Chapter 3
Existing Rail Corridor Inventory

This chapter summarizes the existing operations along the rail corridor. A discussion of the rail passenger service and freight in the corridor is followed by a discussion of the existing stations and associated parking and access. Finally the physical features of the line are presented, including track, the communication and signal system, grade crossings and bridges. Figures 3.1-1 and 3.1-2 show the study corridor between New Haven and Springfield, with Figure 3.1-3 showing the spur rail line to Bradley Airport.

3.1 Existing Passenger Services on the Line

The only existing rail passenger service on the New Haven to Springfield line is operated by the National Railroad Passenger Corporation (Amtrak). Amtrak operates eleven trains a day between New Haven and Springfield, serving eight stations on the line. The stations and associated mileposts that Amtrak serves are listed in Table 3.1-1. Amtrak passes through but does not serve several towns in Connecticut including Hamden, North Haven, New Britain, Newington, West Hartford, and Enfield, as well as Longmeadow, Massachusetts.

Table 3.1-1
New Haven – Springfield Line Current Stations

Station	Milepost	Daily Amtrak Trains
New Haven	0	11*
Wallingford	12.6	8
Meriden	18.6	9
Berlin	25.9	9
Hartford	36.6	11
Windsor	43.1	9
Windsor Locks	47.3	9
Springfield	61.9	11*

*Note-- Numbers of daily trains shown in New Haven and Springfield only relate to New Haven – Hartford – Springfield Amtrak Service and not other lines.
Source: www.amtrak.com

Study Area Corridor
Southern Section

New Haven - Hartford - Springfield
Commuter Rail Feasibility Study

0 0.5 1 Miles

Legend
- Secondary Roads
- Major Roads
- Highways
- Rail Line

Figure 3.1-1

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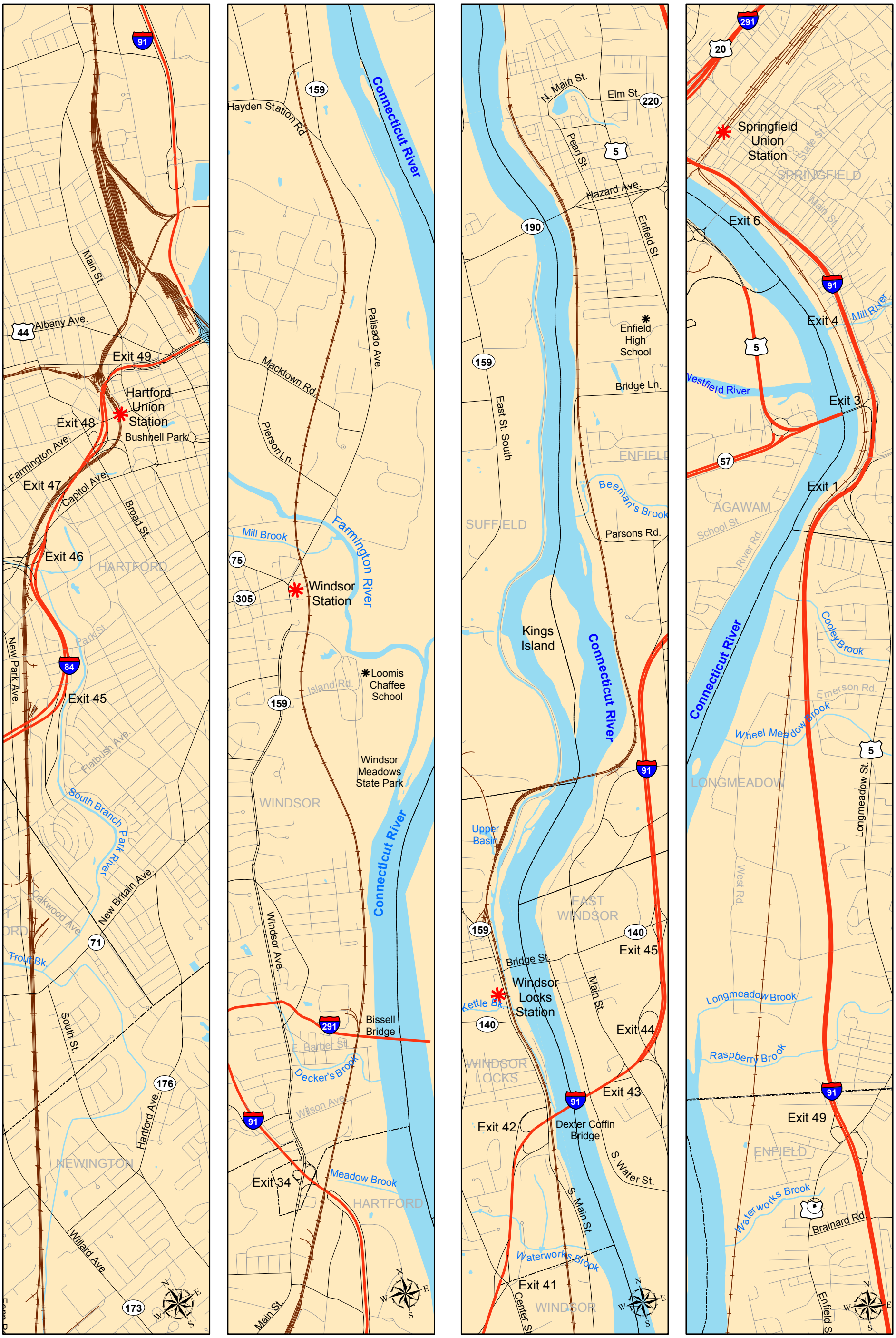


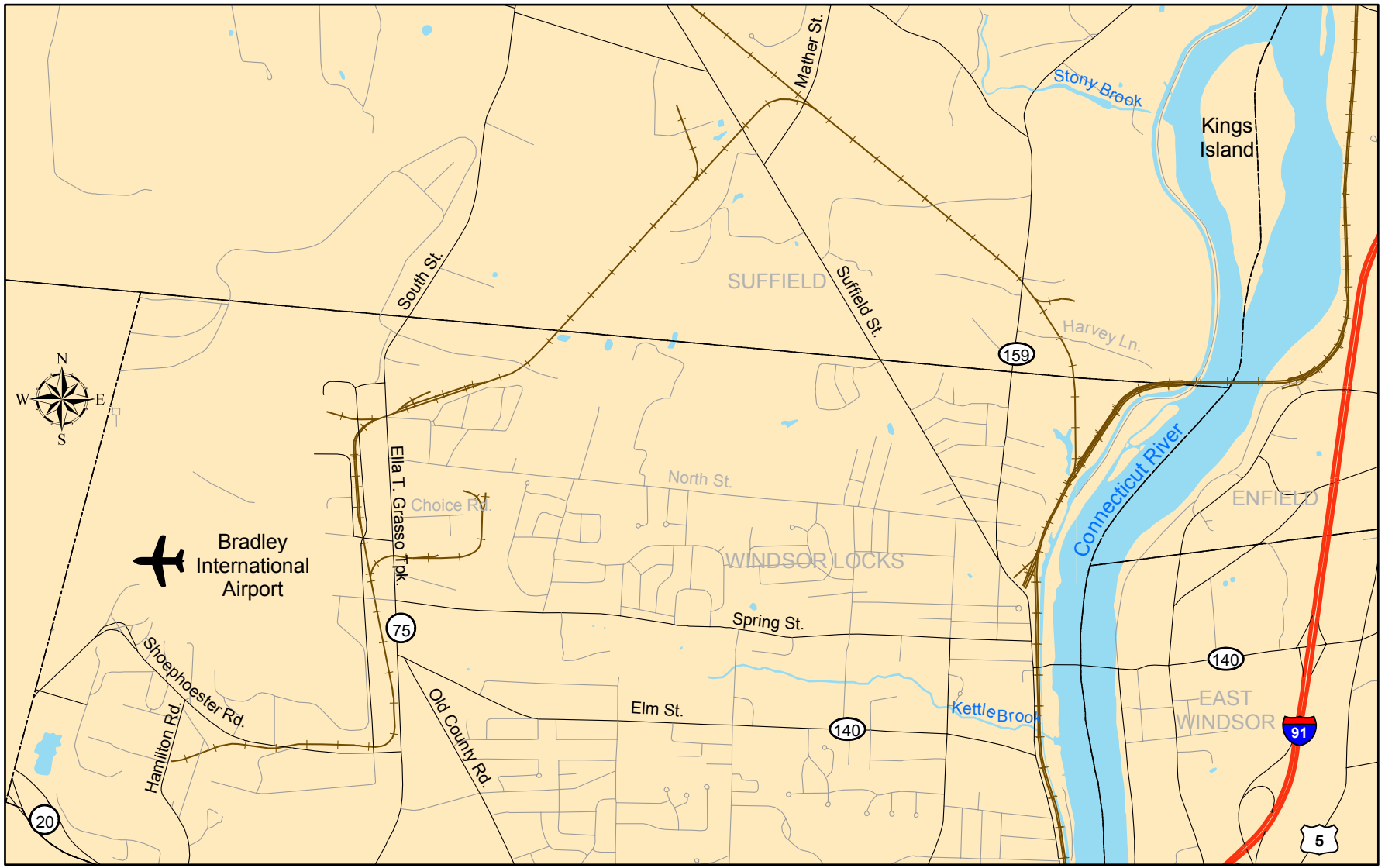
0 0.5 1 Miles

Study Area Corridor Northern Section

New Haven - Hartford - Springfield
Commuter Rail Feasibility Study

Legend
- Secondary Roads
- Major Roads
- Highways
- Rail Line

Figure 3.1-2



0 0.5 1 Miles

Legend

- Secondary Roads
- Major Roads
- Highways
- Rail Line

Study Area Corridor
Bradley Airport Spur

New Haven - Hartford - Springfield
Commuter Rail Feasibility Study

Figure 3.1-3

Amtrak currently provides five southbound weekday trips and six northbound weekday trips on the line. Some schedules are shuttle trains, running between Springfield and New Haven, where they connect with other Amtrak Northeast Corridor trains. Others operate through the corridor to Washington on the south. One round trip operates to and from St. Albans, Vermont, and one northbound through train continues to Boston via Worcester. The trains also permit connections at New Haven with Amtrak's Northeast Corridor (Washington to Boston) service, as well as Metro North service to New York, and Shore Line East local commuter service to New London. Departures are spread throughout the day, with trains typically operating at intervals of two to three hours. Springfield line services are designed as extensions of Amtrak's Northeast Corridor service, and are not scheduled to serve local commuter trips (home to work trips). Only trains 141 (arriving New Haven at 7:28 AM) and 142 (leaving New Haven at 5:25 PM) provide peak hour service that might attract daily commuters.

Table 3.1-2 shows the Amtrak services currently (January, 2003) operated on the Springfield line on weekdays. Saturday, Sunday, and Holiday schedules are slightly different and are not shown here.

Table 3.1-2
Weekday Amtrak Service between Springfield, Hartford, and New Haven*

Read Down *Read Up*

141	471	55	475	477		490	56	474	142	494	148
		Through from St. Albans					Through to St. Albans		Through to Boston		
6 00	9 00	**12 55**	**4 15**	**6 40**	Springfield	10 25	**2 20**	**3 30**	**6 50**	**8 40**	**9 55**
6 20	9 18	----	**4 33**	**6 58**	Windsor Locks	10 00	**----**	**3 05**	**6 26**	**8 15**	**9 30**
6 26	9 23	----	**4 38**	**7 03**	Windsor	9 55	**----**	**3 00**	**6 20**	**8 10**	**9 24**
6 38	9 34	**1 30**	**4 49**	**7 14**	Hartford	9 47	**1 44**	**2 52**	**6 11**	**8 02**	**9 16**
6 51	9 45	**1 46**	**5 00**	**7 25**	Berlin	9 34	**----**	**2 39**	**5 57**	**7 49**	**9 02**
7 01	9 53	**1 56**	**5 08**	**7 33**	Meriden	9 25	**----**	**2 30**	**5 48**	**7 40**	**8 52**
7 09	10 00	**----**	**5 15**	**7 41**	Wallingford	9 18	**----**	**2 23**	**5 39**	**7 33**	**8 44**
7 28	10 20	**2 23**	**5 35**	**8 00**	New Haven	9 05	**1 00**	**2 10**	**5 25**	**7 20**	**8 30**
Through to Washington	Connection to Washington	Through to Washington	Connection to Washington	Connection to Washington		Connection from Washington	Through from Washington	Connection from Washington	Through from Washington	Connection from Washington	Through from Washington

*Light face indicates AM; Bold face indicates PM
Source: Amtrak

The Amtrak fare structure is based on longer distance travel; therefore, short trips within the corridor can be expensive. As an example, Amtrak charges $17 for a one way ticket for the 4.2-mile trip between Windsor and Windsor Locks. In comparison, Amtrak

charges $29 for the corridor-long 62-mile trip between New Haven and Springfield. Table 3.1-3 provides a complete listing of the Amtrak fares within the corridor.

Table 3.1-3
Amtrak One-Way Fare Table for Intra-Corridor Travel (no discounts)

Station	Milepost	New Haven	Walling-ford	Meri-den	Berlin	Hart-ford	Wind-sor	Windsor Locks	Spring-field
New Haven	0	NA							
Wallingford	12.6	$19.00	NA						
Meriden	18.6	$21.00	$17.00	NA					
Berlin	25.9	$22.00	$18.00	$17.00	NA				
Hartford	36.6	$25.00	$20.00	$19.00	$18.00	NA			
Windsor	43.1	$26.00	$20.00	$20.00	$19.00	$17.00	NA		
Windsor Locks	47.3	$27.00	$21.00	$20.00	$20.00	$18.00	$17.00	NA	
Springfield	61.9	$29.00	$24.00	$24.00	$21.00	$20.00	$19.00	$18.00	NA

Source: www.Amtrak.com for travel on November 20, 2002.

Ridership on the Amtrak service within the corridor is collected in terms of boardings and alightings at each station. New Haven was the most frequently used station because it is directly served by many more trains operating on the Shoreline including the new Acela Express services. As shown in Table 3.1-4, the other seven stations reported 138,141 passenger boardings in Amtrak's 2002 fiscal year (October 2001 through September 2002). This yields an average of 378 boardings on the line north of New Haven on a "typical" day.

Table 3.1-4
Detailed Amtrak Ridership, FY 2002 (October 2001 – September 2002)

Station	Milepost	Boardings	Alightings	Annual Total	Average Daily Total	Percent of Total
New Haven*	0	205,385	205,728	411,113	1,126	59%
Wallingford	12.6	1,545	2,120	3,665	10	1%
Meriden	18.6	5,304	6,116	11,420	31	2%
Berlin	25.9	7,550	7,766	15,316	42	2%
Hartford	36.6	62,044	62,313	124,357	341	18%
Windsor	43.1	2,929	3,553	6,482	18	1%
Windsor Locks	47.3	4,856	5,536	10,392	28	2%
Springfield	61.9	53,913	54,888	108,801	298	16%
	Total	**343,526**	**348,020**	**691,546**	**1,895**	**100%**

*New Haven boardings and alightings include data from the Northeast Corridor.
Source: Amtrak's Fiscal Year 2002 Ridership Data for the Springfield Line

Amtrak ticket sales data were obtained showing the destination station for tickets sold at Springfield, Hartford, Berlin, and Meriden for the first six months of 2002. There are no ticket sales at Windsor, Windsor Locks, or Wallingford stations. These stations are

unstaffed and do not have Quick-Trak ticketing machines. The data were useful for gaining a general understanding of current travel patterns between communities on the Springfield line and the rest of the Amtrak system. The data do not reflect total travel between stations, because tickets may be purchased at locations other than the trip origin or trip destination.

Recent data showing total Amtrak passenger volumes at Connecticut stations are shown in Table 3.1-5. These represent total passengers boarding or alighting at each station.

Table 3.1-5
Change in Annual Amtrak Station Passenger Volumes at Connecticut Stations, Fiscal Years 1998 – 2000*

Station	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
New Haven**	255,935	251,130	289,765	370,496	411,113
Wallingford	9,601	8,331	7,885	6,002	3,665
Meriden	27,331	25,066	20,039	16,353	11,420
Berlin	28,569	28,246	25,109	20,326	15,316
Hartford	151,849	151,249	147,043	142,276	124,357
Windsor	8,174	7,994	7,980	7,670	6,482
Windsor Locks	13,747	13,390	13,686	10,704	10,392

*Fiscal Years follow Federal Fiscal Years, i.e., FY 2002 ran from October 2001 to September 2002
**Volumes for New Haven station includes all Amtrak Northeast Corridor Riders
Source: Amtrak Fiscal Year Ridership Data

The current Amtrak service is too limited to draw conclusions about potential commuter ridership within the corridor. The ticket sales data indicate that some local travel occurs between stations on the Springfield line, but the overwhelming travel pattern served by the weekday trains is travel to New York City. Philadelphia, Washington, and New Haven also attract rail riders, but in decreasing numbers. Table 3.1-6 below shows the 20 top destinations for tickets purchased at the four stations.

Table 3.1-6
Top Destinations of Springfield Line Riders
(Based on Ticket Sales Data, January – June 2002)

From Berlin to:		From Hartford to:		From Meriden to:		From Springfield to:	
New York	1223	New York	9414	New York	452	New York	7623
Philadelphia	279	Philadelphia	2283	Washington	130	Philadelphia	1435
New Haven	230	New Haven	1910	Philadelphia	124	Washington	1211
Washington	193	Washington	1622	New Haven	123	New Haven	1041
Metropark	57	Stamford	594	Newark	41	Chicago	685
Windsor Locks	46	Newark	537	Newport News	38	Newark	515
Trenton	45	Metropark	388	Hartford	33	Trenton	317
Springfield	44	Trenton	375	Orlando	31	Boston	307
Chicago	36	Springfield	368	Trenton	28	Stamford	275
Wilmington	36	Wilmington	282	Wilmington	27	Metropark	274
Hartford	31	Chicago	267	Chicago	26	Wilmington	218
Windsor	29	Baltimore	234	Baltimore	20	Baltimore	187
Orlando	25	Boston South	220	Springfield	19	St. Albans	155
Newark	24	New Rochelle	203	New Carrolton	19	New Rochelle	151
Baltimore	18	Bridgeport	197	Metropark	16	Windsor Locks	147
BWI Airport	18	St. Albans	164	BWI Airport	15	Amherst	145
Boston	16	Windsor	161	Wallingford	15	Orlando	141
New Carrolton	14	Orlando	152	Stamford	10	Toledo	127
Montreal	13	Windsor Locks	108	Buffalo	10	Albany	126
Richmond	13	New Carrolton	107	Boston	8	Bridgeport	110

* Note-- Excludes tickets purchased at a station with the destination being the same station. For example, 1,141 tickets were sold at Berlin with a destination of Berlin. These represent sales of return tickets from another location to Berlin.

3.2 Existing Freight Services on the Line

There are four freight carriers using Amtrak's Springfield line between Springfield (Milepost 62 and New Haven Union Station (Milepost 0.0). They include Connecticut Southern (CSO), Boston and Maine Corporation (B&M), CSX Transportation (CSXT), and Providence and Worcester Railroad.

Connecticut Southern - The Connecticut Southern Railroad (CSO) is a short-line operator running trains on the line between Springfield and CSX Transportation's Cedar Hill Yard (Milepost 7). Part of the RailAmerica Inc. short-line family of railroads, the carrier is the major freight operator on the line. CSO hauls its own traffic and traffic for CSX Transportation (see below) between Springfield and Cedar Hill. CSO management reported the following train movements.

CSO has four trains on the line Monday through Saturday, with occasional use on Sunday. These trains are:

- ***CSO-1,*** southbound, departing Springfield at about 6:00 AM, working toward Cedar Hill. The train returns to Springfield in the afternoon.
- ***CSO-2,*** southbound, departing Hartford at about 7:00 PM working toward Wallingford. The train returns to Hartford at 4:30 AM the next day.
- ***CSO-3,*** northbound, departing Hartford at about 7:00 AM, working north to Enfield. The train returns to Hartford between 2:00 and 6:00 PM.
- ***CSO-4,*** northbound, departing about 5:00 PM, working between Hartford and Enfield. The train returns to Hartford in the early morning of the next day.

Traffic on the CSO is growing. When Conrail turned over operations on the line to CSO, Conrail's activity on the line was 20,000 carloads a year, with volumes declining. According to CSO, Conrail was not actively developing traffic on the line. The lowest traffic volume was in 1996, when there were only 16,000 carloads. Presently the annual total is about 18,000 carloads per year, and rising, with customers returning. By 2007, CSO forecasts that there will be between 22,000 and 23,000 carloads per year, if the construction debris haulage market remains stable.

Growth commodities include trash, hazmat and "dirty dirt", i.e. the construction debris market. CSO indicated that CSXT has targeted removing trash, or solid municipal waste, as a market that may grow faster than the economy. Markets that will grow with the economy include chemicals (hauled in tank cars), lumber (box cars and flat cars), plastics (hopper cars), paper and pulp (box cars), steel (gondolas), and scrap paper (box cars).

CSO management reported the following concerns over a new commuter rail service on the Springfield line:

- Commuter rail service would restrict the time windows available for freight operations, making it more difficult to run freight trains. Freight transit time would increase.
- Sidings are not in strategic locations to facilitate the passing of freight and passenger trains.
- Sidings are not long enough. The typical train length for the CSO-1 service is 60 to 100 cars, or about 4,000 to 6,000 feet long. According to CSO, sidings need to be 8,000 feet long. (If the route were double-tracked, these concerns would no longer exist.)
- Traffic on the Suffield Branch (the potential rail link to Bradley International Airport from Windsor Locks) is increasing. Customers include wood pulp and special paper shippers and aviation-related shippers. There is also potential for construction debris removal.
- A new commuter rail service would require new maintenance windows (during which time trains cannot operate), which would hinder freight movement on the line.
- The CSO-1 service needs to return to Springfield before 2:00 PM in order to avoid waiting for CSXT and Amtrak operations to clear the CSXT Albany-Boston line before the train can enter CSXT's West Springfield Yard (the train's origin and destination).

Boston & Maine Corporation - Boston & Maine is a short-line railroad operating on the Springfield line between Springfield and Berlin (Milepost 26) and a switch to Waterbury. B&M is part of the Guilford Rail System. Guilford management declined to comment on either its train volumes, traffic, or concerns over a new commute rail service. According to Amtrak dispatching records, B&M has two trains operating on the line. These are:

- ***PLED***, northbound, operating twice a week with no set schedule between Berlin and Springfield.
- ***EDPL***, southbound, operating twice a week with no set schedule between Springfield and Berlin.

Reportedly, B&M has operating rights as far south as the Cedar Hill Yard (Milepost 7).

CSX Transportation - CSXT is one of the largest rail systems (a "Class 1" railroad) in the United States. It has operating rights on the entire Springfield Line. However, it relies on CSO to haul its traffic between Springfield and Cedar Hill. According to Amtrak dispatching records, CSXT operates two trains serving shippers on the south end of the line between Cedar Hill and Mill River (Milepost 1.5) Monday through Friday. These are ***B-748*** and ***B-747***, a mid-day train.

CSXT trains can enter Cedar Hill Yard from the south via Mill River. CSXT has operating rights on the New Haven Line (Metro North). CSXT trains exiting the New Haven Line northbound can use the Springfield line between New Haven Union Station and Mill River. At Mill River, CSXT trains can enter the southern end of Cedar Hill Yard.

Providence and Worcester Railroad - The Providence and Worcester Railroad (PWRR) is a short-line railroad operating several lines in Connecticut and Massachusetts. One of these lines enters the CSXT Cedar Hill Yard from the north. PWRR has rights to run on CSXT between Cedar Hill and Mill River, on the Springfield Line between Mill River and New Haven Union Station, and on the New Haven Line between New Haven Union Station and the Devon neighborhood in Milford, where it runs north to Waterbury.

According to PWRR management, five to six days a week there are typically two southbound (or westbound) trains leaving Cedar Hill between 7:00 and 8:00 PM headed to the New Haven Line and ultimately to Waterbury. One returns at 5:00 AM the next day and the other returns at 11:00 AM.

3.3 Station Features, Platform Inventory and Condition

On November 20 and 21, 2002, the project team conducted site observations of nine stations located between Union Station, New Haven, Connecticut and Union Station, Springfield, Massachusetts. Each station's existing conditions were documented utilizing a standard checklist and digital photography. The site observation focused primarily on the platforms at the major stations (Union Station – New Haven, State Street Station –

New Haven, Union Station – Hartford and Union Station – Springfield) and on both the station and platform at the other corridor stations (Wallingford, Meriden, Berlin, Windsor and Windsor Locks).

New Haven Union Station – New Haven is a major station served by eight tracks and four elevated concrete platforms. Each of the platforms has a canopy covering, pole lighting and passenger amenities such as vending machines, emergency phone, pay phone, garbage cans and recycling cans. The platforms are accessible by both stairs and elevators from the pedestrian tunnel located below the tracks that connects directly to Union Station. The platform is in excellent condition and the overall appearance is excellent. Figure 3.3-1 shows four views of the station.

The station building has a newspaper stand, dry cleaning drop-off service, food service including Dunkin Donuts and Subway, Amtrak, Metro North and Shore Line East ticket counters, restrooms, and benches and waiting areas. In addition, the building houses the Connecticut Department of Transportation Office of Rail and other office space. A major parking facility is directly adjacent to Union Station with another across the street.

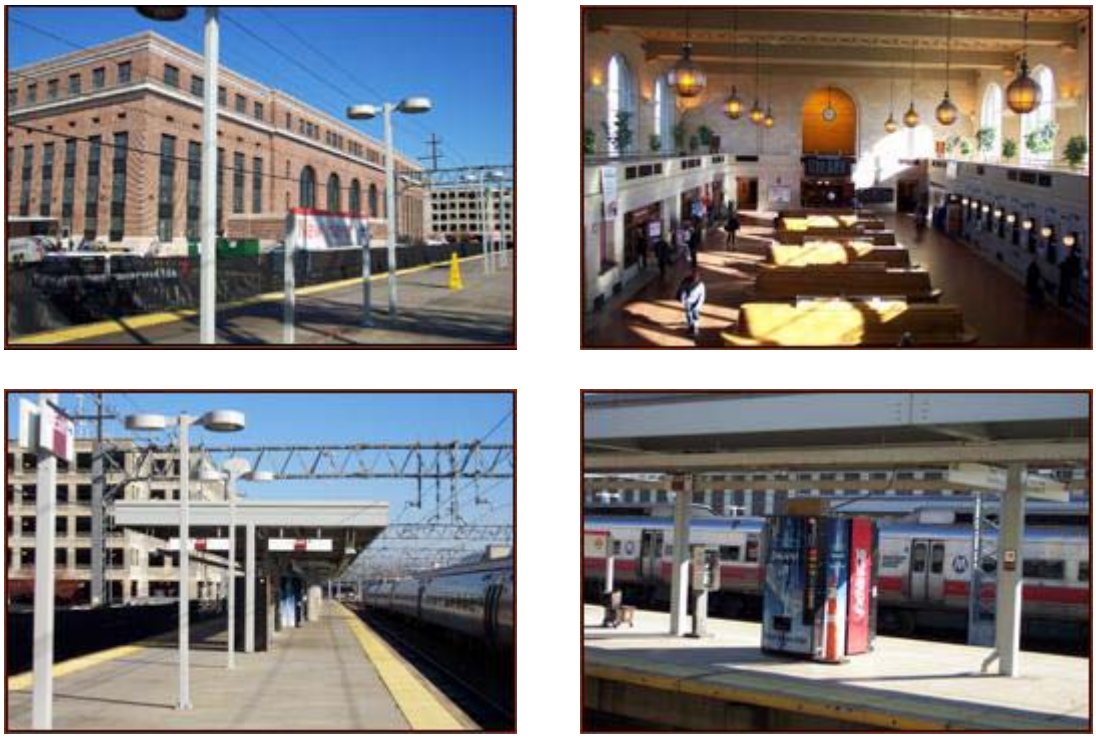


Figure 3.3-1
Four Views of New Haven Union Station

State Street Station – State Street - New Haven is a minor station that opened in June, 2002. Two tracks and one elevated concrete platform serve the station. The platform has a canopy covering, lighting and passenger amenities such as bench seating, emergency phone, pay phone and garbage cans. The platform is accessible by both stairs and an elevator from the pedestrian bridge located above the tracks that connects directly to State Street. The platform is in excellent condition and the overall appearance is clean, colorful and inviting to passengers. Figure 3.3-2 shows views of the new State Street Station.

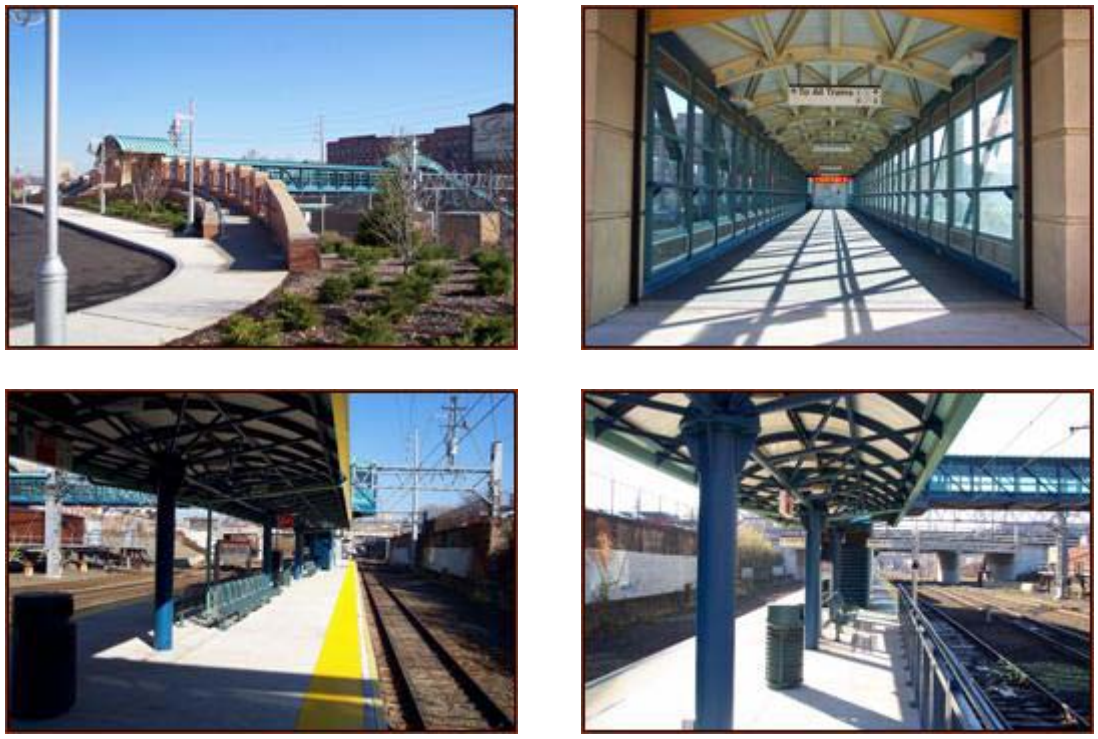


Figure 3.3-2
Four Views of the State Street Station

Wallingford Station is a minor station located at an old railroad station. One track and an at-grade bituminous concrete platform serve the station. Passenger amenities on the platform include bench seating and an emergency phone. The station itself is situated between two roads and parking on-site is nonexistent. Parking is available in a commercial parking lot located south of the station and access to the platform requires individuals to cross a street at the railroad crossing gates. The building, which houses town offices, contains a small waiting area with chairs, tables and soda vending machine. The lobby area can be used only during building business hours. Public restrooms are not available. Figure 3.3-3 shows two views of the Wallingford Station

Figure 3.3-3
Two Views of the Wallingford Station

Meriden Station is a minor station served by one track and an at-grade concrete platform. The platform has a canopy covering, lighting, emergency phone and is in excellent condition. The brick station building offers a ticket office, fixed seating, public restrooms, vending machines, pay phone and the appearance and condition is fair. Figure 3.3-4 shows four views of the Meriden Station.

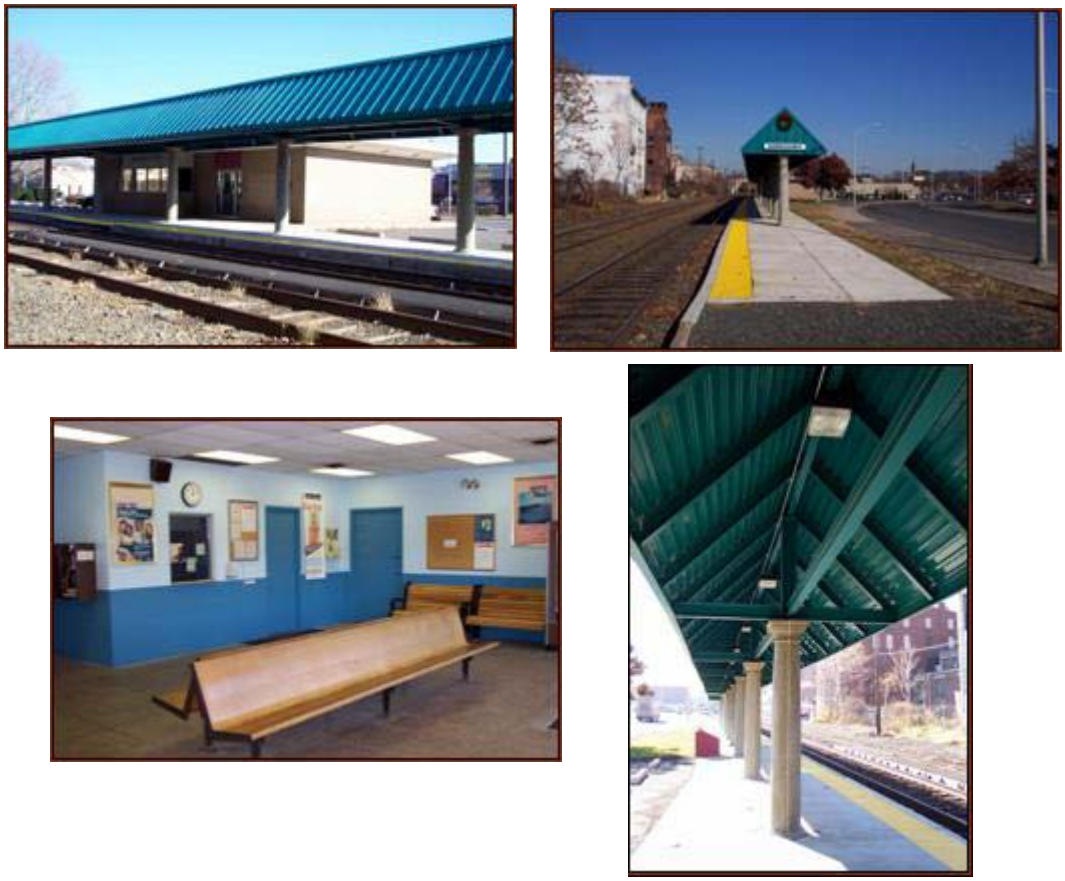


Figure 3.3-4
Four Views of Meriden Station

Berlin Station is a minor station located at an old railroad station served by one track and an at-grade bituminous concrete platform. The platform has an emergency phone, pay phones, manual wheelchair lift and is in fair condition. The station contains a ticket office, fixed seating and public restrooms. The station interior does not meet accessibility standards. The overall condition of the station is fair on the outside and poor on the inside, and the overall appearance of the station is good on the outside and fair on the inside. Figure 3.3-5 shows the Berlin Station.

Figure 3.3-5
Four Views of the Berlin Station

Hartford Union Station is a major station served by one track and one at-grade concrete and wood platform. The platform, which is currently under construction and is being renovated, has a canopy covering, lighting and passenger amenities such as fixed seating and emergency phone. The platform is accessible by both stairs and an elevator from the waiting area located below the tracks. The renovated concrete platform is in excellent condition, the existing wood platform is in fair condition and the overall appearance is fair. Since the platform is a low-level platform (train passengers have to climb steps on the train to enter), a manual wheelchair lift, operated by Amtrak attendants, is available to assist wheelchair users accessing the train.

The station building contains Amtrak and intercity bus operator ticket offices, restrooms, payphones, vending machines, a waiting area with benches, and office space. Figure 3.3-6 shows four views of Union Station in Hartford.

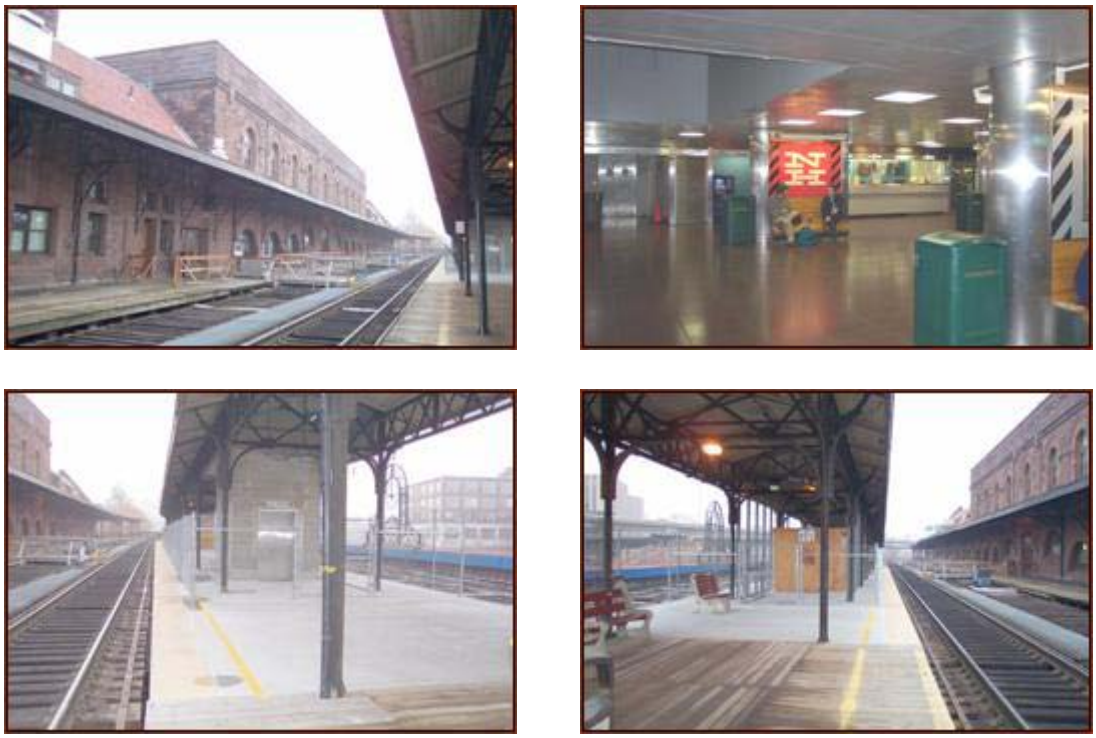


Figure 3.3-6
Four Views of Hartford Union Station

Windsor Station, is a minor station located in the historic area of town. It is served by one track and an at-grade brick platform. The platform has an emergency phone, pay phones, bench seating and is in good condition. The station contains private offices, a small waiting area and public restrooms. The overall appearance is excellent. Figure 3.3-7 shows four views of the exterior of Windsor Station.

Figure 3.3-7
Four Views of Windsor Station

Windsor Locks is a minor station that is served by one track and two elevated platforms. The platform reviewed is located north of the current wooden platform and is under construction (approximately 80% complete). The concrete platform is accessible by both stairs and a ramp, however the ramp is under construction. (The wooden platform is slated to be removed upon completion of the concrete platform). A covered Plexiglas shelter, pay phone and emergency phone is planned for the platform. The wooden platform, which is in poor condition, was not reviewed. Figure 3.3-8 shows two views of the new platform under construction.

Figure 3.3-8
Two Views of Windsor Locks Station

Springfield Union Station is a major station served by ten tracks and four at-grade bituminous concrete platforms. Each of the platforms has a canopy covering, lighting and emergency phone. The platforms are accessible by both stairs and an elevator from the street to the station. The platform condition and overall appearance is fair.

The current station building contains an Amtrak ticket counter, restrooms, payphones, vending machines, and a waiting area with benches. A renovation of the old former station building is currently taking place and is intended for use as the future station, along with additional commercial and office redevelopment.

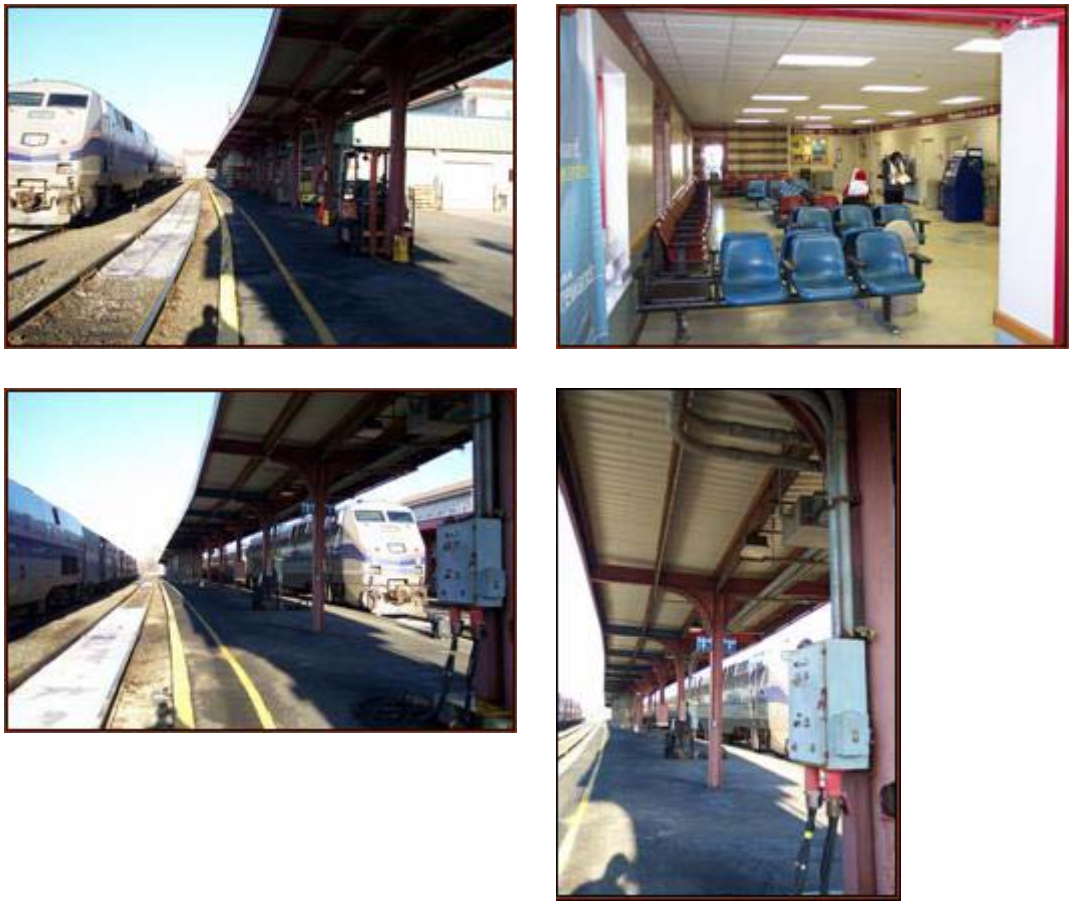


Figure 3.3-9
Four Views of Springfield Union Station

3.4 Station Parking and Access for Cars

The existing stations within the study area corridor are served by parking facilities in use by Amtrak passengers, other transit passengers and park and ride users. Table 3.4-1 provides the existing number of parking spaces and usage rates.

Table 3.4-1
Station Parking Availability and Use

Station	Parking Spaces	Average 10-Year Use	Highest Use in 10 years	Available spaces at highest use
New Haven Union Station	1153[1]	N/A[2]	N/A[2]	0[3]
New Haven State Street	0[4]	N/A[4]	N/A[4]	N/A[4]
Wallingford	96	25	65 (1993)	31
Meriden	16	7	16 (1993)	0
Berlin	60	28	43 (1998)	17
Hartford Union Station	197	81	125 (1998)	72
Windsor	86	8	16 (2001)	70
Windsor Locks	100	17	23 (1996)	77
Springfield Union Station	0[5]	N/A	N/A	N/A

[1]This figure only includes the New Haven Union Station parking structure and adjoining surface parking lot. It does not include a private parking structure (unknown number of spaces) across Union Avenue, nor does it include 600 available spaces at the Temple Street Garage, a quarter-mile away, which is served by a free bus shuttle. An additional parking structure is planned at New Haven Union Station.
[2]This figure is not available for New Haven Union Station because the 10-year data available did not break down availability at Union Station as listed above in footnote 1.
[3]Current utilization for year 2003, using assumptions in footnote 1.
[4]There are 300 private parking spaces in downtown surface lots near the State Street station that are not exclusively dedicated for station use. The State Street Station opened for operation in June, 2002.
[5]There is no dedicated parking available at this station at this time, although on-street parking is available, and a total of 3,170 spaces in structures, surface lots, and on-street were inventoried within a few blocks of the station in 1999 . After renovation, the station is planned to have 1,100 new spaces available.
Sources: ConnDOT Parking Survey, Union Station [Springfield] Draft Environmental Impact Report/Environmental Assessment (Feb. 2000), PVTA web site

Significant parking is available at the three Union Stations. Most of the parking at these stations is filled, however some parking is typically available. As has been noted in other studies, parking is often difficult to find at New Haven Union Station, however a free shuttle has recently been put into service to allow parking at other area facilities when parking at the station is full. In addition, Hartford Union Station and Springfield Union Station have nearby privately-owned parking facilities that are within walking distance of the stations.

In addition to parking at the train stations, there are also public Park and Ride lots provided for the Interstate 91 corridor, which might serve many of the same potential travelers as a New Haven – Hartford – Springfield commuter rail facility. Table 3.4-2 summarizes the available Park and Ride lots along I-91. Note that the Windsor Locks Park and Ride at Exit 42 has also been counted above as a station parking lot.

Table 3.4-2
I-91 Park and Ride Availability and Use

Town	I-91 Exit	Description	Parking Spaces	Average 10-Year Use	Highest Use In 10 Years	Available Spaces At Highest Use
North Haven	10	Rt. 5 @ Devine St.	103	49	70	33
North Haven	10	Rt. 40 @ Devine St.	109	87	112	-3
Wallingford	13	Wharton Brook	79	33	56	23
Wallingford	15	I-91 At Rt. 68	105	50	71	34
Meriden	17	Bee St. north of E. Main St.	72	35	54	18
Middletown	20	Country Club Rd.	50	30	43	7
Cromwell	21	I-91 @ Rt. 372	70	66	78	-8
Windsor	35	I-91 @ Rt. 218	208	14	25	183
Windsor	37	I-91 @ Rt. 305	49	22	32	17
Windsor	38	I-91 @ Rt. 75	219	20	45	174
Windsor	39	Kennedy Rd/Archer Rd.	88	6	45	43
Windsor Locks	42	I-91 @ Rt. 159	342	140	167	175
Windsor Locks	42	Rt. 159 @ Railroad Station[1]	100	17	23	77
Enfield	47	Rt. 190 @ Enfield Commons	400	251	335	65

[1]Totals for this lot are also included in Table 3.4-1 above.

3.5 Station Access for Buses and Existing Bus Connections

A number of communities along the study corridor contain existing, active passenger stations that are served by Shore Line East, Metro North, or Amtrak. They are as follows:

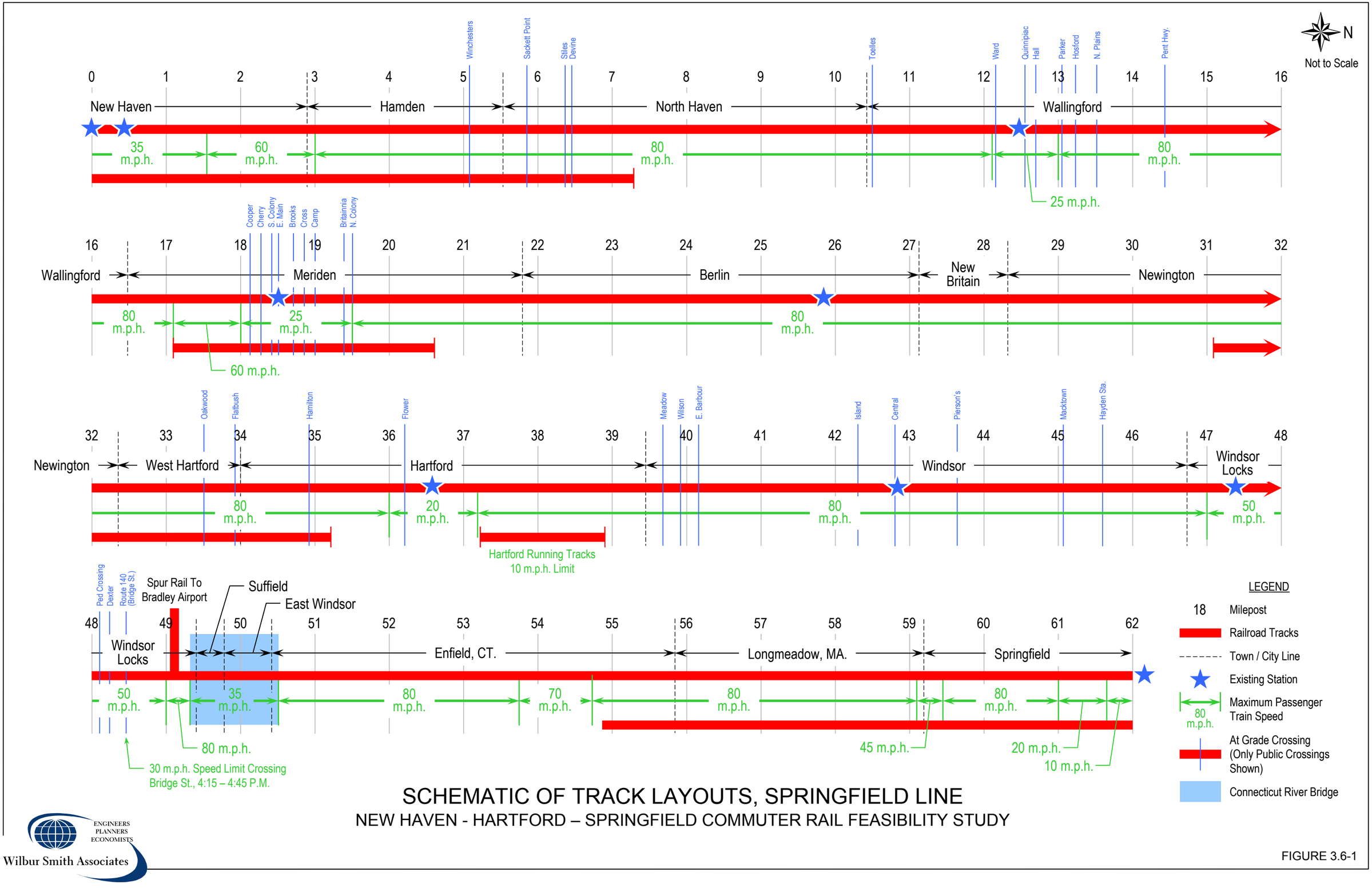
- New Haven Union Station (Amtrak, Shore Line East, Metro North)
- New Haven State Street Station (Shore Line East, Metro North)
- Wallingford (Amtrak)
- Meriden (Amtrak)
- Berlin (Amtrak)
- Hartford Union Station (Amtrak)
- Windsor (Amtrak)
- Windsor Locks (Amtrak)
- Springfield Union Station (Amtrak)

In addition, several additional station locations may be considered for this project.

Sections 4.3 (intercity bus) and 4.4 (local bus transit) provide details regarding existing bus services in the region, and the interfaces offered between these bus services and the existing rail operations.

3.6 Existing Track Evaluation

Two segments of track were reviewed as part of this study, the New England Subdivision Springfield line and the Suffield Industrial track. Figure 3.6-1 provides a schematic of



SCHEMATIC OF TRACK LAYOUTS, SPRINGFIELD LINE

NEW HAVEN - HARTFORD – SPRINGFIELD COMMUTER RAIL FEASIBILITY STUDY

ENGINEERS
PLANNERS
ECONOMISTS
Wilbur Smith Associates

FIGURE 3.6-1

the track layout for the Springfield Line. The reader also can refer back to Figures 3.1-1 through 3.1-3, which showed the study area tracks. Finally, Technical Appendix A (published separately) shows the formal Amtrak track charts for the Springfield Line.

New England Subdivision Springfield Line

This trackage is owned and operated by the National Railroad Passenger Corporation (Amtrak). The segment is described as the Springfield Line of the New England Division. It is primarily a single-track system that starts at New Haven, Connecticut, milepost 0.00 and extends to Springfield, Massachusetts, milepost 62.00. It is operated at a maximum speed of 80 miles per hour (though there are speed restrictions in specific locations as described below). It is therefore maintained as Class IV trackage as defined by the Federal Railroad Administration (FRA) Track Safety Standards. This was at one time a double-track railroad but has since been rationalized for centralized traffic control. Train dispatching is handled out of Boston, Massachusetts.

As is illustrated in Figure 3.6-1 the corridor contains 23.7 miles of double track and 38.2 miles of single track. Double track is available:

- Through New Haven into North Haven (7.2 mi)
- Most of Meriden (3.5 mi)
- A small segment in Newington and West Hartford (2.3 mi, not including Parkville industrial track)
- Windsor to Windsor Locks stations (3.6 mi)
- Enfield Station area into Springfield (7.1 mi)

There are 54 at-grade Crossings (see section 3.10).

The track structure is predominately 119 LB RE continuous welded rail on wood ties fastened by two cut spikes. Double shoulder plates are secured with two spikes. The track is anchored in accordance with standard plans.

In the time since the second track was removed in various portions of the corridor, there have been some new facilities constructed within the second track envelope. Those constraints will be itemized in subsequent phases of this study.

An inspection of the line was made on January 6, 2003. As of that date there are two temporary speed restrictions on the line. The first restriction is a 60 mph limit located at milepost 7.1 on track #1. This order has been in effect for several years because of bridge conditions. The second temporary speed restriction is 30 mph located at milepost 43.08 on track #2. This order has also been in effect for several years because of bridge conditions.

There are a number of permanent speed restrictions that are related to signal design, bridge design or track geometry. There appear to be several restrictions placed at the request of local communities. Speed restrictions may also have been instituted because of a high concentration of at-grade crossings in a short distance, or because other

geometric or structural limitations (curves or bridge loadings) require that trains maintain a slower speed through specific segments. Areas with speed restrictions are pictured in Figure 3.6-1 and include:

- New Haven (35 mph)
- Wallingford (25 mph)
- Meriden (25 mph)
- Hartford (20 mph)
- Windsor Locks (50, 30 mph)
- Connecticut River Bridge (35 mph)
- Springfield (20, 10 mph)

Ride quality over main line switches and road crossing is generally fair to poor.

Rail condition is very good as is the general condition of track ties. Ballast sections are full and comply with standards.

There are no significant vegetation concerns relative to the track structure.

The overall ride quality of this line segment is best described as good. There are, however, concerns regarding line and surface conditions at numerous road crossings and switches. In addition, there are a number of bridge approaches with line and surface defects.

Suffield Industrial Track

The Suffield Industrial Track (spur line), shown in Figure 3.1-3, was visited on January 6, 2003. This track originates at milepost 49.0 on the Springfield line and continues for about 8 miles through the Suffield Industrial Area, the Turnpike Industrial Park, Bradley and International Airport to Crown Industrial Park. The spur crosses and recrosses Route 75 to reach Crown Industrial Park, the end of the line.

Connecticut Southern (CSO) operates on the line at least three days a week. The CSO Train Number 4, a local (a "local" is a train that picks up and delivers cars at and to shippers located along lines between yards; locals have the lowest priority of trains on a line) works the track. Shippers are located all along the spur. Shippers on the line generate between 400 and 500 carloads a year. CSO anticipates that the line's traffic will increase.

CSO maintains the track for a maximum 10 mph operation (excepted track). The industrial track is actually part of the Suffield Branch, which extends beyond the spur (switch near Mather Street) to Suffield. However, that track is presently out of service due to a trestle that is in need of repairs. CSO owns the Suffield Branch, and leases about 2 miles of the industrial track near the airport from the State of Connecticut.

The line is non-signaled. Most grade crossings are equipped with passive warning devices (crossbuck signs). The track is constructed with bolted rail on wood ties.

There has been no production program work performed on this line for many years. Accordingly, tie condition is marginal, switches are in poor condition and grade crossing surfaces are low and rough. Vegetation growth is excessive and drainage conditions are poor.

The Suffield Industrial Track would require a major capital investment to achieve FRA Class IV condition, having a maximum allowable operating speed for passenger trains of 80 miles per hour.

3.7 Existing Communications and Signal Systems Evaluation

Amtrak's 62-mile Springfield Line operationally begins in New Haven at Mill River Interlocking, railroad Mile Post 1.5, and continues north to Springfield, MA, to milepost 61.7. Mill River Interlocking is a key communications and signal control point location that comprises the physical junction of the Springfield Line which operates North / South and the Amtrak-owned Shore Line portion of the Northeast Corridor that operates East / West from New Haven to Boston, MA. At Mill River Interlocking, trains leaving New Haven bound for points on the Springfield Line are diverted north and trains bound for points on the Shore Line are diverted east. The operational end of the Springfield Line is at the north limits of "Spring" Interlocking, milepost 61.7, where it then connects to the CSX-owned Boston and Albany Main Line at Springfield Station.

Unlike the Northeast Corridor from New Haven to Boston and from New Haven to Washington, D.C., the Springfield Line is not electrified through an overhead catenary system. Originally a two-track "main line," the Springfield Line is now a single-track line with remote controlled passing sidings that allow trains to safely pass each other in different directions, or for one train to pass another traveling in the same direction.

Primary Springfield Line Communications & Signal system elements include:

- Cab Signal System (CSS) and Automatic Block Signal (ABS) train control system with 10 controlled passing sidings; bi-directional or "261" signaling to accommodate train movements in either direction; Springfield Line train dispatchers are located in Amtrak's Centralized Traffic and Electrification Control (CETC) facility in South Station, Boston, MA.

- 36 Grade Crossings equipped with active warning devices

- 10 Grade Crossings without active warning devices

- 6 radio repeater sites for train dispatching, maintenance-of-way, and Amtrak Police use; local passenger station services radio use

- 2 local telephone system exchanges (New Haven and Hartford); leased telephone lines for remote supervision of primary signal control points

- Fiber-optic cable is installed in some sections of the Springfield Line but it is owned and maintained by communications service providers (AT&T, MCI, Sprint) and not by Amtrak

Amtrak maintains primary 480-volt AC and 2200-volt AC power distribution systems that provide lower voltage service feeds to all communications & signal facilities, including grade crossings.

3.8 Maintenance Facilities

There are two railroad equipment maintenance facilities in the New Haven area, which were reviewed as potential maintenance facilities for diesel-powered Springfield Line commuter rail rolling stock. Both are owned by the Connecticut Department of Transportation (ConnDOT). One is for the maintenance of Shore Line East equipment and the other is for Metro North equipment.

The Shore Line East facility is approximately 2 years old. The facility has four tracks inside the shop structure. At any given time, 2 diesel-powered train sets (locomotive and cars) can be serviced inside the structure, while 2 others remain outside the shop. In addition to the track, the facility has three overhead cranes, a drop table, a small machine shop, a welding area, and a car wash machine.

Amtrak maintains Shore Line East equipment under contract to ConnDOT. The facility maintains a total of 6 train sets, comprised of 8 locomotives and 22 cab-cars (cars with an operator's compartment at one end) and coaches, including spares. Amtrak reported that it has no available space at this facility for maintaining additional diesel-powered Springfield Line commuter rail equipment. While the Shore Line East shop operates on a six-day, two-shift schedule, maintenance of additional equipment associated with a potential New Haven – Hartford – Springfield Commuter Rail service could not be accommodated at this facility because of limitations in the number of tracks to store and service additional equipment.

If a new maintenance facility were to be constructed, the cost of such a facility would be in the range on $8 to $10 million on the low end, based on a similar shop concept that Wilbur Smith Associates developed for commuter service in Anchorage, Alaska.

ConnDOT recently constructed a storage area to conduct running repairs adjacent to the facility. With these tracks, Shore Line East cars can have their vacuum systems cleaned near the maintenance facility rather than at the New Haven Union Station platform tracks.

At the present time, the yard and maintenance facility currently have limited capacity for expanded commuter operations. However, a build out of the New Haven facility is planned that could probably accommodate added commuter rail service.

Attached to the Shore Line East facility is another facility for the maintenance of Metro North commuter equipment. The equipment maintained here are electric powered train sets. As this facility is an electric equipment maintenance shop, ConnDOT does not consider that this facility would be appropriate for maintenance of diesel-powered Springfield Line commuter rail equipment.

3.9 Amtrak Bridges Evaluation

The evaluation of existing conditions of Amtrak bridges in the study corridor is based solely on the review of Amtrak bridge inspection reports. No site visits, inspections, or other field activities were performed. Based on advisement by Amtrak officials, available bridge load rating reports for structures located on the Springfield Line were deemed outdated and to have inconsequential information for the evaluation of each bridge. Therefore, load rating reports were not used in this Existing Condition Assessment.

The study team reviewed the Amtrak 2002 bridge and culvert inspection reports for the Springfield Line, from milepost 0.76 to milepost 62.08. Following review, the team selected the 33 railroad bridges having the largest total length and summarized the bridge inspection report information as presented in Technical Appendix B (published separately). The furnished bridge and culvert inspection reports included:

- 14 culverts with span lengths from 5 ft to 6 ft
- 5 overhead signal bridges
- 10 overhead utility bridges
- 4 overhead pedestrian/foot bridges
- 2 undergrade pedestrian bridges
- 69 overhead bridges (highway or foreign railroad)
- 60 undergrade bridges (railroad) with total lengths from 7 ft to 1516 ft
- 174 culverts with span lengths from 1 ft to 5 ft

During review of all available data, multiple bridge types were omitted. These bridge types include overhead signal bridges, overhead utility bridges, pedestrian/foot bridges, all overhead structures in which Amtrak crosses under the structure, bridges not currently in use, and culverts (span length less than 6 ft). The 33 railroad bridges with the largest total length were then selected for inclusion in the report. These 33 railroad bridges vary from single spans up to 25 spans and have total lengths ranging from 28 feet to 1,541 feet. The 33 railroad bridges consisted of the following types:

- Concrete Arch
- Concrete Encased Through Girder
- Deck Girder
- Concrete Box Beam
- Stone Arch

- I-Beam
- Through Girder
- Concrete Encased I-Beam
- Concrete Box
- Through Truss

Bridge inspection reports contain the results of annual field review of each bridge by Amtrak staff. The reports contain subjective ratings of substructure and superstructure components based on a rating scale of 1 to 6, with 1 being excellent, 5 being serious and 6 being failed. The 33 bridges were grouped by their overall structural condition. These conditions were based on a comprehensive look at all pertinent (substructure and superstructure) structural items on the Amtrak bridge inspection reports. There were no bridges in **excellent** condition. Approximately 43% (14 of 33 bridges) of the railroad bridges studied had computed ratings of **good** condition. Approximately 39% (13 of 33 bridges) of the railroad bridges studied had computed ratings of **fair** condition.

Approximately 15 percent (5 of 33 bridges) of the railroad bridges had computed ratings of **poor** condition. These bridges are listed in Table 3.9-1:

Table 3.9-1
Bridges on Springfield Line Rated as "Poor"

Bridge Number (Milepost)	Location	Bridge Type
1.61	Humphrey Street, New Haven	Encased Through Girder
26.39	Willow Brook, Berlin	Stone Arch
35.51	Capitol Avenue, Hartford*	Through Girder
61.71	East Columbus Avenue, Springfield	Through Girder
61.98	Dwight Street, Springfield	Through Girder

*To be replaced as part of the New Britain – Hartford Busway project.

Approximately six percent (2 of 33 bridges) of the railroad bridges had computed ratings of **serious** condition. These bridges are listed in Table 3.9-2:

Table 3.9-2
Bridges on Springfield Line Rated as "Serious"

Bridge Number (Milepost)	Location	Bridge Type
1.48	Mill River, New Haven	Concrete Arch
36.66	Church Street, Hartford	Deck Girder

There were no bridges in a **failed** condition.

The structural condition of bridges rated "Fair", "Poor" or "Serious" can be attributed mainly to:

- The type of structure built – certain types of structures are more susceptible to deterioration due to exposure of critical structural members to weather.
- The age of the structure – there are many structures which have outlived their useful design life.
- The level of maintenance performed on the structure to date.
- The presence of highway salt spray.

Presently, six of the 33 bridges studied are now in the category of "Poor" or "Serious". Of the remaining bridges, 13 are currently rated "Fair". In general, all bridges will continue to deteriorate. Rates of deterioration will depend on current condition and future maintenance activities. It should be noted that this evaluation was limited to the 33 longest bridges on the Springfield Line.

3.10 At-Grade Crossing Evaluation

As noted above in Section 3.8, the corridor has 36 Grade Crossings equipped with active warning devices, and 10 Grade Crossings without active warning devices. At-Grade crossings can have various levels of treatments depending upon such factors as traffic volumes, roadway speeds, and whether the roadway being crossed is a public highway or private property access. Figure 3.10-1 shows an example of a crossing with three tracks; two highway gates, eight flashing lights, and one electronic bell (Benton Street, Hamden, Milepost 3.1).

Figure 3.10-1
Benton Street At-Grade Crossing

Figure 3.10-2 shows a higher-level intersection treatment (Flatbush Avenue in West Hartford, milepost 33.9), which includes two sets of cantilevers (lights on a mast over the roadway for better visibility) along with two highway gates, two pedestrian gates, 16 flashing lights, and one mechanical bell.

Figure 3.10-2
Flatbush Avenue At-Grade Crossing

Figure 3.10-3 provides an example of a lower-level treatment with passive crossing control (signs only). This two-track crossing in Longmeadow (Birnie Road, Milepost 57.3) contains only stop signs and crossbucks.

Figure 3.10-3
Birnie Road At-Grade Crossing

Table 3.10-1 summarizes the at-grade crossings in the corridor. Technical Appendix C (published separately) provides photographs of every crossing described in the table.

Table 3.10-1
New Haven to Springfield Line Highway Grade Crossing Survey (Page 1 of 4)

Location City / Town	Crossing Name	AAR/DOT Crossing inventory number	Railroad Mile Post	Number of Tracks	Warning Device Type	Pedestrian Gates	Type of track circuit or other train detection equipment	Cantilevers	Pavement markings Condition; adequate, missing, worn	Line of Sight	Condition Assess-ment	Comments; needs paint, damaged / missing, etc.
Hamden	Benton Street	500619A	3.1	3	Flashers, gates 1 bell, 8-3/8” lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Hamden	Winchesters	500621B	5.0	2	Flashers, gates 2 bells, 8-3/8” lights	None	Constant Warning (AFO)	None	Missing	Clear	Fair	Does not have pavement markings
North Haven	Sackett Point Road	500622H	5.9	2	Flashers, gates 2 bells, 12" LED lights	None	Constant Warning (AFO)	Northeast	Adequate	Clear	Fair	Back to back lights on cantilever
North Haven	Stiles Lane	500623P	6.3	2	Flashers, gates 1 bell, 8-3/8” lights	None	Constant Warning (AFO)			Clear	Fair	
North Haven	Devine Street	500625D	6.4	2	Flashers, gates 1 bell, 8-3/8” lights	None	(Constant Warning (AFO)	None	Adequate	Clear	Fair	Potential new station stop
North Haven	Sherbans(Ferro Lane)	500630A	8.2	1	Crossing eliminated				No Markings			Crossing is closed
North Haven	Grinolds Lumber	500631G	8.3	1	Crossing eliminated				No Markings			Crossing is closed
North Haven	Parese	500632N	8.6	1	Crossing eliminated				No Markings			Crossing is closed
North Haven	Toelles Road	500637X	10.5	1	Flashers, gates 1 bell, 8-3/8” lights	None	Constant Warning (AFO)	None	Adequate	Impaired	Fair	
Wallingford	Ward Street	500640F	12.3	1	Flashers, gates1 bell, 8-3/8” lights	Northwest; Southeast	Constant Northbound (AFO)Motion Sensor southbound for gates, AFO for traffic light control	Northwest	Adequate	Clear	Fair	Back to back lights on cantilever
Wallingford	Quinnipiac Street	500641M	12.6	1	Flashers, gates 2 bells, 8-3/8” lights	Northwest; Southeast	Constant Warning (AFO)	None	Adequate	Clear	Good	

Table 3.10-1
New Haven to Springfield Line Highway Grade Crossing Survey (Page 2 of 4)

Location City / Town	Crossing Name	AAR/DOT Crossing inventory number	Railroad Mile Post	Number of Tracks	Warning Device Type	Pedestrian Gates	Type of track circuit or other train detection equipment	Cantilevers	Pavement markings Condition; adequate, missing, worn	Line of Sight	Condition Assess-ment	Comments; needs paint, damaged / missing, etc.
Wallingford	Hall Avenue	500642U	12.65	1	Flashers, Gates 1 bell, 8-3/8" lights	Southwest	Constant Warning (AFO)	None	Adequate	Clear	Good	Street is one-way. Both highway gates on east side
Wallingford	Parker Street	500643B	13.0	1	Flashers, Gates 2 bells, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Wallingford	North Plains Road	500645P	13.6	1	Flashers, Gates 2 bells, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	Additional flasher for traffic making a right turn onto North Plains Road
Wallingford	Pent Highway	500646W	14.4	1	Flashers, Gates 2 bells, 8-3/"8 lights	None	Constant Warning (AFO)	None	Adequate	Clear	Good	
Meriden	Cooper Street	500653G	18.2	2	Flashers, Gates 2 bells,12" LED lights	None	Motion Sensor	None	Worn	Clear	Fair	Markings worn
Meriden	South Colony Street	500655V	18.5	2	Flashers, Gates 1 bell, 8-3/8" lights	Northeast; Southeast	Motion Sensor	None	Adequate	Clear	Good	Street is one-way going east. Highway gates on west side
Meriden	East Main Street	500656C	18.6	2	Flashers, Gates 1 bell, 8-3/8" lights	Northwest; Southwest	Motion Sensor	None	Worn	Clear	Fair	Markings worn; Street is one-way west; Highway gates on east side.
Meriden	Brook Street	500657J	18.7	2	Flashers, Gates 2 bells, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Meriden	Cross Street	500658R	18.8	2	Flashers; 1 Gate, 1 bell; 8-3/8" lights	None	Constant Warning (AFO)	None	Worn	Impaired	Fair	Cross bucks rusty
Meriden	Britannia Street	500661Y	19.4	2	Flashers; Gates 1 bell, 8-3/8" lights	Northwest; Southeast	TK 1 Motion SensorTK 2 Constant (AFO)	None	Worn	Clear	Fair	Switch to Meriden yard Trk-2South of crossing
Meriden	North Colony Drive	500665B	19.4	2	Flashers; Gates 1 bell, 8-3/8" lights	None	TK 1 Motion Sensor TK 2 Constant (AFO)	None	Worn	Clear	Fair	Crossing timbers bad, Additional flasher pole in parking lot northwest side. Markings worn
Meriden	Silver Lake(Norton)	500685M	22.0	1	Stop sign					Clear	Fair	Stop signs only
Meriden	Fish Pond	Not on FRA List	22.6	1	No Warning Devices							Crossing Barricaded

Table 3.10-1
New Haven to Springfield Line Highway Grade Crossing Survey (Page 3 of 4)

Location City / Town	Crossing Name	AAR/DOT Crossing inventory number	Railroad Mile Post	Number of Tracks	Warning Device Type	Pedestrian Gates	Type of track circuit or other train detection equipment	Cantilevers	Pavement markings Condition; adequate, missing , worn	Line of Sight	Condition Assess-ment	Comments; needs paint, damaged / missing, etc.
West Hartford	Oakwood Avenue	500697G	33.5	2	Flashers and gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	Northeast and southwest sides	Adequate	Clear	Fair	Oak interlocking just south of crossing. Back to back lights on cantilever
Hartford	Flatbush Avenue	500698N	33.9	2	Flashers and gates, 2 bells, 8-3/8" lights	Northwest; Southeast	Constant Warning (AFO)	Northeast and southwest sides	Adequate	Clear	Fair	Back to back lights on cantilever
Hartford	Hamilton Street	500700M	34.9	2	Flashers and gates, 2 bells, 8-3/8" lights	Northwest; Southwest;South east	Constant Warning (AFO)	Northeast side	Worn	Clear	Fair	Back to back lights on cantilever Highway markings worn
Hartford	Flower Street	500710T	36.2	1	Flashers and gates, 2 bells, 8-3/8" lights	Northwest; Southeast	Constant Warning (AFO)	Southwest side	Adequate	Clear	Fair	Back to back lights on cantilever
Windsor	Meadow Road	500725H	39.7	1	Flashers and gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Partially impaired	Fair	Cross bucks rusty, broken signal pole junction box southwest side
Windsor	Wilson Ave	500726P	39.8	1	Flashers, 1bell, 8-3/8" lights	None	Constant Warning (AFO)	None	Worn	Clear	Fair	Gravel crossing surface
Windsor	East Barber Street	500727W	40.1	1	Flashers and gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	South west side of crossing	Adequate	Clear	Fair	Radio repeater station and hot box/dragging equipment, Detector location
Windsor	Island Road	500729K	42.2	1	Flashers and gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Windsor	Central Street	500731L	42.9	1	Flashers and gates, 1 bell, 8-3/8" lights	Northwest; South east	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Windsor	Pierson Lane	500734G	43.6	2	Flashers and gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	South west and northeast side of crossing	Adequate	Clear	Fair	Back to back lights on cantilever
Windsor	Christiansons	Not on FRA list	44.5	2	No warning devices					Clear	Fair	
Windsor	Macktown Road	500739R	45.0	2	Flashers, Gates, 1 bell, 8-3/8" lights	None	Constant Warning (AFO)	South west and northeast side of crossing	Adequate	Clear	Fair	

Table 3.10-1
New Haven to Springfield Line Highway Grade Crossing Survey (Page 4 of 4)

Location City / Town	Crossing Name	AAR/DOT Crossing inventory number	Railroad Mile Post	Number of Tracks	Warning Device Type	Pedestrian Gates	Type of track circuit or other train detection equipment	Cantilevers	Pavement markings Condition; adequate, missing, worn	Line of Sight	Condition Assessment	Comments; needs paint, damaged / missing, etc.
Windsor	Hayden Station Road	500741S	45.6	2	Flashers, Gates, 1 bell, 8-3/8" lights	Southeast	Constant Warning (AFO)	1 Cantilever northeast side	Worn	Clear	Fair	Back to back lights on cantilever
Windsor	Trolley Barn	Not on FRA list			No warning devices							Crossing Closed
Windsor Locks	Clarks	Not on FRA list			No warning devices							Crossing Closed
Windsor Locks	Dexter Mills (Pedestrian)	500746B	48.1	1	Flashers, 1 Bell, 8-3/8" lights	None	Constant Warning (AFO)	None	No markings	Clear	Fair	Dexter Co – pedestrian walkway gates across road; No automobile traffic except in emergency
Windsor Locks	Montgomery Co.	Not on FRA list	48.2	1	No warning devices				No markings	Clear		Foot bridge over canal
Windsor Locks	Bridge Street	500747H	48.4	1	Flashers, 2 Bells, 8-3/8" lights	Southeast	Motion Sensor	1 Cantilever southwest side	Adequate	Clear	Fair	Pedestrian walkway markings worn; Back to back lights on cantilever
Enfield	Parsons Road (Dares)	500749W	51.4	1	Flashers, gates, 2 Bells, 12"LED lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Enfield	Bridge Lane	500750R	52.3	1	Flashers, 1 Bell, 8-3/8" lights	None	Constant Warning (AFO)	None	Adequate	Clear	Fair	
Enfield	Saw Mill Road	500753L	55.6	2	No warning devices				No markings	Impaired	Fair	Timber surface, Crossing closed
East Longmeadow, MA	Bark Haul Road	Not on FRA list	56.7	2	No warning devices				No markings	Impaired	Fair	Timber surface
East Longmeadow, MA	Birnie Road	Not on FRA list	57.3	2	Stop signs and cross bucks				Worn	Impaired	Fair	Timber surface, Stop signs and cross bucks
East Longmeadow, MA	Emerson Road	501940X	58.1	2	Flashers, 1 Bell, 8-3/8" lights	None	Constant Warning (AFO)	None	Worn	Clear	Fair	Highway markings worn
Springfield, MA	State Street	Not on FRA list	61.2	2	No warning devices				No Markings	Clear	Fair	