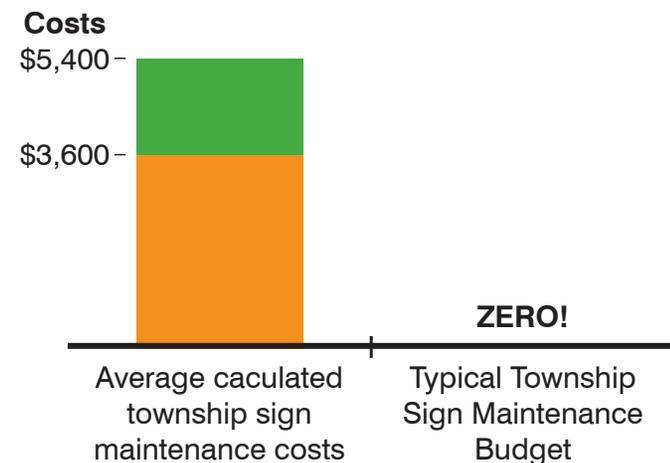


Township Signing Practices

- The average Minnesota township has approximately 30 miles of roadway with an average of 6 total traffic signs per mile (both directions)¹
- At a replacement cost of approximately \$150/sign, a township would need \$27,000 to replace all signs in its inventory¹
- Average annual sign replacement plus maintenance costs for a typical township would be approximately \$3,600 to \$5,400 per year²
- The average sign maintenance budget of a sample of townships that attended a series of LTAP signing workshops was ZERO!
- Agencies that choose to have signs installed but have no practice of maintaining them may be at substantial risk
- Research indicates that few signs are related to safety and many are shown to be ineffective at changing driver behavior³
- A strategy to lower sign maintenance costs and address liability is to reduce sign inventory



¹ Mn/DOT Township Sign Inventory and Replacement Pilot Program

² CH2M HILL Estimate

³ Minnesota's Best Practices for Traffic Sign Maintenance/Management Handbook, Report No. 2010RIC10 Version 1.1 October 2010

Low Volume Roads

- Federal & Minnesota Manuals on Uniform Traffic Control Devices (MUTCD) specifically exempt Low Volume Roads from virtually all sign installation requirements because of the type of typical use of these roads¹
- A Low Volume Road is defined as:
 - Having fewer than 400 vehicles per day
 - Not being on a designated State system
 - Outside of built up areas of cities or towns
 - Roads may be paved or unpaved
- Most township roads would fall under “Low Volume Roads” in which the road user is most likely a local resident and familiar with the roadway
- Four types of Warning signs are required:
 - Advanced Traffic Control (i.e. STOP AHEAD if sight distance is limited), Vertical Clearance, Railroad Crossing signs and MINIMUM MAINTENANCE ROADS
- No regulatory or guide signs are required
- A local resident is less likely to need information about traffic regulations, unexpected conditions or guidance to destinations



¹ 2011 Minnesota Manual on Uniform Traffic Control Devices

Sign Removal Candidates



Regulatory

- Speed limit signs – those that merely state statutory limits are not necessary
- STOP/YIELD signs at low volume intersections- research proves that they are NOT safety devices and fewer than 20% of drivers actually stop²
- Cross Traffic Does Not Stop signs – typical drivers do NOT understand the concept of CROSS TRAFFIC

Warning

- Static signs that warn drivers of hazardous conditions they rarely encounter such as conflicting vehicles at intersections with low volumes on all approaches (ex. 4-way intersection warning signs at low volume intersections where cross traffic is rarely encountered and the intersection is visible and DEER CROSSING signs)
- Pedestrian signs – at uncontrolled intersections, these signs actually increase the number of crashes¹



¹ Charles V. Zegeer, et al., Safety Effects of Marked vs. Unmarked Cross-Walks at Uncontrolled Locations: Executive Summary and Recommended Guidelines, 1996-2001
² Souleyrette, Tenges, McDonald, Maze, "Guidelines for the Removal of Traffic Control Devices in Rural Areas", Iowa Highway Research Board Project TR-527, 2005

Real Life Sign Removals

How do I get my township on board with removing signs?

- In 2011 and 2012, MnDOT piloted a program with Townships in Stevens County to inventory signs and conduct an engineering investigation to determine which signs could be removed
- The investigation identified 285 Regulatory, Warning and Guide Signs (28% of the total number of signs in these townships) as candidates for removal. The Townships have agreed to the removals!
- Of 285 signs to be removed:
 - 93% are Warning (i.e., STOP/ YIELD Ahead, Cross Road, T-Intersection signs)
 - 4 % are Regulatory (i.e., YIELD, Speed Limit signs)
 - 1% are Guide (i.e., Street signs)



Which signs were removed?



- Intersection warning signs: where the intersection is visible (MnMUTCD Table 2C-4)
- STOP or Yield Ahead signs: where the STOP or Yield sign is clearly visible to the driver (MnMUTCD Table 2C-4)
- Neither of these signs are required by MnMUTCD
- There is no proof that these signs have ever proven to be effective at improving safety or changing driver behavior when the condition is visible to the driver
- System wide consistency and consideration for signs at similar locations is important
- If no apparent risks are associated with the intersection (i.e. visibility, high traffic volumes), then signs are candidates for removal

Which signs were removed?

- Watch for children signs: these are not effective at increasing safety and do not change driver behavior
 - Do not give clear and enforceable guidance to drivers
 - Provide a false sense of security to parents and children that may increase risk
 - Give the false impression that areas without signs do not have children
 - Represent an unnecessary cost that then propagates as additional signs are requested
 - Violates the principle that signage should be based on engineering not political judgment
- Research indicates that signs that warn of general conditions (a child that may be present on the road only occasionally as opposed to a curve that is always present) that are rare are virtually ignored by most drivers¹

- The basic objective of warning signs is to make drivers aware of unexpected conditions that are not readily apparent - it is hard to imagine that encountering a tractor on a rural road in an agricultural area would be either unexpected or not readily apparent.
- Not required by MnMUTCD



¹ Wisconsin Department of Transportation, "Effectiveness of Children at Play" Warning Signs, Transportation Synthesis Report, 2007

Which signs were removed?



- A Turn sign should be used instead of a Curve sign in advance of curves that have advisory speeds of 30 MPH or less
- Horizontal alignment series signs are required by MNMUTCD on roads with greater than 1,000 vehicles per day and is suggested for other roads based on speed differential on curve approaches
- Warning signs were removed where the roadway does not match the scenario on the provided sign or if they were not needed or required in the first place
- Key is consistency – If curve warning signs are used at some locations, all curves with similar radii should have similar signs and advisory speeds

Which signs were removed?



- Yield signs: were removed along Minimum Maintenance Roads (MN Statute § 160.095) since these roads, by definition, are “only occasionally or intermittently used for passenger and commercial travel”
- Research has proven that at extremely low volume intersections, increasing the level of intersection control by adding STOP or YIELD sign does not improve safety.¹

¹ Stockton, Brackett, and Mounce, “STOP, YIELD and NO CONTROL at Intersections, Report No. FHWA IRD-81/084, 1981

Key Points

- The Township Sign Program in Stevens County has shown that Town Boards are willing to consider and implement the removal of some signs
- Removing unnecessary signs will reduce Township maintenance costs, reduces liability for inconsistent applications of signs and failing to adequately maintain the signs (an action that is now mandatory).
- Township officials are required to develop a policy to guide their sign maintenance program by June 13th, 2014.
- Be sure to include exercising engineering judgment and create a written record regarding signs to remain and those to remove – this supports establishing both discretionary and official immunity for your agencies actions

