

MINNESOTA DEPARTMENT OF TRANSPORTATION
FREEWAY TRAFFIC MANAGEMENT PROGRAM
Status Report – July, 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/. 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 Metro Division Traffic Engineering (including existing TMC staff) along with State Patrol dispatch and Metro Division Maintenance dispatch.

RAMP METERS:

Results from the ramp meter study of last fall were released February 1. The consultants findings revealed that without ramp meters there was:

- A 9 percent reduction in freeway volume.
- A 22 percent increase in freeway travel times.
- A 7 percent reduction in freeway speeds.
- A 91 percent decline in freeway travel reliability.
- A 26 percent increase in crashes.

Ramp meters currently operate Monday through Friday for two hours (or less, if traffic allows) during each peak period. In the morning, 91 meters may run from 6:30-8:30. In the afternoon, 132 meters may run from 3:30-5:30. An additional 154 meters run during both peak periods. Metering rates are "capped" at 130% of peak hour volume, which allows red times of 0.1 to 13.4 seconds.

CLOSED CIRCUIT TV: There are 240 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. A new computer platform and operator interface was developed which combines the functionality of several stand-alone systems. Transition to the new system is underway and should be complete by early fall. Another new addition is a redesigned online help system (eHelp) which has replaced hard copies of policies, procedures and operating instructions.

DYNAMIC MESSAGE SIGNS: There are currently 66 DMS in operation including both amber LED and rotary display type signs. As the older rotary signs are replaced, they are often relocated to optimize visibility and effectiveness. The 27 newest DMS are NTCIP compliant. Plans call for approximately 8-10 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 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/ (the Traffic Management Center site with real-time video coming online this fall)
www.startribune.com – (click on latest traffic)
www.twincitiesexpress.com/travelerinformation.asp - (a personalized e-mail service)
www.smartraveler.com
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.