



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

TRAFFIC OPERATIONS BULLETIN 02-13

Date: May 31, 2013

To: District Traffic Operations Engineers, District Maintenance Engineers, District Design Engineers, District Directors of Operations, and District Secretaries

From: Mark C. Wilson, P.E., State Traffic Operations Engineer

Copies: Brian Blanchard, Tom Byron, Duane Brautigam, Tim Lattner, Lora Hollingsworth

Subject: Standardization of Yellow Change Intervals for Signalized Intersections

Background

Section 3.6 of the Department's *Traffic Engineering Manual (TEM)* describes the methodology to be used to establish yellow change intervals and red clearance intervals at signalized intersections. The function of yellow change interval is to warn traffic of an impending change in the right-of-way assignment to provide a safe transition between two conflicting traffic signal phases. The function of the red clearance interval is to provide additional time following the yellow change interval to clear the intersection before conflicting traffic is released.

The TEM has historically used the Institute of Transportation Engineer's (ITE) kinematic equation for the computation of the yellow change interval and still does today. The 2009 FHWA Manual on Uniform Traffic Control Devices (MUTCD) states that a yellow change interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds. And, the duration of the yellow change interval shall be determined using engineering practices.

For years traffic engineers have generally used 1.0 second in the ITE formula for the perception/reaction time in the calculation, and many state and local agencies throughout the U.S. still do.

Recent research by the National Cooperative Highway Research Program (NCHRP), administered by the Transportation Research Board (TRB) indicates that using a PRT value greater than 1.0 second would encompass the reaction times of a greater proportion of the driver population. The research found that the 85th percentile PRT value was 1.33 seconds.

Implementation Process

Based on the research results the Department has decided to increase the PRT to 1.4 seconds.

This increased PRT value will allow additional time for Florida drivers to perceive the traffic signal change from green to yellow and to react. This effectively will increase the Department's current minimum yellow change interval by 0.4 seconds.

All new traffic signal installations, new Traffic Infraction Detector installations, signal phasing changes, geometric changes affecting the timing or phasing, or corridor re-timing projects must comply with these requirements immediately upon implementing timing changes or the new installations.

Intersections with existing Traffic Infraction Devices must be in compliance with this bulletin by December 31, 2013. All other existing signalized intersections on the state highway system must be in compliance by June 30, 2015.

The *Traffic Engineering Manual*, Section 3.6 will be revised to reflect these requirements.