# TABLE OF CONTENTS

## EXECUTIVE SUMMARY .....................................................................................................1
- Background ..................................................................................................................1
- NITTEC Membership ..................................................................................................1
- External Constituencies ..............................................................................................2
- Staff and Committees ...............................................................................................3
- RCTO Vision ...............................................................................................................5
- RCTO Operational Categories and Objectives .........................................................5
- Relationship of the RCTO to Current NITTEC Processes .........................................5
- Recommendations and Action Plan ............................................................................13

## INTRODUCTION........................................................................................................14

## NITTEC MEMBERS & CURRENT RELATIONSHIPS ..................................................15
- Governance ...............................................................................................................15
- Membership ..............................................................................................................16
  - 2.2.1 Policy Board ......................................................................................................16
  - 2.2.2 General Members .............................................................................................16
  - 2.2.3 Affiliate Members ............................................................................................17
- Committee Structure ..................................................................................................17
  - 2.3.1 Executive Council ............................................................................................18
  - 2.3.2 Regional Transportation Coordination and Management Council (RTCMC) ......................................................................................................................18
  - 2.3.3 Border Crossing Committee ............................................................................18
  - 2.3.4 Construction Coordination Committee ..........................................................19
  - 2.3.5 Ontario Incident Management Committee ....................................................19
  - 2.3.6 Strategic Planning Committee .........................................................................19
  - 2.3.7 Traffic Operations Center (TOC) Committee ................................................19
  - 2.3.8 Technology and Systems (T&S) Committee ....................................................19
  - 2.3.9 Western New York (WNY) Incident Management Committee ....................20
- Participation Levels .....................................................................................................20
- Staffing .........................................................................................................................20
- Funding ........................................................................................................................21

## KEY EXTERNAL CONSTITUENCIES ..........................................................................22

## INPUTS/DISCUSSION ..................................................................................................23

## PROCESS .....................................................................................................................24

## RCTO VISION AND OBJECTIVES ............................................................................25
- 6.1 RCTO Vision ..........................................................................................................25
- 6.2 RCTO Operational Categories and Objectives ....................................................25

## CANDIDATE RCTO GOALS AND PERFORMANCE MEASURES ......................27
7.1 Improve NITTEC Participation .................................................................27
7.2 Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents .........................................................28
7.3 Provide easily accessible, coordinated, clear and concise, real-time information ..........................................................................................28
7.4 Promote use of traveler information services ..............................................29
7.5 Increase accuracy of congestion (travel time) information ..............................30
7.6 Promote seamless operation among modal choices ........................................30
7.7 Minimize travel delay ...............................................................................31
7.8 Promote use of expedited clearance programs and systems ............................31
7.9 Enhance transit operations ........................................................................32
7.10 Reduce travel time uncertainty ...................................................................32
7.11 Balance traffic loads on border crossing corridors ........................................33
7.12 Increase awareness of cross-border transit solutions ....................................33
7.13 Establish incident classifications and severity guidelines .............................34
7.14 Decrease highway incident clearance time ..................................................34
7.15 Increase responder safety ...........................................................................35
7.16 Decrease secondary highway incidents .......................................................36
7.17 Establish agency MOUs for incident management first responders .................36
7.18 Continue an active, Incident Management Committee to conduct proactive and post incident reviews .................................................................37
7.19 Establish and implement applicable policies, procedures, and practices ..........37

8 RELATIONSHIP OF THE RCTO TO CURRENT NITTEC PROCESSES......39
8.1 Policies and procedures ............................................................................39
8.2 Agency coordination ..................................................................................40
  8.2.1 Government Agencies ........................................................................40
  8.2.2 Border Crossings ...............................................................................40
  8.2.3 Emergency Responders .....................................................................41
8.3 Information Flows ......................................................................................41
  8.3.1 NITTEC Web Site .............................................................................44
8.4 Mobility ......................................................................................................45
  8.4.1 Highway ..............................................................................................45
  8.4.2 Passenger Bus and Rail .......................................................................45
  8.4.3 Air .......................................................................................................46
8.5 Incident Management ..................................................................................46

9 OPERATIONS OBJECTIVES WITHIN NITTEC’S FOUR CATEGORIES OF SERVICES .................................................................................49
9.1 Construction and Event Planning & Coordination ........................................49
9.2 Operational Services ..................................................................................50
9.3 ITS Deployment and Operations ..................................................................51
9.4 Other Services ............................................................................................52
9.5 Improvements and Enhancements Needed to Achieve the Operations Objectives .........................................................................................52
9.6 Policies, Procedures, and Practices Needed to Achieve the Operations Objectives ..........................................................55

10 SHORT-TERM AND LONG-TERM ACTION PLAN ..................................................56
10.1 Expansion and Continued Integration of the TRANSMIT System .................56
10.2 Web Page Pre-Trip Planning Enhancements and Multi-Modal Integrations ..56
10.3 Strategically located VMS for Border Crossing Traffic Information ..........57
10.4 Communication Links to Other Control Centers ........................................58
10.5 Development of Agency Coordination Enhancement Plans .......................58

11 IMPLEMENTATION PLAN ...................................................................................60

TABLES
Table 1-1: Regional Concept for Transportation Operations Goals and Objective Summary .................................................................6
Table 6-1: RCTO Operational Categories and Objectives ..................................25
Table 9-1: Construction and Event Planning and Coordination .........................49
Table 9-2: Operational Services ........................................................................50
Table 9-3: Deployment and Operations ...............................................................51
Table 9-4: Other Services ................................................................................52
Table 11-1: Regional Concept for Transportation Operations Action Plan ........61

EXHIBITS
Exhibit 1-1: External Constituencies .................................................................3
Exhibit 1-2: NITTEC Internal Organizational Chart ........................................3
Exhibit 1-3: NITTEC Organizational Chart .......................................................4
Exhibit 2-1: NITTEC Organizational Chart .....................................................18
Exhibit 2-2: NITTEC Internal Organizational Chart .......................................21
Exhibit 3-1: External Constituencies .................................................................22
Exhibit 9-1: Existing Conditions ..................................................................54

APPENDICES
Appendix A Regional Concept for Transportation Operations Goals and Objectives Summary
Appendix B Summary of Workshop One
Appendix C NITTEC Memorandum of Understanding
EXECUTIVE SUMMARY

Background

In response to Strategic Plan 2007, Niagara International Transportation Technology Coalition (NITTEC) initiated this Transportation Operations Study, which is divided into two parts: the development of a NITTEC Regional Concept for Transportation Operations (RCTO), and providing support to NITTEC in the development of an Integrated Corridor Management (ICM) initiative.

The purpose of an RCTO is to provide a framework for regional agencies to improve regional transportation system performance by working together. It is dependent on a deliberate and sustained effort by operators, planners and other key stakeholders collaborating to establish direction and agree on ways to move forward. In summary, an RCTO answers the following questions: What do the stakeholders want to achieve, and how are they going to achieve it?

This report (1) documents the existing relationships between various agencies and current operations, (2) describes what is working well, (3) provides recommendations to keep key elements working well, and (4) identifies areas that could be improved to achieve full integrated operations in the Buffalo Niagara region.

NITTEC Membership

At its inception on September 22, 1995, NITTEC had 14 members and each held a Policy Board seat. A 2008 update to the NITTEC Memorandum of Understanding set forth a new membership, committee, staff, and funding structure for the organization.

The Niagara Frontier Transportation Authority (NFTA) acts as a host agency to NITTEC. This arrangement was formalized in an agreement between the New York State Department of Transportation (NYSDOT) and NFTA for supporting Coalition activities and the operation of the Traffic Operations Center (TOC). In addition to providing office space, NFTA also provides administrative services to NITTEC.

Currently, NITTEC consists of five Policy Members: Erie County, Ministry of Transportation Ontario, New York State Department of Transportation, New York State Thruway Authority, and Niagara Frontier Transportation Authority. Each Policy Member has one vote on the Executive Council.

General members designate representatives to actively participate in at least two Committees. They may also attend Executive Council meetings and Regional Transportation Coordination and Management Council meetings as non-voting participants. Current general members of NITTEC include: Buffalo and Fort Erie Public Bridge Authority, City of Buffalo, City of Niagara Falls (New York), City of Niagara Falls (Ontario), Niagara County, Niagara Falls Bridge Commission, Niagara Parks Commission, Niagara Region, and Town of Fort Erie.
Affiliate members are not voting members of NITTEC but may send representatives to participate in Committees. Current affiliate members of NITTEC include: New York State Police, Ontario Provincial Police, GBNRTC, Federal Highway Administration, Town of Amherst, Town of Tonawanda, Town of Niagara on the Lake, New York State Department of Environmental Conservation, John’s Towing, Rusiniak’s Towing, US Customs and Border Protection, and Canada Border Services Agency.

**External Constituencies**

As illustrated in Exhibit 1-1, NITTEC’s four main external constituencies include the traveling public, tourism related businesses, freight companies, and information service providers (ISPs). NITTEC receives information, processes it, and disseminates it back to its constituencies in a variety of methods. It uses technology to provide real-time traffic information, border-crossing times, and information regarding upcoming construction projects and special events through the NITTEC web site and on-road information systems such as variable message signs (VMS), highway advisory radio (HAR), and traffic condition warning signs (TCWS).

Different constituencies need information for different reasons. For example, freight companies look to NITTEC to provide border-crossing times. The traveling public may want to learn about construction delays or emergency closures. Tourism-related businesses seek event related information, and tourists unfamiliar with the Buffalo Niagara region may be looking for time saving information. While they may use different channels, NITTEC is the nucleus for overall communication, data processing, and information dissemination related to mobility and safety in the bi-national region.
Staff and Committees

NITTEC consists of the Executive Director, TOC Manager, Engineering Manager, TOC Operations Technicians, Systems staff and one administrative assistant. Exhibit 1-2 depicts NITTEC’s current internal organization.
NITTEC’s governing structure consists of two Councils and seven Committees. The Executive Council and the Regional Transportation Coordination and Management Council (RTCMC) can establish additional standing or ad-hoc Committees and/or project teams for specific tasks. Each Committee prepares and submits individual Committee accomplishments and work plans. The seven Committees include:

- Border Crossing Committee
- Construction Coordination Committee
- Ontario Incident Management Committee
- Strategic Planning Committee
- Traffic Operations Center Committee
- Technology and Systems Committee
- Western New York Incident Management Committee

Exhibit 1-3 depicts NITTEC’s current organization structure.
Process

In order to develop strong input, stakeholder workshops were an integral part of the study. Two rounds of workshops were conducted in addition to vetted discussions with NITTEC management and the Strategic Planning Committee. Workshop One, which consisted of a series of five workshops, was held on September 16-18, 2008 to obtain agency input on the project to date. An ICM Stakeholder meeting was held on February 25, 2009, to present findings and candidate goals and objectives to ICM stakeholders in the Niagara Frontier Corridor.

The goals and objectives identified by the Strategic Plan served as a starting point for candidate goals and objectives and were supplemented by other NITTEC reports, such as the November 2002 Strategic Transportation Direction Report.

RCTO Vision

The RCTO vision is “to establish a basis for a safe, reliable, efficient, and seamless surface transportation system for the NITTEC region.”

RCTO Operational Categories and Objectives

For easier implementation, five RCTO operational categories were developed to identify where improvements are needed. These categories are: Agency Coordination, Traveler Information, Mobility (Arterial, Border, Freeway, and Transit), Incident Management, and Policy and Procedures.

For these categories, a total of 19 objectives were identified. Short and long-term goals were developed for each objective and performance measures were developed for each goal. In Section 6 of this report, the objectives within each category are outlined. Table 1-1 summarizes the goals and objectives of the RCTO.

Relationship of the RCTO to Current NITTEC Processes

NITTEC and its member agencies continue to advance and grow in capacity. In recent years, considerable advancements have been made in the area of data collection, information dissemination, and incident management. Section 9 of this report details recent accomplishments, highlights what is working well and identifies areas of improvement. It also relates how the RCTO can be incorporated into existing NITTEC projects and processes.
## Table 1-1: Regional Concept for Transportation Operations (RCTO)
### Goals and Objectives Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Agency Coordination</td>
<td>A. Improve NITTEC participation</td>
<td>1. 75 percent of all transportation related agencies participate in and contribute to NITTEC activities</td>
<td>1. 95 percent of all transportation related agencies participate in and contribute to NITTEC activities</td>
<td>1. Yearly percentage of transportation related agencies involved in NITTEC activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. All policy and general member agencies attend 75 percent of appropriate Council and Committee meetings</td>
<td>2. All policy and general member agencies attend 90 percent of appropriate Council and Committee meetings</td>
<td>2. Attendance of policy and general member agencies at appropriate meetings</td>
</tr>
<tr>
<td></td>
<td>B. Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents</td>
<td>1. Center-to-center (C2C) communications is functioning among all transportation related agencies in the region</td>
<td>1. Center-to-center (C2C) communications is functioning among all transportation related agencies in the region</td>
<td>1. Evaluate the use of established center-to-center communication links</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Incident data is shared among all responding agencies</td>
<td>2. Incident data is shared among all responding agencies</td>
<td>a. Number of agencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. A uniform method of collecting and reporting information has been established among all agencies</td>
<td>3. A uniform method of collecting and reporting information has been established among all agencies</td>
<td>b. Monthly activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. Monthly down time</td>
</tr>
</tbody>
</table>
<pre><code>                                                                                       |                                                                                                       |                                                                                                | 2. Yearly survey of agencies                                                          |
                                                                                       |                                                                                                       |                                                                                                | 3a. Procedures are in place                                                           |
                                                                                       |                                                                                                       |                                                                                                | 3b. Quarterly use of procedures                                                      |
</code></pre>
<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>II. Traveler Information</strong></td>
<td>A. Provide easily accessible, coordinated, clear and concise, real-time information</td>
<td>1. The information from all agencies is disseminated across all available modes (web, television, radio, telephone, new technologies, etc.).&lt;br&gt;2. The information is provided in real-time.&lt;br&gt;3. Traveler information usage has increased by 100 percent.&lt;br&gt;4. A 75 percent customer traveler information satisfaction rating has been achieved among local commuters and border crossing commuters receiving information.</td>
<td>1. The information from all agencies is disseminated across all available modes (web, television, radio, telephone, new technologies, etc.).&lt;br&gt;2. The information is provided in real-time.&lt;br&gt;3. Traveler information usage has increased by 150 percent.&lt;br&gt;4. A 85 percent customer traveler information satisfaction rating has been achieved among local commuters and border crossing commuters receiving information.</td>
<td>1. The number of available traveler information modes per year&lt;br&gt;2. The number of times information has been posted on VMS, HAR, etc. per month&lt;br&gt;3. Evaluate the use of traveler information monthly&lt;br&gt;   a. Traveler surveys are conducted&lt;br&gt;   b. Web site hits&lt;br&gt;   c. 511 telephone service calls&lt;br&gt;4. Conduct traveler surveys yearly to:&lt;br&gt;   a. Differentiate the type of traveler (i.e. local commuter and border crossing)&lt;br&gt;   b. Determine traveler satisfaction</td>
</tr>
<tr>
<td></td>
<td>B. Promote use of traveler information services</td>
<td>1. A mode of real time traveler information is used for 50 percent of commuters and 30 percent of border crossings</td>
<td>1. A mode of real time traveler information is used for 65 percent of commuters and 50 percent of border crossings</td>
<td>1. Evaluate the use of traveler information monthly&lt;br&gt;   a. Traveler surveys are conducted&lt;br&gt;   b. Web site hits&lt;br&gt;   c. 511 telephone service calls</td>
</tr>
<tr>
<td>Category</td>
<td>Objective</td>
<td>Short Term Goal (less than five years)</td>
<td>Long Term Goal (five to 10 years)</td>
<td>Performance Measure</td>
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<td>--------------------------------------------------------------------------------------</td>
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<tr>
<td>II. Traveler Information</td>
<td>C. Increase accuracy of congestion (travel time) information</td>
<td>1. Travel trip time information received from systems are 90 percent reliable</td>
<td>1. Travel trip time information received from systems are 95 percent reliable</td>
<td>1. Compare reader time vs. actual travel time for selected periods and links</td>
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<tr>
<td></td>
<td>D. Promote seamless operation among modal choices</td>
<td>1. All surface modes are integrated into a traveler information system</td>
<td>1. All surface modes are integrated into a traveler information system</td>
<td>1. Percentage of modes included</td>
</tr>
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</tr>
<tr>
<td>III. Mobility (Arterial, Border, Freeway, Transit)</td>
<td>A. Minimize travel delay</td>
<td>1. Limit the percent increase in average travel time to less than the percent increase in traffic volume.</td>
<td>1. Limit the percent increase in average travel time to less than the percent increase in traffic volume.</td>
<td>1. Compare non-delayed travel times with delayed travel times for selected time periods and links</td>
</tr>
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<td></td>
</tr>
<tr>
<td></td>
<td>B. Promote use of expedited clearance programs and systems</td>
<td>1. The number of vehicles using E-ZPass has increased by 15 percent</td>
<td>1. The number of vehicles using E-ZPass has increased by 25 percent</td>
<td>1. Monthly number of vehicles using the E-Z Pass program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. The number of total border crossing trips using electronic pre-clearance programs/systems has increased by 15 percent</td>
<td>2. The number of total border crossing trips using electronic pre-clearance programs/systems has increased by 25 percent</td>
<td>2. Monthly number of border crossing vehicles using electronic pre-clearance programs/systems</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Enhance transit operations</td>
<td>1. Transit reliability has increased by 15 percent</td>
<td>1. Transit reliability has increased by 20 percent</td>
<td>1. Percentage of time running on or close to schedule</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Transit ridership has increased at a rate greater than the increase in traffic volume</td>
<td>2. Transit ridership has increased at a rate greater than the increase in traffic volume</td>
<td>2. Number of passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3a. Identification of high quality transit corridors</td>
</tr>
</tbody>
</table>
### Table 1-1: Regional Concept for Transportation Operations (RCTO) Goals & Objectives Summary (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. Mobility (Arterial, Border, Freeway, Transit) (continued)</td>
<td>3. High quality transit corridors have been identified 4. Buffalo Niagara International and Niagara Falls International airports have established transit operations (i.e. shuttles to and from hubs or stations including cross border, shuttle service to and from airports)</td>
<td>3. High quality transit corridors have been implemented on two corridors 4. Buffalo Niagara International and Niagara Falls International airports have established transit operations (i.e. shuttles to and from hubs or stations including cross border, shuttle service to and from airports)</td>
<td>3b. Two high quality corridors have been implemented 4a. Number of routes 4b. Frequency of routes</td>
<td></td>
</tr>
<tr>
<td>D. Reduce travel time uncertainty</td>
<td>1. Peak hour travel time variability has decreased by 10 percent</td>
<td>1. Peak hour travel time variability has decreased by 20 percent</td>
<td>1. Compare monthly and yearly travel times on selected links during selected time periods</td>
<td></td>
</tr>
<tr>
<td>E. Balance traffic loads on border crossing corridors</td>
<td>1. The traffic load on any border crossing at peak travel times is in proportion to its capacity in relation to all border crossings</td>
<td>1. The traffic load on any border crossing at peak travel times is in proportion to its capacity in relation to all border crossings</td>
<td>1. Monthly percentage of border crossing traffic on each facility</td>
<td></td>
</tr>
<tr>
<td>F. Increase awareness of cross-border transit solutions</td>
<td>1. A web-based transit pre-trip planner application has been established, which is used region wide and crosses jurisdictional boundaries seamlessly</td>
<td>1. A web-based transit pre-trip planner application has been established, which is used region wide and crosses jurisdictional boundaries seamlessly</td>
<td>1a. A web-based transit pre-trip planner application is operational 1b. Use of the application on a quarterly basis</td>
<td></td>
</tr>
</tbody>
</table>
Table 1-1: Regional Concept for Transportation Operations (RCTO)  
Goals & Objectives Summary (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
</table>
| IV. Incident Management | A. Establish incident classifications and severity guidelines | 1. Develop agreed upon definitions for minor, intermediate, and major incidents  
2. Define incident severity guidelines based on:  
   • Incident severity  
   • Field Conditions  
   • Resources needed  
   • Estimated incident duration | 1. Utilize agreed upon definitions for minor, intermediate, and major incidents  
2. Utilize incident severity guidelines | 1a. Incident definitions agreed upon  
1b. Incident definitions universally used  
2. Incident severity guidelines are defined |
| | B. Decrease highway incident clearance time | 1. Average incident detection to arrival time is less than 10 minutes  
2. Average incident detection to lane clearance time is reduced by 15 percent.  
3. Average time from detection to back to normal conditions is reduced by 10 percent¹  
4. Responder training exists, which provides guidance on relaying accurate information on what equipment is needed for various incidents | 1. Average incident detection to arrival time is less than 8 minutes  
2. Average incident detection to lane clearance time is reduced by 25 percent.  
3. Average time from detection to back to normal conditions is reduced by 20 percent.  
4. Responder training exists, which provides guidance on relaying accurate information on what equipment is needed for various types of incidents | 1a. Monthly average incident detection to arrival time  
1b. Percent reduction of detection to arrival time  
2. Monthly percent reduction of average incident detection to lane clearance time  
3. Monthly percent reduction of average time from detection to back to normal conditions  
4a. The number of training and exercise sessions held yearly  
4b. Percentage of responders trained |

¹ Time differential between when the first responders arrive on the scene to when the facility has been restored to normal conditions.
Table 1-1: Regional Concept for Transportation Operations (RCTO)
Goals & Objectives Summary (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
</table>
| IV. Incident Management (continued) | C. Increase responder safety | 1. Responder incidents have decreased by 20 percent  
2. All responders are trained  
3. All incident management stakeholders (fire, police, towing, highway, public works, utilities, etc.) are trained and involved  
4. Training on traffic control requirements for all on-scene personnel exists | 1. Responder incidents have decreased by 40 percent  
2. All responders are trained  
3. All incident management stakeholders (fire, police, towing, highway, public works, utilities, etc.) are trained and involved  
4. Training on traffic control requirements for all on-scene personnel is conducted quarterly | 1. Monthly and yearly number of responder incidents  
2. Percentage of responders trained yearly  
3. Percentage of stakeholders trained yearly  
4. The number of quarterly training sessions conducted on traffic control requirements for on-scene personnel |
| | D. Decrease secondary highway incidents | 1. Secondary incidents have decreased by 15 percent  
2. A common training program for responders and incident management personnel exists  
3. A training and re-training schedule is in place | 1. Secondary incidents have decreased by 25 percent  
2. A common training program for responders and incident management personnel is conducted quarterly  
3. A training and re-training schedule is in place | 1. The yearly number of incidents, which occur as a result of a primary incident  
2a. A training program is in place  
2b. The number of quarterly training sessions for responders and incident management personnel  
3a. A training and re-training schedule is in place  
3b. The number of training and re-training sessions held yearly |
### Table 1-1: Regional Concept for Transportation Operations (RCTO)
#### Goals & Objectives Summary (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Short Term Goal (less than five years)</th>
<th>Long Term Goal (five to 10 years)</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV. Incident Management (continued)</td>
<td>E. Establish agency MOUs for incident management first responders</td>
<td>1. MOUs have been established among 50 percent of agencies</td>
<td>1. MOUs have been established among 100 percent of agencies</td>
<td>1. The percentage of agencies that have established MOUs</td>
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<td></td>
<td>F. Continue an active, Incident Management Committee to conduct proactive and post incident reviews</td>
<td>1. Continue a multi-agency major post-incident review process, and schedule routine Incident Management Committee meetings</td>
<td>1. Maintain a multi-agency major post-incident review process, and schedule monthly Incident Management Committee meetings</td>
<td>1. The number of monthly post incident review consortium meetings</td>
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<td>2a. The percent of post-incident reviews conducted after major incidents</td>
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<td></td>
<td></td>
<td></td>
<td>2b. Two intermediate and minor incidents are reviewed monthly</td>
</tr>
<tr>
<td>V. Policy and Procedures</td>
<td>A. Establish and implement applicable policies, procedures, and practices</td>
<td>1. All policies, procedures, and practices dealing with the RCTO are in place</td>
<td>1. All policies, procedures, and practices dealing with the RCTO is utilized by all stakeholders</td>
<td>1. The number of stakeholders using policies, procedures, and practices dealing with the RCTO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Promote “Steer It and Clear It” or a similar legislation</td>
<td>2. “Steer It and Clear It” or a similar legislation is utilized by all stakeholders</td>
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<td>3. Policies, procedures, and practices for RCTO are included in public education material given to drivers</td>
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Recommendations and Action Plan

The RCTO focuses on taking the objectives and goals identified by the stakeholders, developing areas for improvements and enhancements, and making recommendations for short-term and long-term initiatives that will assist NITTEC in fulfilling its mission.

To assist in putting in place these policies, procedures, and practices, the RCTO recommendations are organized into a matrix of action items by service area in Table 11-1. Each action item includes a responsible NITTEC Committee or other partner (in **bold italic**), who should be involved with the proposed action. Recommended short-term action items are **bolded**. Early wins are **underlined**.

Abbreviations for the NITTEC Committees are defined below:

- EC: Executive Council
- RTCMC: Regional Transportation Coordination and Management Council
- BC: Border Crossing Committee
- CC: Construction Coordination Committee
- NITTEC: Niagara International Transportation Technology Coalition
- OIM: Ontario Incident Management Committee
- SP: Strategic Planning Committee
- TOC: Traffic Operations Center Committee
- T&S: Technology and Systems Committee
- WNYIM: Western New York Incident Management Committee

NITTEC has developed a good foundation for regional operations. Moving forward, the RCTO recommended action plan will help to enhance as well as advance the NITTEC mission. Upon review of the plan and recommended actions, it will be important for NITTEC Committees and policy board to confirm the priority of the action items.
1 INTRODUCTION

In 2007, Niagara International Transportation Technology Coalition (NITTEC) completed Strategic Plan 2007, which provides a vision of the region’s transportation future, and recommends actions to guide NITTEC toward fostering a preferred long-term future of mobility and opportunity in the Buffalo Niagara region. One of the recommendations was to develop a concept for transportation operations for the Buffalo Niagara region.

In response to Strategic Plan 2007, NITTEC initiated this Transportation Operations Study, which is divided into two parts: the development of a NITTEC Regional Concept for Transportation Operations (RCTO) and providing support to NITTEC in the development of an Integrated Corridor Management (ICM) initiative. This project is taking the next step beyond Strategic Plan 2007.

The purpose of an RCTO is to provide a framework for regional agencies to improve regional transportation system performance by working together. It is dependent on a deliberate and sustained effort by collaborating operators, planners and other key stakeholders to establish direction and agree on ways to move forward. In summary, an RCTO answers the following questions: What do the stakeholders want to achieve, and how are they going to achieve it?

The purpose of an ICM is to operate the established priority corridors in a more coordinated and integrated manner, thereby increasing overall corridor throughput and enhancing the mobility of the corridor.

As part of this project, the vision provided by Strategic Plan 2007 needed to be revisited and the identified goals and objectives needed to be finalized.

The purpose of this report is to (1) document the existing relationships between various agencies and current operations, (2) describe what is working well, (3) provide recommendations to keep key elements working well, and (4) to identify areas that could be improved to achieve fully integrated operations in the Buffalo Niagara region.

This technical memorandum is a living document and the Identified Areas for Improvements will be reviewed periodically. Modifications to the Action Plan will be made to reflect desired changes in RCTO goals and objectives as well as stakeholders’ needs at the time.

In the second phase of this project, NITTEC will develop a Concept of Operations and Requirements document for an Integrated Corridor Management System (ICM) for the bi-national Niagara Frontier Corridor. The purpose of the ICM is to operate the established priority corridors in a more coordinated and integrated manner, thereby increasing overall corridor throughput and enhancing the mobility of the corridor.
2 NITTEC MEMBERS & CURRENT RELATIONSHIPS

The RCTO provides a framework for regional agencies to improve regional transportation performance by working together. The following section documents NITTEC’s existing governance, membership, committee structure, staffing and funding sources. It also describes the existing collaboration between agencies, operators, planners and stakeholders. Subsequent sections will describe what is working well, provide recommendations to keep key elements working well, and identify areas that could be improved to achieve fully integrated operations in the Buffalo Niagara region.

2.1 Governance

At its inception on September 22, 1995, NITTEC had 14 members and each of these members held a Policy Board seat. The original members were:

- Buffalo and Fort Erie Public Bridge Authority
- City of Buffalo
- City of Niagara Falls, New York
- City of Niagara Falls, Ontario
- Erie County
- Ministry of Transportation, Ontario
- New York State Department of Transportation
- New York State Thruway Authority
- Niagara County
- Niagara Falls Bridge Commission
- Niagara Frontier Transportation Authority
- The Niagara Parks Commission
- Niagara Region
- Town of Fort Erie

A 2008 update to the NITTEC Memorandum of Understanding, which is included in Appendix C, set forth the current membership, committee, staff, and funding structure for the organization.

The Niagara Frontier Transportation Authority (NFTA) acts as a host agency to NITTEC. This arrangement was formalized in an agreement between the New York State Department of Transportation (NYSDOT) and NFTA for supporting Coalition activities and the operation of a Traffic Operations Center (TOC) in January 2001. In addition to providing office space, NFTA also provides administrative services to NITTEC.

Currently, there are five Policy Members, nine General Members, and twelve (12) Affiliate Members. NITTEC is governed by an Executive Council, as defined in Article 2 of the MOU.
The Policy Members make up the membership of the Executive Council, which is the decision-making entity of NITTEC.

### 2.2 Membership

During its 2007 Strategic Planning process, NITTEC adopted the following statement of membership principles and categories:

- **a)** NITTEC can serve as a regional coalition without every transportation-related regional agency being a member.

- **b)** Membership should include any agency that either perceives benefits for itself or can contribute to some facet of the Coalition, but different tiers of membership, including some form of “affiliate” membership might appropriately reflect the different requirements of and benefits to be derived by different agencies/jurisdictions.

- **c)** Some agencies/jurisdictions might serve the Coalition primarily through participation in Committees and build consensus among other members of that Committee, because an agency/jurisdiction does not need to be a “policy member” of NITTEC to make policy recommendations.

- **d)** While equal votes for all agencies/jurisdictions, regardless of contribution, might not be appropriate, the effort should be made to engage all regional transportation-related agencies/jurisdictions in participating in the organization in one way or another.

#### 2.2.1 Policy Board

Currently, NITTEC consists of the following five Policy Members:

- Erie County
- Ministry of Transportation Ontario
- New York State Department of Transportation
- New York State Thruway Authority
- Niagara Frontier Transportation Authority

Each Policy Member has one vote on the Executive Council.

#### 2.2.2 General Members

General members designate representatives to actively participate in at least two Committees. They may also attend Executive Council meetings and Regional Transportation Coordination and Management Council meetings as non-voting participants. Current General Members of NITTEC include:

- Buffalo and Fort Erie Public Bridge Authority
- City of Buffalo
Other governmental entities, which are actively engaged in transportation operations, have transportation facility or infrastructure ownership, and are approved by the Executive Council as General Members, can be admitted as general members.

### 2.2.3 Affiliate Members

Affiliate members send representatives to Committee meetings, Executive Council meetings and Regional Transportation Coordination and Management Council meetings as non-voting participants. Current Affiliate Members include:

- Canada Border Services Agency
- Federal Highway Administration
- Greater Buffalo Niagara Regional Transportation Council (GBNRTC)
- John’s Towing
- New York State Department of Environmental Conservation
- New York State Police
- Ontario Provincial Police
- Rusiniak’s Towing
- Town of Amherst
- Town of Tonawanda
- Town of Niagara on the Lake
- United States Customs and Border Protection Agency

### 2.3 Committee Structure

NITTEC consists of two Councils and seven Committees. Figure 2-1 depicts NITTEC’s current organizational structure. The Executive Council and the Regional Transportation Coordination and Management Council (RTCMC) can establish additional standing or ad-hoc Committees and/or project teams for specific tasks. Each Committee prepares and submits individual Committee accomplishments and work plans.
2.3.1 Executive Council

The NITTEC Executive Council provides overall program and policy direction to NITTEC. It directs the work of the Regional Transportation Coordination & Management Council. It also establishes operating procedures and oversees NITTEC’s annual budget. It accepts new members to the Policy, General, and Affiliate Member classes.

2.3.2 Regional Transportation Coordination and Management Council (RTCMC)

The RTCMC facilitates the coordination of capital and operational issues among the NITTEC Members. It provides oversight and approval responsibilities for the activities of the NITTEC Executive Director. The RTCMC provides oversight and approval responsibilities for the activities of all Committees.

2.3.3 Border Crossing Committee

The Border Crossing Committee aims to foster communications and coordination among NITTEC members, border agencies, and stakeholders such as the bridge authorities. The goal is
that better coordination will lead to the development of policies, procedures, and protocols to improve management of the border crossings for efficient movement of people and goods across the region’s bi-national border.

2.3.4 Construction Coordination Committee

The Construction Coordination Committee provides standards for the manner in which NITTEC Members communicate, coordinate, and manage construction information. It coordinates and manages the development and implementation of the NITTEC members traffic management plans and activities related to construction. It reviews the NITTEC members construction programming to identify potential conflicts and mitigation. It identifies Intelligent Transportation Systems (ITS) and operational opportunities within scheduled construction projects to minimize the impacts on regional mobility.

2.3.5 Ontario Incident Management Committee

The Ontario Incident Management Committee directs better coordination, integration, and implementation of operations to enhance the effectiveness of the region’s highway incident management process. It fosters communications and coordination among transportation agencies, public safety agencies, emergency service providers, and traveler information sources that will lead to the development of policies, procedures, and protocols for the management of highway incidents. It plans and executes real time traffic management for special events.

2.3.6 Strategic Planning Committee

The Strategic Planning Committee assesses NITTEC’s performance in meeting the expectations of members, stakeholders, and the public. It establishes strategic initiatives to meet NITTEC’s mission. It reviews and maintains NITTEC agreements, programs, and documentation to reflect the current state of practice and regional conditions. It reviews and maintains strategic planning documentation to establish priorities and identify needs. It identifies, initiates, and manages operations, planning, studies, and requirements for establishing NITTEC goals, objectives, and services. The Strategic Planning Committee works with the Metropolitan Planning Organization (GBNRTC) to coordinate regional transportation planning and operations activities, and to make recommendations to the RTCMC on NITTEC’s long-term direction.

2.3.7 Traffic Operations Center (TOC) Committee

The TOC Committee establishes the operating procedures and protocols of the NITTEC TOC to monitor and report traffic conditions on the transportation system on a real-time basis to NITTEC Members and the public. It also recommends and coordinates traffic management strategies to minimize delays and improve safety. The TOC Committee participates in planning for and managing the transportation system during special events and during major incidents.

2.3.8 Technology and Systems (T&S) Committee
The T&S Committee identifies and coordinates NITTEC Members plans for use of ITS architecture and elements for Advanced Traffic Management (ATM). It facilitates the development and introduction of regionally compatible ITS architecture and technology for traveler information and traffic management. The T&S Committee reviews Revolving Loan Fund project applications for consistency with Regional ITS objectives and compatibility with existing systems for integration. It provides recommendations to the RTCMC on technical aspects of loan applications.

### 2.3.9 Western New York (WNY) Incident Management Committee

Similar to the Ontario Incident Management Committee, the WNY Incident Committee develops recommendations for better coordination, integration, and implementation of operations to enhance the effectiveness of the region’s highway incident management process. It works to improve communications and coordination and develops policies, procedures, and protocols for the management of highway incidents.

### 2.4 Participation Levels

The NITTEC region includes sixty-four (64) local municipalities on the United States side and twelve (12) on the Canadian side. Of these, fewer than a dozen municipalities and agencies are active members of NITTEC. To completely fulfill NITTEC’s mission, it is important that there be active participation from all operating agencies including border-crossing agencies, such as, Canada Border Services Agency (CBSA), United States Customs and Border Protection (CBP), municipal departments of public works, police, emergency responders, transit providers, and towing operators.

### 2.5 Staffing

NITTEC staff currently consists of the Executive Director, TOC Manager, Engineering Manager, TOC Operations Technicians, Systems staff, and one administrative assistant. Exhibit 2-2 depicts NITTEC’s current internal organization.

The Executive Director reports to the Executive Council and the RTCMC, and manages the day-to-day operations of NITTEC, administers the Revolving Loan Fund, and progresses action items in the Committee work plans. The Executive Director also oversees the TOC, which includes identifying conflicting mobility restrictions, such as lane closures on parallel facilities for construction contracts, maintenance, and utility operations.

Based on a detailed staffing impact analysis conducted as part of the Strategic Plan 2007 effort, NITTEC identified a need for additional staff to support expanded services over the next five years. The increases would include additional operations managers, engineering managers, as well as additional operators and systems staff.
2.6 Funding

The NITTEC Executive Director prepares an annual budget for the fiscal year that begins April 1 and ends March 31. The Executive Council reviews the proposed budget. Once approved, NYSDOT incorporates the budget into its presentation to the Greater Buffalo-Niagara Regional Transportation Council on behalf of NITTEC for inclusion in the region’s Transportation Improvement Program (TIP).
3 KEY EXTERNAL CONSTITUENCIES

NITTEC’s four main external constituencies include the traveling public, tourism related businesses, freight companies, and information service providers (ISPs) as shown in Exhibit 3-1. NITTEC receives information, processes it, and disseminates it back to its constituencies in a variety of methods. It uses technology to provide real-time traffic information, border-crossing times, and information regarding upcoming construction projects and special events through the NITTEC web site and on-road information systems such as variable message signs (VMS), highway advisory radio (HAR), and traffic condition warning signs (TCWS).

Different constituencies need information for different reasons. For example, freight companies look to NITTEC to provide border-crossing times. The traveling public may want to learn about construction delays or emergency closures. Tourism-related businesses seek event related information, and tourists unfamiliar with the Buffalo Niagara region may be looking for time saving information. While they use different channels, NITTEC is the nucleus for overall communication, data processing, and information dissemination related to mobility and safety in the bi-national region.

Exhibit 3-1: External Constituencies
4 INPUT/DISCUSSIONS

For the success of this study, stakeholder involvement and input were essential. Two rounds of workshops were conducted in addition to vetted discussions with NITTEC management and the Strategic Planning Committee. Workshop One was a series of five workshops that were held on September 16-18, 2008 to obtain agency input on the project to date. Each workshop focused on one of the following topics:

- Border Crossing
- Canada Policy & Operations
- Canada Incident Management
- United States Policy & Operations
- United States Incident Management

The following were the steps conducted to gain input from stakeholders:

1. Vision, goals, and objectives were vetted among the consultant team for initial revisions.

2. Candidate vision, goals, and objectives were presented to NITTEC management and stakeholder groups at Workshop One conducted from September 16-18, 2008, in the United States and Canada.

3. Candidate vision, goals, and objectives were revised based on comments received.

4. Candidate vision, goals, and objectives were vetted among the consultant team for final revisions.

5. Candidate vision, goals, and objectives were presented to NITTEC management and ICM stakeholders at Workshop Two held on February 25, 2009, in the United States.

6. Vision, goals, and objectives were finalized.

Details of Workshop One, including workshop attendees, agendas, presentations and discussions, are documented in a separate report titled Summary of Workshop One (October 2008), which is included as Appendix B.
5 PROCESS

The goals and objectives identified by Strategic Plan 2007 served as a starting point for candidate goals and objectives and were supplemented by other NITTEC reports, such as the November 2002 Strategic Transportation Direction Report.

Using this information, candidate goals and objectives were developed, which described what will be done, and how it will be achieved.

These goals and objectives were formulated so that they met the following criteria:

a. **Be a statement** – Clear, and concise statement that defines what the RCTO is trying to achieve.

b. **Be measurable** – What gets measured gets done! By establishing a performance measure for each goal, progress towards the goal can be monitored for success.

c. **Have a timeframe** – Each goal was separated into a short-term and long-term timeframe. Short-term goals identified an immediate need and were defined as requiring five years or less for implementation, whereas long-term goals were defined as requiring more than five years for implementation.
6 RCTO VISION AND OBJECTIVES

6.1 RCTO Vision

The finalized RCTO vision is “to establish a basis for a safe, reliable, efficient, and seamless surface transportation system for the NITTEC region.”

6.2 RCTO Operational Categories and Objectives

For easier implementation, five RCTO operational categories were developed to identify where improvements are needed. These categories are: Agency Coordination, Traveler Information, Mobility (Arterial, Border, Freeway, and Transit), Incident Management, and Policy and Procedures.

For these categories, a total of 19 objectives were identified. The objectives defined within each category are listed in Table 6-1 and are outlined in greater detail in Section 7.

Table 6-1: RCTO Operational Categories and Objectives

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
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| 1. Agency Coordination | ➢ Improve NITTEC participation *(7.1)*  
➢ Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents *(7.2)* |
| 2. Traveler Information | ➢ Provide easily accessible, coordinated, clear and concise, real-time information *(7.3)*  
➢ Promote use of traveler information services *(7.4)*  
➢ Increase accuracy of congestion (travel time) information *(7.5)*  
➢ Promote seamless operation among modal choices *(7.6)* |
| 3. Mobility (Arterial, Border, Freeway, Transit) | ➢ Minimize travel delay *(7.7)*  
➢ Promote use of expedited clearance programs and systems *(7.8)*  
➢ Enhance transit operations *(7.9)*  
➢ Reduce travel time uncertainty *(7.10)*  
➢ Balance traffic loads on border crossing corridors *(7.11)*  
➢ Increase awareness of cross-border transit solutions *(7.12)* |
Table 6-1: RCTO Operational Categories and Objectives (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
</table>
| 4. Incident Management | ➢ Establish incident classifications and severity guidelines *(7.13)*  
➢ Decrease highway incident clearance time *(7.14)*  
➢ Increase responder safety *(7.15)*  
➢ Decrease secondary highway incidents *(7.16)*  
➢ Establish agency MOUs for incident management first responders *(7.17)*  
➢ Continue an active, Incident Management Committee to conduct proactive and post incident reviews *(7.18)* |
| 5. Policy and Procedures | ➢ Establish and implement applicable policies, procedures, and practices *(7.19)*                                                                 |
7 CANDIDATE RCTO GOALS AND PERFORMANCE MEASURES

For each of the 19 objectives within the five RCTO operational categories, a set of reasonable and applicable short and long-term goals and their corresponding performance measures were developed. The short-term goals have a target implementation of less than five years. The long-term goals have a target implementation of five to ten years.

**Operational Category 1: Agency Coordination**

An essential component of how well a transportation system functions within a city, region, or state is agency coordination. Multi-agency coordination is the first and most important step to establishing a successful regional transportation system; and agency communication and collaboration is the key to regional traveler information sharing, incident and emergency management, and signal coordination across jurisdictional boundaries. This is why the goals established by the RCTO are geared towards improving agency participation, and coordination among multiple agencies.

7.1 Improve NITTEC Participation

**Short-Term Goals**

- 75 percent of all transportation related agencies\(^2\) participate in and contribute to NITTEC activities
- All policy and general member agencies attend 75 percent of appropriate Council and Committee meetings\(^3\)

**Long-Term Goals**

- 95 percent of all transportation related agencies participate in and contribute to NITTEC activities
- All policy and general member agencies attend 90 percent of appropriate Council and Committee meetings

**Performance Measures**

Progress toward the short and long-term goals of encouraging and improving NITTEC participation can be assessed by monitoring the following:

- Yearly percentage of transportation related agencies involved in NITTEC activities
- Attendance of policy and general member agencies at appropriate meetings

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\(^2\) Includes public agencies/authorities, governmental entities that are actively engaged in transportation operations, or have transportation facility or infrastructure ownership.

\(^3\) As per executed 2008 MOU, dated March 31, 2008.
7.2 Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents

**Short-Term Goals**

- Center-to-center (C2C) communications\(^4\) is functioning among all transportation related agencies in the region
- Incident data is shared among all responding agencies
- A uniform method of collecting and reporting information has been established among all agencies

**Long-Term Goals**

- Same as above

**Performance Measures**

Progress toward the short and long-term goals of improving inter-agency and cross-jurisdictional coordination can be assessed by doing the following:

- Evaluate the use of established center-to-center communication links
  - Number of agencies
  - Monthly activity
  - Monthly down time
- Yearly survey of agencies
- Procedures are in place
  - Quarterly use of procedures

**Operational Category 2: Traveler Information**

Traveler information becomes increasingly important to motorists and transit riders because it can help to select departure time, mode of travel, and alternative routes if an incident occurs. The number of traveler information users reveals not only how travelers prefer to receive traveler information but also how efficiently either traffic or non-traffic related information is disseminated to the traveler during an emergency situation. This is why the goals established by the RCTO focus on ways to improve traveler information sharing among modes and dissemination to the traveling public.

7.3 Provide easily accessible, coordinated, clear and concise, real-time information

**Short-Term Goals**

- The information from all agencies is disseminated across all available modes (web, television, radio, telephone, new technologies, etc.)
- The information is provided in real-time

---

\(^4\) Includes data and video sharing.
Traveler information usage has increased by 100 percent
A 75 percent customer traveler information satisfaction rating has been achieved among local commuters and border crossing commuters receiving information

Long-Term Goals

- The information from all agencies is disseminated across all available modes (web, television, radio, telephone, new technologies, etc.)
- The information is provided in real-time.
- Traveler information usage has increased by 150 percent
- A 85 percent customer traveler information satisfaction rating has been achieved among local commuters and border crossing commuters receiving information

Performance Measures

Progress toward the short and long-term goals of providing real-time information can be measured by monitoring the following:

- The number of available traveler information modes per year
- The number of times information has been posted on VMS, HAR, etc. per month
- The monthly use of traveler information
  - Traveler surveys are conducted
  - Web site hits
  - 511 telephone service calls
- Yearly traveler surveys to:
  - Differentiate the type of traveler (i.e. local commuter and border crossing)
  - Determine traveler satisfaction

7.4 Promote use of traveler information services

Short-Term Goals

- A mode of real time traveler information is used for 50 percent of commuters and 30 percent of border crossings

Long-Term Goals

- A mode of real time traveler information is used for 65 percent of commuters and 50 percent of border crossings

Performance Measures

Progress toward the short and long-term goals of promoting the use of traveler information services can be assessed by performing the following:

- Evaluate the use of traveler information monthly
  - Traveler surveys are conducted
7.5 Increase accuracy of congestion (travel time) information

**Short-Term Goals**
- Travel trip time information received from systems are 90 percent reliable

**Long-Term Goals**
- Travel trip time information received from systems are 95 percent reliable

**Performance Measures**
Progress toward the short and long-term goals of increasing accuracy of information can be assessed by the following:
- Compare reader time vs. actual travel time for selected periods and links

7.6 Promote seamless operation among modal choices

**Short-Term Goals**
- All surface modes are integrated into a traveler information system

**Long-Term Goals**
- Same as above

**Performance Measures**
Progress toward the short and long-term goals of promoting operations among modal choices can be assessed by measuring the following:
- Percentage of modes included

**Operational Category 3: Mobility (Arterial, Border, Freeway, Transit)**

Mobility is key to the success of a transportation system. Mobility is the measure of the ease of movement within a transportation network. Because of the importance of mobility, the goals established by the RCTO are directed towards efforts at reducing recurring congestion, as well as reducing the effects of incidents on the transportation network.
7.7 Minimize travel delay\textsuperscript{5}

**Short-Term Goals**
- Limit the percent increase in average travel time to less than the percent increase in traffic volume

**Long-Term Goals**
- Same as above

**Performance Measures**
Progress toward the short and long-term goals of minimizing travel delay can be assessed by frequently monitoring and measuring the following:
- Compare non-delayed travel times with delayed travel times for selected time periods and links

7.8 Promote use of expedited clearance programs and systems

**Short-Term Goals**
- The number of vehicles using E-ZPass has increased by 15 percent
- The number of total border crossing trips using electronic pre-clearance programs/systems has increased by 15 percent

**Long-Term Goals**
- The number of vehicles using E-Z Pass has increased by 25 percent
- The number of total border crossing trips using electronic pre-clearance programs/systems has increased by 25 percent

**Performance Measures**
Progress toward the short and long-term goals of promoting clearance programs and systems can be assessed by frequently monitoring and measuring the following:
- Monthly number of vehicles using the E-Z Pass program
- Monthly number of border crossing vehicles using electronic pre-clearance programs/systems

\textsuperscript{5} Additional travel time above normal needed to complete a trip at free-flow speeds. Free-flow speeds, which are defined as 60 mph (or 100 km/hr) on freeways and 35 mph (or 60 km/hr) on primary/major arterials, are used as the national comparison thresholds.
7.9 Enhance transit operations

**Short-Term Goals**
- Transit reliability has increased by 15 percent
- Transit ridership has increased at a rate greater than the increase in traffic volume
- High quality transit corridors have been identified
- Buffalo Niagara International and Niagara Falls International airports have established transit operations (i.e. shuttles to and from hubs or stations including cross border, shuttle service to and from airports)

**Long-Term Goals**
- Transit reliability has increased by 20 percent
- Transit ridership has increased at a rate greater than the increase in traffic volume
- High quality transit corridors have been implemented on two corridors
- Buffalo Niagara International and Niagara Falls International airports have established transit operations (i.e. shuttles to and from hubs or stations including cross border, shuttle service to and from airports)

**Performance Measures**
Progress toward the short and long-term goals of enhancing transit operations can be assessed by periodically monitoring the following:
- Percentage of time running on or close to schedule
- Number of passengers
- Identification of high quality transit corridors
  - Two high quality corridors have been implemented
- Number of routes
  - Frequency of routes

7.10 Reduce travel time uncertainty

**Short-Term Goals**
- Peak hour travel time variability has decreased by 10 percent

**Long-Term Goals**
- Peak hour travel time variability has decreased by 20 percent

**Performance Measures**
Progress toward the short and long-term goals of reducing travel uncertainty can be assessed by evaluating the following:
7.11 Balance traffic loads on border crossing corridors

Short-Term Goals

- The traffic load on any border crossing at peak travel times is in proportion to its capacity in relation to all border crossings

Long-Term Goals

- Same as above

Performance Measures

Progress toward the short and long-term goals of balancing load on border crossing corridors can be assessed by frequently monitoring the following:

- Monthly percentage of border crossing traffic on each facility

7.12 Increase awareness of cross-border transit solutions

Short-Term Goals

- A web-based transit pre-trip planner application has been established, which is used region wide and crosses jurisdictional boundaries seamlessly

Long-Term Goals

- Same as above

Performance Measures

Progress toward the short and long-term goals of increasing awareness of cross-border transit can be assessed by implementing the following:

- A web-based transit pre-trip planner application is operational
  - Use of the application on a quarterly basis

Operational Category 4: Incident Management

Incident management is a planned and coordinated process by multiple public agencies and private sector partners to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. This is why the goals established by the RCTO are geared towards increasing responder safety, establishing agency MOUs, and agreeing upon incident classifications and severity guidelines. All of these are key components to establishing a successful incident management program.
7.13 Establish incident classifications and severity guidelines

Short-Term Goals

- Develop agreed upon definitions for minor, intermediate, and major incidents
- Define incident severity guidelines based on:
  - Incident severity
  - Field Conditions
  - Resources needed
  - Estimated incident duration

Long-Term Goals

- Utilize agreed upon definitions for minor, intermediate, and major incidents
- Utilize incident severity guidelines

Performance Measures

Progress toward the short and long-term goals of establishing incident classifications and severity guidelines can be assessed by identifying the following:

- Incident definitions agreed upon
- Incident definitions universally used
- Incident severity guidelines are defined

7.14 Decrease highway incident clearance time

Short-Term Goals

- Average incident detection to arrival time\(^6\) is less than 10 minutes
- Average incident detection to lane clearance time\(^7\) is reduced by 15 percent.
- Average time from detection to back to normal conditions\(^8\) is reduced by 10 percent
- Responder training exists, which provides guidance on relaying accurate information on what equipment is needed for various incidents

Long-Term Goals

- Average incident detection to arrival time is less than eight minutes
- Average incident detection to lane clearance time is reduced by 25 percent.
- Average time from detection to back to normal conditions is reduced by 20 percent.

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\(^6\) Time differential between the first report of an incident to any agency to when the first official responder from any agency arrived on the scene.

\(^7\) Time differential between the first report of an incident to when the incident travel lanes are cleared.

\(^8\) Time differential between when the first responders arrive on the scene to when the facility has been restored to normal conditions.
Responder training exists, which provides guidance on relaying accurate information on what equipment is needed for various types of incidents

**Performance Measures**

Progress toward the short and long-term goals of reducing clearance time can be assessed by frequently monitoring the following:

- Monthly average incident detection to arrival time
  - Percent reduction of detection to arrival time
- Monthly percent reduction of average incident detection to lane clearance time
- Monthly percent reduction of average time from detection to back to normal conditions
- The number of training and exercise sessions held yearly
- Percentage of responders trained

### 7.15 Increase responder safety

#### Short-Term Goals

- Responder\(^9\) incidents\(^10\) have decreased by 20 percent
- All responders are trained
- All incident management stakeholders (fire, police, towing, highway, public works, utilities, etc.) are trained and involved
- Training on traffic control requirements for all on-scene personnel exists

#### Long-Term Goals

- Responder incidents have decreased by 40 percent
- All responders are trained
- All incident management stakeholders (fire, police, towing, highway, public works, utilities, etc.) are trained and involved
- Training on traffic control requirements for all on-scene personnel is conducted yearly

**Performance Measures**

Progress toward the short and long-term goals of increasing responder safety can be assessed by frequently monitoring the following:

- Monthly and yearly number of responder incidents

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\(^9\) Those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment.

\(^10\) Includes crashes, injuries, and fatalities.
Percentage of responders trained yearly
Percentage of stakeholders trained yearly
The number of quarterly training sessions conducted on traffic control requirements for on-scene personnel

7.16 Decrease secondary highway incidents

Short-Term Goals
- Secondary incidents\(^{11}\) have decreased by 15 percent
- A common training program for responders and incident management personnel exists
- A training and re-training schedule is in place

Long-Term Goals
- Secondary incidents have decreased by 25 percent
- A common training program for responders and incident management personnel is conducted quarterly
- A training and re-training schedule is in place

Performance Measures
Progress toward the short and long-term goals of decreasing secondary incidents can be assessed by frequently monitoring and measuring the following:
- The yearly number of incidents, which occur as a result of a primary incident
- A training program is in place
- The number of quarterly training sessions for responders and incident management personnel
- A training and re-training schedule is in place
  - The number of training and re-training sessions held yearly

7.17 Establish agency MOU’s for incident management first responders

Short-Term Goals
- MOU’s have been established among 50 percent of agencies

Long-Term Goals
- MOU’s have been established among 100 percent of agencies

\(^{11}\) Accidents occurring upstream of the initial incident, in either direction, within or at the boundary of the queue formed by the initial incident.
Performance Measures

Progress toward the short and long-term goals of establishing agency MOUs can be assessed by evaluating the following:

- The percentage of agencies that have established MOU’s

7.18 Continue an active, Incident Management Committee to conduct proactive and post incident reviews

Short-Term Goals

- Continue a multi-agency major post-incident review process, and schedule routine Incident Management Committee meetings

Long-Term Goals

- Maintain a multi-agency major post-incident review process, and schedule monthly Incident Management Committee meetings
- All major incidents and two minor and intermediate incidents per agency are reviewed

Performance Measures

Progress toward the short and long-term goals of continuing an incident review consortium can be assessed by frequently monitoring and measuring the following:

- The number of monthly post incident review consortium meetings
- The percent of post-incident reviews conducted after major incidents
- Two intermediate and minor incidents are reviewed monthly

Operational Category 5: Policy and Procedures

Policy and procedures help to provide guidance and support for all stakeholder involved. Some examples of policies and procedures essential to incident management are those addressing responder safety, quick clearance goals, and driver removal laws. State, regional, and local partners should work together to develop and implement traffic incident plans, practices and procedures appropriate for their jurisdictions. The RCTO goals are geared towards establishing and implementing appropriate policies and procedures.

7.19 Establish and implement applicable policies, procedures, and practices

Short-Term Goals

- All policies, procedures, and practices dealing with the RCTO are in place
- Promote “Steer It and Clear It” or a similar legislation
- Policies, procedures, and practices for RCTO are included in public education material given to drivers

**Long-Term Goals**

- All policies, procedures, and practices dealing with the RCTO are utilized by all stakeholders
- “Steer It and Clear It” or a similar legislation is utilized by all stakeholders
- Policies, procedures, and practices for RCTO are included in public education material given to drivers

**Performance Measures**

Progress toward the short and long-term goals of establishing and minimizing policies, procedures, and practices can be assessed by monitoring and measuring the following:

- The number of stakeholders using policies, procedures, and practices dealing with the RCTO
- “Steer It and Clear It” or similar legislation are used by stakeholders
- The number of public education materials given to drivers that include RCTO policies, procedures, and practices

A complete summary of the RCTO objectives, goals, and performance measures are contained in Appendix A of this report.
8 RELATIONSHIP OF THE RCTO TO CURRENT NITTEC PROCESSES

NITTEC and its member agencies continue to advance and grow in capacity. In recent years, considerable advancements have been made in the area of data collection, information dissemination, and incident management. The following section details recent accomplishments, highlights what is working well and where the Coalition could improve. It also relates how the RCTO can be incorporated into existing NITTEC projects and processes. Sections 9, 10 and 11 discuss how the RCTO could further advance NITTEC initiatives.

8.1 Policies and Procedures

During the 2007 strategic planning process, the NITTEC MOU was revised to reflect the makeup and operation of the Coalition and to address members needs for representation within NITTEC. The MOU outlines committee structures, voting rights, and governing covenants.

The 2007 Strategic Plan identifies priorities and Committee responsibilities for each task. The Coalition identified regional construction coordination and border crossing traffic management as a key issue, and as a result, NITTEC created two new Committees and advanced work plans related to these issues.

While policy and committee structures have been updated to improve NITTEC’s structure of operations and governance, there is a need to increase member participation. The RCTO could assist the Coalition in further strengthening existing policies and procedures by improving member participation (Objective 7.1). NITTEC aims to attract 75 percent of all transportation related agencies to participate and contribute in NITTEC activities within the next five years. Within ten years, the goal is to have participation from 95 percent of agencies and to have all member agencies attend 90 percent of NITTEC meetings. NITTEC membership activities may not be a core job function for some agencies, and some agencies may lack the resources to participate. However, in order for NITTEC to function as a true coalition, it needs to engage additional stakeholders.

As part of the development of the RCTO, several workshops were held to solicit input from stakeholders. Over 60 persons from 18 different agencies/organizations participated in the five workshops in September 2008. One of the key comments was that there is a lack of a formal “champion” at senior level of government to promote the benefits of NITTEC. Another concern was that NITTEC needs clear operating goals that are agreed upon by all agencies. The RCTO has helped NITTEC to identify both short-term and long-term goals through a process with substantive stakeholder input.

Moving forward, NITTEC aims to establish and implement applicable policies, procedures, and practices regarding governance of the organization (Objective 7.19). Different member agencies have different priorities, however, the first objective is to put in place all policies, procedures, and practices related to the RCTO. NITTEC could aim to find common ground among the different agencies in order to advance policies and procedures.
The second objective, which NITTEC members would like to see in the short-term, is to promote “Steer It and Clear It” or similar legislation, which would advise motorists involved in minor traffic crashes to move their vehicles to the roadway shoulder in an effort to reduce congestion and keep traffic moving. **Objective 7.19** aims to include policies, procedures, and practices for RCTO in public education material given to drivers.

### 8.2 Agency Coordination

#### 8.2.1 Government Agencies

Governmental agencies have varying levels of involvement in NITTEC. The five Policy Members, which include the MTO, NYSDOT, NYSTA, NFTA, and Erie County, provide overall program and policy direction to NITTEC through their votes on the Executive Council and the RTCMC. The RTCMC facilitates the coordination of capital and operational issues among NITTEC members. It implements the decisions of the Executive Council and has oversight over the other seven Committees. Nine General and 12 Affiliate Members participate in NITTEC activities through their involvement on Committees.

This current structure functions well to advance policy directives in collaboration among members, however there is a need to improve coordination and collaboration around incident management. NITTEC aims to improve inter-agency and cross-jurisdictional collaboration during highway incidents (**Objective 7.2**). It could accomplish this objective by developing functioning center-to-center communications among all transportation related agencies in the region, sharing incident data among all responding agencies, and establishing a uniform method of collecting and reporting information among all agencies.

#### 8.2.2 Border Crossings

In the last two years, the newly formed Border Crossings Committee, which has 17 member agencies, has created a standard methodology for measuring and reporting border wait times for use by all members and stakeholders. The newly redesigned NITTEC web site and traveler notifications use these data to post accurate waiting times for each of the border crossings.

The U.S. Border Crossing Management Plan provides scenario-based directives for each border crossing and circumstances when there are delays at multiple crossings on the United States side. The goal of the plan is to prevent queue-ends from forming on high-speed facilities without serious disruption to the arterial street system. The plan includes traffic management techniques to be utilized depending on the significance of the delay. While the plan is comprehensive, its effectiveness has not yet been evaluated.

A similar plan has been developed for the Canadian side in development by Niagara Region in collaboration with Ontario Incident Management Committee partners. Canadian border delay measurements from queue warning systems are currently under development and should be available in late 2009.

These existing methods of traveler notification at the borders are working well. However, through the RCTO, NITTEC aims to foster better systems for measuring wait time and to
balance traffic loads on border crossing corridors (Objective 7.11) in proportion to crossing capacity.

The existing web site could be enhanced to increase awareness of cross-border transit solutions through the establishment of a web-based bi-national transit pre-trip planner application (Objective 7.12).

8.2.3 Emergency Responders

NITTEC provides training and education to emergency responders. In 2007, the Western New York Incident Management Committee distributed Emergency Responder Checklists, held trainings for first responders, hosted a presentation regarding New York State Department of Conservation’s (NYSDEC) involvement in traffic incident management when accidents involve environmental hazards, and conducted post-incident critiques as part of regular team meetings. It also formed a police/fire outreach team to promote improved incident management practices.

Past training has been successful, but the Coalition would like to increase responder safety (Objective 7.15). NITTEC could work further with its members to reduce responder accidents and injuries. NITTEC could also develop continued training on the scene safety and traffic control requirements for all personnel on the scene of an incident and work to monitor towing company specialty resources to ensure they are well managed and sufficient.

8.3 Information Flows

Dissemination of information to the public and NITTEC stakeholders is a key NITTEC priority. The NITTEC Traffic Operations Center (TOC) is a 24-hour centralized operation center that collects and analyzes real-time traffic information for distribution to NITTEC members, stakeholders, and the public. It is a good example of what is working well because the TOC maintains a high level of service to members and stakeholders while continuing to keep pace with national standards of practice. In 2007, the TOC handled 46,000 calls and 9,000 incidents. In the future, the web site could be further enhanced as a vehicle for traveler information in the region.

NITTEC’s Advanced Traffic Management System, called Crossroads, is comprised of a central software and variety of field devices used to continuously gather information. Crossroads takes diverse inputs and brings them together in a simple, practical, and user-friendly interface for the operators of the system. Crossroads uses Erie County Central Police Services Computer Aided Dispatch data, as well as Closed Circuit Television (CCTV) and traffic monitoring equipment, to detect problems. Crossroads can deploy VMS, warning flashers and automated fax and email to disseminate information to the public and other agencies.

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12 A responder is defined as those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment

http://www.co.pierce.wa.us/pc/abtus/ourorg/dem/DefineFirstResponder.htm
NITTEC established a system that automatically notifies NITTEC about traffic incidents on major roadways in Erie County when police agencies receive a call to a dispatch center. The system automatically forwards notifications to Crossroads when incidents are entered into the police computer aided dispatch system. The integration of these two systems greatly improves the flow of information between police and NITTEC and provides a backbone for future relationships and transfer of value added information. NITTEC is currently working with three townships in Erie County on a plan to expand the system for more comprehensive geographic coverage. The current implementation of the system was one of the best in the country for Traffic Incident Management (TIM) as rated by the FHWA.

Other recent accomplishments by NITTEC related to the TOC include the planning and implementation of special event traveler information strategies, sponsorship of the first statewide Traffic Management Center (TMC) Workshop, coordination of traffic management plans for major construction projects, and establishment of information sharing and communication protocols with the National Weather Services.

NITTEC has established procedures and protocols to manage traffic during events. A procedures manual sets protocols for criteria and procedures for traffic condition warning, motor vehicle incidents, congestion, Amber Alerts, and utility emergencies. During special events, such as Independence Day and the Ellicottville Fall Festival, NITTEC develops traffic management plans that identify routes to be impacted and provides alternative routes and information to travelers using VMS and HAR.

NITTEC has several system components that help the traveling public obtain information:

- The CCTV system of cameras provides the TOC with live images of the highway network to identify traffic congestion and assist in incident detection, verification, and clearance on both sides of the border. Live video could be shared by MTO as soon as high bandwidth communication is in place from the borders to NITTEC.

- Variable Message Signs (VMS) are a series of signs stationed along the highway network, which are capable of displaying various messages that inform motorists of traffic conditions.

- The Highway Advisory Radio (HAR) system advises motorists of traffic conditions that may affect their travel, operating in conjunction with an advisory sign system that notifies motorists when a radio message is playing in the United States.

- TRANSMIT is a system that uses E-ZPass electronic tolling transponders to measure travel times between selected points on the road network. TRANSMIT was developed by the Transportation Operations Coordinating Committee (TRANSCOM), a coalition of 16 transportation and public safety agencies in the New York, New Jersey, Connecticut metropolitan region. TRANSMIT is comprised of devices capable of reading E-ZPass transponders located at strategic locations throughout the road network. As a vehicle equipped with a transponder
passes a reader, the tag ID\textsuperscript{13} and time it passed is read and communicated to the server. As the vehicle passes another reader at a different point within the road network, the new IDs are matched and the time differential is calculated. The result is the travel time between two points on the road network. Post processing and averaging of numerous vehicles provides a near real-time measure of travel times for the various road segments of the network monitored.

- Road Weather Information System (RWIS) has a series of sensors that gather weather and road information that can be used to provide motorists with travel condition forecasts and to assist maintenance crews with the efficient treatment of highway surfaces.

- The Skyway Closing System is an advance warning system that alerts motorists to closures on the Buffalo Skyway in an effort to reduce delays and increase safety.

In 2007, NITTEC developed a Construction Coordination Committee to facilitate the coordinated management of regional construction activities from planning and programming through design and construction, to enhance the effectiveness of the region’s construction activities and information disseminations activities, minimize impacts on mobility, and travel reliability.

In 2007, the Technology and Systems Committee finalized the development of Portable Variable Message Sign (PVMS) Standards for NITTEC. These standards are used to assist in the integration of contractor and member-supplied PVMS into the NITTEC Crossroads System.

In 2008, NITTEC advanced the development of regional Variable Message Signs messaging standards, coordinated with the National Weather Service, coordinated special event planning and traveler notifications, and continued to participate in the development of the Statewide Information Exchange.

There are four areas where improvements related to information flow are needed. First, RCTO workshop participants stated there is a need to improve information dissemination regarding unplanned incidents to NITTEC. Second, NITTEC has made some progress establishing partnerships with the media, but would like to establish formal agreements and connectivity. Third, the United States side has developed a comprehensive system of data collection and information dissemination, however a recurring comment at the RCTO workshops was that the Canadian side data needs to be integrated. Specifically, ‘center-to-center’ capability is needed between MTO and NITTEC. Finally, different VMS standards between Ontario and New York result in messages on opposite sides of the border to look different to drivers. These procedures should be coordinated and combined under the same standard.

The issues regarding information dissemination, unplanned events, and media partnerships could be addressed by initiatives developed to achieve Objective 7.3, to provide easily accessible, coordinated, clear and concise, real-time information. Traveler surveys should

\textsuperscript{13} A different number is assigned to the tag and used to prevent the tracking of individual Tag Identification Numbers.
continue to be conducted annually to differentiate between local commuters and travelers crossing the border.

Additionally, NITTEC could also increase communication by promoting the use of traveler information services (Objective 7.4). A short-term goal is for 50 percent of commuters and 30 percent of border crossings to use real time traveler information.

Developing center-to-center communications between MTO and NITTEC could be a function of Objective 7.2, to improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents. Developing standard VMS procedures is also a function of inter-agency coordination and collaboration. NITTEC may also consider improving information flows with police by expanding the automatic notification of traffic incidents to the Crossroads system on major roadways.

Another way to improve information flows would be to promote seamless operation among modal choices (Objective 7.6). A short-term goal is to integrate all surface modes into a traveler information system within five years.

Another initiative related to information flow that the RCTO could advance includes reducing travel time uncertainty (Objective 7.10). This could be achieved by increasing the number of available locations where travelers can get travel time information.

Objective 7.5 is to increase the accuracy of congestion information, including travel time information. NITTEC could aim for travel trip times from expedited clearance programs and systems to be 95 percent reliable.

8.3.1 NITTEC Web Site

The NITTEC web site provides transportation information related to the Buffalo Niagara region. It provides delay times at all border crossings and major roadways travel speeds, as well as information on events and construction activities. According to a customer survey conducted by the web site, people use the web site to find information related to their commute to and from work during peak travel times. In 2007, NITTEC was recognized for the Outstanding ITS Project of the Year award by ITS-NY for the web page development. The web site provides regional traveler information across international and institutional boundaries.

According to stakeholder input at the RCTO workshops, NITTEC receives and posts information about planned events on the Canadian network, such as construction closures. However, there is a need to improve the ability to provide information about unplanned incidents on the Canadian side on the web site.

Objective 7.3 is to provide easily accessible, coordinated, clear and concise, real-time information. The NITTEC web site is a current source of real-time information. The web site is also a means of gauging customer satisfaction and conducting annual surveys to differentiate the type of travelers.
8.4 Mobility

8.4.1 Highway

Working with the City of Buffalo and NYSDOT, NITTEC has identified priority arterial corridors to improve traffic flow through coordination of traffic signals. Traffic signal equipment is being upgraded in the City of Buffalo. The NITTEC central signal software server can monitor traffic flows, signal timings and can make changes, as necessary. Linking the arterial street systems with the expressway systems in order to reduce travel delay is in line with **Objective 7.7**, which is to minimize travel delay\(^\text{14}\). While progress is being made, there is considerably more work to be done on the upgrade of arterial signal equipment, signal coordination, and integration of priority corridors with the expressway systems. The objective is to limit the percent increase in average travel time to less than the percent increase in traffic volume.

In an effort to reduce delay, NITTEC could promote the use of expedited clearance programs and systems (**Objective 7.8**). The short-term objectives are to increase the number of people using E-Z Pass by 15 percent and to increase the number of total border crossing trips using electronic pre-clearance programs or systems by 15 percent. By 10 years, NITTEC aims to increase the number of vehicles using E-Z Pass by 25 percent and increase the number of people using electronic pre-clearance program and systems for cross border trips by 25 percent.

8.4.2 Passenger Bus and Rail

The Niagara Frontier Transportation Authority (NFTA) provides transit service throughout the Erie Niagara region on the United States side of the border. Municipal transit services are provided by the City of Niagara Falls and the Town of Fort Erie on the Canadian side of the border. None of these operations offer a cross-border service.

Several intercity bus companies provide scheduled services to/from and within the Niagara Frontier, as well as across the border. The majority of scheduled and chartered buses crossing at the Niagara Frontier are operated by private tour companies.

Scheduled cross border bus service between Ontario and Western New York is provided by Greyhound Lines Canada, Greyhound Lines Inc., Trentway-Wagar/Coach Canada, Adirondack, Pine Hill, and New York Trailways bus companies. Both Greyhound and Trentway-Wagar/Coach Canada provide multiple daily trips between Toronto, Niagara Falls, Ontario, Fort Erie, and Buffalo. Both services provide connections to major cities outside of the Niagara Frontier, including New York City, Boston, Cleveland, and Chicago. Niagara Airbus and other private companies provide non-scheduled airport service throughout the region.

Amtrak service with the NY Empire Corridor offers the Maple Leaf route, which provides daily service between New York City, Buffalo, Niagara Falls, New York, Niagara Falls, Ontario, and Toronto. This service is provided in conjunction with VIA Rail Canada.

\(^{14}\) Travel delay is defined as additional travel time above normal travel time needed to complete a trip at free-flow speeds. Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) will be used as the comparison thresholds.
VIA Rail provides twice-daily service between Toronto and Niagara Falls, Ontario. As noted above, VIA Rail also provides daily service to New York City in conjunction with Amtrak.

The Greater Ontario Transit Authority (GO Transit) is in the process of expanding service in the region. However, one existing issue is that the character of transit is different across the borders. The United States side is generally an urban area, while the Canadian side is rural.

The RCTO aims to enhance transit operations (Objective 7.9) in the short-term by increasing transit reliability by 15 percent, increasing transit ridership at a rate greater than the increase in traffic volume, identifying high quality transit corridors, and establishing transit operations at regional airports.

8.4.3 Air

NITTEC provides real time information on travel times to the airport via various travel routes as well as transit. As part of its strategy to increase awareness about cross-border transit solutions (Objective 7.12), NITTEC could promote the establishment of transit operations and other shuttle service to and from all airports, like Niagara Airbus. NITTEC could work with Coalition members to develop a region-wide pre-trip planner that crosses jurisdictional boundaries seamlessly. It could attempt to integrate on-line systems together to provide the most accurate information to travelers.

8.5 Incident Management

NITTEC has both a Western New York Incident Management Committee and an Ontario Incident Management Committee. The Western New York Committee conducted incident management training for first responders in 2007, participated in Erie County and Niagara County Traffic Safety Fairs, discussed incident management on specific roadways, drafted incident management practices for adoption, hosted NYSDEC to present information on environmental hazards and traffic incident management, updated FHWA’s Self Assessment Tool for Incident Management, and reviewed NTIMC’s National Unified Goal (NUG) for traffic incident management. The Western New York Incident Management Committee also formed a Police/Fire Outreach Team to promote improved incident management practices.

The Western New York Incident Management Committee is in the process of establishing an MOU between NYSDOT, the New York State Police, and the police departments of Amherst and Tonawanda, New York. The MOU would outline each agency’s role during highway incidents. In 2008, the Committee hosted a region-wide Incident Management Conference. Plans to establish an incident management training program to agencies for use by primary and secondary responders are being advanced.

The Ontario Incident Management Committee has developed an outline and timetable for an umbrella Border Crossing Plan that will coordinate each agency’s existing Roadway Closure Action Plan or other related plans. It also conducted post incident reviews and evaluated Highway Awareness Training programs. The Committee intends to establish communication protocols among agencies and develop contact information. A first step in this process has been to develop a regional Road Closure Action Plan to establish roles and responsibilities of each
agency and contact information. The plan is currently being reviewed and should be finalized in mid 2009. The Committee also will develop a campaign to educate the public about post accident procedures and develop a Niagara Corridor Emergency Management Plan.

According to stakeholder interviews, there is a need to decrease clearance times and reduce resulting queues from incidents, as well as improve the placement of vehicles at the scene of incidents. There is a lack of quick clearance policy and heavy vehicle response policy in Ontario.

Early discussions in the RCTO process identified the need for continued information exchanges and organizational management for incidents. First, there is a need to continue an active Ontario Incident Management Committee, so that major incidents are reviewed across agencies (Objective 7.18). Secondly, there is a need to establish incident classifications and severity guidelines when discussing incident management (Objective 7.13). NITTEC has a short-term goal of developing agreed upon definitions for minor, intermediate and major incidents. Incident severity guidelines will be based on incident severity, field conditions, resources needed and the estimated incident duration. Another needed step to better manage incidents is to establish agency MOUs for incident management first responders (Objective 7.17). The goal is to establish MOUs among 50 percent of agencies in five years and 100 percent of agencies in ten years.

In terms of improving the management of incidents, the RCTO could help NITTEC by decreasing highway incident clearance time (Objective 7.14). Two short-term objectives are to reduce incident response by 20 percent \(^{15}\) and reduce incident clearance times by 20 percent.\(^{16}\)

Objective 7.15 is to increase responder safety. The first objective is to decrease responder incidents by 20 percent.\(^{17}\) A recurring comment from the RCTO workshops was that there needs to be better training and education regarding the common objectives and practices for incident management responders from different agencies. A short and long-term goal is to develop and conduct training on the traffic control requirements for all personnel on the scene of an incident. The number of responders makes this a large task, but as a Coalition, NITTEC can develop standard training that many agencies may be able to use.

Objective 7.16 is to decrease secondary highway incidents.\(^{18}\) The first objective is to reduce secondary incidents by 15 percent. The second objective is to develop a common training

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\(^{15}\) Incident response time is defined as the differential between the first report of an incident to any agency to when the first official responder from any agency arrived on the scene (http://ops.fhwa.dot.gov/incidentmgmt/docs/incident-mgmt-perf/section4.htm)

\(^{16}\) Incident clearance time is defined as the time differential between when the first responders arrive on the scene to when the capacity of the facility has been fully restored (http://ops.fhwa.dot.gov/incidentmgmt/docs/incident-mgmt-perf/section4.htm)

\(^{17}\) A responder is defined as those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment (http://www.co.pierce.wa.us/pc/abtus/ourorg/dem/DefineFirstResponder.htm)

\(^{18}\) Secondary incidents are accidents occurring upstream of the initial incident, in either direction, within or at the boundary of the queue formed by the initial incident (http://www.cte.iastate.edu/mtc/reports/secondary-accidents.htm#_Toc164651734)
program for responders and incident management personnel. Next, NITTEC could put in place a training schedule for the NITTEC First Responder training program. The Coalition could involve all incident management stakeholders, including fire, police, towing, highway, public works, and utilities.
9 OPERATIONS OBJECTIVES WITHIN NITTEC’S FOUR CATEGORIES OF SERVICES

This section maps the 19 objectives and the corresponding goals of the RCTO - identified and documented during Workshop One - into the four services categories of NITTEC as defined within Strategic Plan 2007. The 19 objectives are grouped and presented in the following tables, identified by the category nomenclature, and a brief objective statement. For the reader’s reference, the corresponding goals and performance measures associated with each objective are tabulated in Appendix A.

9.1 Construction and Event Planning & Coordination

Construction and Event Planning & Coordination is one of the core services currently provided by NITTEC. This service is pivotal to NITTEC’s mission statement and to the RCTO vision. During Task A2, Development of Goals and Objectives for the RCTO, there were no new goals nor objectives identified that map directly to this service category. However, Strategic Plan 2007 identified that this core service is needed, desirable, and of significant value. There were goals and objectives identified that have cross-over characteristics and/or indirect ties to this service category. The following seven objectives and their corresponding goals and performance measures (refer to Appendix A) are tabulated in Table 9-1 as the crossover mapped objectives.

Table 9-1: Construction and Event Planning & Coordination

<table>
<thead>
<tr>
<th>Category 19</th>
<th>Objective</th>
</tr>
</thead>
</table>
| 1. Agency Coordination | Improve NITTEC participation (7.1)  
Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents (7.2) |
| 2. Traveler Information | Provide easily accessible, coordinated, clear and concise, real time information (7.3)  
Promote use of traveler information services (7.4) |
| 3. Mobility (Arterial, Border, Freeway, Transit) | Minimize travel delay (7.7) |
| 4. Incident Management | Continue an active, Incident Management Committee to conduct proactive and post incident reviews (7.18) |
| 5. Policy and Procedures | Establish and implement applicable policies, procedures, and practices (7.19) |

19 Category Identification nomenclature and Objective statements used within the NITTEC RCTO Goals, Objectives (December 2008) are reprinted as Appendix A of this document
As mentioned above, these objectives have more relevance and are direct mappings to other core services as detailed in subsequent sections of this document. Of significance here, are the crossover characteristics as they relate to the Construction and Event Planning & Coordination services provided by NITTEC. Below is a listing of possible additional goals and/or objectives for future consideration by NITTEC as they relate to this service:

- Improve the dissemination of information related to construction activities to the public and member agencies including the sharing of raw and processed data (i.e. road closures and lane reductions);

- Continue to improve the coordination and analysis of selective construction projects and agency programs that may affect regional mobility from the perspective of travel demand versus capacity (i.e. traffic balancing);

- Continue to engage new construction stakeholders outside the NITTEC membership (i.e. utility companies); and,

- Continue to monitor and notify member agencies, stakeholders and the public traffic mobility impacts as a result of delays due to construction.

### 9.2 Operational Services

Coordinated regional traffic management, including but not limited to the ITS elements of the transportation system, is a significant role for NITTEC. For some time now, NITTEC has been managing operation of the system ITS elements for some of the larger NITTEC member agencies.\(^{20}\) During *Task A2* and subsequently during the workshop phase, the following seven objectives with corresponding goals and performance measures (refer to Appendix A) were identified as listed in Table 9-2.

#### Table 9-2: Operational Services

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Incident Management</td>
<td>➢ Establish incident classifications and severity guidelines (7.13)</td>
</tr>
<tr>
<td></td>
<td>➢ Decrease highway incident clearance time (7.14)</td>
</tr>
<tr>
<td></td>
<td>➢ Increase responder safety (7.15)</td>
</tr>
<tr>
<td></td>
<td>➢ Decrease secondary highway incidents (7.16)</td>
</tr>
<tr>
<td></td>
<td>➢ Establish agency MOUs for incident management first responders (7.17)</td>
</tr>
<tr>
<td></td>
<td>➢ Continue an active, Incident Management Committee to conduct proactive and post incident reviews (7.18)</td>
</tr>
<tr>
<td>5. Policy and Procedures</td>
<td>➢ Establish and implement applicable policies, procedures, and practices (7.19)</td>
</tr>
</tbody>
</table>

\(^{20}\) NITTEC Strategic Plan 2007
9.3 ITS Deployment and Operations

Similar to Strategic Plan 2007, the core service of ITS Deployment and Operations has been subdivided into six sub-services to group and map the objectives developed through goals identified during the workshop phase. Nine objectives and their corresponding goals and performance measures (refer to Appendix A) are mapped into the sub-services listed in Table 9-3.

Table 9-3: Deployment and Operations

Advanced Traffic Management Systems (ATMS)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Traveler Information</td>
<td>➢ Increase accuracy of congestion (travel time) information (7.5)</td>
</tr>
<tr>
<td>3. Mobility (Arterial, Border, Freeway, Transit)</td>
<td>➢ Minimize travel delay (7.7)</td>
</tr>
<tr>
<td></td>
<td>➢ Enhance transit operations (7.9)</td>
</tr>
<tr>
<td></td>
<td>➢ Reduce travel time uncertainty (7.10)</td>
</tr>
<tr>
<td></td>
<td>➢ Balance traffic loads on border crossing corridors (7.11)</td>
</tr>
<tr>
<td></td>
<td>➢ Increase awareness of cross-border transit solutions (7.12)</td>
</tr>
</tbody>
</table>

Regional Network and Center to Center (C2C) Systems

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agency Coordination</td>
<td>➢ Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents (7.2)</td>
</tr>
</tbody>
</table>

Advanced Traveler Information Systems (ATIS)

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Traveler Information</td>
<td>➢ Provide easily accessible, coordinated, clear and concise, real time information (7.3)</td>
</tr>
<tr>
<td></td>
<td>➢ Promote seamless operation among modal choices (7.6)</td>
</tr>
</tbody>
</table>

Three of the sub-services of this core service group did not map directly to any single objective. The three non-mapped sub-services included: Communications Network, Data Warehousing, and Disaster Recovery Sites. All three of the above, have crossover characteristics and/or virtual ties to other sub-services and mapped objectives already listed. To prevent duplication in documenting the mapped objectives and for ease of reading, only the directly mapped sub-services and corresponding objectives are listed here.
9.4 Other Services

The services included within this core category are related more to NITTEC’s mission of improving the regional bi-national mobility, reliability, and safety through information sharing and coordinated management of operations without the traditional and/or typical ITS tools and infrastructure associated with the other core services mapped above. During Task A2 and subsequently during the workshop phase, three objectives with corresponding goals and performance measures (refer to Appendix A) were identified as listed in Table 9-4.

Table 9-4: Other Services

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agency Coordination</td>
<td>➢ Improve NITTEC participation (7.1)</td>
</tr>
<tr>
<td>2. Traveler Information</td>
<td>➢ Promote use of traveler information services (7.4)</td>
</tr>
<tr>
<td>3. Mobility (Arterial, Border, Freeway, Transit)</td>
<td>➢ Promote use of expedited clearance programs and systems (7.8)</td>
</tr>
</tbody>
</table>

9.5 Improvements and Enhancements Needed to Achieve the Operations Objectives

This sub-section identifies some of the improvements and enhancements necessary to achieve the operations objectives of the NITTEC service categories documented above.

The existing ITS assets directly controlled and/or influenced by NITTEC operations are extensive. An inventory of the above ITS assets was developed for the ICM. The assets are documented in detail within the System Overview and Operational Description (Existing Conditions) Technical Memorandum of that task. To assist in documenting the improvements and enhancements of this section, Exhibit 9-1 provides the reader a visual representation of the existing ITS assets.

A common theme of the goals and objectives of the Operational Services of NITTEC was enhancements and improvements to the incident management service provided by NITTEC. To that end, expansion, enhancement, and continued integration of the TRANSMIT system to the existing NITTEC ATMS system (a.k.a. Crossroads) and the public web system will compliment many of the objectives listed above.

Many of the goals and objectives of the workshop fell within the ITS Deployment and Operations Services grouping of NITTEC. Listed in no particular priority order below are improvements and enhancements to consider in support of the ATMS, ATIS, and C2C sub-service objectives:

- Expansion and continued integration of TRANSMIT (see also Section 10.1);
- Enhancements to the web page to provide transit based pre-trip planning capabilities and integration to other modes of transportation (bus, rail, air, etc.)
(see also Section 10.2). Additionally, NITTEC should consider enhancements to the site, which promote other means of transportation such as High Occupancy Vehicle (HOV), Park and Ride locations, etc.;

- Further enhancements to the web page and field elements to promote and provide additional feeds to other multi-media destinations (i.e. television, radio, etc.) (see also Section 10.2):

- New and/or enhanced communication links to other control centers (i.e. transit, traffic signals, emergency service providers, etc.). Standardization of the information flows between control centers will be critical and the architecture developed within the Buffalo-Niagara Bi-National Regional ITS Architecture project has been adopted (see also Section 10.4). The Bi-National Regional ITS Architecture is posted at [www.consystec.com/buffalo/web/_inventory.htm](http://www.consystec.com/buffalo/web/_inventory.htm).

- Strategically located Variable Message Signs (VMSs) to provide border crossing traffic information and assist in balancing traffic loads on any border crossing (see also Section 10.3).
Exhibit 9-1: Existing Conditions
The improvements and enhancements as listed above are further defined in short-term and long-term action plans or projects in a subsequent section of this Final Report.

The remaining service category of NITTEC entitled Other Services had goals and objectives identified during Workshop One, which were more related to promoting a service rather than traditional improvements. To that end, enhancements to the web page already identified above (i.e. pre-trip planning) along with the promotion of programs, such as HOV, Public transit, Free and Secure Trade (FAST), NEXUS, etc. within the web page, could compliment the goals and objectives mapped to this service. To a large extent, promoting the web page as a one stop center for pre-trip multi-modal trip planning and a real-time traffic information dissemination source could assist in many of the objectives and goals above as it relates to travel trip time variability and reliability, and the promotion of more efficient means and modes of transportation.

9.6 Policies, Procedures, and Practices Needed to Achieve the Operations Objectives

The RCTO has identified various improvement areas and the associated actions for the four categories of NITTEC services. These proposed improvements include various policies, procedures, and practices to be implemented in the short and long terms.
10 SHORT-TERM AND LONG-TERM ACTION PLAN

The following section details fourteen (14) short and long-term actions and/or projects that could be undertaken by NITTEC in response to the objectives identified to date.

10.1 Expansion and Continued Integration of the TRANSMIT System

Currently, TRANSMIT monitors portions of routes I-90, I-290 and 33 in the Buffalo area. The following expansion and continued integration of the system could provide significant benefits to the traveling public and have crossover integration benefits, which result in the need for new VMS’s to provide border crossing traffic information (see Section 11.3).

1. In the **short-term**, expansion of this system along the approaching road network to the United States from the Canadian side is essential. Expansion of the system with seven TRANSMIT sites is planned along the QEW starting at the QEW/406 split and continuing through the QEW/405 and QEW/420 splits (includes sites on Highways 405 & 420) to the Peace Bridge in Fort Erie. The Ontario Ministry of Transportation (MTO) currently plans this work, and integration of the new data feeds into the Buffalo servers by NITTEC could be part of the short-term action plan and an “*early win*” for NITTEC.

2. In the **short term**, expansion of this system along the I-190 corridor from the Queenston/Lewiston border crossing including the Rainbow Bridge to the Peace Bridge could complete the monitoring of the major freeways and arterials of the region.

3. Also in the **short-term**, further expansion and in-fill of TRANSMIT in the Buffalo area including: expansion along I-290 and I-190 from the Town of Tonawanda to the Peace Bridge, and the State Routes 5, 400, and 219, which feed the existing monitored road network could further benefit NITTEC.

4. In the **long-term**, further in-fill of TRANSMIT in the Buffalo area including I-90 and I-990 as necessary for enhanced travel time or incident detection.

5. In the **short-term**, as detailed above within the proposed TRANSMIT projects, continued expansion of that system will necessitate further expansion of the web page, which provides “speed link” information of the road network. Further refinement and/or fine-tuning of the algorithms that calculate speeds should be advanced to improve the reliability and accuracy of the information presented to the public. This project could be part of the short-term action plan and an “*early win*” for NITTEC.

10.2 Web Page Pre-Trip Planning Enhancements and Multi-Modal Integrations

The NITTEC web page is a huge success as recognized by the recent Outstanding ITS Project of the Year award from ITS-NY in 2007. Continued enhancements of the web page could be beneficial to NITTEC as the public turns more and more to the Internet for most of its information needs.
The following enhancements and/or expansions of functions that are provided by the current web service (all proposed for within the short-term action plan) could help achieve many of the objectives identified during the previous tasks of this project:

6. New functionality could be added to provide a pre-trip (non real-time i.e. based on schedule information) planning tool for the various modes of transportation of the area (i.e. transit, shuttle bus, rail, etc.). This will require integration to other systems of other agencies, but as a one-stop center of information for the public, it could also provide the platform to promote other more efficient means of transportation (i.e. public transportation, HOV, etc.).

7. Continued use of the web page to obtain customer feedback is of extreme benefit to providing indicators of performance measures being met. A consistent and standardized surveying tool could provide more traceable results as the performance levels change as new functions and enhancements are implemented. This project could be part of the short-term action plan and an “early win” for NITTEC.

8. Value added marketing and/or promotion strategies can be employed to promote the existing and new feeds of data and video to the commercial multi-media market place. This could include local radio and television stations as a value added service.

10.3 Strategically located VMS for Border Crossing Traffic Information

The primary operators of VMSs within the geographic boundaries of this study are NITTEC and the MTO. VMSs under the operations umbrella of NITTEC are strategically placed, and stakeholders identified no new objectives related to expansion of the VMS coverage area during the workshop phase of this project. However, as with any expansion program, new needs for VMS in different areas will be identified in the future. Additionally, with ongoing management of construction and special event planning, the need for Portable VMS (PVMS) sites is an ever-evolving requirement and for the purposes of this study left to the normal year-to-year planning work of the current operations group within NITTEC.

The following are other needs for VMS expansion that were identified during Workshop One:

9. In the short-term, with the implementation of TRANSMIT by the MTO and NITTEC on the QEW (identified above as an early win project) a need is apparent (which has been voiced on other occasions) for a VMS on the Niagara-bound QEW in advance of the QEW/405 split. Additionally, consideration could be given for a VMS on the Niagara-bound QEW in advance of the QEW/420 split. Control of this VMS would logically fall under the jurisdiction of the MTO in conjunction with NITTEC and therefore the need for consideration of enhanced Center-to-Center (C2C) communications would be justified at that time to ensure the flow of information between the two control centers (see also Section 11.4).

10. In the short-term, locate travel time signs at border crossings.
10.4 Communication Links to Other Control Centers

The existing links between the NITTEC operation center, the City of Buffalo traffic signal control, and the NFBC operation center are functioning well today. In the future, MTO TRANSMIT data will be linked via a wireless connection through the Niagara Falls Bridge Commission (NFBC). Continuing needs for new and/or expanded operations functionality (detailed in some of the plans above) will create corresponding need for more bandwidth and more physical links. The standardized exchange of information flows (both raw data and processed data, i.e. incident declarations) between control centers was an important objective identified during earlier study tasks and goes hand-in-hand with many of the plans above. The following documents proposed action plans to this objective:

11. In the short-term, the existing wireless link between the NFBC and NITTEC will be used by MTO and NITTEC for the proposed implementation of the TRANSMIT expansion identified as an early win above. Planning for the future communication requirements of the C2C link between the MTO and NITTEC could be initiated with a communication study to identify all current and future needs, and the feasibility of various communication options (i.e. 3rd party, wireless, leased or owned landline) for the future needs of ATMS data exchange and sharing of control of border related field devices. This project could be part of the short-term action plan and an “early win” for NITTEC.

12. As identified above under Project 6, the functionality of providing pre-trip information that relies on data from other agencies will necessitate new communication links to transit, shuttle bus, rail operators, etc. Since this functionality is based on schedule information and not real-time data, the bandwidth requirements should be manageable but again a study could be initiated in the short-term to determine the future requirements similar to the above such that infrastructure decisions can be made in a prudent manner.

13. As identified above under Project 8, the manner of the above enhancements to the functionality of services provided by NITTEC could be further ‘marketed’ to the existing market through outside multi-media organizations (i.e. television and radio). Some carriers will continue with their existing links while some new ones may require new and/or enhanced links. In the short-term, a study could be undertaken to establish the requirements for the “head-end infrastructure” of these multi-media outlets such that infrastructure expansion and upgrade decisions can be prudently made.

10.5 Development of Agency Coordination Enhancement Plans

The current NITTEC structure of graduated level of membership based on participation is working well. However, it is desirable to achieve even higher participation rates at various NITTEC activities and meetings.

In terms of inter-agency and cross-jurisdictional collaboration during highway incidents, Strategic Plan 2007 identified that this is already recognized by agencies as one of the key strengths of NITTEC. However, it is also identified by agencies attending Workshop One that there is always room for improvement with even better coordination and collaboration.
The following are recommended action plans to achieve these objectives:

14. A Participation and Involvement Strategy and Action Plan can be developed, in the short-term, to further enhance participation of agencies, which have different mandates and institutional constraints, at general functions and various Committee meetings. Some of the items that the Strategy and Action Plan could look into include:

- Identify formal ‘champions’ at senior level of agencies;
- Agree up front on how agencies will be involved to set expectations at the start;
- Establish how agencies want to be communicated with throughout this process;
- Develop a process for what can be done if agencies feel their needs are not being met; and,
- Share information (including summary transcripts of meetings) with all stakeholders that need to be engaged in order to keep the lines of communication open.

15. Through the two Incident Management Committees, a more uniform method of collecting and reporting incident information should be established in the short-term. This could range from a standardized key list of information to be collected and nomenclatures to be used in responding to incidents. The work above of the Incident Management Committees should then advance to prepare and promote MOUs between participating agencies to ensure consistency among all first responders. This project could be part of the short-term action plan and an “early win” for NITTEC.

In the short-term, identify agency champions to share information and promote services with stakeholders. This is in addition to improving the C2C link and improving the sharing of incident data, which will also improve agency coordination and are recommended separately for other objectives.
11 IMPLEMENTATION PLAN

This document has focused on taking the objectives and goals identified by the stakeholders, developing areas for improvements and enhancements, and making recommendations for fourteen (14) short-term and long-term projects that will assist NITTEC in fulfilling its mission.

To assist in putting in place these policies, procedures, and practices, the RCTO recommendations from Sections 9, 10 and 11 have been organized into a matrix of action items by service area in Table 11-1. Each action item includes a responsible NITTEC Committee or other partner (in **bold italic**), who should be involved with the proposed action. Recommended short-term action items are **bolded**. Early wins are **underlined**.

Abbreviations for the NITTEC Committees are defined below:

- EC: Executive Council
- RTCMC: Regional Transportation Coordination and Management Council
- BC: Border Crossing Committee
- CC: Construction Coordination Committee
- NITTEC: Niagara International Transportation Technology Coalition
- OIM: Ontario Incident Management Committee
- SP: Strategic Planning Committee
- TOC: Traffic Operations Center Committee
- T&S: Technology and Systems Committee
- WNYIM: Western New York Incident Management Committee

NITTEC has developed a good foundation for regional operations. Moving forward, the RCTO recommended action plan will help to enhance and advance the NITTEC mission. Upon review of the plan and recommended actions, it will be important for NITTEC Committees and policy board to determine how many items are feasible to begin.
Table 11-1: Regional Concept for Transportation Operations (RCTO) Action Plan

<table>
<thead>
<tr>
<th>RCTO</th>
<th>Service Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category</td>
</tr>
<tr>
<td></td>
<td>I. Agency Coordination</td>
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</tbody>
</table>
Table 11-1: Regional Concept for Transportation Operations (RCTO) Action Plan (continued)

<table>
<thead>
<tr>
<th>RCTO Category</th>
<th>Objective</th>
<th>Construction and Event Planning &amp; Coordination</th>
<th>Operational Services</th>
<th>ITS Deployment &amp; Operations</th>
<th>Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Agency Coordination (cont’d)</td>
<td></td>
<td>3. Establish a uniform method of collecting and reporting information among all agencies. (WNYIM, OIM, TOC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Traveler Information</td>
<td>A. Provide easily accessible, coordinated, clear and concise, real-time information</td>
<td>1. Improve the dissemination of information related to construction activities to the public and member agencies including the sharing of raw and processed data (i.e. road closures and lane reductions). (CC)</td>
<td>1. Improve the ability to provide information on the web site about unplanned incidents on the Canadian side (T&amp;S, TOC).</td>
<td>1. Different VMS standards exist between Ontario and New York resulting in different messages on opposite sides of the border. Coordinate uniform VMS procedures under the same standard. (T&amp;S, TOC)</td>
<td>1. Establish formal agreements and connectivity with the media. (RTCMC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Initiate a study to determine the future bandwidth requirements of providing pre-trip planning functionality so infrastructure decisions can be made. (T&amp;S)</td>
<td></td>
<td>2. Implement VMS on the Niagara-bound QEW in advance of the QEW/405 split and on the Niagara-bound QEW in advance of the QEW/420 split. (T&amp;S)</td>
<td>2. Further enhancement to the web page and infrastructure of the control center to promote and provide additional feeds to other multi-media destinations (i.e. television, radio, etc.). (RTCMC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Promote the existing and new feeds of data and video to the commercial multi-media market place. This could include local radio and television stations as a value added service. (RCTMC)</td>
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</tr>
</tbody>
</table>
### Table 11-1: Regional Concept for Transportation Operations (RCTO)
#### Action Plan (continued)

<table>
<thead>
<tr>
<th>RCTO Category</th>
<th>Objective</th>
<th>Construction and Event Planning &amp; Coordination</th>
<th>Operational Services</th>
<th>ITS Deployment &amp; Operations</th>
<th>Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>II. Traveler Information (continued)</td>
<td>3. Plan for future communication requirements of the C2C link between the MTO and NITTEC by initiating a communication study to identify current and future needs, and the feasibility of various communication options (i.e. 3rd party, wireless, leased or owned landline) for the future needs of ATMS data exchange and sharing of control of border related field devices. (T&amp;S)</td>
<td>3. Recommend expansion of TRANSMIT along I-290 and I-190 from the Town of Tonawanda to the Peace Bridge, and local routes 5 and 400 and state route 219. (T&amp;S)</td>
<td>4. Recommend expansion of TRANSMIT along I-190 from the Queenston/Lewiston border crossing to the Peace Bridge. (T&amp;S)</td>
<td>4. Continue expansion of TRANSMIT on the web page to provide information regarding the road network. Further refinement and/or fine-tuning of the algorithms that calculate speeds may be required to improve the reliability and accuracy of the information. (T&amp;S)</td>
<td>5. Undertake a study to establish the requirements for the “head-end infrastructure” of multi-media outlets so that infrastructure expansion and upgrade decisions can be prudently made. (T&amp;S)</td>
</tr>
</tbody>
</table>
Table 11-1: Regional Concept for Transportation Operations (RCTO)
Action Plan (continued)

<table>
<thead>
<tr>
<th>RCTO</th>
<th>Service Categories</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Category</td>
</tr>
<tr>
<td></td>
<td>II. Traveler Information (continued)</td>
</tr>
<tr>
<td></td>
<td>C. Increase accuracy of congestion (travel time) information</td>
</tr>
<tr>
<td></td>
<td>D. Promote seamless operation among modal choices</td>
</tr>
</tbody>
</table>
Table 11-1: Regional Concept for Transportation Operations (RCTO)  
Action Plan (continued)

<table>
<thead>
<tr>
<th>RCTO Category</th>
<th>Objective</th>
<th>Construction and Event Planning &amp; Coordination</th>
<th>Operational Services</th>
<th>ITS Deployment &amp; Operations</th>
<th>Other Services</th>
</tr>
</thead>
</table>
| III. Mobility  
(Arterial, Border, Freeway, Transit) | A. Minimize travel delay | 1. Coordinate and analyze construction activities from the perspective of travel demand vs. capacity (i.e. traffic balancing). (CC) | | 1. Recommend upgrades to arterial signal equipment, coordinate signals, and integrate priority corridors within the expressway systems. (T&S, NITTEC staff, municipal partners) | | |
| | B. Promote use of expedited clearance programs and systems | 1. Continue to participate in the Incident Management proactive and post incident review. (WNYIM and OIM) | | | | |
| | C. Enhance transit operations | 1. Promote the establishment of transit operations to and from all airports. (RTCMC, NITTEC staff, transit partners) | | | | |
| | D. Reduce travel time uncertainty | | | 1. Increase the amount of locations where travelers can obtain travel time information. (T&S, NITTEC) | | |
Table 11-1: Regional Concept for Transportation Operations (RCTO)  
Action Plan (continued)

<table>
<thead>
<tr>
<th>RCTO Category</th>
<th>Objective</th>
<th>Construction and Event Planning &amp; Coordination</th>
<th>Operational Services</th>
<th>ITS Deployment &amp; Operations</th>
<th>Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. Mobility (Arterial, Border, Freeway, Transit) (continued)</td>
<td>E. Balance traffic loads on border crossing corridors</td>
<td></td>
<td></td>
<td>1. Recommend that members strategically locate Variable Message Signs (VMS) to provide border crossing traffic information and assist in balancing traffic loads on any border crossing. (NITTEC, T&amp;S)</td>
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</tr>
<tr>
<td></td>
<td>F. Increase awareness of cross-border transit solutions</td>
<td></td>
<td>1. Develop plans to promote transit across the border. (BC)</td>
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</tr>
<tr>
<td>IV. Incident Management</td>
<td>A. Establish incident classifications and severity guidelines</td>
<td></td>
<td>1. Develop incident classifications and severity guidelines. (WNYIM and OIM)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>B. Decrease highway incident clearance time</td>
<td></td>
<td>1. Work to monitor towing company specialty resources to ensure they are well managed and sufficient. (WNYIM and OIM)</td>
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</tr>
</tbody>
</table>
Table 11-1: Regional Concept for Transportation Operations (RCT0)
Action Plan, continued

<table>
<thead>
<tr>
<th>RCTO</th>
<th>Service Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Objective</td>
</tr>
<tr>
<td>IV. Incident Management (continued)</td>
<td>C. Increase responder safety</td>
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<td></td>
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<tr>
<td>D. Decrease secondary highway incidents</td>
<td>1. Reduce responder response time. (WNYIM and OIM)</td>
</tr>
</tbody>
</table>
Table 11-1: Regional Concept for Transportation Operations (RCTO) Action Plan (continued)

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<thead>
<tr>
<th>RCTO Category</th>
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<tbody>
<tr>
<td></td>
<td><strong>Construction and Event Planning &amp; Coordination</strong></td>
<td><strong>Operational Services</strong></td>
</tr>
<tr>
<td><strong>IV. Incident Management (continued)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Establish agency MOUs for incident management first responders</td>
<td>1. Prepare MOUs between participating agencies to ensure consistency among first responders. (WNYIM and OIM)</td>
</tr>
<tr>
<td>F.</td>
<td>Continue an active, Incident Management Committee to conduct proactive and post incident reviews</td>
<td>1. Continue to participate in the Incident Management proactive and post incident review. (WNYIM and OIM)</td>
</tr>
<tr>
<td><strong>V. Policy and Procedures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Establish and implement applicable policies, procedures, and practices</td>
<td>1. Establish ‘center-to-center’ capability between MTO and NITTEC. (T&amp;S)</td>
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</table>
### Table 11-1: Regional Concept for Transportation Operations (RCTO) Action Plan (continued)

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<thead>
<tr>
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<th>ITS Deployment &amp; Operations</th>
<th>Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. Policy and Procedures (continued)</td>
<td></td>
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<td></td>
<td>2. Adopt the architecture developed within the Buffalo-Niagara Bi-National Regional ITS Architecture(^{21}) project. (RTCMC, EC)</td>
<td>3. Use the web page to obtain customer feedback and provide more traceable results as the performance levels change as new functions and enhancements are implemented. (SP)</td>
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<td></td>
<td>4. Develop a Participation and Involvement Strategy to further enhance participation of agencies at general functions and various Committee meetings. (RTCMC)</td>
</tr>
</tbody>
</table>

\(^{21}\) Bi-National Regional ITS Architecture (www.consystec.com/buffalo/web/_inventory.htm)