Determination of Effect on Historic Properties

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Project: State No.: 156-181  F.A.P. No.: TBD  Project Title: Replacement of Bridges #00161 and #00162  Interstate 95 over 1st Avenue (Route 745) and Metro-North Railroad  Town: West Haven

Determination of Effect: No Adverse Effects to Historic Properties

Project Description

Using federal and state funds, the Connecticut Department of Transportation (CTDOT) proposes to replace Bridges #00161 and #00162, which carry Interstate 95 over 1st Avenue (Route 745) and the Metro-North Railroad’s New Haven Line, respectively, in West Haven (Images 1-16). Bridge #00161 consists of a 180’-long, three-span, steel, multi-girder bridge constructed in 1956, while Bridge #00162 is a 466’-long, six-span, steel, multi-girder bridge also built in 1956. The statewide bridge database maintained by CTDOT identifies both structures as being Not Eligible for listing on the National Register of Historic Places (NRHP). Qualified Staff at CTDOT’s Office of Environmental Planning (OEP) concurs with this assessment and has confirmed that the bridges are not included in the Federal Highway Administration’s (FHWA) “Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System.”

Recent inspections show that Bridge #00162 is structurally deficient and functionally obsolete. A previous review completed by OEP in November 2018 evaluated a proposed concept-level rehabilitation of the structure and determined it would be exempt from full Section 106 review and Tribal consultation, however, the document requested that the project be resubmitted when an alternative was selected, which has

only recently taken place. As currently proposed, State Project #156-181 consists of replacing Bridge #00162 with a slightly wider (than existing) structure and associated roadway improvements along approximately 3,000’ of the approaches in each direction. The increased extent of roadway improvements since the 2018 review also necessitates the replacement of Bridge #00161, which will allow for the correction of a substandard superelevation within the project area. The entirety of the proposed project area falls within the roadway right-of-way (ROW), however, temporary access roads will be required on both sides of the interstate. This being said, these will be located on areas of previous disturbance associated with the highway’s construction and within the ROW.

While the entirety of the project area falls within the roadway Right-of-Way (ROW) and neither the highway nor its associated features are considered historic properties, there is one resource, the New Haven Line, located within the project area that has been previously determined eligible for listing on the NRHP. For this reason, under the provisions of the Programmatic Agreement (PA) executed between CTDOT, FHWA, the Connecticut State Historic Preservation Officer (CT SHPO), and the Advisory Council on Historic Preservation regarding compliance with Section 106 of the National Historic Preservation Act (NHPA) for Minor Transportation Projects, the Office of Environmental Planning (OEP) intends to make a determination of effect on historic properties for the described undertaking.

**Technical Review of Project**

Bridge #00162 is a six-span, steel, multi-girder bridge that carries Interstate 95 over four tracks of the Metro-North Railroad’s New Haven Line in West Haven. The bridge was built in 1956 and it has reinforced concrete abutments, wingwalls, and piers, a reinforced concrete deck with bituminous wearing surface, and concrete parapets with single-rail, box-profile, metal railings. Chain linking fencing supported by box-profile metal posts protects the portions of the bridge parapets directly over the rail line, and concrete Jersey barrier forms the median across the bridge. The Jersey barrier similarly divides the highway east and west of the structure throughout the project area and beyond, while the sides of the roadway are protected by metal beam rail. Bridge #00162 has an overall structure length of 466’ and a maximum span length of 86’. It measures 83’10” curb-to-curb, 91’8” out-to-out, has an approach roadway width of 83’, and the approach skew is 33 degrees. The structure carries six lanes of traffic, this consisting of three 12’-wide travel lanes in each direction, as well as 4’-wide shoulders on the left and right sides of both the northbound and southbound directions.

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2 Mark McMillan (CTDOT), Determination of Exemption as a Minor Transportation Project, State Project #156-181, Rehabilitation of Bridge #00162, I-95 over Metro North RR, West Haven (November 15, 2018).

Bridge #00161 is a three-span, steel, multi-girder bridge that carries Interstate 95 over 1st Avenue (Route 7454) in West Haven. The bridge was built in 1956 and rehabilitated in 1990. It has reinforced concrete abutments, wingwalls, and piers, a reinforced concrete deck with bituminous wearing surface, and concrete parapets with single-rail, box-profile, metal railings. The bridge has an overall structure length of 180’ and a maximum span length of 73’. It measures 112’7” curb-to-curb, 118’5” out-to-out, has an approach roadway width of 113’, and the approach skew is 27 degrees. The structure carries three 12’-wide travel lanes, a 5’-wide left shoulder, and 10’wide right shoulder in each direction, and a 12’-wide acceleration lane in the northbound direction. This section of Interstate 95 has an average bi-directional daily traffic count of 136,900 as of 2017. Both Bridges #00161 and #00162 are categorized as Not Eligible for listing in the NRHP in the statewide bridge inventory database maintained by CTDOT and are not included in the Federal Highway Administration’s (FHWA) “Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System.”

Recent inspections show that Bridge #00162 is structurally deficient due to the superstructure being in “poor” condition (rating 4), and functionally obsolete due to inadequate deck geometry. The proposed project seeks to replace the bridge and bring the crossing up to standards. This will involve removing and replacing the existing 466’-long, 91’8”-wide, six-span bridge with a new approximately 148’-wide structure comprised of a new curved steel composite superstructure, piers, and abutments, these supported on both existing and proposed concrete piles. The number of spans and overall span length to be utilized in the new structure has not been determined, however, the replacement bridge will accommodate three 12’-wide travel lanes, a 12’-wide operational lane, a 16’-wide left shoulder, and 12’-wide right shoulder in the southbound direction, and three 12’-wide travel lanes, a 16’-wide left shoulder, and 12’-wide right shoulder in the northbound direction.

In addition to replacing the bridge, approximately 3,000’ of Interstate 95 will also be reconstructed along the approaches. In the southbound direction, this work will include carrying the acceleration lane from the Route 10 interchange across the bridge as an operational lane, whereupon it will then transition to a deceleration lane for the 1st Avenue exit (Exit 43). Slight reconfiguration of the Exit 43 ramp will be necessary to accommodate this change, however, the realignment will be minimal and will take place within the interstate’s existing footprint. The Exit 43 acceleration ramp in the northbound ramp will also be lengthened, with this work also being limited in scope and located on fill soils well within the roadway ROW. New retaining walls will be constructed along the north and south sides of the interstate along the approaches to Bridge #00162, however, these will be located in close proximity to the edge of the current roadway and in areas of fill necessary to carry the interstate. A substandard superelevation located through the curve within the project area will also be corrected, thus necessitating the replacement of Bridge #00161. This is anticipated to be replaced.

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4 North of the I-95 Southbound Exit 43 off-ramp 1st Avenue is designated as Route 122.
with a single-span, curved, steel-composite continuous superstructure, and reinforced concrete abutments supported on spread foundations. Finally, full reconstruction of the roadway surface will be completed at the end of the project.

The proposed bridge and roadway work will be completed in three stages, during which three lanes of traffic in both directions will be maintained. Contractor access drives will be required at the northeast and southwest quadrants of Bridge #00162, however, these will be located well within the existing roadway ROW and on areas of previous soil disturbance and/or fill. As such, no permanent property acquisitions or temporary access or construction easements will be required by the project. Furthermore, no notable impacts to the railroad will be necessary and catenary portals located approximately 85’ north and 60’ south of Bridge #00162 will be unaffected.

Area of Potential Effect (APE)

The APE for the proposed State Project #156-181 includes the existing footprints of Bridges #00161 and #00162, a combined 3,000’ of roadway between, east, and west of the bridges; as well as the flanking roadway ROW, the latter measuring an average of roughly 350’ from north to south. This consists of the area to be physically impacted by construction, access, and storage/laydown needs, as no significant visual impacts are anticipated on either a temporary or permanent basis. As noted, the entirety of the project area is located within highway ROW.

Historic aerial photographs indicate that the area in the immediate vicinity of Bridge #00161 underwent extensive residential development between the late 19th and early 20th centuries, however, the land north and south of Bridge #00162 remained primarily undeveloped tidal marsh into the mid-20th century (Images 18-19). The latter conditions made the area from Bridge #00162 all the way to the West River unfeasible or unattractive to any improvements other than the rail bed laid out across the marsh during the mid-19th century. This being said, construction of the interstate highway system was not deterred by such physical impediments and the highway corridor through the vicinity was established by the demolition of dozens of structures near the intersection of 1st and Mix Avenues, and the filling and grading of a raised, approximately 3,000’-long section of roadway starting to the west of 1st Avenue and extending east to the West River – with Bridge #00161 spanning 1st Avenue and Bridge #00162 spanning the railroad in the middle of the aforementioned wetlands – in 1956 (Images 20-23).

The highway has remained largely unchanged since its construction, however, the former marshland north of the corridor has since been utilized as landfill space by both the City of West Haven (north of the bridge, east of the railroad) and a private waste disposal company (north of the bridge, west of the rail line), with this use extending right up to the edge of the roadway ROW. In comparison, areas immediately northwest, southwest, and south of the APE consist of mixed residential, commercial, and light industrial development dating from the early through the mid-20th century, with a notable number of earlier residences having been demolished to accommodate
commercial expansion. Despite the late 19th and 20th century vintage of some of the structures, none demonstrate the exceptional level of historical or architectural significance required for individual listing in the NRHP, nor do they possess a level of overall integrity or developmental significance that might support their listing as a historic district. The highway is similarly over 50 years of age, the standard threshold used to determined NRHP eligibility, however, it is not included in the Federal Highway Administration’s (FHWA) “Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System” and is thus not eligible for listing.

All this being said, the Metro-North Railroad’s New Haven Line is considered potentially eligible for listing in the NRHP as a linear historic district. The line passes through the center of the project APE, however, no impacts to the line or its contributing elements are anticipated. The only features of note in the vicinity are the aforementioned catenary portals located north and south of the bridge, however, as noted, these will not be affected by the project.

Archaeological Conditions Within or Abutting the APE

Digital site records maintained by the Office of the State Archaeologist, as well as OEP’s own internally compiled database of historic resources and previously conducted cultural resource studies, were consulted for the purpose of identifying any known archaeological sites located the APE. No documented archaeological sites were found to be present within the project area or a half-mile radius. The eastern edge of the APE does abut the “Reconstruction of I-95 Over West River (SPN 92-522) Archaeological Assessment Survey (2013),” however, no archaeological sites were documented as part of that study.

Soil classification maps maintained by the U.S. Natural Resources Conservation Service were also examined in conjunction with predictive models developed within the State of Connecticut in order to assess the sensitivity of the project area for previously unknown archaeological resources. The vast majority of the APE falls on soils classified as Udorthents-Urban Land Complex (0-35% slopes), these predicted to have a “poor” likelihood of bearing archaeological resources, while limited areas north of the bridge immediately to the east and west of the rail line consist of soils classified as Udorthents, Smoothed (0-35% slopes) and Dumps (0-15% slopes), these predicted to have a “low” and “poor” likelihood of bearing archaeological resources, respectively. Furthermore, evaluation of the area and both project plans for the 1956 construction of Bridges #00161 and #00162 and historic aerial photographs by OEP cultural resources staff indicate that extensive soil disturbances have taken place within the APE (Images 18-23). These include clearing, grading, and filling of the roadway corridor and flanking areas, installation of an extensive system of sand wells along the slope limits, and the construction of the raised roadway corridor, Bridges #00161 and #00162, and associated drainage infrastructure.
Given the aforementioned conditions, OEP Qualified Staff has determined that there is minimal foreseeable potential to impact intact, NRHP-eligible archaeological resources within the project area and no further study is recommended.

**Conclusion**

Qualified OEP cultural resources staff conducted background research and reviewed the project scope. A review of records maintained by the Connecticut State Historic Preservation Office (SHPO) and the “Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System” determined that Bridges #00161 and #00162 are not potentially eligible for listing in the NRHP, and OEP staff also determined that there is minimal foreseeable potential to impact intact archaeological resources within the project area due to extensive soil disturbances. This being said, however, one NRHP-eligible resource, the New Haven Line, is located within the APE. Regardless, no impacts to the line or its contributing features are anticipated.

As such, in accordance with the Section 106 Programmatic Agreement for Minor Transportation Projects, OEP has determined that the project will result in No Adverse Effects on Historic Properties and no further consultation with the Connecticut State Historic Preservation Officer (CTSPHO) is required. A copy of this determination will be included in the quarterly report of Minor Transportation Projects that is submitted to CTSHPO.

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Image 1: 2019 aerial image of project site and vicinity. Approximate project area identified in red.

Image 2: Birdseye view of the portion of project area east and west of Bridge #00161. Looking north. Note the raised fill carrying the roadway throughout the vicinity and over 1st Avenue (Route 745).
Image 3: Birdseye view of the portion of project area and Bridge #00162 west of the railroad line. Looking north. Note the raised fill carrying the roadway from 1st Avenue east to the bridge’s west abutment.

Image 4: Birdseye view of the portion of project area and Bridge #00162 east of the railroad line. Looking north. Note the raised fill carrying the roadway from 1st Avenue east to the bridge’s west abutment.
Image 5: Birdseye view of Bridge #00161. Looking north.

Image 6: Birdseye view of Bridge #00161. Looking south.
Image 7: Birdseye view of Bridge #00162. Looking north.

Image 8: Birdseye view of Bridge #00162. Looking south.
Image 9: Detail of the south face of Bridge #00161 looking north from 1st Avenue. Note the fill carrying the roadway and various utilities throughout.

Image 10: Detail of the north face of Bridge #00161 looking south from 1st Avenue. Note the fill carrying the roadway and various utilities throughout.

Image 11: Typical conditions on the roadway level of Bridge #00161 looking east along I-95 Northbound.
Image 12: Detail of the south face of Bridge #00162 looking northeast from just west of the railroad ROW.

Image 13: Detail of the south face of Bridge #00162 looking northwest from just east of the railroad ROW.
Image 14: Typical details of the underside of Bridge #00162 from just west of the railroad ROW.

Image 15: Typical conditions on the roadway level of Bridge #00162 looking east along I-95 Northbound.
Image 16: Typical conditions on the roadway level of Bridge #00162 looking west along I-95 Northbound.

Image 17: 1856 historic map of project site and vicinity. Approximate project area identified in red.
Image 18: 1934 aerial image of project site and vicinity. Approximate project area identified in red.

Image 19: 1965 aerial image of project site and vicinity. Approximate project area identified in red.
Image 20: 2016 LiDAR image of project site and vicinity. Approximate project area identified in red.

Image 21: Detail from the 1956 project plans for the Greenwich-Killingly Expressway showing Bridge #00161 and the western third of the proposed project area. Note the extent of clearing, grading, and filling required.
Image 22: Detail from the 1956 project plans for the Greenwich-Killingly Expressway showing the design of Bridge #00162 and the central third of the proposed project area. Note the extent of clearing, grading, and filling required.

Image 23: Detail from the 1956 project plans for the Greenwich-Killingly Expressway and the eastern third of the proposed project area. Note the extent of clearing, grading, and filling required.
Image 24: Detail of the proposed design for the roadway work associated with the widening of Bridge #00162, most notable being the slight reconfiguration of the Exit 43 southbound ramp and slight lengthening of the Exit 43 northbound acceleration lane. Note: all work will remain well within the roadway ROW and all work will take place on areas previously disturbed as part of the construction of Interstate 95.
Office of Environmental Planning
Environmental Review - Historical and Archaeological Resources

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State Project No. 156-181
Replacement of Bridges #00161 and #00162
I-95 over First Avenue (Rt. 122) and Metro-North Railroad
West Haven

Predicted Archaeological Soil Sensitivity

- High
- Low
- Moderate
- Poor
- Variable
- Unknown

Cultural Resources

- NRHP Historic Districts
- NRHP Individual Resources
- Cemetery
- Arch. Survey Areas

Approximate Location of Archaeological Site

- Historic
- Pre-Contact
- Unknown

May 23, 2022