



Bringing the City of Ottawa Transportation System Management Strategy to Life!



Chris Brinkmann, P.Eng.
Philippe Landry, P. Eng.

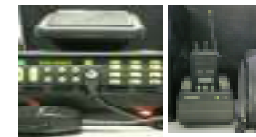
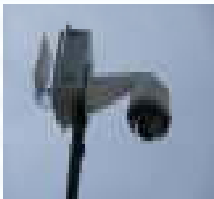
ITS Annual Conference
May 2013

TSM Vision

The City's TSM vision is to provide residents and visitor's to the nation's capital with sustainable state of the art transportation management and traveller information systems that supply safe, reliable and accurate information in a timely and cost effective manner for all modes of travel.

Traffic Operations and Management Centre

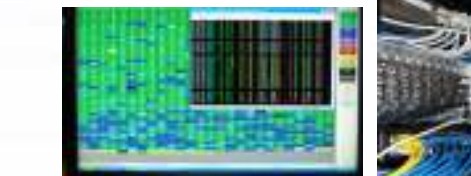
22 monitors ,
rotating between
200 traffic
monitoring cameras



Dispatch
maintenance
crews and
inform TIMG
partners of
incidents

Dedicated media
call in phone

Monitoring Ottawa
Police collision
reporting system



Traffic System Software
controlling 1106 signals
for timing and monitoring

National Traffic Signal Report Card Results

- The National Transportation Operations Coalition (NTOC) conducted a North America wide survey in 2012
- Measure of how well traffic signals are installed, maintained and operated
- **Ottawa “B”**
- Canada “D”
- North America “D-”

National Traffic Signal Report Card 2012	
Management	D
Traffic Signal Operations	C
Signal Timing Practices	C
Traffic Monitoring and Data Collection	F
Maintenance	C
OVERALL	D+

TSM Strategy 2012 and Beyond

- Embarking on a new TSM Strategy
- Existing systems well placed to evolve and take advantage of new technologies
- Multi modal Traveller Information System (TIS) - Cornerstone of the new TSM strategy
- One-Stop-Shop TIS for all modes of travel in the National Capital Region
- Pursuing a transportation system worthy of a Capital City
- Open to collaborating with private sector & academia

TSM Strategy Action Plan

To implement and sustain the long term TSM strategies, an action plan was developed comprising of the following key emphasis and focus areas:

- Advance Traffic Management System (ATMS);
- Traveller Information Services (TIS); and,
- TSM Collaboration, Innovation and Technology Solutions.

TSM Strategy Action Plan

1. Emphasis Area

Advance Traffic Management System (ATMS)

Focus Areas

- Pedestrian
- Cycling
- Transit
- Traffic Management Centre
- Traffic Control System
- Traffic Signal and Camera Infrastructure

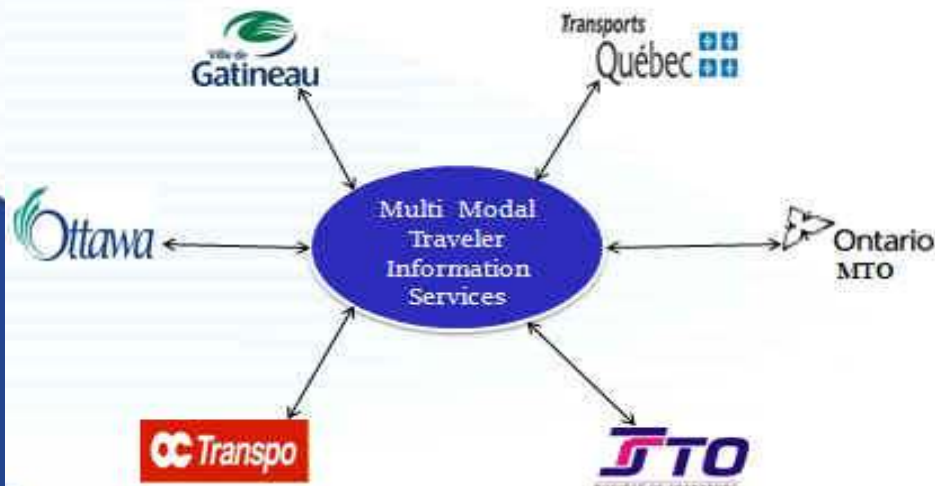
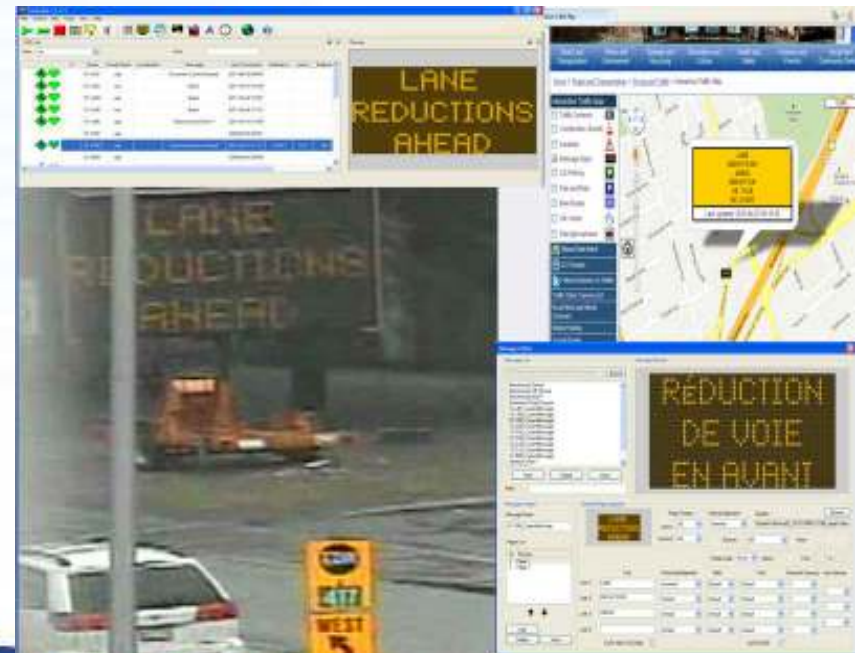


2. Emphasis Area

Traveller Information Services (TIS)

Focus Areas

- Interactive Traveller Information System
- Enhanced Incident Management Program
- National Capital Region Integrated Traveller Information System



TSM Strategy Action Plan

3. Emphasis Area

TSM Collaboration, Innovation and Technology Solutions

Focus Areas

- Collaboration with External Stakeholders
- Innovative TSM Technologies and Services



MINISTRY OF TRANSPORTATION

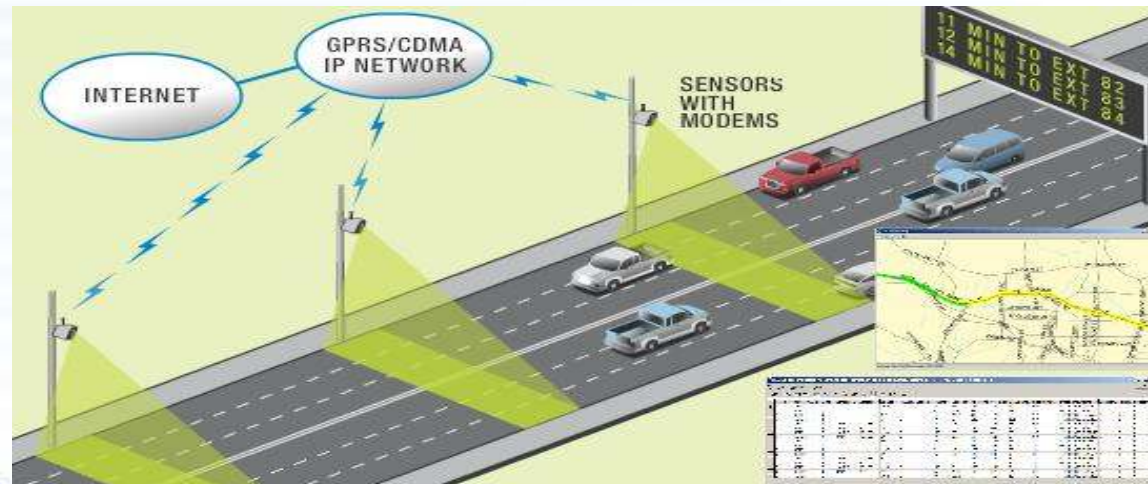


Everyone Makes a Mark



Ottawa Road 174 Proof of Concept

- The Ottawa Road 174 Proof of Concept is one example of how we are integrating various TSM measures to develop an Intelligent Transportation System Plan
- Ottawa Road 174 is City's only 100 km/h highway linking into Highway 417



ISS Canada

Intelligent Transportation System Plan

Existing Problem

Absence of incident, congestion and traveller information due to:

- Lack of traffic monitoring cameras
- Lack of traffic detection system
- Lack of driver information system
- Limited capacity on alternate routes in area

Intelligent Transportation System Plan

1. **Traffic Monitoring Camera System**

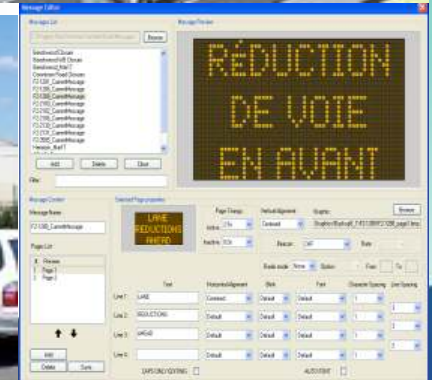
- Real-time monitoring and incident verification
- Available to the public thru the Interactive Traffic Website

2. **Vehicle Detection System**

- Roadside detectors capture traffic volumes, speed, occupancy,
- Detects incidents and congestion
- Provides Travel Time information

3. **Variable Message Signs (VMS)**

- Located in advance of Off-Ramps and also where warranted on arterials feeding RR174
- Display messages regarding road closures, lane blockage, construction info, travel times etc



Intelligent Transportation System Plan

4. **Advanced Traffic Management System (ATMS)**

- Connects all ITS devices in the field (Sensors, cameras, VMS units)
- Uses data from field sensors for incident and congestion detection
- Integrates with Emergency Detour Routes

5. **Traveller Information System (public facing)**

- Connected to ATMS Software
- Deliver info to the public via Interactive Traffic Website, phone, e-mail or other social media methods.











Existing Traveller Information & Incident Management Services



Interactive Traffic Website with real-time streaming traffic monitoring cameras, construction and special event road closures, etc.

Roadside variable message signs (VMS)



Twitter notifications of road closures due to incidents or major planned events



Roadside Emergency Detour Route Guidance





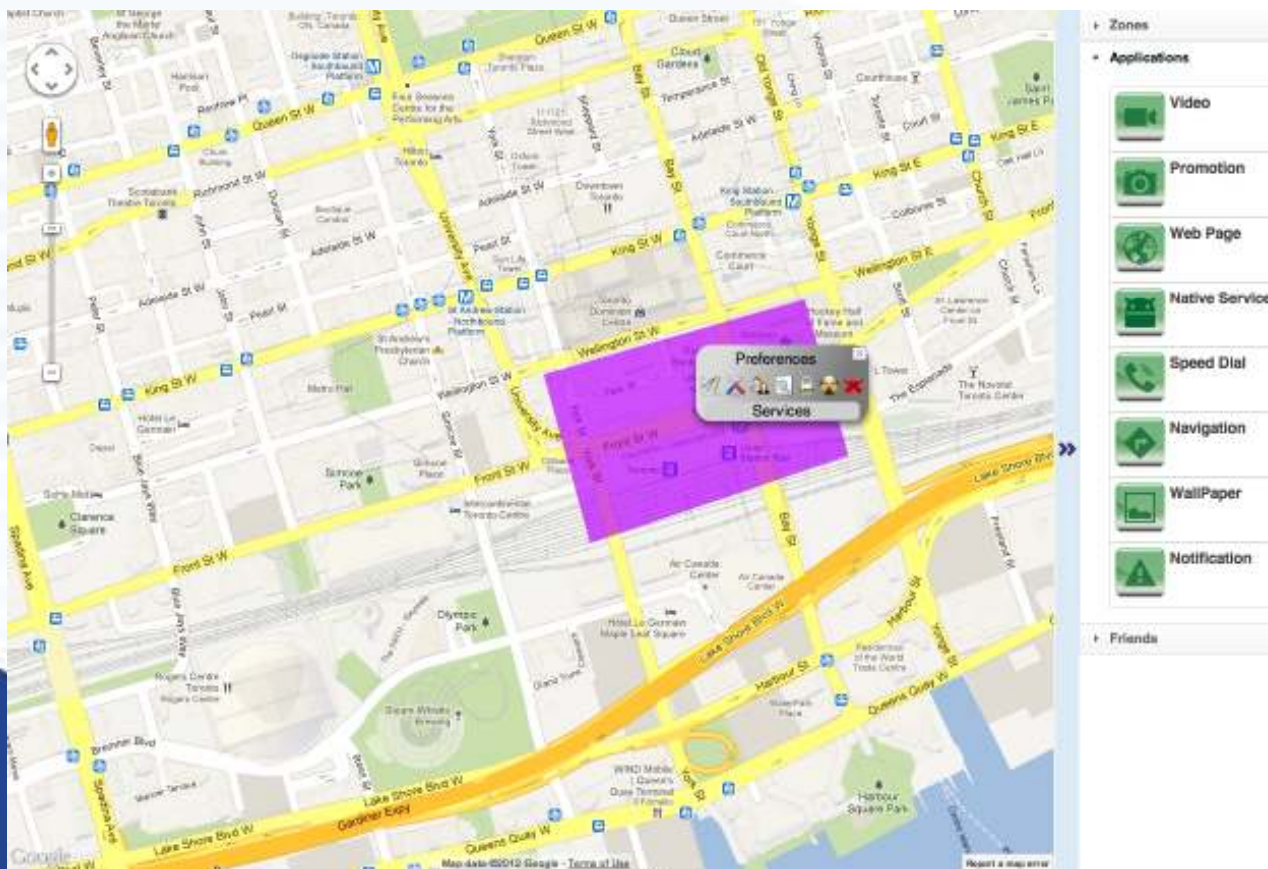
CAVALIS* Proof of Concept

A cost-effective, scalable middleware solution that provides real-time and relevant information to mobile devices. Leveraging existing infrastructure, CAVALIS optimizes road and traffic performance, saving traffic engineers, motorists and taxpayers time and money.



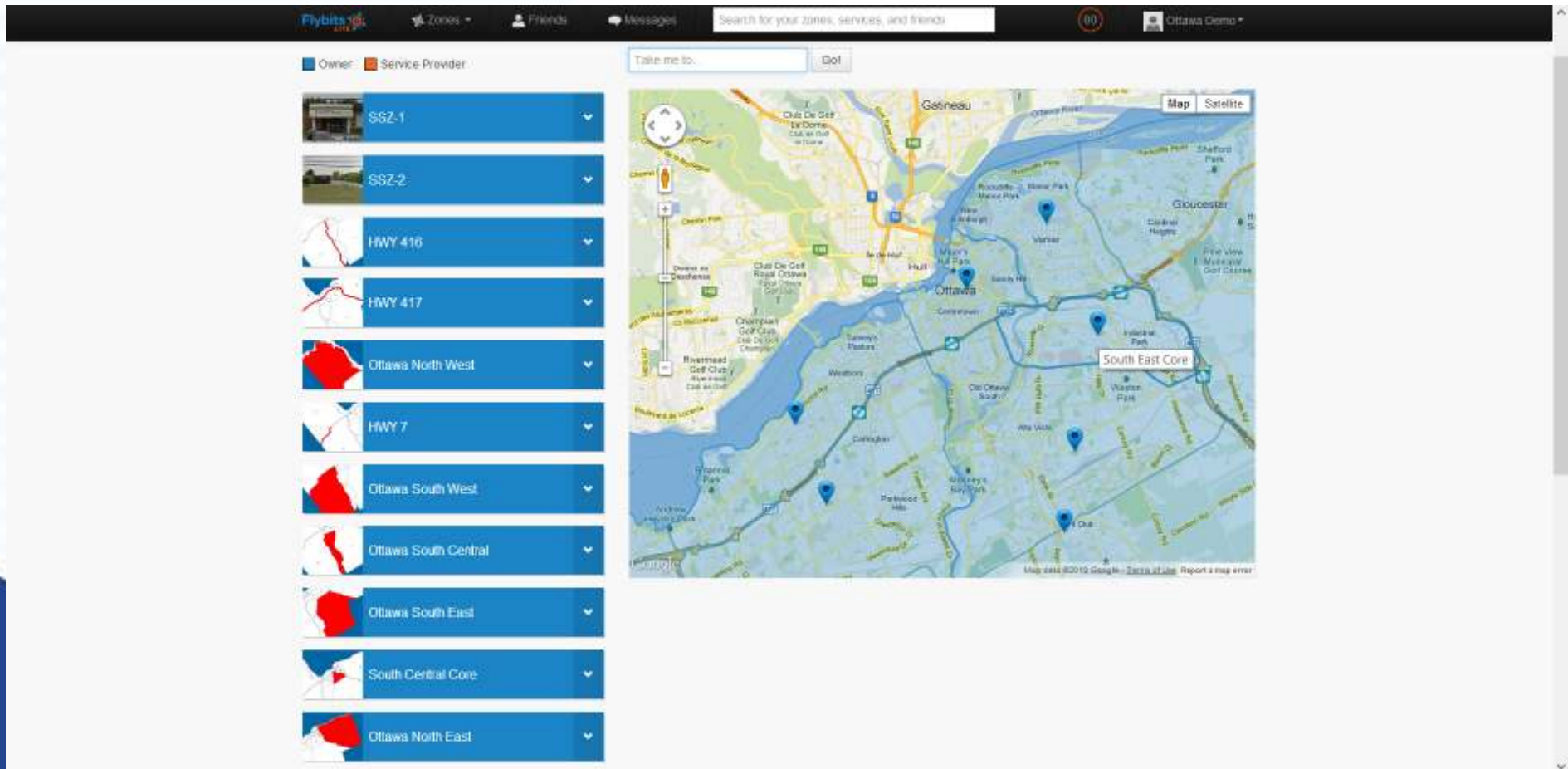
*Context-Aware Vehicular and Logistics Information Systems

The Traffic Management Console: Zone-Based Service Provisioning



- ✓ Send notifications
- ✓ Add videos
- ✓ Add service updates
- ✓ Add indoor navigation
- ✓ Add speed dial numbers
- ✓ Launch mobile applications
- ✓ Add new website services

The Traffic Management Console Ottawa Mobile Application



The screenshot displays the Traffic Management Console Ottawa Mobile Application interface. At the top, there is a navigation bar with the Flybits logo, a search bar, and icons for Zones, Friends, and Messages. Below the navigation bar, there are two tabs: "Owner" (selected) and "Service Provider".

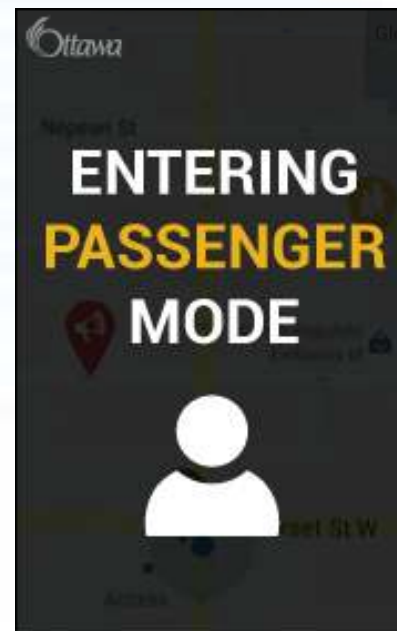
On the left side, there is a list of zones, each with a small map icon and a dropdown arrow. The zones listed are:

- SSZ-1
- SSZ-2
- HWY 416
- HWY 417
- Ottawa North West
- HWY 7
- Ottawa South West
- Ottawa South Central
- Ottawa South East
- South Central Core
- Ottawa North East

On the right side, there is a map of Ottawa showing various zones and roads. The map includes a search bar at the top with the text "Take me to:" and a "Go!" button. The map shows the Ottawa River, major roads, and several zones marked with blue pins. A "South East Core" zone is highlighted with a red box. The map also includes a compass, a scale bar, and a "Map | Satellite" toggle.

User Interface

- Avoid driver distraction
- Notifications are audible (TTS and STT)
- Frame displays camera based on zone

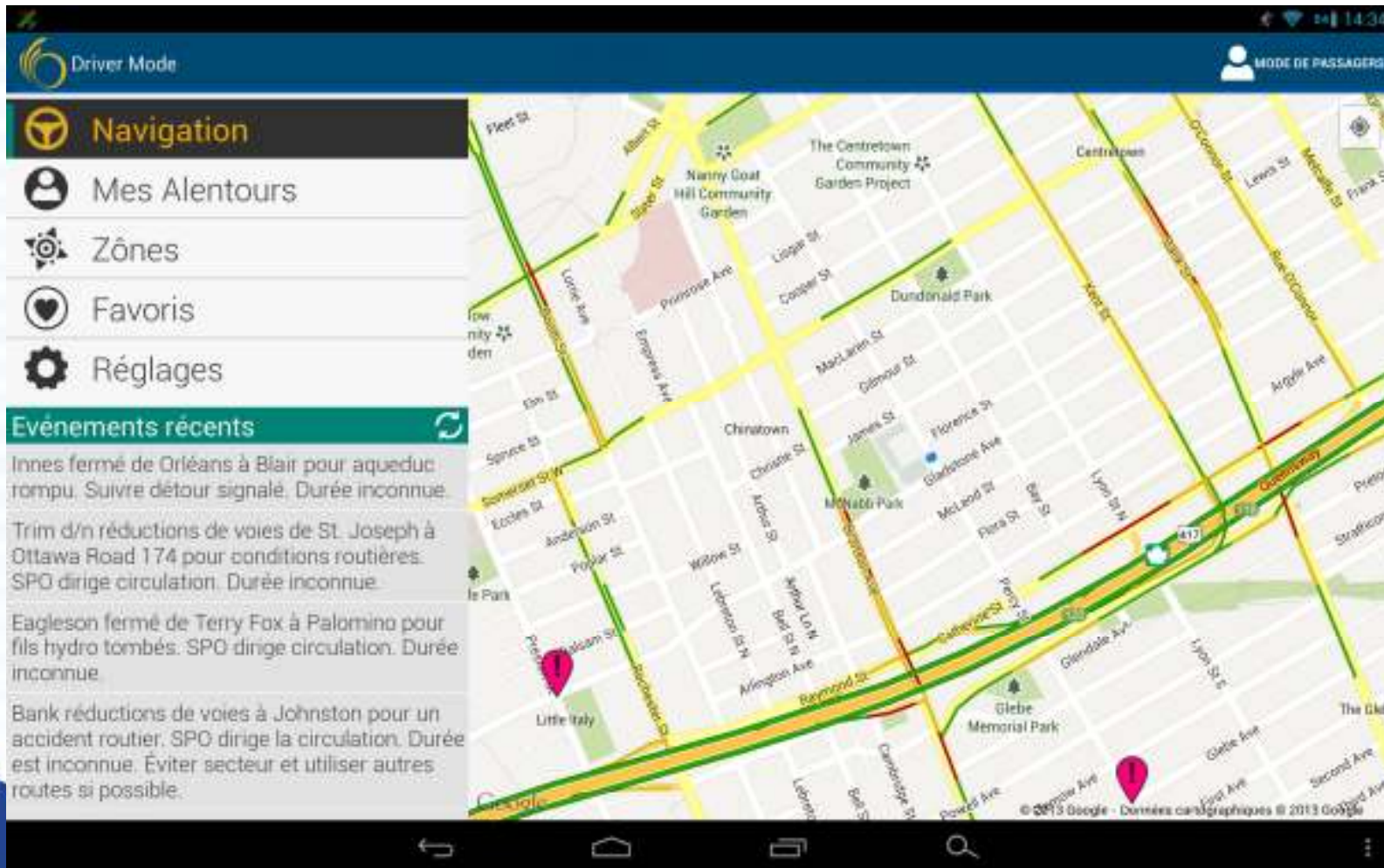


Driver Mode

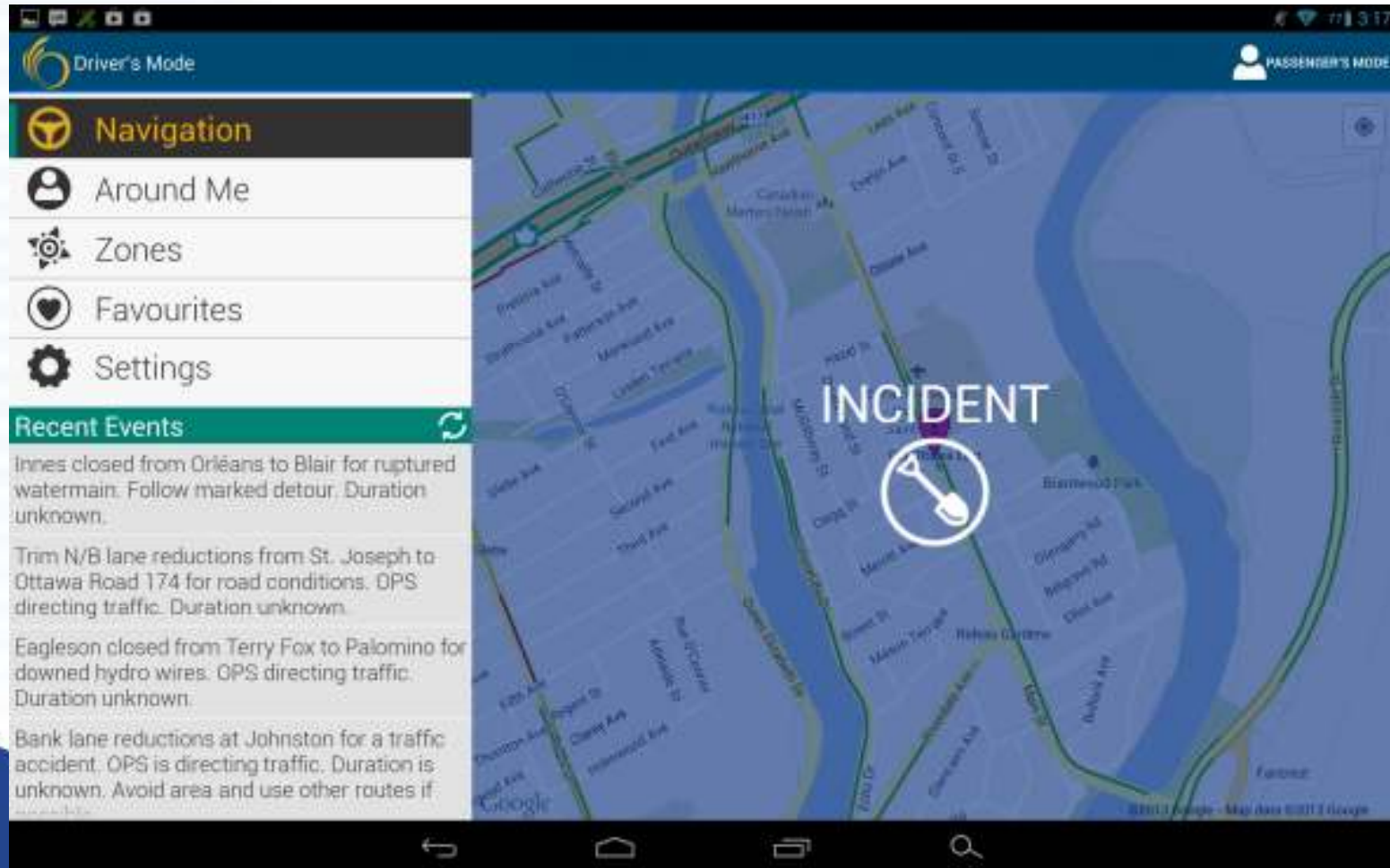


- While device is in driver mode, notifications become audible and overlay the default map display
- Prevents driver distraction
- Portrait and landscape

‘Navigation’ Feature



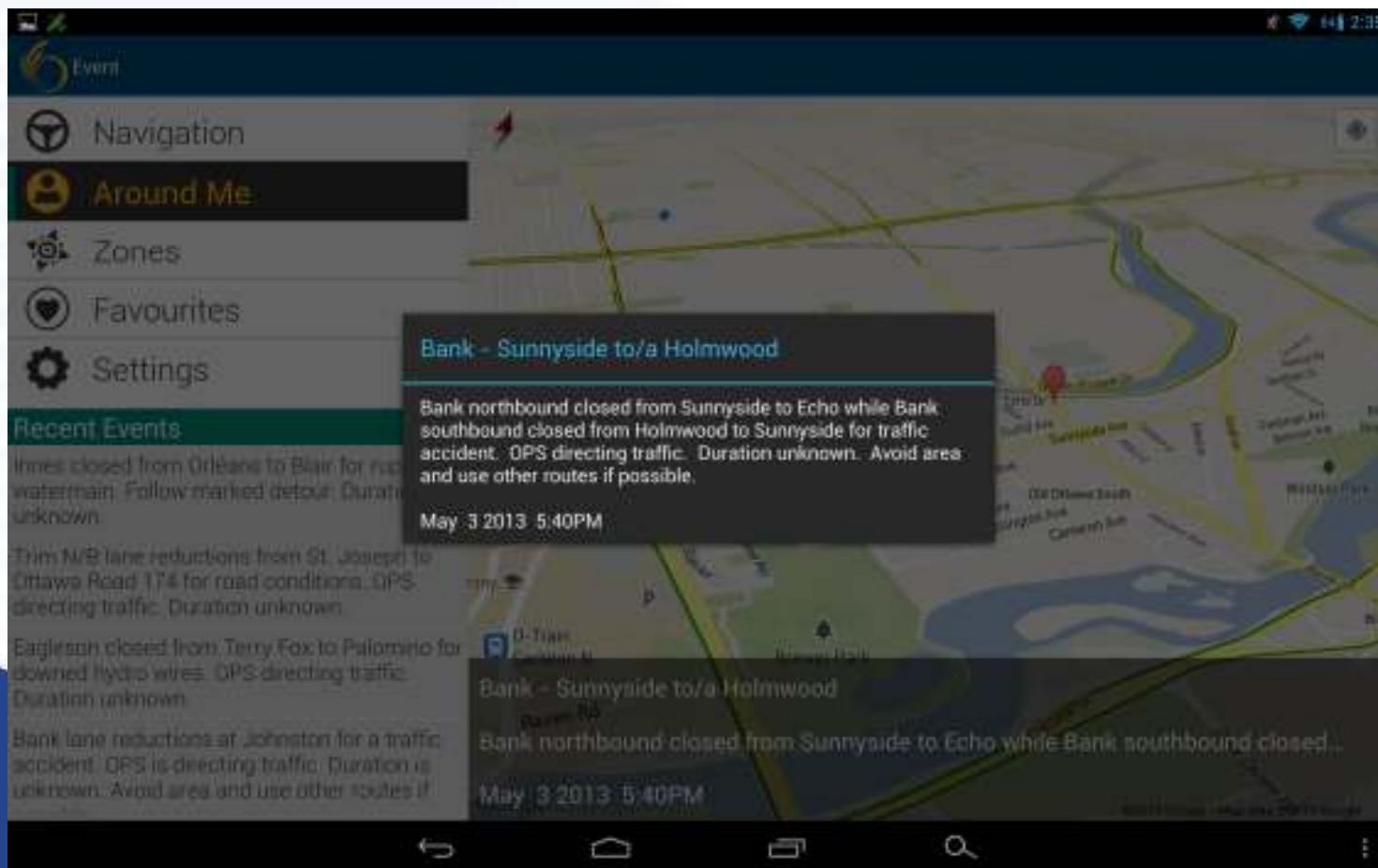
'Incident Notification' Feature



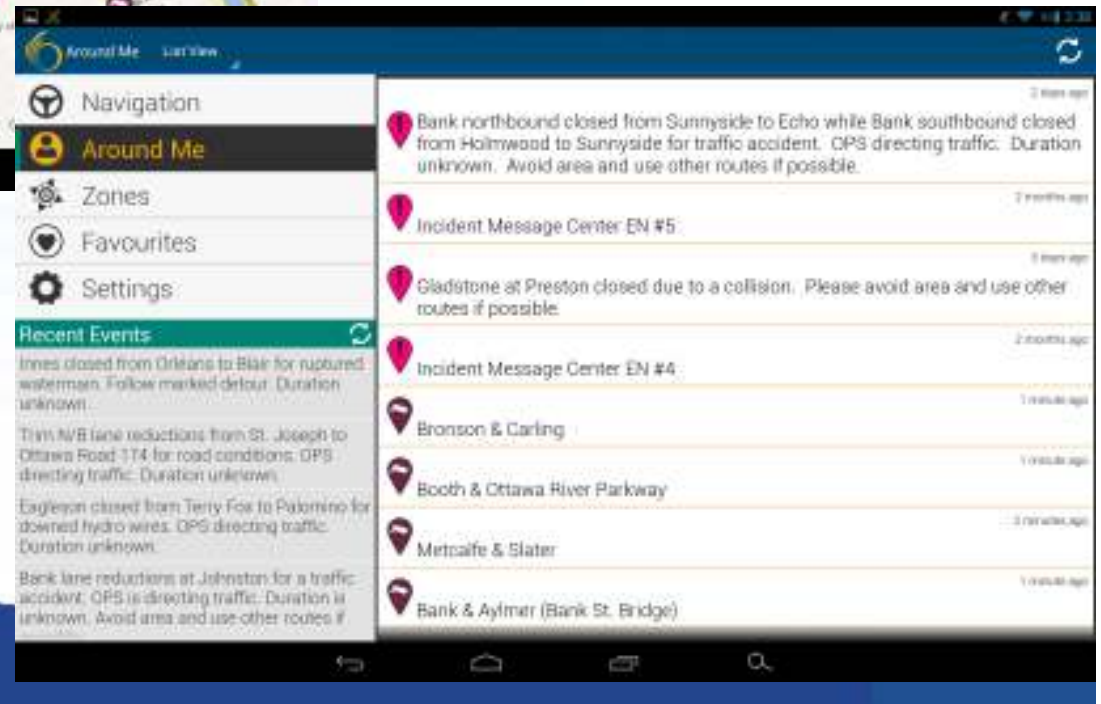
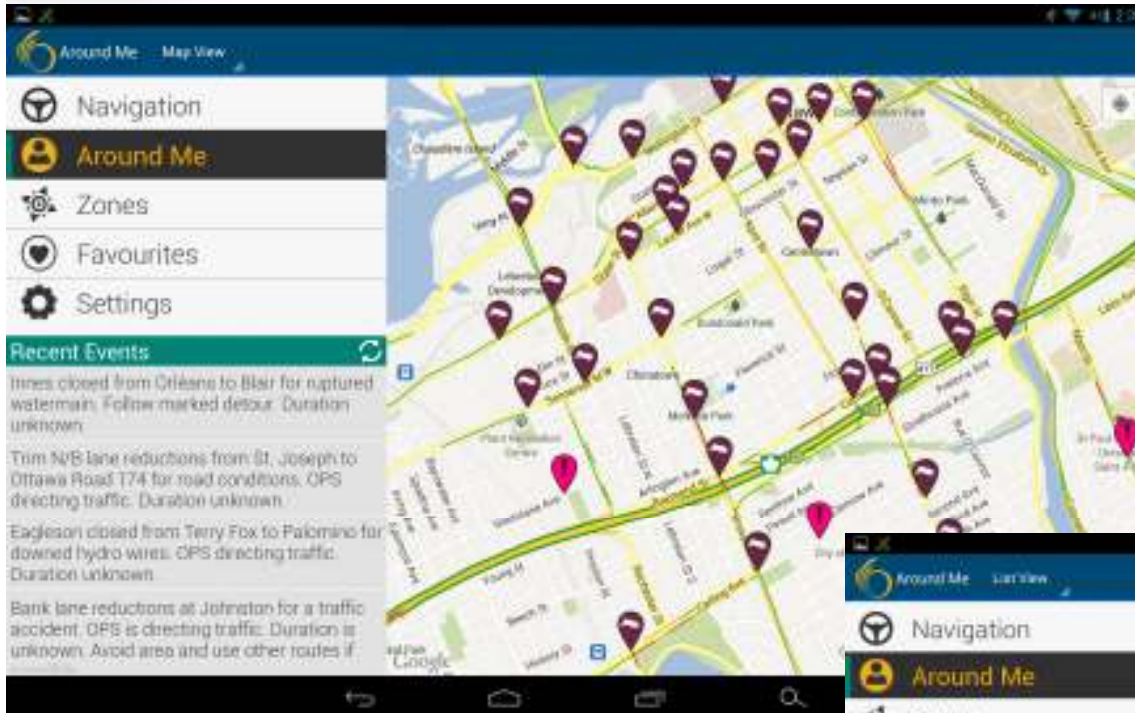


Detailed Notification

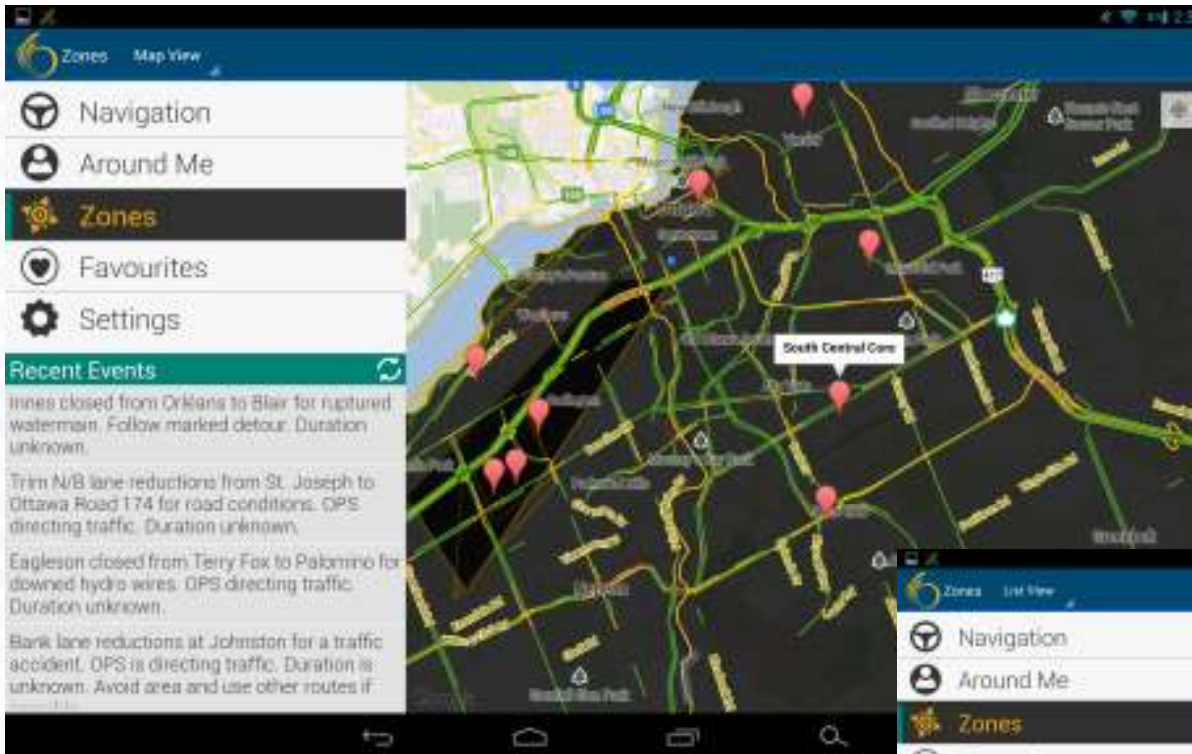
When in passenger mode, notification details are written on the screen. Text-to-speech is turned off.



'Around Me' Feature



'Zones' Feature





Traffic Camera Access

The screenshot displays a mobile application interface. At the top, the status bar shows signal strength, Wi-Fi, 4G, and the time 14:31. Below the status bar, the app header includes the logo and the text "Mes Alentours" and "Mode Liste". A navigation menu on the left contains the following items:

- Navigation (steering wheel icon)
- Mes Alentours** (person icon)
- Zônes (sun icon)
- Favoris (heart icon)
- Réglages (gear icon)

Below the menu is a section titled "Événements récents" with a refresh icon. It lists three recent events:

- Innes fermé de Orléans à Blair pour aqueduc rompu. Suivre détour signalé. Durée inconnue.
- Trim d/n réductions de voies de St. Joseph à Ottawa Road 174 pour conditions routières. SPO dirige circulation. Durée inconnue.
- Eagleson fermé de Terry Fox à Palomino pour fils hydro tombés. SPO dirige circulation. Durée inconnue.
- Bank réductions de voies à Johnston pour un accident routier. SPO dirige la circulation. Durée est inconnue. Éviter secteur et utiliser autres routes si possible.

The main content area on the right shows a live traffic camera feed of a city street intersection. In the foreground, there is a row of red bicycles parked on a sidewalk. In the background, a large stone monument with a statue on top is visible, along with multi-story buildings and a clear sky.

Questions?

Thank you