



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546



Transmittal:

From: Mark McMillan
Date: April 6, 2017
To: Catherine Labadia, Deputy State Historic Preservation Officer

Project: State No.: 40-141
F.A.P. No.: TBD
Project Title: East Haddam Swing Bridge (#01138) Rehabilitation
Route 82 over Connecticut River
Town: East Haddam / Haddam

Subject: SHPO Consultation Documentation

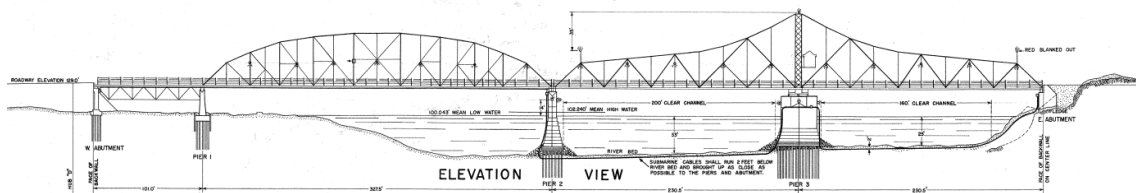
Description of Activity

Using a combination of federal and state funds, the Connecticut Department of Transportation (CTDOT) proposes to perform a major rehabilitation of the East Haddam Swing Bridge (#01138). The bridge carries Route 82 over the Connecticut River between the towns of East Haddam and Haddam. Recent inspections by CTDOT's Bridge Safety and Evaluation unit have determined that the bridge is in Poor condition with an overall sufficiency rating of 25.7%. This is primarily due to deterioration of its superstructure. It has been added to the Bridge Program List 28 for structures requiring major rehabilitation or replacement.

In addition to performing necessary repairs, the project proposes to install a cantilevered 6-foot wide sidewalk on the south side of the deck. Because the East Haddam Swing Bridge is eligible for the National Register of Historic Places, the CTDOT initiated consultation with the Connecticut State Historic Preservation Officer (SHPO) early in this conceptual design process to determine the appropriateness of such an addition. SHPO approved the new sidewalk concept and provided design recommendations intended to minimize impacts to this historic structure. Project design development continues with construction anticipated to begin in Spring, 2020.

Technical Analysis of Project

The East Haddam Swing Bridge has a four-span superstructure supported on concrete and masonry abutments and piers. The bridge deck is 24-½ feet wide, allowing for two lanes of bidirectional traffic with minimal room for shoulders.



From west to east, the spans are a 101' long deck truss and a 327'-long Pennsylvania through-truss, which make up the fixed portion of the bridge. The decks of the fixed spans are paved. The swing span portion is comprised of a pair of 230'-long pin-connected Warren through-trusses centered over a large swing pier. The deck of the swing span is an open steel grid, except for a segment over the pivot pier where the grid is filled with concrete. The concrete is intended to protect the machinery within the pivot pier from water intrusion (Image 1).

With a total length of 889', this is one of the longest truss bridges built in the United States in the early 20th century. Since its completion in 1913, the bridge has undergone two major rehabilitations as well as ongoing maintenance. These have resulted in minor changes to the bridge – most notably the addition of ladders and access platforms beneath the bridge that facilitate maintenance. At various times in the past, the control house has been constructed on either the east side or west side of the center tower. It is currently centered in the tower over the pivot pier of the swing span. The upper portion of the pivot pier has been enclosed to provide easier access to and protection for the turning machinery housed within it (Image 2).

Despite the above mentioned changes, the overall appearance of the bridge remains as it did when it originally opened (Image 3). The bridge is listed in Connecticut's Historic Bridge Inventory and is eligible for the National Register of Historic Places.¹

The proposed undertaking will implement the following repairs:

- Installing a cantilevered sidewalk on the south side of the bridge
- Replacing the existing counterweight
- Installing high-strength bolts to replace missing rivets and to strengthen gusset plates
- Relocating the electrical house and operator house staircase
- Patching concrete in the deck grids on Spans 1 and 2
- Replacing the deck over the machinery pit in the swing span
- Installing a polymer concrete overlay on the deck of Spans 1 and 2 and in the grid section of the swing span
- Upgrading the bridge guide rail system to meet current standards
- Cleaning and lubricating bridge bearings. The disc bearings on Span 1 will be replaced in kind
- Painting areas that have been repaired as part of this project as well as areas exhibiting corrosion. Painting is estimated for 15% of the steel superstructure

¹ Historic Resource Consultants, *Connecticut Historic Bridge Inventory Final Report: Preservation Plan*, State of Connecticut Department of Transportation (May 1991), pp. 72-73.

- Replacing asphaltic joints on west abutment and Pier 1
- Patching the concrete substructure and repointing masonry joints above water line
- Replacing the mechanical system
- Replacing the electrical system, including the installation of a new submarine cable within the Connecticut River channel

The subject bridge provides a vital link between the villages Haddam to the west and East Haddam to the east. It is a gateway into the East Haddam National Register Historic District and the Goodspeed Opera House, both of which are NRHP-listed properties². These resources are a popular attraction for theater productions and outdoor concerts. On the opposite bank is a marina, a State Park, and access to both riverboats and steam train attractions.

Sidewalk

Upon learning of the planned rehabilitation of the subject bridge, the town governments of Haddam and East Haddam contacted CTDOT to express their interest in adding a pedestrian crossing to this undertaking. They noted that the connectivity between their respective towns would be mutually beneficial. There are attractions on each side of the river that are within a mile of each other. A sidewalk would allow pedestrians on both sides of the river access to the 9-town public transportation system in Haddam, as well as overflow parking for events.³ The towns are working collaboratively and have contacted their Regional Planning Agency and Council of Governments to promote this sidewalk project.

CTDOT consulted with the State Historic Preservation Officer (SHPO) regarding the appropriateness of this feature. SHPO expressed their support of the sidewalk concept and offered suggestions to minimize impacts to the historic resource:

- Construct the sidewalk in steel or similar metal to complement the material palette of the bridge trusses. Paint the sidewalk structure the same color as the other steel elements of the bridge.
- Align the elements of the sidewalk's railing and structure with the existing truss members to avoid or minimize the creation of new lines that distract from the historic bridge structure.
- Ideally, the top rail of the pedestrian walk would not exceed the height of the vehicular guiderail of the bridge's vehicle lanes and obscure the view from the bridge deck
- The walking surface of the bridge does not have to be steel. An alternative, lighter-weight material such as wood would be acceptable.

² National Parks Service, *East Haddam Historic District* (NPS #83001273), listed April 29, 1983 and *Goodspeed Opera House* (NPS #71000901), listed July 30, 1970.

³ Letter from Melissa Schlag (First Selectman, Haddam) and Mark Walter (First Selectman, East Haddam) to Hugh Hayward (CTDOT), dated November 10, 2015.

The Area of Potential Effect (APE) for this project is centered on the bridge itself. Access to the bridge will be from the river as well as the banks on either side. The APE will consider the impacts construction will have on the river traffic as well as the properties on land. These include:

4 Harpers Landing Road: 2.5 acre parcel is located at the northwest corner of the bridge. It is home to a commercial marina with 76 slips at floating docks. The marina also includes moorings at the nearby Hamburg Cover. On the land are three structures: a one-story office building (1950); a one-story single family residence with attached garage (1985); and a 1-3/4 story single family residence (1988). None of these buildings exhibit design qualities or associations with people or events that would qualify them for the National Register (Image 4).

Eagle Landing State Park: As the name implies, the 16-acre park provides a venue to view eagles in their natural habitat. It is located in Haddam on the western bank of the river and south of the bridge (Image 5). The park is accessed via Little Meadow Road. It features grass landscaping and a few accommodations, such as picnic tables and a gazebo for visitors.

Along the riverbank are four wooden piers on the riverfront as well as storage structures on the land. The piers accommodate Connecticut River Expeditions, a business that charts cruises along the river. The park is also the northern terminus of the Connecticut Valley Steam Train Riverboat Route line. At this location, patrons of the Steam Train can transfer to a riverboat for a combination train and boat excursion.

1 Bridge Road is located between the bridge and the northern boundary of Eagle Landing State Park. It is a 2.34 acre parcel with a 1-story single family residence that was built in 1960 (Image 6). The house is situated near the southwest corner of the parcel, approximately 200 feet south of Route 82. It is accessed via a gravel driveway that runs parallel to Route 82 (Image 7). The unpaved road continues past the house driveway to provide access to the state-owned right of way beneath the bridge. Use of this road will likely be required during construction to access the river and the western abutment of the bridge.

All the properties on the east side of the river are within the East Haddam Historic District. The subject bridge is excluded from this district and not all of the abutting properties are considered to be contributing elements to the historic district. The parcels are within the project's APE are:

1 Main Street: This 1.5 acre parcel abuts the northeast corner of the bridge. It is owned by the Town of East Haddam and includes buildings used by the state trooper and town for a garage. The smaller of the two buildings is a 2-1/2 story single family residence known as The River House (Image 8). It was built ca. 1913 and is a contributing element to the East Haddam Historic District. Currently it is used by the State Troopers.

There is a 7-bay garage that houses the town vehicles. It was constructed in 1930 and is considered to be non-contributing element of the district. There are two driveways to these buildings, both of which intersect with Route 82.

6 Main Street (Goodspeed Opera House): This 3-story Opera House is the centerpiece of the historic district. It was built in 1876 and designed in Second Empire style with a five bay, symmetrical façade, Mansard roof and square Mansard roof tower rising above center of the primary façade's roof (Image 9). The building operates as a theater and musical venue. In addition to being a contributing element of the historic district, the property was individually listed on the National Register in 1971.


Between the Goodspeed Opera House and the river is a 0.29 acre parcel (**Map 17, Lot 94**). It is co-owned by the Goodspeed Opera House Foundation and the State Pier. It is vacant except for a dock on the river and a paved roadway (Dock Road) that accesses it (Image 1). This area is a likely point of access to the river or for work on the eastern abutment.

There are a variety of sediments within the APE. On the east side of the river, they are characterized as Udorthents and Urban Land, as would be typical of the disturbances caused by the development, excavation and fill resulting from the construction of the buildings, roadways and bridge over time. These types of soils are considered to have low archaeological potential. There is a similar makeup on the western side of the river. Interspersed with these sediments are areas of Suncook Fine Sandy Loam which appear to have been subjected to less development and disturbance. Predictive models find these types of soils to be of high archaeological potential. There are several Pre-Contact archaeological sites along the Connecticut River. The majority of these consist of a few flakes of debitage, however there are been several points and tools recovered from sites further outside the APE.

Staff from the OEP performed a field assessment of the project APE. They noted the disturbance caused by the development on both sides of the river as well as the placement of riprap and signs of cyclical flooding of the area. Given that the majority of the work proposed will occur on the superstructure of the bridge, there is little ground disturbance anticipated by the project. The work on the piers will occur in-water using barges. It is the professional opinion of OEP that there is minimal potential for impacting archaeological resources within the APE. OEP does request that a site plan showing proposed layup and staging areas be provided for review when it becomes available.

Recommendation

The proposed work on the bridge will have an effect on the historic ambience of the East Haddam Historic District and the East Haddam Swing Bridge. The staff of OEP have reviewed the project scope of work, conducted background research on the resources within the undertaking's Area of Potential Effect and performed a field assessment of the bridge and its surroundings. It is our professional opinion that the work proposed meets the Secretary of the Interior's *Standards for the Treatment of Historic Properties*. It will extend the useful lifespan of the bridge and improve the overall accessibility of this structure on both sides of the river. For these reasons, OEP recommends a determination of *No Adverse Effect to Historic Properties* under Section 106 of the National Historic Preservation Act.



Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

SHPO Use Only

Based on the information provided to the State Historic Preservation Office, we:

- ☐ Concur
- ☐ Do Not Concur (additional comments attached)

with CTDOT's Office of Environmental Planning's opinion that there will be

No Adverse Effect to Historic Properties

caused by this undertaking (State Project #40-141 in East Haddam / Haddam).

Catherine Labadia
Deputy State Historic Preservation Officer

Date



Department of Economic and
Community Development

Connecticut
still revolutionary



Image 1: Eastbound segment of swing span of portion of the bridge. The driving surface is a steel “singing” grid. The grid is covered beneath the control house to protect the machinery in the swing pier from water intrusion.



Image 2: An enclosure has been installed on the pivot pier to provide access to and protection for the turning machinery. This marks a visual change to the bridge from its original design, but does not affect the overall historic integrity of the structure.



Image 3: Views of East Haddam Swing Bridge from Opening Day Program (6/14/1913). *Courtesy of Connecticut State Library.*



Image 1: Grand Avenue Bridge (#03810), viewed from southwest. The dock and grass-covered land are part of parcel Map 17 / Lot 94, which is co-owned by the Goodspeed Opera House Foundation and State Pier.



Image 4: Office of Andrews Marina at 4 Harpers Landing. This structure was built in 1950 and does not exhibit design qualities or associations that would qualify it for listing on the National Register of Historic Places. The fixed span of the bridge is visible in the background.



Image 5: Eagle Landing State Park, looking northeast toward the bridge and Goodspeed Opera House.



Image 6: Single family home at 1 Bridge Road. The house was built in 1960 and does not appear to be eligible for the National Register of Historic Places.



Image 7: Driveway to 1 Bridge Road (outlined in red). This gravel road continues parallel to Route 82 toward the river. It provides access to the state-owned right of way beneath the bridge.



Image 8: The River House at 1 Main Street. The single family residence houses the resident State Trooper.



Image 9: The Goodspeed Opera House at 6 Main Street. This individually-listed NRHP property is a contributing element of the East Haddam Historic District. It abuts the southeast corner of the subject swing bridge.

Detail of 2015 Aerial Photography

WATER

01138

East Haddam Swing Bridge #01138

0 125 250 500 750 1,000 Feet

Labels on map:

- Camp Butler
- MANCHESTER GRAVELLY SANDY LOAM 25 TO 15 PERCENT SLOPES
- LOAMY FINE SAND
- SUNCOOK LOAMY FINE SAND
- MANCHESTER GRAVELLY SANDY LOAM 25 TO 15 PERCENT SLOPES
- CHARDON CHATFIELD COMPLEX 3 TO 15 PERCENT SLOPES VERY RICH
- WORTHENTON'S URBAN LAND COMPLEX
- East Haddam National Register Historic District
- REPROVAM FINE SANDY LOAM
- URBAN LAND

Detail of 1:50,000 Scale Quad Map

0 750 1,500 3,000 4,500 6,000 Feet

Detail of 1855 Wading map of Windsor County, Vermont. The map shows various land parcels and owners. A red rectangle highlights a specific area, with an arrow pointing to it and the label "Project Area".

January 13, 2016