Ontario's Transportation Technology Transfer Digest
MINISTRY OF TRANSPORTATION
RoadTalk
Article 1 • Winter 2011 • www.mto.gov.on.ca/english/transtek/roadtalk

A New Angle on Safety!

Innovative Mobile Work Zone Barrier on Highway 115 Project

This past summer, the Ministry of Transportation (MTO) tested an innovative work zone barrier system during a full and partial depth concrete repair project on Highway 115, a busy four lane highway southwest of Peterborough. The new barrier system is fully mobile and consists of a modular unit on wheels pulled by a standard truck tractor. The reversible axles of the mobile unit allow it to be easily reconfigured for either right or left applications in as little as 30 minutes. The mobile unit's bright, construction orange colour helps alert drivers that road work is taking place. The unit also comes equipped with an approved energy attenuator.

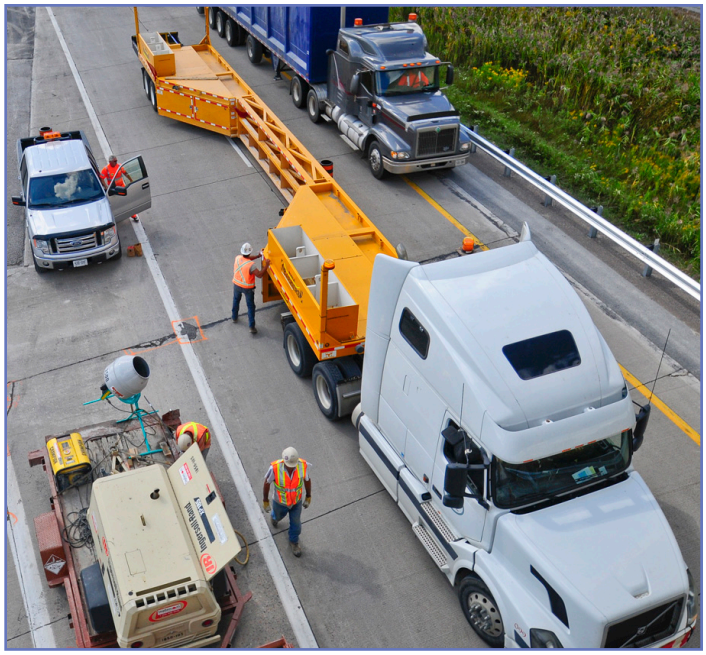
The mobile unit can be deployed in minutes and alleviates the need for road crews to use Temporary Concrete Barrier (TCB), allowing them to finish road work and re-open a highway lane in less time; an important factor as Highway 115 has a peak daily traffic average of 16,699.

The mobile work zone barrier increases the safety of the maintenance and construction crews and is customizable to suit the job site. By adding panels, the mobile barrier can be expanded from 13 to 31 metres in length. Other options available to customize the mobile work zone barrier include adding one or more of the following: Portable Variable Message Sign, speed detection device, portable generator, lighting, rear wheel steerable axle, and privacy barrier. The unit meets U.S. National Cooperative Highway Research Program 350 TL-3 crash test requirements.

A presentation about mobile work zone barriers at the 2010 Annual Conference of the Transportation Research Board meeting in Washington brought this innovation to MTO's attention. After some initial investigation, MTO decided to trial a mobile unit on the Highway 115 project as an alternative to TCB.

The contract for the Highway 115 project was advertised with two options. Option A specified the use of TCB for all full and partial depth concrete repair areas; while Option B specified the use of a mobile unit for partial depth repairs and TCB used only at full depth areas. When the competition closed, bids for the Option B came in priced about one quarter less when compared to average bids for Option A.

The mobile unit performed extremely well in providing a safe area for workers and was positively received by other external agencies such as Ministry of Labour and Ontario >



A mobile work zone barrier being moved into place for Highway 115 road work.

Road work takes place on Highway 115 while traffic moves safely along the other side of the mobile work zone barrier.

Innovative Mobile Work Zone Barrier on Highway 115 Project, *continued*

Provincial Police. Once the project started, Tyler Graham, MTO Contract Administrator on the Highway 115 trial, observed, "It was readily apparent that the mobile work zone barrier was very time effective… [The construction crew] easily adapted to working behind it and felt very confident in the level of protection it provided." In addition, a Change Proposal was submitted by the Contractor to eliminate almost all of the remaining TCB and use the mobile work zone barrier in its place. This Change Proposal saved an additional $80,000 from the original winning bid.

Due to the use of the mobile work zone barrier on the Highway 115 project, the Contractor's schedule was advanced. Repair work, saw cutting, concrete removal, installation of dowels, placement of concrete, and curing were all done as a single operation.

Future MTO applications using the mobile traffic barrier are expected due to the trial's positive outcomes. Potential uses for the device are numerous and could include providing work zone barriers for pothole filling; crack sealing; pavement testing; bridge repairs, investigations, and washing; accident scene investigations and cleanup; guide rail and barrier repairs; illumination repairs and maintenance; and, pre-engineering activities. •

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Listen to audio interviews on the MTO Website:
Interview 1 (1:49 min) and Interview 2 (1:44 min) with Darren Waters, Senior Project Engineer, about the trial while it was underway.

Transcripts for both interviews can be located here: Interview 1 and Interview 2.