Cavendish

Depot Street (Town Highway 1), Bridge 58

Cavendish BO 1442(38)

Project Location: Town of Cavendish in Windsor County on Depot Street over Black River. The bridge is located approximately 0.1 miles southeast of the intersection of VT Route 131 and Depot Street.

The Cavendish Bridge 58 project will replace the existing bridge, which is considered structurally deficient, with a new bridge on the existing horizontal alignment. The existing bridge is located on a substandard sharp horizontal curve; due to site constraints, the new bridge will follow the existing roadway curve. The existing bridge is a two-span concrete T-beam bridge constructed in 1940, and is 87-feet long and 36.8-feet wide. The bridge superstructure (deck and beams) components are in poor condition and the bridge substructure is also in poor condition.

VTrans evaluated alternatives for replacement of Bridge 58 in an engineering study completed in March 2015. The study assessed the proposed design criteria for the bridge and roadway alignment, Right-of-Way impacts, hydraulics, and historic resources. Several alternatives were considered including no action, permanent bridge closure, and full bridge replacement. Given the age of the structure and existing hydraulic and structural deficiencies, the engineering study recommended full bridge replacement with a single span bridge using Accelerated Bridge Construction (ABC) methods with an offsite detour.

The new bridge will be comprised of a superstructure that has the minimum depth possible for the design span, in order to maximize hydraulics. The proposed bridge will include a completely new bridge that is 24 feet wide curb to curb with a 5'-6" sidewalk on the eastern side of the bridge. It is proposed that the sidewalk on the western side of the bridge is eliminated. The proposed structure will match the existing geometry in regards to horizontal alignment, and will be raised three-inches for improved hydraulics. The current structure just meets the minimum hydraulic standards, therefore, the new superstructure span and type should be chosen based on the minimum depth. In order to reduce the closure time and impacts to historic resources, it is recommended that the new abutments are placed on piles behind the existing abutments. This will eliminate the need for cofferdams, and result in a more economical project. The existing pier will be saw-cut down to the stream bed.

It is anticipated that the bridge will be constructed during the summer of 2017 or 2018 using ABC methods, which will expedite construction and reduce disturbance to the public. There will be an allowable 10 week road closure with temporary single lane closures two weeks prior to and two weeks following the bridge closure period. The most likely detour for this project location would add approximately 0.7 miles to the through route, and have an end-to-end distance of 1.7 miles.

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

Looking North Over Bridge

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Target Construction Schedule: It is anticipated that construction activities will take place beginning in June 2017 or June 2018 and last one construction season. The allowable bridge closure period is 10 weeks to be determined at a later date.

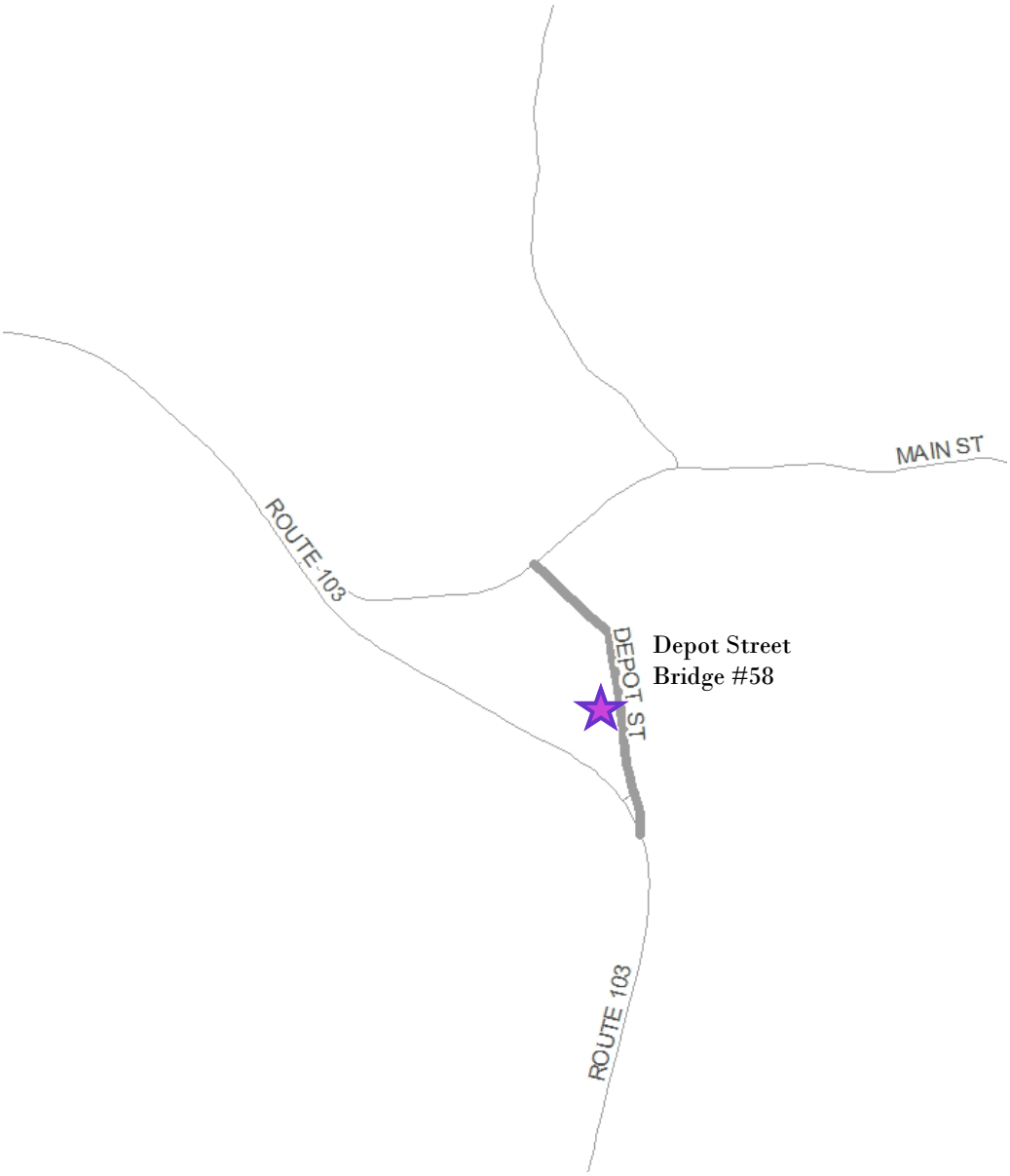
Contractor: TBD

Estimated Total Project Cost: $2,695,050.00

VTrans Project Manager: Robert Young, P.E.

VTrans Resident Engineer: Unknown at this time

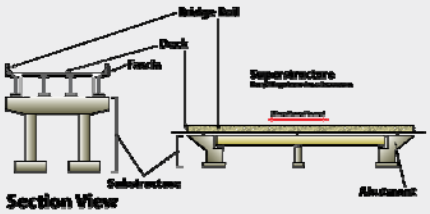
Traffic Maintenance: The bridge will be closed for 10 weeks, and traffic will be maintained on an offsite detour. The town is responsible for choosing and signing the detour route.



Bridge Location Map

Pier (Substructure) Deterioration

T-beam Deterioration



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