



**USGS QUADRANGLE MAP**  
 PROJECT NO. 154-127 BRIDGE NO. 00349  
 US ROUTE 1 OVER PATCHOGUE RIVER



**USGS QUAD #99**  
 Westbrook, CT



Created: January 2023

1 INCH = 2,000 FEET





CT DEEP, USGS, UConn/CTDEEP, Esri, HERE, Garmin, INCREMENT P, NGA, USGS



**CTECO AERIAL MAP**  
WESTBROOK, CT



Created: January 2023

1 INCH = 250 FEET



## **PROJECT DESCRIPTION**

Project Number: 154-127

Town: Westbrook, Connecticut

Rehabilitation of Bridge No. 00349

U.S. Route 1 over Patchogue River

### **Existing Conditions**

Bridge No. 00349 is a 120-foot long, single-span truss bridge that carries U.S. Route 1 over the Patchogue River in the Town of Westbrook, Connecticut. The bridge is named the “Singing Bridge” and acquired its name for the hum that is heard when vehicles drive over its open steel grid deck. It was originally constructed in 1925 and as an NRHP-eligible bridge, was replaced under an Adverse Effect determination in 2004.

The bridge superstructure is comprised of an open steel grid deck supported by longitudinal wide-flange steel stringers. The stringers are supported by transverse wide-flange steel floorbeams, which are carried by two steel thru trusses. The trusses rest on two concrete abutments, which are founded on cast-in-place concrete piles encased in steel pipe. The bridge also supports a cantilevered sidewalk located outboard of the truss on the south side of the bridge.

The bridge carries bi-directional traffic in an east-west direction with a 35-foot roadway curb-to-curb width. The Average Daily Traffic (ADT) on the bridge is estimated to be 7400 vehicles according to the Connecticut Department of Transportation’s [CTDOT] 2021 Bridge Inspection Report, and the roadway over the bridge is classified as a Minor Urban Arterial.

Bridge No. 00349 is not on the National Highway System (NHS) and is not part of the Strategic Highway Network (STRAHNET). This rehabilitation project is being undertaken with Federal and State Funds (80% Federal/20% State).

### **Purpose and Need Statement**

The purpose of this project is to address the deficiencies in the bridge deck identified by recent inspections and to maintain the major components in a “State of Good Repair”. The bridge deck has numerous weld cracks between the stringer top flange and bearing bar that require replacement. A poor connection detail between the steel grid deck and floor beam is resulting in diagonal cracks up to three inches long in the web of the bearing bars at 96 locations. The amount of cracking in the deck has gone beyond repair and needs replacement.

### **Proposed Project**

Based on the current condition of the structure, the open steel grid deck will be replaced as part of the rehabilitation of the project. Additional repairs to the steel superstructure and concrete substructure will be investigated further during the Rehabilitation Study Report (RSR) phase.

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### **Site Information**

The Patchogue River flows northeast to southwest beneath Bridge No. 00349 and is tidally influenced. The project location is within the Patchogue River sub-regional drainage basin (#5102) of the South Central Eastern Complex regional drainage basin (#51). The project location is classified as a FEMA floodplain Zone AE, which is considered an area that presents a 1% annual chance of flooding, according to FEMA Flood Insurance Rate Map #09007C0339J (effective date February 6, 2013).

### **Cultural Resources**

An Environmental Pre-Screening for this site was conducted in January 2022. This initial screening indicated that the original Singing Bridge that was built in 1925 was eligible for the National Register of Historic Places yet was replaced under an Adverse Effect in 2004 when the rehabilitation occurred. The Memorandum of Agreement (MOA) for the replacement project (#154-113) specified that the new structure must “replicate the overall scale and superstructure of the historic Route 1 Bridge.” As such, any work that might alter the existing design could violate the intent of the MOA and coordination with OEP’s CRED Unit must occur. It was also noted that just north of the project’s Area of Potential Effect (APE) an archaeological site remains, and if work is to be done outside the APE a field assessment will be required.

The project is located within an area designated as a Commercial Boating District (CB) per the Town of Westbrook, CT Zoning Map and just east of the Menunketesuck-Cockaponset Regional Greenway.

According to the CTDOT Interactive Bike Map, the project is located on the Connecticut Statewide On-Road Bicycle Planning Network, and Route 1 in this area is considered “suitable” for cycling. According to the EPA’s Environmental Justice Screening and Mapping Tool (Version 2.1), the only environmental or demographic indicators of concern in the project area is that residents are in the 90-95 National Percentile of being over the age of 64.

### **Wetland and Environmental Resources**

According to the National Wetlands Inventory, the project location is defined as an Estuarine and Marine Deepwater habitat (E1UBL3) and is not in an aquifer protection area. Due to the location of the project site wetlands will be delineated.

Approximately a half-mile north of the project site exists the Stewart B. McKinney National Wildlife Refuge- Salt Meadow Unit. This was Connecticut’s first National Wildlife Refuge and was acquired in 1971.

The project is located in a Natural Diversity Database (NDDDB) area per a December 2022 mapping. According to the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation resource (IPaC), the Northern Long-Eared Bat and the Red Knot may potentially be affected by activities in this location. In reference to the Environmental Pre-screening that was conducted in January 2022, OEP will coordinate with USFWS as the design of the project progresses due to possible impacts to the Northern Long-Eared Bat.

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If any in-water work is added to the scope of the project or barges are to be used in construction, then CT Department of Energy and Environmental Protection (DEEP) Fisheries and National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) coordination may be required.

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**EXISTING SITE PHOTOGRAPHS**



South Elevation- View from downstream



North Elevation- View from upstream

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West Approach- looking East



East Approach- looking West

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Abutment 1 Elevation



Abutment 2 Elevation

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Steel Grid Deck with Areas of Peeling Galvanized Coating



Underside of Steel Grid Deck and Framing Condition- Looking North

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Steel Grid Deck has broken Diagonal Bars Between Floorbeams 2 & 3 and Stringers 3 & 4

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