

Project Description

Bridge No. 02245 supports Route 30 over Grants Brook in the town of Tolland. The structure is located approximately 0.4 miles south of Rolling Meadow Drive and Willow Creek Drive.

The existing structure, constructed in 1928, is a short-span concrete crossing consisting of a single-span reinforced cast-in-place concrete deck supported on concrete abutments and wingwalls with concrete parapets. It is supported on concrete foundations that have been exposed. The structure has an overall length of approximately 11 feet and a maximum span of approximately 8 feet. Route 30 over the crossing has a curb-to-curb width of 32 feet 2 inches, consisting of two travel lanes and shoulders. The total deck width is 34 feet 9 inches and the Average Daily Traffic (ADT) is approximately 6,200 vehicles per day (2023 CTDOT Traffic Log).

Bridge No. 02245 exhibits significant deterioration of the deck, superstructure, and substructure. The concrete deck is covered by a bituminous overlay; however, the underlying slab exhibits cracking and areas of significant efflorescence, particularly near the expansion joint. Both abutments exhibit full-height vertical cracking along their centerlines and show signs of misalignment. The wingwalls are in more severe condition, and one wingwall has rotated outward by more than 2 inches. Overall, the concrete elements exhibit widespread deterioration, including scaling, cracking, efflorescence, and localized hollow areas.

The channel alignment remains stable, with evidence of minor upstream scour and minor erosion both upstream and downstream. Light timber debris was observed within the channel.

The project site lies within the Hockanum River regional basin (4500). The project site is not located within an aquifer protection area or FEMA floodplain area.

Review of CT DEEP's Natural Diversity Data Base (NDDDB) for Tolland indicates that the project site is not 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 restore the structure to good condition. The proposed replacement consists of replacing the existing structure with a 10'-0" wide x 7'-0" high precast concrete box culvert, with the bottom slab buried in a minimum of 2 feet of natural streambed material. The proposed structure will be widened approximately 3 feet to the east and 9 feet to the west to support the widened roadway conditions. The proposed structure will have new precast concrete cutoff, return walls, wingwall footings, and wingwalls. The headwalls and parapets at the inlet and outlet will be cast-in-place concrete.

The proposed roadway improvements along Route 30 under this alternative consist of raising the roadway profile, widening at the bridge to meet the approach roadway width, and drainage improvements. The proposed configuration will provide an 11-foot travel lane in each direction with 7-foot outside shoulders and a consistent 2% cross slope from crown to curb, meeting the desired Complete Streets criteria. The curb-to-curb width at the bridge will match the immediate roadway approach widths, however the lane and shoulder configuration will have to transition back to match the existing approaches at the project limits.

The structure will be constructed by detouring traffic and utilizing Accelerated Bridge Construction techniques to install the culvert. The state road detour route is 13.5 miles long beginning and ending at the structure; however, the net detour length is 5.5 miles and utilizes Route 140 (Crystal

Lake Road), Route 83 (Somers Road/West Road), and Route 74 (Union Street/East Main Street/Tolland Avenue/Tolland Stage Road).

Permanent drainage easements and grading easements are anticipated due to proposed roadway widening and drainage improvements. A right to reconstruct the driveway will be required at the southwest corner of the bridge. Additionally, a temporary construction easement is anticipated at the southwest property due to temporary conditions during the bridge replacement.

Aerial utilities are located along the eastern side of Route 30 near the bridge and are expected to remain in service during construction. Minor adjustments may be required to maintain required clearances, particularly as the roadway profile is raised. There are no underground utilities present within the project area.

Construction is anticipated to begin in Spring 2030, depending on the availability of funding, acquisition of rights-of-way, and approval of necessary permits. The estimated construction cost for this project is approximately \$3.0 million, with 80% federal funds and 20% state funds.