

## **3.0 ALTERNATIVES EVALUATION**

### **3.1 Introduction**

This section describes the alternatives evaluated in this Tier 1 EA/EIE. Sections 3.2 and 3.3, respectively, describe the No-Build and Build alternatives. The No-Build Alternative represents conditions in the future analysis year (2030) absent implementation of the proposed project, and serves as the future baseline against which anticipated effects of the Build Alternative are compared to identify any significant project-related impacts. The Build Alternative (the proposed project) would provide for enhanced passenger rail service in the NHHS rail corridor; related rail capacity and train speed improvements; and rail infrastructure improvements (NHHS Rail Program), which are necessary to support the service enhancement. Infrastructure improvements in two portions of the NHHS rail corridor (10.8 miles of rail line between the towns of Meriden and Newington and 5.8 miles between Hartford and Windsor) were previously evaluated by the FRA via CEs; therefore, the evaluations of those project elements, each of which has independent utility, are incorporated in this EA/EIE by reference (see Appendix 1, Phase 1 and 3A CEs).

### **3.2 No-Build Alternative**

The No-Build Alternative assumes that passenger rail infrastructure in the NHHS rail corridor would be maintained in a state of good repair, potentially including any necessary safety and state-of-good repair improvements to the Connecticut River Bridge and the Hartford Viaduct. The No-Build Alternative also includes standard maintenance of up to 46 bridges and 115 culverts throughout the corridor that are not included in the proposed project (see Appendix 3, List of Bridges and Culverts). No restoration, improvement or new construction of passenger rail infrastructure would be undertaken in the corridor except as required by Amtrak to maintain safe rail operations. Therefore, the capacity of the rail line would remain sufficient to operate only today's level of service: six to eight round trips between New Haven and Springfield (with one continuing to Washington, D.C.) and one round trip between Washington, D.C., and St. Albans, Vermont. The service would be operated without the benefit of increased rail capacity, train speeds and intermodal connectivity.

### **3.3 Build Alternative**

The proposed rail service enhancement in the NHHS rail corridor would provide for up to 25 daily round-trip trains (up to 50 one-way trips per day) by 2030 (see Appendix 2, Passenger Service Plan, for the proposed full-build service Plan). The proposed service plan would provide one-seat or cross-platform transfers on service from Washington, D.C., and New York to Springfield, Boston and the Knowledge Corridor, as well as bi-directional, 30-minute peak-hour service and hourly midday service in the NHHS rail corridor. Related operational improvements include an increase in the capacity of the line to accommodate additional trains, an increase in the maximum train speed to 110 miles per hour (mph), service to the new FTA-funded regional train stations and reduced scheduled travel times. These operational improvements, in turn, require rail infrastructure improvements. Therefore, Connecticut has proposed the NHHS Rail Program (Table 1-1), a program of capital projects to support enhanced passenger rail service in the NHHS rail corridor. The proposed project's infrastructure improvements in the NHHS rail corridor consist of:

- Restoration of sections of second track;
- Construction of new passing sidings;

- Construction of a layover and light maintenance facility;
- At-grade crossing upgrades;
- Facility-specific bridge and culvert rehabilitations, replacements and removals;
- Installation of new crossovers and signal upgrades;
- Improvement or relocation of existing passenger rail platforms for Amtrak intercity service, as well as additional station parking and improved station access;
- Improvements to platforms, track configuration and sidings in the Springfield Terminal area; and
- Construction of future FTA-funded new regional rail stations.

Projected intercity ridership resulting from the proposed service enhancement in the NHHS rail corridor (see Appendix 2, Passenger Service Plan, for details of the proposed full-build service plan) was provided by Amtrak using its multimodal passenger travel demand forecasting model. The model considers intercity passenger travel by passenger vehicles, air, intercity bus, and premium (Acela) and regular (regional) rail modes. The study area covered by Amtrak’s model includes the Northeast Corridor spine (Washington, D.C. – New York – Boston) and the corridors branching from the spine serving Virginia, Harrisburg, Pennsylvania, Albany, New York and Springfield, Massachusetts. Annual and daily boarding forecasts for 2030 are presented in Table 3-1.

**Table 3-1 – Forecast of Annual and Daily Intercity Boardings at Selected Stations**

Station	Boardings (2030)	
	Annual	Daily
<i>New Haven</i>	41,4630	1,450
<i>Wallingford</i>	60,732	212
<i>Meriden</i>	142,099	497
<i>Berlin</i>	62,052	217
<i>Hartford</i>	595,310	2,082
<i>Windsor</i>	30,972	108
<i>Windsor Locks</i>	38,166	133
<i>Springfield Union</i>	399,891	1,398

Source: Technical Paper for NHHS Line NEPA/CEPA Environmental Assessment/Environmental Impact Evaluation, CDM Smith, May 2011

CTDOT separately analyzed the ridership at the existing New Haven State Street Station and the four proposed new regional rail stations (see page 5, Technical Paper for NHHS Line NEPA/CEPA Environmental Assessment/Environmental Impact Evaluation, CDM Smith, May 2011). These stations would be served only by the Connecticut-operated regional trains and not by Amtrak. The daily ridership projection for these stations, which assumes up to 32 daily trains, is as follows:

- NH State Street 319
- North Haven 286
- Newington 243
- West Hartford 398

- Enfield 326

Based on the Amtrak and CTDOT ridership forecasts and assumptions about the modal split (auto [parking, kiss-n-ride], walk, bus, rail) for passengers arriving to and departing from the stations, future long-term (2030) parking needs were estimated for each station, ranging from a need for 75 to 365 incremental parking spaces (See Table 5-1, CDM Smith, May 2011). These estimates will be refined through further consultation with each town and/or municipal parking authority, based on the timing for the phase-in of new intercity and regional service. Provision of additional parking will be advanced, compatible with and, where appropriate, leveraging future downtown development plans. It is expected that additional parking will be phased in over several years as parking demand develops at each station. CTDOT will work with the FRA and each municipality to ensure that 2030 intercity parking demand is met at each station and that the design of incremental parking facilities ensures that the use of spaces funded with federal dollars is available for intercity rail passengers.

### **Double Tracking**

The project includes replacement of approximately 35 miles of second track removed by Amtrak in the early 1980s. The track, consisting of a sub-ballast foundation, wood or concrete railroad ties and steel rail, will be restored on the previously engineered Amtrak track bed. It will be aligned to support speeds of up to 110 mph. There are five sections of new double track, including one (MP 31.1 to MP 35.1) where the second track physically still remains, but is no longer in service and will be removed and replaced:

- North Haven to Meriden (MP 7.1 to MP 17)
- Meriden-Newington (MP 20.3 to MP 31.1) (Phase 1 CE)
- Hartford (MP 31.1 to MP 35.1)
- Hartford to Windsor (MP 37.2 to MP 43.0) (Phase 3A CE)
- Windsor to Enfield (MP 46.7 to MP 49.0 and MP 50.4 to MP 54.8)

### **Station Locations**

The proposed project includes improvements to or relocations of seven existing Amtrak stations, operational improvements (crossovers and track connections) at Springfield Union Station and future construction of four new regional rail stations (Figure 1-1 and Table 1-1; see EA/EIE Volume II, Section 1.3 for Station Concept Plans). The State of Connecticut will be applying for FTA funding to add the four regional rail stations at North Haven, Newington, West Hartford and Enfield and to construct an additional platform at the existing New Haven State Street Station. No improvements are proposed for New Haven Union Station.

The proposed station improvements were developed through coordination with the municipalities along the NHHS rail corridor. The following factors were considered during meetings with local officials in the affected communities to determine optimum station locations and overall station layouts: maximum use of existing railroad property and infrastructure before consideration of adjacent properties; consistency with local development plans; intermodal access and connectivity, including local and regional bus services; adequate parking capacity; and environmental impacts, if any.

**Existing Intercity Stations** - The existing train stations at New Haven, Wallingford, Meriden, Berlin, Hartford, Windsor, Windsor Locks and Springfield will continue to provide Amtrak

intercity rail service. As noted on Table 1-1, existing Amtrak stations will be enhanced with two 500-foot-long high-level platforms sufficient to accommodate an 8-car Amtrak train (unless otherwise noted below), covered by a canopy and connected by a pedestrian overpass, with elevator and stair access. Gauntlet tracks would be installed to permit wide freight loads through the station area (except at Hartford Union Station, where a drop-down high-level platform edge is planned). No new station buildings or improvements to existing station buildings are included in the proposed project. Additional parking demand has been estimated for each of the stations, and will be provided as demand develops. Each of these stations is described below, including any site-selection considerations.

New Haven Union Station: No improvements are planned at New Haven Union Station. It is anticipated that long-term (2030) additional parking demand (249 spaces) will result with enhanced service on the NHHS rail corridor.

Wallingford Station: The existing station location is not compatible with addition of high-level platforms, which would block local streets. Three alternative sites were considered for relocation of this station: 1) just north of the existing station on North Cherry Street; 2) further north near the intersection of Parker and North Colony Streets, with split parking accessed from both North Cherry and North Colony Streets); and 3) south of the existing station on Ward Street, adjacent to Judd Square. The North Cherry Street location was dismissed from further consideration because roadway traffic across downtown Wallingford would experience unreasonable delays when at-grade crossing gates are deployed while the train is stopped for passengers. Moving the station to Parker Street or Judd Square would reduce (but not eliminate) delays in the center of Wallingford related to gate closures. A station at the Judd Square site would be co-located with high-density housing and could incorporate more transit-oriented design elements, but would require a parking structure. The Parker Street site offers vehicle access to both platforms and would not need a parking structure. Both the Parker Street/North Colony Street and Ward Street/Judd Square locations are acceptable to the Town of Wallingford, which has requested that a final recommendation for the station site be deferred until after this EA/EIE public comment period. Therefore, both station-siting concepts are evaluated in this EA/EIE. Both sites would require some property acquisition and relocation. Additional future (2030) parking demand is estimated to be 210 spaces.

Meriden Station: High-level platforms and a parking structure would be added to support use of the existing station. From several conceptual station layouts presented to the City of Meriden, the preferred layout closes the Brook Street at-grade crossing and is consistent with the City's plans for TOD in the area. The improvements to the station area may require the demolition of the current Amtrak station building. The functions supported by that building would be re-established as part of the City's TOD plans on property immediately adjacent to the platforms. Future (2030) additional parking demand is estimated to be 300 spaces.

Berlin Station: High-level platforms would be constructed near the existing station building, which would be renovated by the Town of Berlin as part of a separate project. From several conceptual station layouts presented to the Town, the concept selected would be consistent with the Town's overall development plan for the area. Future (2030) additional parking demand at Berlin Station is estimated to be 232 spaces.

Hartford Union Station: At this existing station, the single 500-foot-long platform would be retrofitted or elevated to provide high-level boarding to trains. Associated modifications would be made, as appropriate, to the elevator and stairs. It is anticipated that future (2030) demand for an additional 342 parking spaces would result with enhanced service on the NHHS rail corridor.

Windsor Station: High-level platforms would be constructed near the existing station on Mechanic Street. Additional future (2030) parking demand is estimated to be 180 spaces; parking would be added on the east side of the tracks in a 3-story parking structure. Several conceptual station layouts were presented to the Town of Windsor Locks, the concept selected would be consistent with the Town's overall development plan for the area.

Windsor Locks Station: Two alternative station site options, each including improvements to support a bus shuttle connection to Bradley International Airport, were considered for this station: 1) the existing station location on South Main Street (Route 159) adjacent to the Connecticut River, near Interchange 42 of Interstate 91 and approximately 1 mile south of the Town's central business district; and 2) north of the town's central business district, as part of a proposed renovation and expansion of the Windsor Locks Commons development, and adjacent to an existing historic station structure. The Town of Windsor Locks has stated its preference for the second option, although at-grade crossing gate closures would delay roadway traffic when trains stop at the station. A final recommendation for the station site has been deferred until after the EA/EIE public comment period. Future (2030) additional parking demand at Windsor Locks Station is estimated to be 107 spaces.

Springfield Union Station: High-level platforms are proposed for one or more of the platforms served by passenger trains at the existing Amtrak Springfield Union Station. The configuration of the platforms and future access to the platforms by Amtrak trains operating on the Knowledge, Vermonter and Inland Route Corridors have not been finalized. Once this planning is completed, additional environmental review may be required through a project-level Tier 2 NEPA analysis. Future 2030 additional parking demand resulting from enhanced service on the NHHS rail corridor is estimated at 364 spaces.

### **New Stations**

The State of Connecticut intends to apply for FTA funding to support construction of new regional rail stations along the NHHS rail corridor to supplement planned intercity service. The work would include a new platform at the existing New Haven State Street Station and new regional rail stations at North Haven, Newington, West Hartford, and Enfield. The new stations would include two 180-foot-long high-level platforms covered by a canopy and connected by a pedestrian overpass, with elevator and stair access, and parking for a total of 100 to 200 cars. Gauntlet tracks would be installed to permit wide freight loads through the station area. These potential stations are evaluated in this EA/EIE; however, no FRA funding would be used to construct them.

New Haven State Street Station: One additional 180-foot-long high-level platform, sufficient for safe access to and from the planned two-to-three car regional trains, would be provided on the westernmost track with new (or modified existing) overhead walkway, elevator and stairs at this existing station. The existing station entrance would be modified to accommodate the new walkway. The new platform would be offset approximately 100 feet to the north to avoid an

existing railroad utility structure. There is no parking at this station, as it is intended to provide a pedestrian access alternative to downtown New Haven. Travelers requiring parking currently use nearby Union Station, which includes significant municipal parking facilities.

North Haven Station: This proposed new station would be located at the intersection of Divine and State streets in North Haven, easily accessible from the towns of Hamden<sup>1</sup> and North Haven and from major roadways including nearby I-91 and adjacent Route 40. The site is also adjacent to an existing park-and-ride lot owned by CTDOT, which would be enlarged to provide long-term future (2030) parking of up to 288 parking spaces. Two sites were considered: 1) west of and adjacent to the existing park-and-ride lot; and 2) an unused industrial site on Divine Street immediately east of the tracks. The unused industrial site was preferred because it would not impact wetlands, as would the first option, and all parking spaces would be closer to the new station. The Town of North Haven supports the proposed station plan, which is consistent with the area's overall development plan.

Newington Station: This proposed new station would be located at the intersection of Willard and Francis avenues on the east side of the tracks at the site of the historical station location. The pedestrian overpass would connect to the proposed New Britain-Hartford Busway station located immediately west of the tracks. The station concept would be consistent with the area's overall development plan. Future (2030) parking demand at Newington Station is estimated to be 202 spaces.

West Hartford Station: This new station would be located at the intersection of Flatbush and Newfield avenues on the site of a commercial building on the east side of the tracks. The pedestrian overpass would connect to the proposed New Britain-Hartford Busway station located immediately west of the tracks. The station concept would be consistent with the area's overall development plan. Future (2030) parking demand at West Hartford Station is estimated to be 167 spaces.

Enfield Station: This new station would be located in the Village of Thompsonville at the intersection of Main and North River streets adjacent to an existing residential complex (Bigelow Commons) and a historic commercial building. The town's redevelopment plans for a vacant commercial building on the site are not part of the proposed project. Parking demand at this station is estimated to be 214 spaces. From options considered for station surface parking, the selected concept incorporates the town's plan for an intermodal center, would distribute parking to both sides of the tracks, use underutilized parking spaces at Bigelow Mills and avoid using the bluff overlooking the Connecticut River. This concept, which would preserve the riverfront area, would require acquisition of several properties and reconstruction of private parking and public streets. The selected concept would be consistent with the area's overall development plan.

#### Layover and Light Maintenance Facility

The proposed project includes construction of a train layover and light maintenance facility in the Springfield area. The facility would be required to support the planned 2030 level of service and used for overnight storage, cleaning, and light maintenance of three regional trains. Three

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<sup>1</sup> While no site has been identified in Hamden, Hamden officials remain interested in working with CTDOT to identify a future station site that would be coupled with future transit-oriented development the Town envisions along the Route 5 (State Street) corridor. Such a new station project would be separate from the proposed project evaluated in this EA.

sites were considered for the layover and maintenance activities (see Springfield Layover Site Alternative Analysis Technical Reports included as Appendix 4 and Site Visit Technical Report included as a reference document): Armory Street, east of Springfield Union Station, along a former rail branch line; passenger platform tracks at Springfield Union Station; and the Amtrak-owned “Sweeney Yard” site, southwest of Springfield Union Station, currently used by Amtrak for storage of train equipment and maintenance activities. The following factors were considered in the site selection process: constructability and any significant barriers to facility construction; ability to acquire land compatible with such a rail facility; proximity to the NHHS terminus at Springfield Union Station; availability of sufficient space to construct a facility to accommodate at least three trains; opportunity for potential future site expansion; consistency with City of Springfield development plans; potential for conflict with other passenger and freight rail operations; and environmental impacts, if any.

On the basis of the qualitative analysis of the three potential sites (included in Appendix 4), the Armory Street site was selected as the best long-term location to support the 2030 level of service. Access to the site will require construction of a new 2000-foot access track from Springfield Union Station to the layover area along the former branch line. The current grade from the mainline track to the layover area is uphill at about 1.3 percent. However, the proposed site has recently been filled with poorly compacted uncategorized landfill that would need to be undercut and re-compacted. This would lower the proposed elevation of the site and permit the layover and maintenance area to be graded level or slope away from the mainline. The site is constructible, the land is currently vacant, is reasonably close to the station, and has sufficient space for the proposed facility and for potential future expansion. The City of Springfield supports selection of the Armory Street site as a long-term layover and maintenance site for the NHHS Rail Program. The Armory site would not conflict with existing or future rail operations. The only environmental impact could arise from the undercutting and disposal of the existing landfill, which would be disposed of in accordance with Massachusetts Contingency Plan procedures. In the event that this material is found to contain hazardous substances it would be mitigated in accordance measures identified within both the Hazardous Materials and Construction Impacts sections of this EA/EIE.

Use of the tracks at Springfield Union Station for long-term maintenance and layover needs of three trains is not feasible, as there is insufficient existing space and little opportunity for future expansion at the station. The Sweeney Yard site also lacks sufficient space to meet the long-term requirements presented by the 2030 level of service, and its riverfront location is inconsistent with the City’s long-term development objectives. The Springfield Union Station and the Sweeney Yard currently are used for railroad operations so there would be no environmental impacts related to those alternatives.

However, for interim, short-term phase-in of the NHHS service, use of the existing tracks at Springfield Union Station for layover and maintenance of up to two trains would be consistent with existing uses. The City of Springfield has requested that the Sweeney Yard site be used only as a last resort for short-term, interim layover needs, which is consistent with its plans for riverfront redevelopment. Use of either site would require the installation of a temporary trailer or small structure as location for crews/employees to report for maintenance and train operations as well as installation of a 480 volt power supply.

### **Sidings**

Construction of three new railroad passing sidings is included in the proposed project. The sidings would run parallel to the main line tracks and be used to hold freight trains to avoid delays to passenger trains. The sidings would be located as follows:

- Berlin Siding: MP 26.6-27.8. This siding, which would not be required until 2030 service levels are achieved, would reduce train conflicts south of Hartford for CSO trains serving local area shippers.
- Hartford Yard Siding: MP 37.2-38.8. This siding would be located within the existing Hartford Railroad Yard and provide storage for freight trains operating to and from the yard and adjoining branch lines and turning passenger trains. The environmental impacts of constructing this siding were evaluated in the CE [Hartford-Windsor] (see Appendix 1. Phase I and Phase 3A CEs) and are incorporated in this EA/EIE by reference.
- Armory Street Siding: MP 62.3-62.9. This siding, consisting of construction of a parallel track, would provide access to the proposed Springfield layover and light maintenance facility, as described above. This siding would be constructed only if the Armory Street site is selected as the location for the permanent layover and light maintenance facility.

### **Bridges and Culverts**

Improvement of 42 bridges supporting the track, 4 bridges over the track, and 61 culverts is included in the proposed project. These improvements will extend the useful life of the structures, enhance water-carrying capacity of streams, where required, and accommodate restoration of the second track and other infrastructure. Tables 3-2 through 3-4 provide a complete summary of bridges and culverts included in the Phase 1 and Phase 3A CE's and in this EA/EIA.

The remaining bridges and culverts in the corridor are not included in the proposed project's program of infrastructure improvements because they require only routine maintenance or no action (see Appendix 3, List of Bridges and Culverts, for a full listing of such structures in the corridor, including summary information on each structure, its condition and recommended action).

The bridges and culverts included in Tables 3-2 through 3-4 were determined by CTDOT to warrant improvements on the basis of condition assessments and in-depth inspections of the bridges and culverts in the NHHS rail corridor. Each structure's condition was rated excellent, good, fair, poor, serious, or unknown either because access was not available or the structure was not located). Improvements were recommended for each structure based upon the specifics of its condition.



**Table 3-2 – Inventory of Undergrade Bridge Improvements in Project**

New Haven-Hartford-Springfield High Speed Rail Program										UNDERGRADE BRIDGE INVENTORY
State Project No. 170-2296										December 14, 2011
MP	Town	Phase	Over	Description	Active Tracks	# Spans	Total Bridge Length, ft	Condition Summary	Recommended Action	Comments
7.03	North Haven	Phase 2	Quinnipiac River	Deck Girder	Double	4.00	152.00	Poor	Rehabilitation	Existing condition and increased service will require further evaluation.
7.46	North Haven	Phase 2	Stream	8' Stone Arch(w/steel plate liner)/Rail Top Ext.	Single	1.00	8.00	Good/Fair	Rehabilitation	Further evaluation required to determine the position of proposed track with respect to the existing rail top extension. Possible replacement of rail top.
10.46	Wallingford	Phase 2	Wharton Brook	17' Stone Arch/box culvert extension	Single	1.00	17.00	Fair	Rehabilitation	New retaining structures required to replace existing timber retaining structures, maintenance/rehab to existing arch. Concrete box culvert carries roadway.
12.91	Wallingford	Phase 2	Drainage	Rail Top	Single	1.00	5.00	Poor	Replacement or Fill	Replacement or abandon/fill of existing structure required.
13.96	Wallingford	Phase 2	Stream	Stone Arch/Concrete Arch	Single	1.00	10.00	Poor	Rehabilitation	Rehabilitation required to the stone arch.
15.00	Wallingford	Phase 2	Drainage	Rail Top	Single	1.00	6.00	Poor	Replacement	Replacement - replace rail tops with new structure.
15.26	Wallingford	Phase 2	Meetinghouse Brook	Reinforced Concrete Beam	Single	3.00	58.00	Good	Rehabilitation	Widening/walkway required for proposed 15' track centers. Evaluation required of existing hydraulic/settlement issue.
15.66	Wallingford	Phase 2	Main St/South Broad Rte 71 & 150	Stone Arch	Single	1.00	20.00	Fair	Rehabilitation	Maintenance required to stone arch, retaining structures required to support 2nd track.
16.78	Meriden	Phase 2	Gypsy Lane	Deck Girder	Single	1.00	28.00	Fair	Superstructure Replacement	Replacement of inactive span required due to extensive vehicle impact. Existing clearance only 9'-5".
18.01	Meriden	Phase 2	South Colony St	Through Girder	Double	1.00	44.00	Poor	Rehabilitation	Existing condition and increased service will require rehabilitation.
18.48	Meriden	Phase 2	Harbor Brook	Deck Girder	Double	1.00	51.00	Poor	Rehabilitation	Existing condition and increased service will require rehabilitation.
19.20	Meriden	Phase 2	Drainage	Rail Top w/brick arch beyond	Double	1.00	6.00	Poor	Replacement	Replacement rail top & timber structure will be required. Timber retaining wall to be replaced with new concrete ballast retainer.
20.83	Meriden	Phase 1	Stream	Stone Arch/Brick Arch/Concrete Arch	Single	1.00	5.00	Fair	Rehabilitation	Some maintenance or rehabilitation may be required to support the 2nd track.
22.53	Berlin	Phase 1	Belcher Brook	Stone Arch w/ Rail Top Ballast Retainers	Single	1.00	7.00	Fair	Possible Replacement	Monitoring required for the settled keystone(s). Review limits of rail top relative to tracks.
22.75	Berlin	Phase 1	Belcher Brook	5' Cast Iron Pipe in 7' Stone Arch	Single	1.00	5.00	Critical	Replacement	Steel pipe can support 2 tracks. Retaining walls required.
23.76	Berlin	Phase 1	Crooked Brook	Stone Arch	Single	1.00	10.00	Fair	Rehabilitation	Rehabilitation of the arch required, retaining structures required to support second track.
24.85	Berlin	Phase 1	Berlin Brook	Stone Arch	Single	1.00	10.00	Poor	Rehabilitation	Rehabilitation of the arch required, retaining structures required to support second track.

**Table 3-2 – Inventory of Undergrade Bridge Improvements in Project (Continued)**

New Haven-Hartford-Springfield High Speed Rail Program										UNDERGRADE BRIDGE INVENTORY
State Project No. 170-2296										December 14, 2011
MP	Town	Phase	Over	Description	Active Tracks	# Spans	Total Bridge Length, ft	Condition Summary	Recommended Action	Comments
25.52	Berlin	Phase 1	Mattabeset River	Stone Arch	Single	8.00	170.00	Fair	Rehabilitation	Rehabilitation of existing arch structure.
26.39	Berlin	Phase 1	Willow Brook	Stone Arch	Single	4.00	56.00	Satisfactory	Rehabilitation	Widening required for second track (between Berlin Station & interlocking).
27.83	New Britain	Phase 1	Webster Brook	Stone Arch	Single	1.00	7.00	Satisfactory	Rehabilitation	Retaining structures required to support second track.
28.57	Newington	Phase 1	Webster Brook	Rail Top	Single	1.00	5.00	Poor	Replacement	Complete replacement.
28.63	Newington	Phase 1	Webster Brook	42" Concrete Pipe	Single	1.00	3.50	Poor	Replacement	Due to documented flooding at this location, existing culvert will be replaced with proposed bridge (5' x 11' box).
30.99	Newington	Phase 1	Piper Brook	Concrete Encased I-Beam	Single	2.00	74.00	West - Satisfactory East - Replace	Superstructure Replacement	Superstructure replacement @ east proposed track w/ substructure extension/ retaining walls.
34.51	Hartford	Phase 2	Kane Brook	10' Stone Arch/ Concrete Arch/ Corrugated Metal Pipe	Double	1.00	10.00	Poor	Rehabilitation	Existing tracks supported by 10' stone arch with 1.5'x7' low flow channel. Structure changes to 10' concrete arch/10' Corrugated Metal Pipe. Structure well below grade, extensive repairs/rehabilitation required.
35.15	Hartford	Phase 2	Park St	Through Girder	Single	1.00	79.00	Fair	Maintenance/ Rehabilitation	Busway- western portion of bridge removed to accommodate the busway. In-depth inspection and rating required to determine requirements.
35.41	Hartford	Phase 2	Park River (Old Location)	Stone Arch/ Concrete Arch	Single	3.00	75.00	Fair	Removal	Arches for former Park River, 3rd arch buried. Remainder of structures should be removed or buried. No rating required. Busway closes off one side.
35.51	Hartford	Phase 2	Capital Ave	Through Girder	Single	3.00	103.00	Poor	Rehabilitation	Busway- western portion of bridge removed to accommodate the busway. Rating required, additional action required pending results. 20 year rehab and/or future replace.
36.53	Hartford	Hartford Viaduct	Asylum St	Through Girder	Single	1.00	77.00	Fair	Rehabilitation	Rating required. 20 year rehab, possible future replacement. Feasibility Study
36.55	Hartford	Hartford Viaduct	Union Station	Deck Girder	Single	25.00	637.00	Fair	Rehabilitation	Rating required. 20 year rehab, possible future replacement. Feasibility Study
36.66	Hartford	Hartford Viaduct	Church St	Deck Girder	Single	2.00	36.00	Fair	Rehabilitation	Rating required. 20 year rehab, possible future replacement. Feasibility Study
37.35	Hartford	Phase 3A	Windsor St	Concrete Frame/ Concrete Encased Girder	Single	3.00	93.00	Satisfactory	Rehabilitation	Parapet needs to be replaced & concert repairs.
39.40	Hartford	Phase 3A	Meadow Brook	Reinforced Concrete Beam	Single	1.00	19.00	Satisfactory	Possible Widening	Structure in satisfactory condition, possible widening required to support 15' track centers.

**Table 3-2 – Inventory of Undergrade Bridge Improvements in Project (Continued)**

New Haven-Hartford-Springfield High Speed Rail Program										UNDERGRADE BRIDGE INVENTORY
State Project No. 170-2296										December 14, 2011
MP	Town	Phase	Over	Description	Active Tracks	# Spans	Total Bridge Length, ft	Condition Summary	Recommended Action	Comments
40.90	Windsor	Phase 3A	Stream	Stone Arch w/ Rail Top	Single	1.00	5.00	Satisfactory	Rehabilitation	Old concrete parapet blocking inlet. Rail Top ext. on East may receive live load when 2nd track is added, possible replacement. MDC sewer main in channel, channel poor shape.
41.62	Windsor	Phase 3A	Stream	Stone/Brick Arch	Single	1.00	5.00	Satisfactory	Rehabilitation	Retaining structures required to support second track.
42.65	Windsor	Phase 3A	Batchelder Rd	Deck Girder	Single	1.00	29.00	Satisfactory	Rehabilitation	Low vertical clearance (11'-9").
46.78	Windsor Locks	Phase 3B	Waterworks Brook	Brick Arch w/stone abutments & Fascia	Single	1.00	10.00	Poor	Rehabilitation/Replacement	
49.15	Windsor Locks	Phase 3B	Cannon Brook	Brick Arch w/stone abutments & Fascia	Single	1.00	10.00	Serious	Replacement	Superstructure/bridge replacement.
49.73	Suffield/Enfield	Phase 3B	Connecticut River	Through Truss/Deck Girder	Single	18.00	1541.00	Fair/Poor	Maintenance/Rehabilitation	Major rehabilitation/replacement required to support two active tracks.
51.66	Enfield	Phase 3B	Beemans Brook	Brick Arch w/stone abutments & Fascia	Single	1.00	9.00	Good	Retaining Structures	Additional fill required for ballast retainers, retaining structures required.
53.94	Enfield	Phase 3B	Asnuntuck Rd	Brick Arch/ Concrete Arch	Single	1.00	18.00	Serious	Replacement or fill	Replace the existing concrete arch. Low vertical clearance (7'-6"). Possible abandonment of structure in lieu of replace.
53.96	Enfield	Phase 3B	Freshwater Brook	Brick Arch	Single	1.00	18.00	Poor	Rehabilitation	Rating required. Replacement possible pending rating results.
53.98	Enfield	Phase 3B	Main Street	Concrete Encased I-Beam	Single	1.00	35.00	Good	New Superstructure, Rehabilitate Substructure	Existing superstructure only accommodates one track. New superstructure required for 2nd track.
54.88	Enfield	Phase 3B	Waterworks Brook	Brick Arch w/Stone Abutments & Fascia/Rail Top Extension	Double	2.00	12.00	Fair	Retaining Structures	New Ballast retainers to replace existing timber retaining structures. Survey required to evaluate location of rail top w/respect to tracks.

Source: Parsons Brinkerhoff, 2011

**Table 3-3 – Inventory of Overhead Bridge Improvement in Project**

<i>New Haven-Hartford-Springfield High Speed Rail Program</i>							<b>OVERHEAD BRIDGE INVENTORY</b>
<i>State Project No. 170-2296</i>							<b>December 14, 2011</b>
<b>MP</b>	<b>Town</b>	<b>Phase</b>	<b>Carries</b>	<b>Description</b>	<b>Active Tracks</b>	<b>Recommended Action</b>	<b>Comments</b>
2.36	New Haven	Phase 2A	YMCA Pedestrian Bridge	Through Girder	Double	Removal	Removal of degraded structure required.
2.61	New Haven	Phase 2A	Yard Pedestrian Bridge	Through Truss	Double	Removal	Removal of degraded structure required.
19.90	Meriden	Phase 2A	Meriden Jct. Branch	Deck Girder	Double	Removal	Removal of abandoned structure required.
21.12	Meriden	Phase 2A	Yales Bridge	N/A	Single	Removal	Former Yales Bridge overhead bridge. Superstructure was removed, substructure remains. Removal of existing west brownstone abutment recommended due to close clearance with existing track.

Source: Parsons Brinkerhoff, 2011

**Table 3-4 – Inventory of Culvert Improvements in Projects**

*New Haven-Hartford-Springfield High Speed Rail Program  
State Project No. 170-2296*

**CULVERT INVENTORY  
DECEMBER 14, 2011**

<b>MP</b>	<b>Town</b>	<b>Phase</b>	<b>Description</b>	<b>Active Tracks</b>	<b>Condition Summary</b>	<b>Recommended Action</b>
3.30	Hamden	Phase 2A	24" Corrugated Steel	Double	Unknown	Further Evaluation
3.35	Hamden	Phase 2A	42" Reinforced Concrete Pipe/Brick Arch	Double	Fair	Further Evaluation
3.75	Hamden	Phase 2A	4' (h) X 3' (w) Stone Box	Double	Fair	Further Evaluation
4.86	Hamden	Phase 2A	2' (h) x 4'-6" (w) Stone Box	Double	Poor	Further Evaluation
7.99	North Haven	Phase 2A	2'-8" (h) x 2'-6" (w) Stone Box	Single	Poor	Further Evaluation
16.19	Wallingford	Phase 2A	2'x3' Brick Arch	Single	Fair	Further Evaluation
16.84	Meriden	Phase 2A	18" Corrugated Metal Pipe/4' (h) x 2'-6" (w) Brick Arch	Single	Poor	Further Evaluation
17.00	Meriden	Phase 2A	3' (h) x 4' (w) Brick Arch	Single	Fair	Further Evaluation
19.70	Meriden	Phase 2A	14" (h) x 35" (w) Brick Arch	Double	Poor	Replacement/ Rehabilitation
20.25	Meriden	Phase 2A	2'x2' Stone Box/Brick Arch	Double	Poor	Further Evaluation
21.49	Meriden	Phase 1	3' X 3' Stone Box	Single	Fair	Hydraulic Modeling
21.83	Berlin	Phase 1	44" (h) x 35" (w) Stone Box	Single	Fair	Further Evaluation
23.47	Berlin	Phase 1	2' (h) x 3' (w) Stone Box	Single	Poor	Hydraulic Modeling
23.80	Berlin	Phase 1	2' x 2' Stone Box	Single	Poor	Further Evaluation
24.53	Berlin	Phase 1	3' (h) x 2' (w) Stone Box	Single	Fair	Further Evaluation
25.06	Berlin	Phase 1	15" HDPE Corrugated Pipe	Single	Poor	Replacement/ Rehabilitation
25.70	Berlin	Phase 1	4' (h) x 3' (w) Brick Arch	Single	Fair	Further Evaluation
27.66	New Britain	Phase 1	4' x 4' Stone Arch	Single	Fair	Further Evaluation
28.35	New Britain	Phase 1	2' (h) x 3' (w) Stone Box/Rail Top	Single	Poor	Hydraulic Modeling
28.62	Newington	Phase 1	4' (h) x 3' (w) Stone Box	Single	Serious	Abandon
28.63	Newington	Phase 1	42" Concrete Pipe	Single	Poor	Replacement/ Rehabilitation

**Table 3-4 - Inventory of Culvert Improvements in Projects (Continued)**

*New Haven-Hartford-Springfield High Speed Rail Program  
State Project No. 170-2296*

CULVERT INVENTORY  
DECEMBER 14, 2011

<b>MP</b>	<b>Town</b>	<b>Phase</b>	<b>Description</b>	<b>Active Tracks</b>	<b>Condition Summary</b>	<b>Recommended Action</b>
29.22	Newington	Phase 1	Double 36" PVC Pipe/ Single 36" Corrugated Metal Pipe	Single	Fair	Further Evaluation
29.87	Newington	Phase 1	36" Cast Iron	Single	Fair	Further Evaluation
30.05	Newington	Phase 1	18" Corrugated Metal Pipe	Single	Poor	Replacement/ Rehabilitation
30.16	Newington	Phase 1	30" Pipe?	Single	Unknown	Further Evaluation
33.95	West Hartford	Phase 2B	2'x2' Stone Box	Single	Poor	Hydraulic Modeling
41.17	Windsor	Phase 3A	24" Cast Iron	Single	Poor	Replacement/ Rehabilitation
41.77	Windsor	Phase 3A	3' x 3' Brick Arch/Concrete Box Ext.	Single	Poor	Replacement/ Rehabilitation
42.68	Windsor	Phase 3A	15" (h) x 24' (w) Stone Box	Single	Fair	Further Evaluation
43.58	Windsor	Phase 3B	12" Cast Iron	Double	Unknown	Further Evaluation
43.60	Windsor	Phase 3B	12" Cast Iron	Double	Unknown	Hydraulic Modeling
44.10	Windsor	Phase 3B	2'x2'6" Brick Arch	Double	Poor	Replacement/ Rehabilitation
44.55	Windsor	Phase 3B	3' Brick Arch	Double	Unknown	Further Evaluation
45.64	Windsor	Phase 3B	12" Cast Iron	Double	Unknown	Further Evaluation
45.70	Windsor	Phase 3B	8" Clay Pipe	Double	Poor	Replacement/ Rehabilitation
47.70	Windsor Locks	Phase 3B	12" Cast Iron/Steel Pipe	Single	Unknown	Further Evaluation
47.85	Windsor Locks	Phase 3B	12" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
47.90	Windsor Locks	Phase 3B	12" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
48.53	Windsor Locks	Phase 3B	12" Cast Iron	Single	Poor	Replacement/ Rehabilitation
48.59	Windsor Locks	Phase 3B	12" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
48.65	Windsor Locks	Phase 3B	12" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
48.87	Windsor Locks	Phase 3B	2' Stone Box	Single	Fair	Further Evaluation
48.92	Windsor Locks	Phase 3B	3'6"x3' Stone Box /Rail Top	Single	Fair	Further Evaluation

**Table 3-4 - Inventory of Culvert Improvements in Projects (Continued)**

*New Haven-Hartford-Springfield High Speed Rail Program  
State Project No. 170-2296*

CULVERT INVENTORY  
DECEMBER 14, 2011

MP	Town	Phase	Description	Active Tracks	Condition Summary	Recommended Action
49.05	Windsor Locks	Phase 3B	18" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
49.30	Windsor Locks	Phase 3B	18" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
49.40	Windsor Locks	Phase 3B	3'x5' Stone Box -East/ Brick Arch- West	Single	Poor	Replacement/ Rehabilitation
50.16	Enfield	Phase 3B	2' x2' Brick Arch	Single	Fair	Further Evaluation
50.24	Enfield	Phase 3B	24"Corrugated Metal Pipe	Single	Poor	Replacement/ Rehabilitation
50.48	Enfield	Phase 3B	3' x 4' Stone Box	Single	Fair	Further Evaluation
50.90	Enfield	Phase 3B	8" Clay Pipe/Stone Box Ext.	Single	Poor	Replacement/ Rehabilitation
51.42	Enfield	Phase 3B	36" Corrugated Metal Pipe- East/ Cast Iron -West	Single	Fair	Further Evaluation
53.15	Enfield	Phase 3B	2' x 2' Concrete Box/Stone Box	Single	Fair	Replacement/ Rehabilitation
53.29	Enfield	Phase 3B	1'8" x 1'8" Concrete Box- East/ 16" Clay Pipe- West	Single	Poor	Replacement/ Rehabilitation
53.57	Enfield	Phase 3B	15" Clay Pipe/ 16" Cast Iron	Single	Poor	Replacement/ Rehabilitation
54.43	Enfield	Phase 3B	18" PVC Pipe	Single	Fair	Further Evaluation
54.56	Enfield	Phase 3B	8" Clay Pipe	Single	Poor	Replacement/ Rehabilitation
56.22	Longmeadow	Phase 3B	3' x 3' Stone Box / 18" Steel Pipe Ext.	Double	Unknown	Further Evaluation
56.83	Longmeadow	Phase 3B	3' x 4' Stone Box	Double	Unknown	Further Evaluation
57.22	Longmeadow	Phase 3B	3' x 5' Stone Box /Brick Arch/Stone Box	Double	Unknown	Further Evaluation
57.62	Longmeadow	Phase 3B	48" Cast Iron	Double	Unknown	Further Evaluation
59.73	Springfield	Phase 3B	24" Cast Iron	Double	Poor	Replacement/ Rehabilitation

**Notes:**

- (1) Included in the Busway Project.
- (2) Amtrak has plans for improvements.

Source: Parsons Brinkerhoff, 2011

### **3.4 Applicable Regulations, Required Coordination and Permits**

This section identifies permits, approvals, certifications, coordination and registrations that may be required for implementation of the proposed project.

#### **Federal Permit, Compliance, and Coordination Requirements**

##### **National Environmental Policy Act (NEPA)**

The National Environmental Policy Act of 1969 (NEPA, 42 USC Section 4321 *et seq.*) requires federal agencies to consider the potential environmental consequences of their proposals, to consult with other interested agencies and the public, to document the analysis, and to make this information available to the public for comment before the implementation of the proposals.

##### **U.S. Army Corps of Engineers (ACOE)**

The ACOE has jurisdiction, under the Federal Water Pollution Control Act or Clean Water Act of 1972 (33 USC Section 1251 *et seq.*), to regulate discharge of dredge or fill material into all waters of the United States including open water, inland wetlands and tidal wetlands. The ACOE coordinates the issuance of a Section 404 wetlands permit with the State of Connecticut Water Quality Certification in accordance with Section 401 of the Clean Water Act. The ACOE also has jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 over work performed in navigable waters in the United States. In the case where a Section 404 permit is required, any Section 10 requirements would be combined with the Section 404 permit procedures. Encroachment into wetlands as a result of the proposed project would require a Section 404 permit. Work done to bridges over the Connecticut River or other waters deemed to be navigable by the ACOE would also require a Section 10 permit.

##### **Hazardous Materials Regulations**

Risk sites, regulated by Federal and Connecticut General Statutes (CGS) 22a-134, may be located along the rail corridor. CTDOT Task 210 or Massachusetts Contingency Plan procedures will be implemented during the design phase of the project for areas on or adjacent to identified high-risk sites to comply with CGS 22a-134 and would include final permitting process through site investigations and environmental audits. Actions to remediate the identified sites, avoid them or otherwise bring them into compliance will be taken prior to or during construction.

##### **Historic Preservation Act (Section 106)**

Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470f), requires that federal agencies consider the effect of their undertakings on historic properties. This requirement is independent of, but is typically coordinated with, the environmental review process conducted pursuant to NEPA. Coordination with the Connecticut and Massachusetts State Historic Preservation Officers (CTSHPO and MASHPO) and Federal Advisory Council on Historic Preservation in the form of a Memorandum of Agreement (MOA) or a Programmatic Agreement (PA) is required to ensure that anticipated impacts from the proposed project would be acceptably removed or minimized. A PA is being entered into between FRA, CTDOT, CTSHPO, MASHPO, and others to ensure compliance with Section 106.

##### **Section 4(f)**

Section 4(f) of the U.S. Department of Transportation Act of 1966, which applies to all agencies within the U.S. Department of Transportation, prohibits such agencies from approving the use of



publicly owned parks, recreational areas, wildlife and waterfowl refuges and public and private historic sites unless the agencies make two findings: 1) that there is no feasible and prudent alternative that avoids the use of Section 4(f) properties; and 2) that the project or action includes all possible planning to minimize the harm that would result from the use of those resources. None of the publicly owned recreational properties or wildlife protection areas that are located in the NHHS rail corridor would be impacted by the proposed project; therefore, there will be no use of these resources... However, the NHHS rail corridor contains resources that are listed on the National Register of Historic Places or have been determined to be National Register-eligible, and some may be used for implementation of the proposed project. Therefore, a 4(f) determination will likely be completed for this project as the design progresses.

#### **Section 6(f)**

Section 6(f) of the Land and Water Conservation Fund Act (LAWCFA) 16 USC Sections 460L4 through 460L11, as amended, requires that property acquired or developed with LAWCFA funding not be used for any purpose other than public outdoor recreation without the approval of the Secretary of the U.S. Department of the Interior. There is only one resource funded and protected under Section 6(f) within the corridor study area: Bushnell Park located in downtown Hartford, CT. There would be no impact to this Section 6(f) land with the proposed project; therefore, Section 6(f) evaluation is not required.

#### **Public Health Service Act (Safe Drinking Water Act)**

The 1986 Federal Safe Drinking Water Act (42 USC Sections 300f through 300j-26, as amended) grants primary authority to the states for adoption and enforcement of regulations for the protection of water systems and supplies. If the proposed project involves construction activity on public water supply watershed lands, a review is required by the Connecticut Departments of Environmental Protection and Public Health.

#### **Federal Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970**

Affected property owners would be afforded relocation assistance through the *Federal Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970*. CTDOT is authorized and required to provide monetary and other relocation assistance to displaced property owners whose properties would be acquired for implementation of the proposed federally funded project.

#### **Executive Orders**

The federal Executive Orders listed below must be taken into consideration as part of the evaluation of each alternative:

- Executive Order 11990 mandating that federal agencies ensure preservation and enhancement of wetland resources;
- Executive Order 11988 directing federal agencies to take appropriate action to minimize flood hazards and impacts resulting from modifications to floodplains; and
- Executive Order 12898 requiring federal agencies to ensure that their programs, policies and activities do not result in disproportionately high or adverse human health or environmental effects on minority or low-income populations.

## Other Coordination Requirements

- National Railroad Passenger Corporation (Amtrak) Coordination  
Amtrak, owner of the Springfield Line, currently operates regional passenger service between New Haven, Connecticut, and Springfield, Massachusetts. Coordination with Amtrak is required during the planning, design and construction phases of the project. Amtrak requires that its personnel review all plans and design work. During construction, Amtrak requires that safety personnel be on site for any work that is at or adjacent to its tracks.
- Rail Freight Operations Coordination  
The proposed project requires coordination with rail freight operators to avoid adverse impacts to their operations during construction and as additional passenger rail service is phased in. This includes the following freight railroads: CSX Transportation, Connecticut Southern Railroad, Pan Am Railroad, Providence Worcester Railroad and the Central New England Railroad.

## Applicable State Regulations, Required Coordination and Permits

Connecticut Environmental Policy Act (CEPA): This environmental document has also been prepared in accordance with CEPA - Connecticut General Statutes (CGS), Sections 22a-1a through 22a-1h and thus serves as an EIE under CEPA review. If it is determined that no significant impacts would result from the proposed project, Connecticut's Office of Policy and Management would concur with the FRA's decision document (i.e., either a FONSI or Record of Decision on this EA/EIE or future environmental review documents). The MassDOT has determined that work proposed by the NHHS Project in Massachusetts does not trigger any thresholds under MEPA and therefore is not subject to review under MEPA. See Appendix 8 for supporting correspondence from MassDOT.

The following regulations are applicable to the surface water resources and groundwater resources throughout the study corridor and to the proposed project:

- Connecticut Surface Water Quality Standards (Connecticut Department of Energy and Environmental Protection [CT DEEP], Effective February 25, 2011);
- State of Connecticut Integrated Water Quality Report (Draft, April 11, 2011);
- CT DEEP Groundwater Quality Standards (Effective April 12, 1996); and
- Massachusetts Surface Water Permit Discharge Program, 314CMR 3.00 and 4.00.

Principal applicable state law concerning the proposed project's impact to wetlands is as follows:

- The Connecticut Inland Wetland and Watercourses Act (CGS Section 22a-36 through 22a-45a, inclusive);
- The Connecticut Coastal Management Act (CCMA) (CGS Sections 22a-90 through 22a-112, inclusive); and
- The Massachusetts Wetlands Protection Act (MGL Chapter 13 Section 40).

The following regulations are applicable to the consideration of wild and scenic rivers, navigable waterways, and coastal resources in the NHHS rail corridor:

- Wild & Scenic Rivers Act, October 2, 1968;
- Navigable waterways of the United States are defined (33 CFR Part 329) as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been in the past, or may be susceptible for use to transport interstate or foreign commerce;
- Navigable waterways are also regulated by the CT DEEP, and bridges that cross them may be regulated by the U.S. Coast Guard;
- Connecticut’s Coastal Management Act; and
- Section 22a-94 of the Connecticut General Statutes, in which coastal waters are defined by the state as those waters of Long Island Sound and other associated waters that contain a salinity of at least 500 parts per million (ppm) under low-flow stream conditions; and
- Massachusetts Rivers Protection Act as Amended, 1996.

In addition, the following regulations are applicable to the proposed project’s effects on floodplains and floodways and Connecticut-designated stream channel encroachment lines (SCELS):

- Sections 25-68b through 25-68h, inclusive, of the CGS, Connecticut’s Flood Management Program. This program, administered by the CT DEEP, regulates state agency actions affecting floodplains and natural man-made storm drainage facilities. Agencies undertaking such actions must submit a Flood Management Certification (FMC) describing the project activities and the measures taken to meet the program’s standards. Under recent provisions, project-related improvements that result in the loss of flood storage capacity may be required to provide flood storage compensation.
- The Connecticut SCEL program, administered by the CT DEEP, regulates activities within designated SCELS and issues permits only if there is a clear demonstration that the project would not cause an increase in flood hazard or other adverse effects.

State laws governing review of the proposed project’s effects on threatened and endangered (T&E) species are as follows:

- The Connecticut Endangered Species Act (CGS 26-303) declared a policy of the State to conserve, protect, restore, and enhance any endangered or threatened species and essential habitat. The act requires that any action authorized, funded or performed by a state agency not threaten the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat designated as essential to such species, using the best scientific data available.
- Massachusetts Endangered Species Act (310CMR 10:00).