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November 15, 2012

Mr. Victor Mendez, Administrator
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Dear Mr. Mendez,

The *Manual of Uniform Traffic Control Devices* (MUTCD), which falls under the auspices of your agency, contains a deficiency that requires rectification. I urge you to take immediate action.

An academic study and several case histories have proven conclusively that properly set yellow light intervals help establish minimal red-light violation rates and maximum safety benefits. Yet Paragraph 4D.26 (*Yellow Change and Red Clearance Intervals*) of the MUTCD gives each state maximum latitude to set dangerously short yellow-light durations.

Paragraph 4D.26 notes as guidance: "A yellow change interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds." That MUTCD section contains no specific qualification that ties yellow-light timing to the vehicular 85th percentile approach speed for a given intersection. Yet, that approach speed is the most critical parameter in setting a safe yellow-light cycle.

The study referenced above, *Effect of Yellow-Interval Timing on Red-Light-Violation Frequency at Urban Intersections* (Bonneson and Zimmerman, Texas Transportation Institute, July 2003), concludes that **lengthening the yellow light interval by as little as 0.5 to 1.5 seconds decreases the incidence of red-light running violations by 50 percent or more**.

Several cities throughout the country subsequently added 1.0 second to their yellows and achieved a violation reduction consistent with the researchers' findings. Loma Linda, California, in fact, saw their red-light violations drop 92 percent almost overnight. That was three years ago. Since then, the longer yellow intervals have been maintained and so have the lower red-light violation rates.

Bonneson and Zimmerman released a later study, *Development of Guidelines for Identifying and Treating Locations with a Red-Light-Running Problem* (Texas Transportation Institute, September 2004) that just as remarkably demonstrated that **a 1.0 second increase in yellow light duration corresponded to a 40 percent reduction in intersection crashes**.

In the wake of these findings, the MUTCD should establish a national requirement for a minimum yellow-light change interval, one that enhances intersection safety by replacing the current general guideline in 4D.26 that allows states to set short yellows that are unsafe to motorists, cyclists, and pedestrians.

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A standard for setting minimum yellow-light intervals exists and is widely accepted in the traffic engineering community. The Institute of Transportation Engineers (ITE) has set forth a straight-forward kinematic formula, one that is presented prominently on your website at ***http://safety.fhwa.dot.gov/intersection/redlight/outreach/marketing/rlr_pps022509/long/*** (ref. Slide 28) as that standard.

A simple example illustrates why the FHWA's MUTCD should be brought into compliance with the agency's own definition of minimally adequate yellow-light intervals:

> Chicago posts speed limits of 30 mph which are 8 to 12 mph lower than intersection approach speeds of normal-flowing traffic. Therefore, the city's yellow-light intervals should be set at least at 4.0 seconds. (A 40 mph approach speed plugged into the ITE kinematic formula results in a minimum yellow of 3.93 seconds.) However, the Chicago DOT locks all of their yellow intervals in at the bare minimum 3.0 seconds.

That 1.0 second differential between the ITE standard and the MUTCD non-binding guidance in this common example can account for red-light violation and accident rates that are double-digit percentage points higher than need be. Cities justify the short yellow intervals by pointing to 4D.26 in the MUTCD, as if that is adequate reasoning for subjecting the driving public to improperly engineered intersections. Unfortunately the truth is that the lenient guidelines of 4D.26 in the national MUTCD do allow 3.0 second yellows without regard to traffic approach speeds.

Short yellow lights put motorists at risk even further by allowing cities to ticket red-light violations that wouldn't be citations with proper signal timing. It is not surprising that Chicago is able to generate annual red-light camera ticket revenue in excess of $70 million by setting its yellow lights at deficient 3.0 second intervals. This forces many conscientious drivers to make split-second decisions of whether to jam on their brakes while risking sudden, rear-end collisions, or to proceed through the intersection, hoping a quick change from yellow to red doesn't cost them a ticket.

Chicago is not alone in this. Any city that operates a red-light camera program and establishes yellow-light timing less than that determined per the ITE formula and the 85th percentile approach speed is similarly violating the public trust.

Mr. Mendez, I urge you to close the loophole in 4D.26 of the MUTCD by replacing the current overly general guidance with the ITE standard for determining minimum yellow-light change intervals, and to do so with a particular urgency because of the safety implications faced daily by motorists across the country.

Sincerely,

Gary Biller
President