RECENT BORDER ADVISORY SYSTEM DEPLOYMENTS

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AGENDA

1. Canada
2. Michigan
3. San Diego
CANADA
BORDER ADVISORY MESSAGE SIGNS

CLICK TO ADD SUBTITLE
BORDER Advisory signing

Distinct border wait times for cars and trucks

Signing to guide vehicles to the appropriate lanes
BORDER Advisory signing

Location A
East of Merlin Rd (IC No. 63)
(NOT French Designated Area)

Distance from Border Crossings
Approx. 70 km
Approx. 45 min

Location B
East of Manning Road (IC No. 21)
(French Designated Area)

Distance from Border Crossings
Approx. 30 km
Approx. 25 min

Border Delays
- Windsor-Detroit Tunnel: 60 MIN
- Ambassador Bridge: 60 MIN
- Gordie Howe Iln. Bridge: 60 MIN

Border Delays / Délais-Frontière
- Tunnel Windsor-Detroit Tunnel
- Pont Ambassador Bridge
- Pont Int. Gordie Howe Int. Bridge
BLUETOOTH-BASED BORDER WAIT TIME MEASUREMENT

CLICK TO ADD SUBTITLE
BLUETOOTH travel Time Measurement

Technological Principles

▪ Bluetooth devices within moving vehicles regularly emit a unique identifier
▪ Readers installed at the roadside detect these identifiers as vehicles pass by
▪ Cloud-based analytics collect identifiers from the readers and use this data to compute real-time travel times along routes
▪ Computed travel times are provided to the subscribing agencies

Technical Standards

▪ Bluetooth Classic – increasingly rare
▪ Bluetooth Low Energy – now the prevalent standard

Current Industry Standard

▪ Reader can detect both Bluetooth Classic and Bluetooth Low Energy
▪ Reader supports 4G communication

*Bluetooth Reader in Solar Powered Configuration (per TPA North America)*
Border wait Time Measurement

Readers are placed along the route to the border and at exit from primary inspection

- Along the approaching highway; and, if applicable, along the primary route through the urban signalized network
- Capturing vehicles exiting from primary inspection on the US side of the bridge or tunnel

Specialized analytics differentiate passenger vehicles from commercial vehicles

- Trucks are speed-limited and have a different freeway travel time distribution than cars
- Trucks may follow a different route through inspection facilities
- These effects can be leveraged to provide independent travel time for cars and trucks
BORDER WAIT TIME PROCESSING, MONITORING, AND DISSEMINATION

CLICK TO ADD SUBTITLE
Border wait Time Measurement

Border Crossing Event processing enables MTO ATMS operators to manually override border delays or to close individual border crossings.

Border Wait Time processing collects real-time car and truck border route travel times from Bluetooth data sources, converts these values to border delays, and posts these messages to advisory signs.

COMPASS ATMS

Monitoring and Decision Support (Data Center/Cloud)

Field Traffic Master

Traffic Management (Edge)

Sensing and Advising Traffic (Endpoints)

Roadside Equipment/External Feeds
Border wait Time MANAGEMENT

Ministry TMC operators can manually override messaging in the event of incidents or border closures
Northern Crossing – International Bridge
Eastern Crossing – Blue Water Bridge
Detroit Crossing
Auto Response
Signs used for advance alerting
SAN DIEGO

ABC Project
Advancing Border Crossing
ABC Project Location and Overview
Two main elements for iNET™ Development

- Expansion and version upgrade of existing I-15 ICM for use on SR 905 and SR 11
- Replace iNET™ ICMS simulation with real-time information

- Border wait times and lane management
- Border dynamic-pricing
- Border lane management
SANDAG RBMS Concept
Leverage I-15 ICMS with Enhanced Capabilities

- En-route traveler information
- Pre-trip traveler information
- Automatically detects congestion events
- Dynamic Rerouting
- Regional arterial management

- Freeway coordinated adaptive ramp metering
- Signal coordination on arterials with freeway ramp metering
- Real-time multimodal decision support