



Florida Department of Transportation

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TRAFFIC ENGINEERING AND OPERATIONS BULLETIN 21-06

DATE: November 1, 2021

TO: District Traffic Operations Engineers, District Safety Administrators,
District Design Engineers, District Maintenance Engineers, District Program
Management Engineers and Administrators

FROM: Trey Tillander
Director, Traffic Engineering and Operations

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COPIES: Will Watts, Tim Lattner, Rudy Powell, Stefanie Maxwell, State Traffic
Engineering and Operations Office, Khoa Nguyen (FHWA)

SUBJECT: **Traffic Engineering Manual**

This bulletin announces the release of the 2022 Traffic Engineering Manual (TEM) which is available on the State Traffic Engineering and Operations website:

<https://www.fdot.gov/traffic/trafficservices/studies/tem/tem.shtm>

SUMMARY OF REVISIONS

- **Chapter 2 Signs**
 - **Section 2.21 – Florida Litter Law Signs:** Added Figure 2.21-1 Florida Litter Law sign (FTP-41-21). Made editorial changes to the section. Updated the FTP numbers from:
 - FTP-41-06 to FTP-41-21
 - FTP-40-06 to FTP-40-21
 - FTP-41-04 to FTP-41-21
 - **Section 2.22 – Traffic Control for Toll Collection Facilities:** Updated the name and link to the Turnpike Design Handbook (TDH).
 - **Section 2.42 – Express Lanes Signing:** Added guidance and graphic on Periods of Operation sign (R3-44). Replaced the current graphic in Figure 2.42-4 from “Toll Amount Sign for Tolled Facilities” to “Periods of Operation sign (R3-44)”. Renamed Section 2.42.4 from “Sign Placement” to “Sign Sequence”. Removed Section 2.42.5 “Sign Installation” and repurposed the bullets to Section 2.42.3.3. Made editorial changes to the section.

- **Section 2.44 – Turning Vehicles Stop for Pedestrians Sign: New Section 2.44** gives guidance on the use of TURNING VEHICLES STOP FOR PEDESTRIANS (R10-15a) sign.
- **Chapter 3 Signals**
 - **Section 3.7 – Accessible Pedestrian Signals:** Changed the language from “criteria” to “features” under Section 3.7.3(4). Made editorial changes to the section.
 - **Section 3.8 – Railroad Traffic Signal Preemption Time Calculation:** Added 5-second recommendation under the definitions of minimum green time and minimum walk time during right-of-way transfer. Added Section 3.8.6 on preempt trap check procedure and Section 3.8.7 on vehicle-gate interaction check procedure along with supporting graphics. Also added Section 3.8.8 to show an example of adding a preemption phase to the traffic control system along with supporting graphics. Made editorial changes to the section.
 - **Section 3.9 – Installing Retroreflective Signal Backplates on Existing Structures:** Updated language in Section 3.9.2 clarifying the use of rigid and flexible retroreflective backplates. Added “static signs” and “overhead” street name signs in signal hardware in Section 3.9.4(2). Made editorial changes to the section.
 - **Section 3.10 – Flashing Yellow Arrow Signal Application:** Updated language under Section 3.10.8 regarding educational materials for flashing yellow arrow (FYA) and portable changeable message signs (PCMS). Made editorial changes to the section.
 - **Section 3.11 – Signal Timing Applications for Pedestrian Movement:** Renamed the section title from “Leading Pedestrian Interval Signal Application” to “Signal Timing Applications for Pedestrian Movement”. Added applications from the NCHRP Report 812 such as automatic pedestrian recall, pedestrian scramble/Barnes’ Dance, flashing don’t walk, lagging pedestrian interval, etc. Revised language on leading pedestrian interval (LPI) implementation and LPI considerations. Removed Table 3.11-1 and moved LPI implementation criteria from “Considerations” to “LPI Implementation” section. Made editorial changes to the section.
- **Chapter 4 Markings**
 - **Section 4.2 – Pavement Word, Symbol, and Arrow Markings:** Added language to coordinate with the District Maintenance Office prior to route shield pavement markings approval in Section 4.2.3. Revised the route shield pavement markings installation criteria under Section 4.2.3(3). Updated all graphics in this section. Made editorial changes to the section.
 - **Section 4.5 – Express Lane Markings:** Added definition for “buffer width”. Added FDM reference under Sections 4.5.4 and 4.5.5(2). Moved Figure 4.5-1 under Section 4.5.4. Added Figure 4.5-3 for the tubular marker placement within the tolling area between 8 and 12 feet. Made editorial changes to the section.
- **Chapter 5 Specialized Operational Topics**
 - **Section 5.1 – Golf Cart Crossing and Operation on the State Highway System:** Made editorial changes to the section.

- **Section 5.2 – Treatments for Pedestrian Crosswalks at Midblock and Unsignalized Intersections:** Changed “in-roadway warning lights” to “in-roadway lights”. Added midblock pedestrian signal (MPS) and unsignalized intersection definitions. Updated safety considerations criteria for new marked crosswalks under Section 5.2.4(6). Revised recommended levels of pedestrian demand threshold criteria and added C3C context classification for pedestrian volume demand exemptions under 5.2.5.1(2). Added language on nature-based trail crossings under Section 5.2.5.1(2). Revised language for engineering study under Section 5.2.6. Updated language for PEDESTRIAN CROSSING WARNING sign (W11-2) pavement markings under Section 5.2.7.1(2). Added language and graphic for tubular marker gateway treatment for in-street R1-6a signs under Section 5.2.7.2(5). Made editorial changes to the section.

COMMENTARY

The non-editorial revisions and additions to the TEM in this bulletin will advance Vital Few Safety and Mobility throughout the State. All sections have been reviewed by FHWA and Districts counterparts and all comments from reviewers have been addressed accordingly. All revisions in this bulletin will ensure accurate and consistent implementations with no shift of risk issues.

IMPLEMENTATION

These changes are effective on projects beginning design on or after January 1, 2022, and on projects currently in the design phase where implementation will not adversely impact production schedules.

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