2.3. SAFE AND SECURE TRANSPORTATION PROGRAM DEMONSTRATION

2.3.1. INTRODUCTION

The prototype concept discussed in this section – the Safe and Secure Transportation Program Demonstration – represents an important element to support the flow of international trade goods in the corridor and throughout the state. New York State lies adjacent to Canada’s two largest population concentrations (Toronto and Montreal), and contains a number of key freight border crossings that tie into important trade corridors within the United States. The Champlain crossing and the I-87 corridor are critical elements of the trade network that ties the economies of the two countries together. The demonstration project proposed here is fully consistent with the Smart Freight goal, and with the joint New York-Quebec efforts to increase economic activity in the corridor.

2.3.2. PROJECT DESCRIPTION

The State of New York, with its extensive international borders and major ports of entry for international passenger and freight, is acutely aware of the need to secure the nation’s borders to limit terrorist access and regulate the flow of goods into the country. A sufficiently serious and confirmed terrorist threat or event could immediately close border crossings, bringing international commerce to a halt. There is currently no method or plan defining how international trade at the border would be re-started or opened in phases. International travel and trade are growing exponentially, and New York State’s economy is closely tied to it. Containerized international freight coming into the Port of New York and New Jersey has doubled in the last 10 years, with both import and export freight volumes growing.1 Similar growth has occurred at the Port of Montreal, with containerized freight volumes rising by roughly two-thirds over the same period.2

In the wake of the events of September 11th, 2001, the governments of Canada and the United States signed a Smart Borders Declaration, acknowledging that public safety and economic safety are directly linked, and that both governments must work cooperatively to ensure both. The Action Plan for creating a “Secure and Smart Border” focuses on four areas:

- The Secure Flow of People,
- The Secure Flow of Goods,
- Secure Infrastructure, and
- Coordination and Information Sharing in the Enforcement of these Objectives.

Initiatives that developed from this declaration include the NEXUS and Free and Secure Trade (FAST) programs, with the Canadian Border Services Agency (CBSA) working closely with the US Department of Homeland Security (DHS), Bureau of Customs and Border Protection (CBP) and other groups, including private shippers and other transportation and public safety organizations, to promote the continued flow of goods between the US and Canada under increasingly tight security requirements. The FAST program is intended to expedite freight crossings at the border by identifying shippers with a demonstrated history of compliance and which meet a series of security measures. By verifying these shippers’ trade compliance at the source of the shipment, they arrive at the border pre-approved and can

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2 Montreal Port Authority, Annual Statistics (May 2004)
utilize a dedicated lane to bypass the lengthy queue of other trucks and face a greatly abbreviated inspection process. Similarly, under the NEXUS program, frequent, low-risk travelers who have enrolled in and approved by the program can bypass the usual Customs and Immigration questioning, except when subject to random inspections.

Two additional programs have been developed to facilitate faster travel within the corridor and at border crossings with Canada. New York State implemented the One-Stop Credentialing and Registration (“OSCAR”) program, a web-based program allowing motor carriers to register their vehicles and pay highway use and fuel taxes, normally handled by five different state agencies, at one time. New York State also participates in the North American Pre-clearance and Safety System (“NORPASS”), a transponder-based system which allows trucks that meet credentialing, safety and weigh-in-motion requirements to bypass highway inspection stations.

Within this difficult context, NYSDOT and other agencies seek to find ways to meet these increased security needs in the most efficient manner, controlling the public and private costs of complying with these new requirements and ensuring that the State’s transportation network continues to support economic growth. The NYSDOT Safe and Secure Transportation Program (NYS-SSTP) would establish a demonstration project that incorporates non-traditional approaches and new paradigms in order to ensure that international commerce can continue, and increase, even under the highest alert level or in the event of a border closing. The goal is a system, approved by CBP that assures the integrity of freight while also handling the State’s need to regulate driver and vehicle credentialing and equipment road worthiness and weight.

2.3.2.1. Existing Conditions and Deficiencies

The DHS Operation Safe Commerce (OSC) program is a collaborative effort between the Federal government (DHS-Transportation Security Administration), business interests, and the maritime industry to develop methods to meet higher security requirements while ensuring the expeditious movement of containerized cargo. The OSC program’s goal is to protect the global “supply chain” (e.g., foreign factory -> link to port or terminal -> overseas shipment -> US port or terminal transfer to domestic mode -> factory or warehouse) while expediting the flow of commerce. The OSC initiative provides the framework and possible funding sources for the NYS-SSTP demonstration proposed here. The objective of OSC is to create the type of public-private partnership that is at the heart of the Corridor Strategic Plan’s “Smart Freight” effort.

In this instance, the goal is to develop non-traditional security measures that will increase port and border security and not impede international commerce. Full implementation of the program would effectively push US borders out to the manufacturer, using commercial freight tracking technologies. As an example, Parsons is presently teamed with Boeing and ADT as Global Secure for two OSC demonstrations, including the core components of freight/cargo
assurance, container or trailer security and tracking, and a secure network platform that would be central to the NYS-SSTP proposal.

2.3.3. PROPOSED SOLUTION

2.3.3.1. System Overview

Figure 2.3-1 presents a number of major institutions engaged in freight operations in the corridor, and specifically international freight movements by truck. The following are the mix of inspection and tracking activities that could be involved for a hypothetical international shipment destined for a commercial facility in the Capital District:

• **Port of Entry Inspections.** At the Port of Montreal and the Port of New York and New Jersey, Customs officials inspect a sample of freight shipments upon their arrival. Activities include agricultural inspection to protect against pests and diseases, import duty collection, searches for illegal drugs and other contraband, and other steps to ensure the security of international shipments through these ports.

• **Canada-NYS Border Crossing.** At the Champlain border crossing, U.S. and Canadian Customs agencies carry out similar point-of-entry inspections, as well as handling the flow of passenger cars, trains, and buses crossing at that location.

• **NYS Truck Inspection.** After a truck enters New York State, NYSDOT, NYS Police, and other supporting agencies must ensure that it is within weight limits, has the proper vehicle and driver credentials, and meets minimum safety requirements (e.g., brakes, tires, etc.). While historically this has been done manually, with trucks weighed and inspected and drivers’ credentials checked by pulling trucks into rest areas or dedicated inspection stations, a variety of programs are being pursued by New York State and others to use ITS technologies to streamline this process.

• **Tracking by Shipment Customer/Shipper.** An increasing number of international shippers are choosing to confirm the contents of their containers upon their sealing at the factory abroad and relying on various levels of tracking – from simple “E-Seal” tracking (see Section 2.11 of this memo for further details) to more advanced supply chain radio frequency identification (RFID) and global positioning system (GPS)-based systems – with intrusion detection that monitors all relevant conditions of the container (temperature, pressure, vibration, tilt, etc.).

With this type of system, the key for US Customs and other security officials, as well as shippers, is “visibility;” in other words, what is in the container and when it is going to arrive at its final destination. The benefits of providing security officials with a more complete
FIGURE 2.3-1
INTERNATIONAL FREIGHT WITHIN I-87 CORRIDOR

Port of Montreal

Port of Excellence

NYSDOT

Greater Capital District

Private Sector

CANADA
U.S.
understanding of the contents of each container when it arrives at a port or at a border crossing can be significant:

- Advanced supply chain systems identify any anomalies that may indicate a possible security threat (e.g., if a container has been opened en route, etc.).
- Security officials can act on the intelligence information provided by shippers to bypass low-risk shipments and isolate suspect containers, allowing US CBP to better utilize its resources by focusing only on high-risk containers.
- The systems increase agencies’ ability to thoroughly identify the cause of the possible security problem and to take corrective action in the event of an attack.
- The systems provide information of potential value to a variety of threat analysis programs.

Advanced supply chain systems also benefit private shippers, and their eventual customers, in a number of ways:

- These systems confirm the shipment’s content and location and the integrity of containers, and reduce the often-considerable losses from theft.
- They reduce the time and cost to clear cargo through Customs.
- They improve the “agility” of the supply chain by providing the real-time “visibility” of the goods being shipped.
- They increase the “velocity” of cargo, helping to decrease inventory costs. If shipments in the supply chain can be more closely and reliably tracked, they become an extended warehouse, reducing the necessary size of inventory held in warehouses or stores.

As indicated by the programs highlighted in Figure 2.3-1 and discussed above, it is possible that a truck traveling from Quebec carrying containers from the Port of Montreal to Albany via I-87 and looking to facilitate its trip as much as possible could have:

- a supply-chain based RFID/GPS system attached to each container and connected via a Virtual Private Network (VPN) to a Network Operations Center (NOC) tracking the shipment’s arrival at a Capital District warehouse (with this system hopefully used by CBSA to expedite the container’s passage through the Port of Montreal);
- an E-ZPass transponder for tolls; and
- a NORPASS transponder to minimize delays due to New York State truck inspections.

Other than the simple duplication of transponders and other equipment, the complexity of overlapping nature of the programs offered to the shipper make it less likely that it will take advantage of them. The goal of the proposed program is to tie these systems together, make them work more efficiently and less costly while enhancing their effectiveness.

2.3.3.2. Primary System Components

The goal of the proposed NYS Safe and Secure Transportation Program Demonstration is to
integrate the advanced supply chain security technologies and processes being implemented by private shippers, the on-going Federal government programs (e.g., FAST) to expedite international shipments, and New York State's vehicle, regulatory, and safety monitoring requirements. The demonstration of this system in the I-87 corridor would help to increase the public-private partnering that is essential to more efficient, lower-cost shipment processing, and increase the rate at which goods flow through the corridor.

For example, as a shipment arrives at the Champlain border crossing, the system's security component would track the container or trailer and provide real-time location information to CBP personnel that the shipment has entered the FAST lane queue. Truck vehicle operation and driver information obtained early in the logistic process, through OSCAR, NORPASS, or other systems, would be transferred to the secure network and maintained with the security information to facilitate border crossing and, later, vehicle inspections. NYSDOT, NYS Police, and others involved at truck inspections check points would notified of the vehicle's location and status. Trucks meeting NYSDOT operating requirements could then bypass those check points.

Under high “Alert Level” conditions, trucks fully equipped and participating in the NYS-SSTP would flow more freely, especially at border crossings, while others would face increased delays. Under prolonged high-alert levels, NYS-SSTP could help maintain vital commercial freight movements, as commercial border crossing traffic follows the path of least resistance. Longer term, as major shippers begin to utilize the corridor, related support and commercial infrastructure would be required to handle the increased movements. Major retailers, shippers, and manufacturers would view the corridor as an important element of cost-effective supply chain viability, potentially leading to increased investment in existing or future facilities located along the corridor. The same elements would be useful at other border crossings within the State, as well as at crossings nationwide.

The key message in the near-term would be that New York State, and the I-87 Corridor in particular, is applying innovative ways to cost-effectively maintain freight movements in the present-day, higher-security environment.

### 2.3.3.3. Relation to Other Programs

Many of the existing programs mentioned above – OSCAR, FAST, NORPASS, and others – are intended to provide many of the same benefits of the proposed NYS-SSTP. As noted above, these existing programs require separate transponders, separate program applications and databases, with no provision for the various parties (NYSDOT, NYS Police, CBP, etc.) to communicate or share data. Some of those being proposed for various demonstrations in the I-87 corridor are reviewed in other sections of this report (e.g., see Sections 2.1 (Near-Term Vehicle Inspection Station) and 2.11 (Electronic Seal Screening and Tracking)). However, the proposed NYS-SSTP demonstration would provide several additional benefits:

- immediate pay-off to the State, private firms, others;
- a jump-start for both proposed and existing programs, including a needed boost for FAST, NORPASS, and similar initiatives;
- a useful in-service demonstration that could later be applied elsewhere in the State and nationally; and
• a test of ways to combine existing applications such as transponder readers with innovative technologies like the more advanced supply chain tracking systems described above.

2.3.4. PROJECT IMPLEMENTATION

The goal of the NYS-SSTP demonstration would be to produce a fully scaleable system incorporating advanced engineering concepts currently deployed under the DHS OSC freight initiatives and related State and Federal CVO programs (e.g., C-VISN), with features tailored to meet the State’s and Corridor’s security and safety requirements.

There are many agencies already involved in these same areas at the state, national, and international level, strong interest from the private sector, and numerous freight- and security-related programs already underway. Given these factors, the proposed NYS-SSTP will require extensive coordination meetings and activities in its initial stages to define what the NYS-SSTP can and should do, and the best way to achieve those goals.

The demonstration would be implemented in four phases:

• **Phase 1. Scope Definition and Project Plan** -- develop NYS-SSTP concept in detail, based on close cooperation with key stakeholders, and meetings with potential or representative sites for demonstration facilities (e.g., Port of Excellence at the Champlain border crossing, trucking terminal, supply chain warehouse, etc.). From this, a detailed graphic presentation of NYS-SSTP would be developed, along with a detailed project plan, statement of work and cost estimate.

An early activity under this phase will be the establishment of a NYS-SSTP Stakeholder Committee, involving NYSDOT, US CBP, Canada’s CBSA, NYS Thruway Authority, NYS Police, and other State, Federal or Canadian agencies, as well as major shippers, freight forwarders or brokers, and other relevant business organizations.

To make this demonstration possible, NYSDOT must petition “supply chain owners” (e.g., major freight customers), carriers, trucking companies, and others who utilize the corridor to provide a supply chain, equipment, and information to support the proposed NYS-SSTP demonstration. These supply chain owners would provide access to data, assist in instrumenting the containers/trailers, and conducting the operational test. It is assumed that the operational test of the NYS-SSTP system would be conducted on a non-interference basis and with limited or no exchange of funds.

• **Phase 2. Define NYSDOT, CBP, CBSA, and NYS Police Interface Requirements** -- determine hardware and software interface requirements for these agencies (and other public safety or transportation agencies), as determined during Phase 1. The study team would then develop sample reports and acceptance criteria to be used in the demonstration and submit them to the agencies/stakeholders for their approval.
Integration of existing CBP programs necessary for expedited border crossing will be a key element during this phase. These would include:

- **C-TPAT (Customs Trade Partnership Against Terrorism).** C-TPAT is a government/business initiative to increase cargo security while improving the flow of trade. Seven of America's Fortune 500 companies – BP America, Daimler-Chrysler, Ford, General Motors, Motorola, Sara Lee, and Target – helped Customs develop the program. Under this initiative, businesses must conduct comprehensive self-assessments of their supply chain using the security guidelines developed jointly with the Customs Service. They must also familiarize companies in their supply chain with the guidelines of the program. In short, these businesses must provide Customs with specific and relevant information about their trucks, drivers, cargo, suppliers, and routes.

- **FAST.** This program allows US/Canada and US/Mexico partnering importers expedited release for qualifying commercial shipments. The proposed NYS-SSTP demonstration would incorporate the data and data formats approved by CBP for FAST. The information would be obtained by the shipper/C-TPAT facility and managed under the NYS-SSTP.

- **Advanced Container Security or Smart Box Technology.** A smart box attached to the container or truck trailer would communicate evidence of tampering, and a “container security device” would register every legitimate, as well as unauthorized, opening of the container. This combined container/trailer intrusion and tracking system would be installed in a number of containers and/or trailers.

In the same way that these programs would be integrated into the NYS-SSTP, the equivalent data and systems being developed as part of the State’s on-going OSCAR and NORPASS programs would be incorporated.

- **Phase 3. Implement NYS-SSTP for Selected Supply Chain(s) and/or Stakeholder(s) –** this would involve (1) completing the design of the system, (2) developing software necessary for interface among all system elements (e.g., communications with FAST system), (3) establishing the Network Operating Center (NOC) for the processing of all data and generation of all information and reports to program participants, (4) installation of equipment in the trailers or containers of the participating supply chain organizations, and (5) testing of system, confirmation of protocols and scheduling of the demonstration program schedule.

It is unclear how many vehicles or containers would be involved in this demonstration, although even a relatively small number (i.e., 10 containers/trailers) would be sufficient to test and demonstrate the value of the program.

- **Phase 4 – NYS-SSTP Demonstration Period and Final Report –** implementing the system, which would operate for a period of 6-12 months (depending on how many container/trailers are involved and the number of test events (e.g., border crossings) expected to occur over that period). Data would be gathered throughout the period, with monthly reports provided to key program participants. Upon completion of the demonstration period, a Final Report would be prepared, summarizing all aspects of the effort, the program’s effectiveness, and recommended next steps.

Phases 1 through 3 of the demonstration should be fast tracked. As noted, the duration of Phase 4 would be based on the number of shipments to be instrumented and the agencies’
2.3.4.1. Regulatory, Environmental, and Agency Coordination Issues

Because this project would involve no construction, minimal environmental or other regulatory processing would be needed. Inter-agency coordination (NYSDOT, NYS Police, CBP) is a central element of the proposed program, as detailed above.

2.3.4.2. Project Costs

It is difficult to estimate the projected costs of the proposed NYS-SSTP demonstration program, as the amount of effort and time required to get the program defined, agreed to and implemented will be affected by many elements that are difficult to define. Given this, the following are the initial estimates of the program's possible costs per phase. The Project Cost range indicates the wide variations in costs that could occur, based on, among other factors, how costs are shared among various participants, the amount of required reporting, and the extent of program meetings and related documentation in each phase.

<table>
<thead>
<tr>
<th>Estimated Costs: NYS-SSTP Demonstration Program</th>
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<tbody>
<tr>
<td>System Design</td>
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<tr>
<td>Management</td>
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<tr>
<td>Hardware Interfacing</td>
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<td>Software Integration</td>
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<tr>
<td>Site Installation</td>
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<tr>
<td>NOC - Secure Network, Etc.</td>
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<tr>
<td>Report</td>
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<td>Equipment</td>
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<table>
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<tr>
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<th>$ 480,000</th>
<th>$ 160,000</th>
<th>$ 890,000</th>
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<td>$ 30,000</td>
<td>$ 100,000</td>
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<td>$ 180,000</td>
<td>$ 580,000</td>
<td>$ 190,000</td>
<td>$ 1,070,000</td>
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</tbody>
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Rounded PROJECT COSTS (RANGE) $900,000 to $1,400,000

In terms of long-term operating costs for the program, the business model that the NYS-SSTP represents is one that is a “win-win” for both the public and private sector. The daily operations of the program would be free to the public sector (although agency staff would be involved on an on-going basis in terms of program oversight, tracking, security, etc.). Regular operating costs (e.g., staffing for the NOC) would be covered by private sector fees. Further, public sectors savings could be significant – e.g., the program would substantially reduce CBP staff demands for truck inspections at the border; the staff demands on NYSDOT and the NYS Police to achieve a certain inspection level would be reduced as a greater proportion of trucks take advantage of the pre-inspection and credentialing programs.

Private supply chain owners (e.g., a major retailer with warehouses in the corridor who imports goods from around the world) would benefit from the increased “velocity” of his freight
movement, reduced inventory and warehouse costs, reduced “shrinkage” (theft) and greater visibility of its freight flows. The exact method of cost sharing for the program (or from the private sector’s viewpoint, for this “service”), both during its initial marketing and long-term, will be determined during the development and demonstration phases of the program.