

MINNESOTA DEPARTMENT OF TRANSPORTATION
FREEWAY TRAFFIC MANAGEMENT PROGRAM
Status Report – January, 2003

CONTROL FACILITY: Mn/DOT's Traffic Management Center (TMC) has been the operations base for the Twin Cities metro area freeway traffic management program for 30 years. The TMC is part of Mn/DOT Metro Division's Office of Traffic Engineering and is managed by Glen Carlson. After three decades of growth, a Regional Transportation Management Center (RTMC) was constructed with occupancy scheduled for March 2003. Minnesota State Patrol dispatch and Mn/DOT Metro Division Maintenance dispatch will be part of the joint operation of the new RTMC.



RAMP METERS: 2002 marked the completion of Stratified Zone Metering deployment. An independent study on the effectiveness of ramp metering showed that metering is beneficial for increasing freeway volumes, decreasing travel times, increasing speeds and decreasing crashes. However, motorists felt that some ramp meter wait times were excessive. Stratified Zone Metering strives to ease congestion while limiting ramp meter wait times. This is done by releasing vehicles onto the freeway based on ramp demand so that freeways are safer, travel times are more reliable and wait times are not excessive. There are currently 233 meters which may operate in the a.m. peak period and 278 which may operate in the p.m. peak period (based on traffic demand and directional use).

CLOSED CIRCUIT TV: There are 254 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, Metro Transit, cities, counties and all local TV stations. Real-time pictures from each camera are also available on the internet at <http://www.511mn.org>.

CONTROL ROOM: A new computer platform and operator interface was developed which combines the functionality of several stand-alone systems. Transition to the new system was complete in May 2002. Maintenance and incident logs are online as well as a help system, which covers policies, procedures and operating instructions. An AVL (Automatic Vehicle Location) system aids in dispatching Highway Helpers and in 2003, MN/CARS (Minnesota Condition Acquisition and Reporting System) will be replacing the TIC (Traffic Incident Capture) workstation for displaying construction and incident information on the web map and 511.

During peak periods, a staff of five (plus an on-call supervisor) operates the control room. Staff includes two operators, a radio broadcaster, a traveler information operator and a dispatcher.

- ❖ Each operator station has 24-20 inch CCTV monitors with video switcher control. Operators monitor congestion and incidents, run ramp meters, dynamic message signs (DMS) and lane control signals. They also log any equipment malfunctions in the maintenance log database.

- ❖ The radio broadcaster gives live traffic updates every 10 minutes on KBEM 88.5 FM.
- ❖ The dispatcher operates CAD 911(computer aided dispatch) and communicates with State Patrol and Mn/DOT Maintenance. They also monitor the AVL system and dispatch Highway Helpers to incidents via 800 mhz radio. The dispatcher is responsible for logging all events into the incident log database.
- ❖ The traveler information operator shares incident information with traffic partners via 800 mhz radio. They operate the TIC and MNCARS work stations.

DYNAMIC MESSAGE SIGNS: There are currently 70 DMS in operation including 68 amber LED and two rotary display-type signs. As the older rotary signs were replaced, they were often relocated to optimize visibility and effectiveness. Plans call for approximately 3-5 more signs on the current system. The TMC also operates 23 LCS (Lane Control Signals).

DETECTORS: There are approximately 3,900 inductive loop detectors on the system. In addition, around 40 queue detectors were added on ramps in the fall of 2001. Another 170 queue detectors were added in the summer of 2002 and approximately 30 more queue detectors are scheduled for 2003 installation.

HIGH OCCUPANCY VEHICLE (HOV) FACILITIES: I-394 is a six-lane freeway with three miles of reversible HOV lanes and eight miles of concurrent (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 (7 miles). Mn/DOT operates 73 HOV ramp meter bypasses. A partnership with Mn/DOT, Met Council, Metro Transit, local cities and counties, provides 180.3 miles of bus-only shoulders so transit buses can bypass congested freeway areas. We are currently developing plans to modify HOV operations.

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. The Highway Helpers program has a 17 person staff and nine fleet vehicles. Heavy duty 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 2001, all vehicles were equipped with portable message boards to enhance safety and assist with incident management.

In 2002, a public/private partnership was formed with a private sector towing company. The Wakota Service Patrol, which is equipped with a flatbed tow truck, assists motorists along a section of I-494 which is outside the normal Highway Helper service area. Drivers communicate with Highway Helpers and TMC Control Room personnel via 800 mhz radio. They operate from 6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM, Monday through Friday.

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 Internet - Real-time traffic information is available at <http://www.511mn.org>.

Traffic Telephone – This summer, Mn/DOT launched a new 511 phone service that provides information about road conditions, construction and incidents.

For more information on Mn/DOT's Traffic Management Center, please contact us at 612.341.7500 or tmc@dot.state.mn.us.