

Interactive Warning Signs in Missouri

Missouri Department of Transportation

Three Applications

- ◆ Main line warning
- ◆ Cross street warning
- ◆ Combination

Main Line Warning

- ◆ Traffic on the through route is warned.
 - “Watch For Entering Traffic”
 - “Vehicles Entering When Flashing”
- ◆ Interactive using detector loops on the stop approach.
 - Possibly in two locations
- ◆ Less complex application
 - Sign placement
 - Gap acceptance

Main Line Warning



Main Line Warning



Main Line Warning



Main Line Warning



Main Line Warning



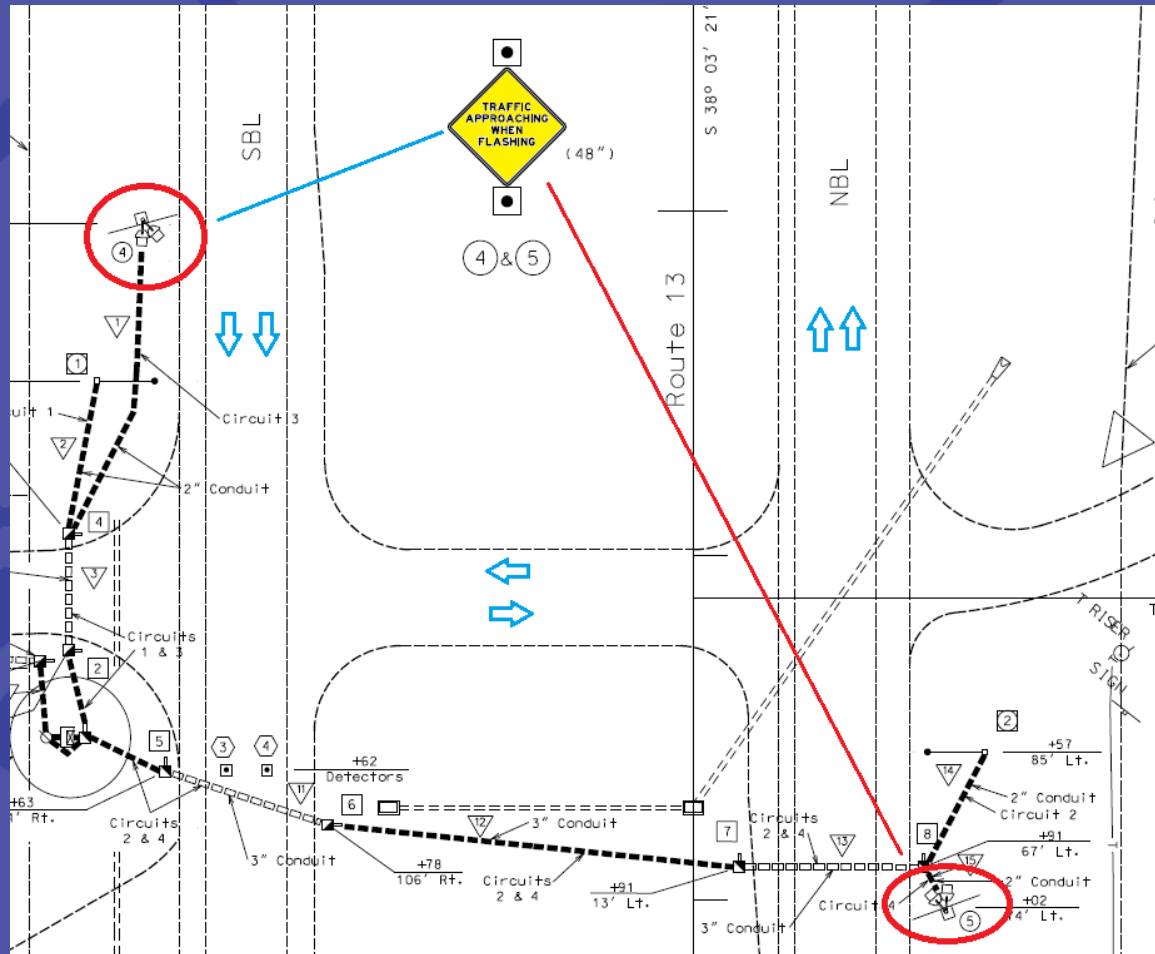
Cross Street Warning

- ◆ Traffic on the stop approach is warned.
 - “Traffic Approaching When Flashing”
- ◆ Interactive using detectors on mainline.
 - A few locations use wireless technology
- ◆ Newer application
 - Less “after” data
- ◆ Can be more complex
 - Sign placement
 - Determining acceptable gaps

Cross Street Warning



Cross Street Warning



Cross Street Warning

07-30-2009

LP 5.051 (164.410)

Flasher ID # 2423

MO 13 @ 1st ST & PVT Driveway

St. Clair County Lowry City

Eastbound on 1st ST

Looking left (north) at intersection



Cross Street Warning

07-30-2009

LP 11.625 (170.984)

Flasher ID # 2332

MO 13 @ BU 13 (N Jct)
St. Clair County Osceola
Eastbound on BU 13 (Truman RD)
Looking left (north) at intersection



Cross Street Warning



Cross Street Warning

07-30-2009

LP 5.051 (164.410)

Flasher ID # 2423

MO 13 @ 1st ST & PVT Driveway

St. Clair County Lowry City

Eastbound in median

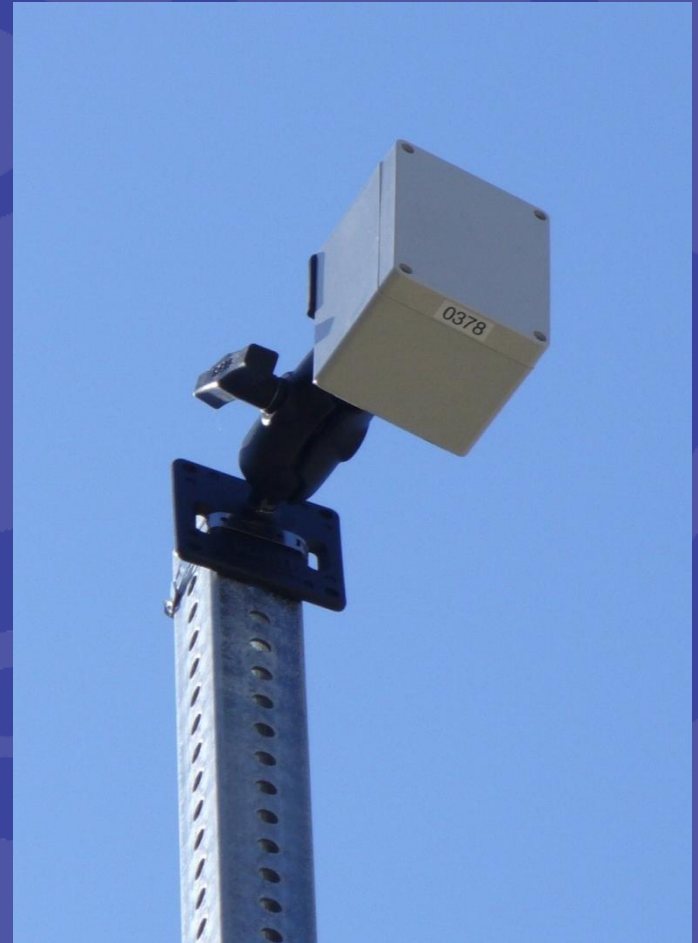
Looking at flasher located on
southeast corner of intersection



Cross Street Warning



Cross Street Warning



Comments

- ◆ Combination locations - All approaches are warned.
- ◆ Loop detectors in pavement generally used
- ◆ Communication generally hard-wired
 - A few wireless locations
- ◆ Signs are generally electrically powered

Crashes - Main Line Warning

- ◆ Simple before/after study
 - 28% reduction in all crashes
 - 37% reduction in angle crashes
 - ◆ 86 before, 54 after
 - 72% reduction in all severe crashes
 - 75% reduction in all severe angle crashes
 - ◆ 28 before, 7 after
- ◆ Isolated locations showed no improvement.
 - Some used standard intersection signs w/flashers

Crashes - Cross Street Warning

- ◆ Simple before/after study
 - 32% reduction in all crashes
 - 44% reduction in angle crashes
 - 33% reduction in all severe crashes
 - 38% reduction in all severe angle crashes
- ◆ Limited data
 - Less crash history at these locations
 - Most locations installed in 2008, 2009
- ◆ Isolated locations showed no improvement.

Crashes - Combination

- ◆ Simple before/after study
 - 27% reduction in all crashes
 - 36% reduction in angle crashes
 - 33% reduction in all severe crashes
 - 43% reduction in all severe angle crashes
- ◆ Isolated locations showed no improvement.
 - Some had little issue to begin with

Summary

- ◆ Overall, crashes are down.
 - However – Little or no improvement at about 1/3 of the locations
- ◆ Not a catch-all solution for angle crashes
 - Consider closures, access control, j-turns
- ◆ Favorable public perception.
- ◆ Few maintenance concerns with reliable components