



*Florida Department of Transportation*

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**ENGINEERING AND OPERATIONS MEMORANDUM 16-01**

**ROADWAY DESIGN BULLETIN 16-02**

**STRUCTURES DESIGN BULLETIN 16-03**

**PROGRAM MANAGEMENT MEMORANDUM 16-01**

**DCE MEMORANDUM NO. 03-16**

**DME MEMORANDUM NO. 16-01**

*(FHWA Approved: 02/05/16)*

DATE: February 5, 2016

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Consultant Project Management Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers, District Maintenance Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, District Program Management Engineers/Administrators, District Drainage Engineers and District Materials Engineers

FROM: Tom Byron, P.E., Chief Engineer

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SUBJECT: ***MASH-16 Implementation Plan***

This bulletin/memorandum introduces the Department's implementation plan for roadside hardware compliance with the 2016 edition of the AASHTO Manual for Assessing Safety Hardware (***MASH-16***). The implementation plan includes the full integration of roadside hardware, including both proprietary devices provided on the Department's Approved Product List (APL) and non-proprietary hardware included in the ***Design Standards*** (e.g., Guardrail, Concrete Barriers, Bridge Traffic Railings, etc.).

## **REQUIREMENTS**

The Department will be developing new design criteria to support a phased implementation of **MASH-16** compliant roadside hardware and devices over the next four years. The Department's **MASH-16** implementation plan is as follows:

- **New Permanent Installations:** For projects with a letting date on or after the dates provided below, only roadside safety hardware which has achieved compliance with **MASH-16** will be allowed:

<b>Implementation Date</b>	<b>Hardware Category</b>	<b>Notes</b>
July 1, 2017	- W-Beam Guardrail - <b>Design Standards, Index 400</b>	Current W-Beam Guardrail ( <b>Index 400</b> ) will meet MASH-16
July 1, 2018	- Guardrail Approach End Terminals - <b>Specification Section 536, APL</b> (will be implemented earlier if products become available prior to July 1, 2018) - Concrete Barrier (36" Single Slope) - <b>Design Standards, Index 410</b> - Pier Protection Barrier (Single Slope) - Integrated into <b>Design Standards, Index 410</b> - Bridge Traffic Railing (Single Slope) - <b>NEW Design Standards, Indexes</b>	Design Standards Indexes for Single Slope Barriers will be developed to meet <b>MASH-16, TL-4 &amp; TL-5</b> . Current Design Standards Indexes for 32" F-Shape Barriers ( <b>MASH-16, TL-3</b> ) will be discontinued.
January 1, 2019	- High Tension Cable Barrier - <b>Developmental Specification Section Dev540, Innovative Products List (IPL)</b> - Permanent Crash Cushion - <b>Specification Section 544, APL</b>	
January 1, 2020	- Barrier Transitions (misc. transitions from differing barrier types) - All Other Longitudinal Barriers (including portable barriers installed permanently) - All Other End Terminals - Sign Supports and All Other Breakaway Devices	

- **Existing Permanent Installations:**
  - Pre-NCHRP 350 hardware: Current design policy already requires that all hardware that has not been successfully crash tested and evaluated to NCHRP 350, or later criteria, be replaced or retrofitted when included within the Project Limits of any New Construction or Resurfacing, Restoration and Rehabilitation (RRR) project.
  - Existing NCHRP 350 hardware: Following the implementation date of each Hardware Category listed above, all hardware will be systematically upgraded with **MASH-16**

compliant hardware when damaged or deteriorated, in accordance with the governing Maintenance Procedure (e.g. *Procedure Topic No.: 850-050-003, Guardrail Inspection and Maintenance*).

- Temporary Work Zone Devices: All hardware manufactured on or after January 1, 2020 must have achieved compliance with **MASH-16**. Hardware that does not comply with **MASH-16**, but included on the *APL* and manufactured before this date may be used through June 30, 2030 provided they meet the requirements of the Standard Specifications.

## **BACKGROUND**

The development of this implementation plan is in response to the AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH). For additional information regarding the agreement and background on the need for a transition to **MASH-16** compliant roadside hardware follow the link below:

[http://safety.fhwa.dot.gov/roadway\\_dept/policy\\_guide/road\\_hardware/](http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/)

## **IMPLEMENTATION**

The implementation of the above requirements will be made effective by revisions to the *Plans Preparation Manual (PPM)*, *Structures Manual*, *Design Standards*, *Standard Specifications*, *Basis of Estimates Manual*, and *Procedures* at later dates as required by the schedule.

## **CONTACT**

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