedule includes three morning thru trains that originate in Danbury and terminate at GCT in New York City, returning in the evening. Two of these thru trains make intermediate main line stops between South Norwalk and Stamford; the third round trip thru train operates express to New York City after making a Norwalk and Stamford stop on the main line. Referring to the weekday train schedule in Figure 7, the thru trains leave Danbury as follows: #1811 at 5:53am, #1819 at 6:20am, and #1833 at 6:52am. These trains stop at all the Danbury Branch stations and South Norwalk, and Stamford on the New Haven mainline. Trains #1811 and #1833 also stop at mainline stations at Rowayton, Darien, and Noroton Heights.

Train from NYC arriving at Danbury Station

The thru train operation retuning to Danbury closely resembles the morning, with the middle thru train in the sequence not making intermediate stops. In the schedule below the thru trains depart GCT #1848 at 5:04 p.m., #1860 at 5:41 p.m., and #1868 at 6:20 p.m. Trains #1848 and #1868 make the intermediate stops. The direct one-seat ride to and from New York City provided by the six thru trains is the premier service characteristic of the Danbury branch commuter rail service for the majority of riders. The direct ride outweighs the disadvantage of added travel time for intermediate main line stops, which in any event economize on peak train slots entering/departing GCT, enabling the direct commute.

Shuttle Train Service

The remaining 16 trains on the Branch provide connecting service to the main line. These trains cycle on the Danbury branch synchronized with main line trains and the passengers connect or transfer to main line trains at South Norwalk or Stamford. In recognition of the increasing travel demand of Stamford as a work destination, an important and popular feature of the Danbury Branch train schedule is the direct one-seat ride at Stamford on all peak inbound and peak outbound trains (the six thru trains and four shuttle trains) from and to the Branch.

Danbury Shuttle Pulled by a Leased Amtrak Locomotive

Weekday shuttle service in the peak has the advantage of access to additional system equipment, and this permits 30-minute service frequency inbound to Stamford, and evening outbound service distribution. Reverse shuttle service is positioned to operate after and chiefly around the peak directional commutation service, although there is one passenger train meet scheduled for 5:45 p.m. at Wilton.

Branch weekend service includes 12 shuttle trains using a single equipment set (one locomotive with three coaches). The weekend service schedule is shown in Figure 8.[1]

MILES	TO NEW YORK	AM PEAK*					OFF-PEAK					
		1811	1819	1833	1837 1437	1841 1441	1851 1551	1863 1563	1873 1573	1881 1581	1895 1395	1897 1497
		AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM
65	Danbury	5 33	6 19	6 49	C 7 26	C 7 56	C 9 57	C12 41	C 3 14	C 5 10	C 8 59	C10 25
62	Bethel	5 38	6 24	6 54	C 7 31	C 8 01	C10 02	C 12 46	C 3 19	C 5 15	C 9 04	C10 30
58	Redding	5 46	6 32	7 02	C 7 38	C 8 08	C10 09	C 12 53	C 3 26	C 5 22	C 9 11	C10 37
54	Branchville	5 54	6 40	7 10	C 7 45	C 8 15	C10 16	C 1 00	C 3 33	C 5 29	C 9 18	C10 44
50	Cannondale	6 02	6 48	7 18	C 7 53	C 8 23	C10 24	C 1 07	C 3 40	C 5 36	C 9 25	C10 51
49	Wilton	6 06	6 52	7 22	C 7 57	C 8 27	C10 28	C 1 11	C 3 44	C 5 45	C 9 33	C10 55
45	Merritt 7	6 12	6 58	7 28	C 8 02	C 8 32	C10 33	C 1 16	C 3 49	C 5 54	C 9 40	C11 00
41	South Norwalk Ar.				E 8 14	E 8 44	C10 45	C 1 29	E 4 02	C 6 10	C 9 53	C11 13
41	South Norwalk Lv.	6 27	7 13	7 43	8 19	8 49	10 51	1 38	4 13	6 16		11 16
33	Stamford	6 48	7 23	8 03	C 8 27	C 8 56	11 01	1 53	C 4 15	6 26	C10 07	11 30
4	Harlem-125th St. (D) ✈	D7 25		D8 40	D 8 34	D 9 39	D11 39	D 2 29	D 5 02	D 7 05	D11 03	D12 25
0	Grand Central Terminal	7 38 AM	8 11 AM	8 53 AM	9 23 AM	9 50 AM	11 50 AM	2 40 PM	5 15 PM	7 16 PM	11 14 PM	12 36 AM

MILES	TO DANBURY	PEAK	OFF-PEAK					PM PEAK*					OFF-PEAK	
		1510 1810	1518 1818	1530 1830		1538 1838	3838	1544 1844	1848	1860	1868	1774 1874	1582* 1882*	1590 1890
		AM	AM	✉ PM		PM	PM	PM	PM	PM	PM	PM	PM	PM
0	Grand Central Terminal	7 34	10 07	1 07		3 07	3 15	4 12	5 04	5 41	6 20	6 55	8 07	10 22
4	Harlem-125th St. (R) ✈	R 7 44	R10 17	R 1 17		R 3 17	R 3 26	R 4 22	R 5 15			R 7 05	R 8 17	R10 32
33	Stamford	8 24	10 51	1 51		C 4 00	4 00	C 5 16	5 51	6 26	7 05	C 7 43	8 53	11 06
41	South Norwalk Ar.	8 37	11 04	2 06		4 06		5 20					9 08	11 21
41	South Norwalk Lv.	C 8 50	C 11 11	C 2 11		C 4 11	4 11	C 5 27	6 10	6 36	7 23	C 7 53	C 9 13	C11 26
45	Merritt 7	C 9 01	C 11 22	C 2 22		C 4 22	4 22	C 5 38	6 21	6 47	7 34	C 8 04	C 9 24	C11 37
49	Wilton	C 9 07	C 11 28	C 2 28		C 4 28	4 28	C 5 45	6 28	6 54	7 41	C 8 10	C 9 33	C11 44
50	Cannondale	C 9 11	C 11 32	C 2 32		C 4 32	4 32	C 5 49	6 33	6 59	7 46	C 8 15	C 9 39	C11 48
54	Branchville	C 9 17	C 11 38	C 2 38		C 4 38	4 38	C 5 55	6 41	7 07	7 54	C 8 21	C 9 45	C11 54
58	Redding	C 9 24	C 11 45	C 2 45		C 4 45	4 45	C 6 02	6 49	7 15	8 02	C 8 28	C 9 53	C12 02
62	Bethel	C 9 30	C 11 51	C 2 51		C 4 51	4 51	C 6 08	6 56	7 22	8 09	C 8 35	C 9 59	C12 08
65	Danbury	C 9 41 AM	C 11 59 AM	C 2 59 PM		C 4 59 PM	4 59 PM	C 6 20 PM	7 06 PM	7 32 PM	8 18 PM	C 8 44 PM	C10 10 PM	C12 16 AM

WILL NOT OPERATE 5/22 & 7/2 — WILL OPERATE 5/22 & 7/2 ONLY

Figure 7: Danbury Branch Trains Weekday Schedule

[1] The timetables in Figure 7 and Figure 8 are effective July 13, 2009 to October 17, 2009.

MILES	TO NEW YORK							
			6813 6513	6825 6525	6837 6537	6849 6549	6861 6561	6873 6573
			AM	AM	PM	PM	PM	PM
65	Danbury		C 7 42	C 10 42	C 1 42	C 4 42	C 7 42	C 11 23
62	Bethel		C 7 47	C 10 47	C 1 47	C 4 47	C 7 47	C 11 28
58	Redding		C 7 54	C 10 54	C 1 54	C 4 54	C 7 54	C 11 35
54	Branchville		C 8 01	C 11 01	C 2 01	C 5 01	C 8 01	C 11 42
50	Cannondale		C 8 08	C 11 08	C 2 08	C 5 08	C 8 08	C 11 49
49	Wilton		C 8 12	C 11 12	C 2 12	C 5 12	C 8 12	C 11 53
45	Merritt 7		C 8 17	C 11 17	C 2 17	C 5 17	C 8 17	C 11 58
41	South Norwalk	Ar.	C 8 30	C 11 30	C 2 30	C 5 30	C 8 30	C 12 11
41	South Norwalk	Lv.	8 38	11 36	2 38	5 36	8 38	12 23
33	Stamford		8 51	11 51	2 51	5 51	8 51	12 38
4	Harlem-125th St. (D) ✈		D 9 27	D12 27	D 3 27	D 6 27	D 9 28	D 1 14
0	Grand Central Terminal		9 38	12 38	3 38	6 38	9 39	1 25
			AM	PM	PM	PM	PM	AM

MILES	TO DANBURY							
			6510 6810	6522 6822	6534 6834	6546 6846	6562 6862	6570 6870
			AM	AM	PM	PM	PM	PM
0	Grand Central Terminal		8 07	11 07	2 07	5 07	9 07	11 22
4	Harlem-125th St. (R) ✈		R 8 17	R 11 17	R 2 17	R 5 17	R 9 17	R11 32
33	Stamford		8 53	11 51	2 51	5 51	9 51	12 06
41	South Norwalk	Ar.	9 06	12 06	3 04	6 06	10 06	12 21
41	South Norwalk	Lv.	C 9 11	C 12 11	C 3 11	C 6 11	C 10 11	C 12 26
45	Merritt 7		C 9 22	C 12 22	C 3 22	C 6 22	C 10 22	C 12 37
49	Wilton		C 9 28	C 12 28	C 3 28	C 6 28	C 10 28	C 12 43
50	Cannondale		C 9 32	C 12 32	C 3 32	C 6 32	C 10 32	C 12 47
54	Branchville		C 9 38	C 12 38	C 3 38	C 6 38	C 10 38	C 12 53
58	Redding		C 9 45	C 12 45	C 3 45	C 6 45	C 10 45	C 1 00
62	Bethel		C 9 51	C 12 51	C 3 51	C 6 51	C 10 51	C 1 06
65	Danbury		C 9 59	C 12 59	C 3 59	C 6 59	C 10 59	C 1 14
			AM	PM	PM	PM	PM	AM

Figure 8: Danbury Branch Trains Weekend Schedule

New Haven Main Line Norwalk Service

The Danbury Branch joins the New Haven Line (NHL) mainline in Norwalk just east of the Norwalk River and west of the South Norwalk RR Station. There is only one switch from the mainline to the branch. It is on the north side of the mainline off Track 3 and is oriented in a west to north configuration. This section of the mainline is known as CP 241 as there are switches, cross-overs, and signals that provide for movement of trains between the four mainline tracks, two pocket or station tracks at South Norwalk Station and the Danbury Branch as well as the moveable bridge over the Norwalk River. Physically branch access is further limited by the railroad bridge over Washington and South Main Streets that is just west of the branch switch. All branch trains must use Track 3 on the bridge as the cross-overs to the other tracks are west of the bridge.

Daily there are approximately 210 Metro North NHL main line trains, 34 Amtrak Northeast Corridor trains, eight Shoreline East Stamford trains, and two freight trains in addition to the 22 Danbury Branch trains that operate through CP 241. Scheduling the branch through trains and the shuttle trains meeting mainline trains requires close and careful coordination with mainline operations in view of the limited gaps between trains at CP 241.

Travel Times

Travel times between various points on the Danbury Branch and the New Haven mainline such as South Norwalk, Stamford and GCT are calculated from the schedule information in the previous section. Table 11 gives the travel times for thru trains between Danbury and GCT.

Table 11: Danbury Branch Travel Times

Trains From Danbury (Inbound)	1811	1819	1833	1837	1841	1851	1863	1873	1881	1895	1897	***Average Danbury Transit Time***
South Norwalk Ar.	0:54	0:54	0:54	0:48	0:48	0:48	0:48	0:48	1:00	0:54	0:48	0:51
Stamford	1:15	1:04	1:14	1:01	1:00	1:04	1:12	1:01	1:16	1:08	1:05	1:07
GCT (NYC)	2:05	1:52	2:04	1:57	1:54	1:53	1:59	2:01	2:06	2:15	2:11	2:01
Trains To Danbury (Outbound)	1810	1818	1830	1838	1844	1848	1860	1868	1874	1882	1890	
GCT (NYC)	2:07	1:52	1:52	1:52	2:08	2:02	1:51	1:58	1:49	2:03	1:54	1:57
Stamford	1:17	1:08	1:08	0:59	1:04	1:15	1:06	1:13	1:01	1:17	1:10	1:08
South Norwalk Lv.	0:51	0:48	0:48	0:48	0:53	0:56	0:56	0:55	0:51	0:57	0:50	0:52

Source: Metro-North Timetable, July 13, 2009

The thru trains contain both longer station dwell times and added overall recovery time, but the overall travel time for trips to GCT from the Danbury branch are nearly uniform at 2:00 hours including shuttle connection times. Thru train schedules contain about 5 minutes added time between South Norwalk and GCT for intermediate main line stops. Otherwise, main line travel times for the diesel operated equipment on the thru trains is nearly the same as the electric multiple unit (EMU) AC-DC car schedule. On certain trains, time allowances are made for dependencies such as trains passing (1810), meets (1881/1844), and equipment cycling/turns (1882), and peak congestion.

The morning (inbound) thru trains have a travel time from Danbury to South Norwalk of 54 minutes. From South Norwalk the travel times vary as trains 1811 and 1833 make three stops between South Norwalk and Stamford. Their time on this segment is 21 minutes vs. train 1819 that makes no stops and has a travel time of 10 minutes. The rest of the trip from Stamford to GCT takes 50 minutes and 48 minutes respectively. The longer travel times (13 minutes) for trains 1811 and 1833 are due to the extra station stops.

The evening (outbound) thru trains from GCT reflect similar variations. Trains 1848 and 1868 make the 3 stops between Stamford and South Norwalk and have a longer travel time than train 1860 by an average of 9 minutes. Train 1860 does not make the stops between Stamford and South Norwalk.

Danbury Branch shuttle trains have average travel times between Danbury and South Norwalk of 50 minutes for inbound and 50 minutes for outbound runs.

Ridership

New Haven Line on/off counts performed by MNR in 2001 and 2007[2] show an overall increase in ridership. This trend is summarized for the Danbury Branch in Table 12, and the 2007 report for the entire New Haven Line, including the Danbury Branch, is in Appendix A.

Table 12: Danbury Branch 2007 On/Off Counts, Summary

	On			Off		
	2001	**2007**	**% Change**	**2001**	**2007**	**% Change**
Weekday Inbound	1,006	1,202	12.8%	26	105	303.8%
Weekday Outbound	56	108	92.9%	1,052	1,135	7.9%
AM Peak Inbound	952	1,092	14.7%	18	97	438.9%
PM Peak Inbound	32	60	115.6%	811	868	7.0%
AM Peak Outbound	1	1	0.0%	57	53	-7.0%
PM Peak Outbound	114	110	-3.5%	8	8	0.0%
Off Peak Outbound	23	38	65.2%	184	214	16.3%
Total	2,244	2,620	16.8%	2,156	2,480	15.0%

As is generally found in rail commuter service, the weekday AM Peak Period has the highest directional ridership. The Danbury Branch has 1,092 of its 1,310 weekday boardings in the inbound (towards South Norwalk and beyond) during the AM Peak.

Table 13 summarizes the 2007 AM Peak On/Off counts at the seven Branch stations. Detailed on/off counts by station and train on the Danbury Branch are in Appendix A.

Table 13: Danbury Branch 2007 On/Off Counts, AM Peak

Station	**On**	**Off**
Danbury	70	0
Bethel	137	0
Redding	40	0
Branchville	97	0
Cannondale	129	0
Wilton	143	0
Merritt 7	98	32
Total	714	32

The 2007 counts do not reveal origin and destination information except that in general we see that during the AM Peak the only alightings (offs) are at Merritt 7. Twenty-nine a total 32 alightings were from Train 1833 that left Danbury at 7:45am.

[2] Metro-North does not perform on/off counts each year. While overall ridership counts are available for 2008, on/off data is not available. Counts for 2007, therefore, are the most recent available information. It should be noted, however, that overall ridership on the New Haven Line in 2008 was 3.9% higher than overall ridership in 2007. The overall ridership on the Danbury Branch in 2008 was 5.1% higher than overall ridership in 2007. Detailed information on 2008 ridership can be found in Appendix B.

Origin and destination information is available from the fall 2008 Rail Passenger Survey that was conducted as part of this study. While the Metro-North 2007 on/off counts shows 1,092 rides boarding these five trains (nos. 1811, 1819, 1833, 1837 and 1841) on the Branch in the morning, the survey had 872 respondents. The destinations of those respondents who boarded at one of the seven Branch Stations are indicated in Table 14.

Table 14: Disembarking Stations of Branch line AM Riders

Station	Number of Respondents	Percent
Danbury	1	**0.1%**
Branchville	1	**0.1%**
Cannondale	1	**0.1%**
Wilton	5	**0.6%**
Merritt 7	62	**7.1%**
South Norwalk	69	**7.9%**
Darien	9	**1.0%**
Noroton Heights	2	**0.2%**
Springdale	2	**0.2%**
Stamford	225	**25.7%**
Greenwich	7	**0.8%**
Port Chester	1	**0.1%**
Rye	2	**0.2%**
Harlem 125	13	**1.5%**
GCT	471	**53.9%**
Bridgeport	1	**0.1%**
Fairfield	1	**0.1%**
Other	1	**0.1%**
Total	**874***	**100%**

**There is a discrepancy between the number of survey respondents and this total because some respondents left this information blank and others filled in multiple responses.*

The disembarking stations for respondents traveling on the commuter shuttle trains, Trains 1837 and 1841, differed from that of the NYC-bound trains, Trains 1811, 1819, and 1833. Table 15 shows the percentage of respondents who went to each destination. The table is broken down by the type of train service used by the respondents.

Table 15: Disembarking Stations by Train and Service Type

	Train 1811	**Train 1819**	**Train 1833**	**NYC-Bound**	**Train 1837**	**Train 1841**	**Commuter Shuttles**
2008 Survey Respondents*	138	301	163	602	141	108	249
Disembarking Station	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Branchville	-	-	0.6%	0.2%	-	-	-
Cannondale	-	-	-	-	-	0.9%	0.4%
Wilton	-	-	0.6%	0.2%	-	3.7%	1.6%
Merritt 7	-	0.3%	7.4%	2.2%	10.5%	30.3%	19.0%
South Norwalk	1.4%	4.0%	9.9%	5.0%	17.5%	11.0%	14.7%
Darien	-	-	4.3%	1.2%	-	1.8%	0.8%
Noroton Heights	0.7%	0.3%	-	0.3%	-	-	-
Springdale	0.7%	-	-	0.2%	0.7%	-	0.4%
Stamford	9.4%	21.9%	19.1%	18.3%	55.9%	27.5%	43.7%
Greenwich	-	1.0%	-	0.5%	2.8%	-	1.6%
Port Chester	-	-	0.6%	0.2%	-	-	-
Rye	0.7%	-	-	0.2%	0.7%	-	0.4%
Harlem 125	1.4%	0.7%	1.9%	1.2%	1.4%	3.7%	2.4%
GCT	85.5%	71.4%	54.3%	70.0%	10.5%	21.2%	15.1%
Bridgeport	-	-	0.6%	0.2%	-	-	-
Fairfield	-	-	0.6%	0.2%	-	-	-
Other	-	0.3%	-	0.2%	-	-	-

**The total number of respondents differs from the total in Table 14 because that table includes surveys that did not include accurate information regarding which AM train the respondent rode.*

Fares

Two fare zones cover the Danbury Branch. The first Fare Zone (41) includes Cannondale, Wilton, and Merritt 7, and the second Fare Zone (42) includes Danbury, Bethel, Redding, and Branchville. In general, ticket prices have a relationship to the length of the trip and time of day (Table 16). A one-way peak ticket purchased at a station, for example, costs $13.50 for Zone 41 and $14.25 for Zone 42. For a pre-purchased WebTicket to GCT, the one-way peak period fares are $12.83 and $13.54, for Zone 41 and Zone 42, respectively. If there is a ticket machine available at the boarding station, a premium is added to the cost of tickets purchased onboard.

Table 16: Danbury Branch Fares to GCT: Station Price vs. WebTicket Price

Zone	Stations	Average Distance to GCT	Station		WebTicket	
			Peak	Off Peak	Peak	Off Peak
41	Cannondale Wilton Merritt 7	48	$13.50	$10.00	$12.83	$9.50
42	Danbury Bethel Redding Branchville	60	$14.25	$10.75	$13.54	$10.21

There are eight types of tickets sold for trips to GCT. In addition to the One-Way Peak fare, there are reduced fares for multiple ride passes such as: Monthly, Weekly and 10-Trips. Off-Peak and Senior-Disabled discounted One-Way and Ten-Trip tickets are also available. Table 17 shows sample fares from New Haven Line stations in Connecticut to GCT. One-way fares represent the cost of tickets bought at a station.

Table 17: Sample New Haven Line Fares to GCT

Station	Monthly	Weekly	10-Trip			One-Way		
			Peak	Off Peak	Senior-Disabled	Peak	Off Peak	Senior-Disabled
Waterbury Branch	$335.00	$114.00	$165.00	$106.25	$82.50	$16.50	$12.50	$8.25
New Haven	$394.00	$126.00	$185.00	$119.00	$92.50	$18.50	$14.00	$9.25
Danbury - Branchville	$308.00	$98.00	$142.50	$91.50	$70.00	$14.25	$10.75	$7.00
Bridgeport	$336.00	$108.00	$155.00	$100.00	$77.50	$15.50	$11.75	$7.75
Cannondale - Merritt 7	$292.00	$93.00	$135.00	$85.00	$67.50	$13.50	$10.00	$6.75
New Canaan Branch	$264.00	$84.00	$122.50	$78.75	$60.00	$12.25	$9.25	$6.00
Stamford	$264.00	$84.00	$122.50	$78.75	$60.00	$12.25	$9.25	$6.00

Table 18 analyzes the one-way peak fares of the sample New Haven Line stations against the length of the trip from a station to GCT. This results in a cost per mile for each of the sample stations, and this allows for an easier comparison of fares. The table shows that the average fares on the Branch Line are comparable to those on the mainline.

Table 18: Sample New Haven Line Cost per Mile to GCT

Station	Average Trip Length (miles)	One-Way Peak Fare	One-Way Peak Cost per Mile
Waterbury Branch	74	$16.50	$0.22
New Haven	72	$18.50	$0.26
Danbury - Branchville	60	$14.25	$0.24
Bridgeport	55	$15.50	$0.28
Cannondale - Merritt 7	48	$13.50	$0.28
New Canaan Branch	37	$12.25	$0.33
Stamford	33	$12.25	$0.37

For intra-state trips, there is not a designation between peak and off peak fares. Table 19 shows the six types of intermediate fares from Danbury Branch Stations, the Waterbury Branch, New Haven, and Bridgeport to South Norwalk and Stamford.

Table 19: Intermediate Trip Fares to South Norwalk and Stamford

Origin Station	Destination Station	Monthly	Weekly	10-Trip		One-Way	
				Regular	Senior-Disabled	Regular	Senior-Disabled
Waterbury Branch	Stamford	$112.00	$34.75	$44.75	$25.00	$5.25	$2.50
New Haven	Stamford	$130.00	$42.00	$53.25	$30.00	$6.25	$3.00
Waterbury Branch	South Norwalk	$101.00	$31.25	$40.50	$22.50	$4.75	$2.25
New Haven	South Norwalk	$110.00	$35.00	$46.75	$27.50	$5.50	$2.75
Danbury - Branchville	Stamford	$80.00	$24.75	$32.00	$17.50	$3.75	$1.75
Bridgeport	Stamford	$73.00	$24.00	$29.75	$17.50	$3.50	$1.75
Danbury - Branchville	South Norwalk	$58.00	$18.00	$23.25	$12.50	$2.75	$1.25
Cannondale - Merritt 7	Stamford	$57.00	$17.75	$23.25	$12.50	$2.75	$1.25
Bridgeport	South Norwalk	$59.00	$18.25	$25.50	$15.00	$3.00	$1.50
South Norwalk	Stamford	$50.00	$15.50	$19.25	$10.00	$2.25	$1.00
Cannondale - Merritt 7	South Norwalk	$44.00	$13.75	$19.25	$10.00	$2.25	$1.00

Table 20 analyzes the one-way fare from Danbury Branch Stations, the Waterbury Branch, New Haven, and Bridgeport to South Norwalk and Stamford against the length of the trip. This results in a cost per mile for each of the sample stations, and this allows for an easier comparison of fares. The table shows that the average fares on the Branch Line are generally comparable to those on the mainline.

Table 20: Intermediate Trip Cost per Mile to South Norwalk and Stamford

Origin Station	Destination Station	Average Trip Length (miles)	One-Way Fare	One-Way Cost per Mile
Waterbury Branch	Stamford	41	$5.25	$0.13
New Haven	Stamford	39	$6.25	$0.16
Waterbury Branch	South Norwalk	33	$4.75	$0.14
New Haven	South Norwalk	31	$5.50	$0.18
Danbury - Branchville	Stamford	27	$3.75	$0.14
Bridgeport	Stamford	22	$3.50	$0.16
Danbury - Branchville	South Norwalk	19	$2.75	$0.14
Cannondale - Merritt 7	Stamford	15	$2.75	$0.18
Bridgeport	South Norwalk	14	$3.00	$0.21
South Norwalk	Stamford	8	$2.25	$0.28
Cannondale - Merritt 7	South Norwalk	7	$2.25	$0.32

Passenger Stations

The Danbury Branch line is served by seven stations located in Norwalk (Merritt 7), Wilton (Wilton and Cannondale), Ridgefield (Branchville), Redding, Bethel, and Danbury. The Branch line meets the mainline at the South Norwalk station. All but one of the stations on the Branch are owned by ConnDOT and leased by the town/city. The exception is Merritt 7, which is leased by Merritt Seven Station, Inc. There are indoor stations at the Bethel and Danbury stations and coffee houses at the Cannondale, and Branchville stations. There are parking fees at the three most northerly stations along the Branch line which include the Danbury, Bethel and Redding stations.

The milepost locations and passenger platforms information follow:

- South Norwalk: MP 41.0 (New Haven Line), Pocket tracks with 2-car platform for Danbury shuttle, and 7-car platform on the New Haven Line.
- Merritt 7 (Merritt Parkway, U.S. 7): MP 3.7, 7-car platform capacity.
- Wilton: MP7.4, 4-car platform capacity.
- Cannondale: MP 8.9, 2-car platform capacity.
- Branchville: MP12.8, 3-car platform capacity.
- Redding: MP 17.3, 2-car platform capacity.
- Bethel: MP 21.0, 5-car platform capacity
- Danbury: MP 23.6, 3-car platform capacity.

Merritt 7 is provided with a low level platform. The South Norwalk platforms and all other platforms of the Danbury Branch are high-level platforms.

Parking

In January 2003, a study was issued by ConnDOT which focused on parking inventories and utilization of spaces at each of the stations along the New Haven Rail Line and its branches. The report "Task 2, Technical Memorandum, Parking Inventory and Utilization, Final Report" was undertaken by Urbitran Associates.

Field studies were conducted midweek (Tuesday, Wednesday, and Thursday) by Urbitran during the fall of 2001 and spring of 2002 to collect data. The parking counts were not taken on holidays and were taken after 10:00 a.m. and before 4:00 p.m., which was assumed to be the peak period of parking utilization. However, it was noted in the report that utilization is difficult to measure since many of the spaces are used for multiple purposes. Thus, the exact number of spaces used by commuter rail users cannot be determined.

In all, 1,033 parking spaces are provided along the Danbury Branch line (Table 21). The line has an overall parking utilization rate of 74%. The state owns 90% of the parking spaces available along the Danbury Branch line. Approximately 68% of the parking spaces available along the line are permit parking spaces. The Wilton station has the most parking spaces (212 spaces) while the Redding station has the least (82 spaces). The Branchville station is the most utilized at 90% utilization and the least utilized is the Danbury station (58%). The three stations with

parking fees (Danbury, Bethel, and Redding) have the option of paying an annual parking fee or daily/hourly fee. The annual permit fees range from $180 to $250 per year. There is no permit wait list for any of these.

Table 21: Danbury Branch Line Parking Capacity

Station	Capacity						
	Permit		Daily		Handicapped		Total
	#	%	#	%	#	%	#
Danbury	129	88.4%	12	8.2%	5	3.4%	146
Bethel	165	83.8%	26	13.2%	6	3.0%	197
Redding	65	79.3%	13	15.9%	4	4.9%	82
Branchville	-	-	166	98.8%	2	1.2%	168
Cannondale	138	98.6%	-	-	2	1.4%	140
Wilton	204	96.2%	-	-	8	3.8%	212
Merritt 7	-	-	86	97.7%	2	2.3%	88
Total	701	67.9%	303	29.3%	29	2.8%	1,033

ConnDOT 2006 Station Study

The Connecticut Department of Transportation made the following observations during visual inspections that they conducted in August and September 2006.

South Norwalk

The South Norwalk Train Station is located in the SoNo District section of the City of Norwalk. The city and the Department reconstructed the South Norwalk Train Station about 15 years ago. A parking garage, waiting room, ticket windows, municipal electricity offices, and security office replaced the old westbound station building. The old eastbound station building was rehabilitated at the same time. The interior has been nicely restored. Motorists can get to the station from nearby I-95, Route 7 and Route 1. However, one must be familiar with the since trailblazing is inconsistent. Where signs indicate the station, the message is sometimes lost amidst the clutter of street, advertising, landmark and business signs.

A bright, clean tunnel connects the two station buildings. Elevators and ramps provide platform accessibility for the less able. The two ten-car platforms serve as center island platforms at their respective east ends for Danbury Branch service. At this time, the Department is replacing the railroad bridge over Monroe Street as part of its catenary replacement project. Bridge plates are in place over Track 3 to accommodate the required track outage.

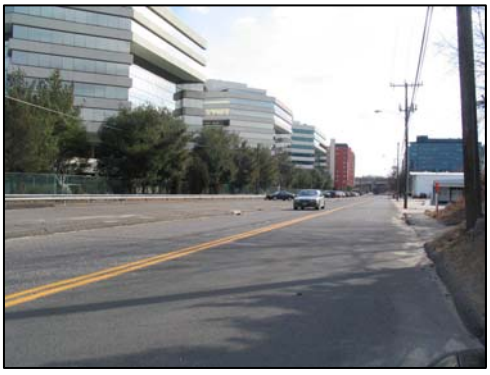
The South Norwalk Station is clean except around the two pocket tracks at the east end of the station. Track level litter has piled up along the rails and under the platforms. Litter is also excessive along the out of service track.

- **Highway Access** – With some difficulty, a motorist new to the area can find the South Norwalk Train Station from I-95, Route 1 and Route 7. Highway signs direct motorists off the highway, where local trailblazing signs provide guidance to the station. There is no dedicated station sign at either side of the station.

- **Parking** – The new parking garage is available for permit parking. The smaller surface lot on the eastbound side is for daily parking. Signs provide parking information and fees. These also note the location of overflow parking. Lighting on the eastbound parking lot appears to be minimal.
- **Walks/Paths** – Nearby construction on Monroe Street has affected some of the sidewalks to the east of the station. The lowering of the roadway will require the reconstruction of these walks under the bridge replacement project. Other paths are limited to movement of people from parking lots and bus drops to the station platforms. Across the driveway from the east end of the eastbound building, there is an unexpected and unprotected drop from the top of a masonry retaining wall.
- **Bus Access & Taxi Stand** – Buses can access both sides of the station. Taxis queue up along the eastbound driveway.
- **Signage** – Signage in and around the station appears to be adequate. However, a review of sign placement and content should be performed upon completion of the nearby bridge construction to confirm the continued accuracy of the signage.
- **Americans with Disabilities Act (ADA) Access** – The South Norwalk Train Station is one of the designated key stations for the New Haven Line. For the most part, it is ADA compliant, except for some issues pointed out in the High Level Platform Visual Inspection Report and a recent federal review. Metro-North is installing ADA compliant variable message signs, which will provide visual backup for audio announcements.

Merritt 7

The Merritt 7 Station is named for its location near Route 7 and Exit 40 of the Merritt Parkway. Situated on Glover Avenue, the station has a shelter, a narrow parking lot and the only low-level platform on the Danbury Branch. The station was built by the adjacent Merritt Seven developer and has since been taken over by CDOT.



Looking South on Glover Ave.
(Station on Left)

Access to the south end of Glover Avenue is made difficult by the adjacent and high volume interchange of Route 7 and the Merritt Parkway. The north end of Glover Avenue ends at the equally busy terminus of the Route 7 expressway at Grist Mill Road and its nearby Main Avenue intersection. There is a parking lot along the tracks to the north of the platform and a smaller lot to the south. There is also a designated bus stop for the local Wheelstop buses. Merritt 7 is little more than a whistle stop along the Danbury Branch, and there are few amenities at this location. The level of improvements to his facility will be governed by future demand and continuing ridership increases.

Looking North on Glover Ave.
(Station on Right)

- **Highway Access** – The station is located on Glover Avenue. Access onto either end of the road is difficult. Both intersections have high volume traffic and conflicting turning moves. Station signs should be considered at both ends of Glover Avenue. Advance trailblazing signage may improve access to this station.
- **Parking** – The parking is accommodated by a long, single aisle lot extending north of the platform along the tracks. The bituminous pavement is cracked and uneven. There is no parking fee and the lot is filled on a first come, first served basis. Lighting levels need to be evaluated.
- **Walks/Paths** – The station is located on Glover Avenue. Paths to and from the station are sidewalks or parking lot surfaces. These paths are cracked, worn and uneven.
- **Bus Access and Taxi Stand** – Wheelstop Bus has commuter connection service to this station. Taxi access and passenger drops are easily accommodated.
- **Signage** – There are a few signs indicating parking for commuters only, a station sign at the south end of the platform and a park & ride sign.
- **Americans with Disabilities Act (ADA) Access** – Being a low- level platform, there is no easy access to the trains. However, there is a portable chair lift chained to a nearby lamppost. Its condition was not determined.

Wilton

The Wilton Train Station is located at the intersection of Route 7 (Danbury Road) and Route 33 (Ridgefield Road) near Wilton Center. Entering and exiting the station is a challenge most days due to high traffic volumes on both roads. In addition, there is no prominent signage indicating the station's presence under the Route 33 overpass.


Wilton Station

The station consists of several parking lots, an old station building, a vehicular/pedestrian rail crossing, and a center island platform. Free parking is available on a first come, first served basis. An at-grade crossing provides access to a lot located on the west side of the tracks. The station building is likely historic with a waiting room, rest rooms and a coffee shop. Closed during the time of this site visit, it was difficult to determine if the station building is active due to overgrown vegetation at the entrances.

Wilton Station has a center island platform, accessible by a ramp from the at-grade pedestrian crossing. The platform is protected by a canopy for most of its length. Additionally, it is situated directly under the Route 33 overpass. There are several active and planned construction projects taking place in the station area.

Underground 345kV electrical cables are being installed by Northeast Utilities. A commercial building located just above the parking lot is being demolished. The Routes 7 and 33 intersection improvements are scheduled to begin soon. Upon completion of the intersection project, construction is planned for a new parking structure at the station. Activities related to these and other projects will make access to this station even more challenging over the next few years.

- **Highway Access** – Located at the busy Routes 7/33 intersection, Wilton Station is difficult to find, hard to enter and even more challenging to exit. A station entrance sign is needed to announce the existence of the depot, as it is located in a depression well below Route 33. Current and future construction projects will eventually improve access to the station. Until then, maneuvers in and out of the parking lot will be formidable, and access to town on foot will be problematic. As this is a busy intersection with its own clutter of signage, it is recommended that the Department provide additional trailblazing signage about a half mile in advance of the station on Route 7 from both directions and on Route 33.
- **Parking** – Parking is free and is filled on a first come, first served basis. A parking structure is planned for the Wilton Train Station. Its construction has been tentatively scheduled to follow the Routes 7/33 intersection improvement project.
- **Walks/Paths** – With parking available on either side of the tracks, access to this platform requires crossing one track to the center island platform ramp. Both the pedestrian and adjacent vehicular crossings are protected by gates. The crossing has a bituminous surface that is cracked and uneven, especially at the bottom of the platform ramp. The ramp has no tactile warning at its base. The bollard mounted light fixtures on the edges of the platform ramp need to be sealed with new gaskets. The bituminous walk on the trackside of the station building is also cracked and uneven. Pedestrians move about the remainder of the station through parking lot aisles.
- **Bus Access & Taxi Stand** – While a bus may be able to find a route through the parking lot, turns within the lot would be difficult. There is no evidence of a regular bus stop at this location and stopping on either Danbury Road or Ridgefield Road would be ill advised. Taxis can access all areas of the parking lot.
- **Signage** – The vehicular crossing has mandatory signage, as do the ADA parking spaces. Other than that, signage is minimal throughout the station area.
- **Americans with Disabilities Act (ADA) Access** – ADA parking spaces are available next to the station building. The platform is accessible, but the station has some ADA non-compliance issues.

Since ConnDOT's visual inspection in 2006, the following changes have occurred at the Wilton station:

- The reconfiguration of Route 7/33 is changing the roadway access to the station, where improved traffic control will assist commuter traffic.
- The station building, which was closed at the time of this site visit, is currently not open to commuters. ConnDOT is preparing to solicit vendor interest in the station.

Cannondale

The Cannondale Train Station is located near Route 7 on Cannon Road in Wilton. A sign at the intersection of Cannon Road and Route 7 indicates the presence of the station, which is located in a quiet rural setting. A cluster of historic office buildings and shops is located across the track from the platform. The station building houses a coffee shop. The rear of the building is landscaped with tables provided for coffee shop patrons. The building currently has no rest rooms. However, the Department plans to install public rest rooms in a separate building on the

station property within the next year or so. A high- level platform with stairs and a ramp provides access to rail cars. The platform has a full length canopy and benches.


Cannondale Station Platform

- **Highway Access** – Access from Route 7 is available via Cannon Road. A trailblazing sign has been placed at the intersection. Once on Cannon Road, the station is easy to locate. However, a station sign at the entrance is still recommended.
- **Parking** – Parking is free at Cannondale. The lot is filled on a first come, first served basis. The lot surface is worn with weeds growing in the cracks. Streetlights illuminate the parking area.
- **Walks/Paths** – The station building at the Cannon Road entrance to the parking lot. Patrons must walk through the lot or behind the building to get to the platform. The area between the building and the tracks has been landscaped. Umbrella tables and chairs are available for coffee shop patrons.
- **Taxi Stand and Bus Access** – Buses and taxis can maneuver through the parking lot. However, there is no evidence of a regular bus stop at this location.
- **Signage** –The only signs observed at this station were the "Cafe Au Lait" business sign and several station name signs.
- **Americans with Disabilities Act (ADA) Access** – The markings for two ADA parking spaces appear to have faded on the street side of the station building. While a handicap person may have access to the trains, this station cannot be considered ADA compliant.

Since ConnDOT's inspection in 2006, the following changes have occurred at the Cannondale station:


Bathroom Facilities at Cannondale Station

- Separate modern men's and women's restrooms have been added.
- Station building, lighting and electrical was updated in fall of 2008.

Branchville

The Branchville Train Station is located on Route 7 in the southeast corner of Ridgefield. It is relatively easy to find, although a station sign is needed at each of the two entrances. Vehicular access is provided over two river bridges in varied stages of disrepair. The station is nestled between the Norwalk River, the railroad tracks, Depot Road and Portland Avenue. The station building houses a bakery and gift shop. New sidewalk and black railing separate the full parking lot from the tracks. An awning provides some shelter for patrons of the bakery or waiting commuters. The area is neat, likely from the housekeeping efforts of bakery personnel. A high- level platform with stairs and a ramp provides access to the rail cars. The platform has a full-length canopy and benches.


Branchville Station Platform

- **Highway Access** – Access to this old train station from the adjacent Route 7 is relatively simple. The Depot Road (north) entrance is signalized. A narrow concrete bridge spans the Norwalk River. Vegetation has overgrown the edge of the roadway, restricting sight distances and giving the appearance of an even narrower bridge. The Portland Avenue (south) entrance is not signalized. This road has an equally dysfunctional structure over the river. Intersection sight distances are also restricted at this entrance. A sign at the Route 7 entrance indicates the presence of the bakery but not the station.
- **Parking** – Parking is distributed along the narrow lot, which is parallel to the tracks. Parking is free at Branchville. The lot is filled on a first come, first served basis. Several spaces appear to have been set aside as bakery customers. The lot's surface is cracked and worn with a few potholes. Lighting appears to be minimal and partially obscured by foliage. Nearly every square foot of the lot is being utilized for parking.
- **Walks/Paths** – The station building is located in the middle of the parking lot. Access to the platform has been improved by the recent addition of raised sidewalks and black railing along the track side of the lot. This feature provides an attractive buffer between vehicles and trains, while keeping pedestrians away from the parking aisles. In front of the bakery is a narrow pedestrian bridge (right) that spans the Norwalk River. The bridge connects the parking lot to an auto body shop. The bridge deck appears to be structurally sound, but the railing is substandard. There are no signs indicating the ownership or availability of this bridge to the public. If the bridge is private, then it should be signed as such. If it is part of the station, the structure should be brought up to current structural standards.
- **Taxi Stands and Bus Stops** – Buses would have a difficult time maneuvering through the narrow parking lot and tighter entrance roads. However, Route 7 is only a few hundred feet away from the station platform. Taxis have normal vehicular access.
- **Signage** – The only signs evident at Branchville station are the two "No Parking, Fire Zone" signs in front of the building.
- **Americans with Disabilities Act (ADA) Access** – No ADA parking spaces have been provided near the ramp to the platform. While a disabled person may have an accessible route to the trains, this station cannot be considered ADA compliant.

West Redding

The West Redding Train Station is a great example of a rural train stop. The addition of proper trailblazing, which is currently lacking at the station, would improve access. The entrance has a station sign. Permit and daily parking areas are explained and easily located. The station's high level platform is ADA accessible. A spotless shelter is protected by the full-length canopy, and the surrounding scenery is nice.

The West Redding Train Station should be a template for future improvements made to other small train stations along the three New Haven Line branches. Built about 10 years ago, the station has incorporated many of the amenities prescribed by the state's Amenities Committee.

West Redding Station

- **Highway Access** – Being a rural location, access to this station can be tricky. A few well-placed trailblazing signs will make the search effort painless.
- **Parking** – A station entrance sign is located just into the opening of the station. The only recommendation would be to place the sign closer to Long Ridge Road to avoid being obscured by the foliage. There is adequate signage indicating the location of daily and permit parking as well as daily rates.
- **Walks/Paths** – Paths and walks around the station are in good condition.
- **Bus Access & Taxi Stand** – Taxis can access the parking lot. Geometrics are too tight for a bus
- **Signage** – Signage is good.
- **Americans with Disabilities Act (ADA) Access** – This station is ADA accessible with only minor non-compliant issues.

Bethel

The Bethel Train Station is one of the more attractive stations on the New Haven Line. It is located a short distance from downtown Bethel. The nearest state highways are Routes 58 and 302. Additional trailblazing signage is needed to guide motorist to the station entrance, which has a prominent station entrance sign. The parking lot surface is cracked with faded line markings. Several Americans with Disabilities Act (ADA) parking spaces have been provided.


Bethel Station

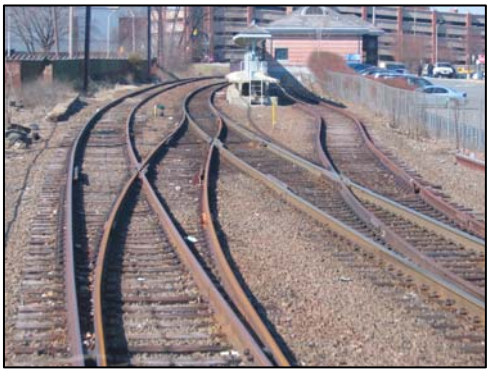
The station was built 10 years ago. It was relocated from downtown Bethel. The new facility includes a brick station building, pedestrian bridge, platform, and parking lot. Although closed during the site visit, the building appears to be is clean and comfortable. The area appears to be adequately illuminated. Mowed areas, numerous plantings, black fencing, and a babbling brook provide a park like setting to commuters and visitors alike. It would appear that the owner and operator have adapted this station to its surroundings in a very pleasing manner.

- **Highway Access** – Trailblazing signage from Route 302 was not observed. The Department and municipality should review and supplement trailblazing from the highways. An older style station entrance sign indicates the presence of the station.
- **Parking** – The parking lot has a simple layout. ADA parking spaces are next to the main walk to the platform. The lot surface is slightly cracked and pavement markings have faded. The concrete curb in front of the building needs attention.

- **Walks/Paths** – The concrete walks, pedestrian bridge over the brook and bridge railings are in good condition.
- **Taxi Stands and Bus Stops** – Buses and taxis can access the station. There is no evidence of a scheduled bus stop at the station, but it is likely that a bus route passes in front of the station.
- **Signage** – A parking information sign should be placed at the lot entrance. This station has metered parking. Each meter handles two spaces, which could be confusing to a first-time user. Directions are provided on the meter, but a larger sign in the metered section may be warranted.
- **Americans with Disabilities Act (ADA) Access** – Bethel is not an ADA accessible key station. However, aside from some minor non-compliant elements, it does provide reasonable ADA access from the parking lot to the train.

Danbury

The Danbury Train Station is located a block from the city's central business district. Trailblazing signage has been provided from Interstate 84 to the station entrance. However, the station can be difficult to find from other directions without some local street knowledge. The station entrance crosses the railroad tracks about 50 feet from Patriot Drive. There is no station entrance sign. The parking lot pavement is cleanly striped and relatively even. Americans with Disabilities Act (ADA) parking spaces have been provided.



Danbury Station

The station was reconstructed about ten years ago. This included a new station building, platform, sidewalks, rail crossing and parking lot. All remain in good condition. The building is clean and comfortable, but it closes at noon. The area appears to be adequately illuminated. The station has been nicely landscaped. However, some paths have been overwhelmed by overgrown vegetation.

Variable message signs have been added to the station building and platforms. When connected to the railroad's communication network, these signs will provide a visual confirmation of audio train announcements. Just beyond the east end of the parking area is the Danbury Rail Museum. Due to a lack of signage, it is unclear if the station parking lot is also used for the Museum. The pedestrian route from the lot to the Museum may also be confusing. In general, Danbury has a nice train station. It is clean, logically laid out, functional and ADA accessible.

- **Highway Access** – A large station sign has been placed on Interstate 84 noting the appropriate exit. On local streets, trailblazing signs have been placed at various locations guiding motorists to the station. It is recommended that the placement of these signs be reviewed during the next phase of improvement projects. At the station, one can easily be confused by the adjacent Danbury Rail Museum or miss station parking lot entrance. The museum property needs to be clearly indicated. In addition, a station entrance sign is needed at the signalized Patriot Drive entrance to the station.

- **Parking** – To access the parking lot, one must pass over the railroad tracks. Exiting the lot may result in queuing on the tracks. "Do Not Stop on Tracks" signs have been provided. The lot is in good condition with bright pavement markings. ADA parking spaces have been provided.
- **Walks/Paths** – Concrete walks are in good condition. They direct patrons through the parking lot. At several locations, bushes and shrubs have overgrown the sidewalks. Plantings need to be trimmed. Some handrails need to be touched up with paint.
- **Taxi Stand and Bus Access** – Buses and taxis can access the station, although turns may be a little tight for busses. There is no evidence of a scheduled bus stop at the station itself, but the possibility of a nearby local bus route is likely.
- **Signage** – The location of monthly permit, daily and 15 minute parking should be noted somewhere near the lot entrance. Parking availability for museum patrons should be clarified and a clear route from the lot to the museum should be provided.
- **Americans with Disabilities Act (ADA) Access** – Danbury is an ADA accessible key station. Although, some non-compliance issues have been noted, overall conditions permit access from parking lot to rail car.

Rolling Stock and Train Crews

As previously discussed in the section on schedules and travel times, there are three round-trip thru trains each weekday that operate between Danbury and GCT, two six-car trains, and one seven-car train, which are operated using a dual-mode Genesis locomotive. They operate as push-pull with the locomotive at the rear of the consist (pushing) for the inbound trip. The leading coach is equipped with controls for the engineer and is known as a "cab control car" or "cab car". For the return or outbound trip the locomotive is at the front of the train (pulling).

The coaches used on the Danbury branch feature power-operated doors, with an interior 3-2 seating configuration and with luggage racks. There are various versions of the coach that have been purchased over the past 20 -25 years. Passenger capacity varies from 100 – 131 depending on door, toilet, and ADA arrangements.

The locomotives used on the Danbury branch are dual-powered P32AC-DM Genesis locomotives for thru train operation and regular diesel-electric locomotives for "shuttle" trains. The dual-mode Genesis locomotive is a diesel-electric/electric locomotive, meaning that in non-electrified branch territory it operates like a standard diesel-electric locomotive. However, in electrified third rail territory, the straight electric mode of the Genesis takes 700 vdc power from a third rail alongside the track via a contact shoe, which powers the train for operation into Grand Central Terminal.

The other eight round-trip weekday trains operating on the branch are "shuttles" operating short of Grand Central Terminal. The shuttle trains are made up of three coaches and a standard diesel-electric Brookville BL-20PH locomotive. The shuttles also operate in push-pull configuration. All weekend trains are shuttles with three coaches.

Total rolling stock used on the branch is three thru train consists and two shuttle train consists. The daily equipment assignments are three Genesis locomotives, two Brookville locomotives, five cab control cars, and twenty trailer coaches.

Nine regular crews work the Branch trains. Three crews handle the thru trains, four crews the weekday shuttles, and two crews the weekend shuttles. Each crew includes the engineer, the conductor, and an assistant conductor. The crews are headquartered at Danbury in the yard.

Equipment Storage and Maintenance

The normal branch trains originate at Danbury and are stored at Danbury yard. Figure 9 depicts the Danbury Rail Yard. In this figure the three thru trains are the long train sets, and the short set is a shuttle train in layover at the yard in the evening. Cleaning, minor service and daily inspection are performed at Danbury overnight but all other periodic inspections and servicing/repairs occur at Harmon Shop on the Hudson line. The thru trains are fueled during the mid day layover at MNR facilities in New York and the shuttle trains are fueled in Stamford Yard. Personnel stationed at Danbury include car cleaners and maintainers.

Operations

The Danbury Branch is a single track railroad with passing sidings at Norwalk, Wilton, Branchville, and Danbury. Train operations are controlled by means of a manual block signal system where track occupancy is controlled by permission between designated block limit stations. These unmanned block limit stations are located at the end-of-block (Canal), at Danbury (Dan), Branchville (Hill) and Wilton (Wilt), Glover Avenue (Glove), and the branch switch (Berk). Manually controlled 1000+-foot long sidings are located at both Hill and Wilt, and scheduled meets presently take place at Wilt. The branch is controlled by MNR's Rail Traffic Controller (RTC) located at the control center at GCT. All orders and clearances are passed by radio communication.

There are two scheduled passenger train meets between trains traveling in opposite directions, on weekdays. Both meets occur at the siding in the Glove-Wilt block. The meet at 5:45 p.m. involves trains 1881 and 1844 and at 9:33 p.m. involves trains 1895 and 1882. These trains are shuttle trains, and the train crew manually operate the switches in performing the train meets.

Figure 9: Danbury Rail Yards

Summary of Danbury Branch Passenger Service

Today there are 22 daily weekday trains and 12 Saturday/Sunday/Holiday trains providing passenger train service on the Danbury branch. In addition to all trains connecting to main line service at South Norwalk, direct service beyond the branch to Stamford and New York City is an especially attractive feature for commutation, and for a single-track, 23-mile rail line, the Danbury branch today features a robust level of passenger train service. The line is well-maintained, with a good level of equipment reliability, and exhibits a solid level of on-time performance for a single-track train operation of like characteristics. The 2,300 daily weekday passengers carried by the Danbury branch passenger train service is slightly higher than the comparable Shore Line East rail passenger service operated for the CTDOT between Old Saybrook and New Haven. When considering all elements in operation of the Danbury service, it likewise appears to exhibit comparable cost and subsidy levels to sister services on a local and national basis. The Danbury branch service is expected to grow along with passenger rail service within the region, and the CTDOT is taking steps to position the branch for the capability to grow into its larger future regional role.

Harlem Line

The Harlem line is operated by Metro-North Railroad for the MTA. It runs 82 miles along the eastern edge of New York State between Grand Central Terminal in New York City and Wassaic, New York. The line is electrified with third rail 700 VDC power for the first 53 miles between Grand Central Terminal and Southeast. North of Southeast to Wassaic, dual power diesel/electric locomotives are required to provide service.

During peak periods, trains depart Grand Central Terminal (GCT) every nine to 25 minutes. Trains depart hourly during the off-peak. Full service is provided between Southeast and Grand Central Terminal, while there are thirteen round daily round trips between Southeast and Wassaic. Of the thirteen Wassaic–Southeast trains, four morning peak trains and three evening peak trains provide "thru" service to/from Grand Central, while all other trains require a transfer at Southeast. In the reverse direction, the frequency of arrivals at Southeast from stations to the south varies between 30 and 60 minutes on weekdays.

On the weekends, trains departing Southeast to New York run hourly, while in the reverse direction, arrivals in Southeast depart GCT on headways between 60 and 90 minutes. A total of nine Southeast to New York trains originate in Wassaic on Saturdays and Sundays, with all requiring transfers at Southeast except one morning train on Saturdays and one afternoon train on Sundays, which each operate through service to GCT.

Stations along the upper part of the Harlem Line that are easily accessible for Connecticut residents that live near the Danbury Branch include Katonah, Golden's Bridge, Purdy's, Croton Falls, Brewster, Southeast, Patterson, and Pawling. Table 22 indicates the average peak period travel time for Harlem Line trains from these stations to GCT. The table indicates that the travel time between Southeast and GCT is approximately 82 minutes compared to the 118 minutes between Danbury and GCT on the Danbury Branch. Figure 10 illustrates the comparative average travel times between the two branches, along with the approximate distance (in miles) from GCT.

Southeast, Brewster, Croton Falls, Purdy's, Goldens Bridge, and Katonah Stations

Table 22: Peak Period Travel Times between Upper Harlem Line Stations and GCT

Station	Peak Period Travel/Running Time (minutes)
Southeast	82
Brewster	78
Croton Falls	74
Purdy's	70
Golden's Bridge	67
Katonah	64

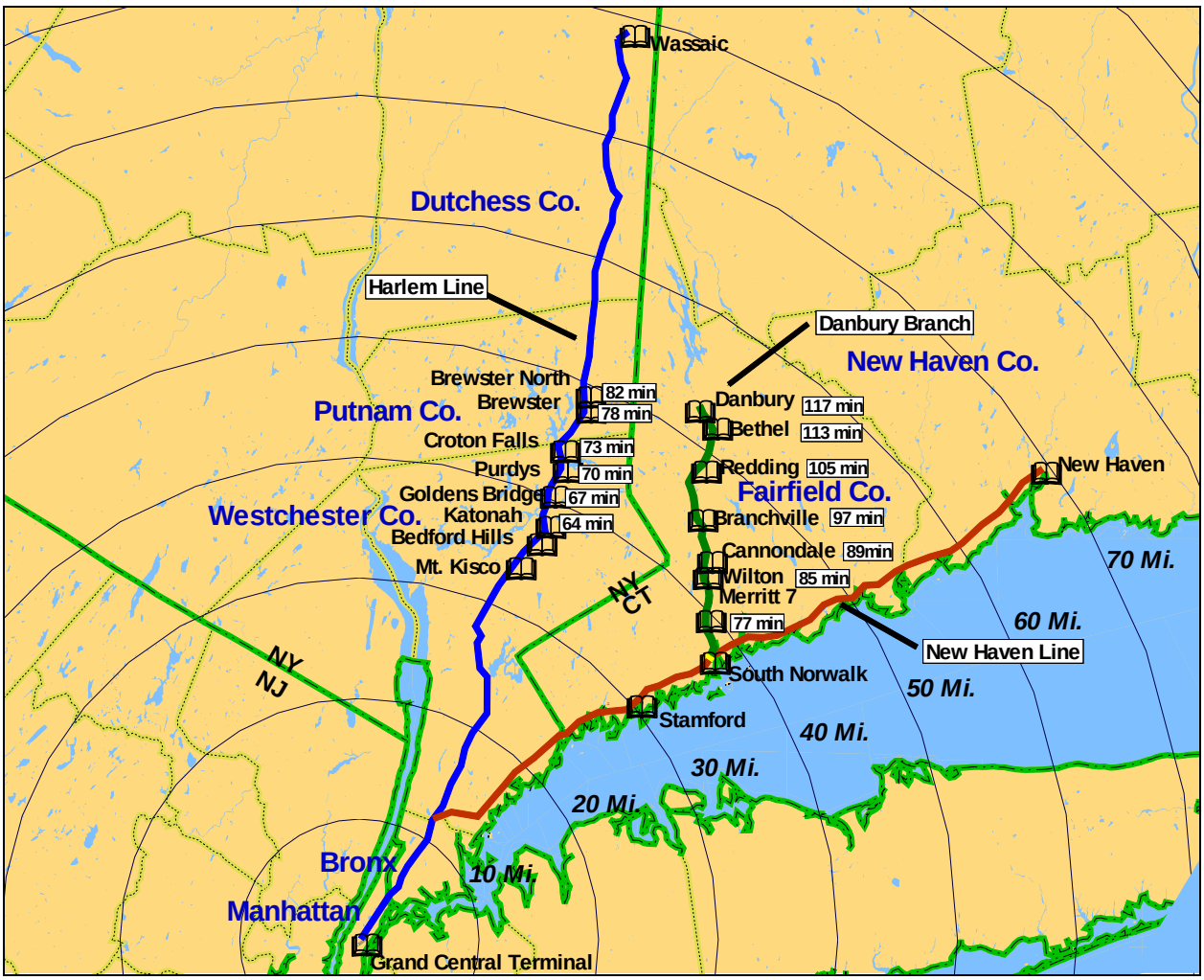


Figure 10: Average Peak Travel Times, Danbury Branch and Upper Harlem Line

Fares

Table 23 indicates the monthly, weekly, 10-trip, one-way peak, and one-way off-peak fares between Grand Central Terminal and the upper Harlem Line stations identified above.

Table 23: Fares between Grand Central and Upper Harlem Line Stations

Miles	Between Grand Central Terminal and	Monthly	Weekly	10-Trip Peak	One-Way Peak (On-board)	One-Way-Off Peak (On-board)
41	Katonah				$12.00	$9.00
44	Golden's Bridge	$261.00	$83.25	$120.00	($17.00)	($14.00)
46	Purdy's				$13.75	$10.25
48	Croton Falls					
52	Brewster				($19.00)	($15.00)
53	Southeast	$300.00	$94.75	$137.50		

2.3 Freight Rail Service

Freight rail service in the study area is provided by the Housatonic Railroad Company and the Providence and Worcester Railroad. A brief description of their current service and future plans are provided below. Figure 11 provides a more comprehensive look at the freight network in the study area and surrounding region.

Figure 11: Freight Network in the Study Area and Surrounding Region

Housatonic Railroad Company (HRRC)

Housatonic Railroad Company Train

The Housatonic Railroad Company, based in Canaan, CT, is a local railroad that operates over approximately 160 miles of track in western Massachusetts and Connecticut. The Railroad provides local freight service in the Housatonic Valley and through an interchange with CSX in Pittsfield, MA, connects to the national rail system. On an annual basis, the company carries approximately 6,000 carloads of freight, which includes a mix of lumber, pulp/paper, waste, aggregates, chemicals/plastics, food/agricultural products, and consumer products. The company also recently completed construction of the Hawleyville Transload Terminal in Newtown as part of its Shepaug Reload Center, which allows local and regional lumberyards to take delivery of building materials originally sent by rail.

The Housatonic Railroad company operates north-south between Danbury and Pittsfield, MA on the Berkshire Line, and between Danbury and Derby on the Maybrook Line. The Railroad also owns the Maybrook Line west of Danbury but has no customers on this segment. In fact, the Railroad sold its portion of the Maybrook Line in New York State to commuter railroad Metro-North, which uses it for occasional equipment and training moves between Metro-North's stub-ended Hudson and Harlem Lines and its Connecticut branches to Danbury and Waterbury.

In the study area (between New Milford and Danbury), the HRR provides service to five customers, three of which are located along the old Berkshire Line and two located along the Maybrook Line. The three customers on the old Berkshire Line, include Kimberly Clark Corporation, which manufactures sanitary personal paper products, ACH Food Companies, which is a manufacturer and packager of oil based food products, and Pharmco Products, which manufactures alcohol based solvents and chemicals. The two customers on the Maybrook Line include Fairfield Processing and Automated Waste Disposal, which is one of the largest waste haulers in Connecticut. Figure 12 indicates the location of each of these customers along the rail study corridor along with those sites served by P&W.

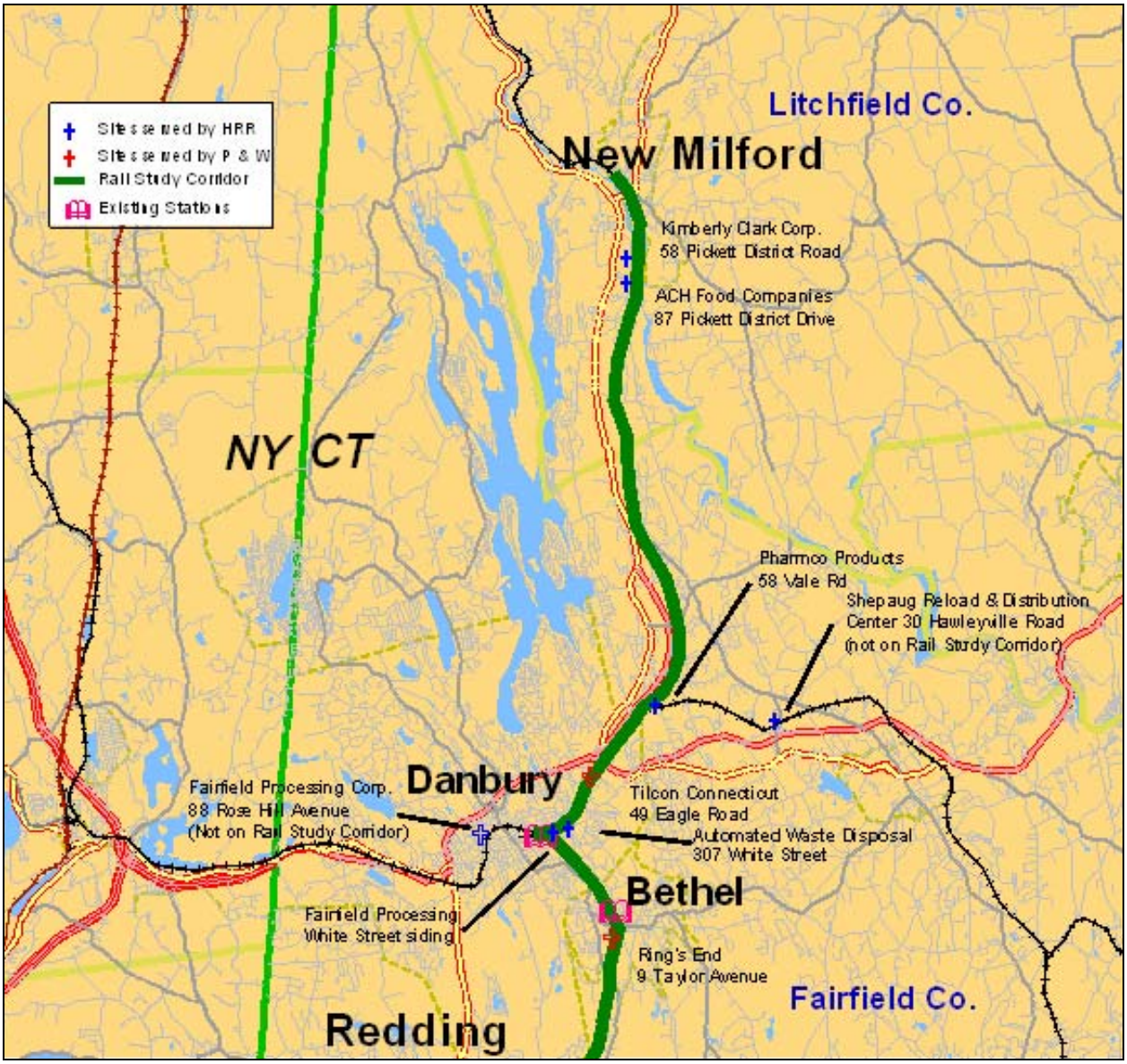


Figure 12: Freight Customers in the Study Area

Service to these customers is provided by HRR's daytime weekday local NX-11, which works south from New Milford, beginning at Kimberly Clark, then switches customers in Danbury, at the HRR's Shepaug Reload Center, and at other shippers on the Maybrook Line. The NX-11 finishes service with a run northward to Canaan on Monday and Friday.

Providence and Worcester Railroad (P&W)

Founded in 1844, the Providence and Worcester Railroad (P&W) is a regional railroad that operates over approximately 545 miles of track in southern New England and New York State. The P&W is a major freight provider in Connecticut and has key interchanges with other major rail freight providers in the region, connecting with CSX in Worcester, MA; the Springfield Terminal Railroad and Norfolk Southern in Gardner, MA, the New England Central Railroad,

Canadian Pacific, Canadian National, and New England Central Railroad in Willimantic and New London, CT; the New York and Atlantic Railway in Fresh Pond, NY; the Housatonic Railroad in Danbury; and the Connecticut Southern Railroad in New Haven. The P&W transports a wide variety of commodities for its customers and annually transports over 29,776 carloads of freight. In addition, the P&W operates the largest double stack intermodal facility in New England, which is located in Worcester, MA.

A Providence and Worcester Railroad Freight Train

Within Connecticut, P&W provides service to customers along the entire coast, the Danbury Branch Line, the Maybrook Line, the Waterbury Branch Line to Derby Junction, from New Haven to Middletown, and in the eastern portion of the state between the cities of Groton, Norwich, Plainfield, Willimantic and north to Worcester, MA.

In the study area, P&W provides service to two customers, Ring's End (a retail outlet providing lumber, hardware, and building materials) in Bethel on the Danbury Branch, and Tilcon Connecticut (a sand, gravel and concrete supplier) in Danbury, which is located along the Maybrook Line. The P&W serves Ring's End by traveling west on the Maybrook Line to Danbury, and then south on the Danbury Branch to the siding for the company. The P&W provides service to Tilcon utilizing the Maybrook Line, which is owned by the Housatonic Railroad Company. During Maybrook track outages, P&W uses Mainline to Norwalk and Danbury Branch to get to Danbury. The P&W has trackage rights on the Maybrook Line from Danbury to Derby and is not in competition with the Housatonic Railroad for Tilcon, as the Housatonic Railroad does not have trackage rights east of Derby Junction, which is where Tilcon sends its material. P&W does however pay the Housatonic Railroad a mileage fee per car for the use of its track.

Norwalk to Danbury Service

The Providence & Worcester Railroad has trackage rights on the MNR Danbury Branch and provides freight service to on-line industries. Currently the only on-line freight customer is located at Bethel. P&W accesses the Danbury Branch by way of the Housatonic Railroad's Maybrook Line at Danbury. P&W Local CT-2 serves one industry in Danbury (located on the Maybrook Line) and operates over the north end of the Danbury Branch between Danbury and Bethel. This train operates to a local industry at Bethel, on an as required basis, on weekdays, shortly after midnight. Generally, the P&W does not operate south of Bethel; however, during Maybrook Line track outages the P&W will run between South Norwalk and Danbury.

One week sample of Freight Service on the New Haven Line as provided by MNR is included in Appendix C. For one week in June 2007, CT-2 operated Monday thru Thursday with four locomotives and an average of two cars. For one week in February 2008, CT-2 only operated on Thursday with two locomotives and only one car.

Danbury to New Milford Service

Tracks north of Danbury to New Milford at Boardman's Bridge are owned and operated by the HRRC. The Housatonic Railroad Company currently provides freight service over the Danbury – New Milford segment. In addition, the Providence & Worcester Railroad has trackage rights over the Maybrook Line and MNR Danbury Branch. Commuter rail service is not provided north of the MNR Danbury station.

Looking South at New Milford

HRRC currently serves two customers on the Maybrook Line in Danbury and three customers on the Berkshire Line south of New Milford. HRRC service to these customers is provided by daytime weekday local NX-11, which works south from New Milford towards Danbury.

Looking North along Danbury Branch
(Bethel Siding on Left)

P&W weekday local CT-2 utilizes trackage rights over HRRC and MNR to serve one customer on the Maybrook Line in Danbury (not served by HRRC) and one customer on the MNR Danbury Branch in Bethel. This train operates on weekdays, shortly after midnight. Generally, the P&W does not operate south of Bethel; however, during Maybrook Line track outages the P&W will run between South Norwalk and Danbury.

Chapter 3: Existing Transit

This chapter describes the current transit services that connect with the Danbury Branch, including Housatonic Area Regional Transit District (HART) bus service, Norwalk Transit District bus service and private/corporate shuttles. Shuttle services that connect with the MNR Harlem Line from the Danbury area are also described.

3.1 Housatonic Area Regional Transit District (HART)

The Housatonic Area Regional Transit District (HART) operates base fixed-route bus service, supplemented by evening and Sunday loop routes, commuter shuttles and one interagency regional route.[3] HART's regular service stops at the Danbury and Bethel Metro-North stations on the Danbury Branch and the Brewster Metro-North station on the Harlem Line. HART also provides shuttle service—designed to meet specific train trips—to the Brewster and Katonah Railroad stations on the Harlem Line in New York. The 7 Link, jointly operated by HART and the Norwalk Transit District, serves the Merritt 7, Wilton and Branchville Railroad stations on the Danbury Branch. HART fixed-route service is in place at the proposed Brookfield and New Milford Railroad stations.

HART fares are presented in Table 24 below. Free transfers are available between any two HART routes or The 7 Link at the Pulse Point in downtown Danbury. Metro-North UniTickets, which combine rail and local bus fares, are also accepted.

Table 24: HART Fare Structure

Regular Fare	
Adult	$1.25
Student	$0.90
Elderly and Disabled	$0.60
Child Under 5 Years	Free
Ten-Ride "Bye-Pass"	
Adult	$11.00
Student	$8.25
Elderly and Disabled	$5.50
Monthly Unlimited-Ride "Fast Pass"	
Adult	$45.00
Student	$32.00
Elderly and Disabled	$22.50

[3] Route and schedule information taken from materials last revised on October 6, 2008.

Base Service

HART operates base fixed-routes, all of which serve the HART Pulse Point in downtown Danbury, a few blocks from the Danbury Railroad station. Route 5 serves the Bethel Railroad station. Route 3 serves the Brewster Railroad station on the Harlem Line, but only during off-peak times. Route 7 operates near the proposed Brookfield and New Milford Railroad stations. All weekday service (except Route 4, which has off-peak service only) operates half-hourly from 6:00 AM to 9:00 AM (morning peak), hourly from 9:00 AM to 3:00 PM (off-peak), and half-hourly from 3:00 PM to 6:30 PM (afternoon peak). Saturday service operates hourly from 8:00 AM to 5:30 PM (except Route 4 which starts at 9:00 AM).

Route 1: Route 1 serves the northern part of Danbury and is the only route operating north of I-84 within Danbury. It serves Danbury Hospital, Danbury High School, the Town Park and the North Street Shopping Center.

Route 2: Route 2 operates along Newtown Road and Stony Hill Road in the northern part of Bethel. It serves several retail sites before terminating at the Big Y supermarket. Although Route2 operates in Bethel, it does not serve downtown or the Bethel Railroad station.

Route 3: Route 3 (Figure 13) serves retail, employment and residential complexes along Lake Avenue and Mill Plain Road (US 6) in the western part of Danbury. Peak trips terminate at the I-84 Exit 2 Park and Ride, while midday trips continue to the Brewster Railroad station. The route has five part-time deviations, including the Hilton Garden, DOW Chemical and Boehringer employment complexes. The West Side Campus of Western Connecticut State University is ¾ mile from the route but is not directly served.

Figure 13: HART Route 3

Route 4: Route 4 is a shorter, local version of Route 7, operating south of Brookfield during off-peak times. Route 4 serves Danbury Hospital and several medical and retail sites in Danbury and along US 202 in Brookfield. Service operates hourly from 9:00 AM to 3:00 PM on weekdays

and 9:00 AM to 5:30 PM on Saturdays. The Route 4 terminus is two miles south of Brookfield center and the proposed Brookfield Railroad station.

Route 5: Route 5 serves Main Street in Danbury before entering the town of Bethel via South Street or Coalpit Hill Road. The bus circulates within Bethel, including a stop at the Bethel Railroad station, and offers peak hour deviations designed for Danbury residents employed at Shepard's and the Francis J. Clarke Industrial Park. Route 5 is displayed in Figure 14.

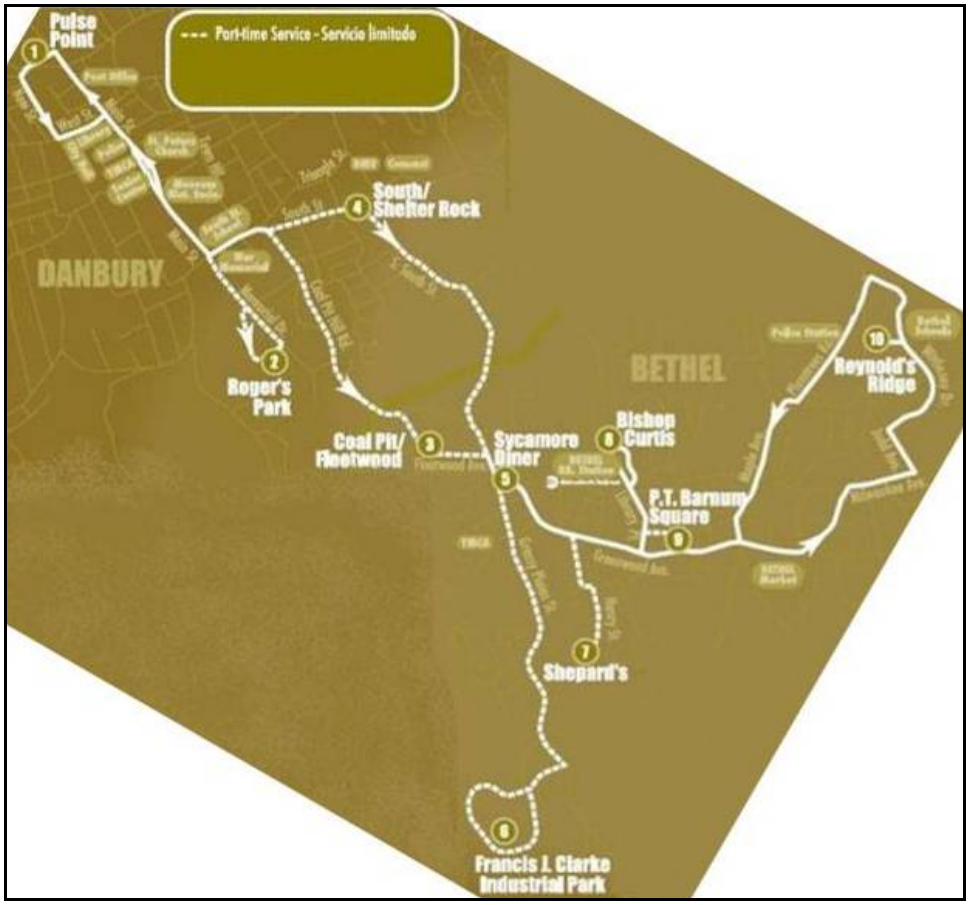


Figure 14: HART Route 5

Route 6: Route 6 travels along Lake Avenue and serves the Danbury Fair Mall, Danbury Square Mall and several employment complexes along Kenosia Avenue. Deviations serve additional employment complexes and the Danbury Municipal Airport.

Route 7: HART Route 7 operates primarily on US 7 and is not to be confused with "The 7 Link". It offers a combination of local and express service along Federal Road (US 202 and US 7) between downtown Danbury and New Milford. In addition to the HART Pulse Point and Danbury Railroad station, it serves two intermediate Park and Ride lots where connections may be made to the Danbury – Brewster Shuttle. Route 7 serves many locations by request only and provides local service at times when Route 4 is not operating. Route 7 operates adjacent to the proposed Brookfield and New Milford Railroad stations and terminates two miles north of New Milford center at the intersection of US 202 and Chestnut Land Road (CT Route 109).

Evening and Sunday Loop Routes

HART operates three evening and Sunday routes to cover most of its fixed-route service area by serving the Pulse Point and key destinations. The loops operate from 6:30 PM to 10:30 PM on weekdays, 5:30 PM to 10:30 PM on Saturdays and from 9:00 AM to 7:00 PM on Sundays.

Mall – Hospital Loop: This loop services the north and west sections of Danbury, including the Danbury Fair Mall, Danbury Hospital and Western Connecticut State University. Numerous retail and entertainment sites are located along the route.

New Milford Loop: Routes 4 and 7 are combined into the New Milford Loop, which provides local service to numerous retail and entertainment locations and residential areas along US 202 and US 7 in Brookfield and New Milford. The New Milford Loop serves the locations of the proposed Brookfield and New Milford Railroad stations.

South Street – Newtown Road Loop: This loop services the south and east sections of Danbury, including Western Connecticut State University, and the town of Bethel. Numerous retail and entertainment sites are located along the route.

Commuter Shuttles

HART operates shuttles to the Brewster and Katonah Railroad stations on the Metro-North Harlem Line in New York. Unlike base service, shuttles serve only a few locations such as park and rides and are timed to meet specific trains. The Brewster and Katonah shuttles provide Housatonic Valley residents an opportunity to use the faster and more frequent direct commuter rail service on the Harlem Line. Shuttle fares are identical to fixed-route fares, and Metro-North UniTickets are accepted.

Danbury – Brewster Shuttle: The Brewster Shuttle is designed to serve New York-bound Metro-North passengers. Service operates on weekdays only between Danbury and the Brewster (New York) Railroad station. In the peak hour and direction, trips serve four park and ride lots on I-84 before terminating at the Brewster station. Midday trips and some reverse peak trips omit the two park and ride lots in Danbury and instead serve the HART Pulse Point, Danbury Fair Mall, I-84 park and ride lots and the Brewster station.

For trips to New York, the shuttle meets eight morning peak departing trains, eight midday departing trains and six evening peak departing trains. For trips from New York, the shuttle meets four morning peak arriving trains, six midday arriving trains and eleven evening peak arriving trains. Riders may transfer for free to Putnam Area Rapid Transit (PART) Route 1 at the Brewster Railroad station.

Service frequency is approximately 15 to 20 minutes in the peak period and direction and hourly in the midday period. The shuttle operates from 5:19 AM to 9:10 PM from Danbury to the Brewster Railroad station, and from 5:50 AM to 9:38 PM from the Brewster Railroad station to Danbury. The shuttle served an average of 268 daily riders, plus 60 midday riders (when trips do not serve Brewster Railroad station) in the month of November 2008. This represents a 4% increase over November 2007.

Route 3 provides additional midday service to the Brewster Railroad station and the Exit 1 and Exit 2 Park and Ride lots on weekdays; on Saturday Route 3 terminates at the Exit 2 Park and Ride and does not serve Brewster.

Ridgefield – Katonah Shuttle: The Katonah Shuttle is designed to bring passengers from park and ride lots in the Route 35 corridor to the Katonah (New York) Railroad station during peak commuting times. The shuttle stops at the Jessie Lee Memorial Church and Prospect Ridge lots in Ridgefield, CT; the Municipal Lot in South Salem, NY; and the Katonah Railroad station. Excepting the last three evening trips to Ridgefield, which serve the HART Pulse Point by request, the Katonah Shuttle is the only HART route which does not connect to any other HART routes.

For trips to New York, the shuttle meets seven morning departing trains and two evening departing trains. For trips from New York, the shuttle meets one morning arriving train and ten evening arriving trains. Riders may transfer for free to Westchester County's Bee-Line Bus Route 19 at the Katonah Railroad station.

Service frequency is approximately 20 to 25 minutes during the peak period in both directions, on weekdays only. The span of service to Katonah is 5:46 AM to 8:24 AM and 5:26 PM to 8:19 PM. The span of service to Ridgefield is 6:12 AM to 7:44 AM and 4:59 PM to 8:54 PM. The shuttle served an average of 201 daily riders in the month of November 2008 (Table 25). This represents a 13% increase over November 2007.

Table 25: Metro-North Harlem Line Shuttle Ridership, November 2008

Ridership	Danbury - Brewster				Katonah
	Midday Local	Peak Shuttle	Total		Trips
Total Riders (November 2008)	1147	5087	6234		3817
Average Daily Riders	60	268	328		201
Riders Per Trip	6.7	14.9	12.2		15.5

Source: Housatonic Area Regional Transit

Regional Routes

The 7 Link: HART operates this peak-hour route in conjunction with the Norwalk Transit District. The Connecticut Transportation Strategy Board contributes funding for the joint venture. The route provides a connection between the two transit districts and serves major retail and employment destinations along US 7 in Danbury, Ridgefield, Wilton and Norwalk. The Merritt 7, Wilton and Branchville Railroad stations are also served along the route. Bidirectional service is provided on weekdays from 6:05 AM to 11:50 AM and from 3:00 PM to 8:45 PM.

The one-way base fare for The 7 Link is identical to regular HART and WHEELS fares (except no discounted student fare is offered). Passengers may use fare media from either agency. Riders may transfer without charge to HART, WHEELS, CT Transit's Route 41 or the Coastal Link. The 7 Link averaged 276 daily riders in the month of September 2008, a significant increase compared to 2002 (Table 26).

Table 26: Average Daily Boardings, The 7 Link

Route	Time Period									
	Fiscal Year							2008		
	2002	2003	2004	2005	2006	2007	2008	Jul	Aug	Sept
7 Link	119	146	156	177	217	209	229	262	268	276

Source: Norwalk Transit District

3.2 Norwalk Transit District (NTD)

The Norwalk Transit District operates base weekday service ("WHEELS"), evening and Sunday routes (called "shuttles"), commuter rail shuttles, and regional interagency "Link" services.[4] Base routes operate on weekdays until 7:35 PM and on Saturdays until 6:35 PM. Two shuttle routes operate during evenings and on Sundays to serve the most popular destinations. Full-time service is available on the Coastal Link to Milford and CT Transit Route 41 to Stamford.

NTD fares are presented in Table 27. Transfers to and from CT Transit, Greater Bridgeport Transit Authority (GBTA), Milford Transit and The 7 Link are free. CT Transit, GBTA tokens and Metro-North UniTickets are also accepted.

Table 27: NTD Fare Structure

Regular Fare	
Adult	$1.25
Elderly and Disabled	$0.60
Child Under 5 Years	Free
Tokens	
Adult 10 rides	$10.50
Adult 20 rides	$21.00
Adult 40 rides	$42.50
Punch Card	
10-ride, Adult	$10.50
10-ride, Elderly and Disabled	$6.00
40-ride, Adult	$42.00

Base Service

There are 12 base fixed routes operating on weekdays and Saturdays (Figure 15). All of these routes serve the WHEELS Hub in downtown Norwalk. Routes 10, 11, and 12 serve the South Norwalk railroad station, the southern terminus of the Danbury Branch. Route 3 and The 7 Link serve the Merritt 7 railroad Station. Other routes serve Rowayton and East Norwalk railroad stations, but these stations are located on the New Haven Line and are not part of the Danbury Branch.

[4] Route and schedule information taken from materials last revised on December 8, 2008.

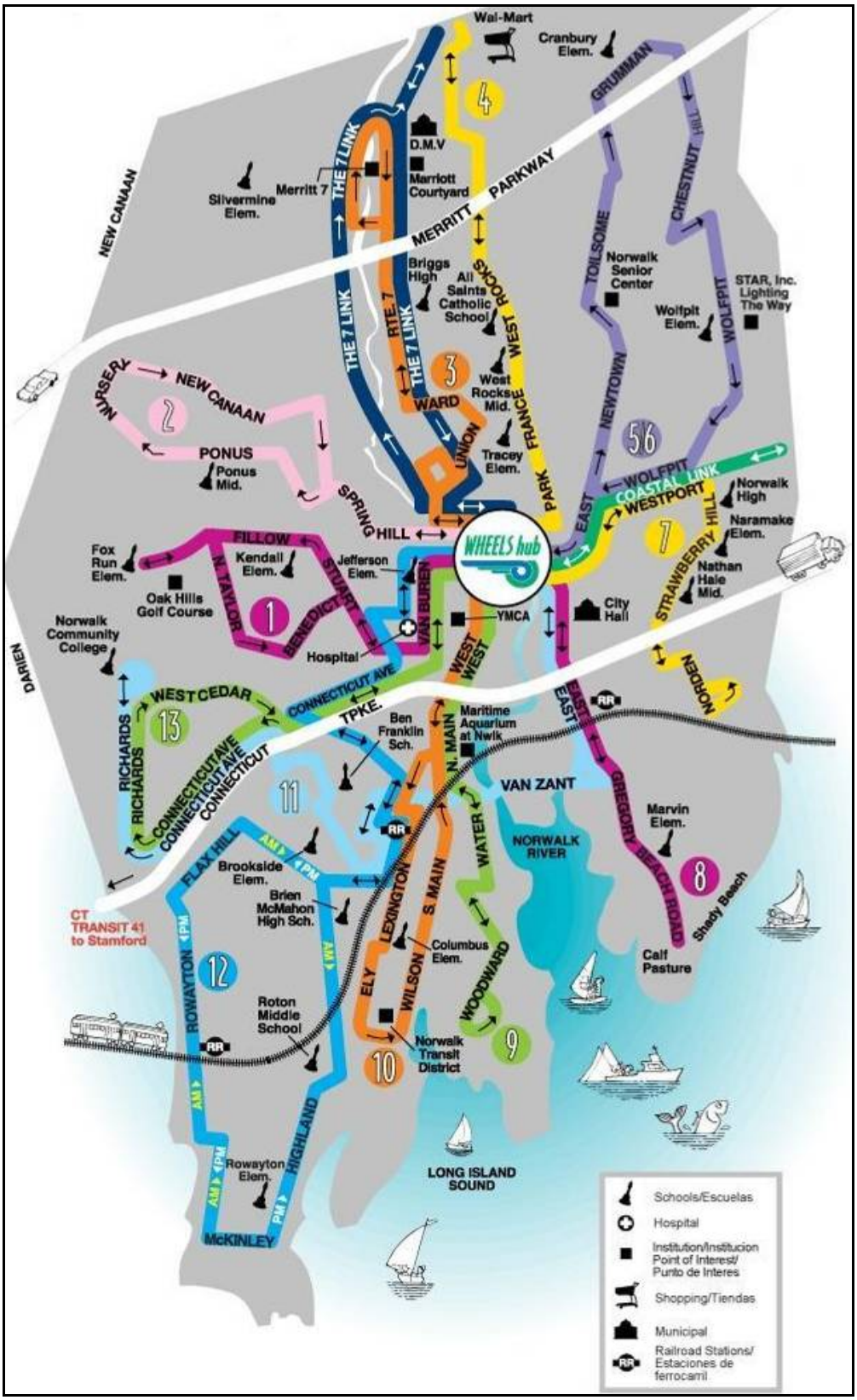


Figure 15: Norwalk Transit District Route Map

Route 3: Route 3 serves north-central Norwalk and terminates at the Merritt 7 railroad station on Glover Avenue, just north of the Merritt Parkway. Service operates every 20 minutes on weekdays from 5:46 AM to 7:35 PM and every 40 minutes on Saturdays from 6:40 AM to 6:55 PM. Route 3 is interlined with Route 10, providing a one-seat ride between the Merritt 7 area and the South Norwalk Railroad station.

Route 10: Route 10 serves the South Norwalk rail station before terminating at the NTD office in the southern part of the city. Service operates every 20 minutes on weekdays from 5:51 AM to 7:35 PM and every 40 minutes on Saturdays from 6:20 AM to 6:55 PM. The route is interlined with Route 3.

Route 11: Route 11 serves the South Norwalk railroad station before serving Connecticut Avenue and terminating at Norwalk Community College in the western part of the city. Service operates every 40 minutes on weekdays from 5:40 AM to 8:15 PM and on Saturdays from 6:20 AM to 7:35 PM.

Route 12: Routes 12 serves the South Norwalk Railroad station before making a loop in the city's southwest corner, which includes the Rowayton Railroad station. Morning service operates every 80 minutes in the clockwise direction on weekdays from 5:37 AM to 12:55 PM and on Saturdays from 6:57 AM to 12:55 PM. Afternoon service operates every 80 minutes in the counterclockwise direction from 1:00 PM to 7:35 PM.

Evening and Sunday Service

Two routes operate hourly during evenings and on Sundays in the most popular portions of the base service area. The Connecticut Avenue Shuttle serves the South Norwalk railroad station directly, while the Main Avenue Shuttle stops nearby and also serves the Merritt 7 railroad station. The schedules for these bus routes are not coordinated with the rail schedule.

Both routes pass through the WHEELS Hub, where riders can transfer without charge between routes or to the Coastal Link and CT Transit Route 41 to Stamford. The evening and Sunday routes operate on weekdays from 7:37 PM to 10:32 PM, on Saturdays from 6:37 PM to 9:32 PM, and on Sundays from 8:40 AM to 6:40 PM.

Connecticut Avenue Shuttle: In addition to the South Norwalk railroad station and WHEELS Hub, the Connecticut Avenue shuttle serves the South Norwalk neighborhood, Norwalk Hospital, Norwalk Community College and several retail and entertainment destinations. This route is shown in Figure 16.

Main Avenue Shuttle: In addition to the Merritt 7 railroad station and WHEELS Hub, the Main Avenue shuttle serves the South Norwalk neighborhood and several retail and employment destinations. This route is shown in Figure 17.

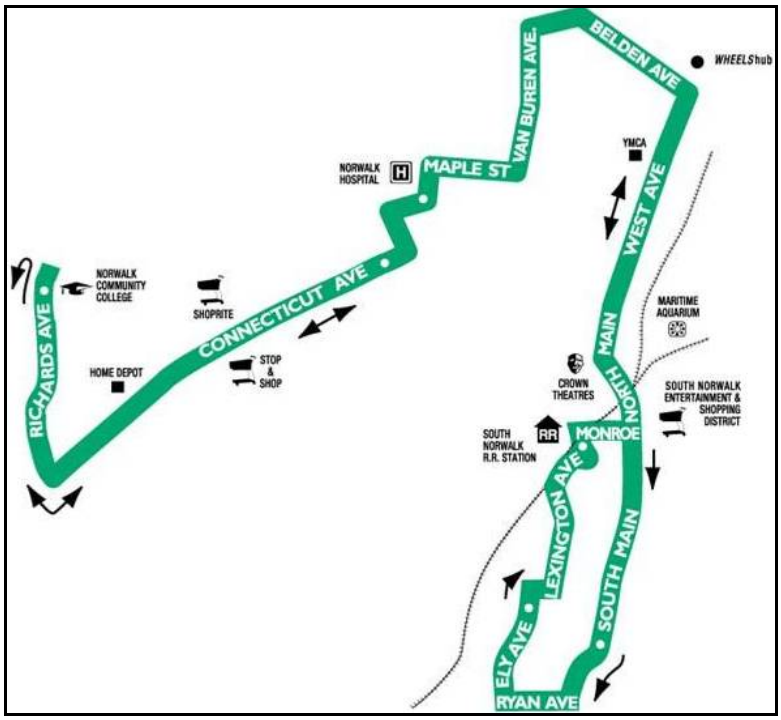


Figure 16: Connecticut Avenue Shuttle (NTD)

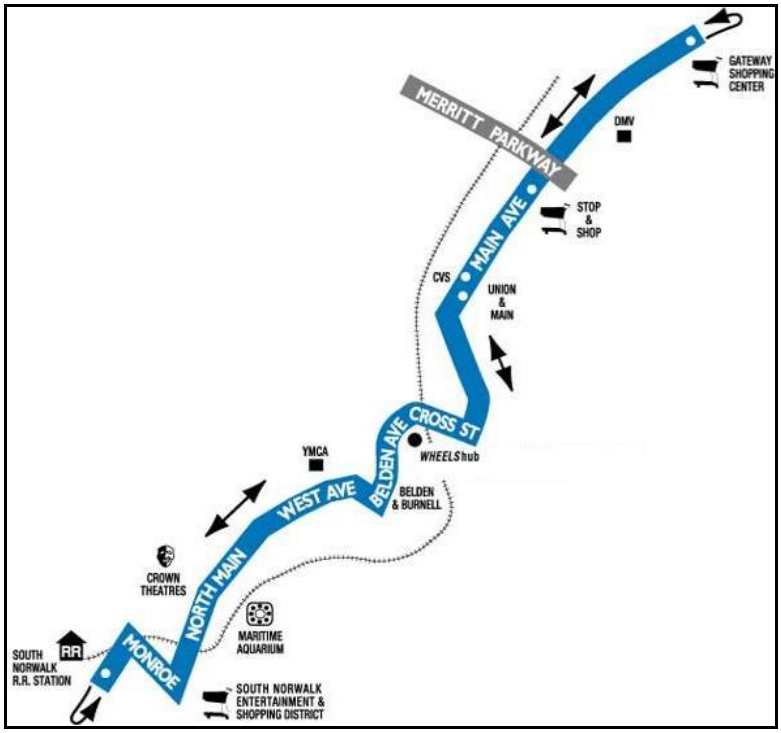


Figure 17: Main Avenue Shuttle (NTD)

Commuter Shuttles

NTD offers three commuter shuttles and one train station park and ride shuttle, all operating only during peak periods on weekdays. The commuter shuttles provide extensive coverage for trains

arriving and departing the South Norwalk Railroad station. The Merritt 7/Glover Avenue shuttle also serves the Merritt 7 Railroad station. Base routes provide additional service to both stations and all of the sites they serve at non-peak hours, although the base route schedules are not coordinated with the train schedules. Shuttle fares are identical to base route fares, and Metro-North UniTickets are accepted. Table 28 shows the average daily ridership of these shuttles.

Table 28: Average Daily Boardings, NTD Commuter Shuttles

Commuter Shuttle	Time Period									
	Fiscal Year							2008		
	2002	2003	2004	2005	2006	2007	2008	Jul	Aug	Sept
Merritt 7/Glover Ave	70	83	106	167	205	194	228	311	309	318
10/20 Westport Road	34	38	40	40	44	56	73	88	85	91
Norwalk Hospital/Belden Ave	81	93	101	112	118	117	114	141	132	134

Source: Norwalk Transit District

Merritt 7/Glover Avenue Commuter Shuttle: The Merritt 7/Glover Avenue Commuter Shuttle provides peak hour service from the South Norwalk Railroad station to the Merritt 7 employment complex and other nearby employment centers. The shuttle served an average of 318 daily riders in the month of September 2008. Each one-way trip takes approximately 20 minutes. Morning trips operate every 10-30 minutes from 6:50 AM to 9:37 AM, meeting all peak trains arriving from New Haven (6), Fairfield (2) and New York (5). Afternoon trips operate every 12-30 minutes from 3:36 PM to 6:30 PM, meeting all peak trains to New Haven (7) and New York (6). An additional trip arrives at 7:30 PM to meet later trains to New York and New Haven. At the Merritt 7 railroad station, the shuttle meets two of the four morning trains arriving from Danbury and three of the six trains to Danbury.

Additional service is offered, although not coordinated with train schedules:

- WHEELS routes 10 and 3, through-routed at the WHEELS Hub, provide service every 20 minutes from the South Norwalk Railroad station to the Merritt 7 area.
- The 7 Link provides hourly service from the WHEELS Hub to the Merritt 7 area during peak hours.

10/20 Westport Road, Wilton Commuter Shuttle: The 10/20 Westport Road, Wilton Commuter Shuttle provides peak hour service from the South Norwalk Railroad station to the Route 7 corridor employment complexes at 50 Danbury Road and 10/20 Westport Road in Wilton. The Department of Motor Vehicles in northern Norwalk is also served by this shuttle, which averaged 91 daily riders in the month of September 2008. About 3 percent of operating expenses are provided by Golf Digest and News America Marketing, employers at 10/20 Westport Road.

Each one-way trip is scheduled to take 20 minutes. Morning trips operate approximately 30 minutes from 7:38 AM to 9:30 AM, meeting four peak trains arriving from New Haven, two from Fairfield, three from Danbury, and four from New York. Afternoon trips operate every 20-40 minutes from 4:35 PM to 6:35 PM, meeting four peak trains to New Haven, three to Danbury, and four to New York.

The 7 Link also serves these destinations hourly during peak hours, although a transfer is required at the WHEELS Hub for service to or from the South Norwalk Railroad station.

Norwalk Hospital/Belden Avenue Commuter Shuttle: The Norwalk Hospital/Belden Avenue Commuter Shuttle provides peak hour service from the South Norwalk Railroad station to Norwalk Hospital and downtown Norwalk. The shuttle served an average of 134 daily riders in the month of September 2008. Each one-way trip is scheduled to take ten minutes. Morning trips operate every 15-20 minutes from 6:47 AM to 9:24 AM, meeting all peak trains arriving from Danbury (5), New Haven (6), Fairfield (2) and New York (5). Afternoon trips operate every 18-40 minutes from 3:48 PM to 6:30 PM, meeting three of the six peak trains to Danbury and all peak trains to New Haven (7) and New York (6).

Additional service is offered, although not coordinated with train schedules:

- WHEELS Route 12 provides service every 80 minutes from the South Norwalk Railroad station to both Norwalk Hospital and Belden Avenue
- WHEELS routes 10 and 11 each provides service every 40 minutes to Belden Avenue (adjacent to the WHEELS Hub), with a timed transfer required for service to Norwalk Hospital.

Maritime/SONO Train Station Shuttle: The Maritime/SONO Train Station Shuttle, initiated in October 2008, is designed to bring rail commuters from the Maritime Garage on North Water Street to the South Norwalk Railroad station. Incoming rail passengers may also use the shuttle to access employment sites along North Water Street. The shuttle departs each end about every ten minutes from 6:00 AM to 9:15 AM and from 3:45 PM to 7:45 PM, for the five-minute one-way trip. No fare is charged for riders with a parking stub or UniTicket; others are charged the full fare.

Additional service is offered, although not coordinated with train schedules:

- WHEELS Route 11 provides service every 40 minutes from the South Norwalk railroad station to the corner of Washington Street and North Water Street.

Regional Routes

The 7 Link: NTD operates The 7 Link in conjunction with HART. This peak hour route provides an interagency connection and serves major retail and employment destinations along US 7 in Danbury, Ridgefield, Wilton and Norwalk. Three intermediate Metro-North stations at Merritt 7, Wilton and Branchville, are also served. The Route 7 Link is described in more detail above in section 3.1.

CT TRANSIT Route 41: The Stamford Division of CT TRANSIT operates Route 41 from downtown Stamford to the WHEELS Hub, serving Norwalk Community College (served on 41A trips) and the Darien and Stamford Railroad stations on the Metro-North New Haven Line. Service operates every 20 to 60 minutes on weekdays from 5:10 AM to 12:28 AM, every 30 minutes on Saturdays from 5:30 AM to 10:37 PM, and every 30 minutes on Sundays from 8:00 AM to 7:28 PM. Additional service (41B) operates between Stamford and Norwalk Community College only; some of these trips operate express via I-95 and omit Darien Railroad station.

Coastal Link: The Coastal Link is a joint venture between NTD, GBTA and Milford Transit District to provide service along US 1 between the WHEELS Hub in downtown Norwalk and the CT Post Mall in Milford. The route serves numerous retail and employment destinations in the dense US 1 corridor and the Railroad stations at Fairfield, Bridgeport, Stratford and Milford (on the New Haven Line). Service operates every 20 to 60 minutes on weekdays from 5:00 AM to 12:00 AM, every 30 minutes on Saturdays from 5:20 AM to 12:00 AM, and hourly on Sundays from 7:30 AM to 8:30 PM.

3.3 Corporate Shuttles

Merritt 7 Corporate Park operates shuttle service from the Merritt 7 Railroad station to places of employment in and around the Merritt 7 Corporate Park, an Albert D. Phelps, Inc. property. The shuttle meets the four morning trains arriving from Danbury at 6:59, 7:31, 8:03 and 8:33 AM and the 9:00 AM train arriving from South Norwalk and New York. In the evening, the shuttle meets the 4:21, 5:38 and 6:20 PM Danbury-bound departures.[5] There is also a 5:52 PM departure to South Norwalk. Passengers may wait in the shuttle vehicle until their train arrives. Passenger counts in the first week of December 2008 showed an average of 40 riders per day (Table 29).

Table 29: Daily Boardings, Merritt 7 Corporate Park Shuttle, December 2008

	Dec 1	Dec 2	Dec 3	Dec 4	Dec 5
Boardings	45	33	38	45	39

Source: A. D. Phelps

Metro-Pool sets up private and corporate shuttles for employers and employees in an attempt to reduce the number of people traveling alone to work (especially along US 7). According to Metro-Pool, there are currently no private or corporate shuttles that serve stations along the Danbury Branch Line but some shuttles serve the South Norwalk Railroad station. One private shuttle, from Cendant Mobility, does operate as both an inter-site and a train shuttle, but acts as a train shuttle only upon request.

3.4 Ride Sharing

Metro-Pool provides free commuter services to employers and commuters with the support of the Connecticut and New York Departments of Transportation. It administers commuting programs for approximately 300 companies, with customized employer and employee incentive programs.

Metro-Pool also facilitates carpool and vanpool ride matching, provides commuting advice to individuals who do not have employer-based programs available to them. Vanpools and carpools administered by Metro-Pool do exist in the Housatonic Valley, although no vanpools serve Danbury Line Metro-North Railroad stations.

[5] This information was received on January 14, 2009 from Merritt 7 Corporate Park. The schedule was last revised in October 2008 to reflect the Metro-North Railroad winter schedule.

Chapter 4: Existing Road Network

4.1 Major Roadways in Corridor

Route 7 from Norwalk to New Milford is a heavily traveled road with peak period congestion. Traffic volume at various points along the corridor as well as accident information is discussed in the following section. Route 7 is a 2-lane surface road for most of its length, but has two expressway sections in Norwalk in Danbury. Route 7 runs concurrently with I-84, U.S. 6 and U.S. 202 in Danbury. There are also sections of the Route 7 corridor in southern New Milford that have been widened to 4 lanes. Major roadways that intersect the Route 7 corridor include I-95 and the Merritt Parkway (Rt 15) in Norwalk, Route 106 in Wilton, Routes 57, 107, and 53 in Branchville/Georgetown, Routes 102, 33 and 35 in Ridgefield, and I-84 and Routes 6 and 202 in Danbury.

The Route 7 corridor, a major commuting corridor in southwest Connecticut, experiences peak period congestion at several points along its length. Travel speeds at points during the peak period range from highway speeds of over 55 MPH down to barely moving at under 20 MPH. Congestion mitigation is a primary goal for the roadway and efforts have been made to increase travel speeds by constructing new highway sections and reducing the number of vehicles on the roadway, among other efforts. This section quantifies travel speeds along the roadway in the corridor.

The South Western Regional Planning Agency (SWRPA) conducted travel time monitoring along the Route 7 corridor from Danbury to South Norwalk in the spring of 2009. From this data collection effort, average travel speeds for segments of the roadway were calculated. Figure 18 and Figure 19 show travel speeds by segment in the southbound morning peak and the northbound afternoon peak periods. Table 30 and Table 31 show travel times and travel speeds between Danbury and Norwalk during the same periods. In general, speeds less than 40 MPH are more frequent than speeds over 50 MPH.

In the morning peak period in the southbound direction, the congested areas are worst in central Danbury, then in central Wilton, and at the Wilton and Norwalk border. There are other smaller pockets of slower travel speeds at the border of Ridgefield and Wilton and in downtown Norwalk. In the northbound direction during the afternoon peak period, the slowest travel speeds are found at the north end of Norwalk and in central Wilton. Other slow pockets are found at the border of Wilton and Ridgefield and in central Danbury. When looking at both peak periods together, the section of Route 7 with the largest amount and longest stretch of the slowest travel speeds is located throughout Wilton.

Currently several attempts are underway to ease congestion and additional efforts are planned for the future. Route 7 is being widened in Wilton, Ridgefield and Danbury. Also, a Route 7 Bypass is under construction in Brookfield, which will extend this expressway section to the New Milford line. The Bypass will dramatically decrease traffic volumes in this region north of Danbury. Historically, plans for a US 7 Expressway to replace the entire length of existing Route 7 from Danbury to Norwalk have circulated through state and local government, but are currently on hold.

Alternatives to single vehicle occupancy are also available in the corridor. Park and ride lots and bicycle and pedestrian facilities are described below. Transit alternatives for both express bus and local bus service are described in the discussion of individual rail stations. Overall, Housatonic Area Regional Transit (HART) and Norwalk Transit District (NTD) operate local bus service from most rail stations into the surrounding communities. Also, HART and NTD operate Route 7 Link regional bus service in the Route 7 corridor from Danbury to Norwalk.

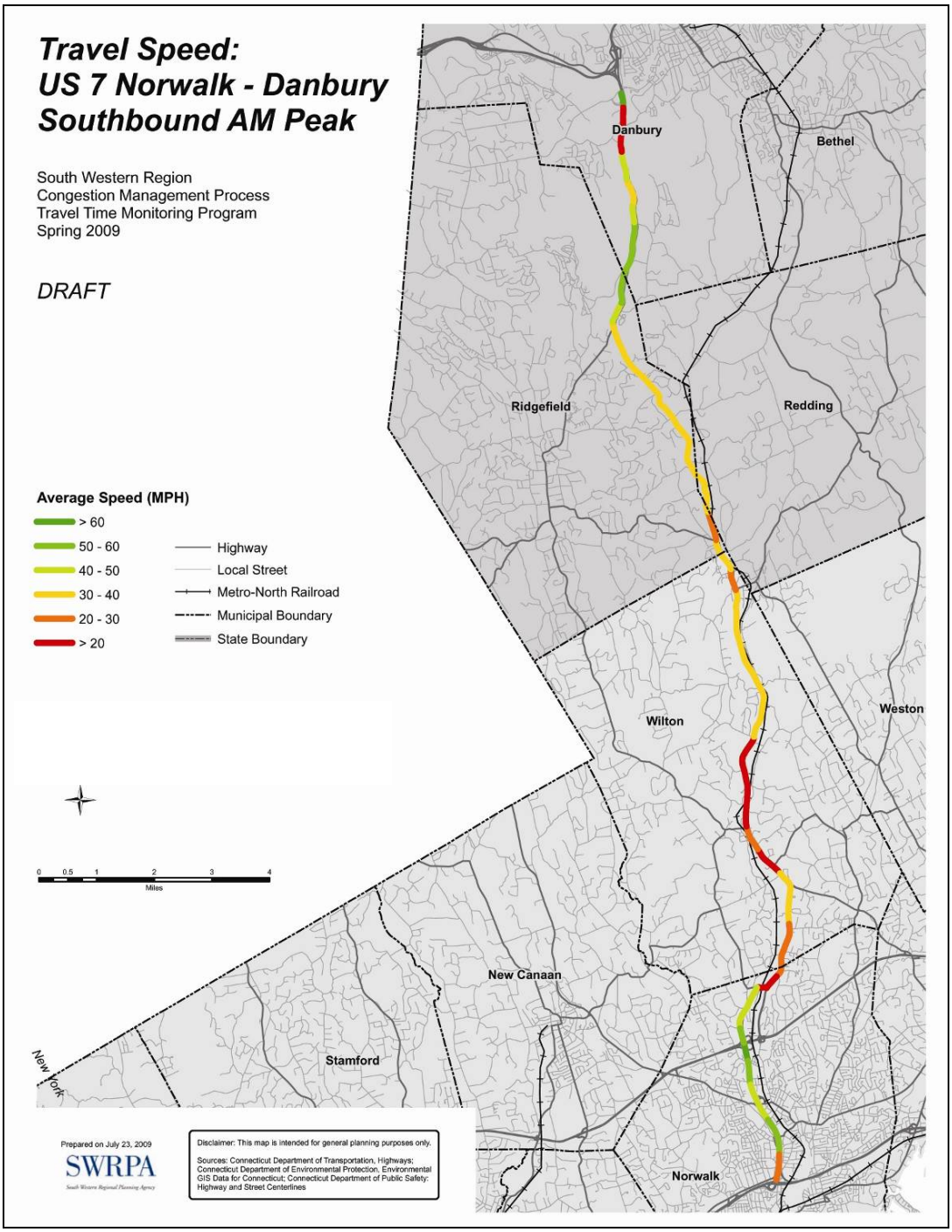


Figure 18: Travel Speed, Norwalk to Danbury (southbound)

Table 30: Travel Time and Speed, Norwalk to Danbury (southbound)

Travel Time (minutes.seconds)			Speed (MPH)		
Mean	Minimum	Maximum	Mean	Minimum	Maximum
43.48	31.27	55.32	28	22	39

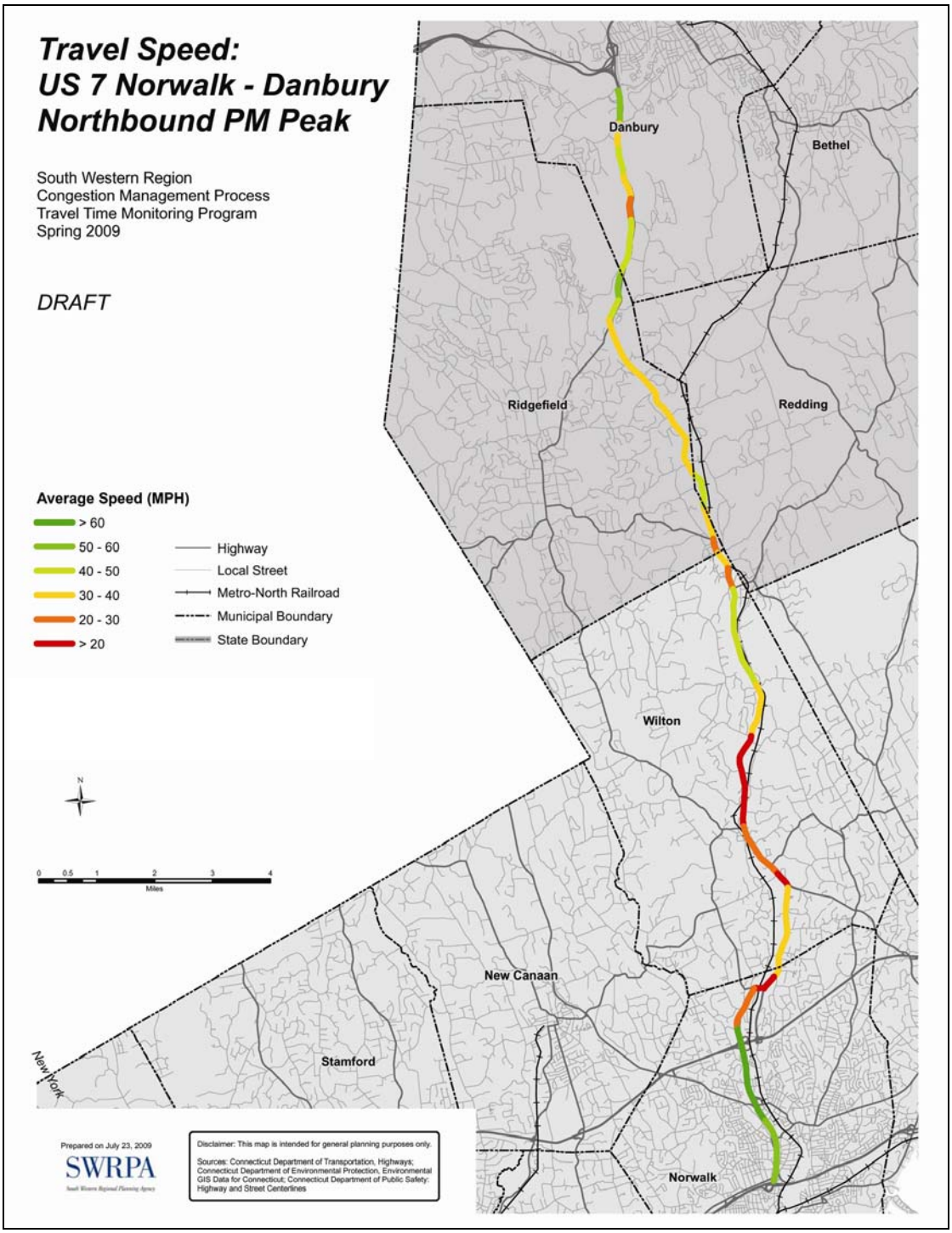


Figure 19: Travel Speed, Norwalk to Danbury (northbound)

Table 31: Travel Time and Speed, Norwalk to Danbury (northbound)

Travel Time (minutes.seconds)			Speed (MPH)		
Mean	Minimum	Maximum	Mean	Minimum	Maximum
42.18	32.32	63.41	29	19	38

4.2 Major Roadways in Vicinity of Danbury Branch Stations

The Danbury Branch Line currently serves seven stations running northward along Route 7 from the South Norwalk Station: Merritt 7 (Norwalk), Wilton, Cannondale (Wilton), Branchville (Ridgefield), Redding, Bethel, and Danbury. This chapter summarizes the current situation regarding highway conditions and plans for each of the existing stations.

The following information was received from the Connecticut Department of Transportation (ConnDOT), South Western Regional Planning Agency (SWRPA), Housatonic Valley Council of Elected Officials (HVCEO), private developers, and the towns of Norwalk, Wilton, Ridgefield, Redding, Bethel, and Danbury. From ConnDOT, two types of roadway information were collected for all of the local intersections used to access the existing stations and all proposed station sites. These types of data were accident data for the period October 1, 2003 to September 30, 2007 and Average Daily Traffic Volume (ADT) for 2008, 2015, and 2030.

South Norwalk Station

The South Norwalk Rail Station is located at 29 Monroe Street and 1 Chestnut Street (Figure 20). Parking is operated by the City of Norwalk and, as of September 2006, had 754 spaces. The parking rates are $70 monthly and $7 daily. There are 160 people on the waiting list, with an average wait time of 12-18 months.

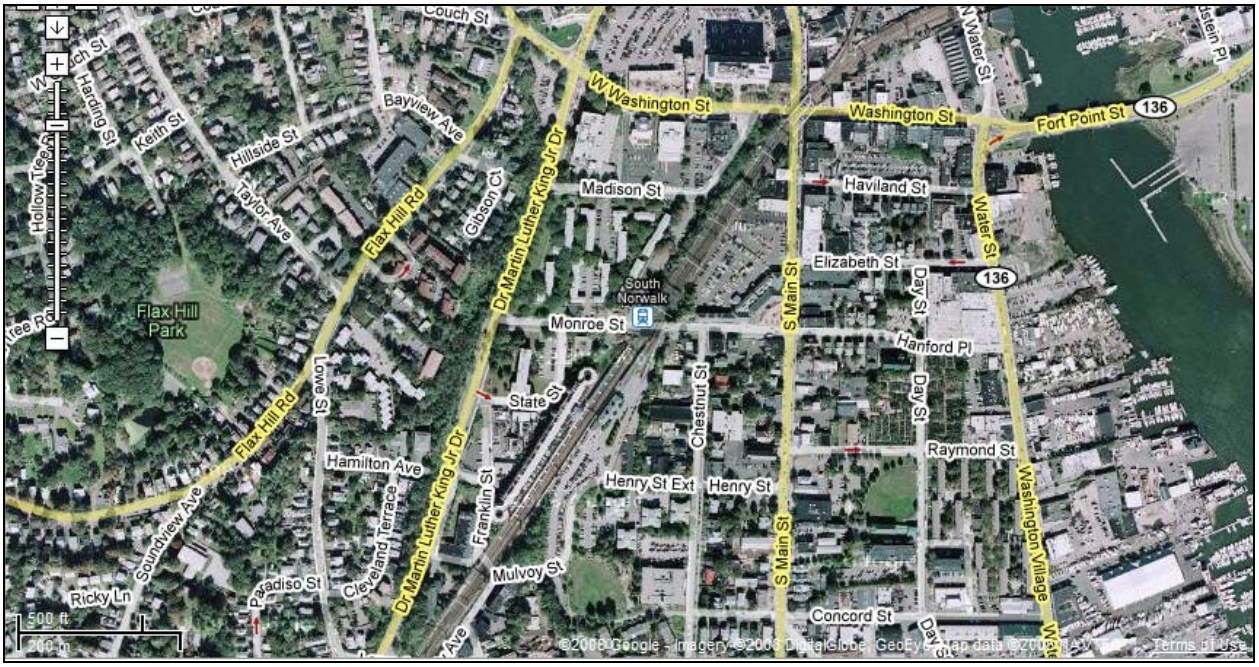


Figure 20: South Norwalk Station Location

Traffic Conditions

The average daily traffic volumes (ADT) for roads in the vicinity of South Norwalk Station in 2008 are listed in Table 32.

Table 32: Traffic at South Norwalk Station

Road	Segment	2008 ADT
Monroe St	Between S Main St & Dr Martin Luther King Jr Dr	5,800
S Main St	Between Monroe St & Raymond St	9,800
Dr Martin Luther King Jr Dr	Between Monroe St & State St	13,100

Accident data from 2003 to 2007 was collected from ConnDOT for all intersections used to access South Norwalk Station. Table 33 lists the numbers of accidents at each of these intersections over the period. Figure 21 shows this data on a map. The intersection closest to the station, Monroe Street & Chestnut Street, recorded the highest number of accidents over the period. Monroe Street at MLK Drive and State Street also recorded high numbers of accidents.

Table 33: Accidents Recorded near South Norwalk Station, 10/1/03 to 9/30/07

Intersection	# Accidents
Monroe St & Chestnut St8	18
Monroe St & Dr Martin Luther King Jr Dr	14
Monroe St & State St	13
Chestnut St & Henry St Ext	8
Henry St & S Main St	8
Bates Ct & Dr Martin Luther King Jr Dr	6
RR Depot	6
Monroe St & S Main St	5
Bates Ct & Franklin St	1
Franklin St & Dr Martin Luther King Jr Dr	0
Mulvoy St & Ely St	0
Mulvoy St & Franklin St	0

Figure 21: Traffic Conditions, South Norwalk Station

Future Development/Improvement Projects

According to the Norwalk Department of Public Works, there are no planned or programmed developments or improvements in the immediate vicinity of the South Norwalk Rail Station, but there are several projects that will impact traffic at the station. These include a 300-unit apartment building near Burnell Boulevard and Belden Avenue, railroad bridge construction between North Water Street and West Avenue, and residential and mixed use redevelopment at the Isaac Street parking lot on the south side of Wall Street.

The City of Norwalk also has planned road paving improvements, but none in the vicinity of the Rail Station.

Merritt 7 Station

The Merritt 7 Rail Station is located at the Merritt 7 Business Complex at 1 Glover Ave in Norwalk. Figure 22 provides an aerial view of the station and its surroundings. The parking at the station is privately operated and has 88 available spaces. There is no charge for the parking at the station and no waiting list.

Figure 22: Merritt 7 Station Location

Traffic Conditions

The average traffic volumes for the intersections that are used to access the Merritt 7 Station are listed in Table 34. The table includes 2008 volumes and projected volumes for 2015 and 2030. The table includes daily totals as well as morning peak volumes.

On Route 7 in the vicinity of the Merritt 7 Station, there are approximately 20,000 vehicles using that stretch of road on a daily basis in 2008. This number is expected to surpass 25,000 vehicles by 2030. During the morning peak period, there are approximately 2,500 vehicles on Route 7 in the vicinity of the Merritt 7 Station. On Glover Avenue, the road on which the station is located, there are approximately 5,000 daily vehicles in the northbound direction and 2,500 vehicles in the southbound direction in 2008, with 600 and 400 vehicles, respectively, during the morning peak. These traffic volumes are also expected to increase through 2030.

Table 34: Traffic at Merritt 7 Station

Merritt 7 Station (access from North/Grist Mill)							
Overall Description of Station Access	**Name of Road**	**2008 ADT**	**AM Peak**	**2015 ADT**	**AM Peak**	**2030 ADT**	**AM Peak**
Main Road	**US Route 7 (S of intersection)**	19,900	2,320	21,900	2,550	24,400	2,850
Station Road	**Glover Avenue**	2,450	430	2,700	470	3,000	520
Turns into Station Road	**from East**	550	110	600	120	700	140
from Grist Mill Rd	**from West**	1,900	320	2,100	350	2,300	380
Turns out of Station Road	**to East**	550	80	600	90	700	180
onto Grist Mill Rd	**to West**	1,300	100	1,400	110	1,600	120
Merritt 7 Station (access from South/Rt 719)							
Overall Description of Station Access	**Name of Road**	**2008 ADT**	**AM Peak**	**2015 ADT**	**AM Peak**	**2030 ADT**	**AM Peak**

Main Road	**US Route 7 (N of intersection)**	19,600	2,460	21,900	2,700	23,800	3,020
Main Road	**US Route 7 (S of intersection)**	21,800	2,460	24,000	2,670	26,600	3,000
Station Road	**Glover Avenue**	5,000	590	5,500	650	6,200	660
Turns into Station Road	**from South**	3,700	450	4,100	500	4,600	490
from Rt 719	**from North**	1,300	140	1,400	150	1,600	170
Turns out of Station Road	**to South**	3,700	100	4,100	110	4,500	150
onto Rt 719	**to North**	1,300	10	1,400	10	1,600	10

Traffic counts for the proposed interchange improvement for Routes 7, 15, and 719 in Norwalk were also provided for 2007, 2010, and 2030 build and no build scenarios. Table 35 details the average daily traffic volumes for the interchange improvement.

The numbers do not differ greatly between the two estimates, but the interchange improvement numbers do provide greater detail for the intersections of interest.

Table 35: Traffic at Merritt 7 Station for Rt. 7/15/719 Interchange Improvement

Overall Description of Station Access	**Name of Road**	*NO BUILD*									*BUILD*		
		2007 ADT	**AM Peak**	**PM Peak**	**2010 ADT**	**AM Peak**	**PM Peak**	**2030 ADT**	**AM Peak**	**PM Peak**	**2030 ADT**	**AM Peak**	**PM Peak**
Main Road	**Rt 719 (N of intersection, southbound)**	8,800	530	1,400	9,200	590	1,730	10,800	670	1,960	9,600	590	1,760
	Rt 719 (N of intersection, northbound)	9,300	1,610	800	8,900	1,560	750	10,200	1,770	860	9,200	1,520	790
	Rt 719 (S of intersection, southbound)	11,200	490	1,870	11,800	560	2,240	13,700	650	2,530	16,900	1,290	2,700
	Rt 719 (S of intersection, northbound)	11,700	2,050	860	11,500	1,980	820	13,200	2,250	940	10,300	1,540	840
	Rt 719 (at intersection, southbound)	7,500	390	1,380	7,800	440	1,710	9,200	500	1,940	7,300	350	1,660
	Rt 719 (at intersection, northbound)	8,000	1,600	750	7,500	1,550	700	8,600	1,760	790	6,300	1,250	630
Station Road	**Glover Avenue (westbound)**	5,000	590	130	5,400	580	140	6,200	660	170	6,200	660	170
Station Road	**Glover Avenue (eastbound)**	5,000	110	540	5,400	130	580	6,100	160	660	6,100	130	670
Turns into Station Road	**from South**	3,700	450	110	4,000	430	120	4,600	490	150	3,500	280	80
from Rt 719	**from North**	1,300	140	20	1,400	150	20	1,600	170	20	1,600	170	20
Turns out of Station Road	**to South**	3,700	100	490	4,000	120	530	4,500	150	590	4,500	120	600
onto Rt 719	**to North**	1,300	10	50	1,400	10	50	1,600	10	70	1,600	10	70

Table 36 lists the number of accidents that occurred at the intersections used to access the Merritt 7 Station from 2003 to 2007. The highest numbers of accidents occurred on Route 15 ramps, at Exit 40A of Route 15, and at the intersection of Route 15 and Main Avenue (Route 719). Over the four-year period, only 7 accidents occurred at the intersection closest to the rail station – Glover Avenue and Main Avenue.

Table 36: Accidents Recorded near Merritt 7 Station, 10-1-2003 to 9-30-2007

Intersection	**# Accidents**
Route 15 @ Exit 40A	**41**
At Exit 40A	7
Exit 40A - Southbound	17
Exit 40A - Northbound	7
.1 Mile North of Exit 40A Southbound	5
30 Feet South of Exit 40A	1
40 Feet North of Southbound Exit 40A	1
50 Feet South of Exit 40A	2
100 Feet North of Soundbound Exit 40A	1
Route 15 @ Exit 40B	16
At Exit 40B	**5**
Exit 40B Northbound Exit	4
.1 Mile South of Exit 40B	2
.4 Mile North of Exit 40B	1
50 Feet North of Exit 40B	2
75 Feet North of Exit 40B	1
500 Feet South of Southbound Exit 40B	1
Route 15 - Undeclared	**55**
Northbound Ramp	33
Southbound Ramp	15
Route 15 Southbound Off Ramp	1
Route 15 Southbound On Ramp	2
Route 15 Southbound Entrace Exit 40	1
100 Feet North of Exit 40 Northbound Entrance	2
150 Feet North of Exit 40 Northbound	1
Route 15 & Glover Ave	**20**
At Intersection	18
30 Feet North of Glover Ave	1
100 Feet North of Glover Ave	1
Route 15 & Main Ave (Route 719)	**57**
Glover Ave & Main Ave (Rt 719)	**7**

Figure 23 shows the data from Table 34, Table 35, and Table 36 on a map.

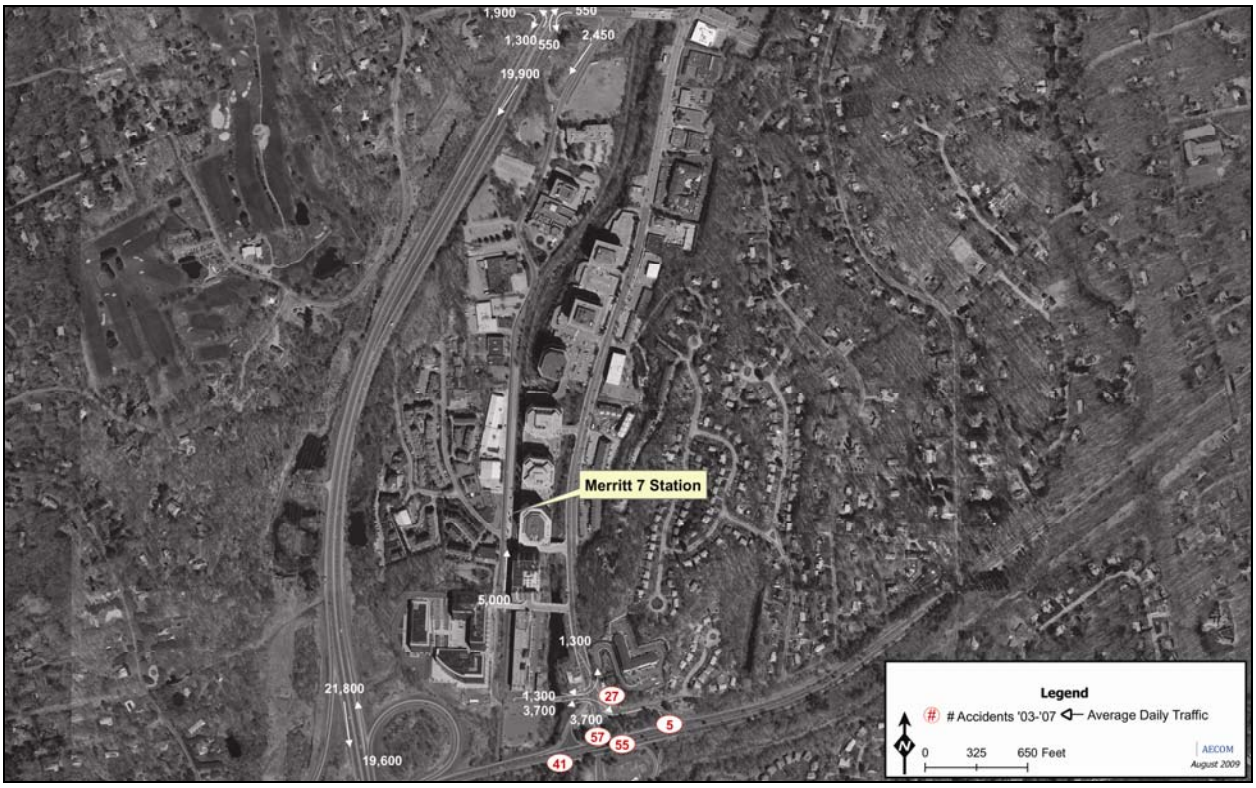


Figure 23: Traffic Conditions, Merrit 7 Station

Future Development/Improvement Projects

The Merritt Parkway/Route 7 interchange and Main St/Glover Ave intersection near the Merritt 7 Rail Station are being improved. The improvements will complete the missing connections between the Merritt Parkway and Route 7, which will result in reduced traffic and accidents on local roads. Additional turning lanes will be built at the intersection of Main St and Glover Ave and a new bridge will be built on Glover Ave.

Wilton Station

The Wilton Rail Station is located at 7 Station Rd near the intersection of Danbury Road (Route 7) and Ridgefield Road (Routes 33 and 106). The parking is operated by the Town of Wilton, and as of September 2006, there was no charge for parking at the station, and no waiting list either. There are 212 parking spaces available for use at the station. Figure 24 shows an aerial view of the Wilton Station.

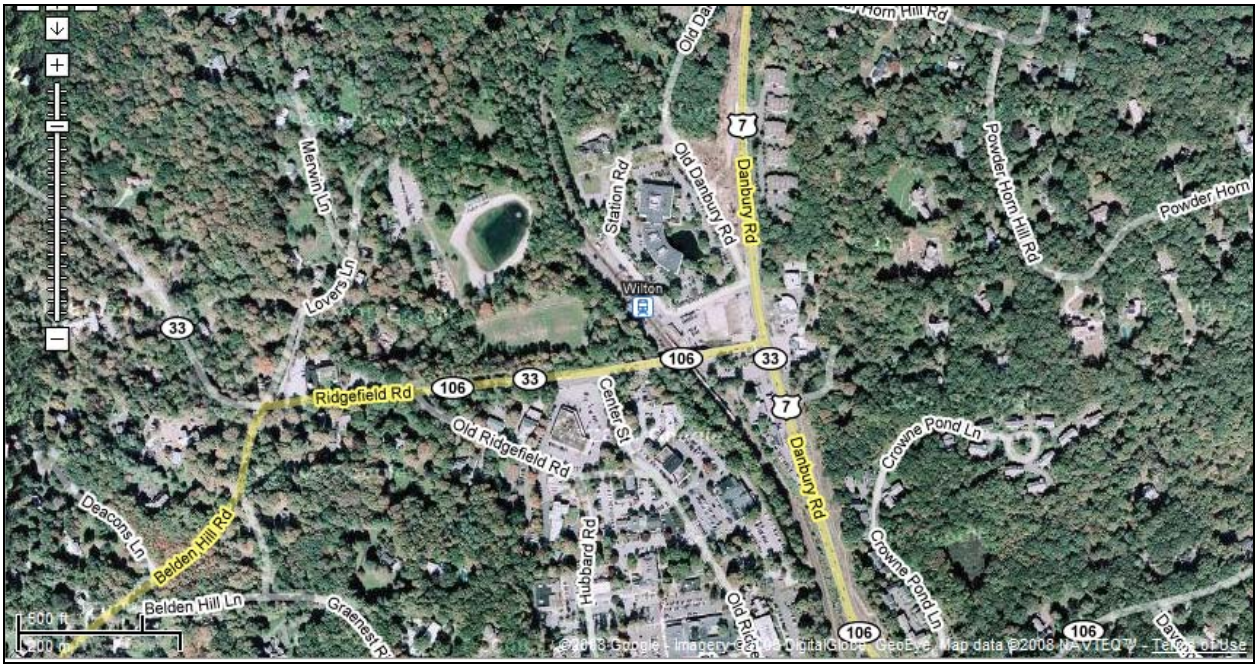


Figure 24: Wilton Station Location

Traffic Conditions

The average traffic volumes for the intersections that are used to access the Wilton Station are listed in Table 37. The table includes 2008 average daily traffic volumes and projected volumes for 2015 and 2030. The table includes daily totals as well as morning peak volumes.

Approximately 15,500 vehicles use the stretch of Route 7 in the vicinity of the Wilton Station daily. The Station Road access has 1,300 vehicles daily and 340 during the morning peak period. Most vehicles turn into Station Road from the north and turn out of Station Road to the south.

Table 37: Traffic at Wilton Station

Wilton Station							
Station Access	**Name of Road**	**2008 ADT**	**AM Peak**	**2015 ADT**	**AM Peak**	**2030 ADT**	**AM Peak**
Main Road	**Route 7 (N of intersection)**	15,600	1,560	16,900	1,110	21,000	2,080
	Route 7 (S of intersection)	15,400	1,110	16,700	1,210	20,800	1,500
Station Road	**Proposed Station Rd. Access**	1,300	340	1,300	340	1,300	340
Turns into Station Road	**from South**	200	40	200	40	200	40
	from North	1,100	300	1,100	300	1,100	300
Turns from Station Rd	**to South**	900	160	900	160	900	160
	to North	400	N	400	N	400	N

Table 38 lists the number of accidents that occurred at the intersections used to access the Wilton Station from 2003 to 2007. More than 20 accidents occurred at both the main intersections near the Wilton Station during the study period – Danbury Road & Route 33 and Danbury Road & Old Danbury Road. Only 11 accidents occurred at the intersection of Danbury Road and Station Road during the four-year period.

Table 38: Accidents Recorded near Wilton Station, 10/1/03 to 9/30/07

Intersection	**# Accidents**
Rt 7 (Danbury Rd) & Rt 33	**27**
At Intersection	14
South Junction	8
150 Feet North of Rt 33	2
200 Feet North of Ridgefield Rd	1
250 Feet North of Ridgefield Rd	2
Rt 7 (Danbury Rd) & Old Danbury Rd	**21**
At Intersection	13
50 Feet South of Old Danbury Rd	3
30 Feet South of Old Danbury Rd	1
30 Feet North of Old Danbury Rd	1
100 Feet North of Old Danbury Rd	2
150 Feet North of Old Danbury Rd	1
Rt 7 (Danbury Rd) & Station Rd	**11**
At Intersection	9
100 Feet North of Station Rd	2
Station Rd & Old Danbury Rd	**1**

Figure 25 shows the data from Table 37 and Table 38 on a map.

Figure 25: Traffic Conditions, Wilton Station

Cannondale Station

The Cannondale Station is located at 22 Cannon Road in Wilton. Figure 26 is an aerial view of the station and its surroundings. Parking is provided by the Town of Wilton, and as of September 2006, there were 140 free parking spaces with no waiting list for spaces.

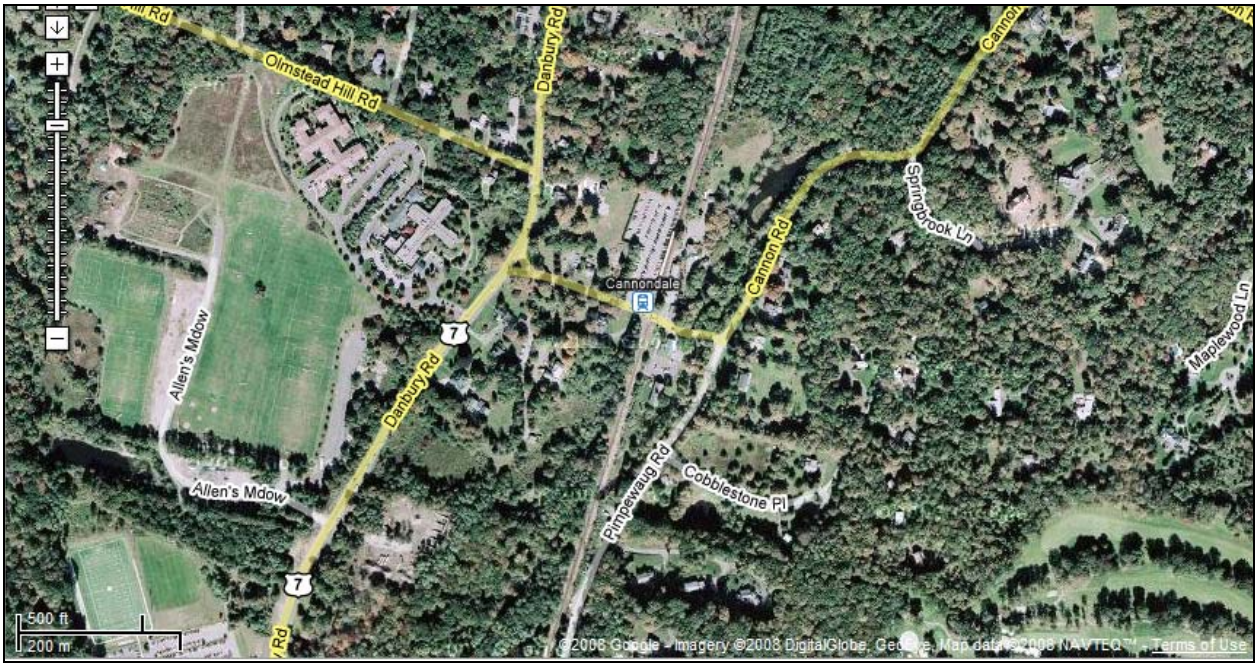


Figure 26: Cannondale Station Location

Traffic Conditions

The average traffic volumes for the intersections that are used to access the Cannondale Station are listed in Table 39. The table includes 2008 average daily traffic volumes and projected volumes for 2015 and 2030. The table includes daily totals as well as morning peak volumes.

Route 7 in the vicinity of the Cannondale Train Station sees an average daily traffic volume of 14,000 vehicles. By 2030, Route 7 is projected to have more than 18,000 daily vehicular travelers in the vicinity of the Cannondale Station. The road on which the station is located, Cannon Road, sees an average daily volume of 1,400 vehicles, with 160 during the morning peak period. Traffic on this roadway is also projected to increase.

Table 39: Traffic at Cannondale Station

Overall Description of Station Access	**Name of Road**	**2008 ADT**	**AM Peak**	**2015 ADT**	**AM Peak**	**2030 ADT**	**AM Peak**
Main Road	**US Route 7 (N of intersection)**	14,000	1,440	15,700	1,610	18,300	1,880
	US Route 7 (S of intersection)	14,100	770	15,800	860	18,400	1,000
Station Road	**Cannon Road**	1,400	160	1,500	180	1,900	210
Turns into Station Rd	**from South**	750	70	800	80	1,000	90
	from North	650	90	700	100	900	120
Turns from Station Rd	**to South**	750	60	800	70	1,000	80
	to North	650	50	700	60	900	80

Table 40 lists the number of accidents that occurred at the intersections used to access the Cannondale Station from 2003 to 2007. Over the four-year period, there were 25 accidents at the intersection of Danbury Road and Cannon Road.

Table 40: Accidents Recorded near Cannondale Station, 10/1/03 to 9/30/07

Station	Town	Intersection	# Accidents
Cannondale	**Wilton**	**Rt 7 (Danbury Rd) & Cannon Rd**	
Cannondale	Wilton	At Intersection	25
Cannondale	Wilton	100 Feet South of Cannon Rd	2
Cannondale	Wilton	40 Feet South of Cannon Rd	1
Cannondale	Wilton	30 Feet South of Cannon Rd	1
Cannondale	Wilton	30 Feet North of Cannon Rd	1
Cannondale	**Wilton**	**Cannon Rd & Pimpewaug Rd**	**2**

Figure 27 shows the data from Table 39and Table 40 on a map.

Figure 27: Traffic Conditions, Cannondale Station

Branchville Station

Branchville Railroad Station is located in Ridgefield, CT directly off of Route 7, near the intersection of Route 7 and Route 102. Its street addresses are 7 US Highway 7 and 787 Branchville Road. Figure 28 provides an aerial view of the Branchville Station and its surroundings. Access to the station is by bridge and across an ungated at-grade railroad crossing. Parking is operated by the Town of Ridgefield.

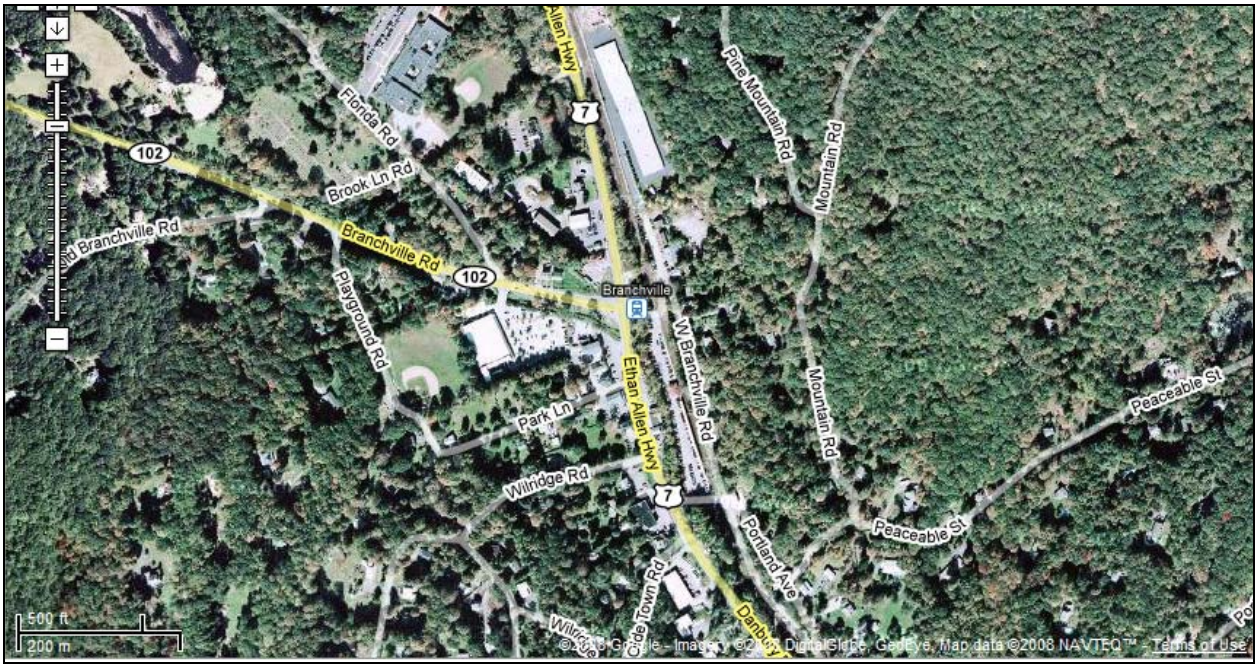


Figure 28: Branchville Station Location

Traffic Conditions

The average daily traffic volumes (ADT) for roads in the vicinity of Branchville Station in 2008 are listed in Table 41.

Table 41: Traffic at Branchville Station

Road	Segment	2008 ADT
Ethan Allen Hwy	North of Depot Rd	16,100
Ethan Allen Hwy	Between Depot Rd & Park Ln	20,200
Branchville Rd	Between Florida Rd & Ethan Allen Hwy	6,800

Table 42 lists the number of accidents that occurred at the intersections used to access the Branchville Station from 2003 to 2007. Figure 29 shows this data on a map. Over the four-year period, 27 accidents occurred at the intersection of Routes 7 and 102.

Table 42: Accidents Recorded near Branchville Station, 10/1/03 to 9/30/07

Intersection	**# Accidents**
Rt 7 (Ethan Allen Hwy) & Rt 102 (Branchville Rd)	**21**
At Intersection	16
50 Feet South of Route 102	1
50 Feet North of Route 102	1
35 Feet North of Route 102	1
100 Feet North of Route 102	2
Rt 7 (Ethan Allen Hwy) & Depot Rd	**5**
Rt 102 (Branchville Rd) & Rt 7 (Ethan Allen Hwy)	**6**
At Intersection	4
75 Feet West of Route 7	1
At Depot Rd	1

Figure 29: Traffic Conditions, Branchville Station

Future Development/Improvement Projects

The Ridgefield Planning & Zoning Department reported that the Branchville Center Study (a mini Plan of Conservation and Development from 2001-2002) produced a 'recommended concept plan' for the area in the vicinity of the train station, but nothing has been adopted yet. Also in that report there is discussion about changing zoning to 'transportation-oriented use' or 'village district like-CBD' or 'transit-oriented development,' but again, there are no concrete plans that have come out of the study.

West Redding Station

The West Redding Train Station is located at 3 Long Ridge Road in Redding, just west of Route 53, near the Bethel and Danbury border. Parking is operated by the Town of Redding. Figure 30 provides an aerial view of the West Redding Station location and its surroundings.

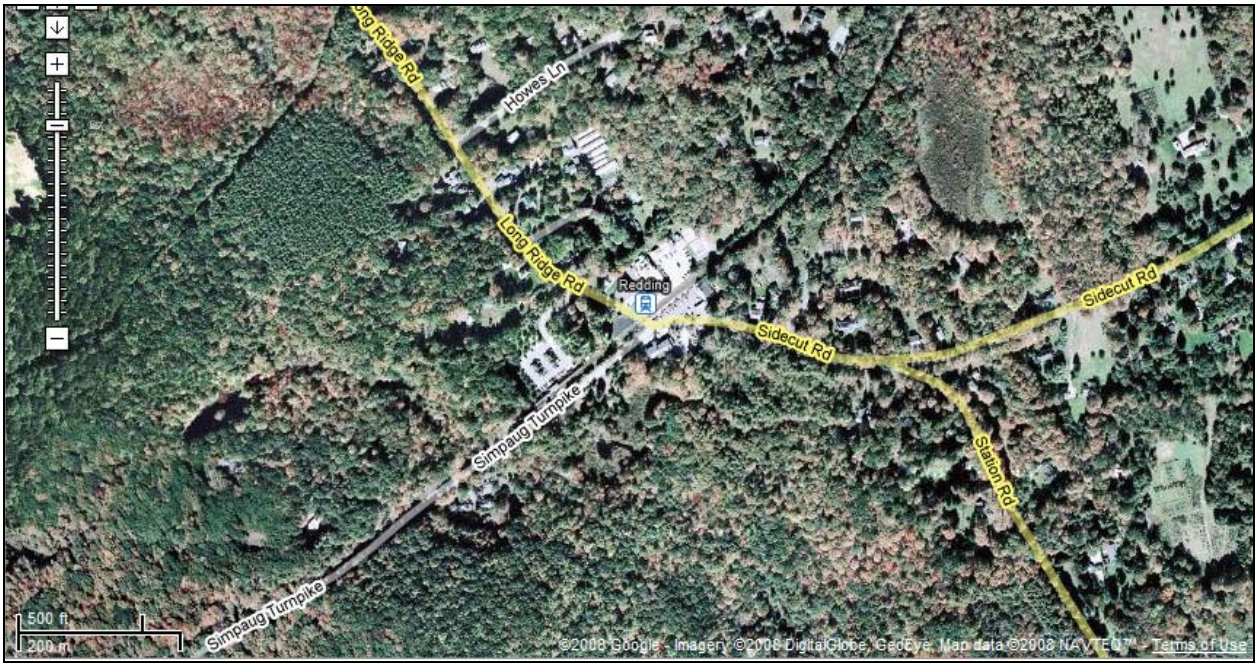


Figure 30: West Redding Station Location

Traffic Conditions

The average daily traffic volumes (ADT) for roads in the vicinity of West Redding Station in 2008 are listed in Table 43.

Table 43: Traffic at West Redding Station

Road	Segment	2008 ADT
Long Ridge Rd	Between Howes Ln & Simpaug Tpke	2,300

Table 44 lists the number of accidents that occurred at the intersections used to access the Redding Station from 2003 to 2007. Figure 31 shows this data on a map. Over the four-year period, seven accidents occurred at Long Ridge Road and Simpaug Turnpike and only three accidents occurred at West Redding Road and Long Ridge Road.

Table 44: Accidents Recorded near Redding Station, 10/1/03 to 9/30/07

Station	Town	Intersection	# Accidents
Redding	Redding	Long Ridge Rd & Simpaug Tpke	7
Redding	Redding	W Redding Rd & Long Ridge Rd	3

Figure 31: Traffic Conditions, West Redding Station

Future Development/Improvement Projects

The Redding Planning and Zoning Department reported that they have no jurisdiction at the Redding Station. The Department does not have any knowledge of future development planned in the vicinity of the Redding Rail Station.

Bethel Station

The Bethel Station is located at 13 Durant Ave in Bethel. Figure 32 is an aerial view of the Bethel Station and its surroundings. Parking is operated by the Town of Bethel.

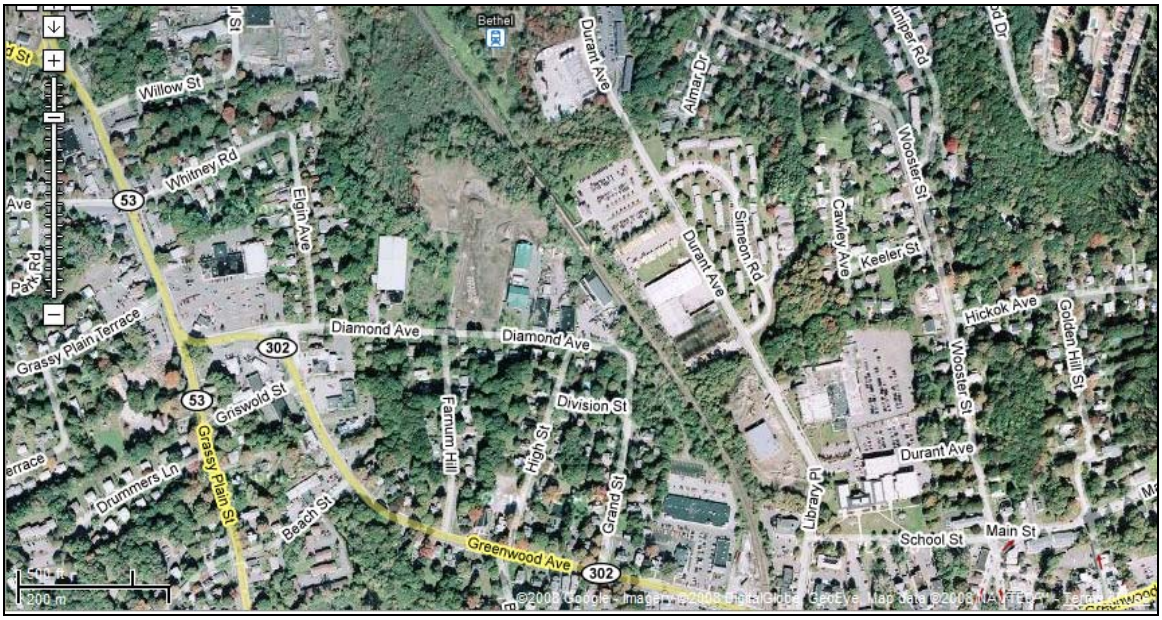


Figure 32: Bethel Station Location

Traffic Conditions

Traffic counts were not conducted on roads in the vicinity of Bethel Station. Therefore, average daily traffic volumes are not available.

From 2003 to 2007, only four accidents occurred at the intersections used to access the Bethel Station. These accidents, shown in Figure 33, occurred at Wooster Street and Durant Avenue.

Figure 33: Traffic Conditions, Bethel Station

Future Development/Improvement Projects

From the Bethel Land Use Department, the 2007 Bethel Plan of Conservation and Development (POCD) has plans for the Bethel Rail Station and its environs. The Plan includes transit-oriented development (TOD), and parking and platform expansion.

The POCD includes plans for the Bethel Train Station platform and parking area:

Currently, access to the train station is only from the east side of the tracks. The Commission recommends that there be consideration of a west side platform for commuters living on the west side of the tracks. Since there is only one rail line, trains stopping at Bethel could open doors on both sides of the track to let passengers enter and exit from the most convenient side. If it is possible to build a west side platform, additional parking on the west side should be constructed, as well as bicycle facilities and additional sidewalks to improve access to and use of the train.

The POCD notes that Census and HART studies show Bethel as desirable for transit-oriented-development due to the transit commuting to NYC from Fairfield County and increased employment opportunities in Fairfield County for people living in northern Fairfield County and working to the south.

Danbury Station

The Danbury Rail Station is located at 1 Patriot Dr, off White Street. Figure 34 provides an aerial view of the Danbury Station Location. Parking is provided by the Danbury Parking Authority.

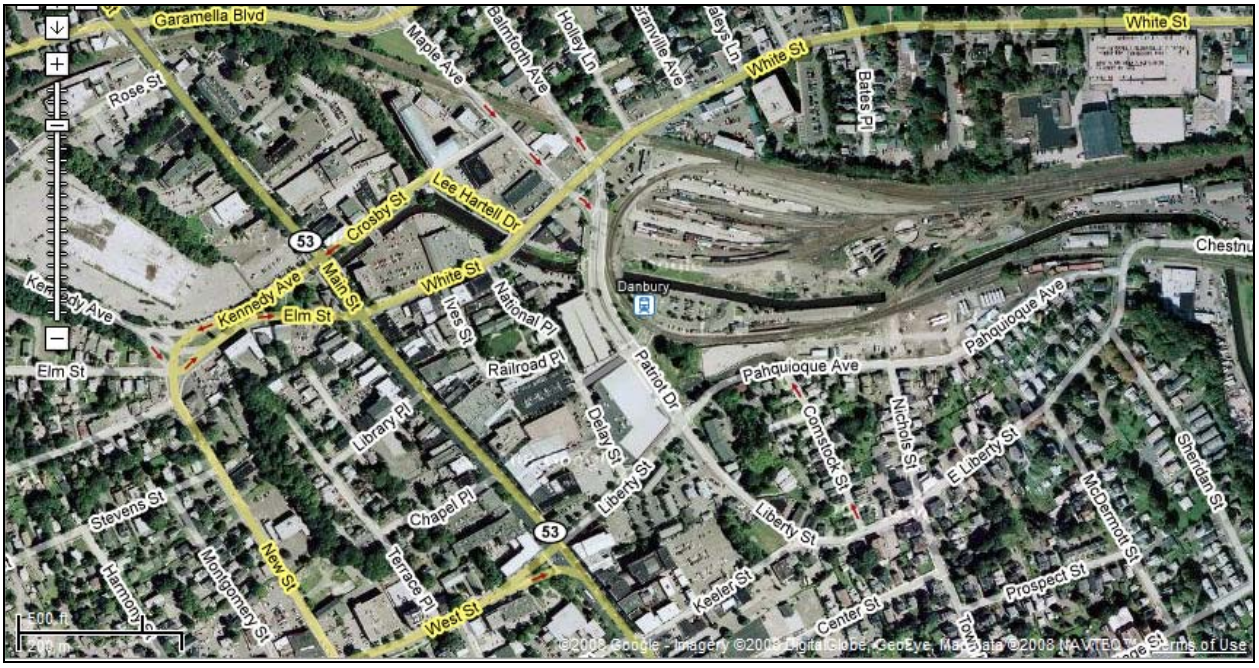


Figure 34: Danbury Station Location

Traffic Conditions

The average daily traffic volumes (ADT) for roads in the vicinity of Danbury Station in 2008 are listed in Table 45.

Table 45: Traffic at Danbury Station

Road	Segment	2008 ADT
Patriot Dr	Between White St & Liberty St	16,100
Liberty St	Between Main St & Delay St	11,400
White St	Between Moss Ave & Fifth Ave	18,800
Pahquioque Ave	Between Nichols St & E Liberty St	3,800

Table 46 lists the number of accidents that occurred at the intersections used to access the Danbury Station from 2003 to 2007. Figure 35 shows this data on a map. Over the four-year period, there were 53 accidents at the intersection of Main Street and Crosby Street, 21 accidents at the intersection of Main Street and Kennedy Avenue, 40 accidents at the intersection of Patriot Drive and White Street, 30 accidents at the intersection of Patriot Drive and Liberty Avenue, and 28 accidents at the intersection of Balmforth Street and White Street.

Table 46: Accidents Recorded near Danbury Station, 10/1/03 to 9/30/07

Intersection	# Accidents
Route 53 (Main St) & Crosby St	**53**
At Intersection	43
Within 30 Feet of Crosby St	3
Within 50 Feet of Crosby St	3
Within 100 Feet of Crosby St	4
Route 53 (Main St) & Kennedy Ave	**21**
At Intersection	18
50 Feet North of Kennedy Ave	1
100 Feet North of Kennedy Ave	2
Route 53 (Main St) & White St	**7**
At Intersection	2
100 Feet South of White St	5
Patriot Dr & White St	**40**
Patriot Dr & Liberty Ave	**30**
Patriot Dr & Independence Way	**5**
Lee Hartell St & Crosby St	**4**
Lee Hartell St & White St	**7**
Balmforth St & White St	**28**
Ives St & White St	**15**
National Pl & Railroad Pl	**2**
National Pl & White St	**2**
Delay St & Liberty St	**22**

Figure 35: Traffic Conditions, Danbury Station

Future Development/Improvement Projects

According to the Danbury Department of Public Works, the City is in the process of the 'White Street Streetscape Improvement' from Bates Place & 5th Avenue to Main Street. The project involves roadway widening and sidewalk improvement. There is no new construction.

4.3 Major Roadways in Vicinity of Harlem Line Stations

The road network at the southern edge of the New York/Connecticut border consists of mostly roads running north and south crossing the border rather than roads running east and west. State Highways 123, 137, and 172 in New York provide travel options for commuter rail station-bound commuters. Obviously Route 7 (Danbury Road) is a major corridor in Connecticut and the Merritt Parkway is another important road in the region.

Harlem Line Stations used by Connecticut residents are generally located along I-684. The stations further north are located near the intersection of I-84 and I-684 and the ones further south are located along the Saw Mill River Parkway. The following pages explain and show the road networks surrounding each station.

Brewster and Southeast (Brewster North) Stations

Both Brewster Stations are located near I-84 and I-684. Figure 36 shows the road network around the Brewster and Southeast (Brewster North) Stations. State Highway 6/Carmel Ave. and State Highway 312 are also located close to the southeast Station. State Highway 6/Carmel Ave., State Highway 22/Branch Ave., and State Highway 6/Danbury Road are all located near the Brewster Station.

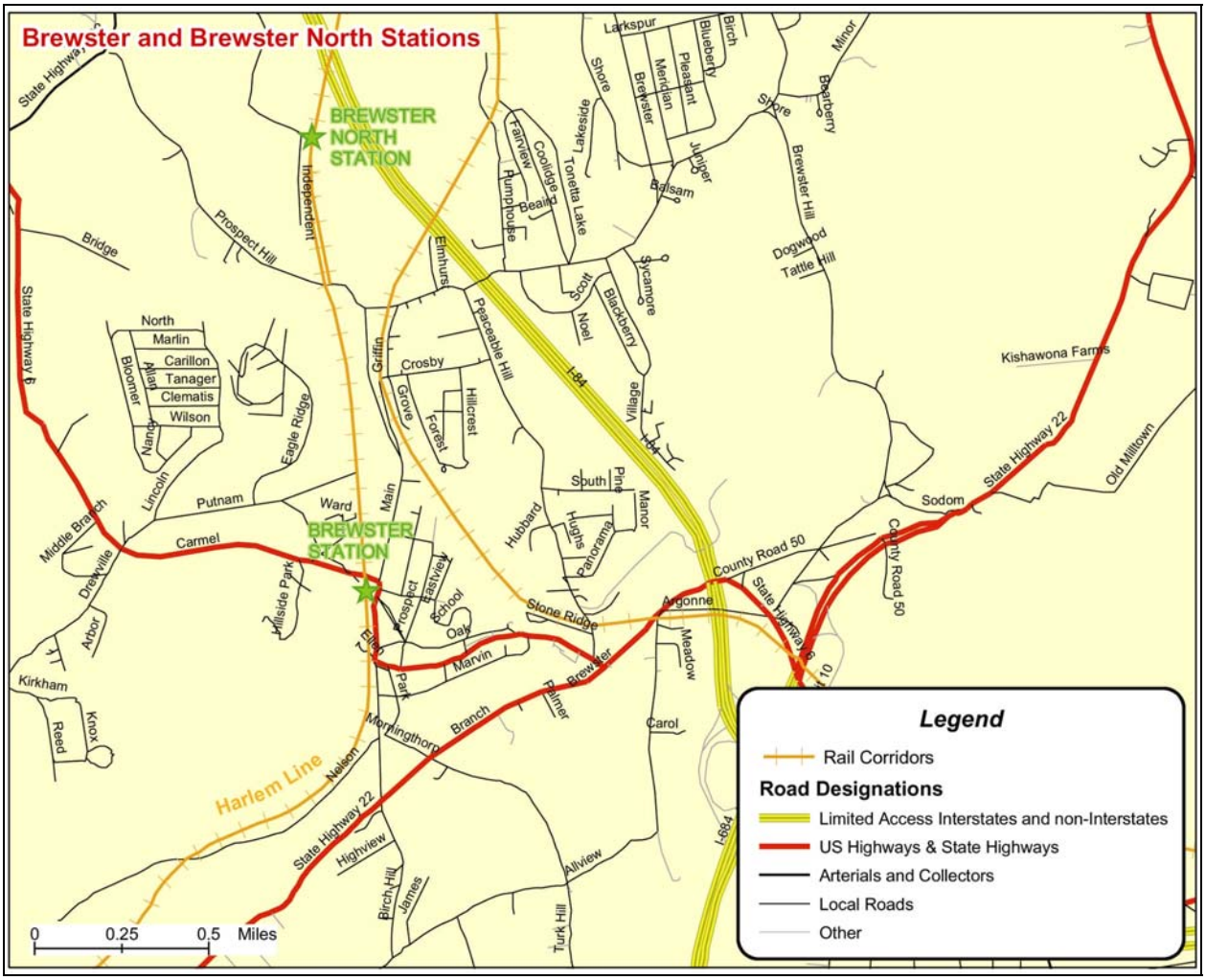


Figure 36: Road Network around Brewster and Brewster North Stations

Croton Falls and Purdy's Stations

Figure 37 shows the road network surrounding the Croton Falls Station and Purdy's Station. Both stations are located in very close proximity to I-684. In addition to I-684, the Croton Falls Station is located in close proximity to Brewster Ave., State Highway 116, and Croton Falls Road Purdy's Station is even closer to State Highway 116 and is also located near Route 202 and Purdy's Road

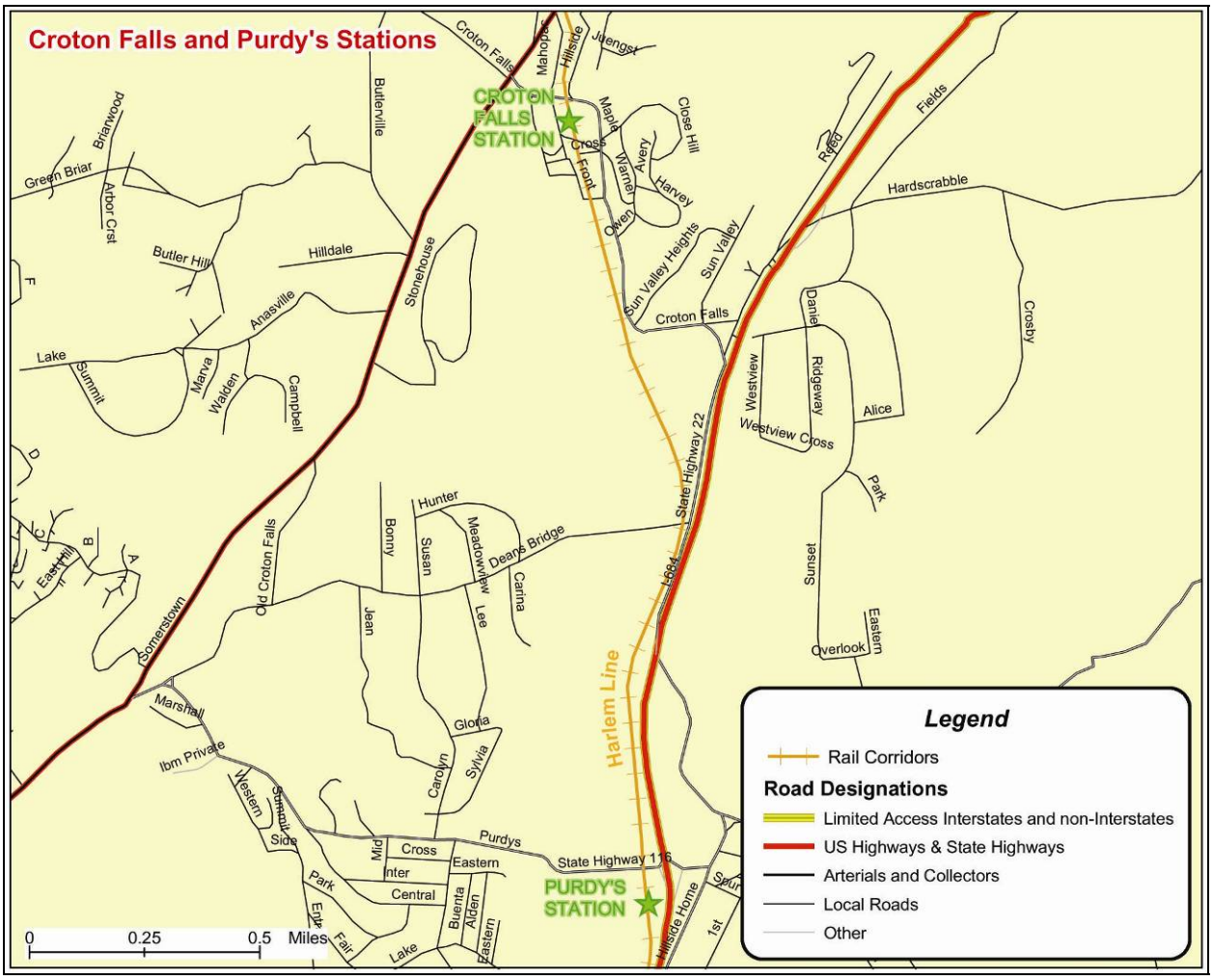


Figure 37: Road Network around Croton Falls and Purdy's Stations

Golden's Bridge and Katonah Stations

The Golden's Bridge and Katonah Stations are also located adjacent to I-684. State Highway 138 passes by the Golden's Bridge Station as does State Highway 22 (Golden's Bridge Road). The Katonah Station is located just south of the fork in Woods Bridge Road (Woods Bridge Road and Cross River Road). Saw Mill River Roadd and Golden's Bridge/Jay Roads also pass by the Katonah Station. Figure 38 displays the road network surrounding the Golden's Bridge and Katonah Stations.

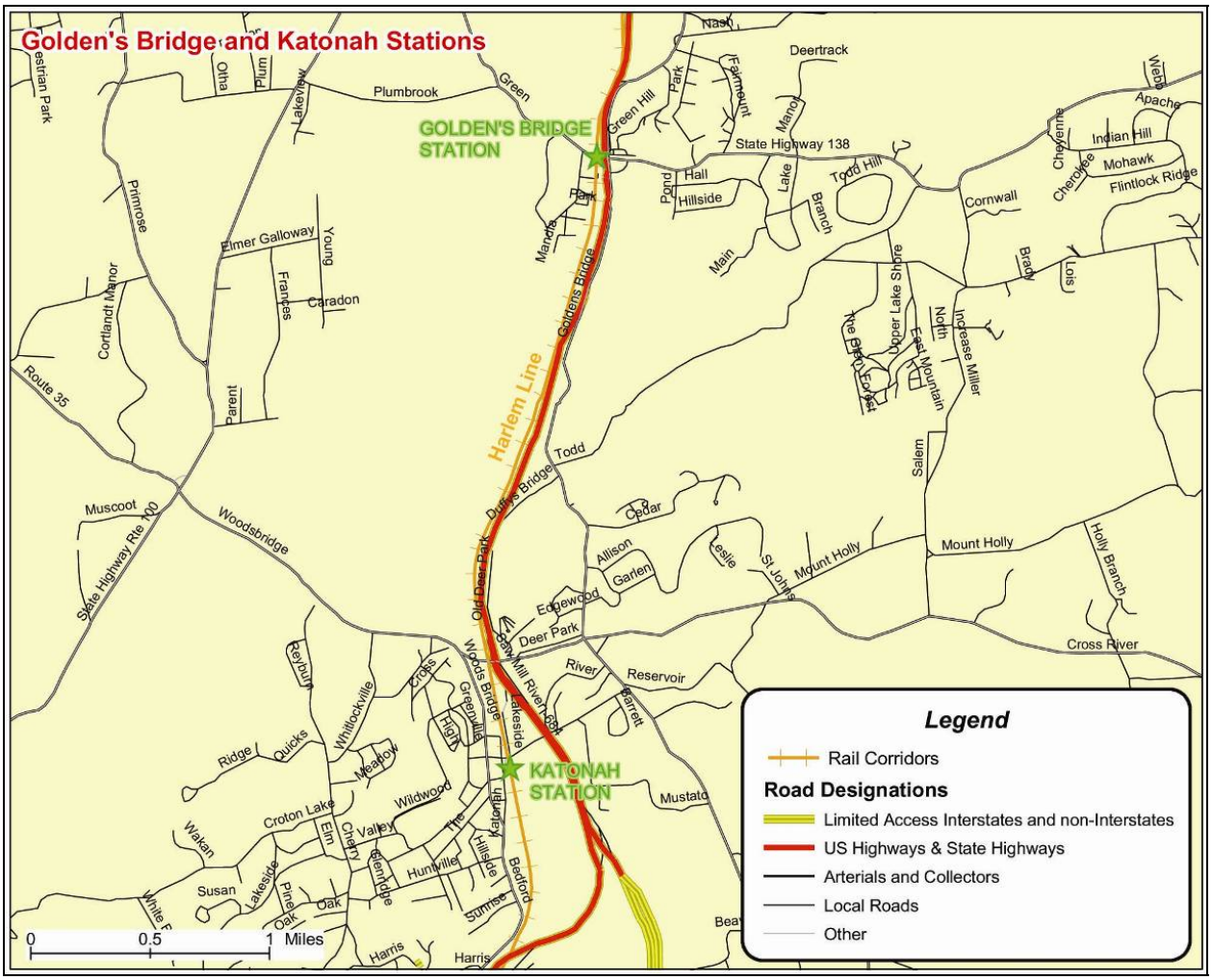


Figure 38: Road Network around Golden's Bridge and Katonah Stations

Bedford Hills and Mt. Kisco Stations

The southernmost two stations used by Housatonic Valley residents are the Bedford Hills and Mt. Kisco Stations, which are located after the tracks turn away from Connecticut and head towards New York City. Figure 39 shows the road network around these two stations. The two stations are flanked by Saw Mill River Road on the west and Bedford Road on the east. I-684 runs along east of the two stations. State Highways 133, 172, and 117 are located near the Mt. Kisco Station.

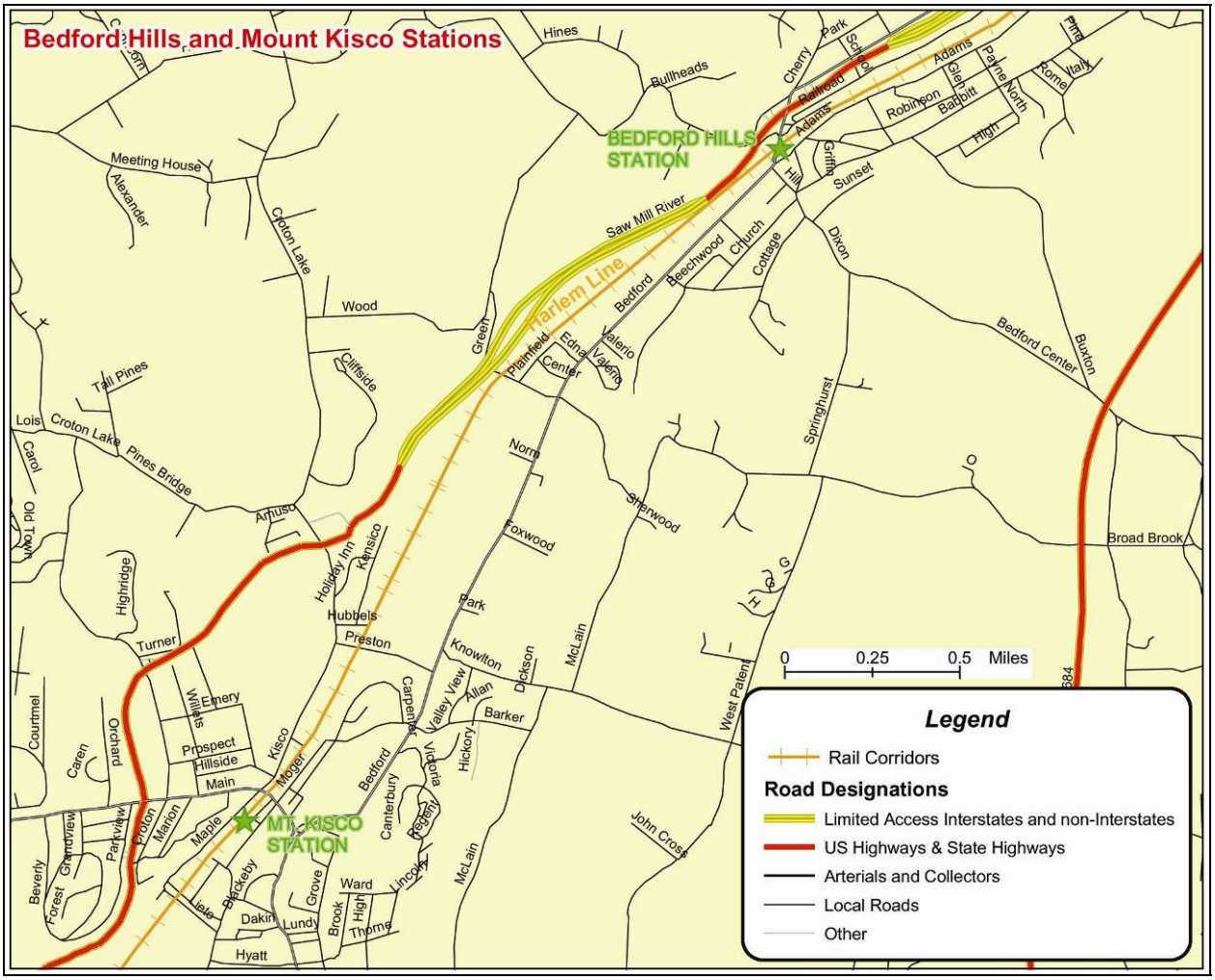


Figure 39: Road Network around Bedford Hills and Mount Kisco Stations

4.4 Park and Ride Lots

Park and ride lots for commuters are also located within the corridor. State-owned park and ride lots are located in Danbury, Bethel, Redding, Ridgefield, Wilton (2), and Norwalk. Table 47 lists the capacity and 2009 use by location.

Table 47: Park and Ride Locations in Corridor

Town	Location	Capacity	2009 Use	2009 % Use
Danbury	Patriot Dr. @ Railroad Station	147	72	49%
Bethel	Durant Ave. @ Railroad Station	197	149	76%
Redding	Long Ridge Rd. @ Railroad Station	82	46	56%
Ridgefield	Rt. 7 & Depot Rd. @ Branchville Railroad Station	168	140	83%
Wilton	Rt. 106 & Station Rd. @ Wilton Railroad Station	167	116	69%
Wilton	Rt. 7 & Cannon Rd. @ Cannondale Railroad Station	140	114	81%
Norwalk	Rt. 15 @ Rt. 7 & Glover Ave. Exit 7) Railroad Station	88	83	94%

4.5 Bicycle and Pedestrian Facilities

CDOT's *2009 Connecticut Statewide Bicycle and Pedestrian Transportation Plan* provides an inventory of existing bicycle and pedestrian facilities across the state as well as proposed facilities from the regional planning agencies. In Norwalk, an off-road bicycle and pedestrian trail exists along the Route 7 corridor between I-95 and the Merritt Parkway (Norwalk River Valley Multipurpose Trail). In Wilton, the Olmstead Hill Road to Wolfpit Road Trail is located along the Route 7 corridor. Throughout the rest of the corridor, the HVCEO and SWRPA have proposed on-road multi-use trail improvements along Route 7 from Norwalk to Georgetown and from Danbury to New Milford. The trail routes for both existing trails and proposed trails are shown in Figure 40 and Figure 41, one each for the HVCEO and SWRPA regions.

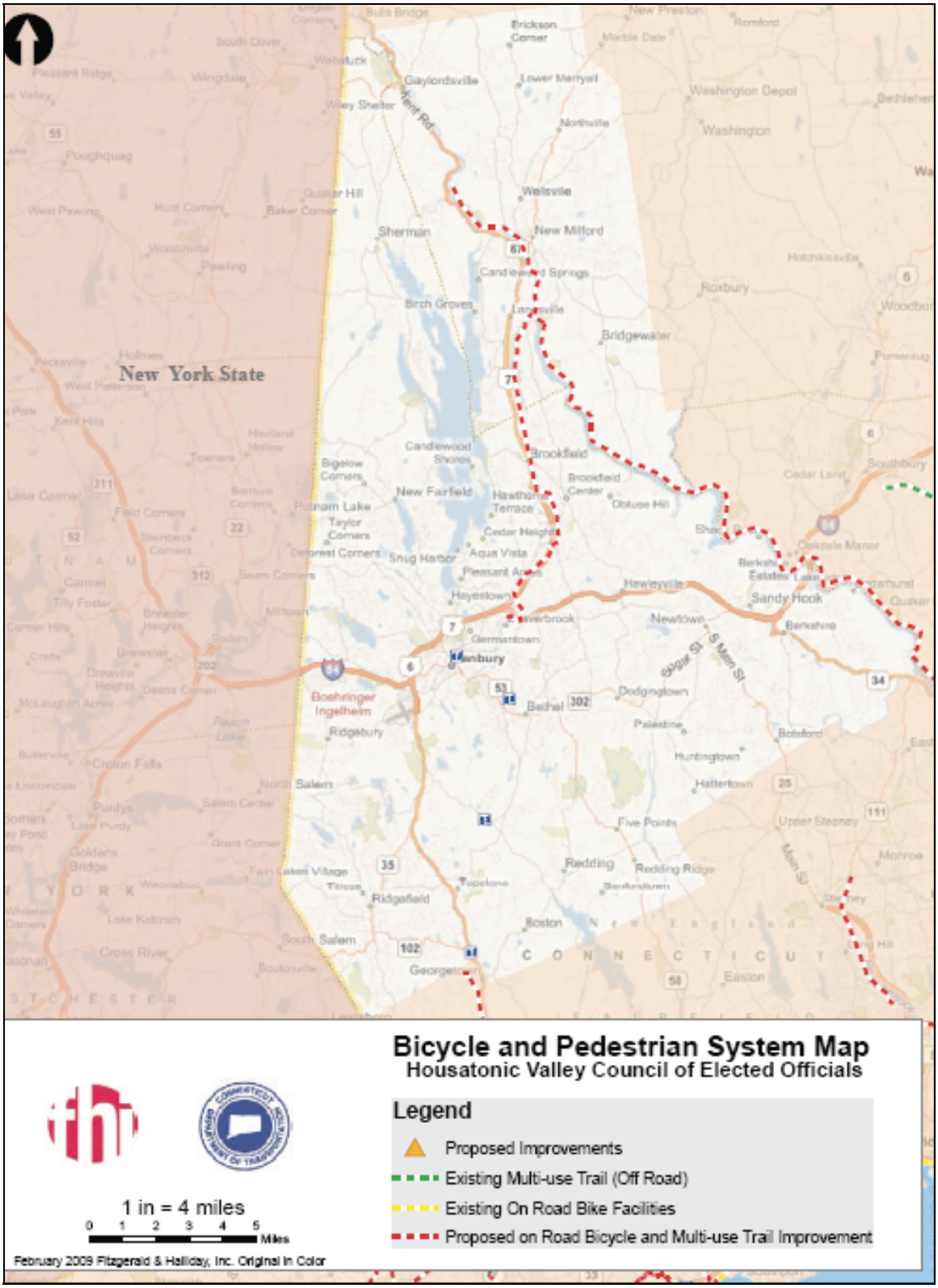


Figure 40: Map of Bicycle and Pedestrian Trails in HVCEO Region

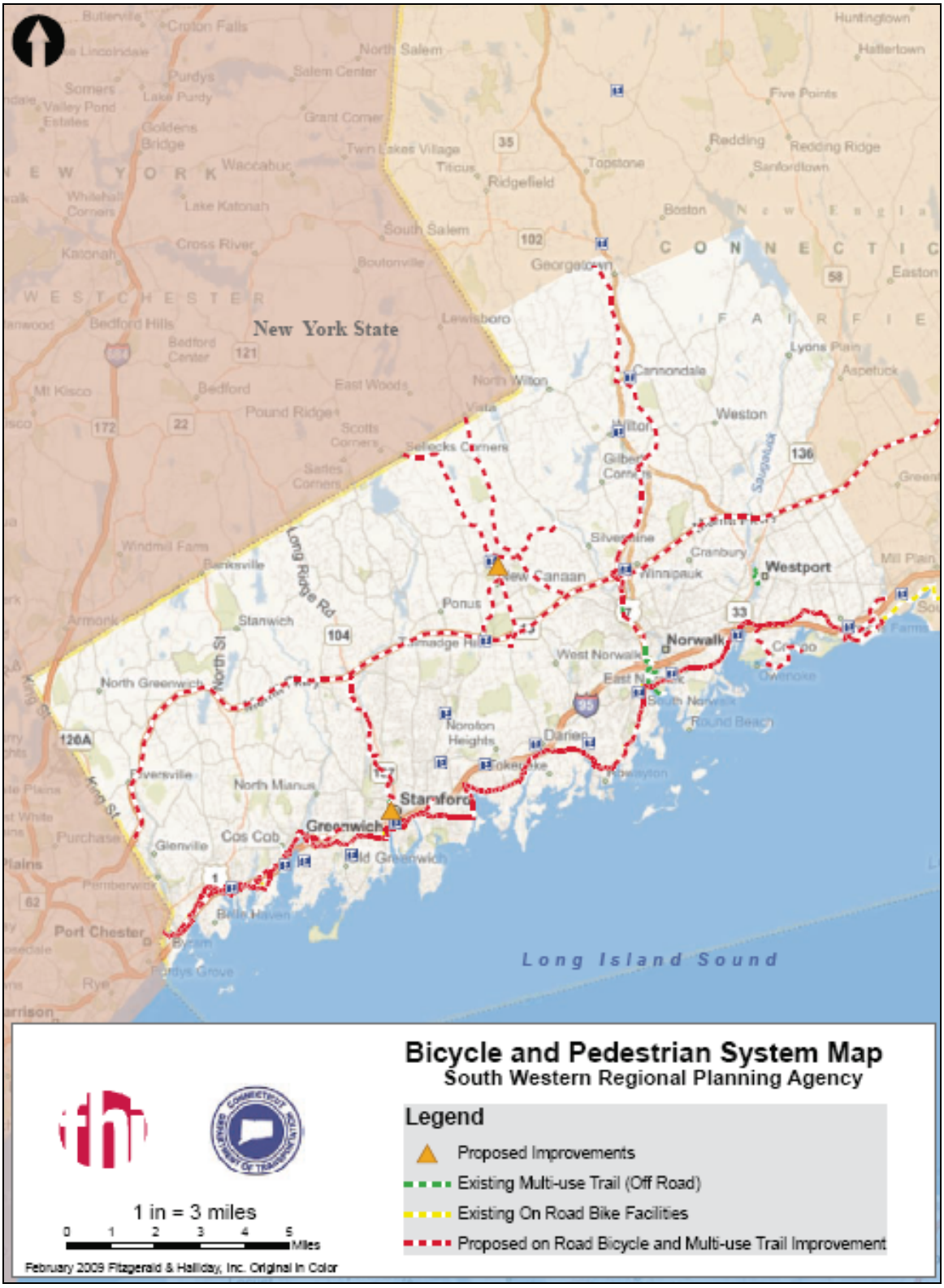


Figure 41: Map of Bicycle and Pedestrian Trails in SWRPA Region

Chapter 5: Rail Rider Surveys

As part of the analysis of the existing transportation, rail, bus, highway conditions, and intermodal opportunities in the Danbury Branch/Route 7 corridor between South Norwalk and New Milford, the URS Project Team developed and conducted two types of surveys for the Danbury Branch EIS. The first was an on-board survey of existing passengers on the Danbury Branch. The second was a telephone survey of potential passengers who do not currently use the available train service.

Below is a summary of the results of these surveys. The reports for the existing Rail Passenger Survey and the Potential Rail Passenger Survey can be found in their entirety in Appendix E and Appendix F, respectively.

5.1 Existing Danbury Branch Passengers

In order to ascertain the characteristics, preferences, and desires of existing passengers, a questionnaire was distributed to individuals riding the Danbury Branch. The survey was conducted on five AM peak trains on Wednesday, September 24, 2008. Survey participants were asked about their trip origin and destination, trip purpose, trip frequency, anticipated mode changes at both trip ends, preferences regarding service, and demographics.

Methodology

A team of surveyors from URS conducted this survey on five trains that departed from Danbury between 5:34 AM and 7:57 AM. Three of these trains were bound for New York City, and two were intra-state commuter shuttles that ended in South Norwalk. Questionnaires were distributed to passengers on each train, and surveyors encouraged passengers to fill out the surveys, provided pencils when needed, answered questions where possible, and collected the completed surveys prior to arrival at South Norwalk. Passengers were also given the option of returning their surveys via pre-paid mail. It is estimated that the team received an 80% response rate for this survey, based on the number of surveys received and the most recent Metro-North average daily inbound counts for the trains surveyed (November 2007).

Findings

The following are some highlights from the on-board survey of existing passengers:

Trip Origin and Destination
Survey results support the observation that the New York bound trains and intra-state shuttles support different travel markets with the following origin and destination characteristics:

- Origin
  - New York bound trains: The distribution of trip origins was spread somewhat evenly across Danbury, Bethel, Cannondale, Wilton, and Merritt 7 stations.
  - Intra-state shuttle trains: Nearly 80% of respondents boarded at either the Danbury or Bethel station.

- Destination
    - o New York bound trains: Approximately 70% of all respondents disembarked at GCT. The next most prevalent destinations were Stamford (18%) and South Norwalk (5%).
    - o Intra-state shuttle trains: Nearly 44% of respondents disembarked at Stamford, 19% at Merritt 7, and 15% at both South Norwalk and GCT.

Trip Purpose

- More than 90% of all respondents said that their trip purpose was going to work.

Trip Frequency

- Approximately 73% of respondents reported riding the train five or more times per week.
- An additional 18.7% of respondents reported riding the train 3-4 times per week.

Anticipated Mode Changes

- To Boarding Station: Approximately 72% of respondents reported driving to their boarding station alone; 15.4% reported being dropped off (Kiss and Ride); and 7.2% walked.
- To Final Destination: Approximately 56% of respondents reported walking to their final destination; 14% reported using the subway; and 12% reported taking a company shuttle.

Service Preferences

All persons surveyed were asked to evaluate a number of improvements by responding whether they would be more likely to increase their use of the train if a specific improvement was made.

- Nearly 86% of respondents would increase their use of the train if there were more frequent service.
- 87.9% of respondents would increase their use of the train if the travel time were reduced by about 20 percent.
- Better shuttle bus service to and from stations and extending the Danbury Branch to New Milford would cause approximately 35% of respondents to increase their use of the train.

Demographics

- The majority of respondents held a valid driver's license (97.1%) and had access to a private vehicle (93.1%).
- The largest percentage of respondents, 31.0%, were between the ages 51 and 65. An additional 29.6% of respondents were between the ages of 41 and 50.
- Most respondents (66.7%) were male.

5.2 Potential Rail Passengers

In order to elicit commuter opinions and input on a wide range of topics, the *Danbury Branch Area Commuter Telephone Survey* was completed between September 29 and October 15, 2008.

During this time, 400 telephone interviews were conducted among commuters who commute to towns near the Danbury Branch. Survey participants were asked about their current commuting mode choice, history of using Metro-North service, perceptions of the market, and demographics.

Methodology

All facets of the *Danbury Branch Area Commuter Telephone Survey* were completed by the Center for Research & Public Policy (CRPP) in Trumbull, Connecticut. CRPP surveyed a random sample of 400 individuals who commute two to seven times per week, do not currently use Metro-North train services for their commute, and commute to a zip code near the Danbury Branch. Surveys were conducted between 5PM and 9PM on weekdays and between 10AM and 4PM on weekends. CRPP successfully contacted 83% of commuters within the original sample. Such a high completion rate results in a non-biased sample and often indicates that respondents are interested in the topic of the survey.

Findings

The following are some highlights from the *Danbury Branch Area Commuter Telephone Survey*.

Mode of Transportation

- While the majority of respondents (85.5%) reported making their weekly commute by "driving alone," 13% also reported "driving or riding with others" during their weekly commute.
- Respondents reported making their round trip commute, on average, slightly more than four times per week (4.06).
- The average commute time of respondents was 28.82 minutes each way.

Metro-North

- Nearly three-quarters of respondents (72.8%) reported to be either "very aware" or "somewhat aware" of Metro-North train services such as schedules, logistics, costs, and destinations.
- Top reasons reported for not using Metro-North train service or not using it more often for reasons other than a commute included the following: "no need to use the train," "it's not close by/not convenient," "prefer driving," "hard to get to different destinations after train," and "only use it for entertainment/NYC."
- When asked to estimate what the price would be for their weekly commute if they used Metro-North as opposed to their current mode of transportation, respondents reported the following:
    - Estimated average cost to use Metro-North = $49.01
    - Estimated average fuel cost using current transportation = $46.98

The Market

All respondents were read a list of improvements and/or enhancements to the Danbury Branch and were asked how likely, if made, each might influence them to begin using Metro-North for their weekly commute.

- The improvements/enhancements which were reported as having the greatest impact included the following: "lower cost of train fares," "lower cost of parking fees," and "a more convenient train schedule."
- The improvements/enhancements which were reported as having the least impact included the following: "a new intermediate station in Georgetown" and "trains being better equipped for physical disabilities."
- Respondents reported the cost of gasoline would need to reach $4.82 (MEAN) per gallon before they would make a concerted effort to use Metro-North train service for their regular commute.

Demographics

- The majority of respondents held a valid driver's license (98.3%) and had access to a private vehicle (99.5%).
- Approximately three-quarters of respondents (78.3%) were over the age of 45.
- Most respondents (60.3%) were female.

Chapter 6: Baseline Train Performance Model

The following is a summary of the Train Simulation Report for the Baseline Train Performance Model. This report can be found in its entirety in Appendix G.

6.1 Overview

The Train Simulation Report for the Baseline Train Performance Model summarizes the findings of base case condition and train simulation on the existing track alignment between South Norwalk and New Milford, Connecticut. The report discusses the initial baseline development and a revised baseline based on instructions from Metro-North Railroad (MNR). The objective of this train simulation is to create a model of the train consist and the track alignment and to compare the runtimes against the existing MNR schedule. The latest public schedule shows trip times between Danbury and South Norwalk of 53 minutes for the inbound trip and 55 minutes for the outbound.

The simulation includes end-to-end train run, stopping at each passenger station, for the outbound and inbound directions, except at Georgetown. The overall alignment is approximately 40 miles in each direction, is at-grade with a short tunnel section and 12 passenger stations, including one planned at Georgetown. The study train consist includes five coach cars type MNR 6300, a cab car type MNR 6300 at the end, and MNR Loco P32 Diesel mode in a push-pull configuration.

The analysis was conducted using Railsim Version 7 software. Specifically, the module used in the analysis was the Train Performance Calculator (TPC).

6.2 Initial Baseline

The simulated runtime including dwells for the outbound direction between South Norwalk and Danbury was approximately 65 minutes. For the inbound direction, the simulated runtime between Danbury to South Norwalk was about 59 minutes. The station-to-station runtimes are included in summary sheets A-1 and A-2 in the appendix of the complete report. All criteria and input parameters are also described in the complete report. The analysis suggests that the simulated runtimes are longer than the existing schedule, and the deviation may be attributed to the assumed dwell times and/or the wheel to rail adhesion coefficient rate, which was assumed to be 6% instead of normal adhesion of 15%.

A draft report discussing the initial baseline development was prepared and discussed at a meeting with MNR on January 12, 2009. At the meeting, MNR gave instructions for preparing a revised baseline.

6.3 Revised Baseline

Using a 15% adhesion coefficient that reflects normal rail conditions, the simulated outbound runtime including dwells between South Norwalk and Danbury was 58 minutes 35 seconds. The

simulated inbound runtime from Danbury to South Norwalk was57 minutes 31 seconds. The four revised baseline station-to-station runtimes are included in summary sheets B-1, B-2, C-1, and C-2 in the appendix of the complete report. All criteria and input parameters are also described in the complete report.

The analysis suggests that the revised simulated runtimes are about 6% longer than the schedule. This deviation may be attributed to the assumed dwell times. Additionally, the runtime utilizing a wheel to rail adhesion coefficient rate of 15% is about 10% shorter than that using 6% adhesion coefficient, in the same direction.

FTA ALTERNATIVES ANALYSIS
DRAFT/FINAL ENVIRONMENTAL IMPACT STATEMENT

TASK 6
EXISTING CONDITIONS REPORT

STATE PROJECT 302-008



APPENDIX A

ON/OFF COUNTS, NEW HAVEN LINE (SPRING/FALL 2007)

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY INBOUND TRAINS

27-Aug-08

TRAIN #	1811*		1819*		1833*		1837*		1841*		1855		1871		1881		1893		1895	
South Norwalk Arrival Time	**6:27 AM**		**7:11 AM**		**7:45 AM**		**8:14 AM**		**8:44 AM**		**11:25 AM**		**3:25 PM**		**6:08 PM**		**9:53 PM**		**11:06 PM**	
Date of Count	9/26/2007		4/26/2007		10/4/2007		4/13/2007		9/20/2007		10/11/2007		3/20/2007		10/4/2007		9/27/2007		6/13/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Danbury	11	0	29	0	30	0	79	0	55	0	12	0	3	0	11	0	9	0	3	0
Bethel	15	0	83	0	39	0	79	0	37	0	6	0	6	0	2	0	0	0	0	0
Redding	9	0	19	0	12	0	10	0	5	0	2	0	1	0	0	2	0	0	0	0
Branchville	19	0	58	0	29	0	21	0	13	2	10	1	2	0	4	1	1	0	0	0
Cannondale	24	0	69	0	36	0	12	0	9	0	5	1	3	0	5	0	0	0	0	0
Wilton	33	0	79	0	31	1	10	1	15	2	2	1	2	0	6	1	3	1	0	0
Merritt-7	18	2	53	1	27	29	20	38	4	21	6	0	0	0	4	0	1	0	1	0
South Norwalk	**52**	**5**	**107**	**13**	**77**	**12**	**29**	**84**	**0**	**71**	**7**	**32**	**0**	**17**	**0**	**28**	**0**	**13**	**0**	**4**
Noroton Hts-Rowayton	329	9	0	0	282	12														
Stamford	**132**	**12**	**141**	**61**	**238**	**13**	**0**	**137**	**0**	**42**	**0**	**15**								
Harlem-125th Street	3	16			5	20														
Grand Central Terminal	**0**	**601**	**0**	**563**	**0**	**719**														
Total Danbury Branch	**129**	**2**	**390**	**1**	**204**	**30**	**231**	**39**	**138**	**25**	**43**	**3**	**17**	**0**	**32**	**4**	**14**	**1**	**4**	**0**
Total Main Line	516	643	248	637	602	776	29	221	0	113	7	47	0	17	0	28	0	13	0	4
New Haven Line Totals	**645**	**645**	**638**	**638**	**806**	**806**	**260**	**260**	**138**	**138**	**50**	**50**	**17**	**17**	**32**	**32**	**14**	**14**	**4**	**4**

* - Peak Train

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY OUTBOUND TRAINS

TRAIN #	1812*		1826		1838		1844*		1848*		1860*		1868*		1874*		1882		1890	
South Norwalk Departure Time	9:16 AM		1:09 PM		4:11 PM		5:27 PM		6:10 PM		6:36 PM		7:23 PM		7:53 PM		9:13 PM		11:26 PM	
Date of Count	10/11/2007		3/20/2007		3/20/2007		9/26/2007		6/7/2007		4/12/2007		5/8/2007		9/27/2007		5/2/2007		9/27/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Grand Central Terminal									**487**	**0**	**471**	**0**	**590**	**0**						
Harlem-125th Street									8	0										
Stamford			**30**	**0**			**182**	**0**	**47**	**172**	**24**	**190**	**33**	**196**	**64**	**0**				
Noroton Hts-Rowayton									12	202			6	275						
South Norwalk	**52**	**0**	**10**	**3**	**76**	**0**	**27**	**0**	**7**	**27**	**1**	**56**	**3**	**48**	**3**	**0**	**45**	**0**	**18**	**0**
Merritt-7	0	5	2	1	21	10	49	3	2	8	11	54	1	25	0	5	2	5	1	2
Wilton	0	10	0	6	4	12	2	9	0	28	0	48	0	25	0	6	0	6	0	1
Cannondale	0	9	0	1	0	8	2	25	2	21	0	34	0	16	0	16	0	11	0	3
Branchville	0	2	0	6	3	9	0	33	0	25	0	45	0	19	0	17	0	9	0	4
Redding	1	5	0	3	3	4	0	13	0	8	0	13	0	4	0	4	0	1	0	1
Bethel	0	2	0	6	2	31	0	78	0	48	0	42	0	8	0	11	0	3	0	2
Danbury	0	20	0	16	0	35	0	101	0	26	0	25	0	17	0	8	0	12	0	6
Total Danbury Branch	**1**	**53**	**2**	**39**	**33**	**109**	**53**	**262**	**4**	**164**	**11**	**261**	**1**	**114**	**0**	**67**	**2**	**47**	**1**	**19**
Total Main Line	52	0	40	3	76	0	209	0	561	401	496	246	632	519	67	0	45	0	18	0
New Haven Line Totals	**53**	**53**	**42**	**42**	**109**	**109**	**262**	**262**	**565**	**565**	**507**	**507**	**633**	**633**	**67**	**67**	**47**	**47**	**19**	**19**

* - Peak Train

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY INBOUND TRAINS

27-Aug-08

TRAIN #	6813		6825		6837		6849		6861		6873	
South Norwalk Arrival Time	8:31 AM		11:31 AM		2:31 PM		5:31 PM		8:31 PM		11:58 PM	
Date of Count	10/13/2007		10/13/2007		5/12/2007		10/13/2007		10/13/2007		9/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Danbury	27	0	16	0	10	0	26	0	15	0	12	0
Bethel	15	0	8	0	10	1	10	0	4	0	1	0
Redding	1	0	3	0	6	0	3	2	1	0	0	0
Branchville	3	1	2	0	0	0	0	0	0	0	2	0
Cannondale	5	1	3	0	1	0	0	0	0	0	0	0
Wilton	2	2	6	0	2	0	5	1	2	0	0	1
Merritt-7	4	0	3	0	5	1	0	1	0	0	0	0
South Norwalk	**0**	**53**	**0**	**41**	**0**	**32**	**0**	**40**	**0**	**22**	**0**	**14**
Total Danbury Branch	**57**	**4**	**41**	**0**	**34**	**2**	**44**	**4**	**22**	**0**	**15**	**1**
Total Main Line	0	53	0	41	0	32	0	40	0	22	0	14
New Haven Line Totals	**57**	**57**	**41**	**41**	**34**	**34**	**44**	**44**	**22**	**22**	**15**	**15**

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	6810		6822		6834		6846		6862		6870	
South Norwalk Departure Time	9:11 AM		12:11 PM		3:11 PM		6:11 PM		10:11 PM		12:26 AM	
Date of Count	10/13/2007		5/12/2007		5/12/2007		10/13/2007		9/29/2007		9/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
South Norwalk	**44**	**0**	**53**	**0**	**44**	**0**	**57**	**0**	**37**	**0**	**10**	**0**
Merritt-7	1	2	1	3	2	3	2	0	0	2	0	1
Wilton	0	7	0	7	0	7	2	1	1	1	0	1
Cannondale	0	1	0	2	0	1	1	0	0	0	0	0
Branchville	1	3	0	6	1	7	3	4	0	1	0	1
Redding	0	3	0	5	0	2	2	5	0	1	1	1
Bethel	0	4	0	7	0	7	0	17	1	12	0	2
Danbury	0	26	0	24	0	20	0	40	0	22	0	5
Total Danbury Branch	**2**	**46**	**1**	**54**	**3**	**47**	**10**	**67**	**2**	**39**	**1**	**11**
Total Main Line	44	0	53	0	44	0	57	0	37	0	10	0
New Haven Line Totals	**46**	**46**	**54**	**54**	**47**	**47**	**67**	**67**	**39**	**39**	**11**	**11**

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY INBOUND TRAINS

27-Aug-08

TRAIN #	6813		6825		6837		6849		6861		6873	
South Norwalk Arrival Time	8:31 AM		11:31 AM		2:31 PM		5:31 PM		8:31 PM		11:58 PM	
Date of Count	10/7/2007		9/23/2007		5/6/2007		5/6/2007		3/18/2007		10/7/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Danbury	8	0	17	0	19	0	17	0	20	0	6	0
Bethel	2	1	11	0	3	0	6	0	12	0	0	0
Redding	2	0	6	0	1	0	5	0	3	0	0	0
Branchville	4	0	11	2	9	0	13	0	0	0	2	0
Cannondale	4	0	6	2	3	0	2	0	0	0	0	0
Wilton	3	1	0	0	1	2	6	2	3	0	0	0
Merritt-7	0	0	2	0	0	0	3	1	0	0	0	0
South Norwalk	**0**	**21**	**0**	**49**	**0**	**34**	**0**	**49**	**0**	**38**	**0**	**8**
Total Danbury Branch	**23**	**2**	**53**	**4**	**36**	**2**	**52**	**3**	**38**	**0**	**8**	**0**
Total Main Line	0	21	0	49	0	34	0	49	0	38	0	8
New Haven Line Totals	**23**	**23**	**53**	**53**	**36**	**36**	**52**	**52**	**38**	**38**	**8**	**8**

DANBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	6810		6822		6834		6846		6862		6870	
South Norwalk Departure Time	9:11 AM		12:11 PM		3:11 PM		6:11 PM		10:11 PM		12:26 AM	
Date of Count	9/23/2007		9/23/2007		5/6/2007		10/21/2007		10/7/2007		9/16/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
South Norwalk	**31**	**0**	**23**	**0**	**31**	**0**	**56**	**0**	**30**	**0**	**6**	**0**
Merritt-7	0	3	0	0	1	1	2	1	0	2	0	0
Wilton	0	4	0	2	0	2	0	2	0	0	0	0
Cannondale	0	3	0	1	0	6	0	4	0	0	0	0
Branchville	4	2	0	5	0	2	0	11	0	0	0	2
Redding	0	1	0	1	0	3	0	3	1	2	0	0
Bethel	1	2	0	6	0	4	0	12	0	7	0	0
Danbury	0	21	0	8	0	14	0	25	0	20	0	4
Total Danbury Branch	**5**	**36**	**0**	**23**	**1**	**32**	**2**	**58**	**1**	**31**	**0**	**6**
Total Main Line	31	0	23	0	31	0	56	0	30	0	6	0
New Haven Line Totals	**36**	**36**	**23**	**23**	**32**	**32**	**58**	**58**	**31**	**31**	**6**	**6**

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
WEEKDAY INBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Waterbury	191	0	110	0	74%	NA
Naugatuck	63	8	19	3	232%	167%
Beacon Falls	5	3	12	1	-58%	200%
Seymour	24	4	11	1	118%	300%
Ansonia	20	8	15	12	33%	-33%
Derby Shelton	22	8	16	7	38%	14%
Danbury	242	0	236	0	3%	NA
Bethel	267	0	172	1	55%	-100%
Redding	58	2	53	0	9%	NA
Branchville	157	4	191	2	-18%	100%
Cannondale	163	1	108	5	51%	-80%
Wilton	181	7	219	1	-17%	600%
Merritt-7	134	91	87	17	54%	435%
New Canaan	1118	0	1211	0	-8%	NA
Talmadge Hill	372	2	361	0	3%	NA
Springdale	441	7	542	5	-19%	40%
Glenbrook	313	11	411	26	-24%	-58%
NH-State Street	6	0 #	33	62 #	-82%	-100%
New Haven	3612	0 #	3000	151 #	20%	-100%
Milford	1721	52	1162	50	48%	4%
Stratford	1388	80 *	992	71 *	40%	13%
Bridgeport	2982	647 *	2484	447 *	20%	45%
Fairfield	2851	193	2639	155	8%	25%
Southport	326	12	219	12	49%	0%
Green's Farms	631	18	557	11	13%	64%
Westport	2180	245	2551	143	-15%	71%
East Norwalk	559	107	484	106	15%	1%
South Norwalk	2015	1116 *	1754	672 *	15%	66%
Rowayton	491	34	574	8	-14%	325%
Darien	1337	140	1404	98	-5%	43%
Noroton Heights	1244	51	1166	36	7%	42%
Stamford	**7725**	**3929 ***	**6126**	**3680 ***	**26%**	**7%**
Old Greenwich	880	69	989	54	-11%	28%
Riverside	689	40	780	20	-12%	100%
Cos Cob	773	39	774	37	0%	5%
Greenwich	3171	821	2957	551	7%	49%
Port Chester	2439	389	2366	436	3%	-11%
Rye	2230	146	2560	115	-13%	27%
Harrison	2388	236	2338	135	2%	75%
Mamaroneck	2152	191	2416	170	-11%	12%
Larchmont	3488	117	3809	124	-8%	-6%
New Rochelle	4040	722	3809	640	6%	13%
Pelham	2445	170	2475	143	-1%	19%
Mount Vernon East	1784	931	1578	1045	13%	-11%
Fordham	51	3322	46	2810	11%	18%
Harlem-125th Street	55	2636	15	1854	267%	42%
Grand Central Terminal	**0**	**42815**	**0**	**42281**	**NA**	**1%**
New Haven Line Totals	**59424**	**59424**	**56198**	**56198**	**6%**	**6%**
Inner New Haven Totals	26530	7193	26897	6280	-1%	15%
Stamford Totals	7725	3929	6126	3680	26%	7%
Outer New Haven Totals	21343	2695	19019	2022	12%	33%
New Canaan Branch Totals	2244	20	2525	31	-11%	-35%
Danbury Branch Totals	1202	105	1066	26	13%	304%
Waterbury Branch Totals	325	31	183	24	78%	29%
Additional SLE Passengers	0	0	367	0	NA	NA

* - Stamford, South Norwalk, Bridgeport and Stratford off counts include passengers transferring from Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains boarding east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
WEEKDAY OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**41054**	**0**	**40172**	**0**	**2%**	**NA**
Harlem-125th Street	2425	57	1516	40	60%	43%
Fordham	3362	63	2983	22	13%	186%
Mount Vernon	1001	1603	1057	1608	-5%	0%
Pelham	184	2237	212	2370	-13%	-6%
New Rochelle	814	4094	771	3689	6%	11%
Larchmont	173	3415	128	3563	35%	-4%
Mamaroneck	209	2285	216	2324	-3%	-2%
Harrison	311	2313	369	2146	-16%	8%
Rye	220	2301	184	2689	20%	-14%
Port Chester	402	2398	356	2518	13%	-5%
Greenwich	527	2972	452	3107	17%	-4%
Cos Cob	48	689	53	715	-9%	-4%
Riverside	29	554	20	608	45%	-9%
Old Greenwich	52	818	40	941	30%	-13%
Stamford	**3952**	**7650 ***	**3732**	**5999 ***	**6%**	**28%**
Noroton Heights	83	1115	33	1050	152%	6%
Darien	138	1289	105	1307	31%	-1%
Rowayton	25	405	3	510	733%	-21%
South Norwalk	825	2046 *	784	1738 *	5%	18%
East Norwalk	114	554	119	506	-4%	9%
Westport	278	2127	141	2384	97%	-11%
Green's Farms	35	503	7	469	400%	7%
Southport	22	274	10	232	120%	18%
Fairfield	169	2769	153	2417	10%	15%
Bridgeport	724	2962 *	621	2467 *	17%	20%
Stratford	83	1198 *	74	953 *	12%	26%
Milford	63	1596	32	1151	97%	39%
New Haven	1	3579	86	3192	-99%	12%
NH-State Street	0	40	32	4	-100%	900%
Glenbrook	23	340	9	398	156%	-15%
Springdale	5	401	12	424	-58%	-5%
Talmadge Hill	1	321	4	369	-75%	-13%
New Canaan	0	1072	0	1122	NA	-4%
Merritt-7	89	118	32	92	178%	28%
Wilton	6	151	10	224	-40%	-33%
Cannondale	4	144	5	96	-20%	50%
Branchville	3	169	8	183	-63%	-8%
Redding	4	56	0	58	NA	-3%
Bethel	2	231	1	178	100%	30%
Danbury	0	266	0	221	NA	20%
Derby Shelton	12	16	6	27	100%	-41%
Ansonia	13	15	10	17	30%	-12%
Seymour	7	32	3	12	133%	167%
Beacon Falls	1	6	0	12	NA	-50%
Naugatuck	7	57	4	32	75%	78%
Waterbury	0	199	0	127	NA	57%
New Haven Line Totals	**57500**	**57500 #**	**54567**	**54567 #**	**5%**	**5%**
Inner New Haven Totals	7332	25742	6841	26300	7%	-2%
Stamford Totals	3952	7650	3732	5999	6%	28%
Outer New Haven Totals	2560	20457	2200	18380	16%	11%
New Canaan Branch Totals	29	2134	25	2313	16%	-8%
Danbury Branch Totals	108	1135	56	1052	93%	8%
Waterbury Branch Totals	40	325	23	227	74%	43%
Additional SLE Passengers	0	0 #	2	256 #	NA	NA

* - Stamford, South Norwalk and Bridgeport on counts include passengers transferring to Branch Line shuttle trains.

\# - Totals include passengers on Shore Line East trains getting off east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
AM PEAK INBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Waterbury	65	0	24	0	171%	NA
Naugatuck	44	1	10	0	340%	NA
Beacon Falls	5	2	8	1	-38%	100%
Seymour	10	2	5	0	100%	NA
Ansonia	10	4	8	1	25%	300%
Derby Shelton	10	4	12	2	-17%	100%
Danbury	204	0	172	0	19%	NA
Bethel	253	0	155	0	63%	NA
Redding	55	0	47	0	17%	NA
Branchville	140	2	180	1	-22%	100%
Cannondale	150	0	104	0	44%	NA
Wilton	168	4	209	1	-20%	300%
Merritt-7	122	91	85	16	44%	469%
New Canaan	779	0	929	0	-16%	NA
Talmadge Hill	324	2	326	0	-1%	NA
Springdale	346	2	465	0	-26%	NA
Glenbrook	243	1	336	0	-28%	NA
NH State Street	0	0 #	6	62	-100%	-100%
New Haven	1697	0 #	1594	151	6%	-100%
Milford	1239	19	837	26	48%	-27%
Stratford	1128	29 *	785	35	44%	-17%
Bridgeport	1915	265 *	1671	192	15%	38%
Fairfield	2151	107	2000	98	8%	9%
Southport	242	8	178	9	36%	-11%
Green's Farms	511	8	487	9	5%	-11%
Westport	1559	129	1795	84	-13%	54%
East Norwalk	460	73	383	76	20%	-4%
South Norwalk	1299	755 *	1123	408	16%	85%
Rowayton	401	13	524	2	-23%	550%
Darien	927	78	980	65	-5%	20%
Noroton Heights	1020	19	957	12	7%	58%
Stamford	**3467**	**2454 ***	**2575**	**2486**	**35%**	**-1%**
Old Greenwich	609	35	690	25	-12%	40%
Riverside	494	20	587	9	-16%	122%
Cos Cob	578	24	585	26	-1%	-8%
Greenwich	1458	616	1494	406	-2%	52%
Port Chester	1261	68	1238	36	2%	89%
Rye	1303	59	1356	29	-4%	103%
Harrison	1469	75	1511	40	-3%	88%
Mamaroneck	1206	31	1424	25	-15%	24%
Larchmont	2331	28	2783	24	-16%	17%
New Rochelle	2191	116	2214	83	-1%	40%
Pelham	1577	24	1897	16	-17%	50%
Mount Vernon	923	122	975	166	-5%	-27%
Fordham	5	440	3	271	67%	62%
Harlem-125th Street	27	932	8	579	238%	61%
Grand Central Terminal	**0**	**29714**	**0**	**30624**	**NA**	**-3%**
New Haven Line Totals	**36376**	**36376**	**36096**	**36096**	**1%**	**1%**
Inner New Haven Totals	15405	1658	16757	1156	-8%	43%
Stamford Totals	3467	2454	2575	2486	35%	-1%
Outer New Haven Totals	14549	1503	13320	1229	9%	22%
New Canaan Branch Totals	1692	5	2056	0	-18%	NA
Danbury Branch Totals	1092	97	952	18	15%	439%
Waterbury Branch Totals	144	13	67	4	115%	225%
Additional SLE Passengers	NA	0	361	0	NA	NA

* - Stamford, South Norwalk, Bridgeport and Stratford off counts include passengers transferring from Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains boarding east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
PM PEAK OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**25109**	**0**	**25693**	**0**	**-2%**	**NA**
Harlem-125th Street	674	17	442	12	52%	42%
Fordham	509	4	391	5	30%	-20%
Mount Vernon	124	767	103	847	20%	-9%
Pelham	40	1352	53	1557	-25%	-13%
New Rochelle	175	1905	154	1842	14%	3%
Larchmont	39	1968	9	2259	333%	-13%
Mamaroneck	44	1114	57	1161	-23%	-4%
Harrison	224	1309	244	1138	-8%	15%
Rye	76	1175	105	1349	-28%	-13%
Port Chester	100	1065	67	1060	49%	0%
Greenwich	309	1174	276	1519	12%	-23%
Cos Cob	24	460	32	484	-25%	-5%
Riverside	15	356	7	404	114%	-12%
Old Greenwich	28	511	19	587	47%	-13%
Stamford	**2096**	**2910 ***	**2068**	**2347 ***	**1%**	**24%**
Noroton Heights	12	753	10	792	20%	-5%
Darien	48	736	56	851	-14%	-14%
Rowayton	9	288	0	399	NA	-28%
South Norwalk	336	1091 *	345	931 *	-3%	17%
East Norwalk	55	405	56	371	-2%	9%
Westport	111	1313	57	1530	95%	-14%
Green's Farms	22	380	6	380	267%	0%
Southport	7	186	5	168	40%	11%
Fairfield	62	1837	39	1653	59%	11%
Bridgeport	348	1671 *	298	1455 *	17%	15%
Stratford	21	814 *	28	683 *	-25%	19%
Milford	18	968	9	722	100%	34%
New Haven	0	1637	24	1551	-100%	6%
NH-State Street	0	0	6	1	-100%	-100%
Glenbrook	8	223	0	299	NA	-25%
Springdale	2	287	0	287	NA	0%
Talmadge Hill	1	268	0	295	NA	-9%
New Canaan	0	727	0	696	NA	4%
Merritt-7	63	95	26	83	142%	14%
Wilton	2	116	4	181	-50%	-36%
Cannondale	4	112	2	78	100%	44%
Branchville	0	139	0	135	NA	3%
Redding	0	42	0	45	NA	-7%
Bethel	0	187	0	140	NA	34%
Danbury	0	177	0	149	NA	19%
Derby Shelton	5	8	5	17	0%	-53%
Ansonia	9	8	5	10	80%	-20%
Seymour	0	24	1	5	-100%	380%
Beacon Falls	1	3	0	11	NA	-73%
Naugatuck	0	48	1	25	-100%	92%
Waterbury	0	100	0	68	NA	47%
New Haven Line Totals	**30730**	**30730 #**	**30703**	**30703 #**	**0%**	**0%**
Inner New Haven Totals	1707	13160	1517	14212	13%	-7%
Stamford Totals	2096	2910	2068	2347	1%	24%
Outer New Haven Totals	1049	12079	939	11487	12%	5%
New Canaan Branch Totals	11	1505	0	1577	NA	-5%
Danbury Branch Totals	69	868	32	811	116%	7%
Waterbury Branch Totals	15	191	12	136	25%	40%
Additional SLE Passengers	0	0 #	0	121	NA	NA

* - Stamford, South Norwalk and Bridgeport on counts include passengers transferring to Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains getting off east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
AM REVERSE PEAK OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**3076**	**0**	**2884**	**0**	**7%**	**NA**
Harlem-125th Street	857	3	577	7	49%	-57%
Fordham	1797	11	1682	5	7%	120%
Mount Vernon	563	244	623	212	-10%	15%
Pelham	90	146	99	175	-9%	-17%
New Rochelle	333	799	410	660	-19%	21%
Larchmont	75	287	58	285	29%	1%
Mamaroneck	74	467	67	485	10%	-4%
Harrison	34	285	80	350	-58%	-19%
Rye	56	494	27	573	107%	-14%
Port Chester	166	510	177	609	-6%	-16%
Greenwich	79	896	50	721	58%	24%
Cos Cob	7	40	2	42	250%	-5%
Riverside	4	35	4	46	0%	-24%
Old Greenwich	6	76	7	83	-14%	-8%
Stamford	**423**	**2052 ***	**378**	**1614**	**12%**	**27%**
Noroton Heights	36	48	11	34	227%	41%
Darien	36	134	11	127	227%	6%
Rowayton	9	7	1	13	800%	-46%
South Norwalk	131	261 *	148	183	-11%	43%
East Norwalk	26	34	26	24	0%	42%
Westport	46	143	19	212	142%	-33%
Green's Farms	4	31	1	14	300%	121%
Southport	7	13	1	14	600%	-7%
Fairfield	41	153	59	142	-31%	8%
Bridgeport	103	213 *	78	213	32%	0%
Stratford	35	35	36	33	-3%	6%
Milford	19	122	10	109	90%	12%
New Haven	1	335	1	336	0%	0%
NH-State Street	0	40	0	2	NA	1900%
Glenbrook	9	23	5	20	80%	15%
Springdale	3	33	2	34	50%	-3%
Talmadge Hill	0	5	4	8	-100%	-38%
New Canaan	0	91	0	88	NA	3%
Merritt-7	0	5	0	3	NA	67%
Wilton	0	10	0	20	NA	-50%
Cannondale	0	9	0	6	NA	50%
Branchville	0	2	1	11	-100%	-82%
Redding	1	5	0	2	NA	150%
Bethel	0	2	0	3	NA	-33%
Danbury	0	20	0	12	NA	67%
Derby Shelton	1	4	1	3	0%	33%
Ansonia	2	1	2	1	0%	0%
Seymour	2	0	0	1	NA	-100%
Beacon Falls	0	0	0	1	NA	-100%
Naugatuck	2	6	2	2	0%	200%
Waterbury	0	24	0	8	NA	200%
New Haven Line Totals	**8154**	**8154 #**	**7546**	**7546**	**8%**	**8%**
Inner New Haven Totals	3284	4290	3286	4246	0%	1%
Stamford Totals	423	2052	378	1614	12%	27%
Outer New Haven Totals	494	1569	402	1456	23%	8%
New Canaan Branch Totals	12	152	11	150	9%	1%
Danbury Branch Totals	1	53	1	57	0%	-7%
Waterbury Branch Totals	7	35	5	16	40%	119%
Additional SLE Passengers	0	0 #	2	0	NA	NA

* - Stamford, South Norwalk and Bridgeport on counts include passengers transferring to Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains getting off east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
WEEKDAY OFF-PEAK INBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Waterbury	126	0	86	0	47%	NA
Naugatuck	19	7	9	3	111%	133%
Beacon Falls	0	1	4	0	-100%	NA
Seymour	14	2	6	1	133%	100%
Ansonia	10	4	7	11	43%	-64%
Derby Shelton	12	4	4	5	200%	-20%
Danbury	38	0	64	0	-41%	NA
Bethel	14	0	17	1	-18%	-100%
Redding	3	2	6	0	-50%	NA
Branchville	17	2	11	1	55%	100%
Cannondale	13	1	4	5	225%	-80%
Wilton	13	3	10	0	30%	NA
Merritt-7	12	0	2	1	500%	-100%
New Canaan	339	0	282	0	20%	NA
Talmadge Hill	48	0	35	0	37%	NA
Springdale	95	5	77	5	23%	0%
Glenbrook	70	10	75	26	-7%	-62%
NH-State St.	6	0	27	0	-78%	NA
New Haven	1915	0	1406	0	36%	NA
Milford	482	33	325	24	48%	38%
Stratford	260	51	207	36	26%	42%
Bridgeport	1067	382 *	813	255	31%	50%
Fairfield	700	86	639	57	10%	51%
Southport	84	4	41	3	105%	33%
Green's Farms	120	10	70	2	71%	400%
Westport	621	116	756	59	-18%	97%
East Norwalk	99	34	101	30	-2%	13%
South Norwalk	716	361 *	631	264	13%	37%
Rowayton	90	21	50	6	80%	250%
Darien	410	62	424	33	-3%	88%
Noroton Heights	224	32	209	24	7%	33%
Stamford	**4258**	**1475 ***	**3551**	**1194**	**20%**	**24%**
Old Greenwich	271	34	299	29	-9%	17%
Riverside	195	20	193	11	1%	82%
Cos Cob	195	15	189	11	3%	36%
Greenwich	1713	205	1463	145	17%	41%
Port Chester	1178	321	1128	400	4%	-20%
Rye	927	87	1204	86	-23%	1%
Harrison	919	161	827	95	11%	69%
Mamaroneck	946	160	992	145	-5%	10%
Larchmont	1157	89	1026	100	13%	-11%
New Rochelle	1849	606	1595	557	16%	9%
Pelham	868	146	578	127	50%	15%
Mount Vernon	861	809	603	879	43%	-8%
Fordham	46	2882	43	2539	7%	14%
Harlem-125th Street	28	1704	7	1275	300%	34%
Grand Central Terminal	**0**	**13101**	**0**	**11657**	**NA**	**12%**
New Haven Line Totals	**23048**	**23048**	**20102**	**20102**	**15%**	**15%**
Inner New Haven Totals	11125	5535	10140	5124	10%	8%
Stamford Totals	4258	1475	3551	1194	20%	24%
Outer New Haven Totals	6794	1192	5699	793	19%	50%
New Canaan Branch Totals	552	15	469	31	18%	-52%
Danbury Branch Totals	110	8	114	8	-4%	0%
Waterbury Branch Totals	181	18	116	20	56%	-10%
Additional SLE Passengers	NA	0	6	0	NA	NA

* - Stamford, South Norwalk, Bridgeport and Stratford off counts include passengers transferring from Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains boarding east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
WEEKDAY OFF-PEAK OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**12869**	**0**	**11595**	**0**	**11%**	**NA**
Harlem-125th Street	894	37	497	21	80%	76%
Fordham	1056	48	910	12	16%	300%
Mount Vernon	314	592	331	549	-5%	8%
Pelham	54	739	60	638	-10%	16%
New Rochelle	306	1390	207	1187	48%	17%
Larchmont	59	1160	61	1019	-3%	14%
Mamaroneck	91	704	92	678	-1%	4%
Harrison	53	719	45	658	18%	9%
Rye	88	632	52	767	69%	-18%
Port Chester	136	823	112	849	21%	-3%
Greenwich	139	902	126	867	10%	4%
Cos Cob	17	189	19	189	-11%	0%
Riverside	10	163	9	158	11%	3%
Old Greenwich	18	231	14	271	29%	-15%
Stamford	**1433**	**2688 ***	**1286**	**2038**	**11%**	**32%**
Noroton Heights	35	314	12	224	192%	40%
Darien	54	419	38	329	42%	27%
Rowayton	7	110	2	98	250%	12%
South Norwalk	358	694 *	291	624	23%	11%
East Norwalk	33	115	37	111	-11%	4%
Westport	121	671	65	642	86%	5%
Green's Farms	9	92	0	75	NA	23%
Southport	8	75	4	50	100%	50%
Fairfield	66	779	55	622	20%	25%
Bridgeport	273	1078 *	245	799	11%	35%
Stratford	27	349	10	237	170%	47%
Milford	26	506	13	320	100%	58%
New Haven	0	1607	61	1305	-100%	23%
NH-State Street	0	0	26	1	-100%	-100%
Glenbrook	6	94	4	79	50%	19%
Springdale	0	81	10	103	-100%	-21%
Talmadge Hill	0	48	0	66	NA	-27%
New Canaan	0	254	0	338	NA	-25%
Merritt-7	26	18	6	6	333%	200%
Wilton	4	25	6	23	-33%	9%
Cannondale	0	23	3	12	-100%	92%
Branchville	3	28	7	37	-57%	-24%
Redding	3	9	0	11	NA	-18%
Bethel	2	42	1	35	100%	20%
Danbury	0	69	0	60	NA	15%
Derby Shelton	6	4	0	7	NA	-43%
Ansonia	2	6	3	6	-33%	0%
Seymour	5	8	2	6	150%	33%
Beacon Falls	0	3	0	0	NA	NA
Naugatuck	5	3	1	5	400%	-40%
Waterbury	0	75	0	51	NA	47%
New Haven Line Totals	**18616**	**18616 #**	**16318**	**16318 #**	**14%**	**14%**
Inner New Haven Totals	2341	8292	2038	7842	15%	6%
Stamford Totals	1433	2688	1286	2038	11%	32%
Outer New Haven Totals	1017	6809	859	5437	18%	25%
New Canaan Branch Totals	6	477	14	586	-57%	-19%
Danbury Branch Totals	38	214	23	184	65%	16%
Waterbury Branch Totals	18	99	6	75	200%	32%
Additional SLE Passengers	0	0 #	0	135 #	NA	NA

* - Stamford, South Norwalk and Bridgeport on counts include passengers transferring to Branch Line shuttle trains.

- Totals include passengers on Shore Line East trains getting off east of New Haven-State Street station.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
SATURDAY INBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Waterbury	211	0	153	0	38%	NA
Naugatuck	41	1	16	2	156%	NA
Beacon Falls	0	1	1	0	-100%	NA
Seymour	14	8	6	2	133%	NA
Ansonia	9	14	11	5	-18%	NA
Derby Shelton	19	10	18	9	6%	NA
Danbury	106	0	118	0	-10%	NA
Bethel	48	1	30	0	60%	NA
Redding	14	2	9	0	56%	NA
Branchville	7	1	20	4	-65%	-75%
Cannondale	9	1	11	2	-18%	-50%
Wilton	17	4	13	4	31%	0%
Merritt-7	12	2	3	1	300%	100%
New Canaan	327	0	269	0	22%	NA
Talmadge Hill	23	1	26	0	-12%	NA
Springdale	94	4	80	3	18%	33%
Glenbrook	80	9	66	11	21%	-18%
New Haven	4364	0	3148	0	39%	NA
Milford	755	35	592	9	28%	289%
Stratford	605	31	431	25	40%	24%
Bridgeport	1573	496 *	1407	375 *	12%	32%
Fairfield	1177	62	1055	48	12%	29%
Southport	68	8	59	10	15%	-20%
Green's Farms	87	4	45	1	93%	300%
Westport	886	72	995	110	-11%	-35%
East Norwalk	156	34	129	24	21%	42%
South Norwalk	990	456 *	839	415 *	18%	10%
Rowayton	82	10	31	2	165%	400%
Darien	476	62	523	42	-9%	48%
Noroton Heights	321	30	357	15	-10%	100%
Stamford	**4168**	**1862 ***	**3444**	**1470 ***	**21%**	**27%**
Old Greenwich	326	51	274	26	19%	96%
Riverside	177	18	106	11	67%	64%
Cos Cob	175	19	216	16	-19%	19%
Greenwich	1134	182	1132	108	0%	69%
Port Chester	1472	464	1458	302	1%	54%
Rye	947	115	1003	113	-6%	2%
Harrison	770	93	738	54	4%	72%
Mamaroneck	947	154	926	180	2%	-14%
Larchmont	1087	143	1168	120	-7%	19%
New Rochelle	2257	566	1939	564	16%	0%
Pelham	903	155	805	101	12%	53%
Mount Vernon	923	745	851	735	8%	1%
Fordham	35	2471	41	2387	-15%	4%
Harlem-125th Street	63	2079	24	1261	163%	65%
Grand Central Terminal	**0**	**17479**	**0**	**16019**	**NA**	**9%**
New Haven Line Totals	**27955**	**27955**	**24586**	**24586**	**14%**	**14%**
Inner New Haven Totals	11153	5176	10657	4717	5%	10%
Stamford Totals	4168	1862	3444	1470	21%	27%
Outer New Haven Totals	11540	1300	9611	1076	20%	21%
New Canaan Branch Totals	524	14	441	14	19%	0%
Danbury Branch Totals	213	11	204	11	4%	0%
Waterbury Branch Totals	294	34	205	18	43%	89%

* - Stamford, South Norwalk and Bridgeport Counts include passengers transferring from New Canaan, Danbury and Waterbury Branch shuttles respectively.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
SATURDAY OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**17995**	**0**	**15541**	**0**	**16%**	**NA**
Harlem-125th Street	1722	68	1292	38	33%	79%
Fordham	2667	27	2532	32	5%	-16%
Mount Vernon	819	978	684	830	20%	18%
Pelham	143	878	127	696	13%	26%
New Rochelle	646	2221	617	1928	5%	15%
Larchmont	132	1231	113	1120	17%	10%
Mamaroneck	136	1094	144	915	-6%	20%
Harrison	96	853	93	732	3%	17%
Rye	99	991	92	1060	8%	-7%
Port Chester	344	1443	319	1473	8%	-2%
Greenwich	166	1232	143	1133	16%	9%
Cos Cob	14	240	14	215	0%	12%
Riverside	13	160	7	161	86%	-1%
Old Greenwich	24	239	14	249	71%	-4%
Stamford	**1925**	**4118 ***	**1367**	**3593 ***	**41%**	**15%**
Noroton Heights	40	305	30	253	33%	21%
Darien	73	470	60	477	22%	-1%
Rowayton	5	88	3	46	67%	91%
South Norwalk	581	1073 *	460	961 *	26%	12%
East Norwalk	47	166	29	107	62%	55%
Westport	94	868	69	863	36%	1%
Green's Farms	13	72	8	65	NA	11%
Southport	11	91	12	58	-8%	57%
Fairfield	57	1212	56	1113	2%	9%
Bridgeport	506	1718 *	407	1542 *	24%	11%
Stratford	44	616	36	365	22%	69%
Milford	27	751	16	496	69%	51%
New Haven	0	4127	0	2837	NA	45%
Glenbrook	27	74	7	41	286%	80%
Springdale	6	92	0	86	NA	7%
Talmadge Hill	2	28	0	32	NA	-13%
New Canaan	0	418	0	332	NA	26%
Merritt-7	6	11	1	5	500%	120%
Wilton	3	24	2	19	50%	26%
Cannondale	1	4	2	14	-50%	-71%
Branchville	5	22	3	29	67%	-24%
Redding	3	17	1	10	NA	70%
Bethel	1	49	0	29	NA	69%
Danbury	0	137	0	100	NA	37%
Derby Shelton	3	12	5	14	-40%	-14%
Ansonia	10	9	3	13	233%	-31%
Seymour	4	21	0	10	NA	110%
Beacon Falls	2	3	0	4	NA	-25%
Naugatuck	1	28	2	33	-50%	-15%
Waterbury	0	234	0	182	NA	29%
New Haven Line Totals	**28513**	**28513**	**24311**	**24311**	**17%**	**17%**
Inner New Haven Totals	5299	11587	4899	10544	8%	10%
Stamford Totals	1925	4118	1367	3593	41%	15%
Outer New Haven Totals	1498	11557	1186	9183	26%	26%
New Canaan Branch Totals	35	612	7	491	400%	25%
Danbury Branch Totals	19	264	9	206	111%	28%
Waterbury Branch Totals	20	307	10	256	100%	20%

* - Stamford, South Norwalk and Bridgeport Counts include passengers transferring to New Canaan, Danbury and Waterbury Branch shuttles respectively.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
SUNDAY INBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Waterbury	217	0	181	0	20%	NA
Naugatuck	53	5	26	3	104%	67%
Beacon Falls	16	2	8	2	100%	0%
Seymour	16	6	10	2	60%	200%
Ansonia	13	19	23	6	-43%	217%
Derby Shelton	8	4	23	1	-65%	300%
Danbury	87	0	101	0	-14%	NA
Bethel	34	1	45	1	-24%	NA
Redding	17	0	13	0	31%	NA
Branchville	39	2	30	4	30%	-50%
Cannondale	15	2	14	0	7%	NA
Wilton	13	5	16	3	-19%	67%
Merritt-7	5	1	3	1	67%	0%
New Canaan	313	0	334	0	-6%	NA
Talmadge Hill	35	1	33	0	6%	NA
Springdale	60	8	80	4	-25%	100%
Glenbrook	52	7	52	9	0%	-22%
New Haven	3191	0	2603	0	23%	NA
Milford	865	18	427	12	103%	50%
Stratford	417	37	236	31	77%	19%
Bridgeport	1361	470 *	1063	387 *	28%	21%
Fairfield	893	64	746	40	20%	60%
Southport	82	3	49	3	67%	0%
Green's Farms	82	4	61	4	34%	0%
Westport	870	58	893	56	-3%	4%
East Norwalk	93	42	72	20	29%	110%
South Norwalk	823	378 *	791	352 *	4%	7%
Rowayton	132	10	47	1	181%	900%
Darien	419	58	465	43	-10%	35%
Noroton Heights	265	40	265	27	0%	48%
Stamford	**3153**	**1363 ***	**2719**	**1347 ***	**16%**	**1%**
Old Greenwich	196	15	217	11	-10%	36%
Riverside	110	16	129	5	-15%	220%
Cos Cob	161	12	121	8	33%	50%
Greenwich	737	124	806	84	-9%	48%
Port Chester	1069	199	1062	232	1%	-14%
Rye	682	70	720	57	-5%	23%
Harrison	533	82	522	49	2%	67%
Mamaroneck	660	126	666	135	-1%	-7%
Larchmont	793	111	661	88	20%	26%
New Rochelle	1437	381	1316	417	9%	-9%
Pelham	584	73	470	59	24%	24%
Mount Vernon	547	495	489	488	12%	1%
Fordham	16	1603	2	1491	700%	8%
Harlem-125th Street	37	1822	3	1217	NA	50%
Grand Central Terminal	**0**	**13464**	**0**	**11913**	**NA**	**13%**
New Haven Line Totals	**21201**	**21201**	**18613**	**18613**	**14%**	**14%**
Inner New Haven Totals	7525	3307	7181	3124	5%	6%
Stamford Totals	3153	1363	2719	1347	16%	1%
Outer New Haven Totals	9493	1182	7718	976	23%	21%
New Canaan Branch Totals	460	16	499	13	-8%	23%
Danbury Branch Totals	210	11	222	9	-5%	22%
Waterbury Branch Totals	323	36	271	14	19%	157%

* - Stamford, South Norwalk and Bridgeport Counts include passengers transferring from New Canaan, Danbury and Waterbury Branch shuttles respectively.

NEW HAVEN LINE SPRING/FALL 2007 ON/OFF COUNT SUMMARY
SUNDAY OUTBOUND

27-Aug-08	2007 TOTALS		2001 TOTALS		% Change (2001-2007)	
STATION	**ON**	**OFF**	**ON**	**OFF**	**ON**	**OFF**
Grand Central Terminal	**14114**	**0**	**12856**	**0**	**10%**	**NA**
Harlem-125th Street	1894	52	1123	19	69%	174%
			0	0		
Fordham	1875	11	1660	16	13%	-31%
Mount Vernon	519	557	545	528	-5%	5%
Pelham	87	551	75	506	16%	9%
New Rochelle	359	1539	441	1518	-19%	1%
Larchmont	87	731	69	767	26%	-5%
Mamaroneck	128	734	124	737	3%	0%
Harrison	54	619	52	494	4%	25%
Rye	65	622	56	700	16%	-11%
Port Chester	238	1241	234	1339	2%	-7%
Greenwich	138	839	94	737	47%	14%
Cos Cob	9	130	8	116	13%	12%
Riverside	11	107	7	94	57%	14%
Old Greenwich	15	173	10	163	50%	6%
Stamford	**1470**	**3628 ***	**1112**	**2846 ***	**32%**	**27%**
Noroton Heights	31	253	18	228	72%	11%
Darien	60	391	34	371	76%	5%
Rowayton	12	39	3	39	300%	0%
South Norwalk	382	900 *	359	812 *	6%	11%
East Norwalk	34	120	14	90	143%	33%
Westport	63	680	44	728	43%	-7%
Green's Farms	3	64	2	38	NA	68%
Southport	10	64	3	38	233%	68%
Fairfield	48	1013	39	907	23%	12%
Bridgeport	448	1423 *	308	1113 *	45%	28%
Stratford	33	430	19	323	74%	33%
Milford	28	700	9	460	211%	52%
New Haven	0	3772	0	2823	NA	34%
Glenbrook	11	42	9	40	22%	5%
Springdale	4	67	8	70	-50%	-4%
Talmadge Hill	3	27	1	25	200%	8%
New Canaan	0	297	0	266	NA	12%
Merritt-7	3	7	1	7	NA	0%
Wilton	0	10	0	27	NA	-63%
Cannondale	0	14	0	12	NA	17%
Branchville	4	22	3	20	33%	10%
Redding	1	10	0	9	NA	11%
Bethel	1	31	1	30	NA	3%
Danbury	0	92	0	92	NA	0%
Derby Shelton	10	5	3	11	233%	-55%
Ansonia	6	10	3	11	100%	-9%
Seymour	0	9	0	7	NA	29%
Beacon Falls	0	3	0	6	NA	NA
Naugatuck	2	31	4	15	-50%	107%
Waterbury	0	200	0	153	NA	31%
New Haven Line Totals	**22260**	**22260**	**19351**	**19351**	**15%**	**15%**
Inner New Haven Totals	3585	7854	3375	7715	6%	2%
Stamford Totals	1470	3628	1112	2846	32%	27%
Outer New Haven Totals	1152	9849	852	7970	35%	24%
New Canaan Branch Totals	18	433	18	401	0%	8%
Danbury Branch Totals	9	186	5	197	80%	-6%
Waterbury Branch Totals	18	258	10	203	80%	27%

* - Stamford, South Norwalk and Bridgeport Counts include passengers transferring to New Canaan, Danbury and Waterbury Branch shuttles respectively.

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY INBOUND TRAINS

27-Aug-08

TRAIN #	1707*		1711*		1723*		1731*		1735*		1741		1745		1751		1755		1759	
Stamford Arrival Time	05:48 AM		06:38 AM		07:27 AM		NA		08:21 AM		09:15 AM		09:52 AM		10:43 AM		11:43 AM		12:43 PM	
Date of Count	10/5/2007		10/10/2007		10/9/2007		4/18/2007		5/10/2007		9/27/2007		3/12/2007		3/15/2007		3/12/2007		6/13/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	55	0	224	0	191	0	182	0	127	0	46	0	18	0	26	0	9	0	14	0
Talmadge Hill	14	0	75	0	133	2	62	0	40	0	17	0	2	0	1	0	3	0	5	0
Springdale	19	0	71	1	105	0	85	0	66	1	27	0	6	1	10	0	1	0	6	3
Glenbrook	18	0	51	0	69	1	48	0	57	0	25	0	4	0	10	0	2	0	4	3
Stamford	**17**	**2**	**52**	**18**	**50**	**44**			**80**	**21**	**58**	**54**	**0**	**29**	**0**	**47**	**0**	**15**	**0**	**23**
Fordham-Old Greenwich	265	11	0	0	0	0	0	0	0	0	298	65								
Harlem-125th Street	0	13	1	20					1	7	1	20								
Grand Central Terminal	**0**	**362**	**0**	**435**	**0**	**501**	**0**	**377**	**0**	**342**	**0**	**333**								
Total New Canaan Branch	**106**	**0**	**421**	**1**	**498**	**3**	**377**	**0**	**290**	**1**	**115**	**0**	**30**	**1**	**47**	**0**	**15**	**0**	**29**	**6**
Total Main Line	282	388	53	473	50	545	0	377	81	370	357	472	0	29	0	47	0	15	0	23
New Haven Line Totals	**388**	**388**	**474**	**474**	**548**	**548**	**377**	**377**	**371**	**371**	**472**	**472**	**30**	**30**	**47**	**47**	**15**	**15**	**29**	**29**

27-Aug-08

TRAIN #	1763		1767		1771		1775		1777		1787		1789		1793		1795		1797	
Stamford Arrival Time	01:43 PM		02:43 PM		03:43 PM		04:45 PM		05:32 PM		07:38 PM		8:25 PM		09:46 PM		10:56 PM		11:56 PM	
Date of Count	10/11/2007		10/11/2007		10/11/2007		10/1/2007		10/5/2007		4/13/2007		5/8/2007		6/16/2007		4/18/2007		6/18/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	17	0	15	0	28	0	24	0	56	0	26	0	12	0	17	0	29	0	2	0
Talmadge Hill	0	0	4	0	3	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0
Springdale	3	0	5	0	2	1	17	0	10	0	1	0	2	0	2	0	2	0	1	0
Glenbrook	4	0	0	1	5	0	2	0	7	4	1	0	3	0	0	1	0	1	3	0
Stamford	**0**	**24**	**0**	**23**	**0**	**37**	**83**	**21**	**126**	**39**	**0**	**28**	**0**	**17**	**0**	**18**	**0**	**30**	**0**	**6**
Fordham-Old Greenwich							84	74	322	259										
Harlem-125th Street							0	26	0	35										
Grand Central Terminal							**0**	**89**	**0**	**197**										
Total New Canaan Branch	**24**	**0**	**24**	**1**	**38**	**1**	**43**	**0**	**86**	**4**	**28**	**0**	**17**	**0**	**19**	**1**	**31**	**1**	**6**	**0**
Total Main Line	0	24	0	23	0	37	167	210	448	530	0	28	0	17	0	18	0	30	0	6
New Haven Line Totals	**24**	**24**	**24**	**24**	**38**	**38**	**210**	**210**	**534**	**534**	**28**	**28**	**17**	**17**	**19**	**19**	**31**	**31**	**6**	**6**

* - Peak Train

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	1710*		1712*		1716		1718		1722		1726		1730		1734		1738		1740*		1748*	
Stamford Departure Time	08:20 AM		09:06 AM		10:02 AM		10:57 AM		11:57 AM		12:57 PM		01:57 PM		02:57 PM		03:57 PM		04:45 PM		05:34 PM	
Date of Count	10/5/2007		3/12/2007		3/20/2007		3/12/2007		3/12/2007		10/11/2007		10/11/2007		10/11/2007		10/1/2007		10/11/2007		4/13/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Grand Central Terminal	**168**	**0**																	**178**	**0**		
Harlem-125th Street	83	1																	10	2		
Fordham-Old Greenwich	205	206																	0	0		
Stamford	**51**	**199**	**39**	**0**	**40**	**0**	**24**	**0**	**19**	**0**	**16**	**0**	**43**	**0**	**41**	**0**	**46**	**0**	**16**	**83**	**82**	**0**
Glenbrook	6	13	3	10	0	6	0	6	0	2	0	2	0	3	1	7	2	11	2	14	1	10
Springdale	3	24	0	9	0	1	0	3	0	4	0	3	0	3	0	8	0	7	0	21	0	19
Talmadge Hill	0	4	0	1	0	6	0	1	0	0	0	2	0	3	0	3	0	2	0	12	0	11
New Canaan	0	69	0	22	0	27	0	14	0	13	0	9	0	34	0	24	0	28	0	74	0	43
Total New Canaan Branch	**9**	**110**	**3**	**42**	**0**	**40**	**0**	**24**	**0**	**19**	**0**	**16**	**0**	**43**	**1**	**42**	**2**	**48**	**2**	**121**	**1**	**83**
Total Main Line	507	406	39	0	40	0	24	0	19	0	16	0	43	0	41	0	46	0	204	85	82	0
New Haven Line Totals	**516**	**516**	**42**	**42**	**40**	**40**	**24**	**24**	**19**	**19**	**16**	**16**	**43**	**43**	**42**	**42**	**48**	**48**	**206**	**206**	**83**	**83**

27-Aug-08

TRAIN #	1752*		1758*		1770*		1774*		1778*		1782		1786		1790		1794		1798	
Stamford Departure Time	05:55 PM		NA		06:52 PM		07:39 PM		08:26 PM		08:58 PM		09:57 PM		11:10 PM		12:10 AM		01:10 AM	
Date of Count	3/20/2007		9/10/2007		5/2/2007		10/5/2007		MNR ESTIMATE		4/18/2007		4/18/2007		3/26/2007		9/11/2007		4/18/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Grand Central Terminal	**294**	**0**	**327**	**0**	**559**	**0**	**400**	**0**	**375**	**0**										
Harlem-125th Street					5	0	6	0												
Fordham-Old Greenwich	47	133	0	0	0	0	0	0	10	301	0	0	0	0	0	0	0	0	0	0
Stamford	**13**	**38**			**9**	**124**	**8**	**150**	**10**	**24**	**72**	**0**	**59**	**0**	**46**	**0**	**20**	**0**	**6**	**0**
Glenbrook	0	39	0	40	4	80	1	30	0	10	0	21	0	3	0	12	0	8	0	3
Springdale	2	30	0	78	0	89	0	40	0	10	0	9	0	16	0	12	0	5	0	1
Talmadge Hill	1	21	0	41	0	98	0	65	0	20	0	13	0	6	0	7	0	3	0	1
New Canaan	0	96	0	168	0	186	0	130	0	30	0	29	0	34	0	15	0	4	0	1
Total New Canaan Branch	**3**	**186**	**0**	**327**	**4**	**453**	**1**	**265**	**0**	**70**	**0**	**72**	**0**	**59**	**0**	**46**	**0**	**20**	**0**	**6**
Total Main Line	354	171	327	0	573	124	414	150	395	325	72	0	59	0	46	0	20	0	6	0
New Haven Line Totals	**357**	**357**	**327**	**327**	**577**	**577**	**415**	**415**	**395**	**395**	**72**	**72**	**59**	**59**	**46**	**46**	**20**	**20**	**6**	**6**

* - Peak Train

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY INBOUND TRAINS

27-Aug-08

TRAIN #	6705		6709		6713		6717		6721		6725		6729		6733		6737	
Stamford Arrival Time	06:46 AM		07:46 AM		08:43 AM		09:43 AM		10:43 AM		11:43 AM		12:43 PM		01:43 PM		02:43 PM	
Date of Count	4/14/2007		10/6/2007		10/6/2007		4/21/2007		4/21/2007		4/21/2007		4/21/2007		4/21/2007		9/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	4	0	9	0	6	0	12	0	27	0	17	0	15	0	12	0	9	0
Talmadge Hill	0	0	2	0	0	0	5	0	2	0	3	0	4	0	0	0	0	0
Springdale	10	0	5	0	12	0	7	0	11	0	15	0	2	0	1	0	2	0
Glenbrook	6	0	7	0	7	0	3	0	7	0	11	0	2	2	9	1	2	0
Stamford	**0**	**20**	**0**	**23**	**0**	**25**	**0**	**27**	**0**	**47**	**0**	**46**	**0**	**21**	**0**	**21**	**0**	**13**
Total New Canaan Branch	**20**	**0**	**23**	**0**	**25**	**0**	**27**	**0**	**47**	**0**	**46**	**0**	**23**	**2**	**22**	**1**	**13**	**0**
Total Main Line	0	20	0	23	0	25	0	27	0	47	0	46	0	21	0	21	0	13
New Haven Line Totals	**20**	**20**	**23**	**23**	**25**	**25**	**27**	**27**	**47**	**47**	**46**	**46**	**23**	**23**	**22**	**22**	**13**	**13**

27-Aug-08

TRAIN #	6741		6745		6749		6753		6757		6761		6765		6769		6773	
Stamford Arrival Time	03:43 PM		04:43 PM		05:43 PM		06:43 PM		07:43 PM		08:43 PM		09:46 PM		10:56 PM		11:56 PM	
Date of Count	9/29/2007		9/29/2007		4/28/2007		4/28/2007		10/20/2007		4/28/2007		10/13/2007		10/13/2007		10/13/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	18	0	33	0	51	0	28	0	19	0	16	0	18	0	19	0	14	0
Talmadge Hill	1	0	2	0	0	0	0	0	1	0	0	0	2	1	0	0	1	0
Springdale	7	0	3	0	2	0	7	0	1	0	1	0	6	1	0	1	2	2
Glenbrook	4	1	5	1	1	0	3	0	6	1	4	1	0	2	2	0	1	0
Stamford	**0**	**29**	**0**	**42**	**0**	**54**	**0**	**38**	**0**	**26**	**0**	**20**	**0**	**22**	**0**	**20**	**0**	**16**
Total New Canaan Branch	**30**	**1**	**43**	**1**	**54**	**0**	**38**	**0**	**27**	**1**	**21**	**1**	**26**	**4**	**21**	**1**	**18**	**2**
Total Main Line	0	29	0	42	0	54	0	38	0	26	0	20	0	22	0	20	0	16
New Haven Line Totals	**30**	**30**	**43**	**43**	**54**	**54**	**38**	**38**	**27**	**27**	**21**	**21**	**26**	**26**	**21**	**21**	**18**	**18**

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	6704		6706		6710		6714		6718		6722		6726		6730		6734		6738	
Stamford DepartureTime	**06:54 AM**		**07:59 AM**		**08:59 AM**		**09:57 AM**		**10:57 AM**		**11:57 AM**		**12:57 PM**		**01:57 PM**		**02:57 PM**		**03:57 PM**	
Date of Count	10/6/2007		10/6/2007		4/21/2007		4/21/2007		4/21/2007		4/21/2007		4/21/2007		9/29/2007		9/29/2007		9/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Stamford	**14**	**0**	**33**	**0**	**35**	**0**	**36**	**0**	**33**	**0**	**32**	**0**	**28**	**0**	**22**	**0**	**42**	**0**	**32**	**0**
Glenbrook	2	3	5	2	6	1	4	1	3	4	0	8	0	1	0	5	0	3	3	1
Springdale	1	3	0	8	0	5	0	3	0	4	0	8	0	4	0	4	0	3	0	7
Talmadge Hill	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	4	0	1
New Canaan	0	10	0	27	0	35	0	36	0	28	0	15	0	22	0	12	0	32	0	26
Total New Canaan Branch	**3**	**17**	**5**	**38**	**6**	**41**	**4**	**40**	**3**	**36**	**0**	**32**	**0**	**28**	**0**	**22**	**0**	**42**	**3**	**35**
Total Main Line	14	0	33	0	35	0	36	0	33	0	32	0	28	0	22	0	42	0	32	0
New Haven Line Totals	**17**	**17**	**38**	**38**	**41**	**41**	**40**	**40**	**36**	**36**	**32**	**32**	**28**	**28**	**22**	**22**	**42**	**42**	**35**	**35**

27-Aug-08

TRAIN #	6742		6746		6750		6754		6758		6762		6766		6770		6774	
Stamford DepartureTime	**04:57 PM**		**05:57 PM**		**06:57 PM**		**07:57 PM**		**08:57 PM**		**09:57 PM**		**11:10 PM**		**12:10 AM**		**01:10 AM**	
Date of Count	4/28/2007		4/28/2007		4/28/2007		10/20/2007		10/13/2007		10/13/2007		10/13/2007		10/13/2007		4/14/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Stamford	**34**	**0**	**34**	**0**	**28**	**0**	**33**	**0**	**26**	**0**	**22**	**0**	**28**	**0**	**22**	**0**	**43**	**0**
Glenbrook	1	1	0	1	0	10	0	1	0	5	3	11	0	5	0	10	0	1
Springdale	0	3	0	8	2	9	0	5	1	3	2	2	0	6	0	1	0	6
Talmadge Hill	0	4	0	4	1	2	0	5	0	0	1	2	0	0	0	1	0	0
New Canaan	0	27	0	21	0	10	0	22	0	19	0	13	0	17	0	10	0	36
Total New Canaan Branch	**1**	**35**	**0**	**34**	**3**	**31**	**0**	**33**	**1**	**27**	**6**	**28**	**0**	**28**	**0**	**22**	**0**	**43**
Total Main Line	34	0	34	0	28	0	33	0	26	0	22	0	28	0	22	0	43	0
New Haven Line Totals	**35**	**35**	**34**	**34**	**31**	**31**	**33**	**33**	**27**	**27**	**28**	**28**	**28**	**28**	**22**	**22**	**43**	**43**

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY INBOUND TRAINS

27-Aug-08

TRAIN #	6705		6709		6713		6717		6721		6725		6729		6733		6737	
Stamford Arrival Time	06:46 AM		07:46 AM		08:43 AM		09:43 AM		10:43 AM		11:43 AM		12:43 PM		01:43 PM		02:43 PM	
Date of Count	10/21/2007		5/6/2007		5/6/2007		5/6/2007		10/14/2007		10/14/2007		10/14/2007		10/14/2007		10/14/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	3	0	4	0	13	0	23	0	25	0	24	0	25	0	18	0	17	0
Talmadge Hill	0	0	10	0	2	0	0	0	5	0	0	0	4	0	5	1	1	0
Springdale	2	0	1	0	2	0	3	0	2	1	9	0	4	2	3	1	2	0
Glenbrook	3	0	0	0	4	0	1	0	3	1	11	0	4	1	1	0	1	3
Stamford	**0**	**8**	**0**	**15**	**0**	**21**	**0**	**27**	**0**	**33**	**0**	**44**	**0**	**34**	**0**	**25**	**0**	**18**
Total New Canaan Branch	**8**	**0**	**15**	**0**	**21**	**0**	**27**	**0**	**35**	**2**	**44**	**0**	**37**	**3**	**27**	**2**	**21**	**3**
Total Main Line	0	8	0	15	0	21	0	27	0	33	0	44	0	34	0	25	0	18
New Haven Line Totals	**8**	**8**	**15**	**15**	**21**	**21**	**27**	**27**	**35**	**35**	**44**	**44**	**37**	**37**	**27**	**27**	**21**	**21**

27-Aug-08

TRAIN #	6741		6745		6749		6753		6757		6761		6765		6769		6773	
Stamford Arrival Time	03:43 PM		04:43 PM		05:43 PM		06:43 PM		07:43 PM		08:43 PM		09:46 PM		10:56 PM		11:56 PM	
Date of Count	10/7/2007		10/7/2007		10/7/2007		10/7/2007		10/7/2007		10/14/2007		10/14/2007		4/29/2007		4/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
New Canaan	35	0	15	0	28	0	13	0	8	0	12	0	30	0	18	0	2	0
Talmadge Hill	2	0	0	0	2	0	1	0	2	0	0	0	0	0	1	0	0	0
Springdale	6	1	3	0	4	3	8	0	4	0	3	0	3	0	0	0	1	0
Glenbrook	1	1	4	0	5	0	0	0	4	0	3	0	1	1	5	0	1	0
Stamford	**0**	**42**	**0**	**22**	**0**	**36**	**0**	**22**	**0**	**18**	**0**	**18**	**0**	**33**	**0**	**24**	**0**	**4**
Total New Canaan Branch	**44**	**2**	**22**	**0**	**39**	**3**	**22**	**0**	**18**	**0**	**18**	**0**	**34**	**1**	**24**	**0**	**4**	**0**
Total Main Line	0	42	0	22	0	36	0	22	0	18	0	18	0	33	0	24	0	4
New Haven Line Totals	**44**	**44**	**22**	**22**	**39**	**39**	**22**	**22**	**18**	**18**	**18**	**18**	**34**	**34**	**24**	**24**	**4**	**4**

NEW CANAAN BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	6704		6706		6710		6714		6718		6722		6726		6730		6734		6738	
Stamford DepartureTime	06:54 AM		07:59 AM		08:59 AM		09:57 AM		10:57 AM		11:57 AM		12:57 PM		01:57 PM		02:57 PM		03:57 PM	
Date of Count	9/16/2007		5/6/2007		5/6/2007		10/14/2007		10/14/2007		10/14/2007		10/14/2007		10/14/2007		10/14/2007		10/7/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Stamford	**15**	**0**	**12**	**0**	**17**	**0**	**13**	**0**	**18**	**0**	**42**	**0**	**22**	**0**	**35**	**0**	**25**	**0**	**29**	**0**
Glenbrook	1	0	0	0	0	1	1	0	1	5	1	2	1	0	1	2	2	2	1	3
Springdale	0	4	0	3	0	2	0	0	0	2	1	7	0	2	0	1	1	5	0	4
Talmadge Hill	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	1	2	0	1
New Canaan	0	12	0	8	0	15	0	14	0	12	0	34	0	21	0	32	0	20	0	22
Total New Canaan Branch	**1**	**16**	**0**	**12**	**1**	**18**	**1**	**14**	**1**	**19**	**2**	**44**	**1**	**23**	**1**	**36**	**4**	**29**	**1**	**30**
Total Main Line	15	0	12	0	17	0	13	0	18	0	42	0	22	0	35	0	25	0	29	0
New Haven Line Totals	**16**	**16**	**12**	**12**	**18**	**18**	**14**	**14**	**19**	**19**	**44**	**44**	**23**	**23**	**36**	**36**	**29**	**29**	**30**	**30**

27-Aug-08

TRAIN #	6742		6746		6750		6754		6758		6762		6766		6770		6774	
Stamford DepartureTime	04:57 PM		05:57 PM		06:57 PM		07:57 PM		08:57 PM		09:57 PM		11:10 PM		12:10 AM		01:10 AM	
Date of Count	10/7/2007		10/7/2007		10/7/2007		4/29/2007		10/14/2007		4/29/2007		4/29/2007		4/29/2007		10/14/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Stamford	**24**	**0**	**38**	**0**	**19**	**0**	**31**	**0**	**29**	**0**	**29**	**0**	**8**	**0**	**6**	**0**	**3**	**0**
Glenbrook	2	5	0	4	0	2	0	2	0	2	0	8	0	0	0	3	0	1
Springdale	1	3	0	5	0	5	0	4	1	5	0	7	0	6	0	1	0	1
Talmadge Hill	0	5	0	9	0	1	1	3	0	1	0	2	0	0	0	0	0	0
New Canaan	0	14	0	20	0	11	0	23	0	22	0	12	0	2	0	2	0	1
Total New Canaan Branch	**3**	**27**	**0**	**38**	**0**	**19**	**1**	**32**	**1**	**30**	**0**	**29**	**0**	**8**	**0**	**6**	**0**	**3**
Total Main Line	24	0	38	0	19	0	31	0	29	0	29	0	8	0	6	0	3	0
New Haven Line Totals	**27**	**27**	**38**	**38**	**19**	**19**	**32**	**32**	**30**	**30**	**29**	**29**	**8**	**8**	**6**	**6**	**3**	**3**

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY INBOUND TRAINS

27-Aug-08

TRAIN #	1935*		1951		1963		1973		1981		1991		1995	
Bridgeport Arrival Time	**7:38 AM**		**10:07 AM**		**1:11 PM**		**3:48 PM**		**5:40 PM**		**7:55 PM**		**10:21 PM**	
Date of Count	10/2/2007		10/2/2007		10/10/2007		MNR ESTIMATE		**NO COUNT**		3/19/2007		6/16/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Waterbury	65	0	40	0	26	0	20	0	TBD	TBD	24	0	16	0
Naugatuck	44	1	2	1	2	4	5	0	TBD	TBD	6	1	4	1
Beacon Falls	5	2	0	0	0	0	0	0	TBD	TBD	0	1	0	0
Seymour	10	2	4	2	2	0	5	0	TBD	TBD	0	0	3	0
Ansonia	10	4	6	2	1	0	2	0	TBD	TBD	1	0	0	2
Derby Shelton	10	4	6	3	2	0	2	0	TBD	TBD	2	1	0	0
Stratford	6	12												
Bridgeport	**0**	**125**	**0**	**50**	**0**	**29**	**0**	**34**	**TBD**	**TBD**	**0**	**30**	**0**	**20**
Total Waterbury Branch	**144**	**13**	**58**	**8**	**33**	**4**	**34**	**0**	**0**	**0**	**33**	**3**	**23**	**3**
Total Main Line	6	137	0	50	0	29	0	34	0	0	0	30	0	20
New Haven Line Totals	**150**	**150**	**58**	**58**	**33**	**33**	**34**	**34**	**0**	**0**	**33**	**33**	**23**	**23**

* - Peak Train

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
WEEKDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	1906*		1916		1926		1934		1946*		1974*		1986	
Bridgeport Departure Time	**8:00 AM**		**10:32 AM**		**1:32 PM**		**3:36 PM**		**5:54 PM**		**8:23 PM**		**10:36 PM**	
Date of Count	10/2/2007		10/10/2007		3/19/2007		**NO COUNT**		3/19/2007		3/19/2007		9/19/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF			ON	OFF	ON	OFF
Bridgeport	**28**	**0**	**21**	**0**	**32**	**0**	**TBD**	**TBD**	**112**	**0**	**63**	**0**	**28**	**0**
Stratford									3	2				
Derby Shelton	1	4	1	1	4	0	TBD	TBD	5	6	0	2	1	3
Ansonia	2	1	0	2	1	3	TBD	TBD	7	7	2	1	1	1
Seymour	2	0	1	0	4	8	TBD	TBD	0	14	0	10	0	0
Beacon Falls	0	0	0	1	0	0	TBD	TBD	1	2	0	1	0	2
Naugatuck	2	6	2	0	3	1	TBD	TBD	0	34	0	14	0	2
Waterbury	0	24	0	21	0	32	TBD	TBD	0	63	0	37	0	22
Total Waterbury Branch	**7**	**35**	**4**	**25**	**12**	**44**	**0**	**0**	**13**	**126**	**2**	**65**	**2**	**30**
Total Main Line	28	0	21	0	32	0	0	0	115	2	63	0	28	0
New Haven Line Totals	**35**	**35**	**25**	**25**	**44**	**44**	**0**	**0**	**128**	**128**	**65**	**65**	**30**	**30**

* - Peak Train

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY INBOUND TRAINS

27-Aug-08

TRAIN #	6913		6929		6945		6961	
Bridgeport Arrival Time	**8:13 AM**		**12:13 PM**		**4:09 PM**		**8:10 PM**	
Date of Count	10/6/2007		4/21/2007		4/21/2007		9/29/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Waterbury	64	0	54	0	37	0	56	0
Naugatuck	15	0	14	0	10	1	2	0
Beacon Falls	0	1	0	0	0	0	0	0
Seymour	8	3	4	3	1	0	1	2
Ansonia	4	1	3	3	2	6	0	4
Derby Shelton	9	2	6	5	4	2	0	1
Bridgeport	**0**	**93**	**0**	**70**	**0**	**45**	**0**	**52**
Total Waterbury Branch	**100**	**7**	**81**	**11**	**54**	**9**	**59**	**7**
Total Main Line	0	93	0	70	0	45	0	52
New Haven Line Totals	**100**	**100**	**81**	**81**	**54**	**54**	**59**	**59**

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SATURDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	**6910**		**6926**		**6942**		**6962**	
Bridgeport Departure Time	**9:34 AM**		**1:32 PM**		**5:36 PM**		**10:32 PM**	
Date of Count	4/21/2007		4/21/2007		9/29/2007		10/20/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Bridgeport	**64**	**0**	**72**	**0**	**90**	**0**	**61**	**0**
Derby Shelton	1	6	0	1	2	4	0	1
Ansonia	3	1	1	0	3	5	3	3
Seymour	3	8	0	5	1	5	0	3
Beacon Falls	0	0	0	1	2	1	0	1
Naugatuck	1	4	0	7	0	9	0	8
Waterbury	0	53	0	59	0	74	0	48
Total Waterbury Branch	**8**	**72**	**1**	**73**	**8**	**98**	**3**	**64**
Total Main Line	64	0	72	0	90	0	61	0
New Haven Line Totals	**72**	**72**	**73**	**73**	**98**	**98**	**64**	**64**

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY INBOUND TRAINS

27-Aug-08

TRAIN #	**6913**		**6929**		**6945**		**6961**	
Bridgeport Arrival Time	**8:13 AM**		**12:13 PM**		**4:09 PM**		**8:10 PM**	
Date of Count	10/7/2007		10/7/2007		10/7/2007		10/7/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Waterbury	38	0	48	0	50	0	81	0
Naugatuck	0	2	9	0	42	0	2	3
Beacon Falls	0	0	1	0	1	0	14	2
Seymour	0	0	11	4	4	0	1	2
Ansonia	1	1	4	5	4	6	4	7
Derby Shelton	1	1	0	2	7	0	0	1
Bridgeport	**0**	**36**	**0**	**62**	**0**	**102**	**0**	**87**
Total Waterbury Branch	**40**	**4**	**73**	**11**	**108**	**6**	**102**	**15**
Total Main Line	0	36	0	62	0	102	0	87
New Haven Line Totals	**40**	**40**	**73**	**73**	**108**	**108**	**102**	**102**

WATERBURY BRANCH SPRING/FALL 2007 ON/OFF COUNTS
SUNDAY OUTBOUND TRAINS

27-Aug-08

TRAIN #	**6910**		**6926**		**6942**		**6962**	
Bridgeport Departure Time	**9:34 AM**		**1:32 PM**		**5:36 PM**		**10:32 PM**	
Date of Count	10/7/2007		10/7/2007		10/7/2007		10/7/2007	
STATION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Bridgeport	**35**	**0**	**54**	**0**	**96**	**0**	**55**	**0**
Derby Shelton	3	0	0	0	1	4	6	1
Ansonia	0	0	2	2	1	5	3	3
Seymour	0	0	0	3	0	3	0	3
Beacon Falls	0	0	0	0	0	2	0	1
Naugatuck	1	0	0	6	1	17	0	8
Waterbury	0	39	0	45	0	68	0	48
Total Waterbury Branch	**4**	**39**	**2**	**56**	**3**	**99**	**9**	**64**
Total Main Line	35	0	54	0	96	0	55	0
New Haven Line Totals	**39**	**39**	**56**	**56**	**99**	**99**	**64**	**64**

FTA ALTERNATIVES ANALYSIS
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APPENDIX B

TOTAL MONTHLY RIDERSHIP, NEW HAVEN LINE (2008 VS. 2007)

TOTAL MONTHLY RIDERSHIP
NEW HAVEN LINE
2008 vs. 2007

MONTH	2008 ACTUAL	2007 RESTATED (1)	CHANGE 2007-2008	% CHANGE 2007-2008
January	2,977,870	2,858,913	118,957	4.2%
February	2,825,900	2,663,250	162,650	6.1%
March	3,050,568	2,894,618	155,950	5.4%
April	3,142,802	3,014,241	128,561	4.3%
May	3,188,419	3,047,557	140,862	4.6%
June	3,293,936	3,124,513	169,423	5.4%
July	3,431,732	3,223,118	208,614	6.5%
August	3,214,999	3,044,551	170,448	5.6%
September	3,186,946	3,084,266	102,680	3.3%
October	3,391,147	3,302,684	88,463	2.7%
November	2,949,621	2,930,715	18,906	0.6%
December	3,241,886	3,286,531	(44,645)	-1.4%
YTD TOTALS	**37,895,826**	**36,474,957**	**1,420,869**	**3.9%**

Note:

(1) 2007 ridership figures have been restated to reflect the 2008 calendar.

NEW HAVEN LINE TOTAL MONTHLY RIDERSHIP BY MARKET/LINE SEGMENT
JANUARY-DECEMBER 2008

(Totals in Thousands)

Market/Line Segment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total
To/From Manhattan													
Inner New Haven (NYS)	838.2	797.3	854.0	871.1	875.9	909.4	944.5	862.7	873.4	934.7	800.2	897.6	**10,458.9**
Inner New Haven (CT)	240.1	224.0	239.2	249.7	252.3	264.6	272.5	247.5	254.3	271.9	233.9	257.6	**3,007.6**
Outer New Haven	1,110.6	1,055.4	1,150.0	1,160.3	1,186.2	1,217.1	1,276.9	1,214.8	1,150.1	1,228.2	1,120.9	1,258.6	**14,129.1**
New Canaan Branch	110.1	102.0	110.7	114.9	114.6	116.4	121.7	109.9	112.3	121.7	103.0	116.4	**1,353.8**
Danbury Branch	40.5	38.0	40.0	40.8	40.9	43.0	45.3	42.0	41.8	44.7	37.4	41.5	**495.9**
Waterbury Branch	7.6	7.5	8.3	8.7	9.3	10.3	11.2	11.2	9.8	10.3	10.4	11.1	**115.8**
Total To/From Manhattan	**2,347.1**	**2,224.2**	**2,402.3**	**2,445.6**	**2,479.2**	**2,560.7**	**2,672.0**	**2,488.0**	**2,441.7**	**2,611.6**	**2,305.8**	**2,582.8**	**29,561.1**
Intermediate													
NY Intrastate	189.4	181.0	204.5	216.8	222.3	227.1	234.1	223.8	215.2	225.8	190.7	190.6	**2,521.3**
Interstate	99.3	95.8	104.5	112.5	114.0	117.9	124.3	123.7	121.6	125.2	108.1	110.4	**1,357.3**
Connecticut Intrastate	342.1	324.9	339.3	367.9	373.0	388.3	401.3	379.5	408.4	428.6	345.1	358.0	**4,456.2**
Total Intermediate	**630.8**	**601.7**	**648.3**	**697.2**	**709.2**	**733.2**	**759.7**	**727.0**	**745.2**	**779.6**	**643.8**	**659.1**	**8,334.8**
TOTAL NEW HAVEN LINE	**2,977.9**	**2,825.9**	**3,050.6**	**3,142.8**	**3,188.4**	**3,293.9**	**3,431.7**	**3,215.0**	**3,186.9**	**3,391.2**	**2,949.6**	**3,241.9**	**37,895.9**

NEW HAVEN LINE TOTAL MONTHLY RIDERSHIP BY MARKET/LINE SEGMENT
JANUARY-DECEMBER 2007 (Calendar-Restated)

(Totals in Thousands)

Market/Line Segment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total
To/From Manhattan													
Inner New Haven (NYS)	797.8	743.6	812.3	828.6	833.3	862.9	883.2	828.8	843.9	911.9	795.1	900.5	**10,041.8**
Inner New Haven (CT)	235.3	217.0	233.3	244.0	246.0	255.9	261.8	241.8	244.7	264.7	232.7	259.5	**2,936.9**
Outer New Haven	1,071.3	1,002.1	1,089.8	1,125.4	1,142.9	1,174.2	1,221.1	1,162.8	1,150.1	1,224.8	1,136.3	1,303.1	**13,803.9**
New Canaan Branch	104.4	95.7	102.4	107.6	107.7	111.2	114.0	106.6	107.9	119.2	101.3	114.1	**1,292.0**
Danbury Branch	40.6	36.6	39.7	40.9	41.0	42.7	43.6	41.2	40.0	44.2	38.0	42.3	**490.7**
Waterbury Branch	7.0	6.4	7.0	7.2	7.5	8.3	8.5	8.7	7.8	7.8	8.8	9.4	**94.4**
Total To/From Manhattan	**2,256.4**	**2,101.4**	**2,284.5**	**2,353.8**	**2,378.3**	**2,455.1**	**2,532.3**	**2,389.9**	**2,394.3**	**2,572.6**	**2,312.1**	**2,629.0**	**28,659.8**
Intermediate													
NY Intrastate	191.6	178.7	200.1	219.4	223.3	223.4	234.4	218.4	223.8	230.8	194.2	203.6	**2,541.7**
Interstate	98.2	91.9	99.1	108.9	109.0	110.9	115.7	109.7	110.8	114.6	99.9	107.7	**1,276.4**
Connecticut Intrastate	312.7	291.3	310.9	332.2	337.0	335.2	340.7	326.5	355.3	384.7	324.5	346.2	**3,997.1**
Total Intermediate	**602.5**	**561.8**	**610.1**	**660.5**	**669.2**	**669.4**	**690.8**	**654.6**	**689.9**	**730.1**	**618.6**	**657.5**	**7,815.2**
TOTAL NEW HAVEN LINE	**2,858.9**	**2,663.3**	**2,894.6**	**3,014.2**	**3,047.6**	**3,124.5**	**3,223.1**	**3,044.6**	**3,084.3**	**3,302.7**	**2,930.7**	**3,286.5**	**36,475.0**

NEW HAVEN LINE TOTAL MONTHLY RIDERSHIP BY MARKET/LINE SEGMENT
ABSOLUTE MONTHLY RIDERSHIP CHANGE (2008 vs. 2007 Restated)

(Totals in Thousands)

Market/Line Segment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total
To/From Manhattan													
Inner New Haven (NYS)	40.4	53.7	41.7	42.5	42.6	46.5	61.3	33.9	29.5	22.9	5.1	(2.9)	**417.1**
Inner New Haven (CT)	4.8	7.0	5.8	5.7	6.3	8.7	10.7	5.7	9.6	7.2	1.2	(1.9)	**70.8**
Outer New Haven	39.3	53.3	60.2	34.9	43.4	42.8	55.7	52.0	0.0	3.4	(15.3)	(44.5)	**325.2**
New Canaan Branch	5.7	6.3	8.4	7.3	7.0	5.2	7.8	3.2	4.4	2.5	1.7	2.3	**61.7**
Danbury Branch	(0.1)	1.5	0.3	(0.1)	(0.1)	0.4	1.6	0.8	1.9	0.4	(0.6)	(0.8)	**5.1**
Waterbury Branch	0.6	1.0	1.4	1.5	1.8	2.0	2.7	2.5	2.0	2.6	1.6	1.7	**21.3**
Total To/From Manhattan	**90.7**	**122.8**	**117.8**	**91.8**	**100.9**	**105.6**	**139.8**	**98.1**	**47.4**	**39.0**	**(6.3)**	**(46.2)**	**901.3**
Intermediate													
NY Intrastate	(2.2)	2.3	4.4	(2.6)	(1.0)	3.7	(0.3)	5.4	(8.5)	(5.0)	(3.5)	(13.0)	**(20.4)**
Interstate	1.1	3.9	5.4	3.6	5.0	7.0	8.6	14.0	10.8	10.6	8.1	2.7	**80.9**
Connecticut Intrastate	29.4	33.6	28.4	35.7	36.0	53.1	60.6	53.0	53.0	43.9	20.6	11.8	**459.1**
Total Intermediate	**28.3**	**39.9**	**38.2**	**36.7**	**40.0**	**63.8**	**68.9**	**72.3**	**55.3**	**49.5**	**25.2**	**1.5**	**519.6**
TOTAL NEW HAVEN LINE	**119.0**	**162.7**	**156.0**	**128.6**	**140.9**	**169.4**	**208.6**	**170.4**	**102.7**	**88.5**	**18.9**	**(44.6)**	**1,420.9**

NEW HAVEN LINE TOTAL MONTHLY RIDERSHIP BY MARKET/LINE SEGMENT
PERCENT MONTHLY RIDERSHIP CHANGE (2008 vs. 2007 Restated)

Market/Line Segment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total
To/From Manhattan													
Inner New Haven (NYS)	5.1%	7.2%	5.1%	5.1%	5.1%	5.4%	6.9%	4.1%	3.5%	2.5%	0.6%	-0.3%	**4.2%**
Inner New Haven (CT)	2.0%	3.2%	2.5%	2.3%	2.5%	3.4%	4.1%	2.4%	3.9%	2.7%	0.5%	-0.7%	**2.4%**
Outer New Haven	3.7%	5.3%	5.5%	3.1%	3.8%	3.6%	4.6%	4.5%	0.0%	0.3%	-1.3%	-3.4%	**2.4%**
New Canaan Branch	5.4%	6.6%	8.2%	6.8%	6.5%	4.7%	6.8%	3.0%	4.1%	2.1%	1.7%	2.0%	**4.8%**
Danbury Branch	-0.2%	4.0%	0.8%	-0.2%	-0.4%	0.8%	3.8%	1.9%	4.6%	1.0%	-1.6%	-2.0%	**1.0%**
Waterbury Branch	8.7%	15.8%	19.9%	21.1%	23.7%	24.2%	31.4%	28.7%	25.4%	32.9%	18.7%	17.7%	**22.6%**
Total To/From Manhattan	**4.0%**	**5.8%**	**5.2%**	**3.9%**	**4.2%**	**4.3%**	**5.5%**	**4.1%**	**2.0%**	**1.5%**	**-0.3%**	**-1.8%**	**3.1%**
Intermediate													
NY Intrastate	-1.2%	1.3%	2.2%	-1.2%	-0.4%	1.7%	-0.1%	2.5%	-3.8%	-2.2%	-1.8%	-6.4%	**-0.8%**
Interstate	1.1%	4.3%	5.5%	3.3%	4.6%	6.3%	7.4%	12.8%	9.7%	9.2%	8.1%	2.5%	**6.3%**
Connecticut Intrastate	9.4%	11.5%	9.1%	10.8%	10.7%	15.8%	17.8%	16.2%	14.9%	11.4%	6.3%	3.4%	**11.5%**
Total Intermediate	**4.7%**	**7.1%**	**6.3%**	**5.6%**	**6.0%**	**9.5%**	**10.0%**	**11.1%**	**8.0%**	**6.8%**	**4.1%**	**0.2%**	**6.6%**
TOTAL NEW HAVEN LINE	**4.2%**	**6.1%**	**5.4%**	**4.3%**	**4.6%**	**5.4%**	**6.5%**	**5.6%**	**3.3%**	**2.7%**	**0.6%**	**-1.4%**	**3.9%**

FTA ALTERNATIVES ANALYSIS
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APPENDIX C

FREIGHT MOVEMENTS, NEW HAVEN LINE AND BRANCH LINES

New Haven Line | Branch Lines | Freight Movements

Summer Week Sample 6/10/07-6/16/07

Days Operated / Destinations

CSX	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
B747				**X**	**X**	**X**		CP274-New Haven	CP271-Trk 5 (Th, Fr) / CP257-Bridgeport Yard (Wed)
B748		**X**						CP274-New Haven	CP271-NH Industrial Trk 5 / CP257-Bridgeport Yard
B750								CP212-Woodlawn	Marvel-Mamaroneck
P&W	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
FPCH				**X**				CP216-New Rochelle	CP274-New Haven
CHFP			**X**					CP274-New Haven	CP216-New Rochelle
CT2		**X**	**X**	**X**	**X**			CP274-New Haven	HAT-Derby (Waterbury Branch)
B&M	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
PL1					**X**			WATER-Waterbury (Waterbury Branch)	BEAK- Beacon Falls (Waterbury Branch)

Note: P&W CT2 operates via the May Brook from HAT-Derby (Waterbury Branch) to CANAL-Danbury (Danbury Branch)

Train Consists

	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
CSX	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
B747							2	3	2	33	2	32		
B748			2	10										
B750														
	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
P&W	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
FPCH							2	30						
CHFP					2	22								
CT2			4	31	4	26	4	25	4	26				
	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
B&M	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
PL1									1	3				

Total Movements

New Haven Line	11
New Canaan Branch	0
Danbury Branch	4
Waterbury Branch	5

New Haven Line Freights

CSX	B747	B748	B750
P&W	FPCH	CHFP	CT2

Branch Line Freights

P&W	CT2
B&M	PL1

New Haven Line | Branch Lines | Freight Movements

Winter Week Sample 2/17/08-2/23/08

Days Operated / Destinations

CSX	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
B747			**X**					CP274-New Haven	CP271-New Haven Industrial Trk 5
B748				**X**	**X**			CP274-New Haven	CP271-NH Industrial Trk 5 / CP257-Bridgeport Yard
B750								CP212-Woodlawn	Marvel-Mamaroneck
P&W	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
FPCH								CP216-New Rochelle	CP274-New Haven
CHFP								CP274-New Haven	CP216-New Rochelle
CT2					**X**			CP274-New Haven	HAT-Derby (Waterbury Branch)
B&M	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Org.	Des (s)
PL1								WATER-Waterbury (Waterbury Branch)	BEAK- Beacon Falls (Waterbury Branch)

Note: P&W CT2 operates via the May Brook from HAT-Derby (Waterbury Branch) to CANAL-Danbury (Danbury Branch)

Train Consists

	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
CSX	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
B747					2	5								
B748							2	17	2	10				
B750														
	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
P&W	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
FPCH														
CHFP														
CT2									2	1				
	Sun		Mon		Tue		Wed		Thu		Fri		Sat	
B&M	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars	# Eng's	# Cars
PL1														

Total Movements

New Haven Line	4
New Canaan Branch	0
Danbury Branch	1
Waterbury Branch	1

New Haven Line Freights

CSX	B747	B748	B750
P&W	FPCH	CHFP	CT2

Branch Line Freights

P&W	CT2
B&M	PL1

FTA ALTERNATIVES ANALYSIS
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APPENDIX D

METRONORTH RAILROAD 2030 OPERATING PLAN, NEW HAVEN LINE

Rev 12/7/07

2030 OPERATING PLAN - New Haven Line

TRAIN	WESTWARD																													
	Source: Timetable Viewer - 2030OPPLAN (GO: 999) Frequency: Tuesday - Thursday / 2030 Operating Plan rev 11-07																													
	4301	4503	4303	4505	4305	4705 New Canaan	4507	4307	4207	4407	4509	4511	4311	4711 New Canaan	4211	4811 Dan-bury	4111	4513	4113	4515	4615	4215	4415	4115	4117	4817 Dan-bury	4417	4917 Water-bury	4517	4315
FREQUENCY (Mo-Fr,except as noted)																														
CP 274																					0604									
NH-State St.																					S 0605									
New Haven		S 0412		S 0442			S 0512				S 0533	S 0543						S 0552		S 0602	S 0611								S 0629	
CP 271		0415		0445			0515				0536	0546						0555		0605	0614								0632	
CP 266		0422		0452			0522				0541	0553						0602		0612	0621								0637	
Milford		S 0425		S 0455			S 0525					S 0556						S 0605		S 0615	S 0624									
CP 261		0428		0458			0528				0546	0559						0608		0618	0627							0633	0642	
Stratford		S 0430		S 0500			S 0530					S 0601						S 0610		S 0620	S 0629									
CP 257		0433		0503			0533			0543	0550	0604						0613		0623	0632		0618				0639	0638	0646	
Bridgeport		S 0436		S 0506			S 0536				S 0553	S 0607						S 0616		S 0626	S 0635							S 0644	S 0649	
CP 255		0437		0507			0537			0546	0554	0608						0617		0627	0636		0621				0642	0645	0650	
Fairfield		S 0444		S 0514			S 0544				S 0601							S 0624		S 0634									S 0657	
Southport				S 0517							S 0604							S 0627		S 0638									S 0701	
Green's Farms				S 0520							S 0607							S 0630									S 0654			
Westport CP 244		S 0451		S 0524			S 0551			0556	S 0611	0618						S 0634		0642	0646		0638				S 0658		0705	
East Norwalk				S 0527							S 0614							S 0637									S 0701			
CP 241		0454		0529			0554			0559	0616	0621				0626		0639		0645	0649		0642			0658	0703		0708	
South Norwalk		S 0456		S 0531			S 0556			S 0609	S 0618					S 0628		S 0641					S 0651			S 0700	S 0705			
Rowayton				S 0534						S 0612						S 0631							S 0654							
Darien		S 0500		S 0537			S 0600			S 0615						S 0635							S 0657							
Noroton Heights		S 0503		S 0540			S 0603			S 0618						S 0639							S 0700							
CP 234	0440	0507	0511	0544	0533	0547	0607	0554	0608	0622	0626	0629	0614	0637	0630	0643		0649		0654	0657	0647	0704			0708	0713		0717	0658
Stamford	S 0443	S 0509	S 0514	S 0546	S 0536	S 0549	S 0609	S 0557	S 0611	S 0624	S 0628	S 0631	S 0617	S 0639	S 0633	S 0646		S 0651			S 0659		S 0706			S 0710	S 0715		S 0719	S 0701
Old Greenwich	S 0445		S 0516		S 0538	S 0551		S 0559					S 0619		S 0635							S 0656								S 0703
Riverside	S 0447		S 0518		S 0540	S 0553		S 0601					S 0621		S 0637							S 0658								S 0705
Cos Cob	S 0449		S 0520		S 0542	S 0556		S 0603					S 0623		S 0640							S 0701								S 0707
CP 229	0450	0514	0521	0551	0543	0557	0614	0604	0616	0629	0633	0636	0624	0644	0641	0652		0657		0700	0705	0702	0712			0716	0721		0725	0709
Greenwich	S 0452		S 0523		S 0545	S 0559		S 0606	S 0618				S 0626		S 0643							S 0704								S 0711
Port Chester	S 0456		S 0527		S 0549	S 0603		S 0610	S 0622				S 0630		S 0647							S 0708								S 0715
Rye	S 0459		S 0530		S 0552	S 0606		S 0613	S 0625				S 0633		S 0650							S 0711								S 0718
CP 223	0501	0520	0532	0557	0554	0608	0620	0615	0627	0635	0639	0642	0635	0650	0652	0658		0703	0655	0706	0711	0713	0718		0715	0722	0727		0731	0720
Harrison	S 0503		S 0534		S 0556			S 0617	S 0629				S 0637						S 0701						S 0718					S 0722
Mamaroneck	S 0506		S 0537		S 0559			S 0620	S 0632				S 0640						S 0704						S 0721					S 0725
Larchmont	S 0509		S 0540		S 0602			S 0623	S 0635				S 0643						S 0707						S 0724					S 0728
New Rochelle	S 0513		S 0544		S 0606			S 0627					S 0647				S 0702							S 0721						S 0732
CP 216	0514	0526	0545	0603	0607	0615	0626	0628	0638	0641	0645	0648	0648	0656	0659	0704	0703	0709	0711	0712	0717	0720	0724	0722	0728	0728	0733		0737	0733
Pelham	S 0516		S 0547		S 0609			S 0630					S 0650				S 0705							S 0724						S 0735
Mt Vernon East	S 0519		S 0550		S 0612			S 0633					S 0653				S 0708							S 0727						S 0738
CP 212	0521	0530	0552	0607	0614	0619	0630	0635	0642	0645	0649	0652	0655	0700	0703	0708	0711	0713	0715	0716	0721	0724	0728	0730	0732	0732	0737		0741	0742
CP 112	0523	0532	0554	0609	0616	0621	0632	0637	0644	0647	0651	0654	0657	0702	0705	0710	0713	0715	0717	0718	0723	0726	0730	0732	0734	0734	0739		0743	0744
Fordham	D 0528		D 0559		D 0621			D 0642					D 0702																	D 0749
Mott Haven Jct. CP 5	0533	0540	0604	0617	0626	0629	0640	0647	0652	0655	0659	0702	0707	0710	0713	0718	0721	0723	0725	0726	0731	0734	0738	0740	0742	0742	0747		0751	0755
Harlem-125th St.	D 0536	D 0543	D 0607	D 0620	D 0629	D 0632	D 0643	D 0650	D 0655	D 0658	D 0702	D 0705	D 0710	D 0713	D 0716	D 0721	D 0724	D 0726	D 0728	D 0729	D 0734	D 0737	D 0741			D 0745	D 0750			D 0758
Grand Central	S 0547	S 0554	S 0618	S 0631	S 0640	S 0643	S 0654	S 0701	S 0706	S 0709	S 0713	S 0716	S 0721	S 0724	S 0727	S 0734	S 0737	S 0739	S 0741	S 0742	S 0747	S 0750	S 0754	S 0756	S 0758	S 0758	S 0803		S 0807	S 0811
Turns from						1704								1710			1110		1112					1114	1116			1916		
Turns to																														
Connecting Trains		4303	4503				4311						4507					4317								4317	4317	4517	4917 4317	4513 4615

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TRAIN	4217	4617	4317	4717 New Canaan	4119	4419	4219	4421	4423	4319	4823 Dan-bury	4523	4623	4123	4725 New Canaan	4125	4425	4427	4927 Water-bury	4323	4727 New Canaan	4527	4127	4529	4829 Dan-bury	4129	4429	4329	4531	4131	4631	4833 Dan-bury
FREQUENCY (Mo-Fr,except as noted)																															
CP 274		0631											0656																	0740	
NH-State St.		**S 0632**											**S 0657**																	**S 0741**	
New Haven		**S 0638**										**S 0644**	**S 0703**									**S 0729**		**S 0710**					**S 0753**		**S 0747**	
CP 271		0641										0647	0706									0732		0713					0756		0750	
CP 266		0648										0654	0713									0739		0720					0803		0757	
Milford		**S 0651**										**S 0657**	**S 0716**									**S 0742**		**S 0723**					**S 0806**		**S 0800**	
CP 261		0654										0700	0719						0732			0745		0726					0809		0803	
Stratford		**S 0656**										**S 0702**	**S 0721**						**S 0735**			**S 0747**		**S 0728**					**S 0811**		**S 0805**	
CP 257		0659				0654		0703	0710			0705	0724					0727	0738			0750		0731			0754		0814		0808	
Bridgeport		**S 0702**							**S 0715**			**S 0708**	**S 0727**						**S 0741**			**S 0753**		**S 0734**					**S 0817**		**S 0811**	
CP 255		0703				0657		0706	0716			0709	0728					0730	0742			0754		0735			0757		0818		0812	
Fairfield									**S 0723**			**S 0716**							**S 0749**					**S 0742**			**S 0806**				**S 0819**	
Southport									**S 0726**			**S 0719**							**S 0752**					**S 0745**			**S 0809**				**S 0822**	
Green's Farms								**S 0717**				**S 0722**						**S 0741**						**S 0748**			**S 0812**				**S 0825**	
Westport CP 244		0713				0707		**S 0721**	0730			**S 0726**	0738					**S 0745**	0757			0804		**S 0752**			**S 0816**		0828		**S 0829**	
East Norwalk								**S 0724**				**S 0729**						**S 0748**						**S 0755**			**S 0819**				**S 0832**	
CP 241		0716				0711		0726	0733		0735	0731	0741				0740	0750	0800			0807		0757	0808		0821		0831		0834	0842
South Norwalk						**S 0719**		**S 0728**			**S 0737**	**S 0733**					**S 0744**	**S 0752**						**S 0759**	**S 0810**		**S 0823**				**S 0836**	**S 0844**
Rowayton						**S 0722**											**S 0747**								**S 0813**							**S 0847**
Darien						**S 0725**											**S 0750**							**S 0803**	**S 0817**						**S 0840**	**S 0851**
Noroton Heights						**S 0728**											**S 0753**								**S 0821**							**S 0855**
CP 234	0715	0724	0719	0728		0732		0738	0741	0734	0745	0741	0749		0755		0757	0802	0808	0751	0812	0815		0809	0825		0833	0827	0839		0846	0859
Stamford		**S 0726**	**S 0722**	**S 0730**		**S 0734**				**S 0737**	**S 0747**	**S 0743**	**S 0751**				**S 0759**		**S 0810**	**S 0754**	**S 0814**	**S 0817**		**S 0811**	**S 0828**		**S 0833**	**S 0830**	**S 0841**		**S 0848**	**S 0902**
Old Greenwich			**S 0724**									**S 0745**												**S 0813**				**S 0832**			**S 0850**	
Riverside			**S 0726**									**S 0747**												**S 0815**				**S 0834**			**S 0852**	
Cos Cob			**S 0729**									**S 0750**												**S 0818**				**S 0837**			**S 0855**	
CP 229	0721	0732	0731	0736		0740		0744	0747	0742	0753	0752	0757		0801		0805	0808	0816	0759	0820	0823		0820	0834		0839	0838	0846		0857	0908
Greenwich			**S 0733**							**S 0744**		**S 0754**								**S 0801**				**S 0821**				**S 0840**	**S 0848**		**S 0858**	
Port Chester	**S 0729**									**S 0748**										**S 0805**				**S 0825**				**S 0844**			**S 0902**	
Rye	**S 0732**									**S 0751**										**S 0808**				**S 0828**				**S 0847**			**S 0905**	
CP 223	0734	0738	0739	0742		0746	0741	0750	0753	0753	0759	0800	0803		0807	0757	0811	0814	0822	0810	0826	0829	0824	0830	0840		0845	0849	0854	0842	0906	0914
Harrison							**S 0744**			**S 0755**						**S 0805**				**S 0812**			**S 0827**	**S 0832**						**S 0853**		
Mamaroneck							**S 0747**									**S 0808**				**S 0815**			**S 0830**							**S 0856**		
Larchmont							**S 0750**									**S 0811**				**S 0818**			**S 0833**							**S 0859**		
New Rochelle					**S 0745**									**S 0806**						**S 0822**					**S 0843**					**S 0903**	**S 0914**	
CP 216	0741	0744	0746	0748	0746	0752	0754	0756	0759	0802	0805	0807	0809	0807	0813	0815	0817	0820	0828	0823	0832	0835	0837	0839	0846	0844	0851	0856	0901	0904	0915	0920
Pelham					**S 0748**									**S 0809**						**S 0825**					**S 0846**					**S 0906**		
Mt Vernon East					**S 0751**									**S 0812**						**S 0828**					**S 0849**					**S 0909**		
CP 212	0745	0748	0750	0752	0754	0756	0758	0800	0803	0806	0809	0811	0813	0815	0817	0819	0821	0824	0832	0831	0836	0839	0841	0843	0850	0852	0855	0900	0905	0912	0919	0924
CP 112	0747	0750	0752	0754	0756	0758	0800	0802	0805	0808	0811	0813	0815	0817	0819	0821	0823	0826	0834	0833	0838	0841	0843	0845	0852	0854	0857	0902	0907	0914	0921	0926
Fordham																				**D 0838**										**D 0919**		
Mott Haven Jct. CP 5	0755	0758	0800	0802	0804	0806	0808	0810	0813	0816	0819	0821	0823	0825	0827	0829	0831	0834	0842	0843	0846	0849	0851	0853	0900	0902	0905	0910	0915	0924	0929	0934
Harlem-125th St.		**D 0801**			**D 0807**					**D 0819**		**D 0824**	**D 0826**	**D 0828**		**D 0832**	**D 0834**	**D 0837**	**D 0845**	**D 0846**	**D 0849**	**D 0852**		**D 0856**	**D 0903**	**D 0905**		**D 0913**	**D 0918**	**D 0927**	**D 0932**	**D 0937**
Grand Central	**S 0811**	**S 0814**	**S 0816**	**S 0818**	**S 0820**	**S 0822**	**S 0824**	**S 0826**	**S 0829**	**S 0832**	**S 0835**	**S 0837**	**S 0839**	**S 0841**	**S 0843**	**S 0845**	**S 0847**	**S 0850**	**S 0858**	**S 0859**	**S 0902**	**S 0905**	**S 0907**	**S 0909**	**S 0916**	**S 0918**	**S 0921**	**S 0926**	**S 0930**	**S 0939**	**S 0944**	**S 0949**
Turns from				4702	1118		1120							1122	1724	1124	4404				1726		1126			1128				1130		
Turns to																																
Connecting Trains			4817 4417 4517			4319				4419			4323							4623					4329			4829				4733

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TRAIN	4435	4635	4133	4335	4437	4537	4135	4337	4439	4939 Water-bury	4539	4137	4339	4841 Dan-bury	4441	4139	4341	4543	4141	4343	4545	4345	4847 Dan-bury	4547
FREQUENCY (Mo-Fr,except as noted)																								
CP 274		0813																						
NH-State St.		**S 0814**																						
New Haven		**S 0820**				**S 0850**					**S 0920**							**S 0954**			**S 1031**			**S 1054**
CP 271		0823				0853					0923							0957			1034			1057
CP 266		0830				0900					0930							1004			1038			1104
Milford		**S 0833**				**S 0903**					**S 0933**							**S 1007**			**S 1041**			**S 1107**
CP 261		0836				0906				0928	0936							1010			1044			1110
Stratford		**S 0838**				**S 0908**					**S 0938**							**S 1012**			**S 1046**			**S 1112**
CP 257	0827	0841			0852	0911			0922	0933	0941				0953			1015			1049			1115
Bridgeport	**S 0830**	**S 0844**			**S 0855**	**S 0914**			**S 0925**	**S 0939**	**S 0944**				**S 0956**			**S 1018**			**S 1052**			**S 1118**
CP 255	0831	0845			0856	0915			0926	0940	0945				0957			1019			1053			1119
Fairfield	**S 0838**				**S 0903**	**S 0922**			**S 0933**		**S 0952**				**S 1004**			**S 1026**			**S 1059**			**S 1126**
Southport	**S 0841**				**S 0906**				**S 0936**						**S 1007**			**S 1029**						
Green's Farms	**S 0844**				**S 0909**				**S 0939**						**S 1010**									**S 1130**
Westport CP 244	**S 0848**	0855			**S 0913**	0929			**S 0943**		0959				**S 1014**			**S 1034**			**S 1106**			**S 1134**
East Norwalk	**S 0851**				**S 0916**				**S 0946**						**S 1017**			**S 1037**						
CP 241	0853	0858			0918	0932			0948		1002			1016	1019			1039			1109		1132	1137
South Norwalk	**S 0855**				**S 0920**				**S 0950**					**S 1018**	**S 1021**			**S 1041**			**S 1111**		**S 1134**	**S 1139**
Rowayton					**S 0923**				**S 0953**						**S 1024**									**S 1142**
Darien					**S 0926**				**S 0956**						**S 1027**			**S 1045**			**S 1115**			**S 1145**
Noroton Heights					**S 0929**				**S 0959**						**S 1030**			**S 1048**						**S 1148**
CP 234	0905	0906			0933	0940		0945	1003		1010		1015		1034		1037	1052		1107	1120	1127	1145	1152
Stamford	**S 0905**	**S 0908**		**S 0918**	**S 0935**	**S 0942**		**S 0948**	**S 1005**		**S 1012**		**S 1018**		**S 1036**		**S 1040**	**S 1054**		**S 1110**	**S 1122**	**S 1130**	**S 1147**	**S 1154**
Old Greenwich				**S 0920**				**S 0950**					**S 1020**				**S 1042**			**S 1112**		**S 1132**		
Riverside				**S 0922**				**S 0952**					**S 1022**				**S 1044**			**S 1114**		**S 1134**		
Cos Cob				**S 0925**				**S 0955**					**S 1025**				**S 1047**			**S 1117**		**S 1136**		
CP 229	0911	0913		0926	0941	0948		0956	1011		1018		1026		1042		1048	1100		1118	1127	1137		1200
Greenwich		**S 0915**		**S 0928**				**S 0958**					**S 1028**				**S 1050**			**S 1120**	**S 1129**	**S 1139**		
Port Chester				**S 0932**				**S 1002**					**S 1032**				**S 1054**			**S 1124**		**S 1143**		
Rye				**S 0935**				**S 1005**					**S 1035**				**S 1057**			**S 1127**		**S 1146**		
CP 223	0917	0921	0913	0937	0947	0954	0945	1007	1017		1024	1015	1037		1048	1045	1059	1106	1115	1129	1135	1148		1206
Harrison			**S 0916**	**S 0939**			**S 0948**	**S 1009**				**S 1018**	**S 1039**			**S 1048**	**S 1101**		**S 1118**	**S 1131**		**S 1150**		
Mamaroneck			**S 0919**				**S 0951**					**S 1021**				**S 1051**			**S 1121**			**S 1153**		
Larchmont			**S 0922**				**S 0954**					**S 1024**				**S 1054**			**S 1124**			**S 1156**		
New Rochelle			**S 0926**				**S 0958**					**S 1028**				**S 1058**			**S 1128**			**S 1200**		
CP 216	0923	0927	0927	0946	0953	1000	0959	1016	1023		1030	1029	1046		1054	1059	1108	1112	1129	1138	1142	1201		1212
Pelham			**S 0929**				**S 1001**					**S 1031**				**S 1101**			**S 1131**			**S 1204**		
Mt Vernon East			**S 0932**				**S 1004**					**S 1034**				**S 1104**			**S 1134**			**S 1207**		
CP 212	0927	0931	0935	0950	0957	1004	1007	1020	1027		1034	1037	1050		1058	1107	1112	1116	1137	1142	1146	1209		1216
CP 112	0929	0933	0937	0952	0959	1006	1009	1022	1029		1036	1039	1052		1100	1109	1114	1118	1139	1144	1148	1211		1218
Fordham			**D 0942**				**D 1014**	**D 1027**				**D 1044**	**D 1057**			**D 1114**	**D 1119**		**D 1144**	**D 1149**		**D 1216**		
Mott Haven Jct. CP 5	0937	0941	0947	1000	1007	1014	1019	1032	1037		1044	1049	1102		1108	1119	1124	1128	1149	1154	1158	1222		1228
Harlem-125th St.	**D 0940**	**D 0944**	**D 0950**	**D 1003**	**D 1010**	**D 1017**	**D 1022**	**D 1035**	**D 1040**		**D 1047**	**D 1052**	**D 1105**		**D 1111**	**D 1122**	**D 1127**	**D 1131**	**D 1152**	**D 1157**	**D 1201**	**D 1225**		**D 1231**
Grand Central	**S 0952**	**S 0956**	**S 1001**	**S 1014**	**S 1021**	**S 1028**	**S 1033**	**S 1046**	**S 1051**		**S 1058**	**S 1103**	**S 1116**		**S 1122**	**S 1133**	**S 1138**	**S 1142**	**S 1203**	**S 1208**	**S 1212**	**S 1236**		**S 1242**
Turns from	4406		1132	4733	4408		1134		4410			1136	1338		1440	1138	1340		1140					
Turns to																								
Connecting Trains	4335	4335		4435	4337	4337	4335	4437	4339	4539	4939	4337	4439	4441	4341	4339	4141	4343	4341	4543	4345	4545	4547	4347
				4635				4537	4739		4339		4539		4841			4743						4747
				4135				4137					4139											4847

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WESTWARD — Source: Timetable Viewer - 2030OPPLAN (GO: 999) Frequency: Tuesday - Thursday / 2030 Operating Plan rev 11-07

TRAIN	4347	4549	4349	4951 Water-bury	4551	4351	4553	4353	4855 Dan-bury	4555	1355 Dead Head	4355	4557	1357 Dead Head	4357	4559	1359 Dead Head	4359	4561	1361 Dead Head	1363 Dead Head	4863 Dan-bury	4763 New Canaan	4361	4963 Water-bury	4563	1563 Dead Head	4263	4363	4565
FREQUENCY (Mo-Fr,except as noted)																														
CP 274																														
NH-State St.																														S 1515
New Haven		S 1131			S 1154		S 1231			S 1254			S 1331			S 1354			S 1431							S 1450	1515			S 1520
CP 271		1134			1157		1234			1257			1334			1357			1434							1453	1518			1523
CP 266		1138			1204		1238			1304			1338			1404			1438							1500	1523			1530
Milford		S 1141			S 1207		S 1241			S 1307			S 1341			S 1407			S 1441							S 1503				S 1533
CP 261		1144		1202	1210		1244			1310			1344			1410			1444						1458	1506	1527			1536
Stratford		S 1146			S 1212		S 1246			S 1312			S 1346			S 1412			S 1446							S 1508				S 1538
CP 257		1149		1207	1215		1249			1315			1349			1415			1449						1503	1511	1531			1541
Bridgeport		S 1152		S 1213	S 1218		S 1252			S 1318			S 1352			S 1418			S 1452						S 1509	S 1514				S 1544
CP 255		1153		1214	1219		1253			1319			1353			1419			1453						1510	1515	1533			1545
Fairfield		S 1159			S 1226		S 1259			S 1326			S 1359			S 1426			S 1459							S 1522				S 1552
Southport					S 1229											S 1429										S 1525				S 1555
Green's Farms										S 1330																S 1528				S 1558
Westport CP 244		S 1206			S 1234		S 1306			S 1334			S 1406			S 1434			S 1506							S 1532	1543			S 1602
East Norwalk					S 1237											S 1437										S 1535				S 1605
CP 241		1209			1239		1309		1332	1337			1409			1439			1509			1532				1537	1546			1607
South Norwalk		S 1211			S 1241		S 1311		S 1334	S 1339			S 1411			S 1441			S 1511			S 1534				S 1539				S 1609
Rowayton										S 1342																S 1542				S 1612
Darien		S 1215			S 1245		S 1315			S 1345			S 1415			S 1445			S 1515							S 1545				S 1615
Noroton Heights					S 1248					S 1348						S 1448										S 1548				S 1618
CP 234	1200	1220	1227		1252	1300	1320	1327	1345	1352	1358	1400	1420	1424	1427	1452	1457	1500	1520	1524	1527	1542	1545	1530		1552	1555	1557	1600	1622
Stamford	S 1203	S 1222	S 1230		S 1254	S 1303	S 1322	S 1330	S 1347	S 1354		S 1403	S 1422		S 1430	S 1454		S 1503	S 1522			S 1544	S 1547	S 1533		S 1554		S 1600	S 1603	S 1624
Old Greenwich	S 1205		S 1232			S 1305		S 1332				S 1405			S 1432			S 1505						S 1535					S 1605	
Riverside	S 1207		S 1234			S 1307		S 1334				S 1407			S 1434			S 1507						S 1537					S 1607	
Cos Cob	S 1209		S 1236			S 1309		S 1336				S 1409			S 1436			S 1509						S 1539					S 1609	
CP 229	1210	1227	1237		1300	1310	1327	1337		1400	1404	1410	1427	1430	1437	1500	1505	1510	1527	1530	1533	1550	1553	1540		1600	1603	1605	1610	1630
Greenwich	S 1212	S 1229	S 1239			S 1312	S 1329	S 1339				S 1412	S 1429		S 1439			S 1512	S 1529					S 1542				S 1607	S 1612	
Port Chester	S 1216		S 1243			S 1316		S 1343				S 1416			S 1443			S 1516						S 1546				S 1611	S 1616	
Rye	S 1219		S 1246			S 1319		S 1346				S 1419			S 1446			S 1519						S 1549				S 1614	S 1619	
CP 223	1221	1235	1248		1306	1321	1335	1348		1406	1410	1421	1435	1438	1448	1506	1511	1521	1535	1538	1541	1556	1559	1551		1606	1609	1616	1621	1636
Harrison	S 1223		S 1250			S 1323		S 1350				S 1423			S 1450			S 1523						S 1553					S 1623	
Mamaroneck	S 1226		S 1253			S 1326		S 1353				S 1426			S 1453			S 1526						S 1556					S 1626	
Larchmont	S 1229		S 1256			S 1329		S 1356				S 1429			S 1456			S 1529						S 1559					S 1629	
New Rochelle	S 1233		S 1300			S 1333		S 1400				S 1433			S 1500			S 1533						S 1603				S 1623	S 1633	
CP 216	1234	1242	1301		1312	1334	1342	1401		1412	1416	1434	1442	1444	1501	1512	1517	1534	1542	1544	1547	1602	1605	1604		1612	1616	1624	1634	1642
Pelham	S 1237		S 1304			S 1337		S 1404				S 1437			S 1504			S 1537						S 1607					S 1637	
Mt Vernon East	S 1240		S 1307			S 1340		S 1407				S 1440			S 1507			S 1540						S 1610				S 1627	S 1640	
CP 212	1242	1246	1309		1316	1342	1346	1409		1416	1421	1442	1446	1449	1509	1516	1521	1542	1546	1548	1551	1606	1609	1612		1616	1620	1629	1642	1646
CP 112	1244	1248	1311		1318	1344	1348	1411		1418	1423	1444	1448	1451	1511	1518	1523	1544	1548	1550	1553	1608	1611	1614		1618	1622	1631	1644	1648
Fordham	D 1249		D 1316			D 1349		D 1416				D 1449			D 1516			D 1549						D 1619				D 1636	D 1649	
Mott Haven Jct. CP 5	1255	1258	1322		1328	1355	1358	1422		1428	1433	1455	1458	1501	1522	1528	1531	1555	1558	1601	1604	1616	1619	1625		1628	1631	1642	1655	1656
Harlem-125th St.	D 1258	D 1301	D 1325		D 1331	D 1358	D 1401	D 1425		D 1431		D 1458	D 1501		D 1525	D 1531		D 1558	D 1601			D 1619	D 1622	D 1628		D 1631		D 1645	D 1658	D 1659
Grand Central	S 1309	S 1312	S 1336		S 1342	S 1409	S 1412	S 1436		S 1442	1447	S 1509	S 1512	1515	S 1536	S 1542	1545	S 1609	S 1612	1615	1618	S 1630	S 1633	S 1639		S 1642	1645	S 1656	S 1711	S 1712
Turns from																														
Turns to																														
Connecting Trains	4547	4349	4549	4551	4951 4351 4751	4551	4353	4553	4555	4355 4755 4855		4555	4357		4557	4359 4759		4559	4361					4561	4563	4963 4363 4763			4563	4365

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TRAIN	4265	4365	4767 New Canaan	4567	1145 Dead Head	4267	4367	4569	1147 Dead Head	4769 New Canaan	1149 Dead Head	4369	4871 Dan-bury	4571	1151 Dead Head	4271	4371	4973 Water-bury	4573	1153 Dead Head	1157 Dead Head	1155 Dead Head	4273	1773 DH New Canaan	4373	4575	1159 Dead Head	4875 Dan-bury	1161 Dead Head	4375	4577	4779 New Canaan	1379 Dead Head
FREQUENCY (Mo-Fr,except as noted)																																	
CP 274																																	
NH-State St.				S 1545				S 1615						S 1645					S 1715							S 1745					S 1815			
New Haven				S 1550				S 1620						S 1650					S 1720							S 1750					S 1820			
CP 271				1553				1623						1653					1723							1753					1823			
CP 266				1600				1630						1700					1730							1800					1830			
Milford				S 1603				S 1633						S 1703					S 1733							S 1803					S 1833			
CP 261				1606				1636						1706				1728	1736							1806					1836			
Stratford				S 1608				S 1638						S 1708					S 1738							S 1808					S 1838			
CP 257				1611				1641						1711				1733	1741							1811					1841			
Bridgeport				S 1614				S 1644						S 1714				S 1739	S 1744							S 1814					S 1844			
CP 255				1615				1645						1715				1740	1745							1815					1845			
Fairfield				S 1622				S 1652						S 1722					S 1752							S 1822					S 1852			
Southport				S 1625				S 1655						S 1725					S 1755							S 1825					S 1855			
Green's Farms				S 1628				S 1658						S 1728					S 1758							S 1828					S 1858			
Westport CP 244				S 1632				S 1702						S 1732					S 1802							S 1832					S 1902			
East Norwalk				S 1635				S 1705						S 1735					S 1805							S 1835					S 1905			
CP 241				1637				1707					1732	1737					1807							1837		1848			1907			
South Norwalk				S 1639				S 1709					S 1734	S 1739					S 1809							S 1839		S 1850			S 1909			
Rowayton				S 1642				S 1712						S 1742					S 1812							S 1842					S 1912			
Darien				S 1645				S 1715						S 1745					S 1815							S 1845					S 1915			
Noroton Heights				S 1648				S 1718						S 1748					S 1818							S 1848					S 1918			
CP 234	1624	1628	1643	1652		1657	1700	1722		1727		1729		1752		1757	1800		1822				1827	1843	1830	1852		1858		1900	1922	1935	1945
Stamford	S 1627	S 1631	S 1645	S 1654		S 1700	S 1703	S 1724		S 1729		S 1732		S 1754		S 1800	S 1803		S 1824				S 1830		S 1833	S 1854		S 1900		S 1903	S 1924	D 1938	
Old Greenwich		S 1633					S 1705					S 1734					S 1805								S 1835					S 1905			
Riverside		S 1635					S 1707					S 1736					S 1807								S 1837					S 1907			
Cos Cob		S 1637					S 1709					S 1738					S 1809								S 1839					S 1909			
CP 229	1632	1638	1650	1700		1705	1710	1730		1734		1739		1800		1805	1810		1830				1835	1849	1840	1900		1906		1910	1929	1944	1952
Greenwich	S 1634	S 1640	S 1652			S 1707	S 1712			S 1736		S 1741				S 1807	S 1812						S 1837		S 1842			S 1908		S 1912	S 1931		
Port Chester	S 1638	S 1644	S 1656			S 1711	S 1716			S 1740		S 1745				S 1811	S 1816						S 1841		S 1846					S 1916			
Rye	S 1641	S 1647	S 1659			S 1714	S 1719			S 1743		S 1748				S 1814	S 1819						S 1844		S 1849			S 1913		S 1919			
CP 223	1643	1649	1701	1706	1708	1716	1721	1736	1739	1745	1751	1750		1806		1816	1821		1836	1838		1843	1846	1855	1851	1906	1912	1915	1930	1921	1936	1950	1958
Harrison		S 1651					S 1723					S 1752					S 1823								S 1853					S 1923			
Mamaroneck		S 1654					S 1726					S 1755					S 1826								S 1856					S 1926			
Larchmont		S 1657					S 1729					S 1758					S 1829								S 1859					S 1929			
New Rochelle	S 1650	S 1701	S 1708			S 1723	S 1733			S 1752		S 1802				S 1823	S 1833						S 1853		S 1903					S 1933			
CP 216	1651	1702	1709	1712	1715	1724	1734	1743	1746	1753	1759	1803		1812	1819	1824	1834		1842	1845	1848	1850	1854	1901	1904	1912	1919	1923	1937	1934	1942	1956	2005
Pelham		S 1705					S 1737					S 1806					S 1837								S 1907					S 1937			
Mt Vernon East	S 1654	S 1708	S 1712			S 1727	S 1740			S 1756		S 1809				S 1827	S 1840						S 1857		S 1910					S 1940			
CP 212	1656	1710	1715	1716	1719	1729	1742	1747	1752	1758	1802	1811		1818	1823	1829	1842		1846	1849	1852	1855	1859	1905	1912	1916	1923	1927	1941	1942	1946	2000	2009
CP 112	1658	1712	1717	1719	1723	1731	1744	1749	1756	1800	1804	1813		1820	1827	1831	1844		1848	1851	1854	1857	1901	1907	1914	1918	1925	1929	1943	1944	1948	2002	2011
Fordham	D 1703	D 1717	D 1722			D 1736	D 1749			D 1805		D 1818				D 1836	D 1849						D 1906		D 1919					D 1949			
Mott Haven Jct. CP 5	1709	1723	1727	1729	1736	1742	1755	1759	1808	1810	1813	1823		1830	1839	1842	1855		1858	1902	1904	1907	1912	1915	1925	1928	1933	1937	1951	1955	1958	2012	2019
Harlem-125th St.	D 1712	D 1726	D 1730	D 1732		D 1745	D 1758	D 1802		D 1813		D 1826		D 1833		D 1845	D 1858		D 1901				D 1915		D 1928	D 1931		D 1940		D 1958	D 2001		
Grand Central	S 1723	S 1739	S 1743	S 1745	1752	S 1758	S 1811	S 1815	1824	S 1826	1829	S 1839		S 1846	1855	S 1858	S 1909		S 1912	1916	1918	1921	S 1926	1929	S 1939	S 1942	1947	S 1951	2005	S 2009	S 2012	2028	2033
Turns from					4144				4146		4148				4150					4152	4156	4154					4158		4160				
Turns to																																	
Connecting Trains		4565		4367			4567	4369				4569	4571	4371 4871			4571	4573	4973 4373						4573	4375 4575				4575	4377	4579	

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TRAIN	4377	4579	1165 Dead Head	1167 Dead Head	4379	4981 Water-bury	4581	1559 Dead Head	4381	4883 Dan-bury	4583	4483	4585	4385	1387 Dead Head	4987 Water-bury	4587	4387	4889 Dan-bury	4589	4489	4991 Water-bury	4591	4391	4593	4493	4595	4395	4897 Dan-bury	4597	4397	1991 DH Water-bury
FREQUENCY (Mo-Fr,except as noted)																																
CP 274																																
NH-State St.																																
New Haven		S 1854					S 1933	1945			S 1959		S 2033				S 2059			S 2133	2145		S 2159		S 2233	2245	S 2259			S 2330		
CP 271		1857					1936	1948			2002		2036				2102			2136	2148		2202		2236	2248	2302			2333		
CP 266		1904					1940	1953			2009		2040				2109			2140	2153		2209		2240	2253	2309			2340		
Milford		S 1907					S 1943				S 2012		S 2043				S 2112			S 2143			S 2212		S 2243		S 2312			S 2343		
CP 261		1910				1936	1946	1958			2015		2046			2107	2115			2146	2158	2207	2215		2246	2258	2315			2346		0011
Stratford		S 1912					S 1948				S 2017		S 2048				S 2117			S 2148			S 2217		S 2248		S 2317			S 2348		
CP 257		1915				1941	1951	2005			2020		2051			2112	2120			2151	2202	2212	2220		2251	2302	2320			2351		0020
Bridgeport		S 1918				S 1947	S 1954				S 2023		S 2054			S 2118	S 2123			S 2154		S 2218	S 2223		S 2254		S 2323			S 2354		
CP 255		1919				1948	1955				2024	2030	2055			2119	2124			2155	2204	2219	2224		2255	2304	2324			2355		
Fairfield		S 1926					S 2001				S 2031		S 2101				S 2131			S 2201			S 2231		S 2301		S 2331			S 0002		
Southport											S 2034												S 2234							S 0005		
Green's Farms		S 1930															S 2135										S 2335			S 0008		
Westport CP 244		S 1934					S 2008				S 2039	2040	S 2108				S 2139			S 2208	2214		S 2239		S 2308	2314	S 2339			S 0012		
East Norwalk											S 2042												S 2242							S 0015		
CP 241		1937					2011			2039	2044	2043	2111				2142		2158	2211	2217		2244		2311	2317	2342		0009	0017		
South Norwalk		S 1939					S 2013			S 2041	S 2046		S 2113				S 2144		S 2200	S 2213			S 2246		S 2313		S 2344		S 0011	S 0019		
Rowayton		S 1942															S 2147										S 2347			S 0022		
Darien		S 1945					S 2017				S 2050		S 2117				S 2150			S 2217			S 2250		S 2317		S 2350			S 0025		
Noroton Heights		S 1948									S 2053						S 2153						S 2253				S 2353			S 0028		
CP 234	1927	1952			2000		2022		2027		2057	2054	2122	2127	2145		2157	2200	2211	2222	2227		2257	2300	2322	2327	2357	0000		0032	0044	
Stamford	S 1930	S 1954			S 2003		S 2024		S 2030		S 2059	S 2103	S 2124	S 2130			S 2159	S 2203		S 2224	S 2230		S 2259	S 2303	S 2324	S 2330	S 2359	S 0003		S 0034	S 0047	
Old Greenwich	S 1932				S 2005				S 2032			S 2105		S 2132				S 2205			S 2232			S 2305		S 2332		S 0005			S 0049	
Riverside	S 1934				S 2007				S 2034			S 2107		S 2134				S 2207			S 2234			S 2307		S 2334		S 0007			S 0051	
Cos Cob	S 1936				S 2009				S 2036			S 2109		S 2136				S 2209			S 2236			S 2309		S 2336		S 0009			S 0053	
CP 229	1937	2000			2010		2029		2037		2105	2110	2129	2137	2152		2205	2210		2229	2237		2305	2310	2329	2337	0005	0010		0040	0054	
Greenwich	S 1939				S 2012		S 2031		S 2039			S 2112	S 2131	S 2139				S 2212		S 2231	S 2239			S 2312	S 2331	S 2339		S 0012			S 0056	
Port Chester	S 1943				S 2016				S 2043			S 2116		S 2143				S 2216			S 2243			S 2316		S 2343		S 0016			S 0100	
Rye	S 1946				S 2019				S 2046			S 2119		S 2146				S 2219			S 2246			S 2319		S 2346		S 0019			S 0103	
CP 223	1948	2006	2011	2027	2021		2037		2048		2111	2121	2137	2148	2158		2211	2221		2237	2248		2311	2321	2337	2348	0011	0021		0046	0105	
Harrison	S 1950				S 2023				S 2050			S 2123		S 2150				S 2223			S 2250			S 2323		S 2350		S 0023			S 0107	
Mamaroneck	S 1953				S 2026				S 2053			S 2126		S 2153				S 2226			S 2253			S 2326		S 2353		S 0026			S 0110	
Larchmont	S 1956				S 2029				S 2056			S 2129		S 2156				S 2229			S 2256			S 2329		S 2356		S 0029			S 0113	
New Rochelle	S 2000				S 2033				S 2100			S 2133		S 2200				S 2233			S 2300			S 2333		S 0000		S 0033			S 0117	
CP 216	2001	2012	2018	2034	2034		2044		2101		2117	2134	2144	2201	2205		2217	2234		2244	2301		2317	2334	2344	0001	0017	0034		0052	0118	
Pelham	S 2004				S 2037				S 2104			S 2137		S 2204				S 2237			S 2304			S 2337		S 0004		S 0037			S 0121	
Mt Vernon East	S 2007				S 2040				S 2107			S 2140		S 2207				S 2240			S 2307			S 2340		S 0007		S 0040			S 0124	
CP 212	2009	2016	2022	2038	2042		2048		2109		2121	2142	2148	2209	2209		2221	2242		2248	2309		2321	2342	2348	0009	0021	0042		0056	0126	
CP 112	2011	2018	2024	2040	2044		2050		2111		2123	2144	2150	2211	2211		2223	2244		2250	2311		2323	2344	2350	0011	0023	0044		0058	0128	
Fordham	D 2016				D 2049				D 2116			D 2149		D 2216				D 2249			D 2316			D 2349		D 0016		D 0049			D 0133	
Mott Haven Jct. CP 5	2022	2028	2032	2048	2055		2100		2122		2133	2155	2200	2222	2219		2233	2255		2300	2322		2333	2355	0000	0022	0033	0055		0108	0139	
Harlem-125th St.	D 2025	D 2031			D 2058		D 2103		D 2125		D 2136	D 2158	D 2203	D 2225			D 2236	D 2258		D 2303	D 2325		D 2336	D 2358	D 0003	D 0025	D 0036	D 0058		D 0111	D 0142	
Grand Central	S 2036	S 2042	2046	2102	S 2109		S 2114		S 2136		S 2147	S 2209	S 2214	S 2236	2233		S 2247	S 2309		S 2314	S 2336		S 2347	S 0009	S 0014	S 0036	S 0047	S 0109		S 0122	S 0153	
Turns from			4164	4166				4558				4462																				
Turns to																																
Connecting Trains	4577	4379			4579	4581	4981		4581	4583	4483	4583	4385	4585		4587	4987	4587	4589	4489	4589	4591	4991	4591	4493	4593	4395	4595	4597	4397	4597	
							4781				4883						4387			4889			4391				4795			4897	4797	
							4381										4787						4791									

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TRAIN	EASTWARD																												
	Source: Timetable Viewer - 2030OPPLAN (GO: 999) Frequency: Tuesday - Thursday / 2030 Operating Plan rev 11-07																												
	1916	1926	4500	4702	4502	4902	4404	1112	1110	1116	4504	4406	4306	1114	1118	4506	4806	4408	4708	1124	1122	1126	4508	4410	4310	1130	1128	4810	4510	1440
	DH Water-bury	DH Water-bury		New Canaan		Water-bury		Dead Head	Dead Head	Dead Head				Dead Head	Dead Head		Dan-bury		New Canaan	Dead Head	Dead Head	Dead Head				Dead Head	Dead Head	Dan-bury		Dead Head
FREQUENCY (Mo-Fr,except as noted)																													
Grand Central			G 0533	G 0537	G 0600		G 0606	0603	0621	0624	G 0630	G 0633	G 0636	0639	0654	G 0701		G 0703	G 0706	0708	0721	0723	G 0730	G 0733	G 0736	0739	0755	G 0757	G 0801	0805
Harlem-125th St.			R 0542	R 0546	R 0609		R 0615				R 0639	R 0642	R 0645			R 0710		R 0712	R 0715				R 0739	R 0742	R 0745			R 0807	R 0810	
Mott Haven Jct. CP 5			0544	0548	0611		0617	0614	0632	0635	0641	0644	0647	0650	0705	0712		0714	0717	0719	0732	0734	0741	0744	0747	0750	0806	0809	0812	0816
Fordham				R 0553	R 0616		R 0622					R 0649	R 0652					R 0719	R 0722					R 0749	R 0752				R 0817	
CP 112			0551	0558	0621		0627	0624	0640	0643	0648	0654	0657	0659	0715	0720		0724	0727	0729	0743	0745	0750	0754	0757	0759	0814	0817	0822	0826
CP 212			0552	0559	0622		0628	0625	0641	0644	0649	0655	0658	0700	0716	0721		0725	0728	0730	0744	0746	0751	0755	0758	0800	0815	0818	0823	0827
Mt Vernon East				S 0601			S 0630					S 0657	S 0700					S 0727	S 0730					S 0757	S 0800					
Pelham				S 0604			S 0633						S 0703						S 0733						S 0803					
CP 216			0557	0606	0627		0635	0630	0646	0649	0654	0700	0705	0705	0721	0726		0730	0735	0738	0749	0752	0756	0800	0805	0807	0820	0823	0828	0834
New Rochelle				S 0607			S 0636					S 0701	S 0706					S 0731	S 0736					S 0801	S 0806					
Larchmont				S 0611			S 0640						S 0710						S 0740						S 0810					
Mamaroneck				S 0614			S 0643						S 0713						S 0743						S 0813					
Harrison				S 0617			S 0646						S 0716						S 0746						S 0816					
CP 223			0603	0619	0634		0648	0639		0656	0701	0709	0718			0733		0739	0748	0751		0805	0803	0809	0818	0821		0830	0835	0841
Rye				S 0620			S 0649					S 0710	S 0719					S 0740	S 0749					S 0810	S 0819				S 0837	
Port Chester				S 0623			S 0652					S 0713	S 0722					S 0743	S 0752					S 0813	S 0822					
Greenwich				S 0627	S 0639		S 0656				S 0706	S 0717	S 0726			S 0738		S 0747	S 0756				S 0808	S 0817	S 0826				S 0842	
CP 229			0609	0629	0641		0658				0708	0719	0728			0740		0749	0758				0810	0819	0828			0837	0844	0848
Cos Cob				S 0630			S 0659						S 0729						S 0759						S 0829					
Riverside				S 0632			S 0701						S 0731						S 0801						S 0831					
Old Greenwich				S 0635			S 0704						S 0734						S 0804						S 0834					
Stamford			S 0615	S 0640	S 0647		S 0712				S 0714	S 0725	S 0742			S 0746	0750	S 0755	S 0812				S 0816	S 0825	S 0842			S 0843	S 0850	
CP 234			0616	0641	0648		0713				0715	0726	0742			0747	S 0751	0756	0813				0817	0826	0842			0844	0851	0854
Noroton Heights			S 0620		S 0652							S 0730						S 0800						S 0830					S 0855	
Darien			S 0623		S 0655						S 0720	S 0733				S 0752		S 0803					S 0822	S 0833					S 0858	
Rowayton					S 0658							S 0736						S 0806						S 0836					S 0901	
South Norwalk			S 0628		S 0702						S 0725	S 0740				S 0757	S 0802	S 0810					S 0827	S 0840				S 0853	S 0905	
CP 241			0629		0703		0724				0726	0741				0758	0803	0811					0828	0841				0854	0906	0910
East Norwalk			S 0631		S 0705							S 0743						S 0813						S 0843					S 0908	
Westport CP 244			S 0635		S 0709						S 0729	S 0746				S 0801		S 0816					S 0831	S 0846					S 0911	0916
Green's Farms					S 0713							S 0750						S 0820						S 0850					S 0915	
Southport					S 0715							S 0753						S 0823						S 0853					S 0918	
Fairfield			S 0641		S 0718						S 0736	S 0756				S 0808		S 0826					S 0838	S 0856					S 0921	
CP 255			0647		0727	0731					0745	0809				0817		0839					0847	0909					0930	0934
Bridgeport			S 0651		S 0728	S 0733					S 0746	S 0810				S 0818		S 0840					S 0848	S 0910					S 0931	
CP 257	0455	0535	0653		0730	0736					0748	0812				0820		0842					0850	0912					0933	0938
Stratford			S 0656		S 0733						S 0751					S 0823							S 0853						S 0936	
CP 261	0500	0540	0659		0736	0742					0754					0826							0856						0939	
Milford			S 0702		S 0739						S 0757					S 0829							S 0859						S 0942	
CP 266			0706		0743						0801					0833							0903						0946	
CP 271			0714		0753						0811					0843							0913						0956	
New Haven			H 0718		H 0757						H 0815					H 0847							H 0917						S 1000	
NH-State St.			S 0723		S 0802						S 0820					S 0852							S 0922							
CP 274																													
Turns from																													
Turns to	4917	4927		4717			4425	4113	4111	4117		4435		4115	4119			4437	4733	4125	4123	4127		4439		4131	4129			4441
Connecting Trains				4502	4702	4502	4504				4404	4506	4506			4406	4506	4508	4508				4408	4510	4510			4310	4410	
					4902											4306							4708		4810				4310	
																													4710	

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TRAIN	4312	1132 Dead Head	1312 Dead Head	4512	4912 Water-bury	4314	1134 Dead Head	1314 Dead Head	1316 Dead Head	4514	4316	1338 Dead Head	1136 Dead Head	1340 Dead Head	1516 Dead Head	4516	4318	1138 Dead Head	1318 Dead Head	4518	4320	1140 Dead Head	4520	4820 Dan-bury	4322	4522	4324	4524	4924 Water-bury	4326	4526	4328	4528
FREQUENCY (Mo-Fr,except as noted)																																	
Grand Central	G 0808	0811	0827	G 0835		G 0838	0843	0853	0859	G 0908	G 0911	0917	0928	0930	0933	G 0935	G 0938	0945	1000	G 1008	G 1011	1022	G 1035		G 1038	G 1108	G 1111	G 1135		G 1138	G 1208	G 1211	G 1235
Harlem-125th St.	R 0817			R 0844		R 0847				R 0917	R 0920					R 0944	R 0947			R 1017	R 1020		R 1044		R 1047	R 1117	R 1120	R 1144		R 1147	R 1217	R 1220	R 1244
Mott Haven Jct. CP 5	0819	0822	0838	0846		0849	0854	0904	0910	0919	0922	0928	0939	0941	0944	0946	0949	0956	1011	1019	1022	1033	1046		1049	1119	1122	1146		1149	1219	1222	1246
Fordham	R 0824					R 0854					R 0927						R 0954				R 1027				R 1054		R 1127			R 1154		R 1227	
CP 112	0829	0831	0845	0853		0859	0902	0914	0919	0926	0932	0936	0946	0948	0951	0953	0959	1003	1018	1026	1032	1040	1053		1059	1126	1132	1153		1159	1226	1232	1253
CP 212	0830	0832	0846	0854		0900	0903	0915	0920	0927	0933	0937	0947	0949	0952	0954	1000	1004	1019	1027	1033	1041	1054		1100	1127	1133	1154		1200	1227	1233	1254
Mt Vernon East	S 0832					S 0902					S 0935						S 1002				S 1035				S 1102		S 1135			S 1202		S 1235	
Pelham	S 0835					S 0905					S 0938						S 1005				S 1038				S 1105		S 1138			S 1205		S 1238	
CP 216	0837	0839	0851	0859		0907	0912	0922	0927	0932	0940	0942	0952	0954	0957	0959	1007	1010	1024	1032	1040	1046	1059		1107	1132	1140	1159		1207	1232	1240	1259
New Rochelle	S 0838					S 0908					S 0941						S 1008				S 1041				S 1108		S 1141			S 1208		S 1241	
Larchmont	S 0842					S 0912					S 0945						S 1012				S 1045				S 1112		S 1145			S 1212		S 1245	
Mamaroneck	S 0845					S 0915					S 0948						S 1015				S 1048				S 1115		S 1148			S 1215		S 1248	
Harrison	S 0848					S 0918					S 0951						S 1018				S 1051				S 1118		S 1151			S 1218		S 1251	
CP 223	0850	0853	0858	0906		0920	0925	0929	0934	0939	0953	0949	1000	1002	1005	1006	1020	1023	1030	1039	1053	1058	1106		1120	1139	1153	1206		1220	1239	1253	1306
Rye	S 0851					S 0921					S 0954						S 1021				S 1054				S 1121		S 1154			S 1221		S 1254	
Port Chester	S 0854					S 0924					S 0957						S 1024				S 1057				S 1124		S 1157			S 1224		S 1257	
Greenwich	S 0858			S 0911		S 0928					S 1001					S 1011	S 1028				S 1101		S 1111		S 1128		S 1201	S 1211		S 1228		S 1301	S 1311
CP 229	0900		0904	0913		0930		0935	0940	0945	1003	0955		1008	1011	1013	1030		1036	1045	1103		1113		1130	1145	1203	1213		1230	1245	1303	1313
Cos Cob	S 0901					S 0931					S 1004						S 1031				S 1104				S 1131		S 1204			S 1231		S 1304	
Riverside	S 0903					S 0933					S 1006						S 1033				S 1106				S 1133		S 1206			S 1233		S 1306	
Old Greenwich	S 0906					S 0936					S 1009						S 1036				S 1109				S 1136		S 1209			S 1236		S 1309	
Stamford	S 0914			S 0919		S 0944				S 0951	S 1017					S 1019	S 1044			S 1051	S 1117		S 1119		S 1144	S 1151	S 1217	S 1219		S 1244	S 1251	S 1317	S 1319
CP 234	0914		0917	0920		0944		0947	0950	0952	1017	1002		1020	1017	1020	1044		1047	1052	1117		1120		1144	1152	1217	1220		1244	1252	1317	1320
Noroton Heights				S 0924						S 0956						S 1024				S 1056			S 1124			S 1156		S 1224			S 1256		S 1324
Darien				S 0927						S 0959						S 1027				S 1059			S 1127			S 1159		S 1227			S 1259		S 1327
Rowayton										S 1002																S 1202							
South Norwalk				S 0932						S 1006						S 1032				S 1104			S 1132	S 1137		S 1206		S 1232			S 1304		S 1332
CP 241				0933						1007					1025	1033				1105			1133	1138		1207		1233			1305		1333
East Norwalk																				S 1107											S 1307		
Westport CP 244				S 0936						S 1011					1028	S 1036				S 1111			S 1136			S 1211		S 1236			S 1311		S 1336
Green's Farms										S 1015																S 1215							
Southport																				S 1115											S 1315		
Fairfield				S 0943						S 1019						S 1043				S 1119			S 1143			S 1219		S 1243			S 1319		S 1343
CP 255				0952	0956					1027					1038	1052				1127			1152			1227		1252	1256		1327		1352
Bridgeport				S 0953	S 0958					S 1028						S 1053				S 1128			S 1153			S 1228		S 1253	S 1258		S 1328		S 1353
CP 257				0955	1001					1030					1040	1055				1130			1155			1230		1255	1301		1330		1355
Stratford				S 0958						S 1033						S 1058				S 1133			S 1158			S 1233		S 1258			S 1333		S 1358
CP 261				1001	1007					1036					1044	1101				1136			1201			1236		1301	1307		1336		1401
Milford				S 1004						S 1039						S 1104				S 1139			S 1204			S 1239		S 1304			S 1339		S 1404
CP 266				1008						1043					1049	1108				1143			1208			1243		1308			1343		1408
CP 271				1018						1052					1106	1114				1152			1214			1252		1314			1352		1414
New Haven				S 1022						S 1056					1110	S 1118				S 1156			S 1218			S 1256		S 1318			S 1356		S 1418
NH-State St.																																	
CP 274																																	
Turns from																																	
Turns to		4133					4135					4339	4137	4341				4139				4141											
Connecting Trains	4512			4312 4912	4512	4514				4314 4714	4516					4316	4518			4318 4718	4520		4320 4820	4520	4522	4322 4722	4524	4324	4524	4526	4326 4726	4528	4328 4828

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TRAIN	4828 Dan-bury	4330	4530	4332	4532	4334	4534	4934 Water-bury	4336	4536	4836 Dan-bury	4238	4338	4738 New Canaan	4538	4240	4340	4840 Dan-bury	4540	4242	4342	4244
FREQUENCY (Mo-Fr,except as noted)																						
Grand Central		G 1238	G 1308	G 1311	G 1335	G 1338	G 1408		G 1411	G 1435		G 1438	G 1440	G 1505	G 1508	G 1511	G 1513	G 1529	G 1533	G 1536	G 1539	G 1558
Harlem-125th St.		R 1247	R 1317	R 1320	R 1344	R 1347	R 1417		R 1420	R 1444		R 1447	R 1449	R 1514	R 1517	R 1520	R 1522	R 1539	R 1542	R 1545	R 1548	R 1607
Mott Haven Jct. CP 5		1249	1319	1322	1346	1349	1419		1422	1446		1449	1451	1516	1519	1522	1524	1541	1544	1547	1550	1609
Fordham		R 1254		R 1327		R 1354			R 1427				R 1456				R 1529				R 1555	
CP 112		1259	1326	1332	1353	1359	1426		1432	1453		1456	1501	1523	1526	1529	1534	1548	1551	1554	1600	1616
CP 212		1300	1327	1333	1354	1400	1427		1433	1454		1457	1502	1524	1527	1530	1535	1549	1552	1555	1601	1617
Mt Vernon East		S 1302		S 1335		S 1402			S 1435				S 1504				S 1537				S 1603	
Pelham		S 1305		S 1338		S 1405			S 1438				S 1507				S 1540				S 1606	
CP 216		1307	1332	1340	1359	1407	1432		1440	1459		1502	1509	1529	1532	1535	1542	1554	1557	1600	1608	1622
New Rochelle		S 1308		S 1341		S 1408			S 1441				S 1510				S 1543				S 1609	
Larchmont		S 1312		S 1345		S 1412			S 1445				S 1514				S 1547				S 1613	
Mamaroneck		S 1315		S 1348		S 1415			S 1448				S 1517				S 1550				S 1616	
Harrison		S 1318		S 1351		S 1418			S 1451				S 1520				S 1553				S 1619	
CP 223		1320	1339	1353	1406	1420	1439		1453	1506		1509	1522	1536	1539	1542	1555	1601	1604	1607	1621	1629
Rye		S 1321		S 1354		S 1421			S 1454			S 1510	S 1523			S 1543	S 1556			S 1608	S 1622	S 1630
Port Chester		S 1324		S 1357		S 1424			S 1457			S 1513	S 1526			S 1546	S 1559			S 1611	S 1625	S 1633
Greenwich		S 1328		S 1401	S 1411	S 1428			S 1501	S 1511		S 1517	S 1530			S 1550	S 1603			S 1615	S 1629	S 1637
CP 229		1330	1345	1403	1413	1430	1445		1503	1513		1519	1532	1542	1545	1552	1605	1607	1610	1617	1631	1639
Cos Cob		S 1331		S 1404		S 1431			S 1504			S 1520	S 1533			S 1553				S 1618		S 1640
Riverside		S 1333		S 1406		S 1433			S 1506			S 1522	S 1535			S 1555				S 1620		S 1642
Old Greenwich		S 1336		S 1409		S 1436			S 1509			S 1525	S 1538			S 1558				S 1623		S 1645
Stamford	S 1325	S 1344	S 1351	S 1417	S 1419	S 1444	S 1451		S 1517	S 1519	S 1525	S 1533	S 1546	S 1548	S 1551	S 1606	S 1612	S 1613	S 1616	S 1631	S 1638	S 1652
CP 234	1326	1344	1352	1417	1420	1444	1452		1517	1520	1526	1533	1546	1549	1552	1606	1612	1614	1617	1631	1638	1652
Noroton Heights			S 1356		S 1424		S 1456			S 1524					S 1556			S 1619				
Darien			S 1359		S 1427		S 1459			S 1527					S 1559			S 1623				
Rowayton			S 1402				S 1502								S 1602			S 1626				
South Norwalk	S 1337		S 1406		S 1432		S 1506			S 1532	S 1537				S 1606			S 1631	S 1626			
CP 241	1338		1407		1433		1507			1533	1538				1607			1632	1627			
East Norwalk							S 1509								S 1609				S 1629			
Westport CP 244			S 1411		S 1436		S 1513			S 1536					S 1613				S 1633			
Green's Farms			S 1415				S 1517								S 1617				S 1637			
Southport							S 1520								S 1620				S 1640			
Fairfield			S 1419		S 1443		S 1523			S 1543					S 1623				S 1643			
CP 255			1427		1452		1531	1535		1552					1631				1651			
Bridgeport			S 1428		S 1453		S 1532	S 1537		S 1553					S 1632				S 1652			
CP 257			1430		1455		1534	1540		1555					1634				1654			
Stratford			S 1433		S 1458		S 1537			S 1558					S 1637				S 1657			
CP 261			1436		1501		1540	1546		1601					1640				1700			
Milford			S 1439		S 1504		S 1543			S 1604					S 1643				S 1703			
CP 266			1443		1508		1547			1608					1647				1707			
CP 271			1452		1514		1558			1614					1658				1718			
New Haven NH-State St.			S 1456		S 1518		S 1602			S 1618					S 1702				S 1722			
CP 274																						
Turns from																						
Turns to																						
Connecting Trains	4528	4530	4330 4730	4532	4332	4534	4334 4734 4934	4534	4536	4336 4836	4536		4538 4738	4338	4338		4540 4840	4340	4340		4642 4742 4942	4542

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TRAIN	EASTWARD																											
	4742 New Canaan	4144	4642	4542	4544	4644	4146	4944 Water-bury	4844 Dan-bury	4546	4248	4148	4348	4548	4748 New Canaan	4648	4250	4450	4850 Dan-bury	4350	4150	4550	4950 Water-bury	4752 New Canaan	4252	4452	4152	4454	4356
FREQUENCY (Mo-Fr,except as noted)																												
Grand Central	G 1601	G 1604	G 1607	G 1614	G 1618	G 1626	G 1628	G 1632	G 1636	G 1642	G 1645	G 1649	G 1651	G 1657	G 1700	G 1703	G 1706	G 1709	G 1711	G 1715	G 1718	G 1721		G 1724	G 1726	G 1729	G 1731	G 1733	G 1735
Harlem-125th St.	R 1610	R 1613	R 1616	R 1623	R 1627	R 1635	R 1637	R 1642	R 1646	R 1651	R 1654		R 1700	R 1706					R 1718	R 1721	R 1724	R 1727	R 1730		R 1733	R 1735				R 1744
Mott Haven Jct. CP 5	1612	1615	1618	1625	1629	1637	1639	1644	1648	1653	1656	1700	1702	1708	1711	1714	1717	1720	1723	1726	1729	1732		1735	1737	1740	1742	1744	1746
Fordham		R 1620			R 1634		R 1644						R 1707																R 1751
CP 112	1619	1625	1625	1632	1639	1644	1649	1651	1655	1700	1703	1707	1712	1715	1718	1721	1724	1727	1730	1733	1736	1739		1742	1744	1747	1749	1751	1756
CP 212	1620	1626	1626	1633	1640	1645	1650	1652	1656	1701	1704	1708	1713	1716	1719	1722	1725	1728	1731	1734	1737	1740		1743	1745	1748	1750	1752	1757
Mt Vernon East		S 1628					S 1652						S 1715								H 1739								S 1759
Pelham		S 1631					S 1655						S 1718								H 1742								S 1802
CP 216	1625	1633	1631	1638	1645	1650	1657	1657	1701	1706	1709	1713	1720	1721	1724	1727	1730	1733	1736	1739	1745	1745		1748	1750	1753	1755	1757	1804
New Rochelle		S 1635			S 1645		S 1659					H 1714	S 1721							H 1740	S 1748						H 1756		S 1805
Larchmont		S 1639					S 1703					H 1718	S 1725							H 1744							H 1800		S 1809
Mamaroneck		S 1642					S 1706					H 1721	S 1728							H 1747							H 1803		S 1812
Harrison		S 1648			S 1652		S 1712				S 1715	S 1727	S 1731				S 1736			S 1753							S 1809		S 1815
CP 223	1632	1650	1638	1645	1653	1657	1714	1704	1708	1713	1716	1729	1733	1728	1731	1734	1737	1740	1743	1754		1752		1755	1757	1800	1811	1804	1817
Rye					S 1655						S 1718		S 1734				S 1739								H 1759				S 1818
Port Chester					S 1658						S 1721		S 1737				S 1742								H 1802				S 1821
Greenwich				S 1650	S 1702					S 1719	S 1725		S 1741				S 1746								H 1806				S 1825
CP 229	1638		1644	1652	1704	1703		1710	1714	1721	1727		1743	1734	1737	1740	1748	1746	1749	1800		1758		1801	1808	1806		1810	1827
Cos Cob					S 1705						S 1728		S 1744				S 1749								H 1809				S 1828
Riverside					S 1707						S 1730		S 1746				S 1751								H 1811				S 1830
Old Greenwich					S 1710						S 1733		S 1749				S 1754								H 1814				S 1833
Stamford	S 1644		S 1650	S 1658	S 1715	S 1709		S 1716	S 1720	S 1727	S 1740		S 1757	S 1740	S 1743	S 1746	S 1801	S 1752	S 1755			S 1804		S 1807	S 1821				S 1841
CP 234	1645		1651	1659	1716	1710		1717	1721	1728	1740		1757	1741	1744	1747	1801	1753	1756	1806		1805		1808	1821	1811		1815	1841
Noroton Heights				S 1703	S 1720				S 1726					S 1745					S 1801										
Darien				S 1706	S 1723				S 1730					S 1748					S 1805										
Rowayton				S 1709	S 1726				S 1733					S 1751					S 1808										
South Norwalk				S 1713	S 1729				S 1738					S 1755				S 1802	S 1813									H 1824	
CP 241			1659	1714	1730	1718		1725	1739	1736				1756		1755		1803	1814			1813				1819		1825	
East Norwalk				S 1716	S 1732									S 1758				S 1805										H 1827	
Westport CP 244			1702	S 1720	S 1736	1721		1728		1739				S 1802		1758		S 1809				1816				1822		H 1831	
Green's Farms				S 1724	S 1740									S 1806				S 1813										S 1835	
Southport				S 1727	S 1743			S 1733						S 1809				S 1816								H 1827			
Fairfield				S 1730	S 1746			S 1737						S 1812				S 1819								H 1830			
CP 255			1712	1739	1755	1731		1745		1749				1821		1808		1833				1826	1831			1844		1847	
Bridgeport			S 1714	S 1740	S 1756			S 1747		S 1751				S 1822		S 1810						S 1828	S 1833						
CP 257			1716	1742	1758	1733		1750		1753				1824		1812		1840				1830	1836			1849		1852	
Stratford			S 1719	S 1745	S 1801			S 1752		S 1756				S 1827		S 1815						S 1833							
CP 261			1722	1748	1804	1737		1757		1759				1830		1818						1836	1842						
Milford			S 1725	S 1751	S 1807	S 1740				S 1802				S 1833		S 1821						S 1839							
CP 266			1729	1755	1811	1744				1806				1837		1825						1843							
CP 271			1739	1805	1821	1754				1816				1847		1835						1853							
New Haven			S 1743	S 1809	S 1825	S 1758				S 1820				S 1851		S 1839						S 1857							
NH-State St.			S 1748			S 1803										S 1844													
CP 274			1750			1905										1846													
Turns from																													
Turns to		1145					1147					1149									1151						1153		
Connecting Trains	4342	4544	4342	4342 4244	4144 4844		4248				4146 4648					4248						4348 4250 4950	4550		4654				4556

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TRAIN	4554	4654	4854 Dan-bury	4254	4154	4456	4156	4556	4756 New Canaan	4558	4258	4458	4158	4858 Dan-bury	4362	4660	4460	4260	4160	4364	4562	4962 Water-bury	4462	4764 New Canaan	4264	4164	4564	4864 Dan-bury	4368	4466	4766 New Canaan	4566	4568
FREQUENCY (Mo-Fr,except as noted)																																	
Grand Central	G 1738	G 1741	G 1746	G 1750	G 1753	G 1756	G 1758	G 1801	G 1804	G 1808	G 1813	G 1816	G 1816	G 1818	G 1822	G 1824	G 1827	G 1836	G 1839	G 1841	G 1847		G 1850	G 1853	G 1859	G 1902	G 1906		G 1909	G 1912	G 1930	G 1933	G 1936
Harlem-125th St.	R 1747	R 1750		R 1759	R 1802		R 1807	R 1810	R 1813	R 1817				R 1828	R 1831	R 1833	R 1836			R 1850							R 1915		R 1918	R 1921	R 1939		R 1945
Mott Haven Jct. CP 5	1749	1752	1758	1801	1804	1807	1809	1812	1815	1819	1824	1827	1827	1830	1833	1835	1838	1847	1850	1852	1858		1901	1904	1910	1913	1917		1920	1923	1941	1944	1947
Fordham															R 1838					R 1857									R 1925				
CP 112	1756	1759	1805	1808	1811	1814	1816	1819	1822	1826	1831	1834	1834	1837	1843	1842	1845	1854	1857	1902	1905		1908	1911	1917	1920	1924		1930	1930	1948	1951	1954
CP 212	1757	1800	1806	1809	1812	1815	1817	1820	1823	1827	1832	1835	1835	1838	1844	1843	1846	1855	1858	1903	1906		1909	1912	1918	1921	1925		1931	1931	1949	1952	1955
Mt Vernon East							H 1819								S 1846					S 1905									S 1933				
Pelham							H 1822								S 1849					S 1908									S 1936				
CP 216	1802	1805	1811	1814	1817	1820	1825	1825	1828	1832	1837	1840	1840	1843	1851	1848	1851	1900	1903	1910	1911		1914	1917	1923	1926	1930		1938	1936	1954	1957	2000
New Rochelle							S 1828								S 1852					S 1911						H 1927			S 1939				
Larchmont					H 1821								H 1844		S 1856				H 1907	S 1915						H 1931			S 1943				
Mamaroneck					H 1824								H 1847		S 1859				H 1910	S 1918						H 1934			S 1946				
Harrison					S 1830								S 1853		S 1902				S 1916	S 1921						S 1940			S 1949				
CP 223	1809	1812	1818	1821	1832	1827		1832	1835	1839	1844	1847	1855	1850	1904	1855	1858	1907	1918	1923	1918		1921	1924	1930	1942	1937		1951	1943	2001	2004	2007
Rye				H 1823							H 1846				S 1905			H 1909		S 1924					H 1932				S 1952		S 2003		
Port Chester				H 1826							H 1849				S 1908			H 1912		S 1927					H 1935				S 1955		S 2006		
Greenwich				H 1830							H 1853				S 1912			H 1916		S 1931					H 1939				S 1959		S 2010		
CP 229	1815	1818	1824	1832		1833		1838	1841	1845	1855	1853		1856	1914	1901	1904	1918		1933	1924		1927	1930	1941		1943		2001	1949	2011	2010	2013
Cos Cob				H 1833							H 1856				S 1915			H 1919		S 1934					H 1942				S 2002		S 2013		
Riverside				H 1835							H 1858				S 1917			H 1921		S 1936					H 1944				S 2004		S 2015		
Old Greenwich				H 1841							H 1904				S 1920			H 1927		S 1939					H 1947				S 2007		S 2018		
Stamford	S 1821	S 1824	S 1830					S 1844	S 1847					S 1902	S 1928	S 1907	S 1910			S 1947	S 1930		S 1933	S 1936	S 1954		S 1949		S 2015	S 1955	S 2022		S 2019
CP 234	1822	1825	1831	1845		1838		1845	1848	1850	1908	1858		1903	1928	1908	1911	1931		1947	1931		1934	1937	1954		1950		2015	1956	2023	2015	2020
Noroton Heights	S 1826							S 1849									S 1915						S 1938							S 2000			S 2024
Darien	S 1829							S 1852									S 1918						S 1941							S 2003			S 2027
Rowayton	S 1832							S 1855									S 1921						S 1944							S 2006			S 2030
South Norwalk	S 1836		S 1841			H 1847		S 1859				H 1907		S 1913			S 1925						S 1948				S 1959	S 2004		S 2010		H 2024	S 2034
CP 241	1837	1833	1842			1848		1900		1858		1908		1914		1916	1926				1939		1949				2000	2005		2011		2025	2035
East Norwalk	S 1839					H 1850		S 1902				H 1910					S 1928						S 1951							S 2013			S 2037
Westport CP 244	S 1843	1836				H 1854		S 1906		1901		H 1914				1919	S 1932				S 1942		S 1955				S 2003			S 2017		H 2028	S 2041
Green's Farms	S 1847					H 1858		S 1910				H 1918					S 1936						S 1959							S 2021			S 2045
Southport	S 1850					H 1901		S 1913				H 1921					S 1939						S 2002							S 2024			S 2048
Fairfield	S 1853					S 1904		S 1916				S 1924					S 1942				S 1950		S 2005				S 2011			S 2027		H 2036	S 2051
CP 255	1902	1846				1918		1925		1911		1938				1929	1953				1959	2002	2016				2020			2038		2045	2100
Bridgeport	S 1903	S 1848						S 1926		S 1913						S 1931					S 2000	S 2005					S 2021			S 2040		H 2046	S 2101
CP 257	1905	1850				1925		1928		1915		1945				1933	1956				2002	2008					2023			2043		2048	2103
Stratford	S 1908	S 1853						S 1931		S 1918						S 1936					S 2005						S 2026					H 2051	S 2106
CP 261	1911	1856						1934		1921						1939					2008	2014					2029					2054	2109
Milford	S 1914	S 1859						S 1937		S 1924						S 1942					S 2011						S 2032					H 2057	S 2112
CP 266	1918	1903						1941		1928						1946					2015						2036					2101	2116
CP 271	1928	1913						1951		1938						1956					2025						2046					2111	2126
New Haven	S 1932	S 1917						S 1955		S 1942						S 2000					S 2029						S 2050					S 2115	S 2130
NH-State St.		S 1922														S 2005																	
CP 274		1924														2007																	
Turns from																																	
Turns to					1155		1157						1159						1161				4483			1165							
Connecting Trains		4252						4356							4562 4462		4562			4564	4362 4962	4562	4362				4364 4864	4564	4568				4368

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2030 OPERATING PLAN - New Haven Line

TRAIN	4166	4372	4772 New Canaan	4570	4870 Dan-bury	4572	4374	4574	4376	4776 New Canaan	4576	4976 Water-bury	4876 Dan-bury	4378	4578	4380	4780 New Canaan	4580	4382	4582	4384	4784 New Canaan	4584	4386	4586	4886 Dan-bury	4388	4588	4390	4590	4392	4592	4394
FREQUENCY (Mo-Fr,except as noted)																																	
Grand Central	G 1938	G 1941	G 2002	G 2005		G 2008	G 2011	G 2038	G 2041	G 2102	G 2105		G 2107	G 2111	G 2138	G 2141	G 2202	G 2208	G 2211	G 2238	G 2241	G 2302	G 2308	G 2311	G 2338		G 2341	G 0023	G 0026	G 0108	G 0111	G 0150	G 0154
Harlem-125th St.		R 1950	R 2011	R 2014		R 2017	R 2020	R 2047	R 2050	R 2111	R 2114		R 2117	R 2120	R 2147	R 2150	R 2211	R 2217	R 2220	R 2247	R 2250	R 2311	R 2317	R 2320	R 2347		R 2350	R 0032	R 0035	R 0117	R 0120	R 0159	R 0203
Mott Haven Jct. CP 5	1949	1952	2013	2016		2019	2022	2049	2052	2113	2116		2119	2122	2149	2152	2213	2219	2222	2249	2252	2313	2319	2322	2349		2352	0034	0037	0119	0122	0201	0205
Fordham		R 1957					R 2027		R 2057					R 2127		R 2157			R 2227		R 2257			R 2327			R 2357		R 0042		R 0127		
CP 112	1956	2002	2020	2023		2026	2032	2056	2102	2120	2123		2126	2132	2156	2202	2220	2226	2232	2256	2302	2320	2326	2332	2356		0002	0041	0047	0126	0132	0208	0212
CP 212	1957	2003	2021	2024		2027	2033	2057	2103	2121	2124		2127	2133	2157	2203	2221	2227	2233	2257	2303	2321	2327	2333	2357		0003	0042	0048	0127	0133	0209	0213
Mt Vernon East		S 2005					S 2035		S 2105					S 2135		S 2205			S 2235		S 2305			S 2335			S 0005		S 0050		S 0135		S 0215
Pelham		S 2008					S 2038		S 2108					S 2138		S 2208			S 2238		S 2308			S 2338			S 0008		S 0053		S 0138		S 0218
CP 216	2002	2010	2026	2029		2032	2040	2102	2110	2126	2129		2132	2140	2202	2210	2226	2232	2240	2302	2310	2326	2332	2340	0002		0010	0047	0055	0132	0140	0214	0220
New Rochelle		S 2011					S 2041		S 2111					S 2141		S 2211			S 2241		S 2311			S 2341			S 0011		S 0056		S 0141		S 0221
Larchmont	H 2006	S 2015					S 2045		S 2115					S 2145		S 2215			S 2245		S 2315			S 2345			S 0015		S 0100		S 0145		S 0225
Mamaroneck	H 2009	S 2018					S 2048		S 2118					S 2148		S 2218			S 2248		S 2318			S 2348			S 0018		S 0103		S 0148		S 0228
Harrison	S 2015	S 2021					S 2051		S 2121					S 2151		S 2221			S 2251		S 2321			S 2351			S 0021		S 0106		S 0151		S 0231
CP 223	2017	2023	2033	2036		2039	2053	2109	2123	2133	2136		2139	2153	2209	2223	2233	2239	2253	2309	2323	2333	2339	2353	0009		0023	0054	0108	0139	0153	0221	0233
Rye		S 2024	S 2035				S 2054		S 2124	S 2135				S 2154		S 2224	S 2235		S 2254		S 2324	S 2335		S 2354			S 0024		S 0109		S 0154		S 0234
Port Chester		S 2027	S 2038				S 2057		S 2127	S 2138				S 2157		S 2227	S 2238		S 2257		S 2327	S 2338		S 2357			S 0027		S 0112		S 0157		S 0237
Greenwich		S 2031	S 2042				S 2101		S 2131	S 2142				S 2201		S 2231	S 2242		S 2301		S 2331	S 2342		S 0001			S 0031		S 0116		S 0201		S 0241
CP 229		2033	2043	2042		2045	2103	2115	2133	2143	2142		2145	2203	2215	2233	2243	2245	2303	2315	2333	2343	2345	0003	0015		0033	0100	0118	0145	0203	0227	0243
Cos Cob		S 2034	S 2045				S 2104		S 2134	S 2145				S 2204		S 2234	S 2245		S 2304		S 2334	S 2345		S 0004			S 0034		S 0119		S 0204		S 0244
Riverside		S 2036	S 2047				S 2106		S 2136	S 2147				S 2206		S 2236	S 2247		S 2306		S 2336	S 2347		S 0006			S 0036		S 0121		S 0206		S 0246
Old Greenwich		S 2039	S 2050				S 2109		S 2139	S 2150				S 2209		S 2239	S 2250		S 2309		S 2339	S 2350		S 0009			S 0039		S 0124		S 0209		S 0249
Stamford		S 2047	S 2054			S 2051	S 2117	S 2121	S 2147	S 2154	S 2148		S 2151	S 2217	S 2221	S 2247	S 2254	S 2251	S 2317	S 2321	S 2347	S 2354	S 2351	S 0017	S 0021		S 0047	S 0106	S 0132	S 0151	S 0217	S 0233	S 0257
CP 234		2047	2055	2047		2052	2117	2122	2147	2155	2149		2152	2217	2222	2247	2255	2252	2317	2322	2347	2355	2352	0017	0022		0047	0107	0132	0152	0217	0234	0257
Noroton Heights						S 2056		S 2126					S 2157		S 2226			S 2256		S 2326			S 2356		S 0026			S 0111		S 0156		S 0238	
Darien						S 2059		S 2129					S 2201		S 2229			S 2259		S 2329			S 2359		S 0029			S 0114		S 0159		S 0241	
Rowayton						S 2102		S 2132					S 2204		S 2232			S 2302		S 2332			S 0002		S 0032			S 0117		S 0202		S 0244	
South Norwalk				H 2056	S 2058	S 2106		S 2136			S 2158		S 2209		S 2236			S 2306		S 2336			S 0006		S 0036	S 0041		S 0121		S 0206		S 0248	
CP 241				2057	2059	2107		2137			2159		2210		2237			2307		2337			0007		0037	0042		0122		0207		0249	
East Norwalk						S 2109		S 2139			S 2201				S 2239			S 2309		S 2339			S 0009		S 0039			S 0124		S 0209		S 0251	
Westport CP 244				H 2100		S 2113		S 2143			S 2205				S 2243			S 2313		S 2343			S 0013		S 0043			S 0128		S 0213		S 0255	
Green's Farms						S 2117		S 2147			S 2209				S 2247			S 2317		S 2347			S 0017		S 0047			S 0132		S 0217		S 0259	
Southport						S 2120		S 2150			S 2212				S 2250			S 2320		S 2350			S 0020		S 0050			S 0135		S 0220		S 0302	
Fairfield				H 2108		S 2123		S 2153			S 2215				S 2253			S 2323		S 2353			S 0023		S 0053			S 0138		S 0223		S 0305	
CP 255				2117		2132		2202			2224	2226			2302			2332		0002			0032		0102			0147		0232		0314	
Bridgeport				H 2118		S 2133		S 2203			S 2225	S 2229			S 2303			S 2333		S 0003			S 0033		S 0103			S 0148		S 0233		S 0315	
CP 257				2120		2135		2205			2227	2232			2305			2335		0005			0035		0105			0150		0235		0317	
Stratford				H 2123		S 2138		S 2208			S 2230				S 2308			S 2338		S 0008			S 0038		S 0108			S 0153		S 0238		S 0320	
CP 261				2126		2141		2211			2233	2238			2311			2341		0011			0041		0111			0156		0241		0323	
Milford				H 2129		S 2144		S 2214			S 2236				S 2314			S 2344		S 0014			S 0044		S 0114			S 0159		S 0244		S 0326	
CP 266				2133		2148		2218			2240				2318			2348		0018			0048		0118			0203		0248		0330	
CP 271				2143		2158		2228			2250				2328			2358		0028			0058		0128			0213		0258		0340	
New Haven				S 2147		S 2202		S 2232			S 2254				S 2332			S 0002		S 0032			S 0102		S 0132			S 0217		S 0302		S 0344	
NH-State St.																																	
CP 274																																	
Turns from																																	
Turns to																																	
Connecting Trains		4572			4570	4372	4574	4374	4576 4876		4376	4576	4376	4578	4378	4580		4380	4582	4382	4584		4384	4586	4386 4886	4586	4588	4388 4788	4590	4390	4592	4392	

2030 OPERATING PLAN - New Haven Line

NEW CANAAN BRANCH

EASTWARD — Source: Timetable Viewer - 2030OPPLAN (GO: 999) Frequency: Tuesday - Thursday / 2030 Operating Plan rev 11-07

TRAIN	1704 Dead Head	1710 Dead Head	1724 Dead Head	4702	1726 Dead Head	4708	4710	4714	4718	4722	4726	4730	4734	4738	4742	4748	4752	4756	4764	4766	4772	4776	4780	4784	4788
FREQUENCY (Mo-Fr,except as noted)																									
ORIGIN				GCT		GCT								GCT	GCT	GCT	GCT	GCT	GCT	GCT	GCT	GCT	GCT	GCT	
Stamford				**S 0640**		**S 0812**	**S 0858**	**S 0957**	**S 1057**	**S 1157**	**S 1257**	**S 1357**	**S 1457**	**S 1548**	**S 1644**	**S 1743**	**S 1807**	**S 1847**	**S 1936**	**S 2022**	**S 2054**	**S 2154**	**S 2254**	**S 2354**	**S 0111**
CP 234	0500	0555	0600	0641	0650	0813	0859	0958	1058	1158	1258	1358	1458	1549	1645	1744	1808	1848	1937	2023	2055	2155	2255	2355	0112
Glenbrook				**S 0644**		**S 0816**	**S 0902**	**S 1001**	**S 1101**	**S 1201**	**S 1301**	**S 1401**	**S 1501**	**S 1552**	**S 1648**	**S 1747**	**S 1811**	**S 1851**	**S 1940**	**S 2026**	**S 2058**	**S 2158**	**S 2258**	**S 2358**	**S 0115**
Springdale				**S 0647**		**S 0819**	**S 0905**	**S 1004**	**S 1104**	**S 1204**	**S 1304**	**S 1404**	**S 1504**	**S 1555**	**S 1651**	**S 1750**	**S 1814**	**S 1854**	**S 1943**	**S 2029**	**S 2101**	**S 2201**	**S 2301**	**S 0001**	**S 0118**
Talmadge Hill				**S 0651**		**S 0823**	**S 0909**	**S 1008**	**S 1108**	**S 1208**	**S 1308**	**S 1408**	**S 1508**	**S 1559**	**S 1655**	**S 1754**	**S 1818**	**S 1858**	**S 1947**	**S 2033**	**S 2105**	**S 2205**	**S 2305**	**S 0005**	**S 0122**
CP 307	0511	0606	0611	0657	0701	0829	0916	1014	1114	1214	1314	1414	1514	1605	1701	1800	1824	1904	1953	2039	2111	2211	2311	0011	0128
New Canaan	0515	0610	0615	**S 0658**	0705	**S 0830**	**S 0917**	**S 1015**	**S 1115**	**S 1215**	**S 1315**	**S 1415**	**S 1515**	**S 1606**	**S 1702**	**S 1801**	**S 1825**	**S 1905**	**S 1954**	**S 2040**	**S 2112**	**S 2212**	**S 2312**	**S 0012**	**S 0129**
Turns from																									
Turns to	4705	4711	4725	4717	4727	4733																			1789
Connecting Trains				4502		4508	4510	4514	4518	4522	4526	4530	4534	4338	4342										4588

NEW CANAAN BRANCH

WESTWARD — Source: Timetable Viewer - 2030OPPLAN (GO: 999) Frequency: Tuesday - Thursday / 2030 Operating Plan rev 11-07

TRAIN	4705	4711	4717	4725	4727	4733	4739	4743	4747	4751	4755	4759	4763	4767	4769	1773 Dead Head	4775	4779	4781	1785 Dead Head	4787	4791	4795	4797	1789 Dead Head
FREQUENCY (Mo-Fr,except as noted)																									
New Canaan	**S 0531**	**S 0621**	**S 0712**	**S 0738**	**S 0756**	**S 0840**	**S 0930**	**S 1030**	**S 1130**	**S 1230**	**S 1330**	**S 1430**	**S 1530**	**S 1628**	**S 1712**	1828	**S 1833**	**S 1920**	**S 2004**	2120	**S 2130**	**S 2230**	**S 2330**	**S 0025**	0140
CP 307	0532	0622	0713	0739	0757	0841	0931	1031	1131	1231	1331	1431	1531	1629	1713	1829	1834	1921	2005	2121	2131	2231	2331	0026	0141
Talmadge Hill	**S 0536**	**S 0626**	**S 0717**	**S 0743**	**S 0801**	**S 0845**	**S 0935**	**S 1035**	**S 1135**	**S 1235**	**S 1335**	**S 1435**	**S 1535**	**S 1633**	**S 1717**			**S 1925**	**S 2009**		**S 2135**	**S 2235**	**S 2335**	**S 0030**	
Springdale	**S 0540**	**S 0630**	**S 0721**	**S 0747**	**S 0805**	**S 0849**	**S 0939**	**S 1039**	**S 1139**	**S 1239**	**S 1339**	**S 1439**	**S 1539**	**S 1637**	**S 1721**			**S 1929**	**S 2013**		**S 2139**	**S 2239**	**S 2339**	**S 0034**	
Glenbrook	**S 0543**	**S 0633**	**S 0724**	**S 0750**	**S 0808**	**S 0852**	**S 0942**	**S 1042**	**S 1142**	**S 1242**	**S 1342**	**S 1442**	**S 1542**	**S 1640**	**S 1724**			**S 1932**	**S 2016**		**S 2142**	**S 2242**	**S 2342**	**S 0037**	
CP 234	0547	0637	0728	0755	0812	0855	0945	1045	1145	1245	1345	1445	1545	1643	1727	1843	1847	1935	2019	2135	2145	2245	2345	0040	0155
Stamford	**S 0549**	**S 0639**	**S 0730**		**S 0814**	**S 0857**	**S 0947**	**S 1047**	**S 1147**	**S 1247**	**S 1347**	**S 1447**	**S 1547**	**S 1645**	**S 1729**		**S 1848**	**D 1938**	**S 2021**		**S 2147**	**S 2247**	**S 2347**	**S 0042**	
DESTINATION	GCT	GCT	GCT	GCT	GCT								GCT	GCT	GCT	GCT		GCT							
Turns from	1704	1710	4702	1724	1726	4708											4774								4788
Turns to						4335																			
Connecting Trains						4833	4439	4543	4547	4551	4555	4559					4575	4579	4581		4587	4591	4595	4397	

Rev 12/7/07

2030 OPERATING PLAN - New Haven Line

DANBURY BRANCH

TRAIN	NORTHWARD													
	4806	4810	4820	4828	4836	4840	4844	4850	4854	4858	4864	4870	4876	4886
FREQUENCY (Mo-Fr,except as noted)														
ORIGIN		GCT				GCT	GCT	GCT	GCT	GCT			GCT	
Grand Central		G 0757				G 1529	G 1636	G 1711	G 1746	G 1818			G 2107	
Harlem-125th St.		R 0807				R 1539	R 1646	R 1721		R 1828			R 2117	
South Norwalk	S 0802	S 0853	S 1137	S 1337	S 1537	S 1631	S 1738	S 1813	S 1841	S 1913	S 2004	S 2058	S 2209	S 0041
CP 241	0803	0854	1138	1338	1538	1632	1739	1814	1842	1914	2005	2059	2210	0042
Merritt 7 GLOVE	S 0816	S 0903	S 1147	S 1347	S 1547	S 1641	S 1748	S 1823	S 1851	S 1923	S 2014	S 2108	S 2219	S 0051
Wilton WILT	S 0824	S 0908	S 1152	S 1352	S 1552	S 1646	S 1753	S 1828	S 1856	S 1928	S 2020	S 2113	S 2224	S 0056
Cannondale	S 0828	S 0912	S 1156	S 1356	S 1556	S 1650	S 1757	S 1832	S 1900	S 1932	S 2024	S 2117	S 2228	S 0100
Branchville HILL	S 0837	S 0920	S 1204	S 1404	S 1604	S 1658	S 1805	S 1840	S 1908	S 1940	S 2032	S 2125	S 2236	S 0108
Redding	S 0843	S 0926	S 1210	S 1410	S 1610	S 1704	S 1811	S 1846	S 1914	S 1946	S 2038	S 2131	S 2242	S 0114
Bethel	S 0850	S 0933	S 1217	S 1417	S 1617	S 1711	S 1818	S 1853	S 1921	S 1953	S 2045	S 2138	S 2249	S 0121
Danbury DAN	S 0902	S 0943	S 1227	S 1427	S 1627	S 1721	S 1828	S 1903	S 1931	S 2003	S 2055	S 2148	S 2259	S 0131
Turns from														
Turns to														
Connecting Trains	4506	4310	4520	4528	4536	4340					4564	4570	4376	4586

WATERBURY BRANCH

TRAIN	NORTHWARD									
	1916 Dead Head	1926 Dead Head	4902	4912	4924	4934	4944	4950	4962	4976
FREQUENCY (Mo-Fr,except as noted)										
Stamford										
CP 234										
CP 241										
CP 255			0731	0956	1256	1535		1831	2002	2226
Bridgeport			S 0733	S 0958	S 1258	S 1537	S 1747	S 1833	S 2005	S 2229
CP 257	0455	0535	0736	1001	1301	1540	1750	1836	2008	2232
Stratford							S 1752			
CP 261	0500	0540	0742	1007	1307	1546	1757	1842	2014	2238
HAT	0511	0551	0753	1018	1318	1557	1808	1853	2025	2249
Derby			S 0754	S 1019	S 1319	S 1558	S 1809	S 1854	S 2026	S 2250
Ansonia			S 0758	S 1023	S 1323	S 1602	S 1813	S 1858	S 2030	S 2254
Seymour			S 0804	S 1029	S 1329	S 1608	S 1820	S 1904	S 2037	S 2301
Beacon Falls BEAK	0524	0609	S 0809	S 1034	S 1334	S 1613	S 1825	S 1909	S 2042	S 2306
Naugatuck			S 0815	S 1040	S 1340	S 1619	S 1831	S 1915	S 2048	S 2312
Waterbury WATER	0535	0620	S 0825	S 1050	S 1350	S 1629	S 1841	S 1925	S 2100	S 2324
Turns from							4944X			
Turns to	4917	4927								
Connecting Trains			4502	4512	4524	4534		4550	4562	4576

DANBURY BRANCH

TRAIN	SOUTHWARD													
	4811	4817	4823	4829	4833	4841	4847	4855	4863	4871	4875	4883	4889	4897
FREQUENCY (Mo-Fr,except as noted)														
Danbury DAN	S 0534	S 0606	S 0643	S 0716	S 0750	S 0923	S 1044	S 1244	S 1444	S 1642	S 1745	S 1944	S 2106	S 2321
Bethel	S 0539	S 0611	S 0648	S 0721	S 0755	S 0928	S 1049	S 1249	S 1449	S 1647	S 1750	S 1949	S 2111	S 2326
Redding	S 0546	S 0618	S 0655	S 0728	S 0802	S 0939	S 1055	S 1255	S 1455	S 1653	S 1756	S 1954	S 2117	S 2332
Branchville HILL	S 0553	S 0625	S 0702	S 0735	S 0809	S 0946	S 1102	S 1302	S 1502	S 1702	S 1809	S 2001	S 2128	S 2339
Cannondale	S 0602	S 0634	S 0711	S 0744	S 0818	S 0954	S 1110	S 1310	S 1510	S 1710	S 1817	S 2009	S 2136	S 2347
Wilton WILT	S 0607	S 0639	S 0716	S 0749	S 0823	S 0958	S 1114	S 1314	S 1514	S 1714	S 1827	S 2020	S 2140	S 2351
Merritt 7 GLOVE	S 0613	S 0645	S 0722	S 0755	S 0829	S 1003	S 1119	S 1319	S 1519	S 1719	S 1832	S 2026	S 2145	S 2356
CP 241	0626	0658	0735	0808	0842	1016	1132	1332	1532	1732	1848	2039	2158	0009
South Norwalk	S 0628	S 0700	S 0737	S 0810	S 0844	S 1018	S 1134	S 1334	S 1534	S 1734	S 1850	S 2041	S 2200	S 0011
Harlem-125th St.	D 0721	D 0745		D 0903	D 0937				D 1619		D 1940			
Grand Central	S 0734	S 0758	S 0835	S 0916	S 0949				S 1630		S 1951			
DESTINATION	GCT	GCT	GCT	GCT	GCT				GCT		GCT			
Turns from														
Turns to														
Connecting Trains		4317		4329	4733	4441	4547	4555		4571		4583	4589	4597

WATERBURY BRANCH

TRAIN	SOUTHWARD									
	4917	4927	4939	4951	4963	4973	4981	4987	4991	1991 Dead Head
FREQUENCY (Mo-Fr,except as noted)										
Waterbury WATER	S 0552	S 0651	S 0847	S 1121	S 1417	S 1647	S 1851	S 2021	S 2126	2335
Naugatuck	S 0600	S 0659	S 0855	S 1129	S 1425	S 1655	S 1859	S 2029	S 2134	
Beacon Falls BEAK	S 0606	S 0705	S 0901	S 1135	S 1431	S 1701	S 1905	S 2037	S 2140	2347
Seymour	S 0611	S 0710	S 0906	S 1140	S 1436	S 1706	S 1914	S 2045	S 2145	
Ansonia	S 0617	S 0716	S 0912	S 1146	S 1442	S 1712	S 1920	S 2051	S 2151	
Derby	S 0621	S 0720	S 0916	S 1150	S 1446	S 1716	S 1924	S 2055	S 2155	
HAT	0622	0721	0917	1151	1447	1717	1925	2056	2156	0000
CP 261	0633	0732	0928	1202	1458	1728	1936	2107	2207	0011
Stratford		S 0735								
CP 257	0638	0738	0933	1207	1503	1733	1941	2112	2212	0020
Bridgeport	S 0644	S 0741	S 0939	S 1213	S 1509	S 1739	S 1947	S 2118	S 2218	
CP 255	0645		0940	1214	1510	1740	1948	2119	2219	
CP 241										
CP 234										
Stamford										
Turns from	1916	1926								
Turns to										
Connecting Trains	4517		4539	4551	4563	4573	4581	4587	4591	

FTA ALTERNATIVES ANALYSIS
DRAFT/FINAL ENVIRONMENTAL IMPACT STATEMENT

TASK 6
EXISTING CONDITIONS REPORT

STATE PROJECT 302-008



APPENDIX E

RAIL PASSENGER SURVEY REPORT

Task 6.1.8 Rail Rider Survey Results

Rail Passenger Survey Report

Introduction

Task 6.0 of the Danbury Branch EIS project is intended to provide an analysis of the existing transportation, rail, bus, highway conditions, and intermodal opportunities (including bicycle and pedestrian) in the Danbury Branch/Route 7 corridor between South Norwalk and New Milford. It also includes an analysis of the transportation effects and an analysis of the costs and benefits of each of the alternatives under consideration.

As part of this analysis, the URS Project Team developed and conducted two types of surveys for the Danbury Branch EIS. The first was a survey of existing passengers on the Danbury Branch to ascertain their various characteristics, preferences, and desires. This report presents the results of the rail passenger survey. A second, non-user telephone survey will be reported on separately within the Task 6 documents.

The rail passenger survey consisted of a questionnaire distributed to riders on board the Danbury Branch commuter trains (On-Board Survey). The URS Team designed the questionnaire, assigned a survey crew, conducted the survey, and analyzed and documented the survey results presented in this report.

The survey questions were oriented to obtain information with the following survey objectives:

- Trip origin and destination
- Trip purpose
- Trip frequency
- Anticipated mode changes at both trip ends
- Preferences regarding service
- Preferences regarding station location(s)
- Suggestions

Survey data was entered into a Microsoft Office Excel database for validation and analysis. The survey data was sorted and a cross-analysis of potentially relevant ridership factors such as travel frequencies, preferred station location(s), and variations among sub-groups (age, gender, profession, and place of residence was prepared for this report. This report summarizes the compiled data, methodology, result highlights. An electronic database is available for the regional planning agencies to use as needed.

SURVEY HIGHLIGHTS

Trip Origin and Destination Results

Overall, survey results support the observation that the New York bound trains and Intra-state shuttles respectively support different travel markets, with the following origin and destination characteristics:.

- **Origin**: On the New York bound trains, the distribution of station boardings was spread somewhat evenly across five stations, including Danbury, Bethel, Cannondale, Wilton and Merritt7 stations; for the shuttle trains, nearly 80% of respondents stated they boarded at either the Danbury or Bethel station.
- **Destination**: for the New York bound trains, approximately 70% of all respondents stated they disembarked at Grand Central Terminal in NYC; Stamford accounted for 18% of respondents and approximately 5% stated they disembarked at South Norwalk. On the shuttle trains, nearly 44% of respondents stated they disembarked at Stamford station, 19% at Merritt7 station, and 15% at the South Norwalk station. Only 15% of the shuttle respondents stated they disembarked at Grand Central Terminal.

Survey Background

On Wednesday, September 24, 2008, five morning commuter trains from the Danbury Branch Line were surveyed by the URS Project Team as part of the Danbury Branch Study.

The five trains surveyed were the 1811, 1819, 1833, 1837 and 1841 which had departure times between 5:34 a.m. and 7:57 a.m. from the Danbury Train Station. Of these trains, three of them, the 1811, 1819 and 1833, are New York City-bound trains, while the two others, the 1837 and 1841, are intra-state commuter shuttles. Surveys were tracked via a serial number to ensure that responses from each train could be identified separately.

A seat drop of surveys was performed by Metro-North personal one day in advance of the survey. Two team members from the URS Team boarded each of the three NYC-bound trains, and one team member boarded each of the smaller, commuter shuttles to encourage passengers to fill out surveys, answer any questions, and collect completed surveys. A total of 872 surveys were both collected on board the trains and sent via mail to URS

The survey consisted of seventeen questions, some with multiple parts. Most questions were multiple choice with an option of “Other”, if necessary. Open-ended questions were succinct and to-the-point, such as “What is your age?” so that responses could be tallied straightforwardly. A copy of the survey is attached in appendix to this report.

Surveys were tallied by individual train, all trains combined and as two other groups: one consisting of the three NYC bound trains and one consisting of the two commuter trains. Twenty-one surveys, which were mailed in separately, did not include a serial number or had a serial number which

could not be tracked. These were only included in the results for all trains combined. Results for all trains and sub-groups were totaled and made part of the database available to the regional planning agencies and CT DOT as required.

Survey Design and Implementation Method

The Danbury Branch Study Team (Team) conducted a rail rider survey of existing passengers to ascertain rider characteristics and preferences as part of the Danbury Branch Alternatives Analysis and Environmental Impact Statement project, sponsored by the Federal Transit Administration and the Connecticut Department of Transportation. The Team developed a questionnaire design and distribution method that was reviewed and approved by Connecticut DOT and the South Western Regional Planning Agency (a cooperative agency in this EIS).

The Team conducted the actual survey on Wednesday, September 24, 2008. A total of five AM peak commuter trains from the Danbury Branch Line were surveyed, including the following:

Train	Station of Departure	Departure Time	Final Destination	Arrival Time	No. of Respondents	2007 Total Danbury Branch Count Inbound
1811	Danbury	5:34 a.m.	NYC	7:38 a.m.	138	129
1819	Danbury	6:20 a.m.	NYC	8:11 a.m.	301	390
1833	Danbury	6:52 a.m.	NYC	8:56 a.m.	163	204
1837	Danbury	7:27 a.m.	So. Norwalk	8:18 a.m.	141	231
1841	Danbury	7:57 a.m.	So. Norwalk	8:49 a.m.	108	138
All Trains Surveyed					872 *	1092

* A total of 21 surveys returned by mail did not have serial number to identify which train they originated from.

It is estimated that the team received an 80% response rate for this survey, based on the number of surveys received and the most recent Metro-North average daily inbound counts for the trains surveyed (November 2007).

Of these trains, the 1811, 1819 and 1833 are New York City-bound trains, while the 1837 and 1841 are intra-state commuter shuttles. Surveys were tracked via a serial number to ensure that responses from each train could be identified separately.

A seat drop of the surveys was performed by Metro-North personnel one day in advance of the survey (the seat notice was placed on the five designated trains by Metro North personnel at their departure point in the Danbury rail yard). Two team members from the Study Team boarded each

of the three NYC trains at Danbury station, and one team member boarded each of the smaller, commuter shuttles. Survey team members were briefed in advance to encourage passengers to fill out surveys, provide pencils when needed, answer questions where possible, and collect the completed surveys. Surveys were picked up just prior to arrival at the South Norwalk station. Passengers were given the option to mail in the survey if they were unable to complete it prior to South Norwalk. A total of 872 surveys were completed and returned, including 754 directly from passengers on board the trains, and another 118 additional surveys sent via pre-paid mail to Connecticut DOT.

The Danbury Branch survey consisted of seventeen questions, some with multiple parts. Most questions were multiple choice with an option of "Other", if necessary. Open-ended questions were succinct and to-the-point, such as "What is your age?" so that responses could be tallied without biased interpretation. A copy of the survey is attached to this report.

Analysis of the survey results divided respondents into three groups: the first group considered all respondents from the five trains together; the second group was comprised of those who rode the New York City-bound trains only; and the third group was comprised of those who rode the two shuttles to South Norwalk. Twenty-one of the surveys that were mailed in separately had the serial number removed or had a serial number which could not be tracked. These were only included in the results for the first group, all trains combined. Results for all trains and the two sub-groups were totaled and presented in a comprehensive format attached to this summary.

Specifics for each group regarding origin and destination are presented below.

Group 1 – All Respondents

Respondents were asked where they boarded the train and from where they started their trip (zip code of origin). When considering the first group, comprised of respondents from all five trains surveyed, one of the most significant findings related to trip origin was that **two stations** accounted for approximately 48% of all responses. A total of 418 out of the 874 respondents surveyed said they boarded their train at either the Bethel (24.4%) or Danbury (23.5%) stations. These are the two northernmost stations on the branch.

The remaining station boardings of significance (each accounting for approximately 10% or more of the respondents) were Cannondale (12.5%), Wilton (approximately 10%) and Branchville (14.1% said they started here). It should be noted that the Cannondale and Wilton stations are both located in Wilton (when combined, this brings the total percent boarding trains in Wilton to 22.5%).

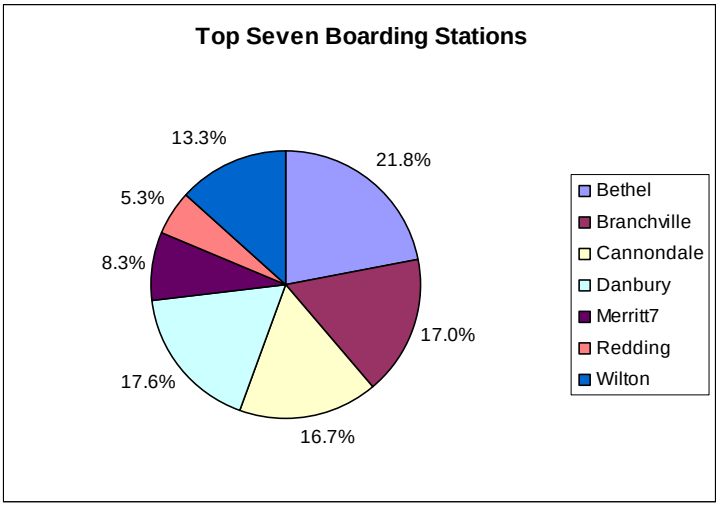
Similarly, when asked where they started their trip, approximately 35% of all respondents stated their zip code of origin was either Bethel or Danbury, and nearly 20% stated their zip code of origin was Wilton (19.4%). As stated previously, the Cannondale and Wilton stations are both located in the Town of Wilton, which explains the trip origin of nearly 20% in Wilton.

Group 2 – New York Bound Trains Only

When considering surveys covering only the three trains with direct service to New York (the first three trains of the day on the Branch), 20.4% of respondents stated Bethel was where they boarded

the train; three stations, including Danbury, Branchville and Cannondale had approximately equal boardings (15-17% each). The Merritt 7 station had 7.8% of boardings. The chart below shows the breakdown by station for the Danbury Branch's New York bound trains:

Group 2 Respondents – Boarding stations



Group 3 – Shuttle Trains Only

When considering respondents from the two shuttle trains only, 45.4% stated they boarded at the Danbury station, and 34.3% indicated Bethel. 10% of respondents stated they boarded at Branchville.

Trip Purpose

Across all three groups, the predominant trip purpose cited was to go to work.

Group 1 – All Respondents

Over 90% of all respondents stated their trip purpose was work.

Group 2 – New York Bound Trains Only
90.0% of respondents on New York bound trains stated their trip purpose was work.

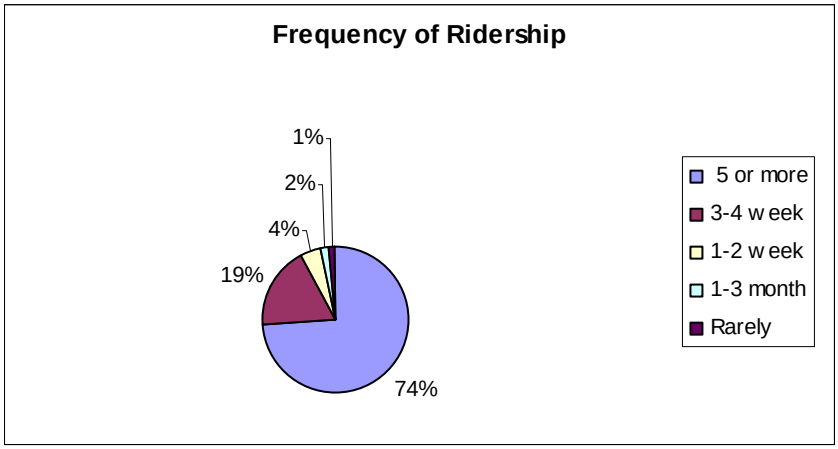
Group 3 – Shuttle Trains Only
93.0% of shuttle train respondents stated their trip purpose was work.

Trip Frequency

Approximately 73% of all respondents stated they rode the train 5 or more times per week. An additional 18.7% stated they rode the train 3-4 times per week.

Group 1 – All Respondents

Approximately 73% of all respondents ride the inbound trains five or more times per week; 18.7% ride the train 3 or more times per week.



Group 2 – New York Bound Trains Only

For New York bound commuters, 75.3% ride five or more times per week and approximately 17% ride 3-4 times per week.

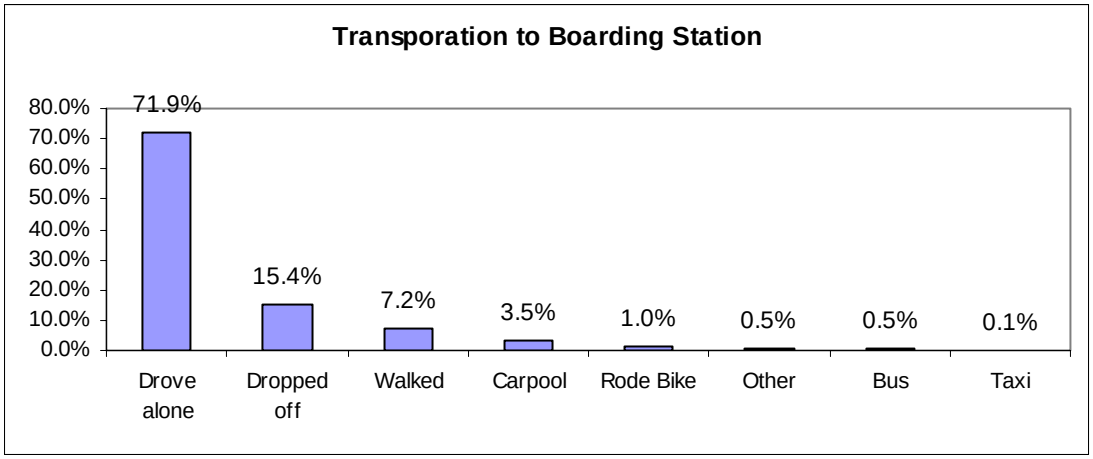
Group 3 – Shuttle Trains Only

For the shuttle trains, the number who say they ride five or more times per week dropped to only 68.0% of respondents, with 25.3% stating they ride the train 3-4 times per week.

Mode of travel to boarding stations

Group 1 – All Respondents

Approximately 72% of all respondents stated they drove to their boarding station alone, whereas 15.4% stated they were dropped off (Kiss and Ride) and 7.2% walked. Those who said they carpooled accounted for only 3.5% and biking 1%. Only one-half of one percent said they rode a bus to the station.



Group 2 – New York Bound Trains

The percentage who said they drove alone to the station was similar to Group 1, approximately 72%; those who stated they were dropped off accounted for 15.0% whereas 8.1% stated they walked, while only slightly more than 3% said they carpooled and 1.2% said they rode a bike.

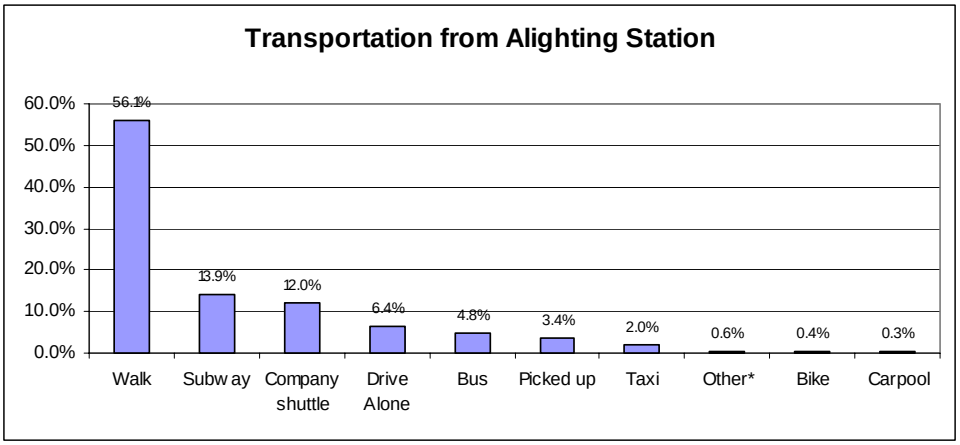
Group 3 – Shuttle Trains Only

Again, the numbers were consistent with Group 2 – 72.0% stated they drove alone to their boarding station, almost 17% said they were dropped off; close to 6% said they walked to the station and almost 4% said they carpooled.

Mode of Travel to Final Destination

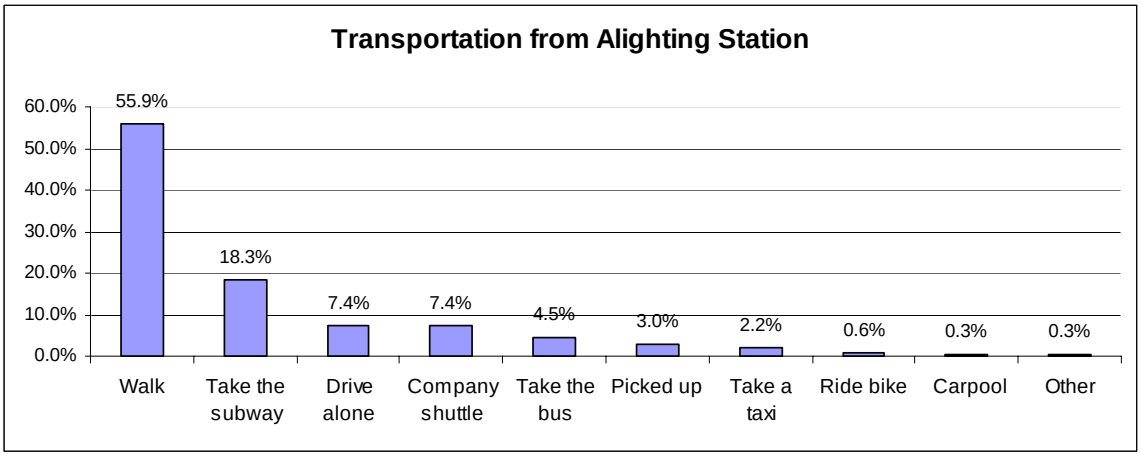
Group 1 – All Respondents

Overall, approximately 56% of all respondents stated they walked to their final destination; nearly 14% said they took the subway, 12.0% a company shuttle and 6.4% said they drove alone. Buses accounted for approximately 5% of the travel mode to the final destination. One respondent, boarding at the Branchville station and disembarking in Stamford, stated that they used roller blades to get to their final destination.



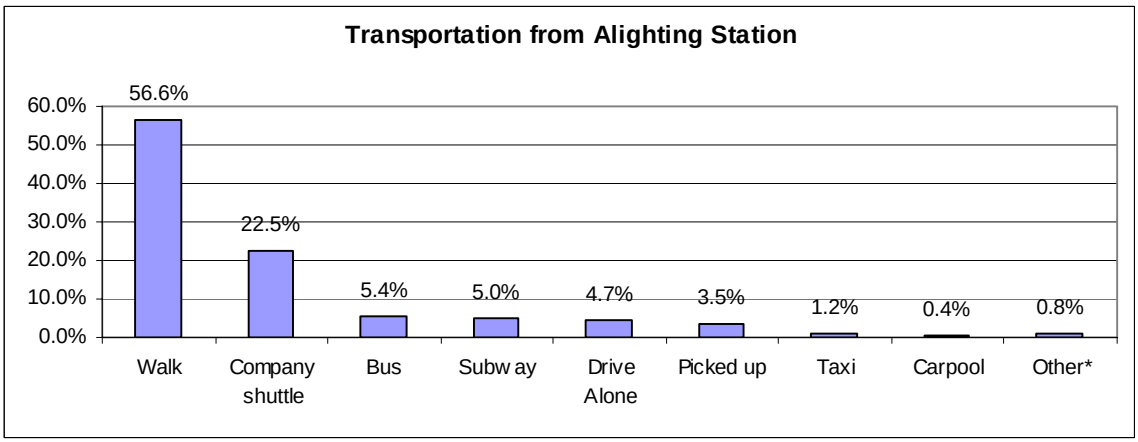
Group 2 – New York Bound Trains Only

The number of respondents on New York bound trains who stated they walked to their final destination was approximately the same as with all respondents – 55.9%. 18.3% Stated they took the subway, 7.4% a company shuttle and 7.4% drove alone. 4.5% stated they took the bus.



Group 3 – Shuttle Trains Only

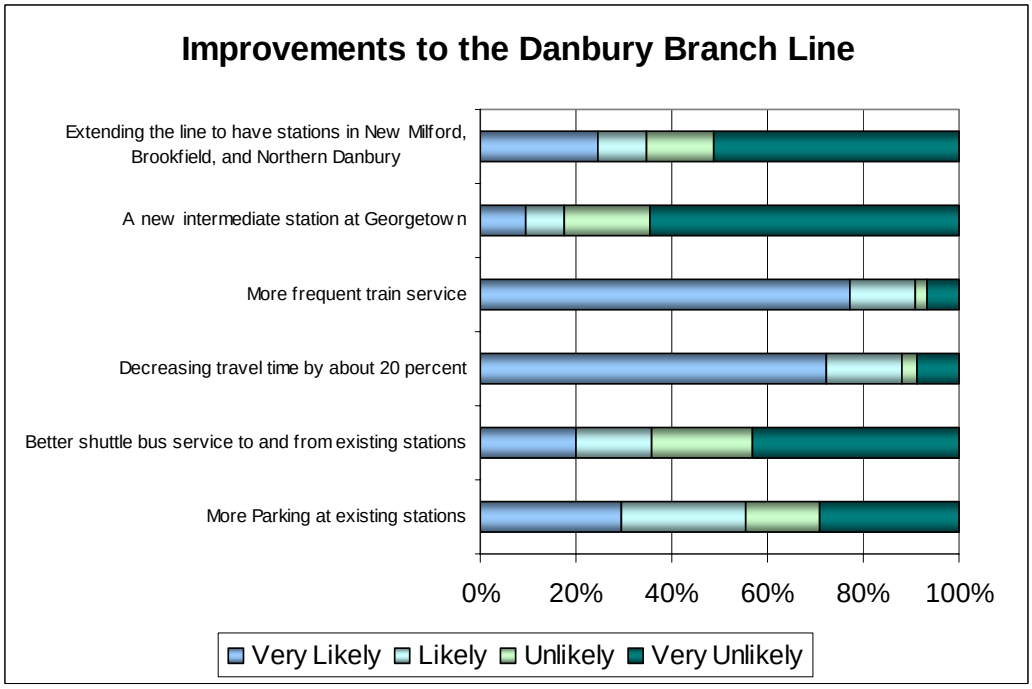
Those who responded that they walked to their final destination were consistent with the New York bound trains – 56.6% of shuttle train riders who responded stated they walked. Of note, nearly 23% stated they used a company shuttle to reach their final destination, whereas all other modes were fairly insignificant (under 6% each).



Preferences Regarding Service

All persons surveyed were asked to evaluate a number of improvements by responding whether they would be more likely to increase their use of the train if a specific improvement was made. Three improvement options stand out:

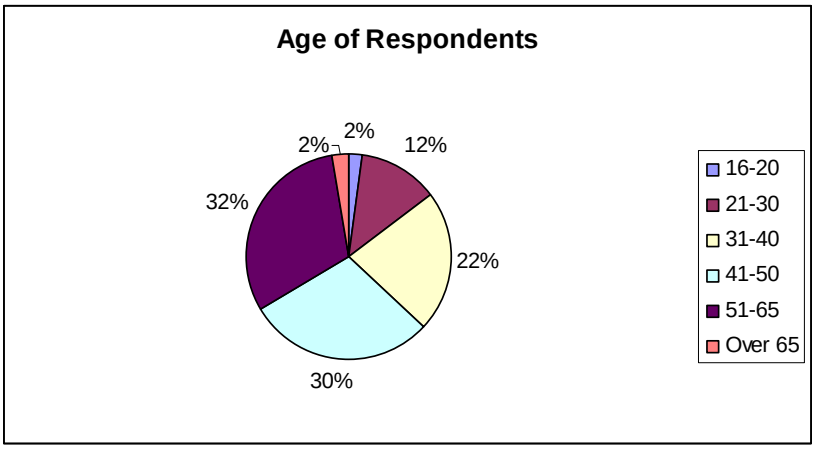
- Nearly 86% of all respondents stated they would increase their use of the train if there were more frequent service
- 87.9% of all respondents stated they would increase their use of the train if the travel time were reduced by about 20 percent
- More than 55% indicated they would increase train usage if more parking were available at existing stations
- Better shuttle bus service to and from stations and extending the line to New Milford would cause approximately 35% of respondents to increase their use of the train



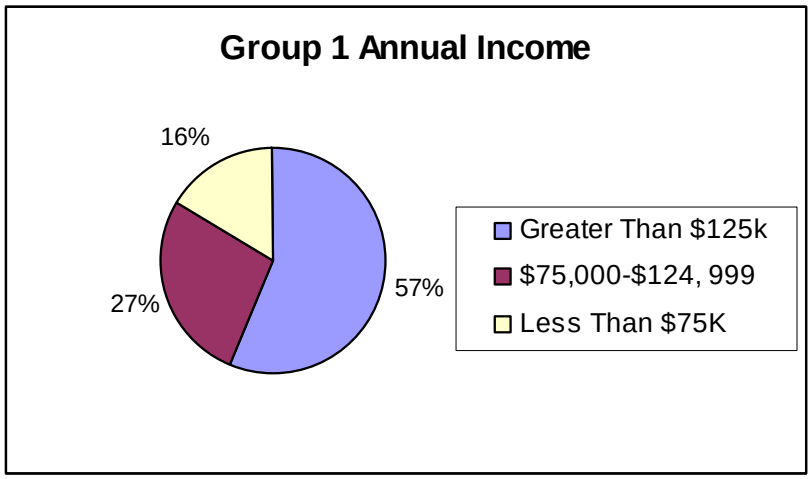
Demographic Characteristics

Group 1—All Trains

All persons surveyed were asked their age, gender and annual household income.
66.7% of respondents were male and 33.3% female. The age of respondents varied from age 8 to 81. The largest percentage of respondents, 31.0% were between the ages 51-65, followed by those aged 41-50 with 29.6%.

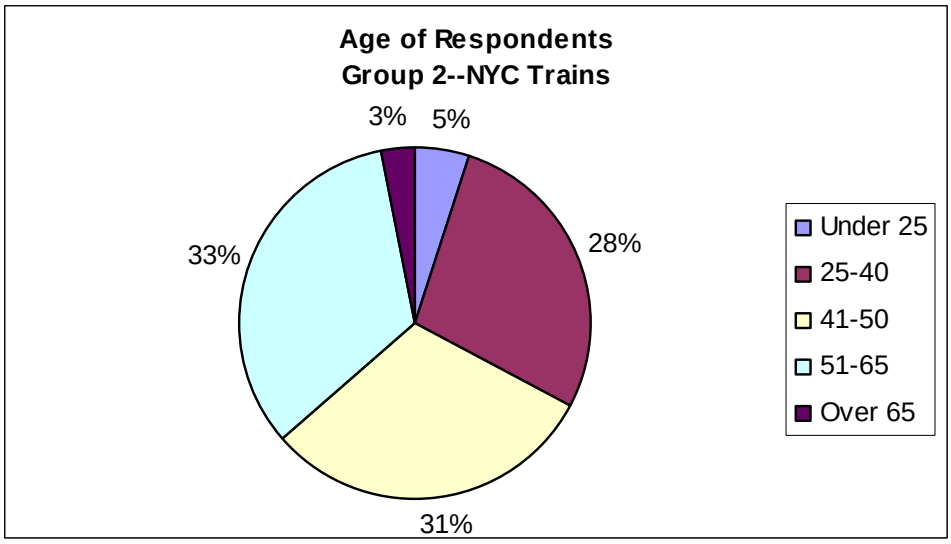


The majority of respondents, 56.20% stated they have an annual household income of $125,000 or greater, followed by 27.32% of respondents with an annual household income of $75,000-$124, 999.

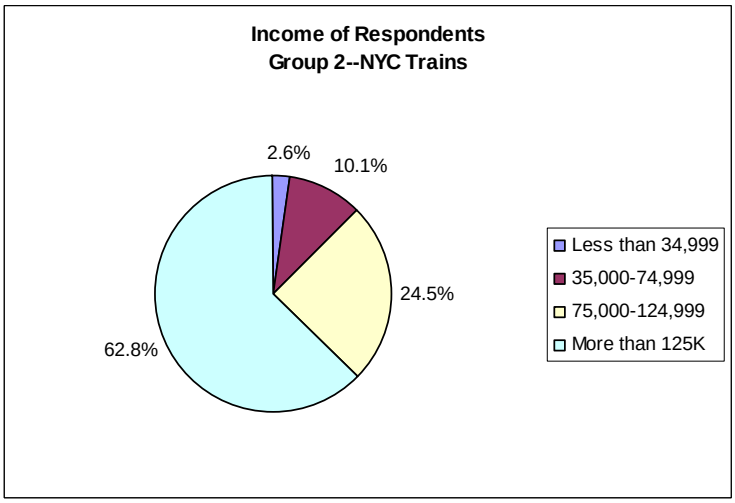


Group 2— New York Bound Trains Only

Of those respondents from Group 2, 69.6% are male, 30.4% are female. The ages of respondents varied from age 8-74. Again, the highest percentages of respondents, 33.4%, were in the 51-65 age groups, followed by the 41-50 age groups with 31.0%.

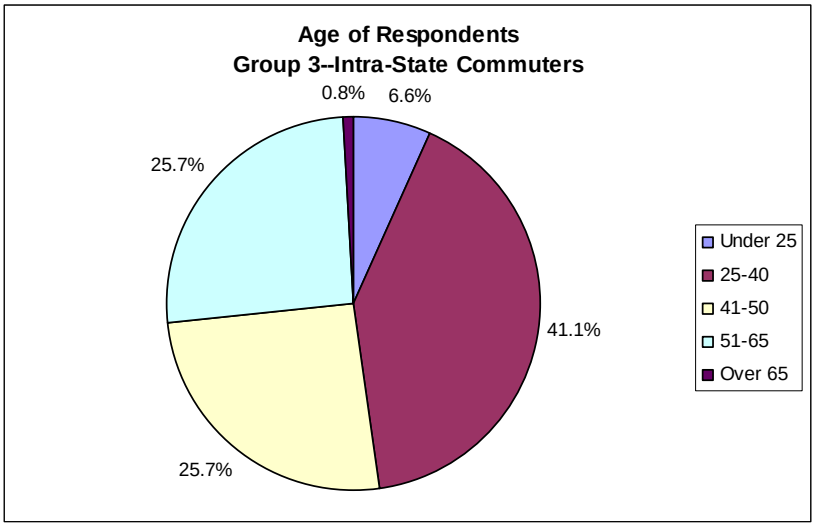


The majority of respondents, 62.8% stated they have an annual household income of $125,000 or greater, followed by those respondents with an annual household income of $75,000-$124, 999 with 24.5%.

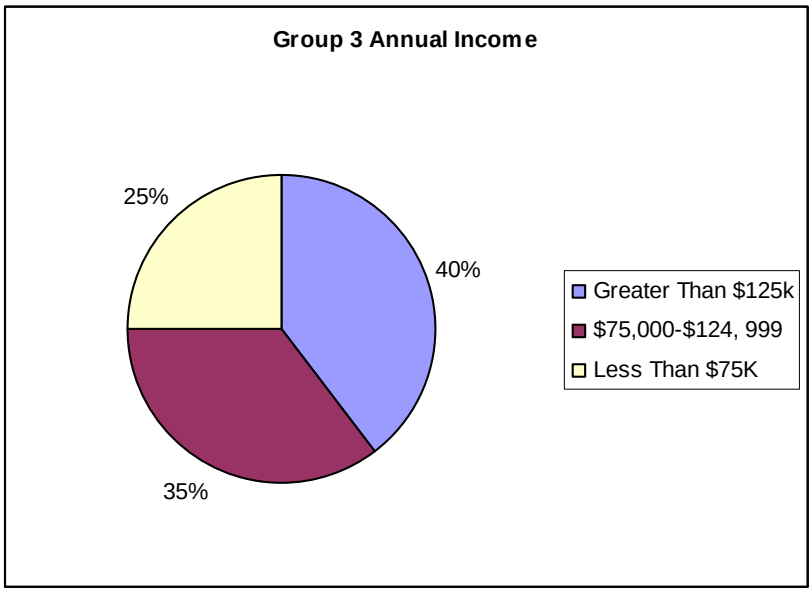


Group 3-- Shuttle Trains Only

Of those respondents from Group 3, 59.7% are male, 40.3% are female. The ages of respondents varied from age 18-80. The largest percentage of respondents from Group 3, 41.1% were in the 25-40 age groups. There were an equal number of respondents from the age groups of 41-50 and 51-65 with 25.7% each.



Again, the majority of respondents, 39.8% stated they have an annual household income of $125,000 or greater, followed by those respondents with an annual household income of $75,000-$124, 999 with 35.2%.



Responses in Spanish

Group 1—Responses in Spanish

Surveys were printed in both English and Spanish, on reverse sides. Of the 872 respondents from all five trains, 6 (less than 1%) responded using the Spanish version of the survey. Five of these were handed to the survey team on the day in person; one was later mailed to URS. Four of these responses were from the New York City Trains, two from Commuter Trains.

Actual Data and Questions from the Danbury Branch Rider Survey Conducted on September 24, 2008

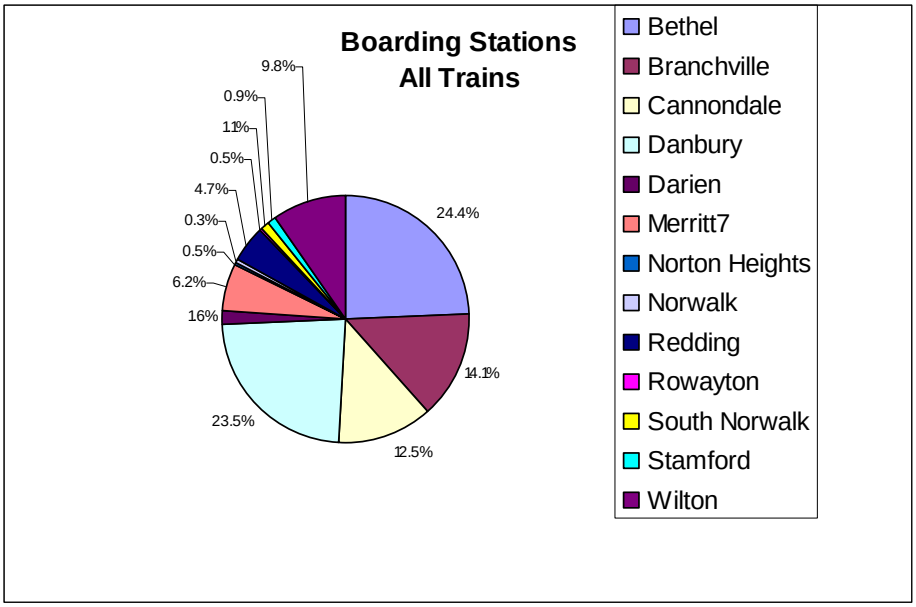
1. At what station did you board this train?

Bethel and Danbury accounted for approximately 48% of comprise the largest portion of all responses with a combined total of 47.9%. Following are Branchville and Cannondale with 14.1 and 12.5%, respectively.

All Trains

Stations	Number	Percent
Bethel	213	24.4%
Branchville	123	14.1%
Cannondale	109	12.5%
Danbury	205	23.5%
Darien	14	1.6%
Merritt7	54	6.2%
Norton Heights	4	0.5%
Norwalk	3	0.3%
Redding	41	4.7%
Rowayton	4	0.5%
South Norwalk	10	1.1%
Stamford	8	0.9%
Wilton	86	9.8%
Total	**874**	**100.0%**

**Some additional answers provided.



Bethel and Danbury also accounted for the highest percentage of responses in the sub-groups with 20.4% and 16.4% respectively for the New York City trains, and 34.36% and 45.4%, respectively on the commuter trains.

New York City Trains

Stations	Number	Percentage
Bethel	123	20.4%
Branchville	96	15.9%
Cannondale	94	15.6%
Danbury	99	16.4%
Merritt7	47	7.8%
Other (Blank)	1	0.2%
Other/Darien	11	1.8%
Other/Norton Heights	3	0.5%
Other/Norwalk	3	0.5%
Other/Rowayton	3	0.5%
Other/South Norwalk	10	1.7%
Other/Stamford	8	1.3%
Redding	30	5.0%
Wilton	75	12.4%
Total	**603**	**100.0%**

Commuter Trains

Stations	Number	Percentage
Merritt7	6	2.4%
Wilton	8	3.2%
Cannondale	1	0.4%
Branchville	25	10.0%
Redding	11	4.4%
Bethel	86	34.3%
Danbury	114	45.4%
Other	0	0.0%
Total	**251**	**100.0%**

2. What is the zip code of the origin of the trip (before you arrived at the train station)?

There were over 60 ZIP codes submitted to answer this question. Topping the list were Wilton, Bethel, Danbury, Redding and Ridgefield.

Town	ZIP Code:	Total	Percent
Beacon Falls	06403	1	0.1%
Bethel	06801	134	15.4%
Branchville	None	1	0.1%
Brewster	10509	1	0.1%
Brookfield	06804	34	3.9%
Cannondale	None	1	0.1%
Danbury	Multiple	170	19.6%
Darien	06820	15	1.7%
Georgetown	06829	4	0.5%
Greenwich	None	1	0.1%
Litchfield	06759	1	0.1%
New Fairfield	06812	10	1.2%
New Milford	06776	18	2.1%
Newtown	06470	39	4.5%
Norwalk	06850	52	6.0%
NYC	Multiple	2	0.2%
Poughkeepsie	12601	1	0.1%
Redding	06896	65	7.5%
Redding Center	06875	1	0.1%
Ridgefield	06877	71	8.2%
Rocky Hill	06067	1	0.1%
Roxbury	06783	3	0.3%
Sandy Hook	06482	7	0.8%
Sherman	06784	1	0.1%
South	None	1	0.1%

Norwalk			
Southbury	06488	8	0.9%
Stamford	06902	7	0.8%
Unknown	multiple	9	1.0%
Wassiac	12592	1	0.1%
Waterbury	06705	1	0.1%
Weston	06883	38	4.4%
Wilton	06897	169	19.4%
Woodbury	06798	1	0.1%
	Total	**869**	**100.0%**

**Three surveys left blank

Wilton had the highest percentage of responses from the New York City trains with 24.4%, followed by Bethel with 13.3% and Redding with 9.0%.

New York City Trains

Town	ZIP Code:	Total	Percent
Beacon Falls	06403	1	0.2%
Bethel	06801	80	13.3%
Branchville	None	1	0.2%
Brookfield	06804	10	1.7%
Cannondale	None	1	0.2%
Danbury	06810	59	9.8%
Darien	06820	13	2.2%
E. Greenbush, NY	12061	1	0.2%
Georgetown	06829	4	0.7%
Greenwich	None	1	0.2%
Litchfield	06759	1	0.2%
New Fairfield	06812	4	0.7%
New Milford	06776	9	1.5%
Newtown	06470	29	4.8%
Norwalk	Multiple	44	7.3%
Redding	06896	54	9.0%
Redding Center	06875	1	0.2%
Ridgefield	06877	49	8.1%
Rocky Hill	06067	1	0.2%
Roxbury	06783	2	0.3%
Sandy Hook	06482	4	0.7%
South Norwalk	None	1	0.2%
Southbury	06488	6	1.0%
Stamford	06811	34	5.6%
Unknown	Multiple	7	1.2%
Wassaic, NY	12592	2	0.3%
Waterbury	06705	1	0.2%
Weston	06883	35	5.8%
Wilton	06897	147	24.4%
TOTAL:	**TOTAL:**	**602**	**100.0%**

Commuter Trains

Town	ZIP Code:	Total	Percent
Bethel	06801	52	20.9%
Brewster	10509	1	0.4%
Brookfield	06804	22	8.8%
Danbury	Multiple	80	32.1%
New Fairfield	06812	6	2.4%
New Milford	06776	9	3.6%
Newtown	06470	9	3.6%
Norwalk	multiple	6	2.4%
NYC	multiple	3	1.2%
Redding	06896	11	4.4%
Ridgefield	06877	19	7.6%
Roxbury	06783	1	0.4%
Sandy Hook	06482	3	1.2%
Sherman	06784	1	0.4%
Southbury	06488	2	0.8%
Unknown	06740	1	0.4%
Unknown	06892	1	0.4%
Weston	06883	3	1.2%
Wilton	06897	18	7.2%
Woodbury	06798	1	0.4%
	Total	**249**	**100.0%**

3. At what station are you disembarking from this train?

The largest percentage of respondents, 53.8% said Grand Central Station, followed by Stamford at 25.8%, South Norwalk at 7.9% and Merritt 7 at 7.1%.

Stations	Number	Percentage
Stamford	225	25.8%
South Norwalk	69	7.9%
Grand Central	470	53.8%
Merritt7	62	7.1%
Greenwich	7	0.8%
Harlem 125	14	1.6%
Wilton	5	0.6%
Cannondale	1	0.1%
Danbury	1	0.1%
Bridgeport	1	0.1%
Norton Heights	2	0.2%
Port Chester	1	0.1%
Darien	9	1.0%
Branchville	1	0.1%
Fairfield	1	0.1%
Rye	2	0.2%
Springdale	2	0.2%
Total*	**873**	**100.0%**

* Four blank responses. Five surveys with multiple answers.

The disembarking stations for respondents travelling on the commuter shuttle trains, Trains 1837 and 1841 differed from that of the NYC-bound trains, Trains 1811, 1819 and 1833. As for commuter shuttle passengers, 43.7% of all respondents said they would disembark at the Stamford station, and 19.0% at the Merritt 7 station, as opposed to 18.3% of NYC passenger respondents disembarking at the Stamford station and 2.2% at the Merritt 7 station.

New York City Bound Trains

Stations	Number	Percentage
Grand Central	420	69.9%
Stamford	110	18.3%
South Norwalk	30	5.0%
Harlem 125	8	1.3%
Other/ Branchville	1	0.2%
Other/ Bridgeport	1	0.2%
Other/ Darien	7	1.2%
Other/Fairfield	1	0.2%
Other/ Merritt7	13	2.2%
Other/ Rye	1	0.2%
Other/ Port Chester	1	0.2%
Other/ Wilton	1	0.2%
Other/Norton Heights	2	0.3%
Other/ Springdale	1	0.2%
Other/None	1	0.2%
Other/ Greenwich	3	0.5%
Total	**601**	**100.00%**

Commuter Trains

Stations	Number	Percent
Stamford	110	43.7%
Merritt7	48	19.0%
Grand Central	38	15.1%
South Norwalk	37	14.7%
Harlem 125	6	2.4%
Other/Wilton	4	1.6%
Greenwich	4	1.6%
Darien	2	0.8%
Springdale	1	0.4%
Cannondale	1	0.4%
Rye	1	0.4%
Total	**252**	**100.0%**

4. What is the zip code of the ultimate destination of the (one-way) trip (after you leave the train station)?

Town	ZIP Code:	Total	Percent
Albany	12222	1	0.1%
Bastory	None	1	0.1%
Bethel	None	1	0.1%
Branchville	None	1	0.1%
Bridgeport	None	1	0.1%
Bronx	Multiple	3	0.4%
Brookfield	06804	1	0.1%
Brooklyn	Multiple	6	0.7%
Cos Cob	06807	2	0.2%
Danbury	Multiple	6	0.7%
Darien	06820	13	1.5%
Fairfield	None	4	0.5%
Grand Central	None	1	0.1%
Greens Farms	None	2	0.2%
Greenwich	06830	20	2.4%
Harlem	None	3	0.4%
Harrison	10528	1	0.1%
Jersey City	07311	3	0.4%
LI City	11101	1	0.1%
Manhattan	None	5	0.6%
Maspeth	11378	1	0.1%
Merritt7	None	1	0.1%
New Canaan	06842	1	0.1%
New Haven	None	1	0.1%
New Milford	06776	1	0.1%
New Rochell	10804	1	0.1%
Newtown	06470	1	0.1%
Norwalk	Multiple	105	12.5%
NYC	Multiple	429	51.0%
Port Chester	10573	2	0.2%
Ridgefield	06877	2	0.2%
Riverside	06878	2	0.2%
Rye	10580	2	0.2%
Secaucus, NJ	None	1	0.1%
South Norwalk	None	9	1.1%
Stamford	Multiple	188	22.4%

Unknown	06802	8	1.0%
Wehawken	07086	1	0.1%
West Hartland	06091	1	0.1%
Westport	06880	2	0.2%
Wilton	06897	6	0.7%
Total**		**841**	100.0%

**Thirty-one surveys left this question blank.

New York City Trains

Town	ZIP	Total	Percent
West Hartland	06091	1	0.2%
New Milford	06776	1	0.2%
Unknown	06802	2	0.3%
Cos Cob	06807	1	0.2%
Danbury	06810	3	0.5%
Darien	06820	8	1.4%
Greenwich	06830	6	1.0%
New Canann	06842	1	0.2%
Norwalk	06850	4	0.7%
Norwalk	06851	4	0.7%
Norwalk	06852	1	0.2%
Norwalk	06854	8	1.4%
Norwalk	06855	1	0.2%
Norwalk	06856	4	0.7%
Riverside	06878	2	0.3%
Westport	06880	1	0.2%
Stamford	06901	24	4.2%
Stamford	06902	24	4.2%
Stamford	06903	2	0.3%
Stamford	06904	3	0.5%
Stamford	06905	1	0.2%
Stamford	06906	2	0.3%
Stamford	06907	1	0.2%
Stamford	06910	1	0.2%
Stamford	06912	2	0.3%
Unknown	06915	1	0.2%
Stamford	06926	1	0.2%
Unknown	06990	1	0.2%
Weehawken, NJ	07086	1	0.2%
Jersey City	07311	2	0.3%
NYC	Multiple	304	52.4%
Unknown	10430	1	0.2%
Bronx, NY	Multiple	3	0.5%
Harison	10528	1	0.2%
Port Chester	10573	1	0.2%
Rye	10580	1	0.2%
New Rochelle	10804	1	0.2%
LI City	11101	1	0.2%
LI City	11120	1	0.2%
Brooklyn, NY	11201	1	0.2%
Brooklyn, NY	11205	1	0.2%
Brooklyn, NY	11210	1	0.2%
Maspeth, NY	11378	1	0.2%
Albany, NY	12222	1	0.2%
Bastory	None	1	0.2%
Bethel	None	1	0.2%

Branchville	None	1	0.2%
Bridgeport	None	1	0.2%
Brooklyn, NY	None	1	0.2%
Cos Cob	None	1	0.2%
Darien	None	1	0.2%
Fairfield	None	4	0.7%
Grand Central	None	1	0.2%
Greens Farms	None	2	0.3%
Greenwich	None	4	0.7%
Harlem	None	2	0.3%
Jersey City	None	1	0.2%
Manhattan	None	5	0.9%
New Haven	None	1	0.2%
Norwalk	None	5	0.9%
NYC	None	85	14.9%
Port Chester	None	1	0.2%
Secaucus, NJ	None	1	0.2%
South Norwalk	None	3	0.5%
Stamford	None	23	4.0%
Total		**578**	**100.0%**

Commuter Trains

Town	ZIP Code:	Total	Percentage
Newtown	06470	1	0.4%
None	06802	1	0.4%
Brookfield	06804	1	0.4%
Danbury	06810	1	0.4%
Danbury	06811	1	0.4%
Darien	06820	4	1.7%
Greenwich	06830	9	3.7%
Norwalk	06850	8	3.3%
Norwalk	06851	17	7.0%
Norwalk	06852	1	0.4%
Norwalk	06854	10	4.1%
Norwalk	06856	8	3.3%
Norwalk	06857	1	0.4%
Ridgefield	06877	1	0.4%
Ridgefield	06879	1	0.4%
Westport	06880	1	0.4%
Unknown	06892	1	0.4%
Unknown	06895	1	0.4%
Wilton	06897	3	1.2%
Stamford	06901	33	13.6%
Stamford	06902	27	11.2%
Stamford	06904	3	1.2%
Stamford	06905	2	0.8%
Stamford	06907	1	0.4%
Stamford	06910	1	0.4%
Stamford	06911	1	0.4%
Stamford	06926	3	1.2%
Stamford	06927	1	0.4%
NYC	10001	1	0.4%
NYC	10004	1	0.4%
NYC	10006	1	0.4%
NYC	10011	2	0.8%
NYC	10016	1	0.4%
NYC	10017	6	2.5%
NYC	10018	1	0.4%
NYC	10021	2	0.8%
NYC	10022	5	2.1%
NYC	10032	1	0.4%
NYC	10035	1	0.4%
NYC	10036	5	2.1%
NYC	10166	2	0.8%
NYC	10173	1	0.4%
Brooklyn	11201	1	0.4%
Wilton	None	3	1.2%

Stamford	None	26	10.7%
South Norwalk	None	6	2.5%
Rye	None	1	0.4%
NYC	None	9	3.7%
Greenwich	None	1	0.4%
Harlem	None	1	0.4%
Norwalk	None	20	8.3%
Merritt7	None	1	0.4%
TOTAL:	TOTAL:	242	100.0%

5. What is the purpose of this trip?

The majority of all respondents surveyed, 90.6%, stated that they were commuting to or from work. This is consistent with respondents from the New York City trains (90.0%) and commuter trains (93.0%).

From		To	
Home	702	Work	624
		Home	1
		Shopping	4
		Other--	25
		Blank	48
Work	151	Blank	138
		Home	3
		Work	10
Other	5	Other	2
		Work	2
		Blank	1
Shopping	1	Blank	1
Blank	14	Work	15
Total	873	Total *	874

*****Some duplicate answers provided

Based on the above, 90.6% of the respondents stated that they were commuting to or from work.

New York Trains

From		*To*	
Home	489	Work	431
		Other/School	14
		Shopping	1
		Blank	42
Work	103	Work	6
		home	2
		Blank	95
Blank	7	Work	8
Shopping	1	blank	1
Other	3	Work	1
		Other	2
Total	**603**	**Total**	**603**

The remaining responses included "other/school" "other" and "shopping/personal business'

Based on the above, 543 of 603 responses included work as either to or from or both representing 90% of the responses.

Commuter Trains

From		To	
Home	194	Work	177
		Other School	9
		Shopping	3
		Other--	2
		Blank	4
Work	46	Blank	41
		Home	1
		Work	4
Other	2	Work	1
		Blank	1
Blank	7	Work	7
Total	249	Total *	250

*One additional answer provided

Based on the above, 231 respondents, or approximately 93% of shuttle passengers are using the train to commute to or from work.

6. About how often do you make this train trip?

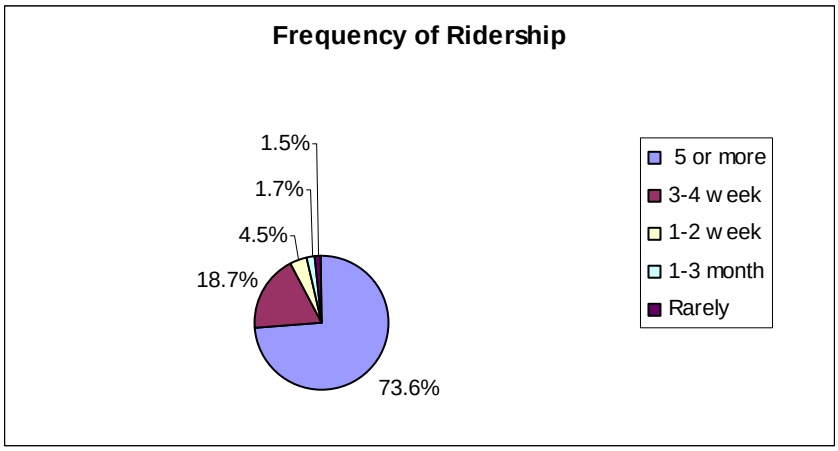
The largest percentage of all respondents surveyed, 7.6% said “5 or more times a week”, followed by 18.7% which said “3-4 times a week”, and 4.5% which said “1-2 times a week”.

These responses are generally consistent with responses from the New York City trains, where 75.3% responded "5 or more times a week", followed by "3-4 times a week" with 16.7%, "1-2 times a week" with 4.3%, "1-3 times a month" with 1.8% and "Rarely" with 1.8%.

Responses from the commuter trains were ranked in the same order, however, with slightly different results. Of the commuter train respondents, 68.0 % said "5 or more times per week", followed by "3-4 times a week" with 25.3%, "1-2 times a week" with 5.1%, "1-3 times a month" with 1.8% and "Rarely" with 1.8%.

Answer	Total	Percent
5 or more	642	73.6%
3-4 week	163	18.7%
1-2 week	39	4.5%
1-3 month	15	1.7%
Rarely	13	1.5%
Total**	**872**	**100.0%**

**Two left blank, two with duplicate answers



New York Trains

Answer	Total	Percent
More than 5 times/ week	452	75.3%
3-4 times/ week	100	16.7%
1-2 times/ week	26	4.3%
1-3 times/ month	11	1.8%
Rarely	11	1.8%
Total	600	100.0%

Commuter Trains

Answer	Total	Percent
5 or more/ week	172	68.0%
3-4 times/ week	64	25.3%
1-2 times/ week	13	5.1%
1-3 times/ month	3	1.2%
Rarely	1	0.4%
Total	253	100.0%

*Two additional answers provided

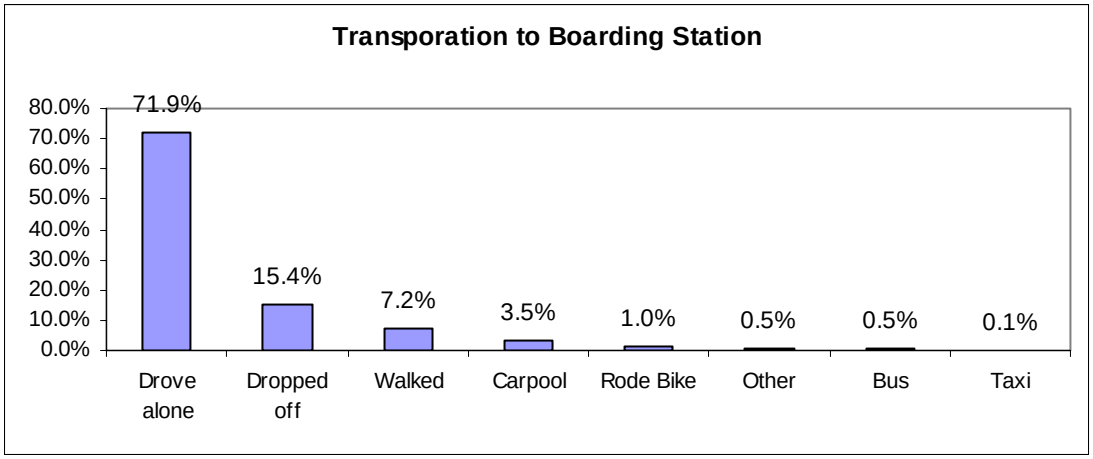
7. How did you get to the boarding station today?

The largest percentage of respondents, 71.9%, said they drove alone, while 15.4% said they were dropped off, 7.2% walked, and 3.5% said they carpooled.

These responses were similar to both the New York City and commuter train groups. The largest number of respondents said "Drove alone" from the New York City and commuter trains with 71.5% and 72.0%, respectively, followed by {"I was dropped off" with 15.0% and 16.8%, respectively.

Answer	**Total**	**Percent**
Drove alone	631	71.9%
Dropped off	135	15.4%
Walked	63	7.2%
Carpool	31	3.5%
Rode Bike	9	1.0%
Other	4	0.5%
Bus	4	0.5%
Taxi	1	0.1%
Total**	**878**	**100.0%**

**Some surveys included multiple answers. A total of 878 responses provided.



New York City Trains

Answer	Total	Percent
Drove alone	435	71.5%
Dropped off	91	15.0%
Walked	49	8.1%
Carpool	20	3.3%
Rode Bike	7	1.2%
Other/Scooter	2	0.3%
Other/Motorcycle	2	0.3%
Taxi	1	0.2%
Bus	1	0.2%
Total	**608**	**100.0%**

Commuter Trains

Answer	Total	Percentage
Drove alone	180	72.0%
Rode Bike	2	0.8%
Walked	14	5.6%
Bus	3	1.2%
Dropped off	42	16.8%
Carpool	9	3.6%
Total	**250**	**100.0%**

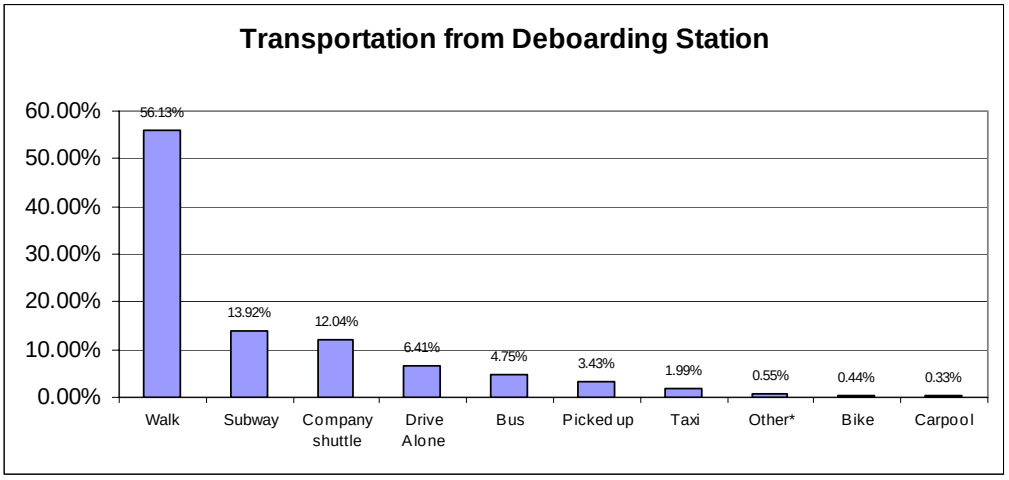
8. How will you get from the train station to your final destination?

The largest percentage of respondents, 56.1%, said they would walk, 13.9% would take the subway, 12.0% would take a company shuttle, 6.4% would drive alone, 4.8% would take a bus and 2.0% would take a taxi.

The largest percentage of respondents from the New York City trains, 55.9%, said "walk", followed by "Take the subway" with 18.3%. The largest percentage of respondents from the commuter trains, 56.6%, also said "walk" followed by "company shuttle" with 22.5%.

Answer	Total	Percent
Walk	508	56.1%
Subway	127	13.9%
Company shuttle	109	12.0%
Drive Alone	57	6.4%
Bus	43	4.8%
Picked up	31	3.4%
Taxi	18	2.0%
Other*	5	0.6%
Bike	4	0.4%
Carpool	3	0.3%
Total	905	100.0%

**Some surveys contained multiple answers.
A total of 905 responses provided.



New York Trains

Answer	Total	Percentage
Walk	349	55.9%
Take the subway	114	18.3%
Drive alone	46	7.4%
Company shuttle	46	7.4%
Take the bus	28	4.5%
Picked up	19	3.0%
Take a taxi	14	2.2%
Ride bike	4	0.6%
Carpool	2	0.3%
Other	2	0.3%
Total *	**624**	**100.0%**

Commuter Trains

Answer	Total	Percent
Walk	146	56.6%
Company shuttle	58	22.5%
Bus	14	5.4%
Subway	13	5.0%
Drive Alone	12	4.7%
Picked up	9	3.5%
Taxi	3	1.2%
Carpool	1	0.4%
Other*	2	0.8%
Total**	**258**	**100.0%**

9. Do you currently use the MetroNorth Danbury Line on the weekend?

Only 13.6% of all commuters surveyed responded that they do currently use the MetroNorth Danbury line on the weekend. Of the remaining respondents, 5.7% provided no reason, 17.1% stated that the train does not go where they need to travel, 33.3% said the train schedule is inconvenient/ there is not service when they want to travel, 6.57% said they could use the train, but prefer to use a car, and 23.8% stated other reasons. Other reasons mostly consisted of "I don't work on weekends", "No need", "I don't go to the city on weekends", etc.

These responses are consistent with the responses from New York City trains. In this group, 12.8% stated that they do use the MetroNorth Danbury line on weekends. Of the remaining respondents, 5.7% provided no reason, 17.1% stated that the train does not go where they need to travel, 33.3% said the train schedule is inconvenient/ there is not service when they want to travel, 6.5% said they could use the train, but prefer to use a car, and 23.8% stated other reasons.

Commuter train responses varied somewhat with 21.0% respondents who said they do regularly use the MetroNorth Danbury line on the weekends. Of the remaining responses, 8.4% said no but provided no reason, 10.9% said the train does not go where they need to travel, 30.3% said the train schedule is inconvenient/ there is no service when they want to travel, 5.0%prefer to go by car, and 24.4% said other reasons.

Answer	Total	Percentage
Yes	126	13.6%
No (no reason)	53	5.7%
No, The train doesn't go where I need to go	159	17.1%
No, the train schedule is inconvienient/ no service when I want to travel	309	33.3%
No, I could use the train, but I prefer to use my car	60	6.5%
No, other reasons	221	23.8%
Total	928	100.0%

**Several surveys with multiple answers provided.

New York City Trains

Answer	Total	Perrcentage
Yes	82	12.9%
No (no reason)	33	5.2%
No, The train doesn't go where I need to go	109	17.1%
No, the train schedule is inconvienient/ no service when I want to travel	219	34.3%
No, I could use the train, but I prefer to use my car	50	7.8%
No, other reasons	145	22.7%
Total	638	100.0%

**Several surveys with multiple answers provided

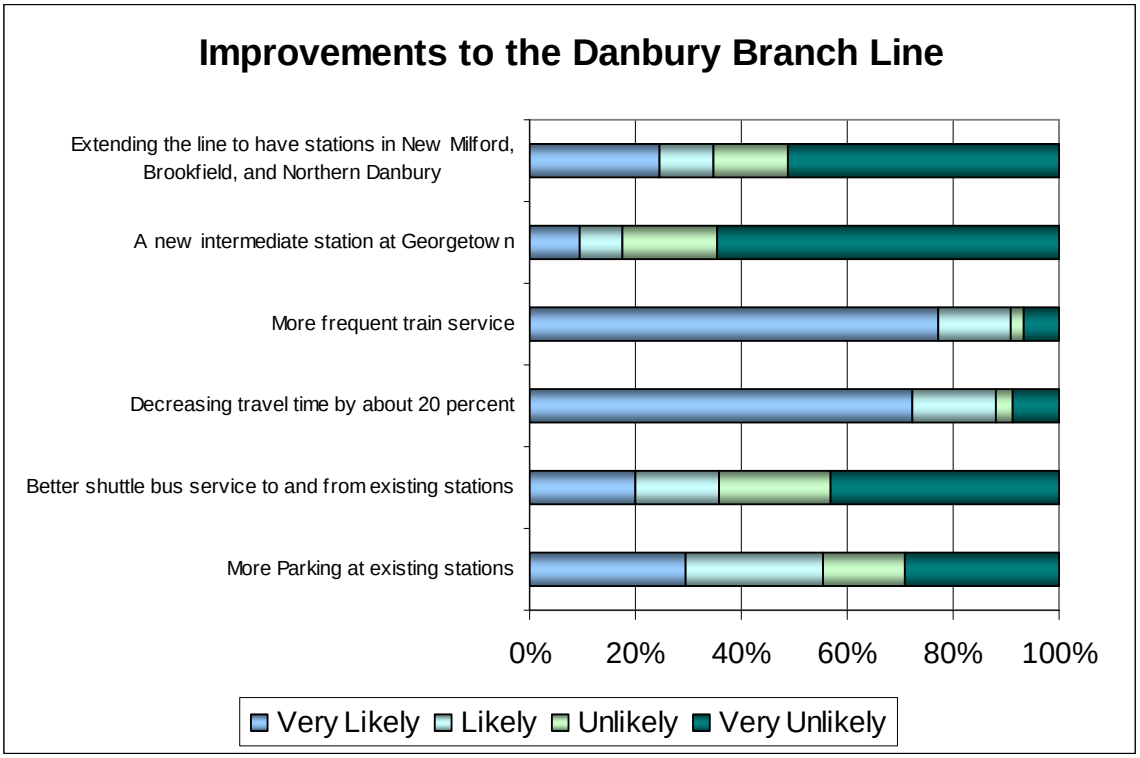
Commuter Trains

Answer	Total	Percentage
Yes	25	21.0%
No (no reason)	10	8.4%
No, The train doesn't go where I need to go	13	10.9%
No, the train schedule is inconvienient/ no service when I want to travel	36	30.3%
No, I could use the train, but I prefer to use my car	6	5.0%
No, other reasons	29	24.4%
Total	**119**	**100.0%**

**Several surveys with multiple answers provided

10. ConnDot is studying potential improvements to the MetroNorth Danbury Branch train service. Would you likely increase your use of the train if any of the following improvements were made?

	Very Likely	Likely	Unlikely	Very Unlikely
More Parking at existing stations	225	197	120	221
Better shuttle bus service to and from existing stations	148	116	155	317
Decreasing travel time by about 20 percent	582	125	27	70
More frequent train service	636	111	20	56
A new intermediate station at Georgetown	67	58	128	458
Extending the line to have stations in New Milford, Brookfield, and Northern Danbury	189	78	108	396



New York City Trains

	Very Likely	Likely	Unlikely	Very Unlikely
More Parking at existing stations	139	125	83	176
Better shuttle bus service to and from existing stations	254	96	71	85
Decreasing travel time by about 20 percent	405	83	16	53
More frequent train service	433	76	16	43
A new intermediate station at Georgetown	46	41	76	326
Extending the line to have stations in New Milford, Brookfield, and Northern Danbury	102	44	69	311

Commuter Trains

	Very Likely	Likely	Unlikely	Very Unlikely
More Parking at existing stations	79	68	32	43
Better shuttle bus service to and from existing stations	59	41	55	58
Decreasing travel time by about 20 percent	164	38	11	16
More frequent train service	188	32	4	12
A new intermediate station at Georgetown	20	16	49	122
Extending the line to have stations in New Milford, Brookfield, and Northern Danbury	81	33	37	78

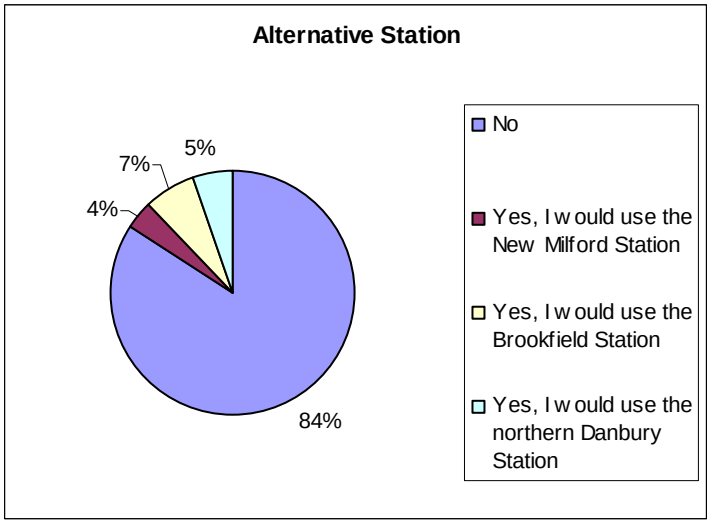
11. If the Danbury Branch was extended north, and there were additional stations, would you change the Danbury Branch station that you use?

The largest percentage of respondents, 84.1% said "No", followed by 7% which said "Brookfield", 5.3% said "Danbury and 3.7% said "New Milford".

Of the New York City train respondents, 88.13% said "No". Of the remaining respondents who said yes, 2.84% said the New Milford station, 5.02 said the Brookfield station and 4.01% said the Danbury Station.

Of the commuter train respondents, 74.51% said "No". Of the remaining respondents who said yes, 5.88% said the New Milford station, 10.98% said the Brookfield station and 8.63% said the Danbury Station.

Answer	Total	Percent
No	736	84.1%
Yes, I would use the New Milford Station	32	3.7%
Yes, I would use the Brookfield Station	60	7.0%
Yes, I would use the northern Danbury Station	46	5.3%
Total	**874**	100.0%



New York City Trains

Answer	Total	Percentage
No	528	88.3%
Yes, I would use the New Milford Station	17	2.8%
Yes, I would use the Brookfield Station	29	4.8%
Yes, I would use the northern Danbury Station	24	4.0%
Total	**598**	**100.00%**

Commuter Trains

Answer	Total	Percentage
No	190	74.5%
Yes, I would use the New Milford Station	15	5.9%
Yes, I would use the Brookfield Station	28	11.0%
Yes, I would use the northern Danbury Station	22	8.6%
Total	**255**	**100.0%**

12. How would you get to the train station identified in Question 11?

Of all commuters surveyed, the largest percentage of respondents, 59.5%, said "drive alone", followed by 20.3% with "dropped off", 9% with "walk", 5.6% with "ride bike" and 2.6% with "carpool".

Of the New York City train respondents, the largest percent, 64.5%, said "drive alone", followed by 15.8% with "dropped off", 9.9% with "walk", 3.9% with "ride bike" and 3.3% with carpool.

Of the commuter train respondents, the largest percent, 64.4%, said "drive alone", followed by 19.2% with "dropped off", 7.7% with "walk", and 5.8% with "ride bike".

Answer	Total	Percent
Drive alone	138	59.5%
Dropped off	47	20.3%
Carpool	6	2.6%
Ride Bike	13	5.6%
Taxi	1	0.4%
Walk	22	9.5%
Other	1	0.4%
Other/bus	4	1.7%
Total	**232**	**100.0%**

New York City Trains

Answer	Total	Percent
Drive alone	98	64.5%
Carpool	5	3.3%
Walk	15	9.9%
Dropped off	24	15.8%
Taxi	1	0.7%
Bus	2	1.3%
Ride a bike	6	3.9%
Other	1	0.7%
Total**	**152**	**100.0%**

Commuter Trains

Answer	Total	Percent
Drive alone	67	64.4%
Carpool	0	0.0%
Walk	8	7.7%
Dropped off	20	19.2%
Taxi	0	0.0%
Bus	3	2.9%
Ride a bike	6	5.8%
Other	0	0.0%
Total**	**104**	**100.0%**

13. Are you male of female?

The largest percentage of respondents, 66.7%, said “male”, followed by 33.3% which said “female”.

Male	578	66.7%
Female	288	33.3%

**Six surveys left this question blank

New York City Trains

Male	417	69.62%
Female	182	30.38%

Commuter Trains

Male	148	59.68%
Female	100	40.32%

14. What is your age?

Age	Total	Percent
16-20	18	2.1%
21-30	105	12.5%
31-40	189	22.5%
41-50	249	29.6%
51-65	261	31.0%
Over 65	19	2.3%
Total	**841**	**100.0%**

******Thirty-one surveys left blank

New York City Trains

Answer	Total	Percent
Under 25	29	5.0%
25-40	161	27.7%
41-50	180	31.0%
51-65	194	33.4%
Over 65	17	2.9%
Total	**581**	**100.0%**

Commuter Trains

Answer	Total	Percent
Under 25	16	6.6%
25-40	99	41.1%
41-50	62	25.7%
51-65	62	25.7%
Over 65	2	0.8%
Total	**241**	100.0%

15. Do you have a driver's license?

The largest percentage of respondents, 97.1%, said "yes" followed by 2.9% which said "no".

Answer	Total	Percent
Yes	842	97.1%
No	25	2.9%

******Five surveys left this question blank.

There is a general consistency in the New York City and Commuter trains sub-groups.

New York City Trains

Answer	Total	Percent
Yes	581	97.0%
No	18	3.0%

Commuter Trains

Answer	Total	Percent
Yes	242	97.6%
No	6	2.4%

16. Is there an automobile generally available for you to drive on this trip?

The largest percentage of respondents, 93.1%, said “yes”, followed by 6.9% which “no”.

Answer	**Total**	**Percent**
Yes	807	93.1%
No	60	6.9%

New York City Trains

Answer	**Total**	**Percent**
Yes	557	93.14%
No	41	6.86%

Commuter Trains

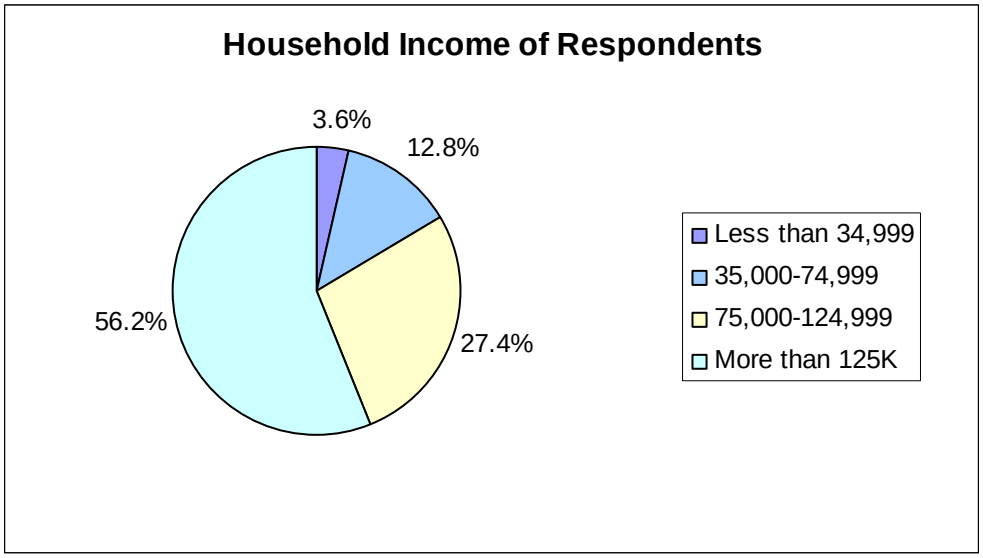
Answer	**Total**	**Percent**
Yes	231	92.77%
No	18	7.23%

17. For statistical purposes only, would you please check your total household income last year (your answers will be kept confidential)?

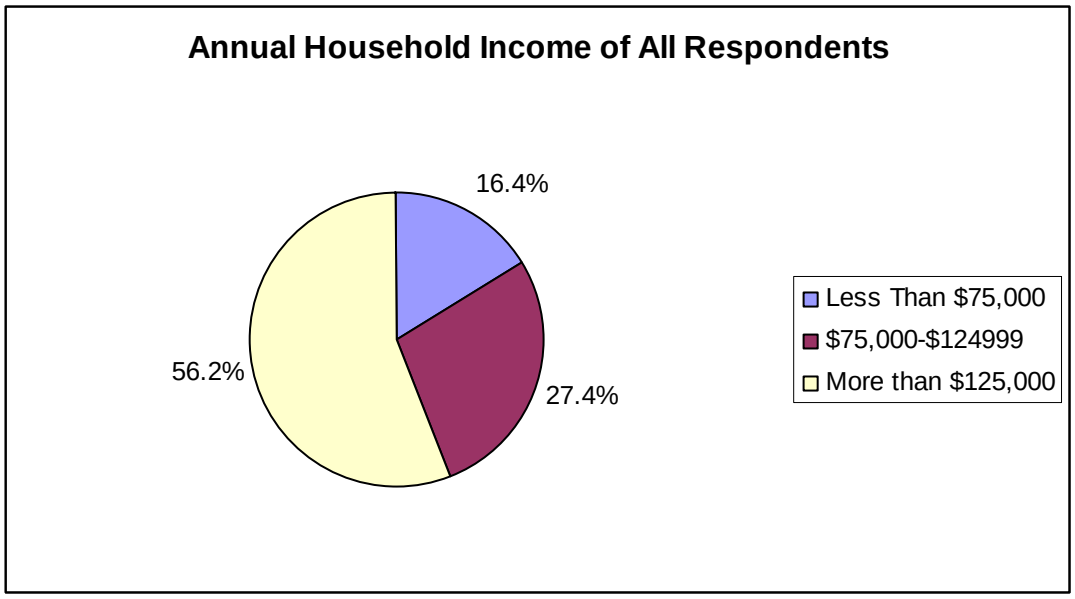
The largest percentage of respondents, 56.2%, said "More than $125k", followed by 27.4% with "$75,000-124,999", followed by 12.8% with "$35,000-74,999" followed by 3.6% with less than $34,999.

Answer	Total	Percentage
Less than 34,999	30	3.6%
35,000-74,999	106	12.8%
75,000-124,999	228	27.4%
More than 125K	467	56.2%
Total	831	100.0%

**Forty-one surveys left this question blank.



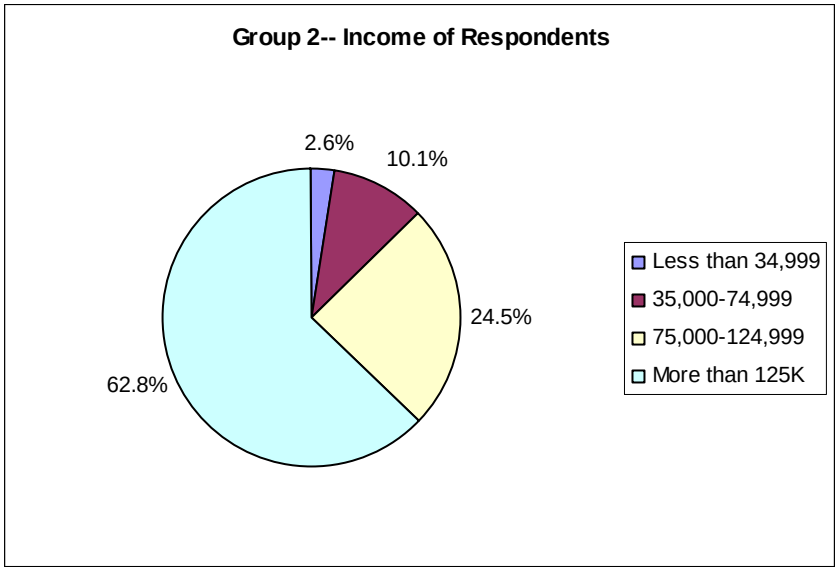
If the lowest two income brackets are consolidated then we can see that only 16.4% of all respondents have an annual household income of less than $74,999 annually.



New York City Trains

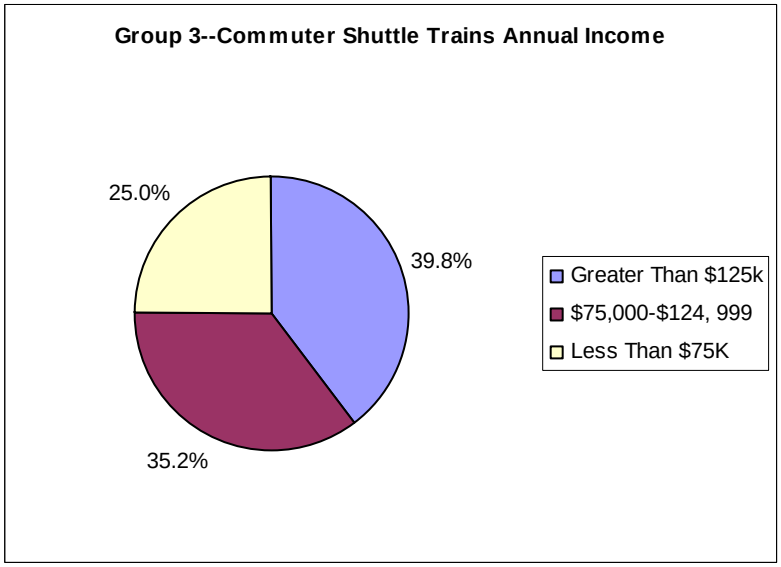
Answer	Total	Percent
Less than 34,999	15	2.6%
35,000-74,999	58	10.1%
75,000-124,999	141	24.5%
More than 125K	361	62.8%
Total	575	100.0%

*****27 Left surveys left this question blank



Commuter Trains

Answer	Total	Percent
Less than 34,999	14	5.9%
35,000-74,999	45	19.1%
75,000-124,999	83	35.2%
More than 125K	94	39.8%
Total	236	100.0%



FTA ALTERNATIVES ANALYSIS
DRAFT/FINAL ENVIRONMENTAL IMPACT STATEMENT

TASK 6
EXISTING CONDITIONS REPORT

STATE PROJECT 302-008



APPENDIX F

POTENTIAL RAIL PASSENGER SURVEY REPORT

Task 6.1.8 Potential Rail Passenger Survey Results

Potential Rail Passenger Survey Report

Overview

Task 6.0 of the Danbury Branch EIS project is intended to provide an analysis of the existing transportation, rail, bus, highway conditions, and intermodal opportunities (including bicycle and pedestrian) in the Danbury Branch/Route 7 corridor between South Norwalk and New Milford. It also includes an analysis of the transportation effects and an analysis of the costs and benefits of each of the alternatives under consideration.

As part of this analysis, the URS Project Team developed and conducted two types of surveys for the Danbury Branch EIS. The first, a survey of existing passengers on the Danbury Branch to ascertain their various characteristics, preferences, and desires was previously reported. The results of the second survey, a non-rail user telephone survey are presented in this report.

The rail passenger survey consisted of a questionnaire distributed to riders on board the Danbury Branch commuter trains (On-Board Survey). The URS Team designed the questionnaire, assigned a survey crew, conducted the survey, and analyzed and documented the survey results presented in this report.

Introduction

This report provides findings of a survey conducted among commuters living in specified towns near the Danbury Branch Metro-North Line. The survey was designed to elicit commuter opinions and input on a wide range of topics. The study team completed a total of 400 surveys among commuters living near the Danbury Branch study corridor.

This report summarizes statistics collected from telephone interviews conducted among customers September 29 through October 15, 2008. All interviews were conducted during this time.

The *Danbury Branch Area Commuter Telephone Survey* included the following areas for investigation:

- Mode of transportation currently used;
- History of using Metro-North;
- Perceptions of the market; and
- Demographics.

Following this Introduction, Section II - contains and explains the methodologies employed in completing this *Danbury Branch Area Commuter Telephone Survey*, the margins for error and the confidence level for the statistics collected.

Section III - contains Highlights made after a careful analysis of the data which is presented in narrative format in the Summary of Findings, Section IV.

Section V - is the Appendix containing a copy of the survey instrument utilized, a cross-tabulation table, additional cross-tabulation frequencies and the composite aggregate data.

METHODOLOGY

The survey utilized a quantitative research design using a questionnaire developed to collect commuter views. Actual wording of each question is contained in the Appendix of this report.

A total of 400 surveys among commuters living near the Danbury Branch were conducted. Respondents qualified if they regularly commute anywhere from two to seven times weekly to such places as work, school or business activities, if they do not currently use Metro-North train services for their regular commute, and if they commute to a specific list of zip codes.

Survey design is a careful, deliberative process to ensure fair, objective and balanced surveys. Further, all scales used (either numeric, such as one through ten, or wording such as strongly agree, somewhat agree, somewhat disagree or strongly disagree) are balanced evenly. And, placement of questions is carefully accomplished so that order has minimal impact.

Completion rates are a critical aspect of any telephone survey research. Because one group of people might be easier to reach than another group, it is important that concentrated efforts are made to reach all groups to an equal degree. A high completion rate means that a high percentage of the commuters within the original sample were actually contacted, and the resulting sample is not biased toward one potential audience. CRPP maintained an **83%** completion rate on all calls made to commuters during the survey. And, a high completion rate often indicates an interest in the topic.

CRPP used a callback procedure to ensure the randomness of the sample and to reduce non-response bias. When a randomly selected commuter was not available during the first telephone contact, additional callbacks were made in order to complete the interview.

All telephone interviews were conducted from CRPP headquarters, located in Trumbull, Connecticut. Research was conducted primarily during the hours of 5:00 p.m. and 9:00 p.m. weekdays and 10:00 a.m. and 4:00 p.m. on weekends. The survey was conducted September 29 through October 15, 2008.

All facets of the *Danbury Branch Area Commuter Telephone Survey* were completed by CRPP's researchers and senior staff. These aspects included survey design, pre-testing, computer programming, fielding, coding, data entry, editing, validation, verification, computer analysis, analysis and report writing.

Statistically, a sample of 400 surveys represents a margin for error of +/-5.0% at a 95% confidence level. In theory, a sample of area commuters will differ no more than +/-5.0% than if all commuters were contacted and included in the survey. That is, if random probability sampling procedures were reiterated over and over again, sample results may be expected to approximate the larger population values within plus or minus 5.0% -- 95 out of 100 times.

Readers of this report should note that any survey is analogous to a snapshot in time and results are only reflective of the time period in which the survey was undertaken. Should concerted public relations or information campaigns be undertaken during or shortly after the fielding of the survey, the results contained herein may be expected to change and should be, therefore, carefully interpreted and extrapolated.

Furthermore, it is important to note that all surveys contain some component of "sampling error." Error that is attributable to systematic bias has been significantly reduced by utilizing strict random probability procedures. This sample was strictly random in that selection of each potential commuter was an independent event, based on known probabilities.

Each qualified commuter had an equal chance for participating in the study. Statistical random error, however, can never be eliminated but may be significantly reduced by increasing sample size.

HIGHLIGHTS

MODE OF TRANSPORTATION

- While the majority of respondents (85.5%) reported making their weekly commute by "driving alone," more than ten percent (13.0%) also reported "driving or riding with others" during their weekly commute.

- Respondents reported making their round trip commute, on average, slightly more than four times per week (4.06).

- On average, commuters living among the Danbury Metro-North line reported their commute time as 28.82 minutes each way.

- Further, commuters living among the Danbury line reported spending, on average, $46.98 each week, for total commuting fuel costs.

METRO-NORTH

- Three-quarters of all commuters living among the Danbury Branch (72.8%) reported to be either "very aware" or "somewhat aware" of Metro-North train services such as schedules, logistics, costs and destinations.

- Despite not utilizing the train service for their weekly commute, respondents reported making, on average, 3.57 trips annually on Metro-North for reasons other than commuting.

- Top reasons reported for not using Metro-North train service or not using it more often for reasons other than a commute included the following: "no need to use the train," "it's not close by/not convenient," "prefer driving," "hard to get to different destinations after train" and "only use it for entertainment/NYC."

- When asked to estimate what the price would be for their weekly commute if they used Metro-North as opposed to their current mode of transportation, respondents reported the following:

  Estimated average cost to use Metro-North= $49.01
  Estimated average fuel cost using current transportation = $46.98

THE MARKET

All respondents were read a list of improvements and/or enhancements to the Danbury Branch and asked how likely, if made, each might influence them to begin using Metro-North for their weekly commute.

- The improvements/enhancements which were reported as having the greatest impact included the following: "lower cost of train fares," "lower cost of parking fees" and offering "a more convenient train schedule."

- The improvements/enhancements which were reported as having the least impact included the following: "a new intermediate station in Georgetown" and "trains being better equipped for physical disabilities."

- Top reasons reported among respondents for not using Metro-North train service for their regular commute included the following: "too far from home," "I use my car more often," "it's not convenient," "train does not go to my destination," "no need to commute by train" and "I am too close to work to use it."

- Finally, respondents reported the cost of gasoline would need to reach $4.82 (MEAN) per gallon before they would make a concerted effort to use Metro-North train service for their regular commute.

CROSS TABULATION REVIEW

To further analyze and cross tabulate the data collected, each of the proposed Danbury Branch improvements were pulled from the data and ran, individually, by each of the demographic questions along with each of the various commuting habits. Those cross tabulations showing significant differences, when compared against the composite aggregate data, are presented below.

Those respondents making "2 or more trips on Metro-North, for reasons other than a commute," reported an increased likelihood to use the train for their commute if the following improvements were made:

- More parking at existing stations
- A more convenient train schedule
- Lower cost of train fares
- Lower cost of parking fees

When those "riding alone," "riding with others" and those with "4 or less round trip commutes per week" were pulled from the data and viewed separately, the level of impact, based on proposed improvements to Metro-North, were statistically insignificant when compared with results found in the composite aggregate data.

However, those respondents making "5 or more round trip commutes per week" reported an increased likelihood to use the train for their commute if the following improvements were made:

- Decreasing travel time by 20%
- A more convenient train schedule
- A new intermediate station in Georgetown
- More parking at existing stations
- Lower cost of train fares

Interestingly, those respondents with children living at home appear slightly more aware of Metro-North train services when compared with those respondents who have no children living at home. Additionally, those respondents with children living at home appear more likely to use the train for reasons other than a commute one or more times per year.

Those respondents ages 34 and younger appear less likely to:

- Make a round trip commute 3 days a week or less
- Enjoy driving a car over taking the train

Those respondents ages 34 and younger appear more likely to:

- Make a round trip commute 3 days a week or more
- Use Metro-North one or more times a year for reasons other than a commute
- Consider taking the train if gas prices, per gallon, reach $5.00 or more

Those respondents making $100,000 or more annually are more likely to:

- Report awareness of services offered by Metro-North
- Use Metro-North for reasons other than a commute one or more times annually

SUMMARY OF FINDINGS

Respondents qualified for the survey if they regularly commute anywhere from two to seven times weekly to such places as work, school or business activities, if they do not currently use Metro-North train services for their regular commute, and if they commute to a specific list of zip codes.

The Summary of Findings presents results collected for commuters living along the Danbury Branch study corridor.

MODE OF TRANSPORTATION

To begin the survey, all respondents were asked to report what mode of transportation they utilize most frequently when making their regular weekly commute.

As presented in the table below, the majority of all respondents reported "driving alone" most frequently.

How do you make your regular weekly commute?	***Danbury***
Drive alone;	85.5%
Drive or ride with others;	13.0
Are dropped off;	---
Take a bus;	1.2
Walk; or	---
Ride a bike	0.2

All respondents were then asked to report the number of days, each week; they make this round trip commute.

As presented in the table below, respondents reported making their round trip commute, on average, slightly more than four times per week.

Average days each week you make this round trip commute.	***Danbury***
0	0.2%
1	1.0
2	18.5
3	16.5
4	7.7
5	49.4
6	4.0
7	2.0
Depends	0.2
Don't know/unsure	0.5
Average (without "don't know" responses)	***4.06***

All respondents were asked to report how long their one-way commute is from door-to-door (in minutes) each time they make it.

On average, commuters living along the Danbury Line reported a commute time of 28.82 minutes each way. Detailed findings may be found in the table below.

How long is your one-way, door-to-door commute each time you make it?	***Danbury***
1-15 minutes	24.4%
16-30 minutes	42.9
31-45 minutes	17.7
46-60 minutes	6.5
61-75 minutes	2.3
76-90 minutes	1.3
91 or more minutes	0.2
Depends	4.2
Don't know/unsure	0.5
Average (without "don't know" responses)	***28.82***

In addition to time, researchers asked all respondents to approximate how much money they spend, on a weekly basis, for the cost of fuel used in their weekly commute.

Detailed findings are presented in the table below.

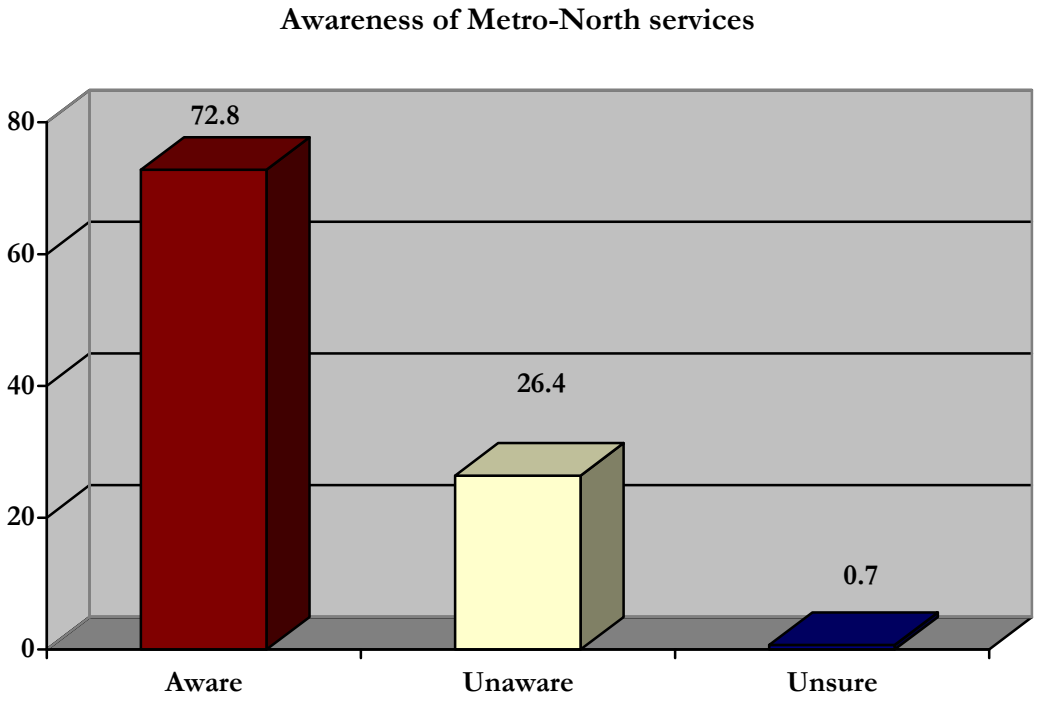
How much you spend on the cost of fuel used in your commuting?	***Danbury***	***Danbury (w/o DKs)***
$0-10 per week	5.0%	6.3
$11-25 per week	15.2	19.2
$26-50 per week	33.7	42.4
$51-75 per week	14.4	18.3
$76-100 per week	5.8	7.2
$101-125 per week	1.2	1.6
$126-150 per week	1.0	1.2
$151-175 per week	---	---
$176-200 per week	0.3	0.4
$200 or more per week	0.7	0.8
Depends	2.0	2.5
Don't know/unsure	20.7	---
Average (without "don't know" responses)	***$46.98***	***$46.98***

METRO-NORTH

Researchers asked all respondents to report their awareness of Metro-North train services such as schedules, logistics, costs and destinations.

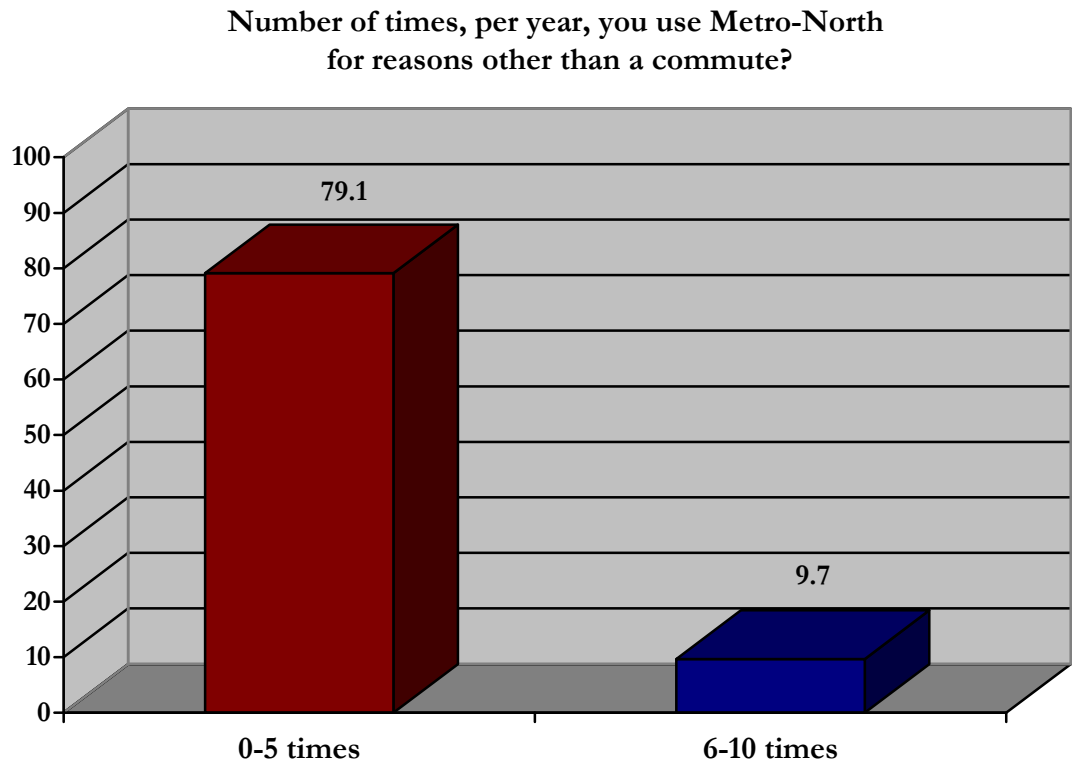
Detailed findings may be found in the table and chart located below.

Awareness of Metro-North train services such as schedules, logistics, costs and destinations?	***Danbury***
Very aware	34.9%
Somewhat aware	37.9
Somewhat unaware	5.7
Not at all aware	20.7
Don't know/unsure	0.7
Total aware	***72.8***
Total unaware	***26.4***



Despite not utilizing Metro-North train service for their weekly commute, all respondents were asked to approximate the number of times, on an annual basis, they use Metro-North for reasons other than commuting.

Number of times you use Metro-North for reasons other than a commute?	***Danbury***	***Danbury (w/o DKs)***
0-5 times per year	79.1%	82.3
6-10 times per year	9.7	10.2
11-15 times per year	4.2	4.4
16-20 times per year	0.8	0.8
21-25 times per year	1.2	1.3
25 or more times per year	1.0	1.0
Don't know/unsure	3.5	---
Refused	0.5	---
Average (without "don't know" responses)	***3.57***	***3.57***



In an open-ended format question, respondents were asked to identify the reasons why they don't use Metro-North train service or don't use it more often for reasons other than a commute.

Reasons you don't use Metro-North train service or don't use it more often for reasons other than a commute	***Danbury***
No need to use the train	23.2%
It's not close by/not convenient	22.7
Prefer driving	13.0
Hard to get from train to destination	11.0
Only use it for entertainment/NYC	8.7
Sometimes it's cheaper to drive	3.7
Don't know/unsure	3.7
Takes too long	3.0
Don't like riding the train	2.2
More parking is needed at the station	2.0
Too old to travel by train	1.5
I am disabled	1.2
Do use it a good amount of time	1.2
No specific reason	1.0
The train does not go close to my job	0.7
Overcrowded	0.2
Too much equipment to get on the train with	0.2
Not safe	0.2
Only to visit relatives	0.2

In an effort to better understand perceptions of the cost that is associated with riding Metro-North for their commute, researchers asked respondents to report what they believe they would pay to use Metro-North train service for their regular, weekly commute.

Detailed findings may be found in the table below.

Estimation of what you believe you would pay Metro-North train service for your regular, weekly commute?	***Danbury***	***Danbury (w/o DKs)***
$0-10	3.2%	15.9
$11-20	1.3	6.1
$21-30	3.0	14.6
$31-40	1.5	7.3
$41-50	3.5	17.1
$51-75	4.7	23.1
$76-100	2.5	12.2
$101 or more	0.7	3.7
Don't know/unsure	79.6	---
Average (without "don't know" responses)	***$49.01***	***$49.01***

THE MARKET

Researchers read a list of improvements or enhancements being considered by the Connecticut Department of Transportation and asked respondents to state whether each improvement would make them very likely, somewhat likely, somewhat unlikely or not at all likely to begin using Metro-North for their commute.

The table below presents the results as collected.

Improvements - Danbury	***Very likely***	***Somewhat likely***	***Somewhat unlikely***	***Not at all likely***
Lower cost of train fares	28.2%	9.2	1.0	52.9
Lower cost of parking fees	27.2	8.2	0.7	55.9
A more convenient train schedule	24.4	11.0	1.5	55.4
Extending the line to have stations in Milford, Brookfield and northern Danbury	23.4	13.2	0.2	57.1
More frequent trains	22.7	8.2	2.0	58.1
Decreasing travel time by 20%	21.2	13.7	1.0	56.6
More parking at existing stations	20.7	12.2	1.5	57.4
Better shuttle bus service to and from existing stations	19.5	12.0	1.5	58.9
Trains are better equipped for physical disabilities	14.0	4.2	1.5	63.1
A new intermediate station in Georgetown	10.2	6.0	2.0	69.1

In an open-ended format question, all respondents were asked to report the primary reason why they don't use Metro-North train services for their regular commute.

The table below presents the results as collected.

Primary reason you don't use Metro-North train service for your regular commute	***Danbury***
Too far from home	26.9%
I use my car more often	20.7
It's not convenient	14.2
Train does not go to my destination	12.5
No need/value to commute by train	9.5
I am too close to work to use it	6.0
Too expensive	2.5
Parking never available at station	2.0

Don't know/unsure	1.5
Sometimes rides with others	1.0
Don't like riding the train	0.7
Bus is earlier/easier	0.7
No shuttle available	0.5
Sometimes they're late	0.5
There's no direct line from Danbury to Stamford	0.2
Overcrowded	0.2
No specific reason	0.2

All respondents were asked by researchers to indicate at what price, per gallon of gas, they would make a concerted effort to use Metro-North train service for their regular commute. Readers should note the cost for a gallon of gas at the time of the survey was approximately $3.75.

Detailed findings are presented in the table below for comparison.

At what price, per gallon of gas, would you make a concerted effort to use Metro-North train for your regular commute?	***Danbury***	***Danbury (w/o DKs)***
$0-2 per gallon	6.5%	22.0
$3 per gallon	0.2	0.9
$4 per gallon	4.2	14.4
$5 per gallon	9.5	32.2
$6 per gallon	1.7	5.9
$7 per gallon	1.7	5.9
$8 per gallon	2.0	6.8
$9 per gallon	0.2	0.8
$10 ore more per gallon	3.2	11.0
Refused	3.5	---
Don't know/unsure	67.1	---
Average (without "don't know" responses)	***$4.82***	***$4.82***

DEMOGRAPHICS

# of Children at home	***Danbury***
None	62.8%
One	13.5
Two	13.7
Three	6.0
Four	0.5
Five or more	0.2
Don't know/unsure	1.0
Refused	2.2

Access to a car?	***Danbury***
Yes	99.5%
No	0.2
Don't know/unsure	0.2

Driver's license?	***Danbury***
Yes	98.3%
No	1.0
Don't know/unsure	0.2
Refused	0.5

Age	***Danbury***
18 to 24	3.5%
25 to 34	2.7
35 to 44	11.0
45 to 54	30.9
55 to 64	21.7
65 or older	25.7
Refused	4.5

Income	***Danbury***
Under $9,999	1.0%
$10,000 to less than $40,000	6.7
$40,000 to less than $70,000	14.5
$70,000 to less than $100,000	9.0
$100,000 to less than $130,000	8.7
$130,000 to less than $160,000	3.7
$160,000 or more	8.2
DK/unsure	2.5
Refused	45.6

Gender	***Danbury***
Male	39.7%
Female	60.3

APPENDIX

INTERPRETATION OF AGGREGATE RESULTS

The computer processed data for this survey is presented in the following frequency distributions. It is important to note that the wordings of the variable labels and value labels in the computer-processed data are largely abbreviated descriptions of the Questionnaire items and available response categories.

The frequency distributions include the category or response for the question items. Responses deemed not appropriate for classification have been grouped together under the "Other" code.

The "NA" category label refers to "No Answer" or "Not Applicable." This code is also used to classify ambiguous responses. In addition, the "DK/RF" category includes those respondents who did not know their answer to a question or declined to answer it. In many of the tables, a group of responses may be tagged as "Missing" – occasionally, certain individuals' responses may not be required for specific questions and thus are excluded. Although when this category of response is used, the computations of percentages are presented in two (2) ways in the frequency distributions: 1) with their inclusion (as a proportion of the total sample), and 2) their exclusion (as a proportion of a sample sub-group).

Each frequency distribution includes the absolute observed occurrence of each response (i.e. the total number of cases in each category). Immediately adjacent to the right of the column of absolute frequencies is the column of relative frequencies. These are the percentages of cases falling in each category response, including those cases designated as missing data. To the right of the relative frequency column is the adjusted frequency distribution column that contains the relative frequencies based on the legitimate (i.e. non-missing) cases. That is, the total base for the adjusted frequency distribution excludes the missing data. For most questions, the relative and adjusted frequencies will be nearly the same; however, some items that elicit a sizable number of missing data will produce quite substantial percentage differences between the two columns of frequencies. The careful analyst will cautiously consider both distributions.

The last column of data within the frequency distribution is the cumulative frequency distribution (Cum Freq). This column is simply an adjusted frequency distribution of the sum of all previous categories of response and the current category of response.

FTA ALTERNATIVES ANALYSIS
DRAFT/FINAL ENVIRONMENTAL IMPACT STATEMENT

TASK 6
EXISTING CONDITIONS REPORT

STATE PROJECT 302-008



APPENDIX G

TRAIN SIMULATION REPORT FOR THE BASELINE TRAIN PERFORMANCE MODEL

DRAFT

TRAIN SIMULATION

REPORT

For

Baseline Train Performance Model

For

Danbury Branch Improvement Program

AA/EIS

April, 2009

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Appendices

1. Train Simulation Output Summary, A-1
2. Train Simulation Output Summary, A-2
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5. Train Simulation Output Summary, C-1
6. Train Simulation Output Summary, C-2
7. Traction Effort Curve P32AC - DM
8. Station Dwell Times (email)
9. Report of the January 12, 2009 meeting

1.0 EXECUTIVE SUMMARY

This report summarizes the findings of base case condition and train simulation on the existing track alignment between South Norwalk and New Milford, Connecticut. The report discusses the initial baseline development and a revised baseline that addresses MNR directions presented at the review meeting held on January 12, 2009. The objective of this initial train simulation is to create a model of the train consist and the track alignment and to compare the runtimes against the MNR schedule. The latest public schedule shows trip times between Danbury and South Norwalk of 53 minutes for the inbound trip and 55 minutes for the outbound.

The simulation includes end-to-end train run, stopping at each passenger station, for the outbound and inbound directions, except at Georgetown. The overall alignment is approximately 40 miles in each direction, is at-grade with a short tunnel section and twelve (12) passenger stations, including one planned at Georgetown. The study train consist includes five (5) coach cars type MNR 6300, a cab car type MNR 6300 at the end, and MNR Loco P32 Diesel mode in a push-pull configuration.

The analysis was conducted using Railsim Version 7 software. Specifically, the module used in the analysis was the Train Performance Calculator (TPC).

Initial Baseline

The overall runtime including dwells for the outbound direction between South Norwalk and Danbury is 1 hour 4 minutes 49 seconds or about 65 minutes. For the inbound direction, Danbury to South Norwalk the trip is 59 minutes 3 seconds, say 59 minutes. The station-to-station runtimes are included in the summary sheets A-1 and A-2 in the Appendix. All criteria and input parameters are described in the subsequent sections. The analysis suggests that the simulated runtimes are longer than the schedule; and the deviation may be attributed to the assumed dwell times and/or the wheel to rail adhesion coefficient rate of 6% assumed instead of normal adhesion of 15%.

A draft report discussing the initial baseline development was prepared and a meeting held with Metro North on January 12, 2009 at which directions were given that would be followed in preparing a revised baseline.

Revised baseline

Using the 15% adhesion coefficient that reflects normal rail conditions the runtime between Danbury and South Norwalk including dwells for the outbound direction, from South Norwalk is 58 minutes 35 seconds, and for the inbound direction, to South Norwalk) is 57 minutes 31 seconds. The four (4) revised baseline station-to-station runtimes are included in the summary sheets B-1, B-2, C-1, and C-2 in the Appendix. All criteria and input parameters are described in the subsequent sections.

The analysis suggests that these revised simulated runtimes are about 6% longer than the schedule. and the deviation may be attributed to the assumed dwell times.

Additionally, the runtime utilizing wheel to rail adhesion coefficient rate of 15% is about 10% shorter than that using 6% adhesion coefficient, in the same direction.

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2.0 SCOPE OF WORK

The work was authorized as part of the Danbury Branch Phase II Alternatives Analysis / EIS. The initial task 6.4 is to create a train model and evaluate runtimes for baseline run on the existing branch plus the extension from Danbury to New Milford. The initial parameters for the scope were discussed and agreed to between ConnDOT, MNR and URS at a meeting held on April 21, 2008.

It was initially agreed that the simulation would include:

- Operation on the Danbury branch and New Milford extension starting at South Norwalk Station
- Low adhesion coefficient of 6% for diesel locomotive and 4% for electric Multiple unit (EMU) trains
- Alignment characteristics based on available track charts
- Based on runtimes from the simulation, operation scenarios would be developed for various alternatives.

Some of the parameters were further modified at the January 12, 2009 meeting as stated above in Section 1.0. The revised baseline would incorporate the following:

- Use of new tractive-effort curve (OEM curve) for P32AC-DM locomotive provided by MNR
- Revise dwell times for each station based on MNR input; add 30 seconds for locomotive acceleration
- Calculate runtimes for both 6% and 15% adhesion coefficient in each direction
- Ignore “Calculated Curve Speed “ in the TPC Program

In addition to the above, the planned Georgetown Station stop was ignored in the revised calculations to more accurately compare with current operation.

3.0 CRITERIA AND SYSTEM DESCRIPTION

- The analysis is based on Metro-North Vehicle Design Criteria and existing alignments and operating speeds. It includes the input parameters listed in the following sub-sections and the base alignment conditions.

3.1 Vehicle Criteria

Diesel Locomotive: MNR P 32 Diesel

- Empty weight 274,400 lbs
- Initial / Maximum Acceleration 1.5 / 2.0 mphps
- Maximum Speed 80 mph
- Auxiliary Power 29 kW
- Maximum Adhesion 6% / 15%
- Tractive Effort See attached curve and add 30 seconds to each station dwell time to approximate engine loading

Passenger Coach: MNR 6300

- Empty weight 99,000 lbs
- Passenger Weight (70 passengers @ 150 lbs)

  Per coach 10,500 lbs
- Vehicle Auxiliary Power 50 kW

Cab Car: MNR 6300

- Empty weight 105,000 lbs
- Passenger Weight (70 passengers @ 150 lbs) 10,500 lbs
- Vehicle Auxiliary Power 50 kW

3.2 Station Stop and Dwell Times

There are a total of twelve (12) passenger stations along the route from South Norwalk to New Milford inclusive. In the initial baseline, a dwell time of 60 seconds was assumed for each station. For the revised baseline, dwell times are from MNR (see station dwell times (email) in the Appendix). Danbury Branch stations are; South Norwalk, Merritt 7, Wilton, Cannondale, Georgetown (planned / skipped stop),

Branchville, Redding, Bethel, and Danbury. Three (3) stations; North Danbury, Brookfield, and New Milford are included as proposed in this study.

3.3 Alignment and Operating Speeds

The analysis is based on alignment, operating speeds, and station location data obtained from existing MNR and HRRC track charts and ConnDOT planimetric maps and aerial photogrametry.

The Danbury Branch begins at South Norwalk and extends northerly to Danbury. It is owned by ConnDOT and operated by Metro North Commuter RR. There is existing rail passenger service with a maximum track speed of 50 MPH. North of Danbury to New Milford, the track is owned and operated by the Housatonic RR (HRRC). Rail service is freight only with maximum speed of 25MPH.

Physical Condition Inputs

- Two segments were created for the simulation, #01 running South to North (inbound) and #02 running North to South (outbound) between the east side of South Norwalk Station and MP 13 of the Berkshire Line.
- The simulated line is comprised of sections of existing lines. These include the New Haven Line (Sta. 1485+13 to Sta. 1506+67)[1], the Danbury Branch (MP 0.0 to MP 23.9, Maybrook Line MP 77.4 to MP 80.0, and the Berkshire Line MP 0.0 to MP 13).
- Total length of the segments is approximately 39.9 miles.

Grade Data

- For the New Haven Line and the Danbury Branch data was collected from the Metro North Railroad (MNR) Track Charts.
- For the section north of Danbury Phase I Report *Section 1.2.1 Overview of Existing Geometry* was used.

Curve Data

- Radius was used and was calculated using the following equation:

$$R = \frac{5730}{D}$$

Where R = radius, and D = degree of curvature.

- For calculating the radius of compound curves, the average of degrees of curvature was taken.
- MNR Curve Data Book was used for degree of curvature and lengths. These were used for the section from S. Norwalk to Danbury Sta. Starting locations were taken from planametrics.

[1] Section B – Catenary Design – Project No. 301-0054

- Data for Curves north of Danbury Station were taken from Val. Maps and Table DNM-1 from the Feasibility Study, Danbury Branch Electrification, Phase I Report.

Platform Data

- Existing station platform length information was taken from MNR Track Charts. The planametrics maps were used to determine the platform starting locations.
- Stations north of Danbury Sta. were assumed to be 400 feet in length.

Speed Data

- 10 mph is assumed from S. Norwalk through crossovers at CP 241 and onto the Danbury Branch
- Danbury Branch line speeds were taken from MNR Railroad Track Charts.
- 10 mph is assumed from Danbury Station northerly to yard limits at "Berkshire Jct.".
- Past this point speed data was collected from Track Charts provided by Housatonic Railroad.

Tunnel Data

- The existing tunnel at MP 1.47 is assumed to be Box type and 400 feet in length.

4.0 SIMULATION PROGRAM

This study was performed using the Railsim Version 7 software.

Railsim is an analytical tool for use in modeling rail systems. It simulates rail systems and the interaction of trains, the physical wayside elements, and the operation of single trains along the alignment to predict system capacities and parameters.

4.1 Train Performance Calculator

The Train Performance Calculator (TPC) simulates a single train on the rail alignment and is the first step in the analysis. Input data to this program include detailed grade, curve, and speed restrictions, along with a suitable model of the vehicle (i.e., weight, performance limitations, and propulsion system characteristics).

The program performs a discrete time simulation; the train position and speed are updated at very small time intervals during the course of the simulation.

Output from the train simulation includes time, distance, speed and acceleration. This information is stored in a database for subsequent use by other program modules as required. The program also outputs other data including distance traveled, average speed, station-to-station run times, and energy consumption.

4.2 Train Performance Calculation & Validation

Results from the TPC have the following runtimes between Danbury and South Norwalk:

Initial Baselines

- Run A-1, Outbound with 6% adhesion coefficient; 64 minutes 49 seconds.
- Run A-2, Inbound with 6% adhesion coefficient; 59 minutes 3 seconds

Revised Baselines

- Run B-1, Outbound direction, Skip Georgetown stop, and 6% adhesion coefficient 68 minutes 51 seconds
- Run B-2, Inbound direction, Skip Stop at Georgetown, and 6% adhesion coefficient - 63 minutes 51 seconds with dwells
- Run C-1, Outbound direction, skip stop at Georgetown, and 15% adhesion coefficient – 58 minutes 35 seconds
- Run C-2, Inbound direction, skip stop at Georgetown, and 15% adhesion coefficient – 57 minutes 31 seconds

The present public train schedule shows trip times of 55 minutes and 53 minutes for outbound and inbound respectively. Thus the calculated times for C-1 and C-2 exceed the schedule by about 3 and 4 minutes respectively and can be considered representative of the existing Danbury Branch peak service.

The activity discussed in this report and the outputs B-1, B-2, C-1, and C-2 satisfy the requirements to:

- Develop a model that simulates the current base conditions on the Danbury Branch and extension to New Milford
- Train performance for the Baseline or No Build Alternative

			OB Run 6% Adhesion Coeff. (A-!)						
Station	Event	Interval Time	Elapsed Time	Distance	Average Spd.	Max. Spd.	Make Up	Peak Power	Energy Consumption
ID	State	Hrs:Min:Sec	Hrs:Min:Sec	Feet	Mph	Mph	Percent	Gallons/hour	Gallons
South Norwalk	Departure	0:00:00	0:00:00	0			N.A.		0
Merritt 7	Arrival	0:11:25	0:11:25	20789	20.7	40	0	124.21	9.40957
Merritt 7	Departure	0:01:00	0:12:25	0	19.04		0	21.23	0.35436
Wilton	Arrival	0:06:32	0:18:56	16585	28.85	50	0	150.01	8.7839
Wilton	Departure	0:01:00	0:19:56	0	25.02		0	21.23	0.35436
Cannondale	Arrival	0:05:33	0:25:30	12320	25.19	48.49	0	146.11	7.31308
Cannondale	Departure	0:01:00	0:26:30	0	21.35		0	21.23	0.35436
Georgetown	Arrival	0:06:38	0:33:08	15001	25.71	50	0	150.01	8.90388
Georgetown	Departure	0:01:00	0:34:08	0	22.34		0	21.23	0.35436
Branchville	Arrival	0:02:45	0:36:53	3354	13.83	30.28	0	99.17	2.32161
Branchville	Departure	0:01:00	0:37:53	0	10.15		0	21.23	0.35436
Redding	Arrival	0:11:39	0:49:33	22635	22.06	50	0	149.5	12.13635
Redding	Departure	0:01:00	0:50:33	0	20.32		0	21.23	0.35436
Bethel	Arrival	0:06:50	0:57:22	21725	36.16	50	0	149.59	7.20273
Bethel	Departure	0:01:00	0:58:22	0	31.54		0	21.23	0.35436
Danbury	Arrival	0:06:27	1:04:49	12174	21.43	43.38	0	132.87	5.63669
Danbury	Departure	0:01:00	1:05:50	0	18.56		0	21.23	0.35436
North Danbury	Arrival	0:20:28	1:26:17	17701	9.83	10	0	46.59	7.88172
North Danbury	Departure	0:01:00	1:27:17	0	9.37		0	21.23	0.35436
Brookfield	Arrival	0:11:39	1:38:57	23060	22.49	25	0	85.54	7.92802
Brookfield	Departure	0:01:00	1:39:56	0	20.71		0	21.23	0.35436
New Milford	Arrival	0:19:09	1:59:06	34571	20.51	25	0	85.13	8.08512
Run Total (With Dwells)		1:59:06		199915	19.08	50	0	150.01	89.14631
Run Total (Without Dwells)		1:49:06		199915	20.82	50	N.A.	150.01	85.60268

			IB Run 6% Adhesion Coeff. (A-2)						
Station	Event	Interval Time	Elapsed Time	Distance	Average Spd.	Max. Spd.	Make Up	Peak Power	Energy Consumption
ID	State	Hrs:Min:Sec	Hrs:Min:Sec	Feet	Mph	Mph	Percent	Gallons/hour	Gallons
New Milford	Departure	0:00:00	0:00:00	0			N.A.		0
Brookfield	Arrival	0:19:10	0:19:10	34571	20.49	25	0	85.61	13.08031
Brookfield	Departure	0:01:00	0:20:10	0	19.48		0	21.23	0.35436
North Danbury	Arrival	0:11:38	0:31:48	23060	22.52	25	0	85.55	6.55229
North Danbury	Departure	0:01:00	0:32:48	0	20.74		0	21.23	0.35436
Danbury	Arrival	0:20:13	0:53:02	17556	9.87	10	0	46.5	11.02491
Danbury	Departure	0:01:00	0:54:02	0	9.4		0	21.23	0.35436
Bethel	Arrival	0:06:35	1:00:37	12344	21.31	46.35	0	140.5	4.77738
Bethel	Departure	0:01:00	1:01:37	0	18.5		0	21.23	0.35436
Redding	Arrival	0:07:22	1:08:58	21470	33.15	50	0	149.63	8.14529
Redding	Departure	0:01:00	1:09:58	0	29.18		0	21.23	0.35436
Branchville	Arrival	0:10:05	1:20:03	22720	25.6	50	0	149.42	8.42835
Branchville	Departure	0:01:00	1:21:03	0	23.29		0	21.23	0.35436
Georgetown	Arrival	0:02:07	1:23:10	3499	18.81	35.1	0	111.44	1.97565
Georgetown	Departure	0:01:00	1:24:10	0	12.77		0	21.23	0.35436
Cannondale	Arrival	0:04:42	1:28:52	14771	35.73	50	0	149.65	3.65653
Cannondale	Departure	0:01:00	1:29:52	0	29.46		0	21.23	0.35436
Wilton	Arrival	0:04:20	1:34:12	12490	32.73	50	0	149.57	4.25924
Wilton	Departure	0:01:00	1:35:12	0	26.6		0	21.23	0.35436
Merritt 7	Arrival	0:05:13	1:40:25	16585	36.16	50	0	149.67	4.27602
Merritt 7	Departure	0:01:00	1:41:25	0	30.34		0	21.23	0.35436
South Norwalk	Arrival	0:11:41	1:53:05	21299	20.73	42.33	0	130.15	7.24844
Run Total (With Dwells)		1:53:05		200365	20.13	50	0	149.67	76.96803
Run Total (Without Dwells)		1:43:05		200365	22.09	50	N.A.	149.67	73.4244

Base Run OB 6% Adhesion Coeff. New TE (Run B-1)

Station ID	Event State	Interval Time Hrs:Min:Sec	Elapsed Time Hrs:Min:Sec	Distance Feet	Average Spd. Mph	Max. Spd. Mph	Make Up Percent	Peak Power Gallons/hour	Energy Consumption Gallons
South Norwalk	Departure	0:00:00	7:00:00 AM	0			N.A.		0
Merritt 7	Arrival	0:11:25	7:11:25 AM	20789	20.7	40	0	124.21	9.40957
Merritt 7	Departure	0:02:30	7:13:55 AM	0	16.98		0	21.23	0.88502
Wilton	Arrival	0:06:32	7:20:27 AM	16585	28.85	50	0	150.01	8.7839
Wilton	Departure	0:02:30	7:22:57 AM	0	20.87		0	21.23	0.88502
Cannondale	Arrival	0:05:33	7:28:30 AM	12320	25.19	48.49	0	146.11	7.31308
Cannondale	Departure	0:01:30	7:30:00 AM	0	19.84		0	21.23	0.53125
Georgetown	Pass	0:06:18	7:36:18 AM	15001.88		50	N.A.		9.31641
Branchville	Arrival	0:01:07	7:37:24 AM	3353.12	28.16	50	0	150.01	0.83674
Branchville	Departure	0:02:30	7:39:54 AM	0	21.05		0	21.23	0.88502
Redding	Arrival	0:11:39	7:51:34 AM	22635	22.06	50	0	149.5	12.13635
Redding	Departure	0:01:30	7:53:04 AM	0	19.55		0	21.23	0.53125
Bethel	Arrival	0:06:50	7:59:53 AM	21725	36.16	50	0	149.59	7.20273
Bethel	Departure	0:02:30	8:02:23 AM	0	26.47		0	21.23	0.88502
Danbury	Arrival	0:06:27	8:08:51 AM	12174	21.43	43.38	0	132.87	5.63669
Danbury	Departure	0:01:30	8:10:21 AM	0	17.39		0	21.23	0.53125
North Danbury	Arrival	0:20:28	8:30:49 AM	17701	9.83	10	0	46.59	7.88172
North Danbury	Departure	0:01:30	8:32:19 AM	0	9.16		0	21.23	0.53125
Brookfield	Arrival	0:11:39	8:43:58 AM	23060	22.49	25	0	85.54	7.92802
Brookfield	Departure	0:01:30	8:45:28 AM	0	19.92		0	21.23	0.53125
New Milford	Arrival	0:19:09	9:04:37 AM	34571	20.51	25	0	85.13	8.08512
Run Total (With Dwells)		2:04:37		199915	18.23	50	0	150.01	90.72668
Run Total (Without Dwells)		1:47:07		199915	21.21	50	N.A.	150.01	84.53034

Base Run IB 6% Adhesion Coeff. New TE (Run B-2)

Station ID	Event State	Interval Time Hrs:Min:Sec	Elapsed Time Hrs:Min:Sec	Distance Feet	Average Spd. Mph	Max. Spd. Mph	Make Up Percent	Peak Power Gallons/hour	Energy Consumption Gallons
New Milford	Departure	0:00:00	7:00:00 AM	0			N.A.		0
Brookfield	Arrival	0:19:10	7:19:10 AM	34571	20.49	25	0	85.61	13.08031
Brookfield	Departure	0:01:30	7:20:40 AM	0	19.01		0	21.23	0.53125
North Danbury	Arrival	0:11:38	7:32:18 AM	23060	22.52	25	0	85.55	6.55229
North Danbury	Departure	0:01:30	7:33:48 AM	0	19.95		0	21.23	0.53125
Danbury	Arrival	0:20:13	7:54:02 AM	17556	9.87	10	0	46.5	11.02491
Danbury	Departure	0:01:30	7:55:32 AM	0	9.18		0	21.23	0.53125
Bethel	Arrival	0:06:35	8:02:07 AM	12344	21.31	46.35	0	140.5	4.77738
Bethel	Departure	0:02:30	8:04:37 AM	0	15.44		0	21.23	0.88502
Redding	Arrival	0:07:22	8:11:58 AM	21470	33.15	50	0	149.63	8.14529
Redding	Departure	0:01:30	8:13:28 AM	0	27.54		0	21.23	0.53125
Branchville	Arrival	0:10:05	8:23:33 AM	22720	25.6	50	0	149.42	8.42835
Branchville	Departure	0:02:30	8:26:03 AM	0	20.51		0	21.23	0.88502
Georgetown	Pass	0:01:46	8:27:50 AM	3501.23		42.43	N.A.		2.337
Cannondale	Arrival	0:03:50	8:31:40 AM	14768.77	37.04	50	0	149.51	2.08294
Cannondale	Departure	0:01:30	8:33:10 AM	0	29.22		0	21.23	0.53125
Wilton	Arrival	0:04:20	8:37:30 AM	12490	32.73	50	0	149.57	4.25924
Wilton	Departure	0:02:30	8:40:00 AM	0	20.76		0	21.23	0.88502
Merritt 7	Arrival	0:05:13	8:45:13 AM	16585	36.16	50	0	149.67	4.27602
Merritt 7	Departure	0:02:30	8:47:43 AM	0	24.44		0	21.23	0.88502
South Norwalk	Arrival	0:11:41	8:59:23 AM	21299	20.73	42.33	0	130.15	7.24844
Run Total (With Dwells)		1:59:23		200365	19.07	50	0	149.67	78.4085
Run Total (Without Dwells)		1:41:53		200365	22.35	50	N.A.	149.67	72.21216

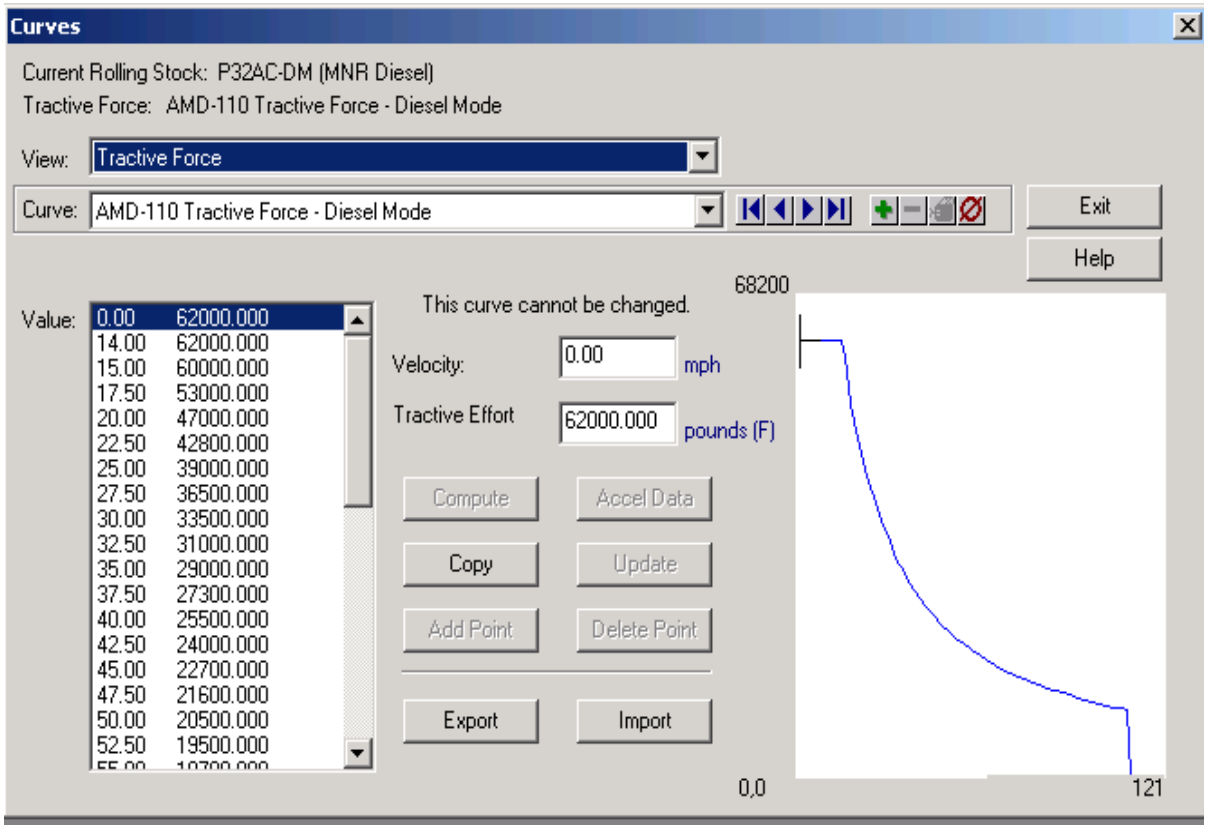
Base Run OB 15% Adhesion Coeff. New TE (Run C-1)

Station ID	Event State	Interval Time Hrs:Min:Sec	Elapsed Time Hrs:Min:Sec	Distance Feet	Average Spd. Mph	Max. Spd. Mph	Make Up Percent	Peak Power Gallons/hour	Energy Consumption Gallons
South Norwalk	Departure	0:00:00	7:00:00 AM	0			N.A.		0
Merritt 7	Arrival	0:10:55	7:10:55 AM	20789	21.64	40	0	169.79	9.33981
Merritt 7	Departure	0:02:30	7:13:25 AM	0	17.61		0	21.23	0.88502
Wilton	Arrival	0:04:51	7:18:16 AM	16585	38.9	50	0	169.75	8.40537
Wilton	Departure	0:02:30	7:20:46 AM	0	25.66		0	21.23	0.88502
Cannondale	Arrival	0:04:06	7:24:52 AM	12320	34.12	50	0	169.65	7.43085
Cannondale	Departure	0:01:30	7:26:22 AM	0	24.99		0	21.23	0.53125
Georgetown	Arrival	0:04:29	7:30:51 AM	15001	38.01	50	0	169.57	8.34302
Georgetown	Departure	0:00:00	7:30:51 AM	0	38.01		0	21.23	0.00059
Branchville	Arrival	0:01:44	7:32:35 AM	3354	22.09	40.99	0	169.67	2.65548
Branchville	Departure	0:02:30	7:35:05 AM	0	9.02		0	21.23	0.88502
Redding	Arrival	0:07:15	7:42:20 AM	22635	35.45	50	0	169.55	11.8817
Redding	Departure	0:01:30	7:43:50 AM	0	29.37		0	21.23	0.53125
Bethel	Arrival	0:06:27	7:50:17 AM	21725	38.29	50	0	169.88	7.26266
Bethel	Departure	0:02:30	7:52:47 AM	0	27.59		0	21.23	0.88502
Danbury	Arrival	0:05:48	7:58:35 AM	12174	23.84	50	0	169.69	6.02855
Danbury	Departure	0:01:30	8:00:05 AM	0	18.94		0	21.23	0.53125
North Danbury	Arrival	0:20:17	8:20:23 AM	17701	9.91	10.4	0	85.75	7.83005
North Danbury	Departure	0:01:30	8:21:53 AM	0	9.23		0	21.23	0.53125
Brookfield	Arrival	0:10:58	8:32:51 AM	23060	23.88	25	0	169.58	7.69838
Brookfield	Departure	0:01:30	8:34:21 AM	0	21.01		0	21.23	0.53125
New Milford	Arrival	0:18:52	8:53:13 AM	34571	20.82	25	0	169.8	8.01826
Run Total (With Dwells)		1:53:13		199915	20.07	50	0	169.88	91.09107
Run Total (Without Dwells)		1:35:43		199915	23.73	50	N.A.	169.88	84.89414

Base Run IB 15% Adhesion Coeff. New TE (C-2)

Station ID	Event State	Interval Time Hrs:Min:Sec	Elapsed Time Hrs:Min:Sec	Distance Feet	Average Spd. Mph	Max. Spd. Mph	Make Up Percent	Peak Power Gallons/hour	Energy Consumption Gallons
New Milford	Departure	0:00:00	7:00:00 AM	0			N.A.		0
Brookfield	Arrival	0:18:59	7:18:59 AM	34571	20.7	25	0	174.11	13.02329
Brookfield	Departure	0:01:30	7:20:29 AM	0	19.18		0	21.23	0.53125
North Danbury	Arrival	0:10:58	7:31:27 AM	23060	23.89	25	0	174.1	6.32725
North Danbury	Departure	0:01:30	7:32:57 AM	0	21.01		0	21.23	0.53125
Danbury	Arrival	0:20:07	7:53:04 AM	17556	9.92	11.19	0	90.23	11.01574
Danbury	Departure	0:01:30	7:54:34 AM	0	9.23		0	21.23	0.53125
Bethel	Arrival	0:06:00	8:00:33 AM	12344	23.39	50	0	181.94	4.97531
Bethel	Departure	0:02:30	8:03:03 AM	0	16.51		0	21.23	0.88502
Redding	Arrival	0:06:28	8:09:31 AM	21470	37.76	50	0	181.87	8.39679
Redding	Departure	0:01:30	8:11:01 AM	0	30.64		0	21.23	0.53125
Branchville	Arrival	0:07:02	8:18:03 AM	22720	36.73	50	0	182.02	8.19922
Branchville	Departure	0:02:30	8:20:33 AM	0	27.1		0	21.23	0.88502
Georgetown	Pass	0:01:16	8:21:49 AM	3505.09		50	N.A.		2.92125
Cannondale	Arrival	0:03:49	8:25:38 AM	14764.91	40.86	50	0	181.97	1.51311
Cannondale	Departure	0:01:30	8:27:08 AM	0	31.54		0	21.23	0.53125
Wilton	Arrival	0:03:57	8:31:05 AM	12490	35.9	50	0	181.97	4.45648
Wilton	Departure	0:02:30	8:33:35 AM	0	21.99		0	21.23	0.88502
Merritt 7	Arrival	0:04:42	8:38:17 AM	16585	40.06	50	0	181.95	4.27311
Merritt 7	Departure	0:02:30	8:40:47 AM	0	26.16		0	21.23	0.88502
South Norwalk	Arrival	0:11:18	8:52:05 AM	21299	21.43	43.2	0	181.73	7.39745
Run Total (With Dwells)		1:52:05		200365	20.32	50	0	182.02	78.69533
Run Total (Without Dwells)		1:34:35		200365	24.07	50	N.A.	182.02	72.49899

MNR Genesis Diesel TE Curve: Manufacturers Spec (1 of 3)



Station Dwell Times

Station	Station Dwell (seconds)	Engine Loading (seconds)	Total Dwell (seconds)
Danbury (Inbound Only)	0	30	30
Bethel	120	30	150
Redding	60	30	90
Branchville	120	30	150
Cannondale	60	30	90
Wilton	120	30	150
Merrit 7 (low level platform)	120	30	150
Merrit 7 (high level platform)	60	30	90

URS

MEETING MINUTES

RE: Danbury Branch Phase II Alternatives Analysis & EIS

DESCRIPTION: Baseline Train Performance Model

MEETING DATE: Monday Jan. 12, 2009, 11:00 AM

LOCATION: 347 Madison Ave.
New York, NY

ATTENDEES:

NAME	ORGANIZATION	EMAIL
Ed Lydecker	Metro-North	Lydecker@mnr.org
John Kesich	Metro-North	Kesich@mnr.org
David Chase	URS	David_Chase@urscorp.com
Dan Khan	URS – Washington Division	Dan.Khan@wgint.com

As part of the Danbury Branch Study, URS has prepared a baseline condition TPC model. Various runs were performed using the model and different assumptions discussed in our meeting last April. In particular, the simulations considered a base vehicle model for the diesel locomotive and the train consists along with underlying assumptions for adhesion coefficient, dwell time and passenger counts. A draft report of our work was presented and is attached.

Results of the discussions are:

- The preliminary TPC runs give a trip time up to 10 minutes over the schedule.
- MNR advised that URS should ignore the calculated curve speed element of the TPC program.
- There may be an issue with the tractive effort curve used by URS, and that was provided by MNR. The same curve is also included with Railsim Version 7 that URS is using for its TPS runs. MNR advised that URS should use the OEM curve and add 30 seconds to dwell time to account for the time lost in locomotive accelerating from zero speed. This will not be an issue when we do the model for electric equipment.
- Since there was some concern about the TE curve to be used, Ed Lydecker will check with SYSTRA and provide URS with the correct curve for the Genesis locomotives.
- There will now be four (4) baseline TPCs, two for each direction. For each direction there will 2 TPCs, one with a adhesion rate of 15%, considered as normal condition and a second with a 6% adhesion rate as a adverse condition as experienced in the fall with wet leaves on the rails. It is expected that when the electric equipment is modeled that there will be a significant improvement in the adverse weather condition as each axle on the whole consist will be powered.
- To develop a TPC for the through trip from New Milford to GCT, MNR will run their model between South Norwalk Station and GCT and provide the data to URS. URS will do the models between New Milford and South Norwalk and prepare the combined trip results. Dave Chase will identify the train Number(s) to be modeled.

- Ed Lydecker will confirm station dwell times to be used.
- The electric (EMU) vehicle tractive effort data to be used will be for the existing M2, 4, &6. MNR expects the new M8 cars to have similar characteristics. We will revisit this item when we start the alternate TPCs.
- The fuel consumption calculation appears to be reasonable based on MNRs average locomotive fuel usage of 2 Gallons per mile.

The following data on existing diesel hauled trains was requested by a subconsultant for the energy portion of the Danbury Study:

- What locomotive(s) and coaches are in use on the Danbury Branch (for each train)?
  The 3 through trains are 1 Genesis diesel electric/electric locomotive with 6 coaches. The shuttles are 1 BL20GH diesel electric locomotive with 3 coaches.
- Trip schedules for each train, including route segments it travels (if not entire), where do the through trains layover?
  Dave Chase will respond.
- For each train:
  Data on fuel consumption – either actual data on diesel consumption (per trip, 2-way trip, day, week) OR the manufacturer's spec for fuel consumption. Compare to calculated fuel consumption.
  MNRs average fuel consumption is 2 gallons per mile. URS will be calculating fuel consumption with the TPCs.
  How many seats on each run?
  100 seats is average per coach.

Submitted by: David Chase, URS 1-20-09 Date

Reviewed by: Stephen Gazillo, URS 1-20-09 Date

Cc: Attendees – By Email
Andrew H. Davis
J. Mark Foran
File: 10.02