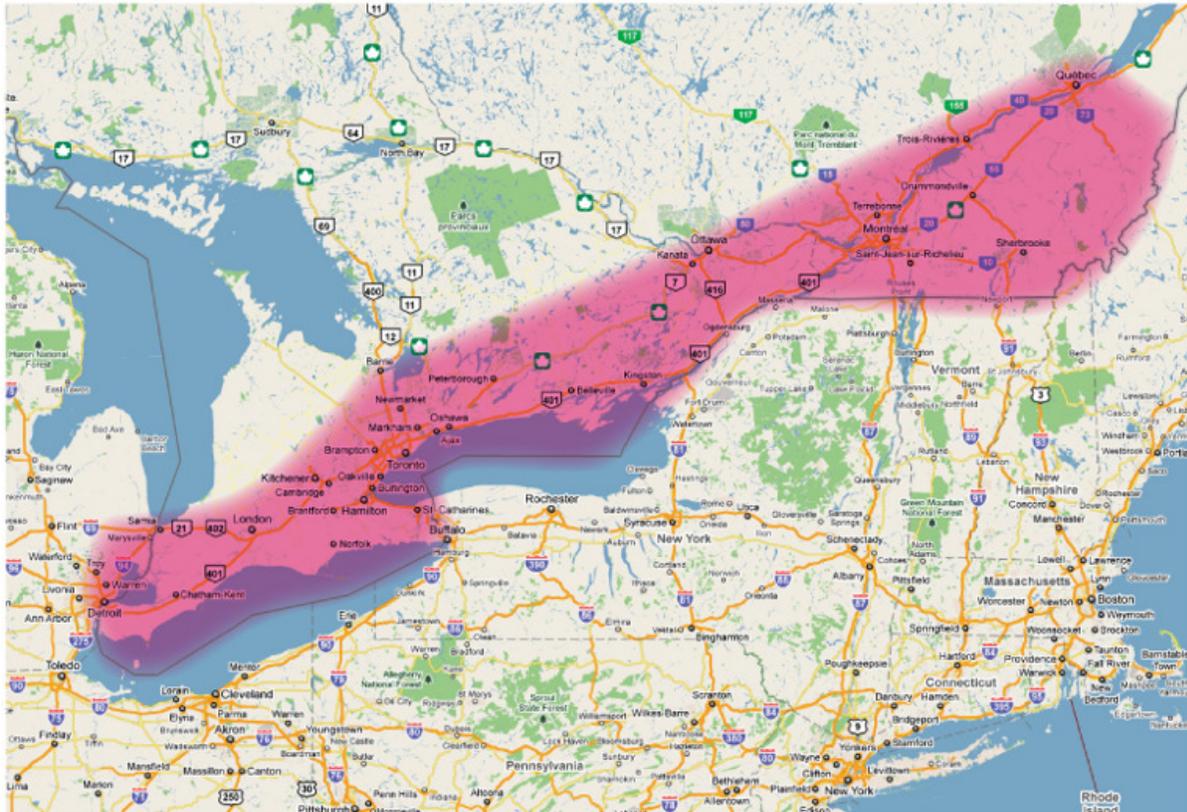


# Smart Corridor Concept of Operations

## Background

Transport Canada, in partnership with the Ministry of Transportation of Ontario and le Ministère des Transports du Québec, has initiated the development of a Smart Corridor Concept of Operations for Ontario and Quebec, focusing on the region from Windsor to Quebec City, and south to the Canada/U.S. border.



The Corridor includes infrastructure components essential to the transportation networks of Ontario and Québec, which facilitate international trade and support domestic flows. This infrastructure includes:

- Road, rail and marine infrastructure; and
- Strategic ports, airports, intermodal facilities and border crossings.

The primary objective of the Smart Corridor is to support a sustainable, secure and efficient multimodal transportation system to keep Canada's economic heartland competitive, attractive for investment and essential for trade.

## What Makes a Corridor "Smart"?

A Smart Corridor is a corridor in which multiple transportation networks are operationally coordinated, including intermodal connections and collaboration between organizations that participate in the operation of the corridor. Technology is a key enabler through which coordination is achieved.

The notion of a smarter transportation corridor is rooted in the very early days of transportation systems in the 1980s, through traffic management programs in California and Long Island, New York. Subsequently, efficiency of goods movement was the impetus for multi-state/provincial initiatives involving the pre-clearance of trucks at inspection stations. At that time, the focus was on the introduction of new and emerging technologies to improve operational efficiency. The industry has progressed, and now all major stakeholders have adopted some level of transportation technology. In today's setting, the challenge has grown in terms of the ability to share information among various legacy systems in order to achieve higher order benefits of coordinated operations among stakeholders. Example elements of the Smart Corridor might include:

- Electronic filing of credentials/reporting;
- Automated means of inspection;
- Automated authentication of vehicles, cargo, and personnel;
- Seamless electronic transactions/payments;
- Terminal reservations;
- Dangerous goods tracking; and
- Readily accessible current/predictive travel conditions information.

To date, various programs have targeted the inherent technical and institutional barriers, and will serve as inputs to this work. Examples include the Border Information Flow Architecture, and Ontario's Intelligent Border Crossing programs. The Smart Corridor development will also draw from the experience of U.S. programs and corridors, such as the I-95 Corridor Coalition along the U.S. eastern seaboard.

## A Concept of Operations

The Concept of Operations will define the operation of transportation system solutions required to achieve the Smart Corridor. The Concept will be based upon:

- A common vision of co-ordinated operations and information flows;
- Stakeholder goals and objectives;
- Stakeholder roles and responsibilities; and
- Current and future supporting system applications.

The Concept of Operations will serve as a framework to guide future investments in underlying technology applications.

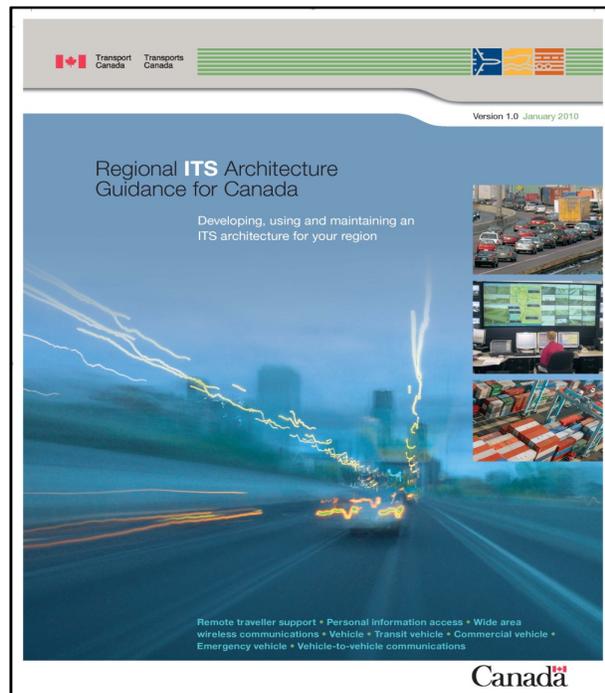


## The Role of Intelligent Transportation Systems

Intelligent Transportation Systems – or ITS – facilitate the Smart Corridor, and can be defined as interactive systems for the collection, processing and dissemination of information applied to the field of transportation, based upon the integration of information and communication technologies into infrastructure and vehicles in order to improve the management and operation of transportation networks and associated user services. Examples of ITS relevant to goods movements include traveller information systems, road weather information systems, electronic toll collection, and weigh-in-motion. ITS applications contribute to improving safety, mobility and service levels, reducing energy and environmental impacts, and enhancing productivity. The potential benefits generated from implementation are considerable, including travel time savings, more reliable travel times, operating cost reductions, safer highways, improved cargo security, and reduced emissions. In order to fully incorporate ITS into the transportation network, ITS must be considered in the overall transportation planning and project development processes that currently exist.

The ITS Architecture for Canada is a powerful tool for planning the regional development and integration of transportation systems. It is a framework that identifies all agencies, stakeholders and transportation systems within a region and outlines the relationships among them in order to facilitate the sharing of transportation related information. The Architecture helps to define what the elements of the system do and the information that is exchanged between them.

An Architecture is important because it allows integration options to be considered prior to investment in the design and development of the elements of the system. It is functionally oriented and not technology specific, which allows the Architecture to remain effective over time. In other words, it defines “what” should be done, not “how” it will be done. It also identifies the relevant standards applicable to various interfaces among stakeholder systems.



Transport Canada has published a guidebook and software tool to assist stakeholders in developing Regional ITS Architectures. This methodology will be applied in order to develop the Smart Corridor Concept of Operations. It is a critical step to establish the compatibility/interoperability between new and existing ITS operated by the various transportation stakeholders throughout the Corridor.

## Stakeholder Outreach

The Concept of Operations and underlying Regional ITS Architecture will be developed through stakeholder consultation to represent a consensus roadmap for how various ITS elements can work together, without un-necessary redundancy, to achieve a Smart Corridor. Stakeholder representatives have been invited from the following transportation industries:

- Carriers, shippers, logistics providers, terminal operators;
- Public sector transportation authorities;
- International border authorities;
- Information service providers; and
- Academia.

## Benefits of Involvement

Involvement in the Smart Corridor Concept of Operations process can yield various benefits to stakeholders. Stakeholders are able to identify and build valuable relationships with peer or neighbouring entities, often resulting in partnering to achieve shared goals. Through the various workshops, Stakeholders are exposed to lessons learned with regards to transportation issues that they may currently be experiencing. Ultimately, the Concept of Operations will provide a vision through which the Smart Corridor can prosper through:

- Improved transportation of goods and people;
- Improved operational efficiencies and cost savings; and
- Reduced risks of investment in technology.

## Getting Involved

The Smart Corridor Concept of Operations is expected to take approximately 12 months to develop. Over the duration of the project, stakeholders are invited to several 'hands-on' workshops used to present materials, gather input and advance the Concept of Operations. In addition, phone or web communication with stakeholders is customary for targeted follow-up as required.

Participation in all of the workshops is strongly recommended as each one builds off of the previous effort. The workshop schedule is anticipated as follows:

- *Workshop #1:* Vision for the Smart Corridor; Stakeholder Needs and Roles - June 2011;
- *Workshop #2:* Priority System Project Requirements - September 2011;
- *Webinar #1:* The ITS Architecture to Support the Concept of Operations - November 2011;
- *Webinar #2:* Project Implementation Programming - December 2011; and
- *Final Presentation:* Ontario - Québec Smart Corridor Concept of Operations - February 2012.

Over the course of the study, material will be posted for review/input on the project website. At the outset, stakeholders are asked to respond to the on-line questionnaire such that we can gather stakeholder information as input to Workshop #1. Please refer to: <http://www.surveymonkey.com/s/SmartCorridor>.

## Contact Information

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