



Updates to the Traffic Engineering Manual

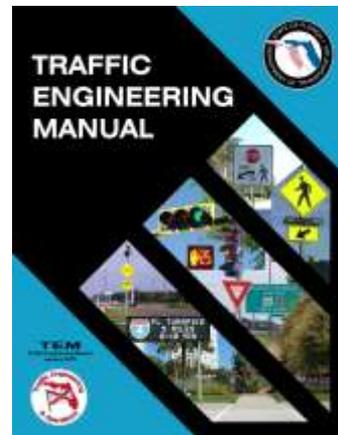
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State Traffic Studies Engineer



What is the Traffic Engineering Manual (TEM)?

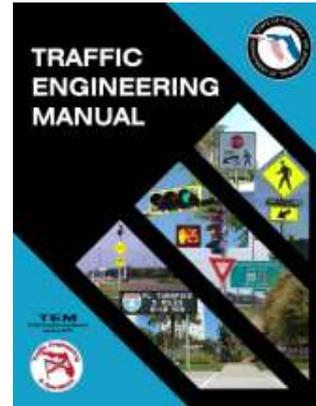
Purpose: "Provide traffic engineering standards and guidelines to be used on the State Highway System"

<http://www.dot.state.fl.us/traffic/operations/Operations/Studies/TEM/TEM.shtm>



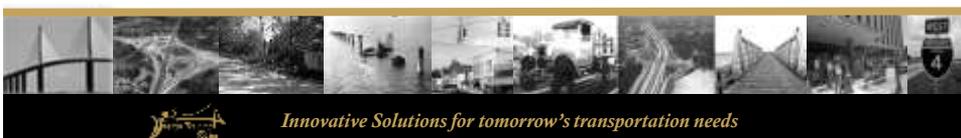
Who uses the Traffic Engineering Manual (TEM)?

- Design
- Maintenance
- Construction
- Traffic Operations
- Planning
- Local Municipalities



TEM Overview

- Ch. 1: Procedure
- Ch. 2: Signs – 2.1 thru 2.40
- Ch. 3: Signals – 3.1 thru 3.9
- Ch. 4: Markings – 4.1 thru 4.4
- Ch. 5: Specialized Operational Topics – 5.1
- Ch. 6: Safe Mobility for Life – Safety Is Golden
<http://www.dot.state.fl.us/TrafficOperations/Operations/SafetyIsGolden.shtm>
- Ch. 7: Technology – Certification and Approval of Traffic Control Signals and Devices ([Local Procedure No. 2012-05-02](#))

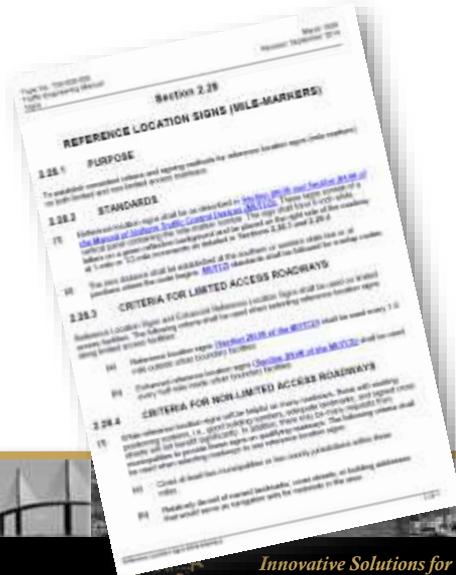


2014-2015 TEM Updates

- **Section 2.20 Call Box/Mile Marker Signs**
 - Rescinded in 2014. Call boxes removed from State Highway System.
- **Section 2.28 Reference Location Signs (Mile-Markers)**
 - 09/14: Criteria established for both limited and non-limited access roadways.
- **Section 4.2 Pavement Word, Symbol, and Arrow Markings**
 - 02/15: Added new subsection for Route Shields for Wrong Way Treatment.
- **Section 3.8 Pedestrian Crosswalks at Uncontrolled Approach Locations**
 - 10/14: Modified to reflect the language for crosswalk illumination to help implement safe crossing of pedestrians at midblock locations
 - Currently undergoing significant modifications to criteria



TEM Section 2.28 Reference Location Signs (Mile-markers)



- Changed mile marker guidance from general “Criteria For Route Selection” to separate criteria for Limited Access and Non-Limited Access Roadways



TEM Section 4.2.4

Route Shields for Wrong Way Treatment

- At interchanges with a break in the arterial left turn lane(s) serving a ramp
- Pavement markings preceding the break shall include the interstate shield, cardinal direction, and a straight arrow
- All newly designed interchanges shall follow this scheme



TEM Section 3.8

Pedestrian Crosswalks At Uncontrolled Approach Locations



Video Credit: Philip Hakim

Consistent installation and operation of mid-block pedestrian crosswalks at uncontrolled approach locations.



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

- Updated title and language to address “midblock” crosswalks vs unsignalized intersections
- Added definitions:
 - **Uncontrolled approach.** A portion of the roadway without stop or signal control, including midblock and unsignalized intersections.
 - **Unmarked crosswalk.** The legal crossing area at an intersection connecting opposite sides of the roadway.
- Criteria: Added consideration of transit stop activity



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

- Revisions to minimum pedestrian activity thresholds:

Previous:

20+ pedestrians/1 hour or
60+ pedestrians/4 hours

Revised:

20+ pedestrians/1 hour or
18+ pedestrians/hour for 2+ hrs
15+ pedestrians/hour for 3+ hrs

- ♣ Count bicyclist as pedestrian if appropriate for the crossing
- ♣ Users with slower crossing speeds can be weighted twice (children, older adults, physically disabled)
- ♣ No minimum for trail crossing



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

Pedestrian Hybrid Beacon Section

- MUTCD Chapter 4F warrants
- Consider 2 stage crossing for 6-lane roadways and crossing distances > 80 ft
- May be upgraded to pedestrian signal on urban corridors within coordinated signal system



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

Rectangular Rapid Flashing Beacon (RRFB) Section



- Should be limited to roadways with four or fewer through lanes.
- Should be installed overhead on multilane roadways unless design constraints or engineering documentation preclude overhead installation.



Traffic Engineering Manual

Variation Process

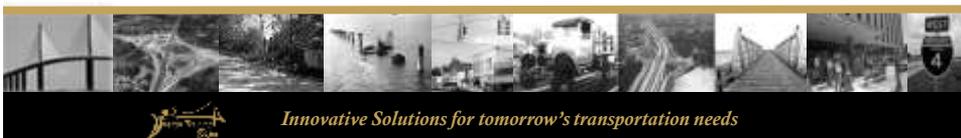
- Outlined in TEM Chapter 1
 - Site specific conditions or circumstances may warrant a variation from the criteria or standards
 - One-time event on a case-by-case basis or the **TEM** may be revised to incorporate a variation
 - Can be written request from local government to DTOE
 - Must include how proposal can be as safe and describe other impacts
 - If DTOE concurs, send to Central Office for approval
 - CO TEO will provide memorandum with decision and any special conditions (follow up evaluation, etc.)

Traffic Engineering Manual

Variation Process

Approved TEM 3.8 Variations: 2012 - 2015

Year	District	Location	CO Response	Devices	Notes
2015	D2	SR A1A at Citrona Drive	Approved	RRFB	
2015	D2	SR A1A at Library Blvd	Approved	Signal	Emerg Signal Upgrade
2015	D1	SR 789 at Companion Way	Approved	RRFB	Beach Access
2015	D1	SR 789 at Longboat Club Rd	Approved	RRFB	Beach Access
2015	D2	SR A1A at Timucuan Trail	Approved	RRFB	trail
2015	D2	SR 109 at Auburn Rd	Approved	RRFB	sports complex
2015	D1	SR 84 at Rich King Greenway	Approved	RRFB	trail
2014	D3	Perdido Key	Approved	RRFB	4 crossings - beach
2013	D7	SR 580, Hillsborough Co.	Approved	RRFB	
2012	D5	US 17/92, Sanford	Approved	RRFB	
2012	D5	US 17/92, Sanford	Approved	RRFB	
2012	D2	SR A1A, St. Johns Co	Approved	RRFB	5 crossings
2012	D2	SR 207, St. Johns Co	Approved	RRFB	



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

- Example Variation
SR 789 - Longboat Key, D1



TEM Section 3.8

Crosswalks At Uncontrolled Approach Locations

- Example Variation – Longboat Key
 - Signed & Sealed Engineering Study
 - 3 days ped/bike counts
 - Observations, sight distance evaluation
 - Crash history

		LOCATION OF CROSSING AND TOTAL OF CROSSINGS	
←	SR 789	1	1
	SR 789	0	0
	SR 789	0	0
	SR 789	0	0
←	SR 789	0	0
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	SR 789	0	0
	SR 789	0	0
LOCATION OF CROSSING AND TOTAL OF CROSSINGS			

Traffic Engineering Manual

Approved Variations

The screenshot displays a SharePoint web page titled 'Traffic Engineering Manual'. On the right side, there is a cover image for the 'TRAFFIC ENGINEERING MANUAL'. Below the cover, there is a table with columns for 'Item', 'Date', 'Version', and 'Status'. A yellow arrow points from the text on the right to the 'Approved Variations' section of the table.

Item	Date	Version	Status
1.0	01/01/2011	1.0	Approved
1.1	01/01/2011	1.1	Approved
1.2	01/01/2011	1.2	Approved
1.3	01/01/2011	1.3	Approved
1.4	01/01/2011	1.4	Approved
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1.11	01/01/2011	1.11	Approved
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2.0	01/01/2011	2.0	Approved

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SharePoint site
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dot.state.fl.us/sites/
trafficoperations/op
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Future Updates

- Current registered holders of the TEM receive electronic updates when approved changes have been made.
- **TO REGISTER** for updates please email:
 - Gail.Holley@dot.state.fl.us



Questions?

- Contact Information:

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