INTERSECTION WARNING SYSTEMS IN MINNESOTA

Jon Jackels - Mn/DOT ITS Program Engineer
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Minnesota ITS Safety Plan

ITS Critical Strategy 5:
Use Intersection Collision Warning Systems

Deployment Strategies for Minnesota

- Dynamic Intersection Warning is included in Minnesota’s ITS Safety Plan and SHSP.
- Eligible for federal HSIP funding.
- It is anticipated Minnesota Safety plans will identify 160 to 180 intersections where dynamic intersection warning systems may be installed.
Intersection Warning Systems

Major Roadway Warning Systems
Vehicle Crossing / Entering Mainline
Speed Warning (none in Minnesota)

Minor Roadway Warning Systems
Mainline Vehicle Approaching Cross Street
Cross-street Stop Sign Warning Systems
Cross-street Gap Assistance Systems
Intersection Warning Systems in Minnesota
Major Roadway Warning

Vehicle Entering or Crossing

TH 169 @
Mille Lacs CSAH 11

(This system has been removed and a CICAS system installed)
Minor Roadway Warning
Vehicle Approaching Intersection

Hennepin County Road 47
@ Lawndale Lane

Minor Roadway Warning
Cross Street STOP Sign Warning

Washington County
CSAH 15 (Manning Ave) @ CR 47 (McKusick Road)
Minor Roadway Warning
Gap Assistance System

US 52 @ CSAH 9 – Goodhue County – January 2010
US 169 @ CSAH 11 – Milaca, MN - Spring 2011
MN 23 @ CSAH 7 – Lyon County – Spring 2011

Major Roadway and Minor Roadway Warning

St. Louis County
• Co Rd 2 (West Tischer Road) @ Co Rd 246 (West Eagle Lake Road) [De-energized]

Wright County
• CSAH 5 @ CSAH 35
• CSAH 6 @ CSAH 35
• CSAH 9 @ CR 107

Scott County
• CSAH 42 @ CSAH 17
Safe Intersection Project - COTS

District 4
- TH 200 @ Mahnomen CSAH 4
- TH 29 @ Douglas CSAH 5
- TH 75 @ Clay CSAH 2
- TH 210 @ Ottertail CSAH 35

District 2
- TH 75 @ Polk CSAH 21
Challenges

- Establish the safety impact
- Continue development of intersection warning systems
- Establish warrants for proper applications
- Implement MUTCD standards and guidelines
- Educate and inform drivers
- Focus enforcement efforts
Bring together the agencies and individuals who have deployed ITS intersection warning systems to reach consensus on an approach for an accelerated uniform deployment of intersection warning systems, and a recommendation for inclusion in the MUTCD.
Contact Information

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Right angle crashes overrepresented at rural STOP controlled intersections.
Fatal Crashes

Most of the fatal crashes at STOP controlled intersections are stop and proceed.
Primary cause where drivers stopped before entering:

- Driver looked but did not see other vehicle (62.1%);
- Driver misjudged the gap (lag) (19.6%);
- Driver had obstructed view (14.0%), or
- Roads were ice-covered (4.4%)

The first 3 are problems with lag detection or selection.
• FHWA Pooled Fund Study since 1991
• 16 members (including Ontario and Dutch Ministry of Transport)
• Forum for collaborative ITS research, development, and deployment ventures
• Facilitates the sharing of technological and institutional experiences gained from individual ITS projects from its members
Developing Consistency in ITS Safety Solutions

Intersection Warning Systems

Bring together the agencies and individuals who have deployed ITS intersection warning systems to reach consensus on an approach for an accelerated uniform deployment of intersection warning systems, and a recommendation for inclusion in the MUTCD.
Project Stakeholders

- ENTERPRISE Pooled Fund Members
- States with ICW Systems
- NCUTCD – Committee on Warning and Guide Signs
- AASHTO – Sub-Committee on Traffic Engineering
- NACE
- FHWA
Anticipated Results

• Comprehensive List of Deployed Intersection Systems

• Workshops to learn from others and develop consensus on revisions to the MUTCD

• Recommended Application Guidelines for Intersection Warning Systems