Abstract

The Wisconsin Department of Transportation (WisDOT) has been an early adopter of traffic operations and intelligent transportation systems. WisDOT established a Traffic Operations Infrastructure Plan (TOIP) with two primary goals: to develop a methodology and associated tool to evaluate operational projects in the same manner as infrastructure projects, and to integrate technology deployments into the planning process. The TOIP includes an operationally-oriented methodology and provides deployment recommendations integrating three areas: Freeway Surveillance and Ramp Control, Travel Warning and Information Systems, and Traffic Signal Systems.

One of the principal results of the TOIP methodology is a Deployment Density Class (DDC) recommendation for every segment of roadway, in the form of a baseline, low, medium, or high operational deployment recommendation. The DDC is reached through the analysis of 10 critical operations-oriented inputs, which include mobility, safety, environmental conditions, and special events.

Based on the DDC results, the corridors were prioritized to identify corridors with the greatest needs for traffic operations investment. The top corridors were defined as Priority Corridors (6 corridors) and Emerging Priority Corridors (8 corridors), resulting in 14 corridors included in the 2008 TOIP.

The TOIP was intended to be re-visited, re-evaluated and eventually updated as part of ongoing planning activities. The 2010 TOIP incorporates new data that reflects recent changes to the corridor highways. The changes are likely to re-prioritize the order of corridors included in the Priority and Emerging Priority categories.

Preliminary analysis for the 2010 TOIP update revealed that the priority score has changed for all the corridors; some increased while others decreased. Of the 10 criteria assessed for the TOIP, the most notable increases in priority score were due to increases in AADT, crashes and percent of trucks. Some of the corridors experienced up to a 40% increase in some criteria. While some decreases in priority score were due to decreases in criteria, some decreases are attributed to infrastructure improvement, such as bypass, interchange improvement, and lane expansion.

The Priority Corridors list remain basically unchanged. The Emerging Priority Corridors list had two significant changes: Wisconsin Heartland (Green Bay to Eau Claire), which is recommended to be included on the list as an Emerging Priority Corridor, and Peace Memorial Corridor (Eau Claire to Superior), which now scores too low to be included in either the Priority or Emerging Priority list. The differences between the 2008 and 2010 Priority and Emerging Priority corridors

---

1 ITS/Traffic Engineer, University of Wisconsin-Madison, Wisconsin Traffic Operations and Safety Laboratory, 2205 Engineering Hall 1415 Engineering Drive, Madison, WI 53706, Tel: 608-890-1219, Email: wjmelend@engr.wisc.edu
were identified through a comparison of the number of corridor miles that fall into each recommendation category (baseline, low, medium, and high).

The purpose of this paper is to describe the TOIP methodology and to compare the new 2010 update results with the results outlined in the 2008 TOIP. It is also intended to describe the 2009 implementation plan and the 2010 Communication System Layer (CSL), which identifies statewide communication infrastructure needs.

Key words: intelligent transportation systems – traffic operations – traveler information systems