Summary Report
on the
Traffic Control Device Demonstration
held on
June 15, 2005
at the
3M Transportation Safety Center
Cottage Grove, Minnesota

Introduction

On June 15, 2005, Mn/DOT's (Minnesota Department of Transportation) Work Zone Safety Committee in partnership with the Northland Chapter of ATSSA (American Traffic Safety Services Association), sponsored a Traffic Control Device Demonstration. This demonstration was held at the 3M Transportation Safety Center in Cottage Grove, Minnesota.

Purpose

The primary purpose of this demonstration was to exhibit new technologies and materials used in providing temporary traffic controls, permanent signing, and pavement markings. A secondary purpose of this demonstration was to gather information about the various devices and materials for inclusion in decision making related to their application in Minnesota.

Scope

Since this was not a scientific study where all variables were controlled and the audience was biased by the fact that everyone was in the traffic control industry the results of any of these evaluations were not the only information used in Mn/DOT's decision making for the application of any of these devices and materials.

Acknowledgements

Mn/DOT and the Northland Chapter of ATSSA would like to thank the 3M Corporation for allowing us to use their sophisticated traffic control demonstration area at their Transportation Safety Center in Cottage Grove Minnesota. We especially extend our gratitude to Mr. Gary Clark, Senior Account Representative, for all of his efforts in coordinating delivery and pickup of the various devices and expertise in coordinating a demonstration of this complexity. A special thanks is also needed for all of the Mn/DOT workers, especially Mr. John Benson and Mr. Marv Sohlo, Office of Traffic, Security and Operations, and employees of ATSSA member companies for the many hours they spent making this demonstration a success.

Participants

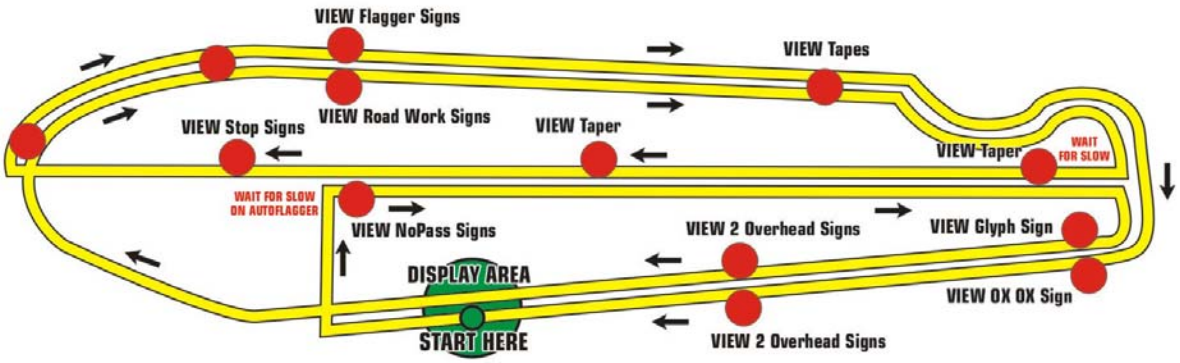
Over 100 members of the traffic control communities in Minnesota, North Dakota and South Dakota attended this daytime and nighttime demonstration. A complete listing of participants can be found in **Attachment 1**. These individuals represented the FHWA, Mn/DOT traffic engineering, construction and maintenance, South Dakota DOT traffic engineering, North Dakota DOT engineering and representatives of the traffic control industry in all three states.

Traffic Controls Demonstrated

The traffic control devices, materials and evaluations included in the demonstration were:

- Comparison of ASTM Type IX to Type HP (High Performance) sign sheeting for brightness and legibility on:
    - No Passing Zone Sign
    - Ground Mounted Guide Sign
    - Overhead Mounted Guide Sign
    - Stop Signs
- Effect of sheeting orientation on performance of micro-prismatic signs.
- Comparison of Flashers to SYG borders to give Construction Signing improved conspicuity.
- Comparison of Standard Highway Fonts to the new Clearview Fonts on Guide Signs and Work Zone Warning Signs.
- Comparison of Traditional lane closure taper with drums to experimental night maintenance taper with cones and direction indicator barricades.
- Legibility of service truck mounted Type A portable changeable message signs.
- Demonstration of:
    - Wet Reflective Pavement Markings
    - Autoflagger AFAD Device
    - NCHRP350 Crashworthy Portable and Ground Mount Sign Supports
    - Intelligent Work Zone Systems
    - Balloon lighting
    - Longitudinal delineation
    - Longitudinal barricades
    - Incident Response Truck
    - SCI100GM Impact Attenuator

These devices and products were placed on the test facility as detailed in the map below.



STATEWIDE WORK ZONE SAFETY COMMITTEE DEMONSTRATION

JUNE 15th, 2005 - 3M Transportation Safety Center in Cottage Grove, MN

Sponsored by Mn/DOT & ATSSA Northland Chapter

Method

All of the devices installed on the test track were evaluated by the participants as they drove the route shown on the map. The questions asked and comments received were recorded on the evaluation form shown in **Attachment 2**.

Findings

Detailed findings of the evaluation and participant's comments are included in **Attachment 3**.

As a result of the evaluation portion of this demonstration Mn/DOT has moved forward with improving sign sheeting on both permanent and temporary signs. Details of these implementations can be found on the attached Technical Memorandums (Attachments **4** and **5**).

The review of various orientation angles on the "OX OX OX" sign did not reveal a problem with the different performance of the high performance sheeting at night. Therefore, it was determined that orientation angle of background and legends on guide signs did not have to be controlled during sign fabrication.

The conspicuity evaluation for the FLAGGER AHEAD symbol signs revealed that the most conspicuous sign was the one with the dynamic flashing lights. As a result OTSO is continuing the evaluation of these types of lighting devices so a guideline can be developed for their implementation.

The taper used for night maintenance activity is continuing to be used by Mn/DOT's night maintenance crews and further evaluation is being completed. It is anticipated that this new method will be included in the 2007 update to Mn/DOT Temporary Traffic Control Layouts Field Manual, which is a part of the MN MUTCD.

Mixed results along with national research findings have resulted in Mn/DOT continuing to use existing highway fonts on both guide and warning signs.

Many participants thought that Mn/DOT should continue to have this type of technology transfer event to keep the industry informed of activities and to share ideas and techniques used for traffic controls.

Inquiries

Any inquiries regarding the information contained in this report and any of the supporting documentation can be forwarded to:

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Attachment 1: **Demo Attendee Listing**

Attachment 2: **Demo Evaluation Form**

Attachment 3: **Demo Evaluation Results Summary**

Attachment 4: **Tech Memo for Permanent Sign Sheeting**

Attachment 5: **Tech Memo for Temporary Sign Sheeting**

Attachment 6: **PowerPoint Presentation of Summary**

Attachment 7: **PowerPoint Presentation of Summary** (suitable for printing)