



## Florida Department of Transportation

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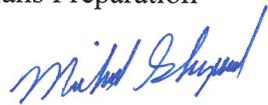
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### **ROADWAY DESIGN BULLETIN 15-01**

DATE: January 1, 2015

TO: All Users of the Florida Department of Transportation Plans Preparation Manual

FROM: Michael Shepard, P. E., State Roadway Design Engineer 

COPIES: Brian Blanchard, Tom Byron, Duane Brautigam, David Sadler, Tim Lattner, Mark Wilson, Trey Tillander, Bruce Dana, John Krause, Robert, Robertson, Gregory Schiess, Nick Finch (FHWA), Sara Cattau, District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Roadway Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers

SUBJECT: Implementation – Plans Preparation Manual January 1, 2015 Edition

### **REQUIREMENTS**

The January 1, 2015 Update includes:

1. The January 2015 Revisions to the Plans Preparation Manual (PPM), Volume 1, January 2014 (Topic No. 625-000-007).
2. The January 2015 Revisions to the PPM, Volume 2, January 2014 (Topic No. 625-000-008).

The major changes in design requirements are to be implemented as follows:

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### **Volume 1, Chapters 2, 8, 21, and 25: Volume 2 Chapter 6 Exhibits – Typical Sections Urban Arterial Lane Width and Bicycle Lane Options**

These Chapters were revised to modify criteria for Urban Arterial Travel Lane Width and Bicycle Lanes. Eleven foot travel lanes are the new standard for roadways with a divided typical section in or within one mile of an urban area and with a Design Speed of 45 mph or less. Seven foot Buffered Bicycle Lanes are the new standard for marked bike lanes.

**Chapter 2 - Design Geometrics and Criteria:** Tables 2.1.1 Lane Widths, 2.1.2 Other Lane Widths, and Tables 2.3.2 and 2.3.4 are revised to note the new vehicle and bicycle lane width criteria.

**Chapter 8 - Pedestrian, Bicycle and Public Transit Facilities:** Table 8.1.1 On-Street Bicycle Facilities and Section 8.4 were revised to clarify the new bicycle lane width criteria.

**Chapter 21 - Transportation Design for Livable Communities:** Table 21.1 Lane Widths, revise note 3 to require a minimum of 7 foot wide bicycle lanes adjacent to on-street parking.

**Chapter 25 - Design Criteria for RRR Projects:** Table 25.4.5.1 Lane and Shoulder Widths for Rural Multilane Roadways was revised to allow 11 foot lanes for divided roadways with a Design Speed of 45 mph or less within one mile of an urban area. Section 25.4.19.2 note 1 was revised to be consistent with the new lane width criteria.

**Volume 2 Chapter 6 Exhibits – Typical Sections** were revised to be consistent with the new vehicle and bicycle lane width criteria.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-17](#) and are currently in effect except as noted below. Therefore, Roadway Design Bulletin 14-17 is void as of January 1, 2015.

Design build projects for which the final RFP was released before November 18, 2014 (the publication date of Roadway Design Bulletin 14-17) are exempt from these requirements unless otherwise directed by the District.

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#### **Volume 1, Chapter 2, Section 2.1.5.1 Hydroplaning Analysis**

This section was added to outline a new process for analyzing hydroplaning risk, using a software tool developed by FDOT and University of South Florida, called HP.

A cost effective design preference for widening roadway sections is to slope all lanes in the same direction to minimize drainage infrastructure. Designers may implement any of the eight (8) standard pavement cross slopes shown on revised Figure 2.1.1 in Section 2.1.5 of the Plans Preparation Manual. If the widening design uses a differing pavement cross slope section, then a Design Variation is required and a hydroplaning analysis should be performed.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-09](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-09 is void as of January 1, 2015.

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**Volume 1, Chapters 2, 7, 8, 21, 23, 25 and Volume 2, Chapters 2 and 26:  
Change in Terminology: “Horizontal Clearance” revised to “Lateral Offset”**

These sections were revised to change all references from “horizontal clearance” to “lateral offset” that refer to roadside obstructions to be consistent with current AASHTO terminology.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

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**Volume 1, Chapter 2, Section 2.7 Sight Distance:**

This section was revised to note the criteria used for sight distance calculations. The AASHTO Green book is referred to for decision sight distance considerations.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015.

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**Volume 1, Chapters 2 and 8, Bridge Fencing for Pedestrian Railing:**

**Section 2.12, Figures 2.12.11 and 2.12.12:** These figures were revised to clarify guidance on when to use each type of fencing on bridges with pedestrian facilities.

**Section 8.7.1:** This section was revised to refer to Chapter 2, Figures 2.12.11 and 2.12.12 for typical fencing on bridges with pedestrian facilities.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015.

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**Volume 1, Chapter 4, Section 4.1.3 Roadside Ditches:**

This section was revised to note the use of V-bottom ditches requires approval from the District Drainage Engineer.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015.

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**Volume 1, Chapter 4, Section 4.2.1 Canal Hazards:**

This section was revised to explain requirements for shielding canal hazards, and when a benefit cost analysis is needed.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015.

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**Volume 1, Chapter 4 and Chapter 25 W-Beam Guardrail Mounting Height Implementation and Additional Requirements for Guardrail Systems**

These Chapters were revised to be consistent with a new policy for installation of standard W-beam guardrail on the State Highway System. All new W-beam guardrail installations are to be mounted at 2'-1" to the center of beam, as noted in the Revisions to Design Standards, Index 400 series and [Roadway Design Bulletin 14-05](#). PPM Chapter 4 revisions note revised minimum offsets for W-beam guardrail at the new mounting height and revised curb-barrier combinations. Chapter 25 revisions include guidance on requirements for upgrading and replacing existing guardrail with 1'-9" mounting height.

IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-13](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-13 is void as of January 1, 2015.

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**Volume 1, Chapter 7, Table 7.3.4 Underdeck Lighting:**

This section was revised to require wall mount fixtures for underdeck lighting, for safety and maintenance reasons. Pendant lighting is no longer permitted.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

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**Volume 1, Chapter 8, Section 8.8 Pedestrian/Bicycle Railing Height:**

This section was revised to specify conditions requiring a railing height exceeding 42 inches. The higher railing height is changed from 54" to 48".

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

**Volume 1, Chapter 8, Sections 8.10 and 8.10.3 Public Transit Facilities:**

This chapter was revised to add references to new guidance on the design of public transit facilities.  
**Section 8.10:** A reference was added to a new AASHTO Publication on geometric design of Transit Facilities.

**Section 8.10.3:** This section was added, referring to a new FDOT publication with guidance on typical sections for exclusive transit running ways.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015.

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**Volume 1, Chapter 10, Section 10.7 Single Post Median Barrier Mounted Sign Support**

This section was revised to inform designers of revised requirements for the use of single post median barrier mounted sign supports in work zones. When the requirements of Index 600 cannot be met for post mounted signs and barrier or traffic railing exists, temporary signs per *Design Standards* Index 11871 are required.

IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-11](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-11 is void as of January 1, 2015.

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**Volume 1, Chapter 10, Section 10.8.1, Item Number 3, Type C Steady-Burn Lights**

This section was revised to indicate a change in the Department's policy. This policy requires Barrier Delineators to be used instead of Type C Steady-Burn Lights on top of temporary barrier walls.

IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-06](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-06 is void as of January 1, 2015.

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### **Volume 1, Chapter 10.12.4.1, Pedestrian Longitudinal Channelizing Devices in Work Zones**

This section was revised to inform designers of requirements for pedestrian traffic control. A Longitudinal Channelization Device (LCD) is a new type of channelizing device used to channelize traffic in the work zone. Whenever pedestrians are detoured, at an intersection, mid block, onto a temporary walkway, etc., designers shall detail the pedestrian way in the Temporary Traffic Control Plans.

#### **IMPLEMENTATION:**

These changes supersede [Roadway Design Bulletin 14-10](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-10 is void as of January 1, 2015.

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### **Volume 1, Chapter 10, Section 10.12.13 Temporary Highway Lighting**

This section was revised to modify existing policy and design criteria for the use of temporary roadway lighting. The modifications in this section shall be followed to determine how temporary highway lighting is to be installed. Furthermore, the language written in this section establishes a standard policy for the design and usage of temporary roadway lighting that is attached to permanent or temporary barriers/traffic railings.

The usage limitations provided in this modified policy are intended to restrict overuse of temporary, barrier mounted roadway lighting and instead encourage the use of other temporary roadway lighting solutions. The design criteria is intended to preserve the crashworthiness of the Type K Temporary Concrete Barriers and to provide an appropriate design for the temporary light poles and support brackets.

#### **IMPLEMENTATION:**

These changes supersede [Roadway Design Bulletin 14-04](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-04 is void as of January 1, 2015.

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### **Volume 1, Chapter 10, Section 10.12.9 Detours, Diversions and Lane Shifts:**

The definition of “Special Detour” and associated pay item was revised, to be consistent with Estimates Bulletin 14-06. This section notes revised requirements for pay items used with Special Detours.

#### **IMPLEMENTATION:**

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

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### **Volume 1, Chapter 12 Right of Way**

This section was revised to establish a policy to use license agreements as the default method for harmonization of driveway connections and removal of roadway features found to be outside of the right of way. The inconsistent use of temporary construction easements and license agreements prevents the establishment of realistic state-wide production and performance measures for the use of license agreements and increases the cost of construction products.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-08](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-08 is void as of January 1, 2015.

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### **Volume 1, Chapter 19, Section 19.2 Sealing of Contract Plans/Record Set & Volume 2, Chapter 3, Section 3.8 Governing Standards and Specifications**

These sections were revised to inform designers of the new Developmental Design Standards (DDS) process. DDSs will no longer contain project specific information in the title block and will not be signed and sealed for project-specific use by the department.

The original DDS process as implemented by the archived Structures Design Bulletin C10-03 and Roadway Design Bulletin 10-06 required the FDOT originator of the DDS to sign and seal each of the DDS for project specific use. This element of the original process has proven to be inefficient because it required the FDOT originator to become intimately involved in all aspects of the project affected by the use of the DDS. The new process eliminates the need for plans production coordination between the consultant/District and the DDS originator on electronic plans delivery.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-07](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-07 is void as of January 1, 2015.

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### **Volume 1, Chapter 21, Table 21.3 Lateral Offset to Trees:**

This Table has revised criteria for locating trees in the median, making criteria for offsets in median match the distances from the outside curb.

#### IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

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### **Volume 1, Chapter 23. Section 23.5 Design Safety Analysis Updates**

Item “y” of the Design Exception documentation requirements was revised, adding a third method for benefit/cost analysis, using the *Highway Safety Manual (HSM)* tools. Crash costs have also been updated.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-12](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-12 is void as of January 1, 2015.

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### **Volume 1, Chapter 25, Section 25.4.24.3 Bridge Railing**

This section was revised due to the need to address pedestrian railings on existing bridges. The revisions to the sections address the following: bridges with existing continuous post and beam traffic railings that met the three criteria and are not being retrofitted as traffic railings; bullet-type railings, pedestrian railings, and fences that have been installed incorrectly on traffic railings located between the shoulder and the sidewalk; old bullet railings that do not have crashworthy end treatments and/or rail splices; and other non-crashworthy and non-traffic railing mounted pedestrian railings not in compliance with the lateral offset requirement in *Table 2.11.9, Lateral Offset to Other Roadside Obstacles*.

#### IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-03](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-03 is void as of January 1, 2015.

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### **Volume 1, Chapter 26, Bridge Project Development:**

This Chapter was revised to update the definitions of Category 1 and 2 Structures, and requirements for independent peer reviews for Category 2 Structures.

#### IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

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### **Volume 1, Chapter 31 Geosynthetic Design**

This Chapter was revised to implement changes to the method for specifying geosynthetic materials in the Plans. All geosynthetic materials have been removed from *Indexes 501 and 199* and will be

listed on the Approved Products List (APL) in January 2015. Chapter 31 now refers to the APL for product details, instead of *Index 501*.

IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-15](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-15 is void as of January 1, 2015.

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**Volume 1, Chapter 32 Noise Walls and Perimeter Walls**

This chapter was revised to assure that the use and costs of perimeter walls are consistent across the state. The revisions now convey more accurately the guidelines that have been developed containing the processes and design methodologies to be used when considering the use of perimeter walls. It is important to note, there is no change to any existing noise wall policy, procedure, or process other than consistency in terminology.

IMPLEMENTATION:

These changes supersede [Roadway Design Bulletin 14-02](#) and are currently in effect. Therefore, Roadway Design Bulletin 14-02 is void as of January 1, 2015.

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**Volume 2, Chapter 9, Section 9.4 and Exhibit GN-1 General Notes:**

This section and plan sheet was renamed from “General Notes” to “Project Notes”, to emphasize that only project notes specific to a project should be used. The number of project notes on example GN-1 was reduced.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2015 and on all projects still in the design phase where implementation will not adversely impact production schedules.

**GENERAL**

All other changes in the January 1, 2015 *Plans Preparation Manual* update package primarily consist of minor editing, updated references, clarification and/or error corrections and are effective immediately.

Should you have any questions, please contact this office at (850) 414-4283.

MS/sf