

Border wait time system validation & calibration

Summary scope of work

Introduction

The IMTC Dynamic Border Management project includes three tasks for improving existing datasets for enhanced border performance: (1) Border area simulation modeling; (2) A Cascade Gateway RFID pilot project; and (3) Integrated border wait time validation. This scope of work relates to the third task, developing a shared methodology to periodically validate and calibrate advanced traveler information systems (ATIS) managed southbound by B.C. Ministry of Transportation (BCMOT) and northbound by WA State Department of Transportation (WSDOT).

Initial concepts

Initial discussions with project advisory team members looked at ways to make ongoing validation activities less labor-intensive than the effort undertaken in 2013 to validate Pacific Highway northbound wait times. Ideas included both developing a macro to automate Canada Border Services Agency (CBSA) data preparation; or using a Bluetooth wait time system to provide an ongoing comparison between the actual¹ wait times and the current² wait times calculated by WSDOT and BCMOT systems.

Benefits of a Bluetooth system

Installing a secondary wait time measure at a port-of-entry has the following benefits:

- Provides an actual¹ (vs. current²) value to compare the results of both systems.
- Provides a value in both directions that can be compared.
- Provides CBSA and U.S. Customs and Border Protection (CBP) a more appropriate measure of system performance to their headquarters compared to the current estimate which is best for traveler information.
- An additional and distinct data set to include in the Cascade Gateway Border Data Warehouse.

Proposed scope of work

The following scope of work describes initial efforts to be undertaken as part of the Dynamic Border Management project:

1. Estimate costs for:

- Readers
- Annual data service
- Wi-fi coverage
- What would the costs be if WSDOT could do the installation and maintain the data internally?

¹ **Actual** = The actual wait time experienced by a specific vehicle, as measured by a device such as Bluetooth, that makes a timestamp when a device passes by two points and calculates the time it took to travel between them.

² **Current** = An estimation of the wait time experienced by approaching vehicles, based on service rates and the length of the queue. This value is displayed to show oncoming traffic what the predicted wait will be for them, as compared to a value of the car that just crossed the border ahead of them.

2. Complete a feasibility analysis:

- Is it possible to use just two Bluetooth readers per crossing, per direction (four readers total) at Pacific Highway Port-of-Entry, or will three be needed to filter out NEXUS traffic from results?
- Would it be possible for the Bluetooth readers at CBP and CBSA booths to be installed and powered by each respective inspection agency?
- What are the wi-fi requirements for a system at the border, given signal strength variation?
- What agency/organization would be responsible for ongoing maintenance/service charges?
- What is the cost to incorporate the resulting data feed into the Cascade Gateway Border Data Warehouse?

Next steps

WCOG will work with members of the advisory team to clarify the types of assistance available from the inspection agencies for installation, power, and connectivity.

WCOG will initiate a cost estimate for installation and integrating a new feed into the Cascade Gateway Border Data Warehouse.

Partnering agencies have been asked to explore their own cost estimates as well.

Another summary document will be prepared in December to update work to date.

For more information

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Initial ideas for installation

The Pacific Highway is the preferred location for this initial effort. The proposal would require a minimum of four Bluetooth readers, one at the primary booths of each port-of-entry facility, and a second reader downstream at a logical pre-queue-end location. The location downstream will be determined based on utility access (power, wi-fi), average end of queue location, optimal set up for collecting signals from passenger vehicle traffic (note: signals can be collected from NEXUS vehicles at this location – as long as they can be filtered out by the reader at the primary booth).



Project Advisory Team

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