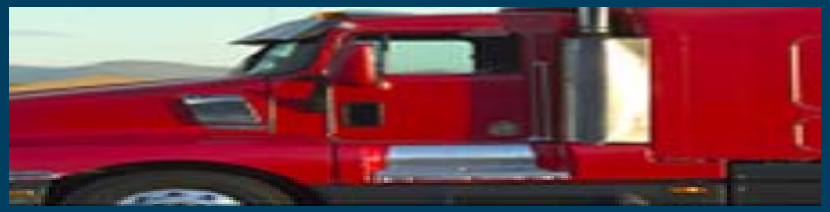
Evaluation of a Truck Priority for Two-Lane Signalized Roadways



Jon Jackels – MnDOT ITS Program Engineer

2012 NRITS

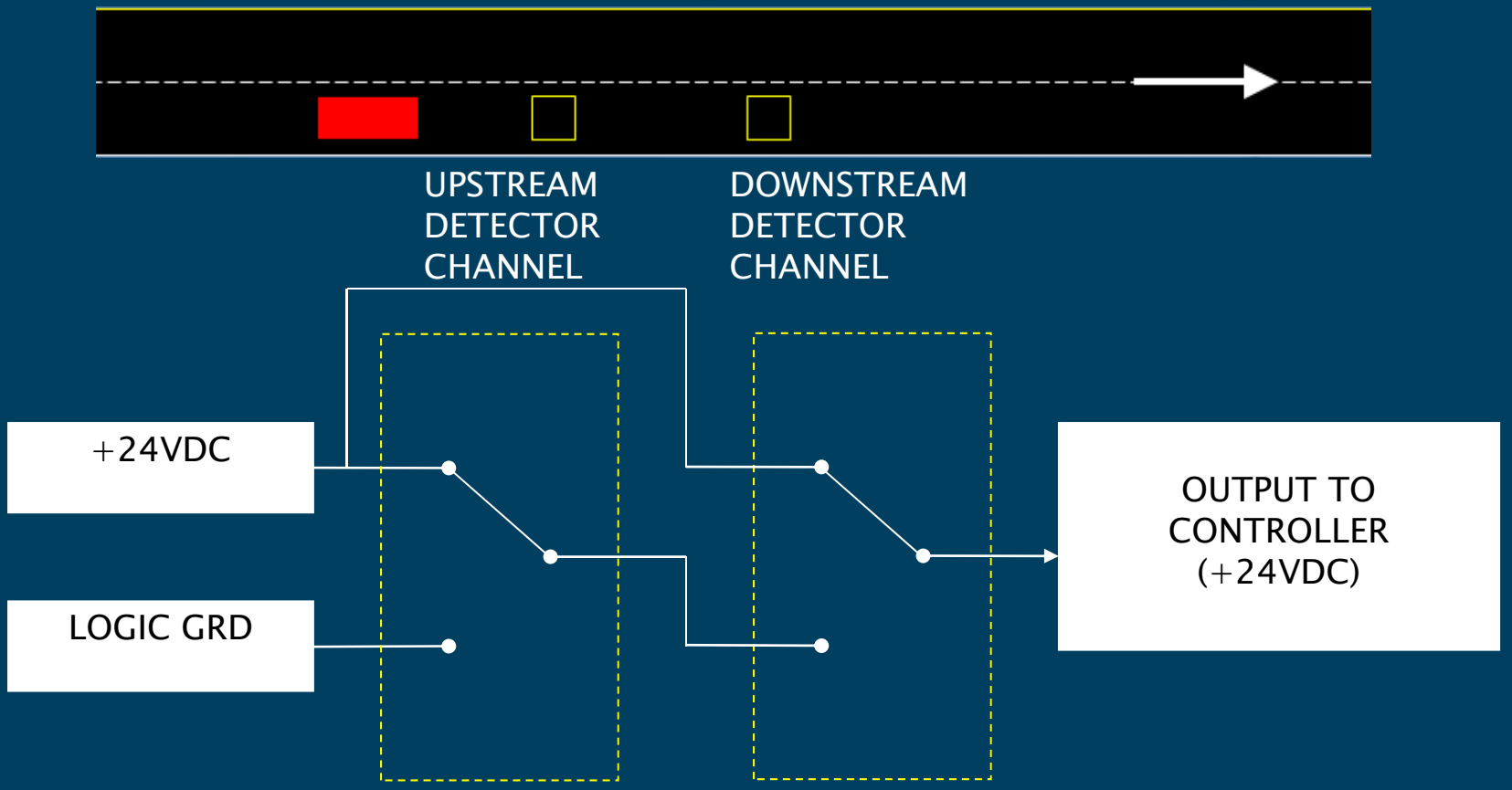
September 17, 2012

Your Destination...Our Priority

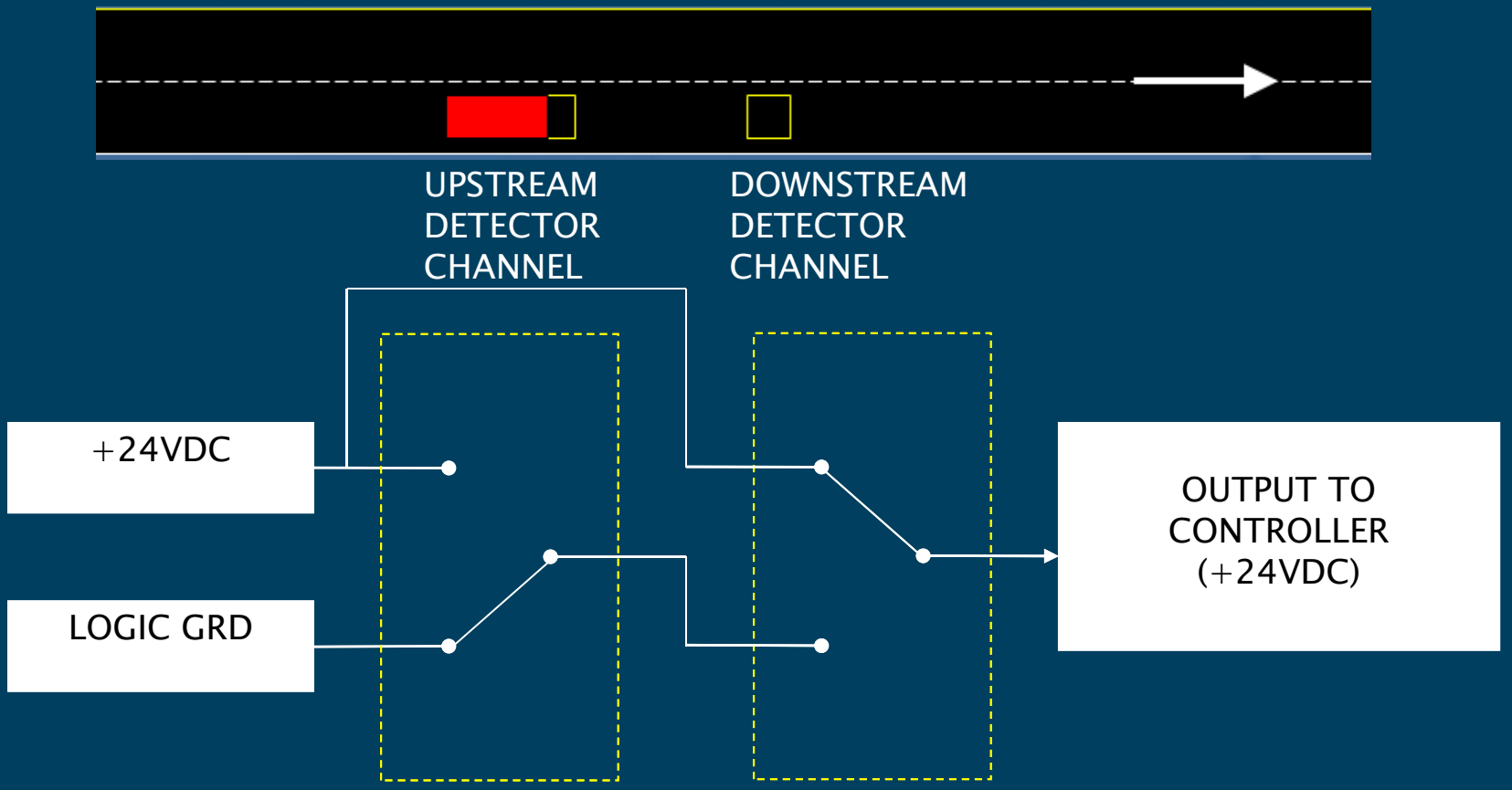
Truck Priority

- Primary Objective
  - Reduce delay to the public due to platooning
- Secondary Objective
  - Reduce delay to heavy commercial vehicles
  - Reduce stops to heavy commercial vehicles

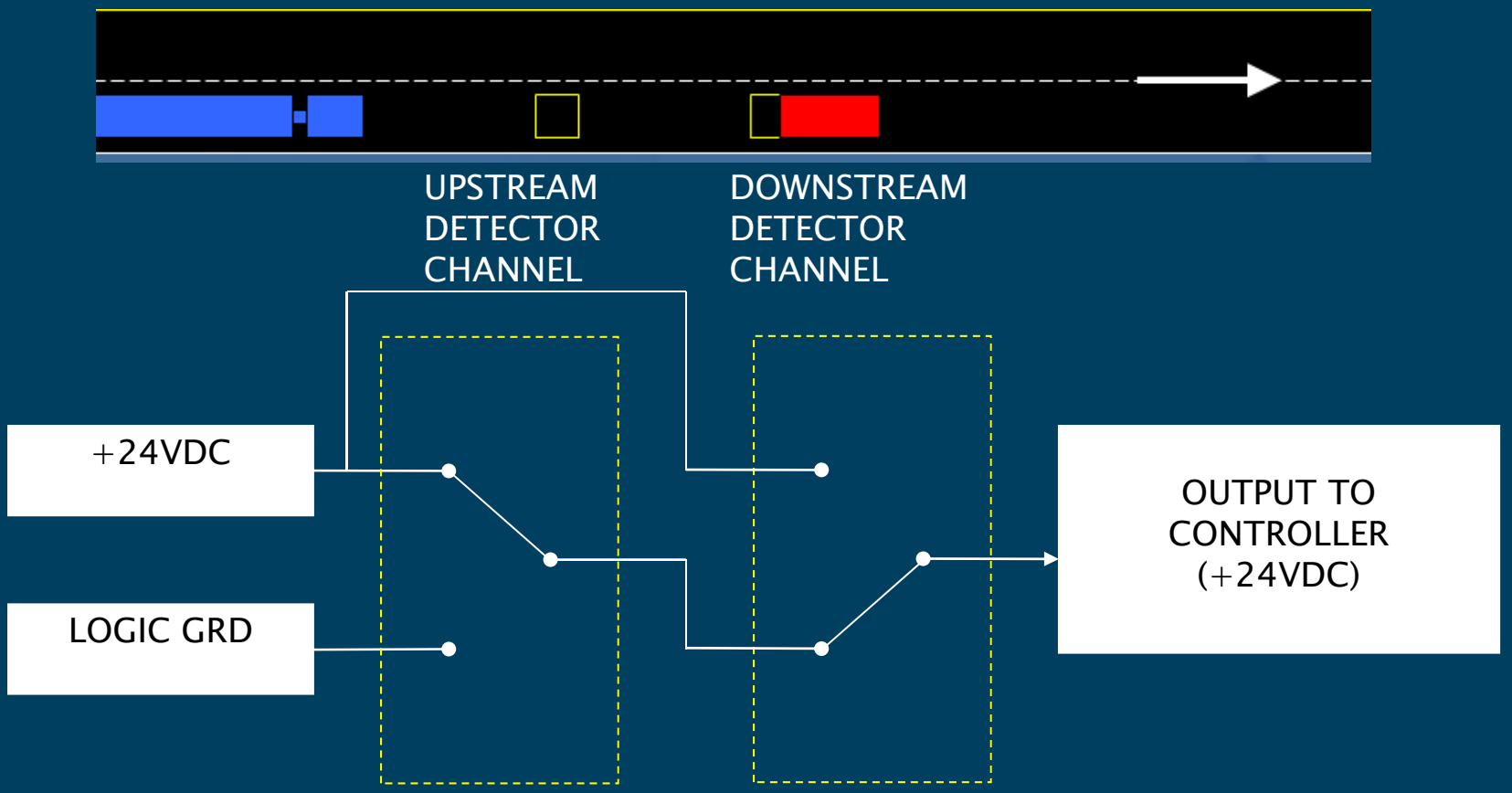
Truck Priority System Design
No Loop Occupied



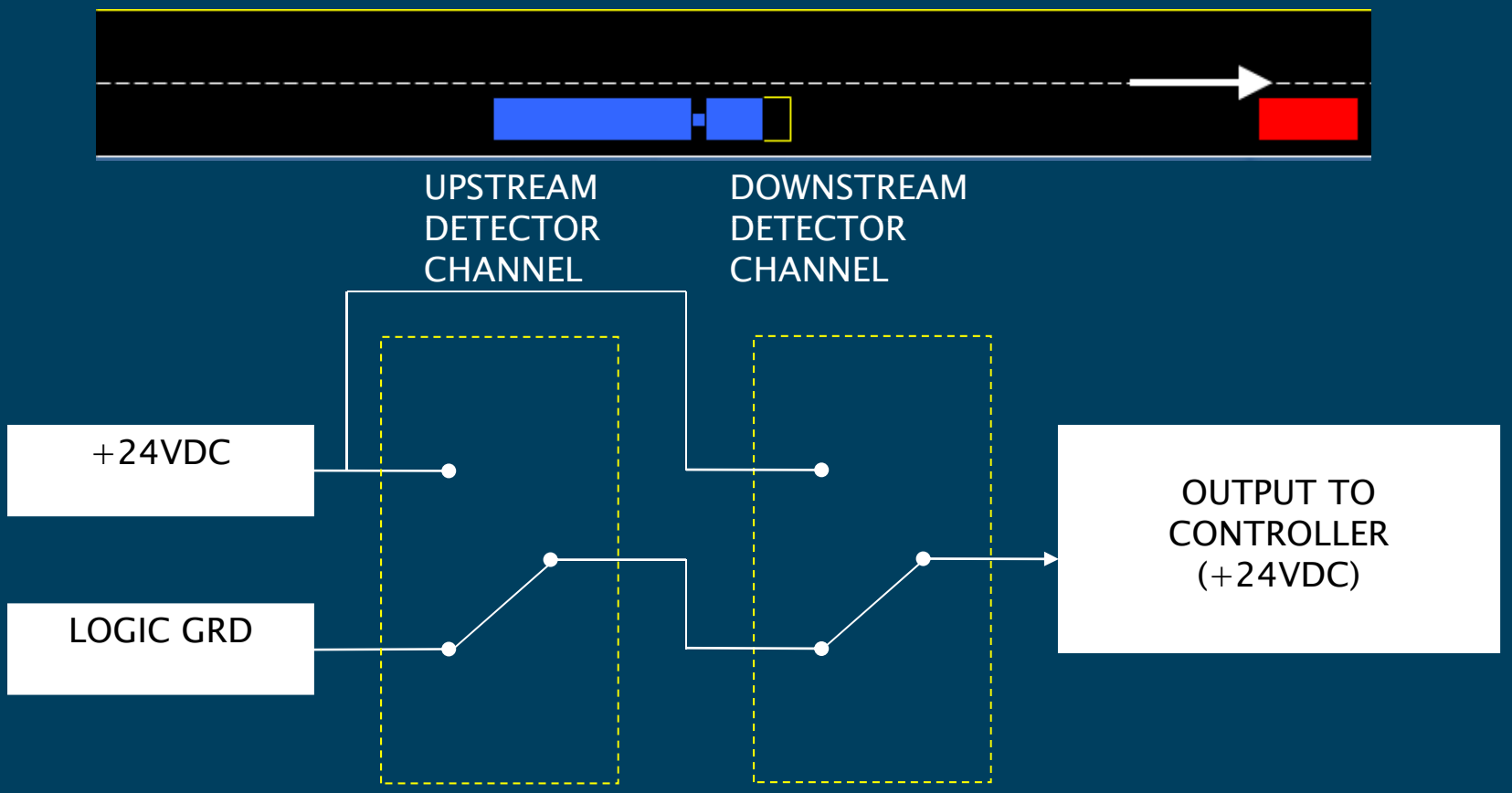
Truck Priority System Design
Upstream Loop Occupied



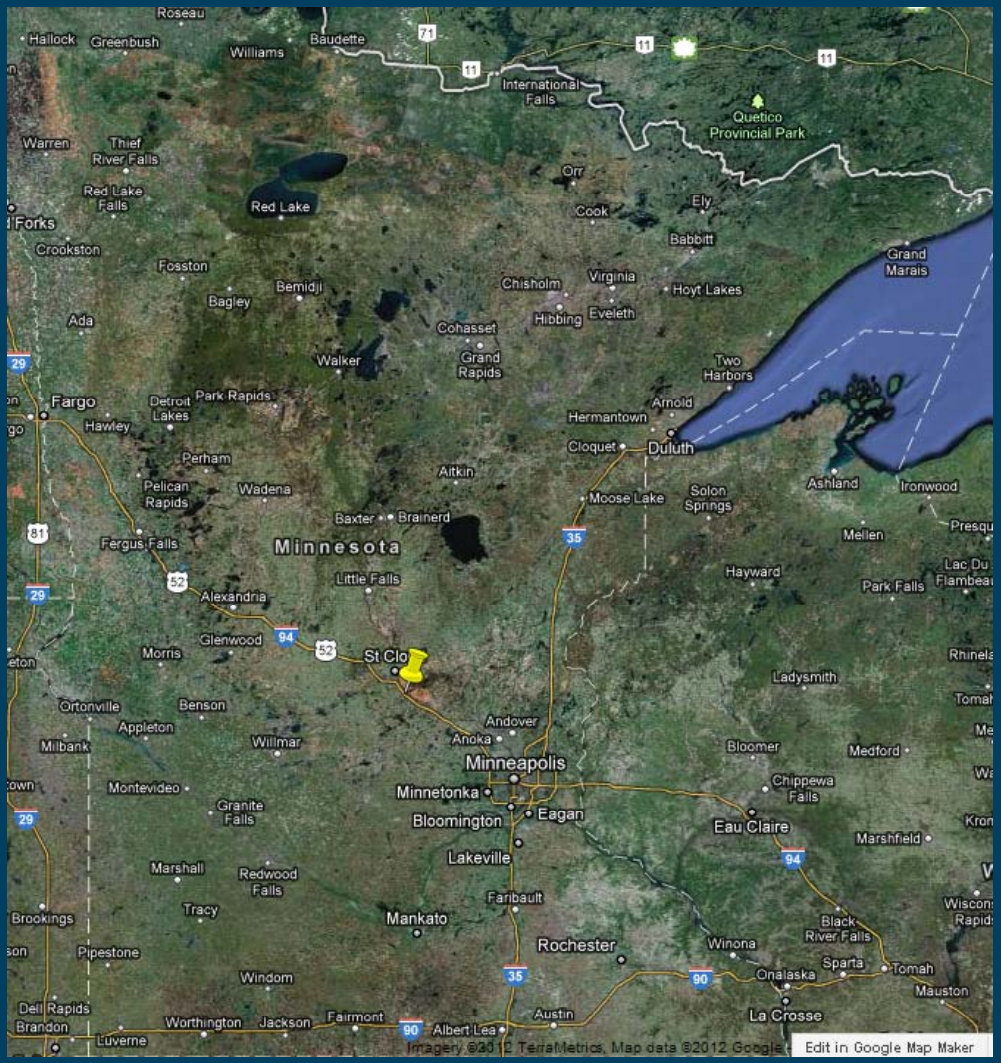
Truck Priority System Design
Downstream Loop Occupied



Truck Priority System Design
Both Loop Occupied



Location

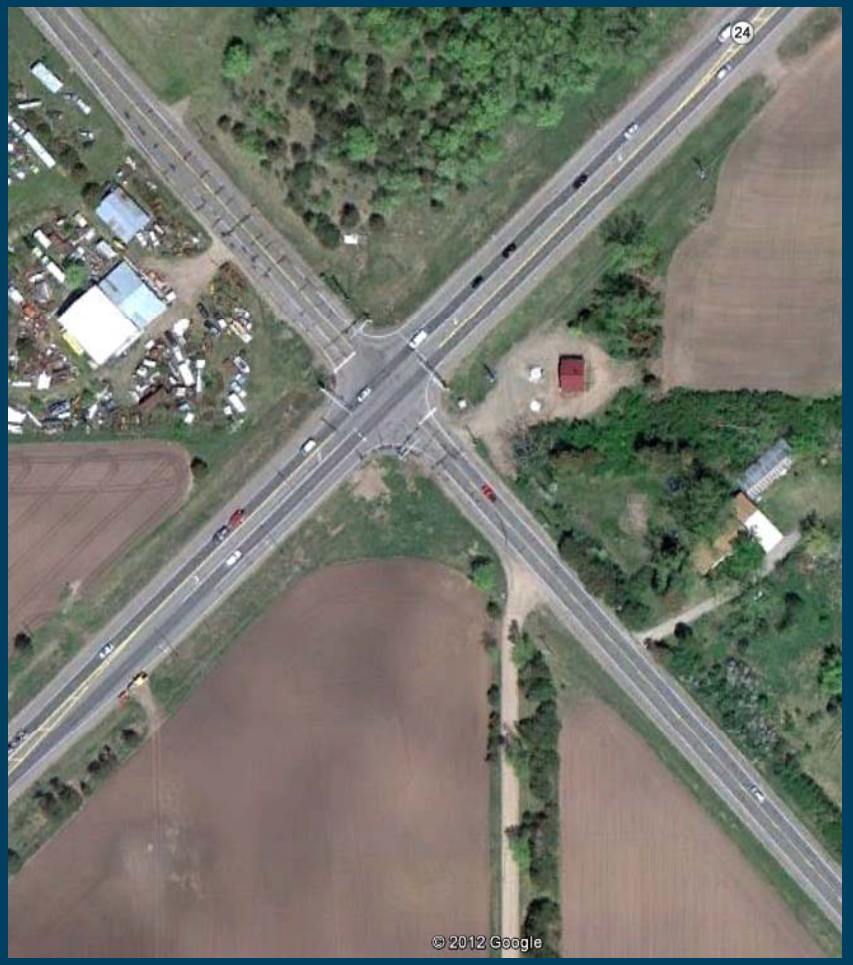


Clear Water, MN

- TH24 and Sherburne CSAH 8

Hwy 24 and Sherburne CSAH 8

- Isolated signal
- No advance detection
- 55mph
- TH 24
  - AADT 17,800
  - HC 1850 (10.4%)
- CSAH 8
  - AADT 1,900



Smallest Vehicles Detected

Largest Vehicles Not Detected

Observed Benefit

- All vehicle Benefit
  - Delay reduction of 308 hours/year
- Heavy Commercial Vehicle Benefit
  - Delay reduction of 158 hours/year, 1st observation
    - Operating Cost Savings of $14,924
  - Delay reduction of 514 hours/year, 2nd observation
    - Operating Cost Savings of $48,577
  - Reduction in average stops 7.4%

Recommendations

- Expand the priority to intersections with
  - High truck volumes
  - Seasonal trucking routes
- Expand the priority to multilane roadways
  - Trucks benefit from reduced delay and number of stops
  - Little or no benefit to Non-trucks

Questions?

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http://www.dot.state.mn.us/guidestar/2006_2010/truck_priority.html