



Guilford

US Route 5, Bridge 5 over Broad Brook

Guilford BF 0113(68)

Project Location: Town of Guilford in Windham County on US Route 5 approximately 1.5 miles south of the intersection with I-91, exit 1.

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

Guilford Bridge 5 is a State-owned bridge. This project will completely replace the existing bridge, which is structurally deficient and substandard in width and in several geometric parameters. The existing bridge is a single span concrete T-beam bridge constructed in 1925, and is 53 feet long and 21 feet wide. The substructure is in poor condition and the bridge superstructure is only in fair condition.

VTrans evaluated alternatives for replacement of Bridge 5 in an engineering study completed in October 2013. The study assessed the proposed design criteria for the bridge and roadway, Right-of-Way impacts, hydraulics, and impacts to potential environmental and cultural resources. Several alternatives were considered including no action, rehabilitation, and full bridge replacement. Given the age of the structure and existing 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 prefabricated superstructure. On the south end, prefabricated integral abutments supported by driven piles will be installed. At the north end, prefabricated abutments will be placed on bedrock. The width of the new bridge will be 30 ft. curb to curb, with 11 ft. travel lanes and 4 ft. shoulders and will span approximately 85 ft. In addition to the 30 ft. width, a 5'-6" sidewalk is proposed. New bridge and roadway standards will be met including strength, width, horizontal and vertical alignment, and hydraulics.

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 4 week road closure with temporary single lane closures three weeks prior to and two weeks following the bridge closure period. The most likely detour for this project location would be on I-91 and would add no distance traveled for through traffic. The end-to-end distance is approximately 25 miles using the detour route. It is anticipated that locally generated non-truck traffic would use other public roads, including town roads, to circumvent the project area.



Looking North Over Bridge

Target Construction Schedule: It is anticipated that construction activities will take place beginning in June 2017 and last one construction season. The beginning of the closure period is to be determined at a later date but will be during the school summer break.

Contractor: TBD

Estimated Total Project Cost: \$2,767,000

VTrans Project Manager: Robert Young, PE

VTrans Resident Engineer: Unknown at this time

Traffic Maintenance: The bridge will be closed for 4 weeks with traffic being maintained on an offsite detour.



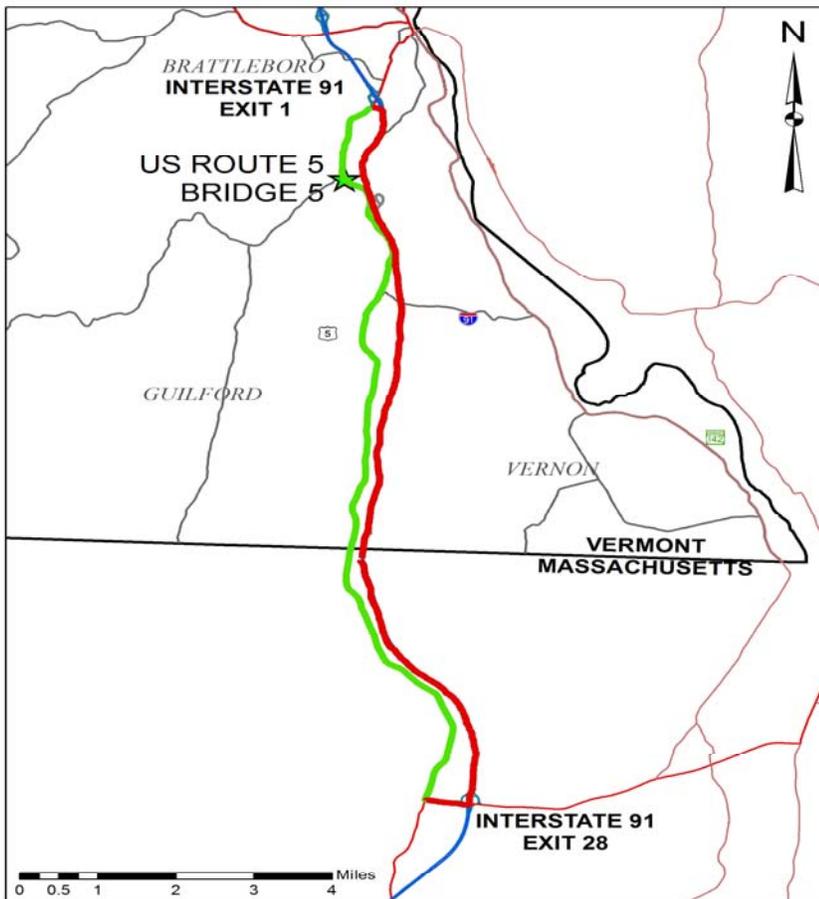
Barrier Deterioration



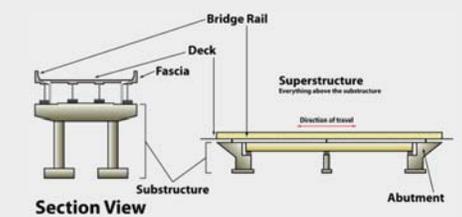
Wingwall Deterioration



Abutment Scour



Detour/Bridge Location Map



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