Beaver Brook Bridge Replacement

Westford, Massachusetts

Precast concrete bridge abutments and other prefabricated bridge elements facilitate a faster construction period and, in turn, a shorter duration of road closure along Beaver Brook Road.

Steel sheeting will be driven to create a temporary cofferdam, which will divert stream flows around the construction area and allow for the precast concrete abutments to be installed “in the dry”.

The proposed roadway will be widened to include a sidewalk and two bicycle lanes, in accordance with MassDOT’s Healthy Transportation Policy Directive. New crash tested bridge railing and compliant approach guardrail will provide an improvement to motorist safety.

Services/Highlights

- Bridge design
- Highway design
- Drainage design
- Utility coordination
- Environmental permitting
- Local permitting
- Traffic management planning
- ROW
- Construction administration & inspection Services

TEC has been contracted by the Town of Westford and MassDOT to perform engineering services associated with the complete replacement of the bridge carrying Beaver Brook Road over Beaver Brook in the Westford (Bridge No. W-26-014). The purpose of this project is to replace the deteriorated corrugated metal pipe (CMP) culverts to avoid a potential bridge failure and subsequent unexpected road closure. The project scope includes a complete bridge replacement at the subject site while minimizing impacts to the approach roadway, adjacent properties, and adjacent wetlands. Replacing the Beaver Brook Road bridge is critical, considering the structural deficiencies at the current bridge and the important role Beaver Brook Road serves to the surrounding region. The proposed project will also upgrade the substandard traffic safety features, provide one sidewalk over the bridge, and provide two bicycle lanes over the bridge. In an effort to reduce the duration of construction (and subsequently limit the duration of road closure) prefabricated bridge elements, including precast concrete beams and abutments, are currently proposed for the new bridge.

The flow in Beaver Brook will be temporarily diverted (in two stages) to allow for the precast concrete abutments to be installed “in the dry”. All environmental permits will be strictly enforced to ensure any environmentally sensitive areas are not adversely affected.

A larger hydraulic opening will provide improved means for wildlife passage beneath the structure in Beaver Brook. Utility supports will be mounted on the outside of the deck beams to accommodate the current utilities and any future utilities the Town plans to install along Beaver Brook Road.

Bipartisan Infrastructure Law