

# INTELLIGENT WORK ZONE SYSTEM

## Highway 10/Connect Detroit Lakes Project



### Mn/DOT – District 4

Mn/DOT District 4 has passed the halfway point in the reconstruction of Highway 10 through Detroit Lakes. The project began in mid-April 2007 and is on schedule for completion in fall 2008. Originally designed as a three-year project, the District has utilized a variety of Innovative Contracting methods to reduce the duration of the project.

As a result of the accelerated schedule, traffic on Highway 10 through town has been reduced to one lane in each direction throughout the winter months. One stretch in particular generated phone calls from the public who were concerned with the existing situation. The two-lane area is flanked on the north side of the road by a retaining wall and on the south side by Big Detroit Lake. This section meets all design criteria for the traffic it is carrying,



but local motorists were not used to being confined to this degree. Their concerns mainly focused on the potential loss of control in icy conditions for drivers traveling at an excessive rate of speed.

District maintenance forces also expressed concern that we needed to find a way to notify motorists when our snow plow operators were in the area performing snow and

ice operations, so drivers could slow down and drive with caution through the area. In addition, removing snow from against the retaining wall occasionally requires that traffic be backed up for short periods of time.



The District worked with the Office of Traffic, Safety and Operations as well as the Office of Construction and Innovative Contracting to determine a solution to address the concerns of

both the public and Mn/DOT maintenance forces. The solution was found in the form of funding from the Intelligent Work Zone (IWZ) seed program administered by OTSO. Representatives from District 4, OTSO and OCIC worked together to develop a system specifically designed for the project in Detroit Lakes.

The IWZ system consists of two changeable message signs (CMS), one on each end of the section of roadway that is flanked by the retaining wall and Big Detroit Lake. Each CMS is equipped with a radar detection device. The radar detectors determine the speed of the traffic as it enters the area. If the oncoming vehicles are traveling at, or below, the threshold speed (set at 3 mph over the posted speed limit of 35 mph), the signs remain blank. However, if the vehicles exceed the threshold speed, the CMS flashes a two frame message that reads, “SPEED LIMIT EXCEEDED – REDUCE SPEED NOW.” Response to these safety messages has been extraordinary. We have noted that out-of-town truckers exhibit the greatest response to the flashing message.



To address the concerns of the Mn/DOT snow plow operators, we equipped four of our snow plows with portable transmitters. The CMS boards are programmed to receive a signal from the transmitters any time the snow plows enter the area. When the transmitter is activated, the message on both CMS boards switches to “SNOW REMOVAL AHEAD – DRIVE WITH CAUTION.”

Tying the snow plow notification to the IWZ system was extremely important. Initially our maintenance personnel wanted to erect permanent signing through this stretch asking people to watch for snow plows. The District was concerned that the public would become complacent if they saw these signs 24 hours a day, since plows actually operate through this area on an infrequent basis. The IWZ system allowed us to provide a real-time message that is only activated when the snow plows are actively working in the area.



The feedback from our plow operators has been extremely positive. Several of the operators have noted that they appreciate that their concerns were heard and addressed in a proactive manner.

The application of the IWZ system in Detroit Lakes has been successful thanks to the partnership between representatives of traffic, construction, maintenance, communications and District Management. It is a shining example of what can be accomplished when we work together to address concerns.