Michigan Department of Transportation

Blue Water Bridge International Smart Freight Corridor Project

Project Description

The Blue Water Bridge International Smart Freight Corridor Project will implement a proof of concept (POC) of a smart corridor for truck-borne goods movement at the Blue Water Bridge (BWB) in Port Huron, Michigan, and the Port Huron Port of Entry (POE). The main goal of the smart corridor is to apply data-centered technologies to enable the unimpeded flow of information among commercial carriers, shipping companies, vehicles, border agencies, and infrastructure operators along a key international freight corridor in order to:

- ✓ **Increase predictability and reliability of freight travel/ delivery times**
- ✓ **Minimize border wait times, queuing and congestion**
- ✓ **Create efficiencies and rationalize resource allocation for border agencies and infrastructure operators**
- ✓ **Support timely response to disruptions/incidents on the BWB, at the Port Huron POE or on the I-94/I-69 corridor**

For this purpose, a smart freight corridor solution will be developed, which will include the following key features:

1. **Platform for trip declaration and planning**
2. **Information management infrastructure**
3. **Trip monitoring**
4. **Incident response**
5. **Analytics and reporting**

Current Conditions

Hours-long queues result in inefficiencies and significant greenhouse gases and particulate emissions in the Port Huron area (55 tons per year of PM2.5)

$398.2 billion → **$71.5 billion**

Value of goods movement across the **U.S.-Canada border in 2020**

Value of goods passing through the **BWB** – the most of any other U.S.-Canada land border

A **SMART Grant** Project

The project is funded by USDOT through a **Strengthening Mobility and Revolutionizing Transportation (SMART) Program Grant.**

Civic Partners:
- U.S. Customs and Border Protection
- Michigan State Police
- Motor Carrier Advisory Committee
- Council of the Great Lakes
- Canada U.S. Transportation Border Working Group

Community Partners:
- Commercial Carriers
- Local Truck Stops: Love's, Pilot
- Michigan Trucking Association
- American Trucking Association

Other Partners:
- Canada Border Services Agency
- Ontario Ministry of Transportation
- Ontario Vehicle Innovation Network
- Federal Bridge Corporation Limited
- Ontario Trucking Association

Stage 1

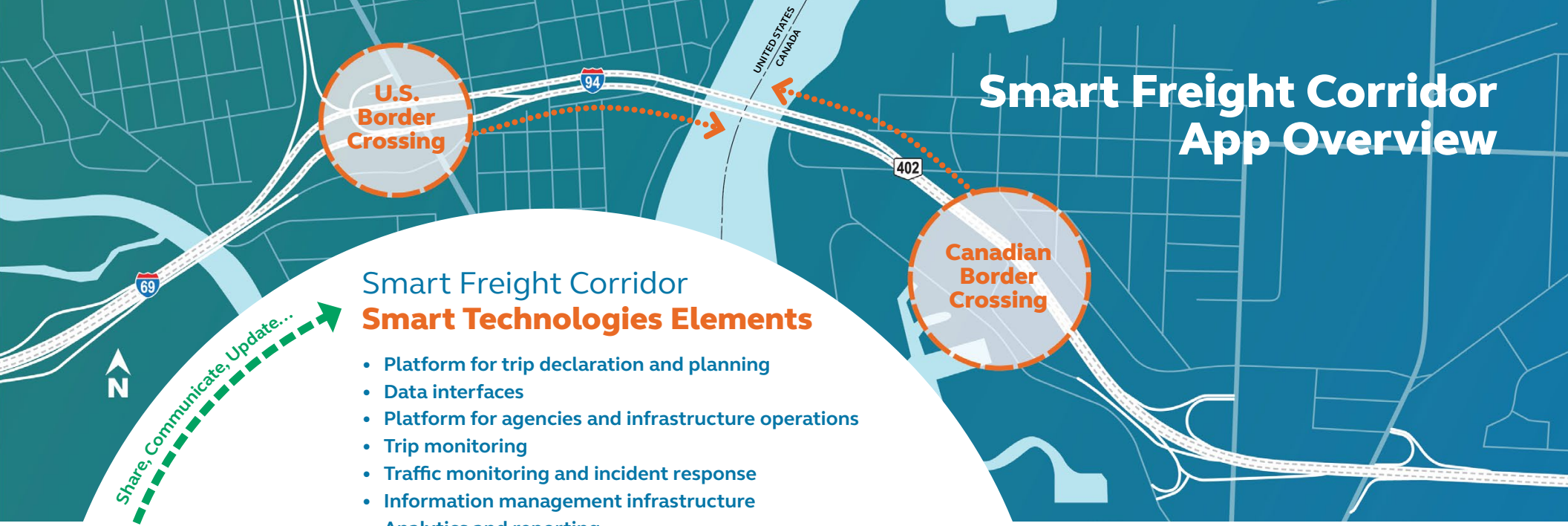
Work under **Stage 1** serves to optimize the user experience by understanding the needs and will develop a concept of operations to develop a **Smart Freight Corridor app.** Work will be organized into the following four tasks:

- **Task 1: Needs Assessment and Data and Processes**
- **Task 2: Concept of Operations**
- **Task 3: Development and Implementation of a POC**
- **Task 4: POC Evaluation and Future Implementation Program**

Looking Forward

The proposed solution can be rapidly extended to eastbound traffic (i.e., from the United States to Canada), and to similar bridge-constrained border crossings (i.e., Detroit, MI; Sault Ste. Marie, MI; International Falls, MN; Massena, NY), as well as to the busy truck crossings at Blaine, WA, and Sweetgrass, MT. This can spread congestion and emissions improvements quickly and efficiently.

Smart Freight Corridor App Overview



Smart Freight Corridor **Smart Technologies Elements**

- **Platform for trip declaration and planning**
- **Data interfaces**
- **Platform for agencies and infrastructure operations**
- **Trip monitoring**
- **Traffic monitoring and incident response**
- **Information management infrastructure**
- **Analytics and reporting**

Smart Freight Corridor **User Experience**

1. Users register for the service.
2. Through the trip planner, users schedule trips prior to their performance. Users input trip origin and destination, time of departure, any stops in between, and the platform returns estimated duration to destination and border crossing.
3. Trip information and data, including vehicle information, driver information, commercial invoices, packing lists, customs declaration documents, transport documents obtained through interface to electronic data interchange, or uploaded by users via the application.
4. Trip plan is finalized and trip is scheduled for departure and arrival to border plaza, arrival to border control point and destination.
5. Trip information shared with infrastructure operators and border agencies. Details of the trip can be reviewed and adjusted.
6. Adjustments are being made to the trip plan details (for example, time of departure) based on demand versus capacity constraints, infrastructure operator or border agency input or other reasons.
7. The corridor and adjacent network is continuously monitored for traffic conditions, major and minor disruptions, border crossing waiting times, and adjusts predicted times of arrival to border and destination accordingly.
8. Users, vehicle drivers, infrastructure operators, and border agencies are informed of adjustments accordingly.
9. Stops are performed as per the original plan. Trip details and arrival slots are adjusted accordingly.
10. Vehicle arrives at the toll plaza as per the appointment details and is being processed.
11. Vehicle arrives at the primary inspection lines as per the appointment details and is being processed.
12. Vehicle reaches destination.