



## Florida Department of Transportation

RICK SCOTT  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450

MIKE DEW  
SECRETARY

### **ROADWAY DESIGN BULLETIN 17-09**

*(FHWA Approved: June 26, 2017)*

DATE: June 28, 2017

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

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

COPIES: Brian Blanchard, Tom Byron, Courtney Drummond, Tim Lattner, Rudy Powell, David Sadler, Amy Tootle, Dan Scheer, Gregory Schiess, Trey Tillander, Stefanie Maxwell, Dan Hurtado, Robert Robertson, Lora Hollingsworth, Kevin Burgess (FHWA), Nick Finch (FHWA), Chad Thompson (FHWA)

SUBJECT: Pedestrian Lighting Retrofits at Signalized Intersections

This Bulletin implements Lighting Retrofit criteria for pedestrian lighting at existing signalized intersections that are not being reconstructed. This criteria is based on a design methodology similar to that used for pedestrian intersection lighting retrofit projects discussed in [Roadway Design Memorandum 16-02](#).

### **REQUIREMENTS**

1. **Replace the first paragraph in Section 7.3.2.1 of the PPM, Volume 1, Chapter 7, with the following:**

Establish independent analysis zones for each signalized intersection and for each roadway segment between signalized intersections. Roadway lighting for roadway segments and signalized intersection segments are to meet the criteria shown in *Table 7.3.1*. Pedestrian lighting at signalized intersections are to meet the criteria in *Table 7.3.3*.

2. **Replace the first paragraph in Section 7.3.2.2 of the PPM, Volume 1, Chapter 7, with the following:**

Pedestrian lighting criteria in *Table 7.3.3* applies to signalized intersections located within urbanized areas, but may be used in other locations at the District's discretion.

**3. Replace the last paragraph in Section 7.3.2.2 of the PPM, Volume 1, Chapter 7, with the following:**

See Section 7.3.2.5 for projects where pedestrian lighting improvements are desired, but the existing intersection infrastructure will remain and be supplemented to achieve the desired improvements.

**4. Add Section 7.3.2.5 to PPM, Volume 1, Chapter 7, as follows:**

**7.3.2.5 Pedestrian Lighting Retrofit at Signalized Intersections**

For existing signalized intersections where a full signal upgrade is not occurring, the existing infrastructure restricts the placement of additional lighting fixtures necessary to meet the New and Reconstruction criteria of **Table 7.3.3**. Lighting Retrofits should be considered at signalized intersections on corridors that have a history of nighttime pedestrian crashes. Lighting Retrofits may be included with RRR and minor intersection improvement projects that do not include full signal upgrades.

For Lighting Retrofits, supplement with additional lighting fixtures as necessary to meet the Lighting Retrofit criteria shown in **Table 7.3.3**. The vertical illuminance calculation only applies to the near side movement (see **Figure 7.3.1**).

When the maintaining agency converts existing light fixtures to LED fixtures, and no other lighting improvements are included, the agency is not required to meet the Lighting Retrofit criteria shown in **Table 7.3.3**.

**5. Replace Table 7.3.3 in PPM, Volume 1, Chapter 7, with the following:**

**Table 7.3.3 Pedestrian Lighting at Signalized Intersections**

ARTERIALS AND COLLECTORS	ILLUMINATION LEVEL AVERAGE INITIAL FOOT CANDLE		ILLUMINATION UNIFORMITY RATIOS <sup>1</sup>	
	Horizontal (H.F.C.)	Vertical (V.F.C.)	Avg./Min.	Max./Min.
New and Reconstruction	3.0	2.3	4:1 or Less	10:1 or Less
Lighting Retrofit	1.5 <sup>2</sup>	1.5 <sup>2</sup>		

Notes:

(1) Illumination Uniformity Ratios do not apply to V.F.C.

(2) The Lighting Retrofit average initial foot candles of 1.5 is a target. When this value cannot be obtained, provide the highest value possible, but not less than 1.0.

## **BACKGROUND**

The Lighting Retrofit criteria is provided to improve pedestrian safety at intersections other than those on reconstruction projects. In order to meet the New or Reconstruction criteria for pedestrian lighting, the lighting fixtures must be placed in specific locations which are not always feasible for safety or resurfacing projects. However, the safety of the pedestrians may be improved at a low cost when illumination levels can be increased to greater than or equal to 1.0 foot-candles (ideally, equal to 1.5 foot-candles).

## **IMPLEMENTATION**

This bulletin is effective immediately.

## **CONTACT**

Ed Cashman, P.E.  
Standard Plans Engineer  
Phone: (850) 414-4314  
[Edward.Cashman@dot.state.fl.us](mailto:Edward.Cashman@dot.state.fl.us)

MS/ec