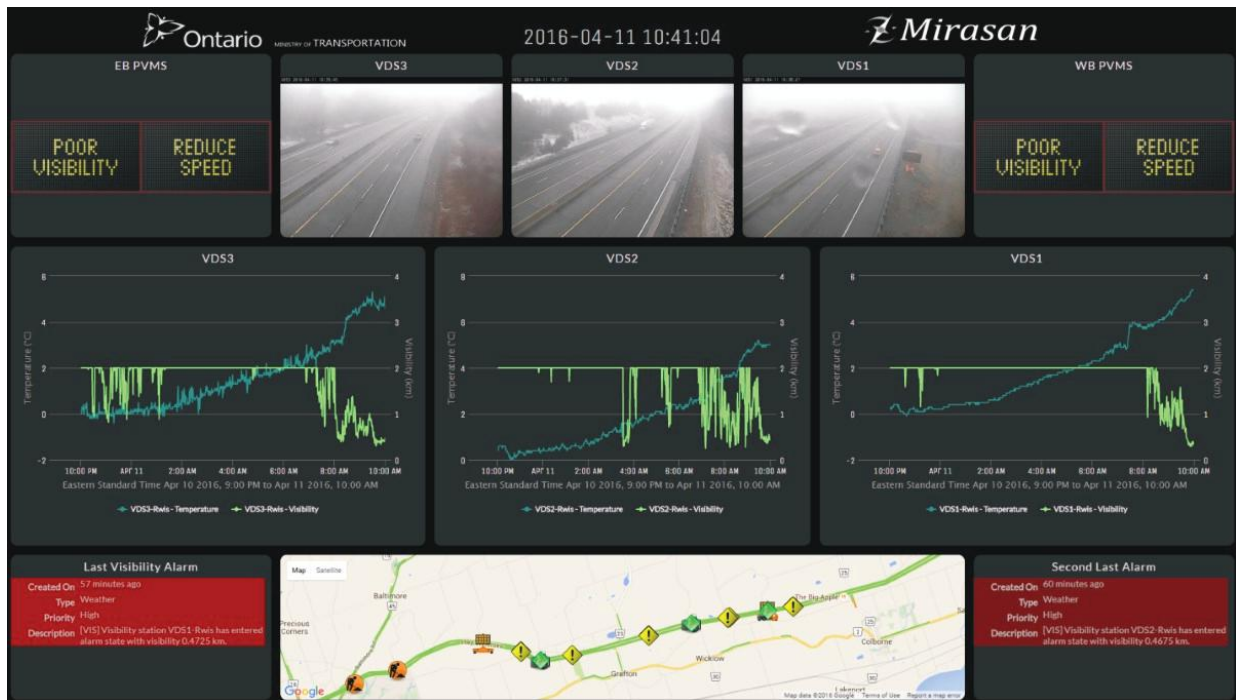




## MTO Deployments Visibility Warning System – MTO

Transnomis Solutions is in a Design-Build-Maintain-Operate consortium that provides the Ministry a visibility warning system on a section of Highway 401 between Cobourg and Colborne, which is prone to fog and white-out conditions.

The system integrates with weather stations. Should poor visibility be detected, it activates a message on the PVMSs, warning flashers, swing signs and sends out email notification to MTO staff. The system has been running with virtually no manual intervention since January 2016.



*Dashboard display setup for the Visibility Warning System while warning system was activated*

### Traffic Device Information System

In order to manage traffic during the Pan Am Games effectively, especially those on the Game Route Network, the Ministry needs a system that can seamlessly integrate data from all municipalities involved. They also require data from new technologies and systems, such as video analytics. The TDIS is a pilot system that showcases the value and importance of such integration.

The TDIS integrates data from a large number of open and private data sources, from all three levels of governments, police forces, transit authorities, and third party data providers. Below is a list of data sources that the TDIS integrates with:



## Live Streaming Video

- MTO
  - Downsview TOC
  - Burlington TOC
  - London TOC
- City of Toronto
- York Region



## Fleet Vehicle Locations

- TTC buses and streetcars
- York Region Transit and Viva buses
- GO Transit trains



## Weather

- Environment Canada
- US National Weather Service
- WxTiles free weather map



## Planned & Unplanned Events

- MTO TRIS System
- Toronto Transportation
- TTC Service Alerts
- Toronto Special Events
- York Region
- York Regional Police Motor Vehicle Collisions
- Ontario Provincial Police Twitter Feed
- MASAS – Power outages, forest fires, weather alerts, etc.
- TrafficVision™ video analytics system
- GreenOwl Mobile (issues reported by its mobile app users)
- Michigan Department of Transportation



## Traffic Data

- Road segment speeds derived from TTC and YRT buses
- MTO vehicle detector stations
- Travel times from
  - Google
  - TomTom



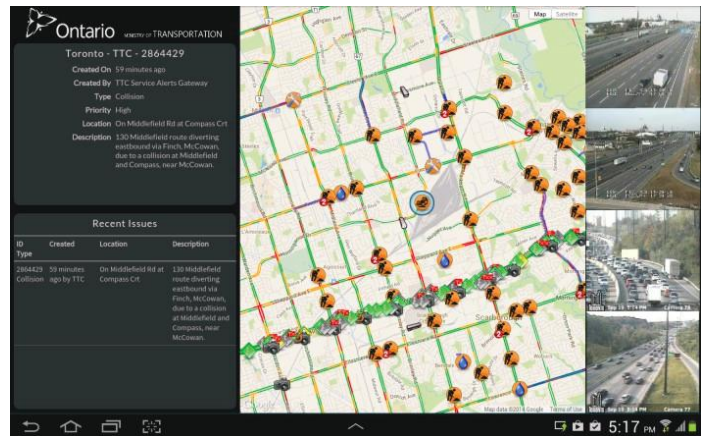
## Wait Times

- Canadian Border Services Agency
- US Customs and Border Protection
- MTO-MDOT Border Advisory System
- CATSA – Airport security wait times



**Dashboard display in MTO Downsview TOC showing travel times, the latest unplanned issues, and nearby traffic cameras. Formatted for a large 3x2 1080p display wall**

With Mirasan, operators in the Downview TOC can look up information from any of the above system with a few mouse clicks. Since the amount of data and information in the system can be overwhelming, Mirasan has a dashboard feature that summarizes the most relevant information at the moment. The display can be viewed on screens as big as a control room display wall and as small as a tablet on the manager's desk.



**Dashboard display on a Samsung tablet showing the latest unplanned issues and nearby traffic cameras**

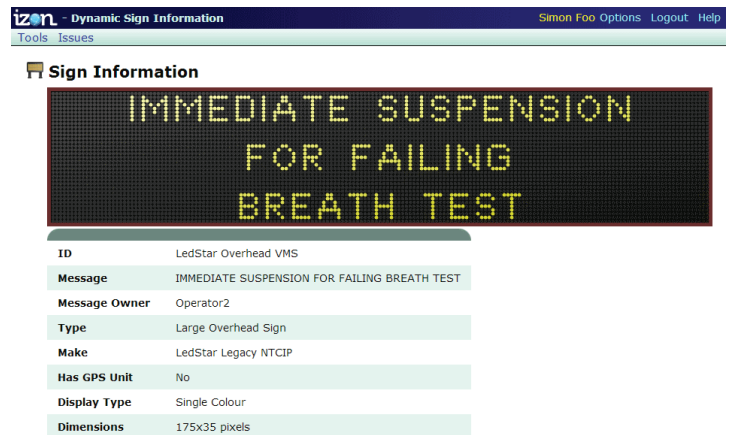
## IZ-ON Maintenance Management System

MTO's West Region Traffic Operations Centre (WRTOC) in London, Ontario manages all traffic operations from west of Milton to Sarnia and Windsor. It oversees the operation of:

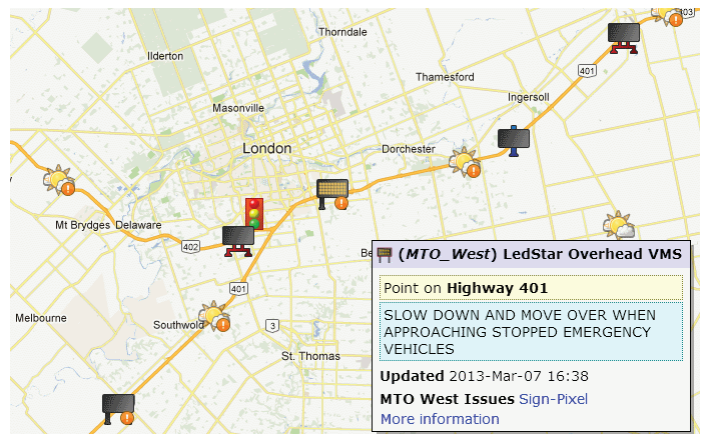
- 33 portable variable message signs,
- 6 permanent pole-mounted message signs
- 1 large overhead message sign
- 6 portable trailer cameras
- 63 pole-mounted cameras.

The traffic operations center uses the previous generation software, branded "IZ-ON", to track the locations of the portable signs and cameras as they are used to manage traffic during construction projects.

The software allows the control room operator to change messages on the signs, control the pan-tilt-zoom of the portable cameras, and start or schedule recording of the cameras. The software also detects and logs issues detected on the signs, such as communications failures and pixel failures. The operator can log work performed on the sign, and attach and associate files to any entities on the map.



**A pixel-by-pixel preview of London's large overhead sign**



**MTO's West Region Traffic Operations Centre (WRTOC)**