

1. Title of proposal, principal investigator (and co-PI, if applicable):

The Effectiveness of Dual Phase Message Signs (CMS's) Kathleen Harder and John Bloomfield

2. Name of End-User Product that will be developed from proposed project:

Final design of the Dual Phase Changeable Message Signs or other signage on 494 and T.H. 5 which will give directions to travelers to either the Lindgren Terminal and Humphrey Terminal, in such a manner, which will allow travelers to maintain their speed during their reading of the messages.

Check a category and select the type of End-User Product from the pull-down menu:	
<input checked="" type="checkbox"/> Technical End-User Product	<input checked="" type="checkbox"/> Management End-User Product
Technical Standard or Practice	Policy, Rule or Regulation

Roadmap Strategic Areas :	<input type="checkbox"/> Providing a Multi-Modal System	<input type="checkbox"/> Organizational Transformation
<input type="checkbox"/> Innovative Project Delivery	<input checked="" type="checkbox"/> Traffic Safety / Low Cost Solutions TZD	<input type="checkbox"/> Infrastructure Preservation
<input checked="" type="checkbox"/> Working with Stakeholders	<input type="checkbox"/> Green Roads	<input checked="" type="checkbox"/> Congestion Management

3. Roadmap sub-topic area and/or titles of related active projects:

2005-060R: 8805(113): The Effectiveness & Safety of Traffic and Non-Traffic Related Msgs Presented on Changeable Msg Signs. HARDER
 2005-068R: Evaluating the Effectiveness of the Minnesota Speed Management Program. HARDER
 2003-047R: The Effectiveness and Safety of Traffic and Non-Traffic Related Messages Presented on Changeable Message Signs. HARDER
 1995-214R: Genesis Human Factors of Message Formats and In-Vehicle Devices. WADE
 1993-023R: MN Intelligent Driving Enviromental Research (Minder) Program. HANCOCK
 1996-319R: Simulation Validation. WADE
 1993-029R: Human Factors Issues in Traffic Signing. HANCOCK
 1993-071R: Following Advice From Traffic Advisories. HANCOCK
 1995-202R: Warning Flashers at Rural Intersections (FRI). WADE

The following other State and National research reports have information for consideration for the above project:

- Changeable Message Sign Displays During Non-Incident, Non-Roadwork Periods
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_383.pdf

- CalTrans Changeable Message Signs Guidelines, April 2006
- TxDOT Changeable Message Signs Guidelines, March 2006
- TRB Report 600a Human Factors Guidelines for Road Systems, Chapter 19 Variable Message Signs on going NCHRP Project ??

4. Goal and description of End-User Product:

The goal of this research is to determine whether or not a dual-phase CMS that provides airline information will have a negative impact on 494 freeway traffic. Mn/DOT is currently in negotiations with MAC regarding the signing for MSP. Once they began implementing their plan to move several airlines to Humphrey, half of all motorists driving to the airport will be destined for Humphrey.

5. Performance measures (from State Transportation Plan or other Mn/DOT document):

This research will contribute to several goals of the state transportation system as outlined in the State Transportation Plan: provide multimodal and intermodal transportation that enhances mobility and economic development and provides access to all persons and businesses in Minnesota while ensuring that there is no undue burden placed on any community; to provide an air transportation system sufficient to encourage economic growth and allow all regions of the state the ability to participate in the global economy; to promote productivity through system management and the utilization of technological advancements; to encourage tourism by providing appropriate transportation to Minnesota facilities designed to attract tourists.

6. Major steps (projects) to deliver End-User Product:

This applied human factor research process requires the following steps:

- Obtain Proposed Design from MAC Traffic Consultants (February 8)
- Compare to National Guidance, (FHWA, CalTRANS, TxDOT, Literature and Mn/DOT Staff Experience)
- Give feedback on design, and finalize the proposed design
- Design human factors experiment which best mimics the traffic patterns anticipated at the MAC
- Deliver conclusions by the end of July 2009
- Prepare detailed design information – font size, number of characters, airline information etc., and modify design of MAC.

Provide names of key individuals:
Technical Liaison for proposed project: Cassandra Isackson, Mike Weiss
Management Champion for End-user Product: Susan Groth, Bernie Arsenau
RSS Roadmap manager: <input type="checkbox"/> Clark Moe <input checked="" type="checkbox"/> Alan Rindels <input type="checkbox"/> Bruce Holdhusen

Stakeholders and roles in delivery of end-user product: (as applicable)
Mn/DOT District: Metro District Design
Mn/DOT Office or CO Functional Group: OTTS
Other cooperating agency or state: Metropolitan Airports Commission

Additional comments:

Cassandra Isaackson commented this research project is very important for Mn/DOT and the safety of the traveling public by the airport. The MAC is proposing renaming terminals, moving airlines from one terminal to another. And since our highways are integral to that transfer of people and freight this research is critical to Mn/DOT.

Metro Traffic is very concerned about people slowing down to read a CMS. In addition, there are other design options that are being considered, however, the Human Factors research facility at the UMN is an excellent method to test out the validity of the various designs, static, dynamic, and other.

Note: If this research cannot start the first of the year, it may not be useful in the design process.