



Highway Safety & Design Engineering Instructions (HSDEI)

Distribution: Highway Division, Director of Policy, Planning and Intermodal Development, American Council of Engineering Companies of Vermont, Vermont State Police – Traffic Safety Unit

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Subject: **U-Turn Guidance**

Administrative Information:

Effective Date: HSDEI 15-102 shall be effective from the date of approval.

Superseded HSDEI: Not Applicable

Exceptions: Not Applicable

Disposition of HSDEI Content: Not Applicable

Purpose:

Throughout Vermont’s Highway system there are approximately 340 miles of limited access divided highway. The intention of these limited access divided highways is as indicated, to limit the points of access to these high speed highways reducing the likely hood of crashes. Because the intent is to limit access points this also limits access to maintenance personnel and emergency responders. To aid emergency responders and maintenance personnel on these limited access divided highways VTrans uses U-Turns to allow maintenance personnel to more efficiently address maintenance issues or for emergency responders to arrive at their destination as expedient as possible.

The intention of this HSDEI is to establish criteria for the installation, removal and construction of U-Turns on Vermont’s limited access divided highways.

Technical Information:

The following criteria shall be considered when determining the location of a U-Turn:

- High crash locations shall be evaluated for need based on proximity of nearest U-Turns.
- Tangent roadway sections should be used, when possible, to avoid conflicts with superelevation.
- The maximum grade for any U-Turn should be 9%.

- Areas where the divided lanes of the highway are in close proximity and have a minor grade differential should be used so that the overall length of the U-Turn is minimized. A Minimum length of 80 feet should be achieved to accommodate maintenance operations.
- Minimum spacing between U-Turns shall be 1 mile, unless otherwise dictated by maintenance or interchange proximity.
- Maximum spacing between U-Turns shall be 5 miles.
- U-Turns should be placed so as to allow approaching traffic adequate Stopping Sight Distance (SSD) as identified in the current edition of “A Policy on Geometric Design of Highways and Streets” published by the American Association of State Highway and Transportation Officials (AASHTO).
- U-Turns should be placed directly across from emergency access points to aid emergency responders in crossing divided highways.
- To provide adequate room for maintenance operations, U-Turns should not be placed where guardrail is present on an outside shoulder of the divided highway.

U-Turns shall meet the following minimum construction requirements:

- U-Turns shall be a minimum of 30 feet wide with a minimum of 30 foot radii
- U-Turns shall be constructed of 24 inches of Dense Graded Crushed Stone and 5 inches of Bituminous Concrete Pavement.
- All U-Turns shall be clearly marked with the R3-4 “U-Turn Prohibited” sign for traffic approaching in both directions. Signs shall be installed prior to the U-Turn and as described in the current Standard Drawings.
- All U-Turn sideslopes shall be in accordance with the current Roadside Design Guide.

These guidelines are intended to be implemented through VTrans construction projects, site conditions and emergency/maintenance needs will govern specific locations and as such the Maintenance & Operations Bureau and the Vermont State Police shall be notified of any proposed removal and/or construction of U-Turns. Because the primary purpose of U-Turns is for maintenance and emergency functions the designers shall obtain concurrence from the Maintenance & Operations Bureau and the Vermont State Police prior to any removal and/or construction of U-Turns.

Implementation:

The content of HSDEI 15-102 is to be implemented beginning immediately.

Transmitted Materials:

Not applicable