Title:	Guardrail and Guardrail Terminal Policy		
Discipline:	General Engineering		
Originator:	Highway Program	Issue Date:	August 14, 2014
Approved by:	Joyce Taylor, P.E., Chief Engineer	Revised Date:	August 15, 2017

APPLICABILITY

This Policy shall apply to all Maine Department of Transportation (MaineDOT) Capital Improvement projects on Highway Corridor Priority 1-4, except for Light Capital Paving projects.

Within this Policy, the term "guardrail" shall refer to w-beam steel rail barrier systems.

COMPLIANCE REQUIREMENTS

Guardrail and guardrail terminals shall comply with the requirements of the National Cooperative Highway Research Program Report 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH) as established by this Policy. Where compliance is not required by Policy, consideration shall always be given to the potential safety and economic benefits of upgrading noncompliant guardrail or guardrail terminals.

The standard MaineDOT NCHRP 350 compliant guardrail installation shall consist of galvanized strong-post W-beam guardrail with the guardrail beam splices at the posts, wood or steel posts, and eight-inch wood or composite offset blocks. The height shall not exceed 30 inches.

The standard MaineDOT MASH compliant guardrail installation shall consist of galvanized strong-post W-beam guardrail with mid-way splices, steel posts, and eight-inch wood or composite offset blocks. The height shall be 31 inches.

Guardrail Length of Need, defined as the length of barrier needed to shield the area of concern, shall be established using the detailed methodology presented in the AASHTO Roadside Design Guide and the Design Guidance Barrier Layout – Length of Need.

NEW GUARDRAIL/GUARDRAIL TERMINALS

Guardrail

New permanent guardrail installations shall be MASH compliant.

Guardrail Terminals

New permanent guardrail terminal installations shall be listed on MaineDOT's Qualified Products List (QPL). Buried in back-slope and flared terminals are preferred. Flared terminals shall be installed with a four-foot offset. Where adequate vehicle recovery area cannot be provided, energy-absorbing flared terminals should be considered. Tangent terminals are more likely to experience head-on and nuisance hits, and should be

installed with a two-foot offset whenever possible. Safety and maintenance concerns should be weighed against potential cost savings and impact minimization when considering tangent terminals.

The following exceptions apply:

- If an entrance or access point is located within the Length of Need required to properly shield an area of concern, one of the following three options shall be installed: a guardrail terminal listed on the QPL, an anchored radius, or an unanchored radius.
- On one lane roadways or divided highways, a compliant guardrail terminal is not required on the trailing end.

EXISTING GUARDRAIL/GUARDRAIL TERMINALS

Treatment of existing guardrail and guardrail terminals shall be determined by one of the following project scopes: New Construction/ Reconstruction, Rehabilitation, or Restoration/ Resurfacing. Projects cannot always be categorized neatly by scope, and terminology varies by Program within MaineDOT. The intent of this Policy is that when the nature of the work is such that guardrail systems are impacted, the New Construction/ Reconstruction or Rehabilitation section should be used. When the nature of the work is such that guardrail systems are not impacted, the Restoration/Resurfacing section should be used.

Extensions to runs of existing guardrail shall be NCHRP 350 or MASH compliant.

For existing guardrail runs that extend beyond the limit of work by more than 150 feet, only the sections within project limits need to be considered for adjustment or replacement.

New Construction/Reconstruction

Guardrail

Existing guardrail shall be fully replaced with MASH compliant guardrail.

Guardrail Terminals

Existing guardrail terminals shall be fully replaced with terminals listed on MaineDOT's QPL. See the New Guardrail Terminal section for additional considerations.

Rehabilitation

Guardrail

Existing guardrail shall be adjusted as follows:

- Corridor Priority 1 - 2: Guardrail shall be adjusted to meet NCHRP 350 compliance requirements.
- Corridor Priority 3 - 4: Guardrail in good condition may remain in place.

Existing NCHRP 350 or MASH compliant guardrail may remain in place and any necessary adjustments or repairs may be made. Full replacements of existing guardrail shall be MASH compliant.

Guardrail Terminals

Projects advertised before January 1, 2020

Existing NCHRP 350 compliant guardrail terminals in good condition may remain in place. All other terminals shall be replaced with a system listed on MaineDOT's QPL. See the following exceptions:

- Corridor Priority 3-4: MELTs and BCTs in good condition may remain in place if there are no crashes recorded at that location.

- Corridor Priority 4: Low Volume Ends in good condition may remain in place on low volume roads if the design year AADT is less than 1,000.

Projects advertised on or after January 1, 2020

Existing NCHRP 350 compliant guardrail terminals in good condition may remain in place. All other terminals shall be replaced with a system listed on MaineDOT's QPL. See the following exceptions:

- Corridor Priority 3-4: MELTs in good condition may remain in place if there are no crashes recorded at that location.

Restoration/Resurfacing

Guardrail

Existing guardrail in good condition may remain in place.

Guardrail Terminals

Projects advertised before January 1, 2020

Existing guardrail terminals in good condition may remain in place.

Projects advertised on or after January 1, 2020

Existing NCHRP 350 compliant guardrail terminals in good condition may remain in place. All other terminals shall be replaced with a system listed on MaineDOT's QPL. See the following exceptions:

- Corridor Priority 3-4: MELTs in good condition may remain in place if there are no crashes recorded at that location.