

## FHWA Report Summary

### ***Making Intersections Safer: A Toolbox of Engineering Countermeasures to Reduce Red-Light Running: An Informational Report***

#### **Background**

Intersections are critical components of the highway network and are used by all road users—passenger cars, heavy trucks, motorcycles, bicycles, and pedestrians. They are among the greatest safety challenges because they are some of the most common highway features, each having numerous conflict opportunities. Red-light running at intersections is a national safety problem resulting in approximately 900 – 1,000 fatalities annually. The problem is complex and typically requires a balanced application of engineering, enforcement and education measures. “Intentional” red-light runners are typically most affected by law enforcement while “unintentional” violators are most affected by engineering countermeasures.

#### **Report Features**

The primary focus of this 2003 publication is to address engineering design and operational features that can discourage red-light running. The report: discusses the background characteristics of the red-light running problem; identifies how various engineering measures can be implemented to address this problem; suggests a procedure for selecting the appropriate engineering measures; and, provides guidance on when enforcement, including red-light cameras, may be appropriate.

This report provides information that could be used to proactively ensure that intersections are engineered to discourage red-light running. It is also intended to serve as an educational tool for law enforcement agencies and others.

Some of the more promising engineering countermeasures which may help to reduce red-light running involve:

- Improving Signal Visibility;
- Improving Signal Conspicuity;
- Increasing Likelihood of Stopping;
- Addressing Intentional Violations (including optimizing yellow interval timing); and
- Eliminating the Need to Stop.

#### **Contacts**

For more information on how to obtain a copy of this report, please see the FHWA website at <http://safety.fhwa.dot.gov>, or contact Ed Rice, Intersection Safety Team Leader, at (202) 366-9064, [ed.rice@dot.gov](mailto:ed.rice@dot.gov).



U.S. Department of Transportation  
Federal Highway Administration



03/08