

**MINNESOTA DEPARTMENT OF TRANSPORTATION**  
**FREEWAY TRAFFIC MANAGEMENT PROGRAM**  
**Status Report – January, 2001**

**CONTROL FACILITY:** Mn/DOT's Traffic Management Center (TMC) has been the operations hub for Twin Cities metro area freeway traffic management since 1972. The TMC, which is located at 1101 4th Avenue South, Minneapolis, MN 55404 is managed by Glen Carlson. Glen can be reached at 612.341.7500 (phone), 612.341.7239 (fax), or Glen.Carlson@dot.state.mn.us (e-mail). TMC's web site address is [www.dot.state.mn.us/tmc/](http://www.dot.state.mn.us/tmc/). The TRB contact is Nick Thompson, Operations Manager.

A new Regional TMC is under construction and should be complete in Fall, 2002. The facility will house existing TMC staff along with State Patrol dispatch, Metro Division Maintenance dispatch, and Metro Division Traffic Engineering.

**RAMP METERS:**

A bill passed by the Minnesota Legislature in 2000 required that Mn/DOT study the effectiveness of ramp meters in the Twin Cities metro area by conducting a shutdown study. Study objectives were: to explore the impact of ramp metering on freeways, local streets and transit operations; to identify public perception of ramp metering; to compare Minnesota's system and timing strategies with others around the country; and to measure customer satisfaction. A consultant was hired, data collection began in September and the shutdown took place in October. Results are due to the Legislature by 2/1/01.

Under modified metering, the ramp meters currently operate Monday through Friday for two hours (or less) during each peak period. In the morning, 213 meters may run from 6:30-8:30. In the afternoon, 266 meters may run from 3:30-5:30. They may be turned off early if traffic allows. Metering rates are "capped" at 130% of peak hour volume, which allows red times of 0.1 to 13.4 seconds. In the past, Mn/DOT employed the "Minnesota Algorithm" which used a zone control approach to maximize both bottleneck flow rates and overall freeway system productivity. Mn/DOT's present goal is "to strike a balance between what is right and proper from an engineering perspective concerning the efficiency of moving as much traffic during the rush hours as possible, and the safety and other concerns of the people who use the system everyday." More detailed information can be found on Mn/DOT's web site at [www.dot.state.mn.us](http://www.dot.state.mn.us).

**CLOSED CIRCUIT TV:** There are 233 cameras located along segments of the freeway system. Plans call for a total of 300 cameras by the end of year 2005. The standard design includes color cameras mounted on 50-foot poles, one mile apart, with fiber optic communications. Video from all of the cameras is shared via a distribution network with stakeholders including the State Patrol, Metro Division Maintenance and Traffic Engineering, Metro Transit, cities and counties, and all local TV stations.

**CONTROL ROOM:** The control room includes two independent operator stations, a radio announcer station, an information officer work station (for communicating with the Highway Helpers, State Patrol and information providers) and an incident capture work station. Each operator station has 24-20 inch CCTV monitors with video switcher control. They operate ramp meters, dynamic message signs (DMS) and lane control signals from independent computer work stations. The control room has gone through several upgrades, with the most recent re-design completed in 1998. A new computer platform and operator interface is being developed which combines the functionality of several stand-alone systems.

**DYNAMIC MESSAGE SIGNS:** There are currently 62 DMS in operation including both amber LED and rotary display type signs. The 23 newest DMS are NTCIP compliant. Plans call for approximately 10-12 more signs on the current system.

**DETECTORS:** There are approximately 4150 inductive loop detectors on the system.

**HIGH OCCUPANCY VEHICLE (HOV) FACILITIES:** I-394 is a six-lane freeway with three miles of reversible HOV lanes and eight miles of concurrent or diamond HOV lanes. Six HOV ramps on I-394 provide direct access to the reversible lanes between the Minneapolis CBD and TH 100. On I-35W, a diamond lane runs in each direction between Highway 13 and I-494. A project is currently underway, with completion scheduled for 2004, to extend the HOV lanes from I-494 to 46th Street. Mn/DOT operates 73 HOV ramp meter bypasses. Through a partnership with Mn/DOT, Met Council, Metro Transit, and other cities and counties, there are 100 miles of bus-only shoulders so transit buses can bypass congested areas of freeway.

**HIGHWAY HELPER PROGRAM:** The Highway Helper program was initiated in December 1987 to remove stalled vehicles from the roadway, assist stranded motorists and aid the State Patrol with incident management. Fully equipped pickup trucks patrol eight routes (or 170 miles) of the most congested freeway segments from 5:00 AM to 7:30 PM Monday through Friday. Each year the program assists approximately 13,000 motorists. In May 2000, the Highway Helper program relocated to a new-shared facility. This facility houses the 17 person Highway Helper staff and nine fleet vehicles along with a State Patrol station of 10 officers.

#### **TRAVELER INFORMATION PROGRAM:**

Traffic Radio - Mn/DOT has a partnership with the Minneapolis Public Schools (MPS) to provide a Traffic Radio service for the Twin Cities metro area. Public radio station KBEM (88.5 FM) provides live traffic broadcasts from the TMC control room. During weekday peak periods, a two to three minute report is broadcast every ten minutes. During major incidents, traveler information is broadcast continuously and drivers are alerted by DMS to tune to Traffic Radio for live reports. TMC operators also communicate frequently with commercial traffic reporters via two-way radio, updating them on current situations.

Traffic Television - Negotiations for a partnership agreement with a local broadcast television station are currently on hold.

Traffic Internet - Real-time traffic information at the web sites listed below and several other sites are under development. The data for most of these web sites comes directly from the TMC data distribution server:

[www.dot.state.mn.us/tmc/trafficinfo/](http://www.dot.state.mn.us/tmc/trafficinfo/) (the Traffic Management Center site)  
[www.startribune.com](http://www.startribune.com) – (click on latest traffic)  
[www.twincitiesexpress.com/travelerinformation.asp](http://www.twincitiesexpress.com/travelerinformation.asp) - (a personalized e-mail service)  
[www.smartraveler.com](http://www.smartraveler.com)  
[www.trafficstation.com](http://www.trafficstation.com)

Traffic Telephone - SmarTraveler, a private sector company, offers a route-specific traffic telephone service, free to the public. The number is (651) 633-8383 or #211 on most cellular phones.

**ITS OPERATIONAL TESTS:** The principal involvement with operational testing has been the Integrated Corridor Traffic Management (ICTM) project. This project was a multi-partner project with the goal of improving traffic flow along an eight-mile stretch of I-494. The adaptive control system runs 75 traffic signals and coordinates operation with 27 freeway ramp meters based on changing traffic conditions. An extensive traveler information system provides up-to-the-minute information on how to avoid incidents, construction and maintenance activities. Nine variable message signs, 81 electronic arrow signs and 11 surveillance cameras are installed along major local streets. The project evaluation has been completed and the final report is now available.

**RESEARCH AND DEVELOPMENT:** The TMC conducts research in the areas of traffic management and traveler information. Simulation and modeling support is provided by the University of Minnesota, Center for Transportation Studies.