# Improving Border Crossing Planning and Decision-Making in Whatcom County, Washington, and British Columbia, Canada

## Overview

In 2000, the Washington Department of Transportation (WSDOT) deployed the Whatcom County region's first border wait time system, designed to address large vehicle wait time inconsistencies between the Peace Arch/Douglas and Pacific Highway Ports-of-Entry, situated less than one mile apart.

Whatcom County, located in northwestern Washington State, borders the Canadian province of British Columbia (BC). In 2018, there were over 1.1 million commercial vehicles crossing the border between Whatcom County and the Lower Mainland of BC. Freight movement is essential for economic development and involves high levels of trade across international borders. However, when there are heavy truck and car volumes moving through these border crossings, there can be high congestion levels.

Whatcom Council of Governments (WCOG) is the metropolitan planning organization for Whatcom County. Along with State, regional, and Canadian provincial partners, WCOG identified a need to improve the border wait times collection and reporting to inform travelers' decision-making, to ease congestion, and to support the region in more effective transportation planning and management. As these initiatives evolved, there have been ongoing opportunities to assess border congestion impacts on freight mobility.

Implementation of border wait time systems in Whatcom County and BC demonstrate how data-sharing across borders can improve transportation coordination, planning, and decision-making, including for freight. WCOG plays a critical role helping to compile and share wait time information across the U.S./Canada border.



**Image courtesy of the Whatcom Council of Governments.**

## Key Accomplishments

- Deployment of border wait time technologies in the northwestern Washington State/southern British Columbia region has improved transportation coordination and management across international borders.

- Agencies in the region are using information captured from the border wait time deployments to support improved inspections planning/staffing, analyses, reporting, and transportation system operations/management.

- The deployment of border wait time systems in the region has helped to redirect trucks to ports with shorter wait times, benefitting overall transportation mobility.

WCOG is the lead agency for the International Mobility and Trade Corridor Program (IMTC), a binational coalition of public agencies supporting border crossing systems in the region. WCOG's members include seven cities in Whatcom County, the Port of Bellingham, and other regional entities. Although most border crossing technology implementation and management is under the IMTC purview, WCOG supports coordination and outreach to assist IMTC in implementing these initiatives.

## Implementation Approach

In 2000, WSDOT's installed the region's first U.S.-Canada border wait time system on I-5 northbound lanes and WA State Route 543. This system used loop detector sensors to develop a vehicle wait time estimate and display the estimates on variable message signs (VMS) located on public roadways near the ports. The system purpose was to help distribute passenger traffic across the two ports to maximize available capacity.

Later, the system was expanded to include a southbound system (funded jointly by the Province of British Columbia, Transport Canada, and Federal Highway Administration's (FHWA) Coordinated Border Infrastructure (CBI) funds), as well as all four regional ports-of-entry, and to capture commercial vehicle border wait times.

Currently, only passenger vehicle wait times are displayed on the roadway VMS; commercial wait time estimates are available

from the Canadian Border Services Agency, British Columbia Ministry of Transport and Infrastructure (BCMOTI), and WSDOT for access by freight brokerages and dispatchers.

In 2005, WCOG began to develop a border wait time data archive to compile all data in a "one-stop shop." WCOG deployed the first archive in 2007 and completed a revised version in 2012. The initial deployment and revisions were funded by Transport Canada ($355,000), with additional funding support from FHWA ($100,000); WSDOT ($200,000); and BCMOTI ($55,000). The archive provides a portal to assist stakeholders, including the public, in accessing border wait time data. Using the archive, WCOG produces passenger and freight traffic reports for IMTC partner agencies and the public via the IMTC website. WCOG and its partners have also used the archive for trends analysis and performance measurement.

WCOG received FHWA and BCMOTI funding to update and expand the archive in 2020. WCOG aims to incorporate more commercial vehicle traffic information into the archive to improve border wait time reporting accuracy.

There is an ongoing need to ensure that border wait time systems data helps address the specific freight operations needs. For example, WCOG has found some apparent freight stakeholders limitations in using the information for dynamic freight routing. WCOG is actively working with freight industry partners, through forums such as IMTC, to improve how commercial vehicle operators can more effectively consume border wait time data.

## Outcomes and Results

Deployment of the border wait time systems and data archive has improved regional transportation coordination, as well as infrastructure and operations planning and decision-making.

For example, U.S. Customs and Border Protection (CBP) and the Canada Border Services Agency (CBSA) use border wait time data for inspections staffing analysis, reporting, and planning.

The archive provides a measuring tool for infrastructure investments impact on average border wait times, including for freight operations. Using wait time data in conjunction with other data sets, WCOG has conducted simulation modeling to analyze potential border crossing operational or infrastructure changes.

## Lessons Learned

**Unique characteristics of freight movement present challenges and opportunities for border wait time systems deployment.** For example, IMTC and WCOG are trying to understand better how border wait time data could inform dynamic freight routing through ports-of- entry.

**Technology deployments require a clear traceability framework to show how deliverables achieve desired outcomes.** WCOG developed a traceability matrix that incorporates a concise list of outcomes for all of its software deliverables, including the data archive. This matrix helped to ensure that the final product vision aligned with that of the developer's, decreasing the frequency of cost overruns and other challenges.

**Fostering buy-in from multiple partners is critical to deploying border wait time systems.** Highly tailored messaging shows the expected individual stakeholder benefits. Private sector freight stakeholders have needs, goals, and missions distinct from the public sector; public agencies need to understand these unique concerns and how the technology deployments can effectively addressed those interests.

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