



Waterford

VT Route 18, Bridge 7

Waterford BF 0225(4)

Project Location: Town of Waterford in Caledonia County on VT Route 18 over Mad Brook. The bridge is located approximately 5.9 miles south of the intersection of VT Route 18 and VT Route 2.

Benefits of Accelerated Bridge Construction:

- Reduced design and construction duration
- Reduced road user cost
- Safer for workers and traveling public
- Increased strength and quality of bridge components
- Eliminates need for temporary bridge construction
- Reduced impacts to:
 - Environmental Resources
 - Utilities
 - Right-of-Way

The Waterford VT Route 18 Bridge 7 project will replace the existing bridge, which does not have adequate hydraulic capacity and is considered structurally deficient, with a new bridge that meets current design standards. The existing bridge is a single span concrete slab bridge constructed in 1938 and later widened with a concrete box culvert on the inlet end. The existing bridge is 12-feet long and 48-feet wide. The bridge superstructure (deck and beams) components are in fair condition and the bridge substructure is in poor condition.

VTrans evaluated alternatives for replacement of Waterford VT Route 18 Bridge 7 in an engineering study completed in October 2014. The study assessed the proposed design criteria for the bridge and roadway alignment, Right-of-Way impacts, hydraulics, aquatic organism passage (AOP), and wetland resources. Several alternatives were considered including no action, full replacement with a precast reinforced concrete box, and full replacement with an integral abutment bridge. Given the age of the structure and existing hydraulic and structural deficiencies, the engineering study recommended full bridge replacement with a precast reinforced concrete box using Accelerated Bridge Construction (ABC) methods with an offsite detour.

The new culvert will be a 16-foot by 8-foot precast concrete box culvert. The new precast box will have 12 inch high bed retention sills, to allow for a natural channel bottom to form, accommodating AOP. Since the precast culvert will have a closed bottom, it will be protected from scour. In order to satisfy AOP requirements, the culvert invert will be buried 36 inches and stone will be placed along the length of the channel bottom through the culvert, resulting in a 5 foot high waterway opening. The new culvert will have headwalls that extend 4 feet below the channel bottom at the inlet and the outlet to prevent undermining. This new structure will meet the minimum hydraulics standards.

It is anticipated that the bridge will be constructed during the summer of 2017 using ABC methods, which will expedite construction and reduce disturbance to the public. There will be an allowable 7 day road closure with temporary single lane closures prior to and following the bridge closure period. The detour for this project location would add approximately 0.3 miles to the through route, and have an end-to-end distance of 17.3 miles.



Looking South Over Bridge

Target Construction Schedule: It is anticipated that construction activities will take place beginning in June 2017 and last one construction season. The allowable bridge closure period is 7 days to be determined at a later date.

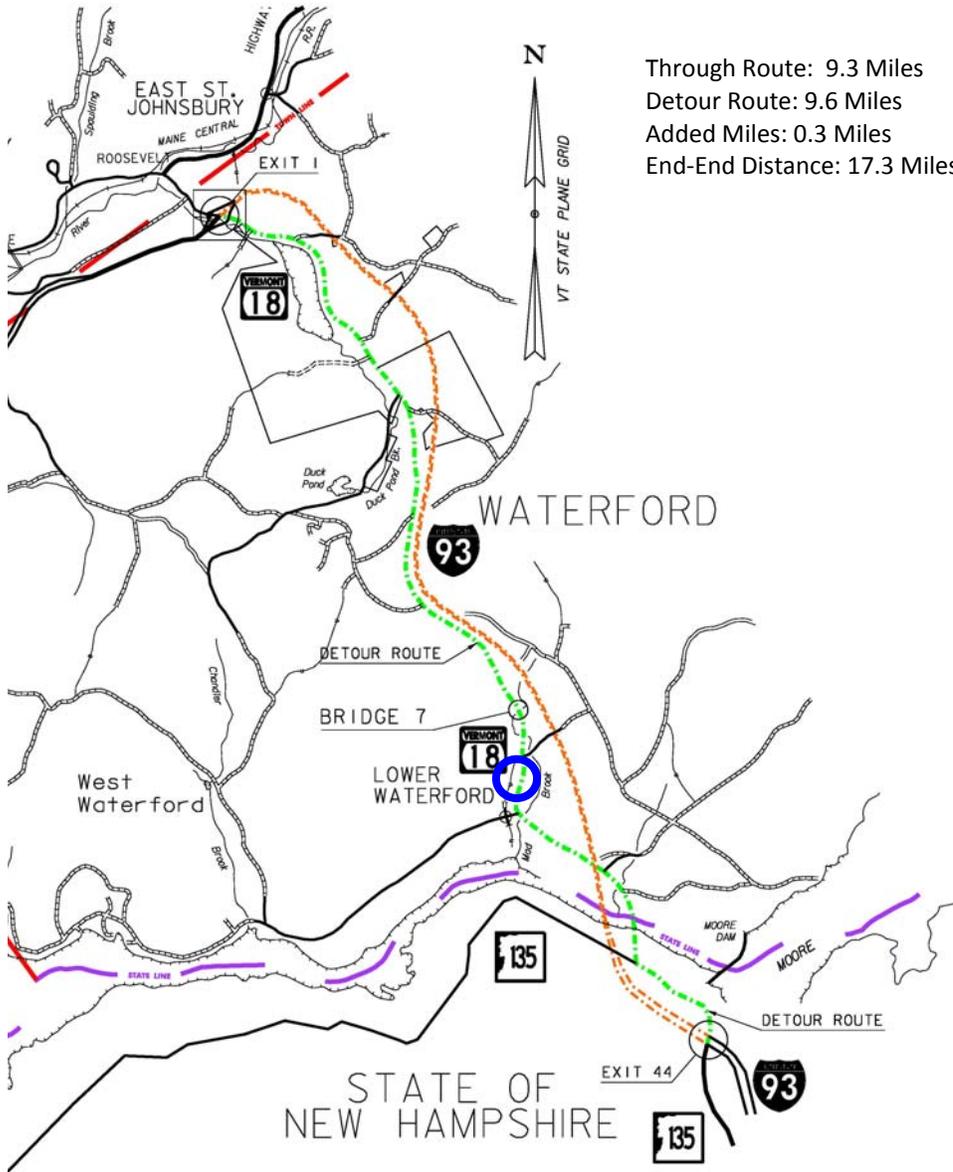
Contractor: TBD

Estimated Total Project Cost: \$862,000.00

VTrans Project Manager: Kristin Higgins

VTrans Resident Engineer: Unknown at this time

Detour Route: During construction, traffic will be rerouted on Interstate-93, back to NH/VT Route 18



Through Route: 9.3 Miles
Detour Route: 9.6 Miles
Added Miles: 0.3 Miles
End-End Distance: 17.3 Miles

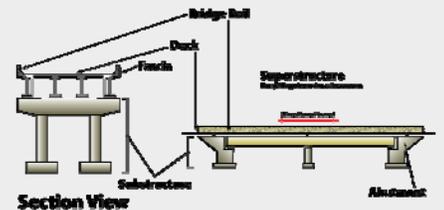
Bridge Location Map



Spalling and Efflorescence on Soffit



Abutment Undermining



Section View



<https://www.facebook.com>



<https://twitter.com/511VT>

[Click here for more Information](#)