FINDING OF NO SIGNIFICANT IMPACT

Connecticut River Bridge Replacement Project
Old Saybrook and Old Lyme, Connecticut
November 2016

Introduction

The National Railroad Passenger Corporation (Amtrak) proposes to replace the Connecticut River Bridge, which became operational in 1907 and is nearing the end of its useful life. The existing Connecticut River Bridge is located along Amtrak's Northeast Corridor (MP 106.89) between the Town of Old Saybrook in Middlesex County and the Town of Old Lyme in New London County. The existing bridge spans the Connecticut River, 3.4 miles from its mouth at the Long Island Sound. The existing bridge is used by Amtrak, Providence and Worcester Railroad (P&W), and by the Connecticut Department of Transportation's (ConnDOT) Shore Line East (SLE) service. Roughly 38 Amtrak trains, 12 SLE trains (including 2 non-revenue trains), and 6 freight trains travel across the bridge each weekday.

The Federal Railroad Administration (FRA) is serving as lead federal agency for the environmental assessment (EA), prepared in accordance with the National Environmental Policy Act of 1969 (42 USC § 4321 et seq.) (NEPA). The EA analyzes and documents whether replacing the existing bridge would have significant effects on the environment. The EA was widely distributed for public and agency review on May 15, 2014. It was also posted to the FRA's website at https://www.fra.dot.gov/Page/P0699. The comment period extended from May 15, 2014 to June 30, 2014. Comments received are summarized in this document.

This Finding of No Significant Impact (FONSI) is made based on the information in the EA to comply with NEPA, FRA's Procedures for Considering Environmental Impacts (64 FR 28545, May 6, 1999), and other related laws.

Statement of Purpose and Need

The purpose of the Connecticut River Bridge Replacement Project is to improve the aging bridge, enhance its reliability and long-term serviceability, and ensure continued passenger and freight rail operations along the Northeast Corridor as well as navigation along the Connecticut River. The project is needed to address the deficiencies of the existing Connecticut River Bridge. The primary concerns with the existing Connecticut River Bridge are its age and deteriorated condition, since it is nearing the end of its useful life. The existing bridge is a rolling lift bascule span bridge, and the lift span opens to allow boats and other marine vessels to traverse the Connecticut River. At times, the operational reliability of the aging bridge and its failure to open and close properly results in cascading delays to rail and maritime traffic. Between May 15 and October 15 of each year, the bridge typically remains in the open position and closes for rail traffic as needed. Additionally, the existing timber fenders that mark the navigation channel are deteriorated and substandard. Because the navigation channel is off-center (closer to the eastern shoreline), the ebb tide current tends to pull marine vessels into the west channel pier.

Amtrak commissioned a bridge inspection in 2006. Amtrak found certain aspects of the existing bridge to be particularly problematic, including the mechanical operating system, the bascule span rolling tread plates, the approach span truss pin and eyebar connection, the curved tread plates, and mating track plates of the heel end of the rolling lift span.

To compare and contrast the project alternatives developed as part of the environmental review process, Amtrak identified specific project goals and objectives to be used as the basis for developing the criteria and screening methodology for evaluating the project alternatives. Amtrak established three goals for the

Connecticut River Bridge Replacement Project. The objectives further define the goals and provide specific and measurable means by which to evaluate project alternatives. The three project goals and their respective objectives are as follows:

Goal 1: Improve the reliability and long-term serviceability of the Connecticut River Bridge and its approach structures.
- Objective: Maintain a state-of-good-repair for the bridge and its approaches.

Goal 2: Minimize conflicts with maritime traffic.
- Objective: Minimize delays to trains and/or marine traffic due to bridge operations.
- Objective: Provide sufficient vertical clearance and channel width for commercial and recreational traffic on the Connecticut River.
- Objective: Minimize construction-period impacts to rail operations and navigation.

Goal 3: Minimize permanent and temporary impacts to the surrounding environment.
- Objective: Minimize temporary and permanent impacts to wetlands and other ecologically sensitive areas.
- Objective: Minimize impacts to cultural resources
- Objective: Minimize short-term construction impacts.

Alternatives

Amtrak considered a range of improvement alternatives, including minor repairs, rehabilitation of the existing bridge, partial replacement, and complete replacement, in addition to an alternative of no action. In all, Amtrak evaluated 21 different build alternatives in seven groups based on specific criteria, including: construction-period impacts to rail service and navigation; operational improvements to rail service and navigation; long-term serviceability and reliability of the bridge and its approach structures; impacts to railroad facilities, such as electrification; and permanent and temporary environmental impacts including property acquisition. Alternatives were also grouped by the proposed rail alignment—"on-line" alternatives proposed to build a new bridge along the existing alignment, whereas "off-line" alternatives would build a new bridge to the north or south of the existing alignment. Below is a brief description of the seven build alternative groups evaluated.

- Alternative Group 0—No Action Alternative. Only minimal repairs and maintenance needed to keep the existing bridge in service will be performed.
- Alternative Group 1—Rehabilitation of the existing bridge. This will include rehabilitation of the existing bridge approach spans and substructures. These alternatives are assumed to extend the service life of the bridge for 40 years.
- Alternative Group 2—Partial bridge replacement. This will include rehabilitation of the approach spans and substructures. The moveable span will be replaced in its entirety. These alternatives are assumed to extend the service life of the bridge for 40 years.
- Alternative Group 3—On-line bridge replacement. This will include replacement of the entire bridge superstructure, the approach spans, and the moveable span. The bridge will be replaced on its current alignment. These alternatives are assumed to extend the service life of the bridge for 75 years.
- Alternative Group 4—Off-line moveable bridge replacement to the north. This will include the replacement of the entire bridge superstructure, the approach spans, and the moveable span. The

existing bridge piers were constructed to allow for the future addition of parallel spans to the north. The northern alignment alternatives could extend and reuse the existing bridge piers, if determined to be structurally sufficient. If not, construction of a new substructure will be required. These alternatives assume the service life of the replacement bridge to be 75 years.

- Alternative Group 5—Off-line moveable bridge replacement to the south. This will include the replacement of the entire bridge superstructure, the approach spans, and the moveable span. The construction of a new substructure will be required. These alternatives assume the service life of the replacement bridge to be 75 years.
- Alternative Group 6—Off-line fixed bridge replacement to the south. This will include the complete replacement of the bridge superstructure and substructure, and new approach spans. The vertical alignment for this alternative group will include a 1.5 percent grade. These alternatives assume the service life of the replacement bridge to be 100 years.
- Alternative Group 7—Off-line fixed bridge replacement to the south. This will include the complete replacement of the bridge superstructure and substructure, and new approach spans. The vertical alignment for this alternative group will include a 1.9 percent grade. These alternatives assume the service life of the replacement bridge to be 100 years.

Evaluation of Alternatives

Groups 1, 2, and 3

Amtrak eliminated the rehabilitation alternatives in Group 1 due to concerns with the performance of the rehabilitated components, particularly with the long-term serviceability and reliability of the existing piers. The project team also discarded partial replacement alternatives and those associated with complete on-line replacement alternatives in Groups 2 and 3 because of the need to maintain uninterrupted train operations during on-line construction. The estimated loss of service and revenue for each two-track outage is unacceptable; thus Amtrak determined that Groups 1, 2, and 3 did not appropriately meet the project purpose and need and eliminated them from further project consideration.

Groups 4 and 5

Amtrak gave additional consideration to all of the Groups 4 and 5 alternatives, except the use of swing-type bridge replacement. Swing bridge alternatives were deemed impractical due to constructability concerns. To accommodate construction with the current bridge intact, a new swing bridge would need to be built approximately 200 feet off-line from the current bridge, which would entail extensive land use and potential environmental impacts. Additionally, a central-support swing bridge would not satisfy the 150-foot minimum channel width desired for navigation.

As explained above, the navigation channel is off-center—it is located closer to the eastern shoreline than the western shoreline. As a result, the ebb tide current tends to pull marine vessels into the west channel pier. Some of the Group 4 and 5 alternatives included an option to relocate the navigation channel into the center of the river. Through consultation with the U.S. Army Corps of Engineers (USACE) and the U.S. Coast Guard (USCG), Amtrak determined that relocating the navigation channel would present unacceptable navigation difficulties during construction (conflicting with the objective to minimize construction-period impacts to rail operations and navigation). Amtrak therefore eliminated those alternatives within Groups 4 and 5 that proposed to relocate the navigation channel. To determine whether the existing piers could be reused and/or extended for the northern alignment alternatives (Group 4), Amtrak performed additional conceptual engineering and a construction feasibility study. While minimal information is available regarding the structural integrity of the existing piers, the construction feasibility study concluded that their potential reuse could cause problems with seismic resistance and structural capacity. Furthermore, installing new piles or drilled shafts near the existing piers (which would be

required for any of the Group 4 alternatives) raised concerns about damaging vibrations and potential pier settling occurring during the construction process. Installing new foundations for the southern alignment alternatives (Group 5) will provide more distance from the existing piers and will therefore lessen the risk of damage to the existing bridge during its continued operation throughout the construction period. Based on the results of the construction feasibility study and the need for continued operation of the existing bridge during the construction phase, Amtrak determined that Group 4 alternatives presented unreasonable constructability and safety risks. Amtrak therefore eliminated the remaining Group 4 alternatives from further consideration.

Groups 6 and 7

The alternatives within Groups 6 and 7 would involve a high-level fixed-span crossing. Since this segment of the Connecticut River is heavily used by tall sailboats, a vertical clearance of at least 90 feet would be required. This would in turn require lengthy approach structures and extensive environmental impacts (including wetlands impacts and property acquisition). The high-level nature of the bridge would require relatively steep grades, which could be present operational impacts for the freight trains not equipped to handle steep grade changes. Furthermore, Amtrak estimated that these fixed bridge alternatives would be cost-prohibitive. Using these combined considerations, Amtrak determined that Group 6 and 7 fixed-bridge alternatives did not appropriately meet the purpose and need without significant impacts, and therefore eliminated the Groups 6 and 7 alternatives from further consideration.

No Action Alternative

Amtrak also evaluated the No Action Alternative, wherein the existing Connecticut River Bridge would remain in service as-is, with continued maintenance and minimal repairs. No major improvements to or replacement of the Connecticut River Bridge would be undertaken as part of the No Action Alternative. While the No Action Alternative would not meet the project's purpose and need, it is used as a baseline for comparison of environmental impacts and benefits.

Selected Alternative

The EA identified a Group 5 alternative that includes replacing the existing bridge with a new moveable bridge along a new alignment to the south of the existing alignment as the Preferred Build Alternative. FRA and Amtrak have chosen the Preferred Alternative as the Selected Alternative because it would satisfy all the project goals and objectives listed above. Specifically, the Preferred Alternative would improve the reliability and long-term serviceability of the bridge, minimize conflicts with maritime traffic, and minimize permanent and temporary impacts to the surrounding environment.

The Preferred Alternative will involve complete replacement of the existing superstructure with a two-track moveable bridge. It will be built along a new southern alignment, with an offset of 48 feet from the centerline of the existing bridge to the centerline of the new bridge. It will not reuse the existing piers, and will therefore require a new substructure. The upland portions of the Preferred Alternative will be built entirely within Amtrak's existing ROW. The channel will remain in its existing location. Upon completion of the new bridge, the existing Connecticut River Bridge will be decommissioned and removed. Amtrak identified two feasible options for the Preferred Alternative. One option (Option A) will replace the existing bridge with a bascule bridge and will maintain the existing 150-foot channel width. Option A will provide a vertical clearance of 18 feet in the closed position. In the open position, it will likely provide a similar vertical clearance as the existing bridge (i.e., 68 feet for full channel width and unlimited for vessels requiring less than 71 feet in width).

The other option (Option B) will replace the existing bridge with a vertical lift bridge. This option could potentially provide for a wider channel. The exact channel width for Option B will be determined during preliminary engineering; however, it will provide a minimum of 150 feet and a maximum of 200 feet. Option B will provide a vertical clearance of 18 feet in the closed position. When in the open position, the

vertical clearance of the lift bridge will be at least 90 feet. The EA analyzes both options. The analysis shows that the differences in environmental impacts between the two options are minimal. Amtrak will determine which option to pursue during the preliminary engineering phase, based on factors to include cost and constructability.

Environmental Consequences

The EA analyzed the potential impacts that may occur during construction or operation of the Preferred and No Action Alternatives. The following is a summary of the information presented in the EA.

Transportation

The Preferred Alternative will not result in significant adverse impacts to intercity rail operations, freight service, public transportation, or the regional highway system. The Preferred Alternative will improve the reliability of the bridge structure and moveable span, which will decrease unscheduled delays caused by bridge malfunctions and improve rail service. The Preferred Alternative will result in an improvement to navigability along this segment of the Connecticut River. The project will improve the reliability of the bridge and will therefore reduce delays to maritime traffic caused by bridge openings and closings. Option A will retain the alignment and width of the existing channel and replace the existing bridge with a bascule moveable span, which will provide unlimited vertical clearance for a portion of the channel. Option B could potentially expand the navigation channel to 200 feet in width (which could further benefit navigation by reducing the likelihood of fender collisions) and will include a vertical lift span with a vertical clearance of 90 feet.

The Preferred Alternative will result in some temporary adverse impacts to mariners during the construction period. Construction may impede navigation during the construction of the replacement moveable span, which will be placed in alignment with the existing channel. Intensive construction activities in the Connecticut River during the high season for recreational boating (May through October) will be avoided to the extent practicable. Navigation will be maintained even in the winter months (November through April) since commercial traffic continues during that time. Amtrak will arrange channel closures through coordination with USCG and the maritime community. Overall, river closures are expected to be limited to brief periods during winter months. Amtrak anticipates that river navigation closures will occur only during the installation of the moveable span and a portion of the existing bridge demolition. Impacts to navigability will be temporary, non-significant, and limited only to the construction of the replacement bridge. During the construction period, passenger and freight trains operating through the project area may need to operate at slightly slower speeds to ensure safety. A track outage may also be required to connect the newly constructed bridge approach spans to the existing track. There will be no adverse impacts on vehicular traffic in the project area.

Land Use, Zoning, and Public Policy

The Preferred Alternative will not adversely affect existing or planned land uses in the study area and will not result in any adverse impacts to zoning or public policy. The improvements will be contained within the existing Amtrak right-of-way; therefore, the project will not require any permanent upland land acquisition, the land will continue to be used for rail transportation, the surrounding land uses will not change as a result of the Preferred Alternative, and local zoning districts and legislation will remain unaffected. In addition, since the Preferred Alternative is expected to only improve the reliability and long-term serviceability of the Connecticut River Bridge and its approach structures and to minimize conflict between rail and maritime traffic, and will not result in increased train speed or frequency of service, the Preferred Alternative will not alter the existing neighborhood character.

Parkland and Open Space

The Preferred Alternative will not have significant adverse effects on the two parks located within the study area—Ferry Landing Park and the Elizabeth B. Karter Watch Rock Natural Preserve ("Watch Rock"). Watch Rock is a 25-acre preserve with wooded hiking trails and picnic areas. While the majority of Watch Rock is located well beyond the study area, the northernmost tip is within the study area that was used for the parkland analysis. This northernmost tip is located ¼-mile away from the project site itself, and will not be subject to any disturbance. The Preferred Alternative will not adversely affect the preserve, the hiking trails, or the picnic area. Ferry Landing Park is a waterfront park located within the confines of the Connecticut Department of Energy and Environmental Protection (CTDEEP) Marine Headquarters, offering a large lawn, a picnic area, a gazebo, and a waterfront walkway that extends around the perimeter of the lawn and picnic area. The waterfront walkway extends into a boardwalk (located in the river itself) that continues underneath the existing Connecticut River Bridge into an adjacent wetlands area. The boardwalk segment that passes underneath the bridge will be closed during bridge construction. While this boardwalk segment would be affected in the short-term (for a period of up to three years), this impact will be temporary. The large lawn, picnic area, gazebo, and perimeter waterfront walkway are expected to remain open during construction. The temporary closure of a portion of the in-water boardwalk is necessary for bridge construction and public safety and would not constitute a significant adverse effect to Ferry Landing Park. Therefore, the project will not result in significant adverse impacts to parkland and open space.

Socioeconomic Conditions

The Preferred Alternative would not require the acquisition or displacement of any active businesses or affect area employers. The Preferred Alternative is not expected to increase or decrease marine traffic in the project area or adversely impact the marine-related businesses. The Preferred Alternative will replace an aging two-track rail bridge with a more modern and reliable two-track rail bridge, and will not entail new passenger service, increased train speeds, expanded rail capacity, or a new passenger rail station. The Preferred Alternative is therefore not expected to induce new population growth or development, nor would it change employment levels. No significant adverse effects to socioeconomic conditions will result from the Preferred Alternative.

Visual Resources

In replacing the historic bridge with a new bridge, this aspect of the Connecticut River View Corridor (the central visual resource in the study area characterized by an expansive view shed that includes the Connecticut River and surrounding tributaries, marshes, wetlands, and woods, and the Connecticut River Bridge) will be altered. The magnitude of the change will vary somewhat according to whether Option A or Option B is selected. Both options will likely result in the removal of the existing stone pier structure. Option A will be of the same bridge type and will have dimensions and height similar to the existing bridge. Insofar as the bascule bridge design will minimize impacts to the Connecticut River View Corridor, Option A will result in less change to visual conditions, while Option B will result in more change. Neither will block views along the Connecticut River View Corridor. The design of the new bridge will be undertaken by Amtrak in coordination with the Connecticut State Historic Preservation Office (CTSHPO), as described in the Memorandum of Agreement (MOA), and will include consultation to incorporate historically compatible designs. This process will, to the extent practicable, result in a new bridge design that reflects the historic character of the existing bridge and will further minimize any visual changes or intrusions along the Connecticut River View Corridor. The Preferred Alternative will not substantially alter the visual character of the study area or block important views to visually sensitive resources. Therefore, the project will not result in adverse impacts on visual character and visually sensitive resources in the study area. For the duration of construction, cranes, barges and other construction equipment, as well as staging areas on both sides of the Connecticut River will be visible to

boaters and pedestrians. These temporary changes will not constitute an adverse impact to visual resources.

Cultural Resources

Amtrak has coordinated with CTSHPO throughout the project development, as mandated by Section 106 of the National Historic Preservation Act. As described below, consultation will continue throughout the preliminary and final engineering and permitting phases.

Archaeological Resources

The Preferred Alternative involves modification of portions of the Northeast Corridor within the archaeological area of potential effect (APE). Embankment extensions required for the Preferred Alternative will impact ground surfaces to the south of the current alignment for a length of up to 1,200 feet in Old Saybrook and 1,100 feet in Old Lyme. As described in the MOA (executed by FRA, CTSHPO, and Amtrak), Amtrak will develop and implement an archaeological testing plan, in coordination with the CTSHPO, to determine the presence or absence of archaeological resources in Old Lyme that could be affected by the Preferred Alternative. If archaeological resources are found to be present in the APE, further field testing may be necessary to determine whether these resources are significant or eligible for listing on the State Register of Historic Places (SR) or the National Register of Historic Places (NR) (S/NR eligible). If Amtrak determines that S/NR-eligible archaeological resources will be impacted by the project, avoidance or mitigation measures will be developed in coordination with the CTSHPO.

Architectural Resources

The Preferred Alternative will not directly affect any known or potential architectural resources identified in the study area, with the exception of the Connecticut River Bridge. Because the architectural resources in the study area are far removed (between 400 feet and a ¼-mile) from the project site, they are not at risk for inadvertent damage due to project-related construction activities. Furthermore, while the context of these resources will be somewhat altered by the removal of the Connecticut River Bridge and the construction of a new bridge over the Connecticut River, it will not substantially change. The history and significance of these historic resources is not associated with the railroad, and therefore, their relationship to the railroad is not an important character-defining feature. Lastly, under the Preferred Alternative, the new bridge will not differ substantially in height, dimension, or alignment, and therefore, is not expected to block existing views to and from historic resources.

The Preferred Alternative will result in the removal of the existing Connecticut River Bridge and the construction of a new bridge. The Preferred Alternative will therefore have an adverse effect on the Connecticut River Bridge, which is individually listed on the Connecticut State Register of Historic Places (SR) and individually eligible for the National Register of Historic Places (NRHP) (as the Connecticut River Railroad Bridge) within the context of the Moveable Railroad Bridges on the Northeast Corridor in Connecticut Thematic Nomination. Mitigation measures are described in the MOA, and include: Historic American Engineering Record (HAER) documentation; development of an interpretive exhibit in a park, greenway, or public space that will present the history of the bridge and other moveable railroad bridges in the Connecticut segment of the Northeast Corridor; and potentially salvaged elements of the bridge.

Air Quality

The Preferred Alternative will not result in an increase in rail capacity over the Connecticut River and the project will not increase the number of trains traveling over the bridge on the Northeast Corridor. Therefore, the project will not substantially increase the number of new transit riders and will not measurably reduce vehicle-miles-traveled in the region. The Preferred Alternative will not cause any change in current conformity designations and will not result in significant adverse effects on air quality.

While the proposed improvements will lead to an improvement in service along the Northeast Corridor that could slightly increase passenger travel and reduce auto usage in the region, the air quality benefits will be negligible.

Air pollutant emissions from construction of the Preferred Alternative will include emissions from on-site non-road construction equipment (potentially including both construction vehicles and small generators), emissions from on-road vehicles, including worker and delivery vehicles, emissions from marine engines and possibly locomotives delivering and removing materials from the site, and fugitive dust emissions from land-clearing operations, demolition, grading, excavation, and transfer of debris and loose material. These activities are temporary and short-term. The use of USEPA Tier 2 certified non-road diesel engines, diesel particulate filters for engines greater than 50 horsepower, and other measures detailed in the "Commitments and Mitigation Measures" section below, will help ensure minimization of air quality emissions during construction. Overall, no significant adverse impacts to air quality would result from the construction or operation of the Preferred Alternative.

Noise and Vibration

Both options of the Preferred Alternative will result in comparable noise levels since rail traffic will be identical, and the track alignment will be the same with either option. There are two noise-sensitive receptors in the study area: a waterfront boardwalk and a group of residences on Clark Street. The distance between the boardwalk receptor and the track will not change with the Preferred Alternative, as the track runs directly over the boardwalk in both options of the Preferred Alternative as well as the existing condition. Therefore, the operation of the Preferred Alternative will not result in a change in noise levels at the boardwalk. The distance between the Clark Street receptors and the track will increase with either option, as compared to the existing condition. While this increase in distance will result in a slight decrease in noise levels at the Clark Street receptors, this change will be too small to be noticeable according to the results of the noise assessment conducted in accordance with Federal Transit Administration's (FTA) General Noise Assessment (which has been adopted by FRA). No vibration-sensitive uses are located within the vibration study area. In summary, the operation of the Preferred Alternative will not result in significant adverse noise or vibration impacts.

Construction activities related to the bridges, approach structures, embankment and retaining walls, and new track and ancillary equipment along each alignment will result in short-term noise increases in the vicinity of the actual work site. The project will result in temporary noise increases at CTDEEP Marine Headquarters and Ferry Point Park from deliveries of materials that will be needed for construction purposes. Any impacts will be temporary, non-significant, and will most likely occur due to weekday truck trips concentrated in the morning and afternoon peak periods, with occasional late night deliveries of oversized materials (e.g., bridge girders). Since the use of driven piles will be limited, no controlled blasting is anticipated, and no vibration-sensitive receptors were identified, the Preferred Alternative is not expected to result in any significant adverse vibration impacts during the construction period.

Energy Use

The Preferred Alternative will operate more efficiently than the existing bridge, using state-of-the-art electric motors and modern construction materials. Both bascule bridges and vertical lift bridges require relatively little power to operate the moveable span since the weight of the span is balanced by the counterweight. There is no meaningful difference in energy requirements for a bascule bridge versus a vertical lift bridge; therefore, neither option of the Preferred Alternative presents a benefit over the other in terms of energy consumption.

Terrestrial Resources

Extensive field surveys were performed as part of the EA analyses, supplemented by recent desktop surveys in 2016. The desktop surveys confirmed that natural resources within the study have remained

largely unchanged in recent years. Terrestrial resources potentially affected by the Preferred Alternative are confined to those within Amtrak's right-of-way and possible construction staging areas. The removal of some scrub/shrub vegetation along the existing embankment may be necessary to accommodate the new alignment and construction access. These areas have relatively little value as terrestrial habitat, and as such, no significant permanent impacts to terrestrial natural resources are expected. The Preferred Alternative will not result in increases in rail traffic or train speed; therefore, no long-term noise impacts on local reptile, bird, and mammal reproduction, foraging, or movement will be occur.

Floodplains

The Preferred Alternative will not significantly impact floodplains. In-water piers and other support structures will not constrict tidal or freshwater flows, and are expected to be virtually identical to the existing structures with respect to flood water throughput. The bottom of steel of the new bridge superstructure will be located above the 100-year flood elevation. Small areas of fill in tidal floodplains associated with embankment widening and pier installation encroach into the floodplain. Because the Connecticut River and adjacent coastal floodplains are entirely tidal in the project area, this fill will not impact the capacity of the river to absorb flood waters. Since the project area is located near the mouth of the river at Long Island Sound, the ultimate flood storage capacity that should be considered for the site is that of Long Island Sound and the Atlantic Ocean.

Coastal Zone

Amtrak coordinated with CTDEEP during development of the EA. According to CTDEEP, a formal coastal management consistency review should be performed during the subsequent preliminary engineering and permitting phase, rather than during the environmental review phase. Therefore, Amtrak will submit a complete "Coastal Management Consistency Review Form for Federal Activities" along with all required attachments and will seek a formal Coastal Zone Consistency Determination from CTDEEP during the preliminary engineering and permitting phase. Nonetheless, as part of the EA, a preliminary coastal zone consistency analysis was conducted to determine the project's anticipated effects on coastal resources. The applicability of and the project's consistency with each individual coastal policy was assessed. Overall, the Preferred Alternative is consistent with Connecticut's Coastal Management Program.

Wetlands

Due to the nature and location of the river crossing and the need for continuous operations along the Northeast Corridor, complete avoidance of wetland and open water areas will not be feasible. Based on the conceptual bridge design, Amtrak estimates that the Preferred Alternative will result in approximately 2.8 acres of permanent wetland impacts and 0.74 acres of permanent open water impacts. Removal of the existing Connecticut River Bridge may result in approximately 0.33 acres of restored open water, for a net project impact of 0.41 acres. In addition, Amtrak estimates that approximately 3.2 acres of wetlands and 2.0 acres of open water will be temporarily impacted during the construction period. Given the large, expansive wetland systems in the area, the width of the river in this location, and the length of the bridge, these acreages are relatively minor. No significant adverse impacts to wetlands would result from the Preferred Alternative. Since complete avoidance of wetlands and open water is not feasible for this river bridge replacement project, minimization and mitigation measures will be implemented. Amtrak has incorporated efforts to minimize wetland impacts into the conceptual design for the Preferred Alternative, and will continue to reduce these impacts to the extent practical as the project proceeds into the preliminary and final engineering stages. Wetland mitigation measures (e.g., wetland restoration or enhancement) will continue to be developed through coordination with the appropriate regulatory agencies (CTDEEP, USACE, USCG) during the permitting process.

Water Resources

The Preferred Alternative would not permanently impact water quality. Water quality impacts from the Preferred Alternative will consist of sediment resuspension, a temporary impact associated with in-water construction. As stated above, the construction period is expected to be about three years, with a portion of that period including in-water work (e.g., approximately five months for construction of each bridge abutment) and upland work (e.g., 10 to 12 months for off-site construction of the moveable span). In-water sediment resuspension would only occur in very localized areas of activity during certain construction activities, such as pier installation. Due to its coarse nature, the Connecticut River sediment will not remain suspended for extended periods of time, especially since in-water work will be performed intermittently as various project elements are constructed. Such sediments are expected to dissipate shortly after the completion of these in-water construction activities. Therefore, temporary increases in suspended sediment resulting from in-water construction activities will not result in significant adverse impacts. Overall, the short duration and localized extent of construction activities and similar operation of existing and replacement bridges means that the Preferred Alternative will not result in significant adverse impacts.

Threatened and Endangered Species

Fish

Shortnose sturgeon, Atlantic sturgeon, and blueback herring are likely to occur at least seasonally within the study area. Because the Preferred Alternative is a bridge replacement, long term future operational effects will be similar to those of the existing bridge and no adverse operational impacts are anticipated. If present in the study area, these highly mobile fishes will be expected to avoid noise associated with construction activities. The use of pile drilling (rather than impact pile driving) is expected to minimize the potential for noise impacts by ensuring that construction noise does not reach levels associated with the onset of physiological impacts, recoverable physical injury, or mortality. Therefore, noise-related impacts to fishes are not expected to result from the Preferred Alternative. Furthermore, no dredging is planned for the Preferred Alternative, which will avoid any indirect impacts caused by increased turbidity and the removal of benthic forage organisms. Increases in suspended sediment concentrations will be minimized through the use of containment measures during pile drilling. Overall, construction and demolition activities associated with the Preferred Alternative are not expected to have an adverse impact on listed fish species in the Connecticut River.

The National Marine Fisheries Service (NMFS) has confirmed that no further consultation pursuant to Section 7 of the Endangered Species Act (ESA) is required. Amtrak will continue to coordinate with NMFS and any other involved federal agencies during the final design and permitting process. If necessary, in-water work restrictions will be implemented to minimize the potential impacts. Permits issued by USCG, USACE, and through the ESA Section 7 consultation process for similar bridge construction projects have included in-water work restrictions designed to protect fishes. Since construction will adhere to the permit conditions anticipated for this project, no adverse impacts to federally or state listed fish populations are expected.

Plants

CTDEEP identified saltmarsh bulrush and pygmy weed as being potentially within or immediately adjacent to the project site. Although bayonet grass, mudwort, eastern prickly pear, and Lilaeopsis have not been documented in the immediate vicinity of the project site, they have been documented within the 0.5-mile study area and habitat is present within the vicinity of the project site for these species. Amtrak did not observe any of these plant species during preliminary field surveys, and they are not known to be present within the Preferred Alternative footprint. However, since these plant species have been documented within the study area, the absence of these species within the project footprint will be

confirmed prior to construction. During the preliminary engineering and permitting phase, additional surveys will be conducted in coordination with CTDEEP to determine the presence or absence of these species and the size of the populations within the area of disturbance. Should these plants be present in the area of disturbance, then measures to avoid and/or minimize impacts to these species where possible will be developed in coordination with CTDEEP. As stated above, these species have not been identified within the project footprint and no significant adverse impacts to plants are expected from the Preferred Alternative.

Birds

Several threatened or endangered bird species may be seasonally present within the tidal wetlands affected by the Preferred Alternative. Further coordination with CTDEEP and species specific surveys will likely be required during the preliminary engineering and permitting phase of the project to confirm the presence of these birds. Should these species be determined to be present, CTDEEP may include construction restrictions (i.e., "work windows") in its permits to minimize disturbance and ensure that the project will not result in significant adverse impacts to these bird species.

Contaminated Sites and Hazardous Waste

Amtrak performed a Phase I Environmental Site Assessment to determine the potential presence of contaminated materials in areas that would be disturbed by the Preferred Alternative. This effort included a records search, document review, analysis of historical data, and site inspections. This assessment did not identify any potential sources of hazardous materials that likely impacted the project site. Therefore, no significant adverse effects to contaminated sites or hazardous waste are expected. However, based on the age of the bridge itself, lead-based paint, asbestos-containing materials, and/or PCB-containing electrical equipment may be present. To ensure any significant adverse impacts are avoided, prior to the demolition of the existing bridge, Amtrak will survey the structure for asbestos, lead based paint, and PCB-containing equipment.

- Amtrak will remove any identified asbestos-containing materials prior to demolition, and will implement controls to minimize asbestos exposure.

- If lead paint is present, Amtrak will perform an exposure assessment to determine whether lead exposure will occur during the demolition and/or removal of the existing bridge. If the exposure assessment indicates the potential to generate airborne dust or fumes with lead levels exceeding health-based standards, Amtrak will employ a higher personal protection equipment standard to counteract the exposure.

- Amtrak will survey and evaluate any suspected PCB-containing equipment (e.g., transformers, electrical feeder cables, hydraulic equipment, and fluorescent light ballasts) that would require removal, disturbance or relocation. Amtrak will remove and dispose of PCB-containing equipment that the work would disturb in accordance with applicable federal and state regulations. Generally, unless suspected PCB-containing equipment is labeled to be "non-PCB," it must be tested or assumed to be PCB-containing and disposed of at properly licensed facilities.

During new bridge construction of the Preferred Alternative, construction of the foundation could potentially require the removal and off-site disposal of soil and river sediments up to 90 feet or more below existing grade, depending on the foundation type that is chosen. Amtrak will import clean fill for grading during construction, e.g., to widen the bridge embankments.

Amtrak will perform all work in accordance with applicable local, state, and federal regulatory requirements. Prior to commencing site disturbance, Amtrak will prepare a Construction Health and Safety Plan (CHASP) to address the potential of encountering contamination during soil disturbance activities. The CHASP will describe in detail the health and safety procedures to minimize exposure to

contaminated materials by workers and the public. The CHASP will be developed in accordance with Occupational Safety and Health Administration (OSHA) regulations and guidelines. Amtrak will handle excavated soil or sediment in accordance with all applicable regulations and will classify all excavated material (e.g., historical fill, uncontaminated native soils, petroleum contaminated wastes, etc.). The extent and parameters of any testing depend on the classification and any requirements of off-site waste disposal facilities.

Safety and Security

Employees

Amtrak will design, build, and operate the Preferred Alternative to comply with all applicable federal, state, and local safety regulations. During construction of the Preferred Alternative, Amtrak will develop written Safe Work Plans to identify potential hazards and safety measures to be implemented for the protection of workers on the project site and the general public in the vicinity of the project. With the implementation of the safety measures described above, no adverse impacts to safety or security of employees are expected.

Passengers

The Preferred Alternative will improve the structural and operational reliability of the existing Connecticut River Bridge and increase the safety of passengers traveling on SLE and Amtrak trains over the bridge.

Marine Users

The Preferred Alternative will provide navigational benefits by improving the reliability of the bridge and minimizing delays during bridge openings and closings. Option A (which will retain the existing channel width and alignment) will maintain the current navigational conditions. Widening the channel (a possibility under Option B) can improve navigation further and may reduce the likelihood of boat collisions due to tidal currents. To prevent and/or minimize future accidents due to an off-center channel, Amtrak will provide navigation channel fenders and a dolphin system designed to protect the piers from aberrant vessels.

Indirect and Cumulative Effects

The Preferred Alternative will not result in an increase in train frequency or speed, nor will it result in measurable new rail ridership. The Preferred Alternative will not have an adverse impact on the population, land use, or economic activities in the study area. The project will not result in new development or population/employment growth. Therefore, no positive or negative secondary effects will result from the Preferred Alternative. The construction and operation of the Preferred Alternative in conjunction with the planned projects identified in this EA will not result in an adverse cumulative impact to any environmental resource in the region or around the project site.

Amtrak's Northeast Corridor Improvement Project includes infrastructure improvements to the Northeast Corridor system between Washington, D.C. and Boston. The Northeast Corridor Improvement Project, together with the Connecticut River Bridge Replacement Project, will improve the operations and reliability of the Northeast Corridor and result in a cumulative benefit. The NEC FUTURE program, which is being led by FRA, is a comprehensive planning effort to determine the appropriate role for passenger rail along the Northeast Corridor, the 457-mile rail transportation system extending from Boston's South Station in the north to Washington D.C.'s Union Station in the south, and the infrastructure and service improvements necessary to achieve that role for passenger rail. The improvements expected from the Connecticut River Bridge Project is consistent with the NEC FUTURE alternatives being examined.

Environmental Justice

Amtrak conducted an environmental justice analysis for the Preferred Alternative, following the guidance and methodologies recommended in the federal Council on Environmental Quality's (CEQ) Environmental Justice Guidance under the National Environmental Policy Act (December 1997) and the U.S. Department of Transportation's (USDOT) Final Order on Environmental Justice (April 1997). This analysis did not identify any minority and low-income populations[1] that would be affected by the project; therefore, the Preferred Alternative will not result in any disproportionately high and adverse effects on minority and low-income populations.

Section 4(f) Determination

Section 4(f) of the USDOT Act of 1966 (49 USC § 303) prohibits the Secretary of Transportation from approving any program or project that requires the use of: (1) any publicly owned land in a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or (2) any land from a historic site of national, state, or local significance (collectively "Section 4(f) resources"), unless there is no feasible and prudent alternative to the use of such land and the project includes all possible planning to minimize harm to the resource. The EA contained a Section 4(f) Evaluation that described the project, the purpose and need, applicability of Section 4(f) to the project, the use of Section 4(f) properties, avoidance alternatives to the use of the Section 4(f) properties, and measures to minimize harm to the Section 4(f) properties. This FONSI summarizes the Section 4(f) Evaluation and provides the agency's Section 4(f) Determination.

Use of Section 4(f) Properties

Construction of the Preferred Alternative would require the decommissioning and removal of the existing Connecticut River Bridge, which was determined eligible for the National Register of Historic Places (NR) and was listed on the Connecticut State Register of Historic Places (SR) in 1986. The Preferred Alternative would also involve construction of a new bridge over the existing boardwalk within Ferry Landing Park, a waterfront park owned by CTDEEP. The Preferred Alternative would constitute a use of these two Section 4(f) resources.

The EA identifies several additional parklands, wildlife areas, and cultural resources. The Elizabeth B. Karter Watch Rock Nature Preserve, a property of the Old Lyme Conservation Trust, is located at the southeastern border of the study area. There are two CTDEEP-owned and managed wildlife areas adjacent to the project site that are considered Section 4(f) resources: the Roger Tory Peterson Wildlife Area, located south of the project site on the western side of Connecticut River, and the Ragged Rock Creek Marsh WMA, located south of the project site on the eastern side of the river. Besides the Connecticut River Bridge itself, three known historic resources—the John Whittlesey Jr. House (S/NR-Listed), the Old Lyme Historic District (S/NR-Listed and a Local Landmark), and the Enoch Noyes

[1] In accordance with the guidance referenced in the text, the intent of an environmental justice analysis is to identify and address any disproportionate and adverse impacts on minority or low-income populations. Following CEQ guidance, Amtrak identified minority populations where either: (1) the minority population of the affected area exceeds 50 percent; or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Amtrak used the percentage of individuals below poverty level in each census tract, as estimated in the 05-09 ACS, to identify low-income communities.

House at 317 Ferry Road (SR-Listed)—are located within the project study area. Additionally, the project team identified five potential historic resources (61 Ferry Road, 94 Ferry Road, 101 Ferry Road, 9 Clark Street, and 2-20 Clark Street) within the study area.

None of these additional resources would be permanently acquired as part of the Preferred Alternative. While these resources are located within the ¼-mile study area that was delineated for purposes of environmental analyses, they are removed from the project site itself and would not be subjected to direct impacts. Furthermore, the analyses conducted as part of the EA (including noise, visual, and construction) concluded that none of these resources would experience any significant adverse indirect impacts. The Preferred Alternative would not constitute a Section 4(f) use of these properties and no further analysis is necessary.

Connecticut River Bridge

The Connecticut River Bridge carries the Northeast Corridor over the Connecticut River between Old Saybrook and Old Lyme. The Connecticut River Bridge is individually eligible for listing on the National Register of Historic Places NR within the context of the Moveable Railroad Bridges on the Northeast Corridor in Connecticut Thematic Resource Nomination, and is listed on the SR. Connecticut's moveable railroad bridges date from the late 19th through the early 20th century, and span such rivers as the Pequonnock, Mianus, Norwalk, Housatonic, Saugatuck, Niantic, and Thames. The American Bridge Company began construction of the bridge in 1904 and it became operational in 1907. The Connecticut River Bridge is over 1,500 feet long and has ten spans. The bridge is a two-track, ten-span steel rail bridge with an open deck and stone masonry piers. Construction of the Preferred Alternative will involve the decommissioning and removal of the existing Connecticut River Bridge. The removal of the existing bridge will constitute a use of this Section 4(f) property.

Avoidance Alternatives

Under Section 4(f), in order to move forward with an alternative that uses a Section 4(f) property, the project sponsor must demonstrate that any alternatives that avoid that use are either not feasible or would not be prudent to undertake. To demonstrate that no feasible and prudent alternatives to the use of the Section 4(f) property exist, location alternatives and design options should be considered. FRA considered the following alternatives, which would avoid removal of the historic bridge:

- Perform minimal repairs and maintenance of the existing Connecticut River Bridge in order to keep the bridge in service for rail traffic.
- Rehabilitate the existing bridge including the approach spans and substructures without affecting the historic integrity of the structure as determined by NHPA and reuse the bridge for rail traffic.
- Construct a new bridge on a new alignment and leave the existing bridge in-place and out of service.

In finding that an avoidance alternative is not feasible or prudent, adverse factors such as environmental impacts, safety, engineering/operational deficiencies, poor transportation service, increased costs, and other factors may be considered collectively. FRA has considered these factors in determining whether the avoidance alternatives would be feasible and prudent.

Minimal Repairs and Maintenance of Existing Connecticut River Bridge

Under this avoidance alternative, minimal repairs and maintenance would be employed to keep the Connecticut River Bridge in service (similar to the "No Action Alternative" analyzed in the EA). The existing bridge was constructed beginning in 1904 and it became operational in 1907. It has been in continuous operation for over 100 years and, due to its age, it is nearing the end of its useful life. In 2006, Amtrak performed a bridge inspection that found several aspects of the existing bridge to be particularly problematic, including the mechanical operating system, the bascule span rolling tread plates, and the approach span truss pin and eyebar connection. The curved tread plates and mating track plates of the heel end of the rolling lift span were specifically identified as concerns. Disruptive rehabilitations of the treads and tracks are required approximately every 20 years, which limits the retrofit options. At the time of the inspection, the existing track and tread structure, and the supporting steel segmental box girder exhibited cracks. The approach spans have truss pin and eyebar connections, which typically loosen after years of service. Amtrak has determined retrofit devices installed during the 1970s to be ineffective.

Amtrak installed a moveable catenary unit on the bridge as part of the electrification project. The complex structure extends the length of time required to open and close the bridge and adds weight to the bridge. The weight of the electrification facilities was not factored into the original bridge design, and has therefore increased stresses and bearing pressures. The moveable span counterweight balance is a concern, as is potential deterioration of structural members. Amtrak identified additional concerns such as: tight working clearances within the machinery house, limited access for maintenance and routine inspection, and uncertainty in the seismic resistance of the existing stone masonry piers.

Amtrak considered performing minimal repairs and maintenance on the existing bridge and allowing it to remain in service. This avoidance alternative would permit the Connecticut River Bridge to remain in place with its historical integrity unaffected. Amtrak determined that substantial maintenance would be required roughly every 20 years. This avoidance alternative would not provide a reliable structure and would be expected to perform poorly. It would fail to meet the project's purpose, along with several of the project goals and objectives, including long-term serviceability and reliability. While this avoidance alternative would be feasible, it would not be prudent to expend capital funds and still fail to meet the project's purpose and need.

Rehabilitation of Existing Connecticut River Bridge

This avoidance alternative would result in the rehabilitation of the existing bridge approach spans, the moveable span, and minimal rehabilitation of the substructure. This avoidance alternative would likely extend the service life of the bridge for 40 years. This avoidance alternative would permit the Connecticut River Bridge to remain in place with its historical integrity unaffected. This avoidance alternative would not provide a reliable structure and would be expected to perform poorly. It would fail to meet the project's purpose, along with several of the project goals and objectives, including long-term serviceability and reliability. While this avoidance alternative would be feasible, it would not be prudent to expend capital funds and still fail to meet the goals and objectives of the Preferred Alternative.

Construct a New Bridge and Leave Existing Bridge in Place

This avoidance alternative would involve construction of a new rail bridge far enough away from the existing bridge to leave its historical integrity intact. This would pose several engineering and planning challenges. The bridge approaches and existing infrastructure would need to be modified to align with the

new bridge. Amtrak would need to expand its ROW and therefore substantial property acquisition would be required. Based on the surrounding land uses, the properties to be acquired would likely be a combination of private residences, commercial uses, wetland preserves, and fish and wildlife refuges.

The existing bridge could not remain in the closed position as it would preclude the passage of all marine vessels requiring more than 18 feet in vertical clearance. It would need to be fixed in the open position or Amtrak would need to continue to open and close the bridge regularly. This would not be feasible from an operational and cost perspective. The bridge could remain in-place and fixed in the open position; however, it would still present navigational challenges due to the narrow and off-center channel. Boats would be required to navigate around three bridges in close proximity—the existing I-95 Baldwin Bridge, the existing Connecticut River Bridge, and the new replacement bridge. This would not satisfy one of the main project goals—to minimize conflicts with marine traffic. FRA determined this avoidance alternative to be neither feasible nor prudent.

Planning to Minimize Harm

As required by Section 106 of NHPA, FRA and Amtrak are participating in an ongoing consultation process with the CTSHPO regarding the potential effects on archaeological and architectural resources. As part of this ongoing process, Amtrak has explored measures to avoid or minimize any adverse effects to such resources. Development of these mitigation measures is set forth in the Memorandum of Agreement (MOA), included in Appendix A, executed by CTSHPO, FRA, and Amtrak.

The MOA describes the continuing consultation process that Amtrak will conduct as project designs evolve, and the measures Amtrak will implement during the project's design process to avoid, minimize, or mitigate adverse effects of the project on historic resources. Amtrak will undertake the design of the replacement bridge in coordination with CTSHPO and make an effort to incorporate historically compatible designs. Mitigation for adverse effects on the Connecticut River Bridge (a contributing element of the Moveable Railroad Bridges of the Northeast Corridor in Connecticut Thematic Resource) include HAER documentation for the Connecticut River Bridge and development of an interpretive exhibit in a park, greenway, or public space that presents the history of the bridge and other moveable railroad bridges on the Northeast Corridor in Connecticut. This exhibit could possibly include salvaged elements of the bridge, signage, etc.

Ferry Landing Park

Ferry Landing Park is located on the east bank of the Connecticut River within the confines of the CTDEEP Marine Headquarters and just north of the project site in Old Lyme. The waterfront park is open to the public year-round and is furnished with picnic benches and a gazebo, and features an elevated wooden boardwalk that extends south from the park, passing underneath the bridge into the marshes. The boardwalk offers access to various recreational uses such as fishing and crabbing. The pier also provides scenic vistas of the Connecticut River and tidal marshlands. The park is owned and maintained by CTDEEP. The Preferred Alternative eastern approach will be constructed over the existing boardwalk. The Preferred Alternative will not require permanent acquisition of any upland portion of the park. Neither the park nor the boardwalk will be permanently adversely affected by the Preferred Alternative. However, to maintain public safety, it is likely that a portion of the boardwalk will be temporarily closed

(and possibly removed and replaced) during the construction phase of the project.[2] Because these activities will temporarily interfere with the intended purpose of the boardwalk, they constitute a "use" of the Section 4(f) property.

Avoidance Alternatives

Decommissioning and removing the existing bridge will require temporary closure of the boardwalk. Performing minimal repairs, minor rehabilitation, or major rehabilitation of the existing bridge will also require temporary closure of the boardwalk. Complete avoidance of Ferry Landing Park will only be possible with the following avoidance alternative:

- Construct a new bridge on a new alignment far away from Ferry Landing Park and the boardwalk and leave the existing bridge in-place and out of service.

This avoidance alternative would involve construction of a new rail bridge far enough away from the existing bridge to avoid Ferry Landing Park and the boardwalk. This would pose several engineering and planning challenges. The bridge approaches and existing infrastructure would need to be modified to align with the new bridge. Amtrak would need to expand its ROW and therefore substantial property acquisition would be required. Based on the surrounding land uses, the properties to be acquired would likely be a combination of private residences, commercial uses, wetland preserves, and fish and wildlife refuges.

In order to completely avoid use of Ferry Landing Park, even if the new bridge were constructed on an alignment far away from the park, the existing bridge would need to remain in place and out of service. As discussed above, the existing bridge could not remain in the closed position as it would preclude the passage of all marine vessels requiring more than 18 feet in vertical clearance. It would need to be fixed in the open position or Amtrak would need to continue to open and close the bridge regularly. This would not be feasible from an operational and cost perspective. The bridge could remain in-place and fixed in the open position; however, it would still present navigational challenges due to the narrow and off-center channel. Boats would be required to navigate around three bridges in close proximity—the existing I-95 Baldwin Bridge, the existing Connecticut River Bridge, and the new replacement bridge. This would not satisfy one of the main project goals—to minimize conflicts with marine traffic. FRA determined this avoidance alternative to be neither feasible nor prudent.

Planning to Minimize Harm

The Preferred Alternative will require a temporary closure of a portion of the boardwalk to facilitate construction of the new bridge and ensure the safety of the public. The remainder of Ferry Landing Parking—including the lawn, picnic area, gazebo, and the segment of the waterfront walkway that extends around the perimeter of the lawn and picnic area—is expected to remain open during the entire construction period. Amtrak will work closely with CTDEEP to minimize the boardwalk closures and provide adequate signage and information to the users of the park. Good construction practices (e.g. temporary barriers or shields) will be implemented to ensure the boardwalk is protected during the

[2] A more refined estimate of the duration and physical length of the boardwalk closure will be determined during the final engineering phase. For purposes of providing a conservative estimate for the environmental assessment, Amtrak has estimated the multi-year closure would affect approximately 800 feet of the in-water portion of the boardwalk.

construction period and rebuilt as necessary.[3] The project will not result in any permanent adverse effects to Ferry Landing Park or the boardwalk.

Section 4(f) Determination

The proposed Connecticut River Bridge Replacement Project will ensure continued connectivity and safe and efficient rail service along the Northeast Corridor. To achieve its purpose, the project will require the decommissioning and removal of the Connecticut River Bridge, which is individually listed on the SR and individually eligible for the NR within the context of the Moveable Railroad Bridges on the Northeast Corridor in Connecticut Thematic Nomination. The project will also require the temporary use of a portion of the Ferry Landing Park boardwalk. FRA considered avoidance alternatives that included performing minimal repairs only and a bridge rehabilitation alternative, neither of which would be prudent. Another avoidance alternative—building a new bridge on a new alignment farther away from the existing bridge and leaving the existing bridge in place—is not a prudent and feasible alternative. FRA has therefore determined that there is no prudent and feasible alternative to the proposed use of Section 4(f) properties. FRA has incorporated all possible planning to minimize harm to the Section 4(f) property into the project design and project mitigation commitments. This includes execution of a MOA among FRA, CTSHPO, and Amtrak pursuant to Section 106 of the National Historic Preservation Act. FRA and Amtrak will continue to work with CTSHPO in implementing the MOA, including stipulations to mitigate the adverse effects to historic properties. FRA explored alternatives to avoid or minimize the adverse effects. FRA submitted a draft Section 4(f) Evaluation to the U.S. Department of the Interior (DOI) for review and comment on May 15, 2014. FRA received DOI's concurrence with its findings on June 10, 2014.

Public and Agency Coordination

During the early phases of the Preferred Alternative, FRA and Amtrak hosted a joint public involvement and agency coordination meeting in Old Lyme, Connecticut on July 8, 2008. The meeting included an overview of the project purpose and the project alternatives being considered. Attendees of the meeting included mariners, local maritime-related business owners, officials of the towns of Old Lyme and Old Saybrook, and representatives of state and federal agencies. Amtrak and FRA solicited input on the Preferred Alternative during the meeting.

As stated above, the Connecticut River Bridge Replacement Project EA was made available for public and agency review on May 15, 2014. FRA and Amtrak circulated the EA to a broad distribution list that included agencies, elected officials, town representatives, mariners, rail users, key stakeholders, and other interested parties. The EA was posted on FRA's website. Copies of the EA were made available for public review at two public libraries located near the Preferred Alternative site—the Phoebe Griffin Noyes Library in Old Lyme, CT and the Acton Library in Old Saybrook, CT. The availability of the EA was announced in two local newspapers, The Hartford Courant and The New London Day. Comments were accepted through June 30, 2014.

Throughout the NEPA process, the maritime community was identified as one of the key stakeholder groups. On June 5, 2014, Amtrak hosted its quarterly Mariners' Coordination Meeting and the Annual Boaters' Meeting in New London, CT. At each of these meetings, the project team delivered a presentation about the Connecticut River Bridge Replacement Project and the information contained in

[3] Further specification of the construction practices to be implemented will be determined during the final engineering phase and in coordination with CTDEEP.

the EA. Meeting attendees included commercial boaters, recreational boaters, trade association representatives, agency representatives, local residents, and others.

FRA and Amtrak received a number of formal and informal comments throughout the EA process. Major comment themes included: funding sources, additional navigational improvements (e.g., a second navigation channel, higher vertical clearance when the bridge is in the closed position), suggestions for mitigation measures, and comments pertaining to future required permits. The list of commitments and mitigation measures presented below address several of these comments. Many of the other comments will be more directly addressed during the future final design and permitting phase. A response to comments report was prepared and is part of the project file, and is available upon request.

Commitments and Mitigation Measures

As described in the sections above, Amtrak has identified a number of measures required to avoid, minimize, and mitigate environmental impacts. Table 1 below summarizes the specific commitments and mitigation measures that Amtrak is required to implement as part of the Preferred Alternative (as mentioned above, FRA and Amtrak have chosen the Preferred Alternative as the Selected Alternative).

Table 1
Environmental Commitments

Resource	Commitments
Transportation	▪ Minimize track outages and rail service reductions during the construction period. ▪ Deliver and transport construction material through a combination of rail, barge, and truck trips to minimize vehicular traffic. ▪ Schedule construction in the river outside the high season for recreational boating (May through October) to the extent practicable. ▪ Arrange construction-period channel closures through coordination with USCG, CTDEEP Boating Division, and the maritime community. ▪ Notify the USCG at least 90 days in advance of any anticipated waterway closures and/or impacts to routine navigability. ▪ During preliminary/final engineering, investigate whether design modifications and bridge deck types could allow for additional vertical clearance (when the bridge is in the closed position) without incurring additional environmental and property impacts. ▪ During preliminary/final engineering, work with USCG to determine if measures such as enhanced communication of bridge rules can further improve navigation.
Parkland and Open Space	▪ Coordinate with CTDEEP to minimize closures to the Ferry Landing Park boardwalk during construction; provide adequate signage and information to users of the park. ▪ Coordinate with CTDEEP Bureau of Central Services / Land Acquisition and Management regarding potential construction staging areas. ▪ Take appropriate measures during construction to minimize short-term impacts to the Ferry Landing Park boardwalk. ▪ Implement good construction practices to ensure the boardwalk is protected during the construction period and rebuilt as necessary.
Visual Resources	▪ Continue coordination with CTSHPO, as described in the MOA, with respect to the design of new bridge.
Cultural Resources	▪ Continue to participate in a consultation process with the CTSHPO, as mandated by Section 106 of the National Historic Preservation Act. ▪ Comply with the terms of the MOA for architectural and archaeological resources, including development and implementation of an archaeological testing plan for portions of Old Lyme.

Table 1 (cont'd)
Environmental Commitments

Resource	Commitments
Air Quality	Require the following emissions controls during the construction period: ▪ All non-road diesel engines will be U.S. Environmental Protection Agency (USEPA) Tier 2 certified or higher. ▪ All non-road diesel engines greater than 50 hp will be retrofit with diesel particulate filters (DPFs) unless they are Tier 4 certified. ▪ Truck routes for deliveries will be established so as to minimize the use of local truck trips in populated areas. ▪ Idling of delivery trucks or construction equipment when not in active use will be strictly prohibited. ▪ Coordinate as early as possible with Connecticut Light & Power to ensure the availability of grid power on-site, and will distribute power throughout the site as necessary. Use a combination of grid power and catenary power in lieu of generators to the extent practicable, including, but not limited to, lighting, signage, and small power tools. ▪ If rail transfer is used, locomotives would idle only as necessary at the sidings in Old Saybrook and would do so to maximize the distance from the nearest residence (i.e., at least 200 feet from the nearest residence). ▪ Control of dust at all times during contract, 24 hours a day, seven days a week, including non-working hours, weekends, and holidays. ▪ Exposed unpaved areas and access roads will be watered at regular intervals or treated with water soluble, non-toxic, non-reactive, and non-foaming dust suppression agents as necessary to avoid fugitive dust resuspension by vehicles. ▪ Stock piles will be covered or watered at regular intervals to avoid windblown dust. ▪ Vehicles leaving the construction site will not have loose mud or dirt on the vehicle body or wheels and will be cleaned as necessary before leaving sites to control tracking. ▪ Haul truck cargo areas will be securely covered during material transport on public roadways. Trucks will have tight fitting tailgates that can be secured in the closed position. ▪ Vehicle mud and dirt carryout, material spills, and soil washout onto public roadways and walkways and other paved areas will be cleaned up immediately. ▪ Demolition, excavation, dumping, and transfer of materials will be accompanied by wet suppression so as to avoid the release of dust.
Energy Use	▪ Coordinate relocation of all utilities with the utility provider to minimize service disruptions during construction. ▪ During construction, use a combination of grid power and catenary power in lieu of generators to the extent practicable, including, but not limited to, lighting, signage, and small power tools.
Coastal Zone	▪ Perform a formal coastal management consistency review during the preliminary engineering and permitting phase. ▪ Submit a complete "Coastal Management Consistency Review Form for Federal Activities" along with all required attachments and seek a formal Coastal Zone Consistence Determination from CTDEEP during the permitting stage.

Table 1 (cont'd)
Environmental Commitments

Resource	Commitments
Wetlands, Natural Resources, and Threatened or Endangered Species	▪ During preliminary and final engineering, determine whether wetlands impacts can be further minimized through the use of retaining walls or other design refinements. ▪ Perform field-delineation of wetland areas and continue coordination with CTDEEP, USEPA, USACE, USCG, NMFS, and other natural resource agencies to develop appropriate wetland mitigation ratios and strategies. ▪ Prepare a compensatory mitigation plan in compliance with the 2008 Compensatory Mitigation Rule and the USACE New England District Compensatory Mitigation Guidance. ▪ Continue coordination with NMFS regarding the compensatory mitigation plan and appropriate EFH conservation recommendations. ▪ As appropriate during construction, use sedimentation control measures, such as silt fences, hay bales, sedimentation basins, slope stabilization measures, and sediment booms. ▪ Minimize upland vegetation removal to the extent practical. ▪ Use pile drilling rather than impact pile driving to minimize potential noise impacts and/or ensure that construction noise does not reach levels associated with the onset of physiological impacts, recoverable physical injury, or mortality. ▪ Use containment measures during pile drilling to minimize suspended sediment concentrations. ▪ Continue coordination with NMFS, CTDEEP Office of Long Island Sound Program, and other involved agencies during the permitting phase to determine if seasonal in-water work restrictions are necessary to protect aquatic resources. ▪ Consult with CTDEEP Marine Fisheries Division and Marine Headquarters regarding notices to fisherman. ▪ Continue coordination with CTDEEP regarding construction restrictions ("work windows") required to minimize disturbance to bird species ▪ Conduct additional field surveys during the preliminary engineering and permitting phase in coordination with CTDEEP to determine the presence or absence of threatened and endangered plant species and the size of the populations within the area of disturbance. Should threatened or endangered species be present in the area of disturbance, then develop measures to avoid and/or minimize impacts to these species where possible. ▪ Use turbidity curtains during construction of temporary access roads and staging platforms in intertidal areas until turbidity levels are consistent with ambient turbidity. ▪ Use turbidity curtains during deconstruction phase of current bridge piers until turbidity levels are consistent with ambient turbidity.
Contaminated Materials	▪ Prepare a Construction Health and Safety Plan (CHASP) to address the potential of encountering contamination during soil disturbance activities in accordance with OSHA regulations and guidelines. ▪ Handle excavated soil or sediment in accordance with all applicable regulations and classify excavated material. ▪ Survey the structure for asbestos, lead-based paint, and PCB-containing equipment. ▪ Remove any identified asbestos-containing materials prior to demolition of the existing bridge. ▪ Implement appropriate engineering controls (e.g., containment, wetting and other dust control measures) to minimize asbestos exposure. ▪ Perform an exposure assessment if lead paint is found to determine whether lead exposure will occur during the demolition and/or removal of the existing bridge. If the exposure assessment indicates the potential to generate airborne dust or fumes with lead levels exceeding health-based standards, Amtrak will employ a higher personal protection equipment standard to counteract the exposure. ▪ Evaluate any suspected PCB-containing equipment that requires removal, disturbance, or relocation. Amtrak will remove and dispose of PCB-containing equipment in accordance with applicable federal and state regulations.

Table 1 (cont'd) Environmental Commitments	
Resource	**Commitments**
Safety and Security	▪ Design, build, and operate the Preferred Alternative to comply with all applicable federal, state, and local safety regulations. ▪ Develop written Safe Work Plans to identify potential hazards and safety measures during the construction of the Preferred Alternative. ▪ Provide navigation channel fenders and a dolphin system designed to protect piers from aberrant vessels.
Section 4(f) Resources	Connecticut River Bridge ▪ Continue coordination with CTSHPO, as described in the MOA, to minimize any adverse effects to Section 4(f) resources. ▪ Undertake the design of the replacement bridge in coordination with CTSHPO and make an effort to incorporate historically compatible designs. Ferry Landing Park Boardwalk ▪ Coordinate closely with CTDEEP to minimize closures. ▪ Provide adequate signage and information to users of the park. ▪ Implement good construction practices to ensure the boardwalk is protected during the construction period and rebuilt as necessary.

Conclusion

FRA finds that the Preferred Alternative, as presented and assessed in the attached EA, satisfies the requirements of FRA's Procedures for Considering Environmental Impacts (64 FR 28545, May 26, 1999) and NEPA (42 USC § 4321), and the Preferred Alternative would have no foreseeable significant impact on the quality of the human or natural environment. As the project sponsor, Amtrak is responsible for ensuring all environmental commitments identified in this FONSI are fully implemented. The EA provides sufficient evidence and analysis for FRA to determine that an environmental impact statement is not required for the project as presented. Furthermore, as stated above, FRA has determined that there is no prudent and feasible alternative to the proposed use of Section 4(f) properties.

1/5/2017

Date

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This document has been prepared in accordance with FRA's Procedures for Considering Environmental Impacts by the Office of Railroad Policy and Development (64 FR 28545, May 26, 1999) and NEPA (42 USC § 4321), with assistance from the Office of Chief Counsel. This document was prepared in 2016. For further information regarding this document contact:

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