

Project Description

Bridge No. 07109 supports Route 349 over Birch Plain Creek in the city of Groton. The structure is located approximately 2,100 feet north of Poquonnock Road.

The existing bridge was constructed in 1964; it consists of a 7-foot asphalt-coated corrugated metal pipe (ACCMP), approximately 175 feet long. The culvert is under approximately 40 feet of fill with sloped embankments at the inlet and outlet. Bridge No. 07109 exhibits laminar rust at and below the waterline. The asphalt coating is missing on the lower corner plates and active leakage is visible at the joints. The headwall at the inlet has horizontal hairline cracks with efflorescence and rust stains. The outlet has no formal headwall but has broken concrete around the pipe.

The Route 349 lane configuration over the bridge is composed of two 10-foot lanes with a 1-foot shoulder travelling northbound (NB) and two 10-foot lanes with a 1-foot shoulder travelling southbound (SB). A metal beam rail is present along both sides of the roadway. The Average Daily Traffic (ADT) over the bridge is approximately 16,600 vehicles per day (2023 CTDOT Traffic Log).

Illumination exists within the project limits; however no utility impacts are anticipated.

It is anticipated that impacts to right-of-way (ROW) will include a temporary construction easement at the inlet end of the structure to access the site and provide a work area.

The project site lies within the Southeast Shoreline drainage basin (2000) and is not located within an aquifer protection area. According to the FEMA Map Service Center, the Project Area is adjacent to other flood areas. Review of CTDEEP's Natural Diversity Data Base (NDDDB) for Groton indicates that the project site is located within an area identified as a known habitat for state and federally listed species and significant natural communities.

The purpose and need of this project is to address the deteriorating condition of the bridge and restore the structure to good condition. The proposed scope of work consists of relining the existing ACCMP with a 2" Ultra-High-Performance Concrete (UHPC) invert liner along the full length of the culvert. The concrete collar at the outlet is broken and non-functional. Prior to installing the 2" UHPC invert lining, the existing culvert will be cleaned. The collar will be removed and a new concrete headwall and wingwalls will be constructed in its place. A riprap basin and rock weir will be constructed at the outlet to further reduce flow velocities.

There are minimal impacts to the roadway anticipated with short-term duration, off-peak lane and shoulder closures to construct the access roads and facilitate access to and from the work areas. All proposed rehabilitation work to the existing structure is expected to be generally performed with minimal, temporary disturbance to the travel way. Temporary construction

access roads will be established to reach the upstream and downstream ends of the structure to complete the proposed work.

Sections of the metal beam rail will be removed and reset during construction for the installation of the access roads.

Construction is anticipated to begin in Spring 2030.