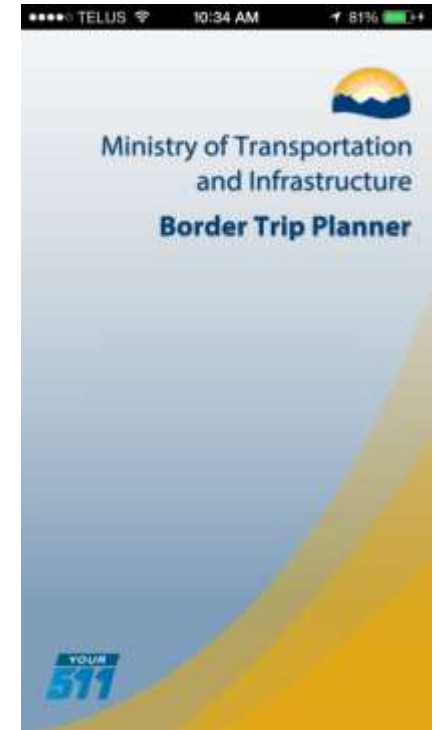# Traveler Information Smartphone Application

June 02, 2014

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Presentation Scope

- Application overview
- Data Fusion Engine

*iOS version shown

- # Background
  - – Funded from the border infrastructure program
  - – Part of a group of projects intended to improve flow of people and goods across the border

- # Objective
  - Initial goal is to improve information available for border trip planning
  - Architecture is scalable: can ingest any traffic data source
  - Can function as full point to point trip planner

*iOS version shown

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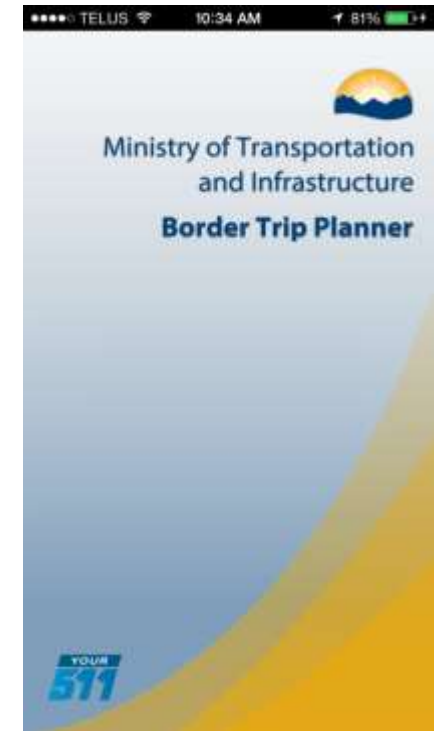
Application Purpose

- ## Provide mobile access point for:
  - ➤ Border crossing travel times for 24 distinct travel routes
  - ➤ Notification of travel delays and alerts for each route
  - ➤ Delivery of up-to-date traffic camera images for on-demand viewing

- Provide all of the above in a streamlined native application that is purpose-built for Apple iOS 5+ and Android 2.x and later
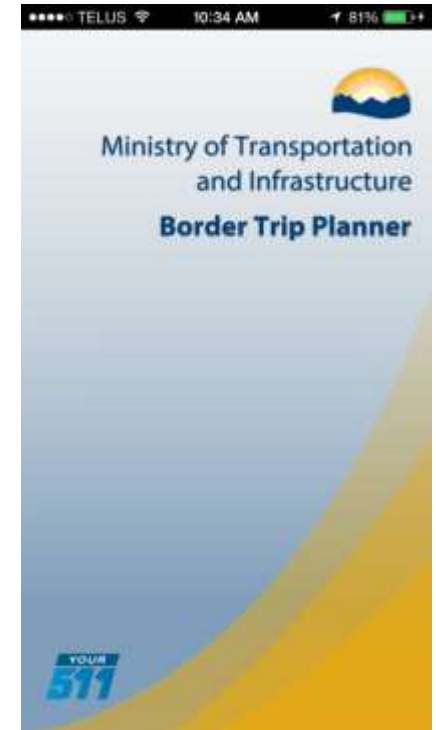

*iOS version shown

Data Sources

- ## Border ATIS

  - ➤ Estimated wait time at Peach Arch, Pacific Truck, Aldergrove, and Sumas
  - ➤ Derived from loop-based data

- ## Hwy 99-91 Travel Time

  - ➤ Travel time along Hwy 99 and 91 corridors

- ## Other Roadway Links

  - ➤ Google Traffic
  - ➤ Historical travel times
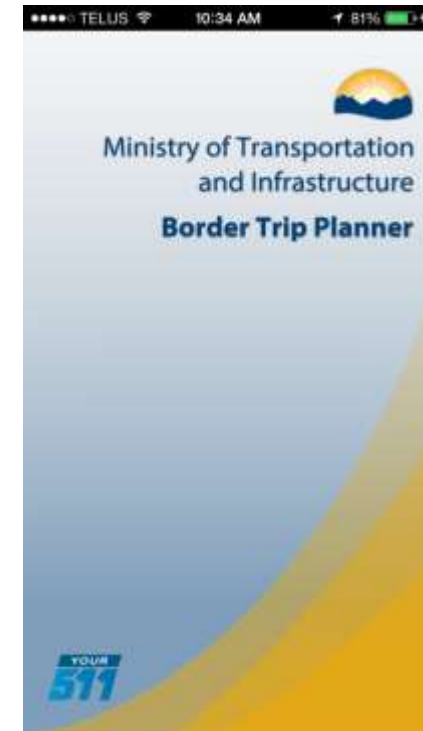
*iOS version shown

Driving Times

- Travel routes are grouped by trip origin (common, recognizable start points)
- Each trip origin contains several crossing destinations with associated travel times
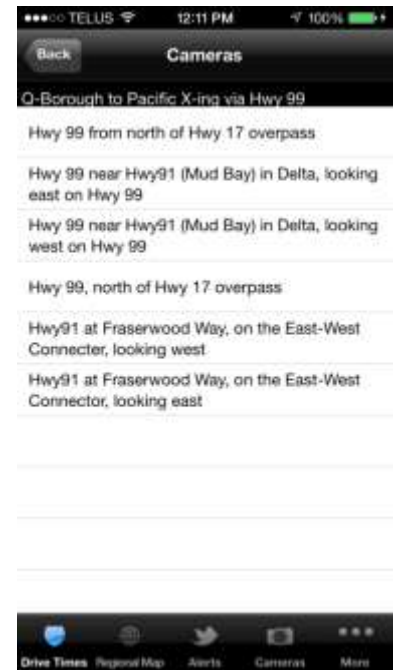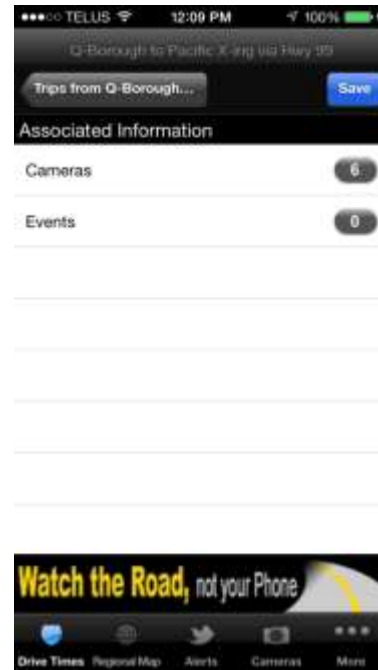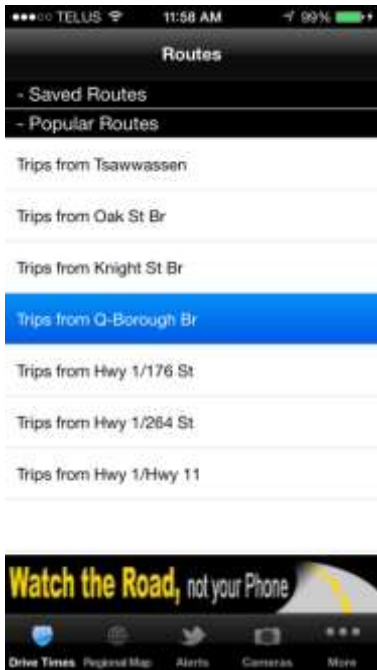
Regional Map

- Color-coded traffic flow displayed on map
- Tapping on specific event/camera triggers display of latest image
- Customizable legend provided for ease-of-use

Alerts

- Traffic alerts for each crossing link to Twitter accounts regularly-updated by Canada Border Services Agency (CBSA)

- Alerts can be configured to point to other regularly-updated data sources
- Specific crossings can be set to "Favourite" to allow for Push notifications on smartphone UI

Cameras

- Cameras are grouped according to highways and roadways
- Tapping on specific highway/roadway expands associated camera list
- Tapping on specific camera description triggers display of latest image from that camera

- Current configuration pulls images from DriveBC
- Image source can be configured on the back-end to provide images from any database

Ministry of Transportation and Infrastructure
Border Trip Planner Smartphone Application
Application Functionality – Preferences

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Preferences

- User preferences allow toggles for:
  - ➢ Device GPS utilization
  - ➢ Display of camera icons on Regional Map
  - ➢ Display of congestion data on Regional Map
  - ➢ Metric / US Customary units

- Coverage areas can be set via geo-location (using GPS) or manually specified
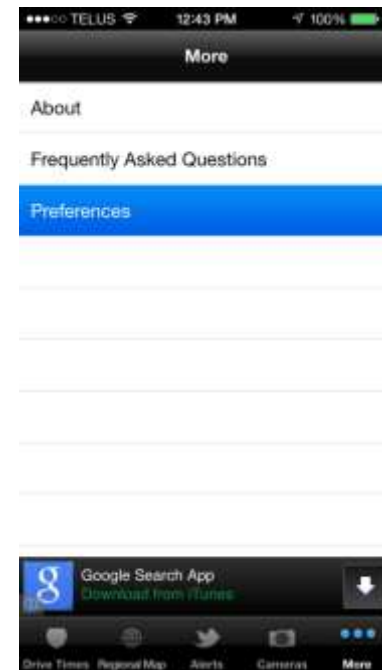
Data Fusion Engine

- Developed by ICX Transportation Group

- Used by a number of transportation agencies in North America

- DFE is a sophisticated tool for collection, integration, and dissemination of traffic data sets

- Collection
  - Gathering
  - Validating
  - Converting

- Fusion
  - Rules based system for combining similar data from multiple sources
  - Can be applied to any data type
    - Link(roadway sensor) data
    - Event data
  - Produces a derivative output that is one of
    - A combined view of the inputs
    - A unified view of the best of the inputs

- Link Data
  - Speed/Travel Times
  - Sources: field detectors, probe sources, aggregate providers
- Events
  - Roadway (via operators)
    - Construction/Incidents/Special Events
  - Weather Data (RWIS and Forecast)
    - Automated interfaces to NWS
  - Police CAD Reports
- Camera Metadata

The system includes a number of offline map/GIS tools to support maintenance and operations.

- Link Tools

- Route Tools

- Data Tools

- iOS and Android Supported

- Native UI controls (notably Map)

- Server-side controls provide greater flexibility in content changes/updates

- Resulting data validated to be very accurate

- Interface is very popular with test group; described as "very useful"

- Currently being tested by MoTI

- Design team is working on rollout roadmap for testing among broader audience