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ABOUT NITTEC

Mission

The mission of NITTEC is to improve mobility, reliability and safety on the regional bi-national multimodal transportation network through information sharing and coordinated management of operations.

Management Objectives

✓ Maintain Corporate Culture as a Service Organization.
✓ Maintain Diverse Professional Staff of Service Providers.
✓ Maintain Organizational Hierarchy to Improve Career Development and Succession.
✓ Be Focal Point for ITS Projects & Information Sharing, Coordinated Operations, Congestion Mitigation and ITS Project Delivery in the Region.

Regional Operations Functions

✓ Traveler Information
✓ Border Traffic Management
✓ Traffic and Congestion Management
✓ Incident Management
✓ Special Event Planning and Management
✓ Transportation System Monitoring
✓ Emergency Management
✓ Weather System Monitoring
✓ Construction Coordination
✓ Performance Measures Reporting
✓ Multi-Agency Collaboration

NITTEC Organization
NITTEC STAFF

Athena Hutchins, P.E.
Executive Director

Michael Smith
Operations Manager

Andrew Bartlett, PhD, P.E.
Transportation Engineer

Robert Eberhardt
Systems Administrator

Cheryl Hagen
Operations Technician

John LaFalce
Operations Technician

Gordon Scherer
Operations Technician

Jordan Sullivan
Operations Technician

Matthew Vazquez
Junior Systems Administrator

Timothy McGovern, P.E.
Engineering Manager

William Conway
Operations Technician

Steven Eiss
Operations Technician

Dee Idzior
Operations Technician

William Lobuzzetta
TOC Supervisor

Stephen Schnepf
Operations Technician

John Thompson
Operations Technician

Lisa Walgate
Administrative Assistant
NITTEC MEMBER AGENCIES

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

Affiliate Members
- AAA Western and Central New York
- Ontario Provincial Police
- American Medical Response (AMR)
- Rusiniak’s Towing
- Canada Border Services Agency
- Seneca Nation
- Cattaraugus County
- Town of Amherst
- Chautauqua County
- Town of Evans
- City of Lackawanna
- Town of Hamburg
- City of St. Catharines
- Town of Cheektowaga
- Federal Highway Administration
- Town of Niagara-on-the-Lake
- Greater Buffalo Niagara Regional Transportation Council
- Town of Orchard Park
- John’s Towing
- Town of Tonawanda
- LTR Rigging and Hauling
- Town of West Seneca
- Montgomery Towing
- Twin City Ambulance
- New York State Department of Environmental Conservation
- Twin City Ambulance
- New York State Police
- University at Buffalo
- US Customs and Border Protection

General Members
- Buffalo and Fort Erie Public Bridge Authority
- City of Buffalo, NY
- City of Niagara Falls, NY
- City of Niagara Falls, ON
- Niagara County
- Niagara Falls Bridge Commission
- Niagara Parks Commission
- Niagara Region
- Town of Fort Erie, ON
NITTEC COMMITTEES

NITTEC currently has eight committees: Border Crossing, Construction Coordination, Incident Management - Ontario, Incident Management – Western New York, Regional Traffic Signal, Strategic Planning, Technology and Systems, and Traffic Operations Center. Each committee is comprised of representatives from a variety of organizations that meet regularly and works on establishing and executing work plans to meet their respective mandates. Additionally, the policy member agencies make up NITTEC’s Board of Directors, which provide overall program and policy direction of the Coalition.

Committee Participarion

The table below shows the participation in NITTEC’s Committees by member agencies.

<table>
<thead>
<tr>
<th>Participation Level</th>
<th>None</th>
<th>Partial</th>
<th>Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>General</td>
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<tr>
<td>Affiliate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Affiliate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table

| Committee                            | Erie County | Ministry of Transportation - Ontario | New York State Department of Transportation | New York State Thruway Authority | Niagara Frontier Transportation Authority | Buffalo and Fort Erie Public Bridge Authority | City of Buffalo | City of Niagara Falls, NY | City of Niagara Falls, Ontario | Niagara County | Niagara Falls Bridge Commission | Niagara Region | Niagara Parks Commission | Town of Fort Erie | Canada Border Services Agency | Federal Highway Administration | Greater Buffalo Niagara Regional Transportation Council | New York State Police | Ontario Provincial Police | Town of Amherst | Town of Cheektowaga | Town of Hamburg | Town of Orchard Park | Town of Tonawanda | Town of West Seneca | US Customs and Border Protection | Other Affiliate Members | Grimsby Fire Department | Lincoln Fire Department | New York State OEM | Other Non-Affiliate Members |
|--------------------------------------|-------------|-------------------------------------|---------------------------------------------|----------------------------------|-------------------------------------------|---------------------------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------------|----------------|----------------------------|----------------|--------------------------------|----------------------------|--------------------------------|-----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|-----------------|-----------------|------------------------------|----------------|----------------------|-----------------|-------------------|--------------|-------------------|
Border Crossing Committee

Committee Mandate
To support cross border relations among member agencies and affiliates by providing a forum to address transportation related issues for the efficient movement of people and goods through the regional bi-national border crossings.

2021 Highlights
✓ Held an after-action review of the commercial vehicle staging plans with stakeholders after a major border crossing disruption.
✓ Presented Freight Plan Study conducted by GBNRTC to the Committee Members.
✓ Stakeholders shared border crossing restriction information.

Initiatives
✓ Provide input on deployment of border travel time signage.
✓ Identify and evaluate best practices and new technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.

Scheduled
✓ Yearly review of the border related incident management plans, including communication and management protocols with the Incident Management Committees.
✓ Summer traffic and fall traffic debrief meetings.
✓ Seek input from freight operators regarding their needs and feedback on possible solutions.

Ongoing
✓ Monitor and enhance measurement and reporting of border wait times for use by all members and stakeholders. Recommend future deployment and operational procedures, of border crossing travel time technology.
✓ Review border crossing traveler information services and products (Nexus Program, Motorcoach Border Planner) to maintain delivery of common information to all users, and identify opportunities to enhance services (sources & notifications) and expand delivery (products & consumers).
✓ Enhance relationships between Coalition members and border agencies including Canadian Border Services Agency (CBSA) and U.S. Customs and Border Protection (CBP) to improve communication for travelers and balance border traffic through traffic management initiatives. Provide the opportunity for agencies to talk with each other, share knowledge and discuss border issues.
✓ Coordinate with other Coalition Committees on border related issues.
✓ Identify and address emerging border related issues to ensure the safe and efficient operation of border crossings in the future.
✓ Evaluate "green lane" emerging technologies and Integrated Corridor Management (ICM) Project recommendations that could be utilized with existing border related transportation strategies and improve freight processing in support of the Committee mandate.
Construction Coordination Committee

Committee Mandate
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 dissemination activities and minimize impacts on mobility and travel reliability.

2021 Highlights
- Provided project updates and summary of regional construction to stakeholders.
- Reviewed case studies related to integrated/smart work zone initiatives which leverage ITS applications to create smart works zones in an effort to increase safety for workers as well as motorists.
- Shared work zone intrusion statistics for 2020, during the height of the pandemic when traffic volumes were low and noted excessive speed being a contributing factor for the increase in the number of incidents.

Initiatives
- Identify and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
- Identify the needs and usage of a construction planning / coordination software amongst Coalition members to collect and integrate information, coordinate and assist member agencies with their planned construction activities.
- Evaluate and promote new technologies related to work zone safety.
- Promote the use of iCone equipment among member agencies.

Scheduled
- Coordinate and manage the development and implementation of regional traffic management plans and activities related to construction projects.

Ongoing
- Have ad-hoc meetings to discuss lessons learned from the coordination issues that were not addressed through normal procedures.
- Continue a regional approach to communicate, coordinate and manage construction information, include a broader set of community stakeholders (bus operators, livery services, and delivery services).
- Monitor and report construction zone travel time and delay for major projects and coordinate with other Committees with construction related issues.
- Identify project locations to use temporary technology (iCone equipment, portable variable message signs, CCTV, etc.) to gather delay information.
- Evaluate traffic data to improve work zone efficiency.
- Continue to work with GBNRTC and member agencies to coordinate regional transportation planning and operations activities.
Incident Management Committee - Ontario

Committee Mandate
To develop recommendations for Board of Directors, NITTEC member agencies and other emergency services providers for the better coordination, integration, and implementation of operations to enhance the effectiveness of the region’s highway incident management process.

2021 Highlights
✓ Debriefed major incident response and agency coordination.
✓ Identified High Priority Collision Locations to discuss mitigation efforts to reduce collisions/severity.
✓ Reviewed upcoming construction activities and the possible effects on incident response.

Initiatives
✓ Identify new technology deployments and best practices to accelerate incident detection time and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
✓ Identify opportunities to improve safety and coordination among responders.
✓ Monitor installation of Emergency Detour Route signage for Highway 406 and promote its' use to first responders and motorists.

Scheduled
✓ Debrief major incidents and establish “Best Practices” for future events.
✓ Continue to collect and report incident information among all agencies.
✓ Use the Highway Safety Awareness Training Program to demonstrate/disseminate incident response and recovery best practices to local jurisdictions.
✓ MTO, OPP, and Niagara Region to report on the highest priority locations for collisions.
✓ Report and review upcoming construction projects.
✓ Promote public education about "Steer It Clear It", "Move Over" Law, and incident markers first responder safety campaigns.
✓ Review Committee Performance Measure Report and establish/update goals.

Ongoing
✓ Participate in event planning and traveler information activities.
✓ Maintain outreach program to encourage local response community participation.
✓ Maintain communication protocols and contact information for major incidents among incident management agencies and stakeholders.
✓ Develop Traffic Management Plans for Special Events.
✓ Promote effective communication and sharing of information (video, center-to-center, computer aided dispatch) among all responding agencies and the other NITTEC Committees.
✓ Provide input to improve safety on the Garden City Skyway.
✓ Identify areas and roadway conditions that could result in traffic incidents to enable activities around proactive incident reduction.
Incident Management Committee - WNY

Committee Mandate
To develop recommendations for Board of Directors, NITTEC member agencies and other emergency services providers for the better coordination, integration, and implementation of operations to enhance the effectiveness of the region’s highway incident management process.

2021 Highlights
✓ Met with stakeholders to review and update expressway closure guidelines.
✓ Held in-person Highway Safety Awareness Training classes for first responders.
✓ Provided access to a video system for first responder agencies.
✓ Debriefed major incident response and agency coordination.

Initiatives
✓ Identify and evaluate technology opportunities and best practices to accelerate incident detection time for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
✓ Identify areas and roadway conditions that could result in traffic incidents to enable activities around proactive incident reduction.
✓ Provide input in the development of Thruway Closure Plans with toll barrier removal and communicate to first responders.

Scheduled
✓ Conduct incident management training and distribute Emergency Responder Checklist cards to agencies for use by primary and secondary responders.
✓ Identify and review commercial vehicle staging areas and procurement.
✓ Promote public awareness about "Steer It Clear It", "Move Over" Law, Crash Investigation Sites, and incident markers to attendees of the Niagara Traffic Safety Fair and other venues.
✓ Debrief major incidents and establish “Best Practices” for future events.
✓ Conduct regional training exercise.
✓ Review Committee Performance Measure Report and establish/update goals.

Ongoing
✓ Participate in event planning and traveler information activities.
✓ Promote effective communication and sharing of information (video, center-to-center, computer aided dispatch) among all responding agencies and the other NITTEC Committees.
✓ Review and provide recommendations for roadside assistance program.
✓ Provide incident management training to towing companies and maintain an urban area towing company resource list to ensure well managed and sufficient response.
✓ Develop Traffic Management Plans for Special Events.
✓ Maintain closure responsibility guidelines for regional expressways and communicate to stakeholders.
✓ Promote and evaluate accident reporting areas at the I-90/I-290 interchange and expand to other locations.
Regional Traffic Signal Committee

Committee Mandate
To address current and future needs for daily management, emergency evacuation and improved efficiency on priority arterials; recommend plans for: maintaining and upgrading arterial signal equipment; coordinating signals; integrating priority corridors within the system; and identifying high quality transit corridors for implementation of Transit Signal Priority in the Buffalo Niagara Region.

2021 Highlights
✓ Reviewed the draft Traffic Signal Systems Concept of Operations for the Buffalo Niagara region.
✓ Discussed options for a shared asset inventory/asset management software system.
✓ Held Miovision demonstrations for smart technology at signalized intersections.

Initiatives
✓ Define a corridor based concept of operations and system requirements for desired functionality of signal systems in the region.
✓ Enhance the ability to collect data for performance measures and begin a plan for analytics.
✓ Identify and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.

Scheduled
✓ Review corridor timing plans, implementation and maintenance status as identified in the Corridor Status Matrix in conjunction with regional projects and available funding.

Ongoing
✓ Assess existing regional traffic system equipment and evaluate systems to enhance asset management inventory.
✓ Define opportunities for funding and training needs to develop skill sets, technologies, and processes.
✓ Maintain a Corridor Status Matrix of traffic signals along existing and proposed signal management corridors and identify and prioritize activities. The matrix shall identify signals to be upgraded based on limitations of phase plans that can be implemented along each corridor.
✓ Develop traffic signal performance measures reports to determine effectiveness of coordination along existing corridors. Monitor average speeds on each corridor for development of travel times.
✓ Identify high quality transit corridors and recommend implementation of Transit Signal Priority.
✓ Coordination with other Committees regarding highway closures and detours through signalized corridors.
✓ Monitor progress of Regional Traffic Signal projects.
Strategic Planning Committee

Committee Mandate
To assess NITTEC’s performance in meeting member, stakeholder and public expectations, and make recommendations to the Board of Directors on the Coalition’s long term direction.

2021 Highlights
- Reviewed the Strategic Plan Tasks in accordance with the Strategic Plan recommendations.
- Reviewed the Committee Initiatives Update to track progress of percent complete.
- Reviewed the status of the region’s Transportation Projects and Initiatives.
- Reviewed the draft Buffalo Niagara Regional Transportation Data Business Plan.

Initiatives
- Establish performance measures to evaluate overall progress against the NITTEC Strategic Plan Recommendations.
- Evaluate Committee effectiveness for establishing and meeting quantifiable goals.
- Oversee the development and delivery of the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program.

Scheduled
- Review Committee work plans for consistency with Strategic Plan to establish priorities and identify needs.

Ongoing
- Monitor progress of regional projects and initiatives.
- Continue long term Business Continuity planning.
- Continue to work with GBNRTC and member agencies to establish a process for identifying transportation corridors where operational strategies can be adopted to improve mobility and coordinate regional transportation planning and operations activities.
- Identify and pursue Revolving Loan Fund (RLF) and Grant fund project and promotion opportunities.
- Continue to coordinate with relative entities the proposed high quality transit corridors and identify needs for implementation, including transit signal priority.
- Continue to provide recommendations for NITTEC promotional opportunities.
- Continue to promote transit ridership and biking related to shared mobility.
- Implement Strategic Plan recommendations / action items based on available funding.
- Assess NITTEC’s performance in meeting the expectations of members and stakeholders.
Technology and Systems Committee

Committee Mandate
To identify and coordinate member agencies plans for use of ITS architecture and Advanced Traffic Management elements; facilitate the development and introduction of regionally compatible ITS architecture and technology for traveler information and traffic management; and review RLF project applications for consistency with Regional ITS objectives and compatibility with existing systems for integration with a view to providing recommendations to the Board of Directors on the technical aspects of these applications.

2021 Highlights
✓ Reviewed NITTEC’s cybersecurity best practices/standards and mitigation strategies.
✓ Reviewed NITTEC’s Systems and Data Diagrams for supporting the Regional ITS Architecture.
✓ Reviewed the draft Buffalo Niagara Regional Transportation Data Business Plan.

Initiatives
✓ Investigate supporting documentation for the Regional ITS Architecture.
✓ Identify technology requirements for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
✓ Investigate cyber security and systems security solutions in accordance with standards.
✓ Develop data strategies to collect, store, secure and make available to member agencies the various NITTEC data.
✓ Identify needs and the next steps for business continuity and disaster recovery planning.

Scheduled
✓ Maintain and update a Major Systems Replacement Plan to identify the areas of system risk and additional support / redundancy for the equipment at NITTEC in conjunction with monitoring current and development of proposed budgets.
✓ Review requirements for NITTEC systems support and identify maintenance and warranty contract requirements, including system redundancy and business continuity and disaster recovery initiatives.
✓ Maintain and update annually the Regional Architecture according to the Maintenance Plan.
**Ongoing**

- Support Technology and Systems requirements for ITS projects and strategic initiatives, including expanding ITS operations and coverage within the region with the goal of integrating systems and operations across modes and agencies.
- Support a regional network and Center-to-Center (C2C) system and review future integration opportunities for automated data exchange.
- Identify System Integration opportunities, compliance with standards and technology issues.
- Support and enhance the central signal software system and support the Regional Traffic Signal Committee connectivity initiatives by evaluating technology and hardware requirements.
- Review technology aspects of any Revolving Loan Fund (RLF) and Grant Fund applications that are received.
- Continue to report on Member Agency’s systems status and activity logs monthly.
- Continue to monitor and update the progress of the regional projects and initiatives.
- Continue to identify training opportunities available for the benefit of NITTEC and Member Agencies.

**Traffic Operations Center Committee**

**Committee Mandate**

To provide policy guidance and oversight of the NITTEC TOC, develop regional bi-national operational policies and procedures for Advanced Traffic Management and Traveler Information.

**2021 Highlights**

- Met with Technology & Systems committee to discuss systems enhancements, replacement and issues.
- Discussed changes to the I-90 closure plans as a result of the toll barrier removal on the mainline as well as the entry/exit points and messaging on the new DMS installed at entrances.
- Provided stakeholders a demonstration of the enhanced Crossroads System, response plans and DMS messaging.
Initiatives

✓ Identify and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
✓ Review and provide input on the enhanced Crossroads System response plans and DMS messaging.
✓ Evaluate the Cashless Tolls traffic patterns and recommend solutions if issues arise.

Scheduled

✓ Coordinate periodic stakeholder meetings when transportation issues arise.
✓ Monitor current and develop proposed budgets.
✓ Review and analyze performance measures to calculate the impact of incidents, construction, and weather delays within a corridor and promote operational improvements.
✓ Collaborate with the Technology & Systems Committee to define and address ATMS, traffic signal systems, Communication Log and other ITS systems needs.
✓ Review Committee Performance Measure Report.

Ongoing

✓ Review Regional Event Traffic Management Plans (TMP), expressway detour routes and signing plans that will be utilized during major events.
✓ Continue TOC quality initiatives.
✓ Evaluate operational procedures, training programs and staffing levels to ensure they are adequate for implementation of new systems and initiatives.
✓ Continue to provide the opportunity for agencies to talk with each other, share knowledge and discuss issues.
✓ Review and identify additional opportunities for Center-to-Center (C2C) data sharing among member agencies and evaluate and enhance communication protocols.
✓ Monitor recommended strategies from Integrated Corridor Management (ICM) project and other project integration opportunities.
✓ Establish traffic management strategies using data driven performance outcomes to achieve optimal results.
✓ Support evaluation for Incident Detection Systems and promote within Member Agencies.
REGIONAL INITIATIVES

Advanced Transportation Congestion Management Technologies Deployment

The Advanced Transportation Congestion Management Technologies Deployment (ATCMTD) Grant was awarded to the region by the Federal Highway Administration in late 2016. The $7.8 million award is targeted specifically to fund model deployment sites for large-scale installation and operation of advanced transportation technologies. NITTEC’s proposal focused on the region’s role as a major border crossing and freight conduit.

Since 2016, the decision was made to divide the project into two phases. Phase 1 focuses on planning tasks designed to provide a clear vision of the solutions to be developed and ensuing deployments. Phase 2 involves the actual development, testing, and implementation of new technology and systems.

Phase 1 was completed in 2021. Phase 2 is planned to officially kick-off in early 2022 with an overall project completion planned for the end of 2023.

Advanced Traffic Management System

Crossroads has served as NITTEC’s Advanced Traffic Management System (ATMS) software since 2003. The ATMS is the main way in which NITTEC tracks, monitors, and disseminates information on traffic incidents in the region. In 2021, the software received a major enhancement to better address the needs of the Traffic Operations Center and the region. The system enhancements included a browser-based interface, Google Maps functionality, ad-hoc sign message creation, ability to create events on all member agency roadways, rules-based response plans, and additional event types.

Buffalo Niagara Regional Transportation Data Business Plan

A data business plan is a set of documented standards and processes for efficient use of people, processes, and technology. It links business objectives, programs, and processes to data systems, services, and products and guides an agency in data management practices.

In 2021, NITTEC began development of a regional transportation business plan. This plan will help the region understand what roadway travel mobility data is being collected within their organizations and at the regional level, how the data supports mobility planning, operations, and performance measure activities, and who is responsible for managing/updating the data. The process will also help solidify working relationships by identifying how various agencies share and exchange roadway travel mobility data with both internal and external stakeholders.
The adopted SFY 2021-2022 Operating Budget was $2,549,331, distributed as identified below.

### Budget Distribution

#### Labor Costs
- **Benefits**: $729,215
  - Administration & Systems Salary: $648,308
  - TOC Salaries: $544,051
  - Overtime: $23,000

#### Non-Labor Costs
- **Committee**: $343,500
- **Facility and Host Administration**: $142,556
- **Direct Non-Salary**: $83,700
- **Project and System Enhancements**: $35,000

#### Total Expenditures
- **2016-2017**: $1.250M
- **2017-2018**: $1.375M
- **2018-2019**: $1.500M
- **2019-2020**: $1.625M
- **2020-2021**: $1.750M
- **2021-2022**: $1.875M

### Budget Performance

The bar graph shows the budget performance from 2016-2017 to 2021-2022, with the adopted budget (blue bars) and total expenditures (red bars) compared against the budgeted amounts.
REVOLVING LOAN FUND & GRANT

NITTEC manages a Revolving Loan Fund (RLF) established to support and enhance innovation and development of ITS and transportation operations solutions to improve mobility in the region.

There is approximately $5,012,859 in available monies for regional ITS, operations, and mobility projects for loan through the NITTEC RLF. Based on the established guidelines, loans are available for member agency sponsored organizations that wish to pursue project funding in the region in accordance with the established Project Selection Criteria.

The financial status of the RLF as of December 31, 2021 is presented here.

<table>
<thead>
<tr>
<th>Total RLF Summary</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF Principal</td>
<td>$5,000,000</td>
</tr>
<tr>
<td>Interest</td>
<td>$1,103,190</td>
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<tr>
<td>RLF Principal &amp; Interest</td>
<td>$6,103,190</td>
</tr>
<tr>
<td>Grant Monies Paid</td>
<td>$662,592</td>
</tr>
<tr>
<td>Remaining Allocated Grant Monies</td>
<td>$183,000</td>
</tr>
<tr>
<td>Other - Write Off</td>
<td>$244,739</td>
</tr>
<tr>
<td>Available Balance</td>
<td>$5,012,859</td>
</tr>
</tbody>
</table>

In addition, interest earned on the RLF has been distributed as grants to fund multiple ITS projects in the region.

<table>
<thead>
<tr>
<th>Project</th>
<th>Details</th>
<th>Organization</th>
<th>Grant Amount</th>
<th>Amount Paid</th>
<th>Amount Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niagara Street Corridor Signal Controllers</td>
<td>Installation of 26 traffic signal controllers to implement transit signal prioritization along the corridor</td>
<td>City of Buffalo</td>
<td>$182,000</td>
<td>$182,000</td>
<td>$0</td>
</tr>
<tr>
<td>Border Crossing Traveler Information System</td>
<td>Installation of 9 hybrid message signs displaying border crossing information for the three international br.</td>
<td>NITTEC Border Crossing Committee</td>
<td>$183,000</td>
<td>$0</td>
<td>$183,000</td>
</tr>
<tr>
<td>Smart Camera Technology</td>
<td>Installation of 5 smart cameras and 2 ATC controllers</td>
<td>Town of Tonawanda</td>
<td>$120,000</td>
<td>$120,000</td>
<td>$0</td>
</tr>
<tr>
<td>Fiber Optic Diagnostic Equipment</td>
<td>Purchase of Fiber Optic Diagnostic equipment, repair tools, and a specialized trailer</td>
<td>NYSTA</td>
<td>$75,000</td>
<td>$60,592</td>
<td>$0</td>
</tr>
<tr>
<td>Crossroads ATMS Enhancement</td>
<td>Improvements to NITTEC’s Advanced Traffic Management System</td>
<td>NITTEC</td>
<td>$300,000</td>
<td>$300,000</td>
<td>$0</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$860,000</strong></td>
<td><strong>$622,592</strong></td>
<td><strong>$183,000</strong></td>
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</tbody>
</table>
TRAVELER INFORMATION

Website Statistics

The charts below show the total number of NITTEC Website pageviews and users from 2019 to 2021 and the number of annual sessions from 2011 to 2021.

Pageviews: The total number of pages visited across all website visitors.

Session: A session is the period of time a user is actively engaged with the website.

Pageviews

<table>
<thead>
<tr>
<th>Month</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
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<tbody>
<tr>
<td>Jan</td>
<td>100K</td>
<td>78K</td>
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<tr>
<td>Feb</td>
<td>91K</td>
<td>82K</td>
<td>105K</td>
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<tr>
<td>Mar</td>
<td>168K</td>
<td>312K</td>
<td>326K</td>
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<tr>
<td>Apr</td>
<td>269K</td>
<td>299K</td>
<td>407K</td>
</tr>
<tr>
<td>May</td>
<td>186K</td>
<td>224K</td>
<td>210K</td>
</tr>
<tr>
<td>Jun</td>
<td>91K</td>
<td>82K</td>
<td>105K</td>
</tr>
<tr>
<td>Jul</td>
<td>105%</td>
<td>86%</td>
<td>11%</td>
</tr>
<tr>
<td>Aug</td>
<td>111%</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>Sep</td>
<td>25%</td>
<td>-54%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Annual Sessions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>91K</td>
<td>82K</td>
<td>105K</td>
<td>168K</td>
<td>312K</td>
<td>326K</td>
<td>407K</td>
<td>168K</td>
<td>224K</td>
<td>210K</td>
<td>210K</td>
</tr>
<tr>
<td>Feb</td>
<td>-9%</td>
<td>-14%</td>
<td>-1%</td>
<td>11%</td>
<td>8%</td>
<td>1%</td>
<td>25%</td>
<td>-54%</td>
<td>21%</td>
<td>-54%</td>
<td>21%</td>
</tr>
</tbody>
</table>
MYNITTEC

The graph below shows the number of MYNITTEC Subscribers from January 2019 to December 2021.

**MYNITTEC Subscribers**

The graphs below show the number of Twitter “Followers” and Facebook “Likes” from January 2019 to December 2021.

**Twitter and Facebook**

**Twitter Followers**

**Facebook Likes**
REGIONAL MESSAGING

Dynamic Message Sign Activity

The graph below displays the total number of DMS activations for accidents, border crossing, weather conditions, and special events. The following graph shows the number of activations for the top ten most active signs in 2021.

**Total DMS Activations**

The graph displays the total number of DMS activations for accidents, border crossing, weather conditions, and special events from 2019 to 2021. Each bar represents the number of activations for each month.

**Top 10 DMS Activations**

A bar chart showing the top ten most active DMS signs in 2021, ranked by the number of activations. The signs include:
- I-90 E at Route 400
- I-190 S at Seneca
- I-90 W at I-290
- I-190 S at I-290
- I-290 W at Colvin
- Route 400 N at Union
- I-190 N at Sheridan
- Route 33 W at I-90
- I-190 S at Ontario
- I-190 N at Ogden

Each bar indicates the number of activations for each sign, with the highest activation counts at the top and the lowest at the bottom.
Portable Variable Message Sign Activity

The graph below displays the total number of PVMS activations for construction, road closures, and other temporary messaging. The following graph shows the number of activations by owner in 2021.

**Total PVMS Activations**

![Graph showing total PVMS activations with data points for each month from January to December for the years 2019, 2020, and 2021.]

**2021 PVMS Activations by Owner**

<table>
<thead>
<tr>
<th>Owner</th>
<th>Activations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>3,994</td>
</tr>
<tr>
<td>NYSDOT</td>
<td>3,755</td>
</tr>
<tr>
<td>NYSTA</td>
<td>167</td>
</tr>
<tr>
<td>Other</td>
<td>331</td>
</tr>
</tbody>
</table>
## INCIDENT ACTIVITY

The table below shows the total activity counts for 2019, 2020, & 2021.

<table>
<thead>
<tr>
<th>Category</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>% Change (2020 to 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crashes</td>
<td>1,505</td>
<td>963</td>
<td>1,247</td>
<td>29%</td>
</tr>
<tr>
<td>Construction/Maintenance</td>
<td>1,855</td>
<td>1,617</td>
<td>1,551</td>
<td>-4%</td>
</tr>
<tr>
<td>Disabled Vehicles</td>
<td>1,499</td>
<td>1,150</td>
<td>1,431</td>
<td>24%</td>
</tr>
<tr>
<td>Debris</td>
<td>2,148</td>
<td>2,161</td>
<td>2,405</td>
<td>11%</td>
</tr>
<tr>
<td>Congestion</td>
<td>1,035</td>
<td>202</td>
<td>264</td>
<td>31%</td>
</tr>
<tr>
<td>Snow &amp; Ice</td>
<td>551</td>
<td>379</td>
<td>438</td>
<td>16%</td>
</tr>
<tr>
<td>Signal Malfunction</td>
<td>1,260</td>
<td>1,243</td>
<td>1,242</td>
<td>0%</td>
</tr>
<tr>
<td>Border Crossing</td>
<td>118</td>
<td>14</td>
<td>52</td>
<td>271%</td>
</tr>
<tr>
<td>Total</td>
<td>9,971</td>
<td>7,729</td>
<td>8,630</td>
<td>12%</td>
</tr>
</tbody>
</table>

### Total Activity

The table below shows the total activity counts for 2019, 2020, & 2021.

<table>
<thead>
<tr>
<th>Month</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>% Change (2020 to 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>994</td>
<td>1,226</td>
<td>1,362</td>
<td>27%</td>
</tr>
<tr>
<td>February</td>
<td>963</td>
<td>748</td>
<td>680</td>
<td>-29%</td>
</tr>
<tr>
<td>March</td>
<td>106</td>
<td>574</td>
<td>656</td>
<td>12%</td>
</tr>
<tr>
<td>April</td>
<td>83</td>
<td>438</td>
<td>566</td>
<td>31%</td>
</tr>
<tr>
<td>May</td>
<td>109</td>
<td>1,242</td>
<td>1,150</td>
<td>-7%</td>
</tr>
<tr>
<td>June</td>
<td>115</td>
<td>744</td>
<td>812</td>
<td>7%</td>
</tr>
<tr>
<td>July</td>
<td>121</td>
<td>660</td>
<td>811</td>
<td>22%</td>
</tr>
<tr>
<td>August</td>
<td>127</td>
<td>616</td>
<td>818</td>
<td>31%</td>
</tr>
<tr>
<td>September</td>
<td>130</td>
<td>806</td>
<td>948</td>
<td>16%</td>
</tr>
<tr>
<td>October</td>
<td>134</td>
<td>664</td>
<td>1,042</td>
<td>-34%</td>
</tr>
<tr>
<td>November</td>
<td>132</td>
<td>664</td>
<td>1,247</td>
<td>92%</td>
</tr>
<tr>
<td>December</td>
<td>146</td>
<td>729</td>
<td>1,617</td>
<td>-42%</td>
</tr>
</tbody>
</table>

### Crashes

The table below shows the total activity counts for 2019, 2020, & 2021.

<table>
<thead>
<tr>
<th>Month</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>% Change (2020 to 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>165</td>
<td>83</td>
<td>85</td>
<td>-13%</td>
</tr>
<tr>
<td>February</td>
<td>136</td>
<td>83</td>
<td>118</td>
<td>42%</td>
</tr>
<tr>
<td>March</td>
<td>106</td>
<td>47</td>
<td>77</td>
<td>-42%</td>
</tr>
<tr>
<td>April</td>
<td>83</td>
<td>61</td>
<td>111</td>
<td>80%</td>
</tr>
<tr>
<td>May</td>
<td>109</td>
<td>61</td>
<td>104</td>
<td>-5%</td>
</tr>
<tr>
<td>June</td>
<td>116</td>
<td>58</td>
<td>104</td>
<td>-7%</td>
</tr>
<tr>
<td>July</td>
<td>121</td>
<td>83</td>
<td>111</td>
<td>-2%</td>
</tr>
<tr>
<td>August</td>
<td>127</td>
<td>83</td>
<td>128</td>
<td>13%</td>
</tr>
<tr>
<td>September</td>
<td>130</td>
<td>95</td>
<td>123</td>
<td>7%</td>
</tr>
<tr>
<td>October</td>
<td>131</td>
<td>99</td>
<td>129</td>
<td>7%</td>
</tr>
<tr>
<td>November</td>
<td>146</td>
<td>69</td>
<td>98</td>
<td>-13%</td>
</tr>
<tr>
<td>December</td>
<td>146</td>
<td>99</td>
<td>98</td>
<td>0%</td>
</tr>
</tbody>
</table>
Debris

Signal Malfunction

Snow & Ice
The chart below shows the number of incoming and outgoing calls to the TOC during 2021.

### TOC INFORMATION

#### 2021 TOC Incoming/Outgoing Calls

**Highway Safety Awareness Training**

<table>
<thead>
<tr>
<th>Year</th>
<th>First Responders Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>252</td>
</tr>
<tr>
<td>2018</td>
<td>420</td>
</tr>
<tr>
<td>2019</td>
<td>328</td>
</tr>
<tr>
<td>2020</td>
<td>171</td>
</tr>
<tr>
<td>2021</td>
<td>128</td>
</tr>
</tbody>
</table>

#### Traffic Incident Management Self Assessment

- **Self-Assessment**
  - **NITTEC/Buffalo**
  - **National Average**

- **2017**: NITTEC/Buffalo = 90%, National Average = 80%
- **2018**: NITTEC/Buffalo = 91%, National Average = 81%
- **2019**: NITTEC/Buffalo = 92%, National Average = 82%
- **2020**: NITTEC/Buffalo = 93%, National Average = 83%
- **2021**: NITTEC/Buffalo = 94%, National Average = 84%
INCIDENT ACTIVITY BY ROUTE

Western New York

The table below shows the total activity for each route in 2019, 2020, & 2021.

<table>
<thead>
<tr>
<th>Route</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>% Change (2020 to 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-90</td>
<td>663</td>
<td>360</td>
<td>488</td>
<td>36%</td>
</tr>
<tr>
<td>I-190</td>
<td>1,039</td>
<td>575</td>
<td>751</td>
<td>31%</td>
</tr>
<tr>
<td>I-290</td>
<td>1,371</td>
<td>851</td>
<td>1,140</td>
<td>34%</td>
</tr>
<tr>
<td>Route 33</td>
<td>1,316</td>
<td>956</td>
<td>1,076</td>
<td>13%</td>
</tr>
<tr>
<td>Route 198</td>
<td>96</td>
<td>77</td>
<td>78</td>
<td>1%</td>
</tr>
<tr>
<td>Route 219</td>
<td>230</td>
<td>187</td>
<td>213</td>
<td>14%</td>
</tr>
<tr>
<td>Route 400</td>
<td>87</td>
<td>64</td>
<td>98</td>
<td>53%</td>
</tr>
<tr>
<td>I-990</td>
<td>70</td>
<td>74</td>
<td>54</td>
<td>-27%</td>
</tr>
<tr>
<td>Total</td>
<td>4,872</td>
<td>3,144</td>
<td>3,898</td>
<td>24%</td>
</tr>
</tbody>
</table>

I - 90

![Chart showing activity by month for I-90 route in 2019, 2020, and 2021.]

I - 190

![Chart showing activity by month for I-190 route in 2019, 2020, and 2021.]

Legend:
- Green: 2019
- Orange: 2020
- Blue: 2021
Southern Ontario
The table below shows the total activity for each route in 2019, 2020, & 2021.

<table>
<thead>
<tr>
<th>Route</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>% Change (2020 to 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWY 405/406/420</td>
<td>148</td>
<td>175</td>
<td>217</td>
<td>24%</td>
</tr>
<tr>
<td>QEW</td>
<td>429</td>
<td>406</td>
<td>504</td>
<td>24%</td>
</tr>
</tbody>
</table>

**QEW**

**HWY 405/406/420**

[Bar charts showing monthly activity trends for HWY 405/406/420, with data points for each month from January to December for 2019, 2020, and 2021.]
TRAVEL TIME REPORT

The graphs below show the monthly travel time and planning time indices from 2019 to 2021. The following graphs show the monthly congested hours during 2021 and the planning time indices by hour during 2020 and 2021.

Each performance measure was calculated from speed data collected at ten-minute intervals between 6:00 AM and 10:00 PM on non-holiday weekdays.

**Travel Time Index (TTI):** The measure of average conditions that indicates how much longer, on average, travel times are during congestion compared to during the free-flow travel time. The objective benchmark for peak TTI is below 1.50. For all highways, Free Flow Travel Time calculated using 55 mile per hour (mph).

**Planning Time Index (PTI) (95th Percentile):** The amount of time a traveler should allow ensuring on-time arrival 95% of the time. This measure indicates the travel time reliability of a route. The objective benchmark for peak PTI is below 2.50.

**Congested Hours:** The average number of hours per day that congestion occurred.

**I-90 between Exit 50A (Cleveland Drive) and Exit 55 (Ridge Road)**

**Eastbound**

**Westbound**
I-90 between Exit 50A (Cleveland Drive) and Exit 55 (Ridge Road)

Average Daily Congested Hours (2021)

**Eastbound**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congested Hours</td>
<td>0.34</td>
<td>0.82</td>
<td>0.58</td>
<td>0.55</td>
<td>1.44</td>
<td>2.01</td>
<td>1.99</td>
<td>1.72</td>
<td>2.32</td>
<td>2.73</td>
<td>1.09</td>
<td>1.38</td>
</tr>
</tbody>
</table>

**Westbound**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congested Hours</td>
<td>0.27</td>
<td>0.86</td>
<td>0.32</td>
<td>1.00</td>
<td>1.70</td>
<td>2.33</td>
<td>2.43</td>
<td>2.19</td>
<td>2.35</td>
<td>2.47</td>
<td>2.14</td>
<td>1.98</td>
</tr>
</tbody>
</table>

**Planning Time Index**

**Eastbound**

- 6 AM: 1.0
- 8 AM: 1.2
- 10 AM: 1.4
- 12 PM: 1.6
- 2 PM: 2.0

**Westbound**

- 7 AM: 1.0
- 9 AM: 1.2
- 11 AM: 1.4
- 1 PM: 1.6
- 3 PM: 2.0
- 5 PM: 2.2
- 7 PM: 2.4
- 9 PM: 2.6

---

**Legend**

- 2020
- 2021
I-190 between I-90 Henry Street and Skyway Overpass

Northbound

Southbound

Travel Time Index

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.90 1.91 1.76 1.67 1.55 1.36 1.99 1.82 2.03 2.04 2.12 2.19

1.90 1.76 1.44 1.67 1.55 1.36 1.99 1.82 2.03 2.04 2.12 2.19

3.0 2.5 2.0 1.5 1.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Northbound

Southbound

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.76 1.92 2.41 2.70 2.63 1.58 2.43 2.33 2.77 2.39 2.37 2.01

1.76 1.92 2.41 2.70 2.63 1.58 2.43 2.33 2.77 2.39 2.37 2.01

3.0 2.5 2.0 1.5 1.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1.0 1.5 2.0 2.5 3.0

Planning Time Index

2019 2020 2021

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
I-190 between I-90 Henry Street and Skyway Overpass

Average Daily Congested Hours (2021)

Northbound

Southbound

2020

2021
I-190 between Skyway Overpass and Exit 16

Northbound

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>1.96</td>
<td>2.52</td>
<td>2.01</td>
<td>1.57</td>
<td>1.54</td>
<td>2.21</td>
<td>2.05</td>
<td>2.33</td>
<td>1.79</td>
<td>1.98</td>
<td>1.96</td>
<td>1.98</td>
<td>1.96</td>
<td>1.96</td>
<td>2.01</td>
</tr>
<tr>
<td>2020</td>
<td>1.98</td>
<td>1.98</td>
<td>1.54</td>
<td>2.13</td>
<td>2.11</td>
<td>2.05</td>
<td>2.02</td>
<td>1.69</td>
<td>1.74</td>
<td>1.81</td>
<td>1.78</td>
<td>1.75</td>
<td>1.06</td>
<td>1.71</td>
<td>2.13</td>
</tr>
<tr>
<td>2021</td>
<td>1.86</td>
<td>1.86</td>
<td>1.14</td>
<td>1.14</td>
<td>1.17</td>
<td>1.17</td>
<td>1.19</td>
<td>1.36</td>
<td>1.35</td>
<td>1.40</td>
<td>1.40</td>
<td>1.47</td>
<td>1.83</td>
<td>1.72</td>
<td>2.11</td>
</tr>
</tbody>
</table>

Southbound

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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I-190 between Skyway Overpass and Exit 16

Average Daily Congested Hours (2021)

Northbound

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<tr>
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<tr>
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Southbound

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<td>Feb</td>
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I-290 between I-190 Exit 16 and I-90 Exit 50

Eastbound

Westbound
I-290 between I-190 Exit 16 and I-90 Exit 50

Average Daily Congested Hours (2021)

<table>
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<th>Feb</th>
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<th>Apr</th>
<th>May</th>
<th>Jun</th>
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Eastbound

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Westbound

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Route 33 between Oak Street and Union Road

Average Daily Congested Hours (2021)

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Eastbound

Westbound

Planning Time Index

2021

2020
INCIDENT RESPONSE

The graphs below show the average crash clearance times for different severity classifications during 2021.

**Average Minor Crash Clearance Time**

The goal is to clear minor crashes within less than 30 minutes. The clearance times vary throughout the year, with the lowest times occurring in June and July.

**Average Intermediate Crash Clearance Time**

The goal is to clear intermediate crashes within less than 2 hours. The clearance times also vary throughout the year, with the lowest times occurring in June and July.

Secondary crashes refer to events which occur directly as a result of another, ongoing event. The primary source of these events is crashes which result from the impact of another crash or disabled vehicle. The following graph compares the number of secondary crashes over the last five years.

**Secondary Crashes**

- **2017**: 7
- **2018**: 24
- **2019**: 14
- **2020**: 8
- **2021**: 14

The number of secondary crashes has fluctuated over the years, with a peak in 2018 and a recent increase in 2021.
The following graphs show the number of crashes by severity and detection type on the region’s major roadways in 2021.

**Incident Severity**

- **Minor**: Typically one or two vehicle crashes with no or minor injuries (closures less than 30 minutes).
- **Intermediate**: Typically multiple vehicle crashes involving injuries (expected duration of greater than 30 minutes and less than 2 hours).
- **Major**: Typically crashes involving hazardous materials, fatalities, tractor-trailers or full road closures with detouring of traffic (expected duration of greater than two hours).

**Detection Method**

- **Camera**: Incidents detected from NITTEC’s TOC using the CCTV network
- **Phone Call**: Incidents called in over the phone
- **Scanner**: Incidents heard over the police scanner
- **CHARMS**: Incidents using the internal incident reporting system
- **HELP Team**: Incidents detected by HELP trucks

---

#### Crash Severity

![Crash Severity Graph](image1)

#### Crash Detection

![Crash Detection Graph](image2)
## HELP TEAM PERFORMANCE

<table>
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<tr>
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<th>2019</th>
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<th>2021</th>
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<td>Route 33</td>
<td>I - 290</td>
<td>Route 33</td>
<td>I - 290</td>
<td>Route 33</td>
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<tr>
<td>Total HELP Assists</td>
<td>961</td>
<td>883</td>
<td>626</td>
<td>623</td>
<td>875</td>
<td>739</td>
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<tr>
<td>Total First on Scene</td>
<td>677</td>
<td>614</td>
<td>392</td>
<td>394</td>
<td>596</td>
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<td>70%</td>
<td>63%</td>
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### HELP Assist Types

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<td>I - 290</td>
<td>Route 33</td>
<td>I - 290</td>
<td>Route 33</td>
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<td>77</td>
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<td>98</td>
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<td>30</td>
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<td>Change Tire</td>
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<td>97</td>
<td>83</td>
<td>122</td>
<td>80</td>
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<td>Fix-A-Flat</td>
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<td>17</td>
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<td>14</td>
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<td>18</td>
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<td>Jump Battery</td>
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<td>1</td>
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<td>22</td>
<td>38</td>
<td>20</td>
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<tr>
<td>Other &amp; Provide Cell Phone</td>
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<td>261</td>
<td>188</td>
<td>163</td>
<td>188</td>
<td>112</td>
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<td>19</td>
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<tr>
<td>Provide Fuel</td>
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<td>60</td>
<td>80</td>
<td>112</td>
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<td>10</td>
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<td>28</td>
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<tr>
<td>Push-Off Highway</td>
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<td>6</td>
<td>2</td>
<td>8</td>
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<td>31</td>
<td>29</td>
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<td>Request Police/Ambulance</td>
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<td>Total</td>
<td>961</td>
<td>883</td>
<td>626</td>
<td>623</td>
<td>875</td>
<td>739</td>
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</table>
The graphs below show the percentage breakdown for each type of action taken by the HELP team and the average assist time in 2021.

**HELP Assist Types Graph**

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<tr>
<th>Action Taken</th>
<th>I - 290</th>
<th>Route 33</th>
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</thead>
<tbody>
<tr>
<td>Push-Off Highway</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Request Police/Ambulance</td>
<td>9%</td>
<td>15%</td>
</tr>
<tr>
<td>Provide Fuel</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>No Action Taken</td>
<td>57%</td>
<td>52%</td>
</tr>
<tr>
<td>Mechanical/Other</td>
<td>17%</td>
<td>13%</td>
</tr>
<tr>
<td>Change Tire</td>
<td>10%</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Average HELP Incident Timeline**

- **1 - 290**: 1.0, 1.1, 24.3
- **Route 33**: 1.4, 29.5

- **Minutes**: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32

- **Avg. Response Time**: Purple
- **Avg. Notification Time**: Light Brown
- **Avg. Assist Time**: Light Blue

- **Goal**: Less than 30 Minutes

**Average HELP Assist Time**

- **Assist Time (mins)**: 31.3, 30.9, 30.4, 35.1, 25.7, 25.4, 20.4, 24.4, 27.4, 24.5, 28.0, 25.8

**Average Response Time**: The time between incident notification and scene arrival.

**Average Assist Time**: The time between arrival at the scene and to scene departure.
The impacts of the COVID-19 pandemic on the region’s roadways have continued to evolve. NITTEC has been closely monitoring these changes and planning traffic management responses accordingly.

The maps shown here provide some high-level insight into the changes that have occurred in regional congestion, including the congestion location, time, and severity.

Each line on the maps is a simplified representation of a segment on a major roadway in one direction. The color of the line indicates the average number of **hours of congestion** during either the morning or afternoon period for the corresponding year. Green lines indicate little to no congestion while red lines indicate severe and recurrent congestion.
The impacts of the COVID-19 pandemic on the region’s roadways have continued to evolve. NITTEC has been closely monitoring these changes and planning traffic management responses accordingly.

The maps shown here provide some high level insight into the changes that have occurred in regional vehicle crashes, including the congestion location, time, and frequency.

Each line on the maps is a simplified representation of a segment on a major roadway in one direction. The color of the line indicates the average number of crashes per mile during either the morning or afternoon period for the corresponding year. Green lines indicate areas with low crash density while red lines indicate areas where crashes occur more frequently.
BORDER CROSSING STATISTICS

Border Crossing Volumes

The following charts show the total monthly border crossing counts for the Peace Bridge, Lewiston-Queenston Bridge, and Rainbow Bridge in the U.S. and Canada bound directions from 2019 to 2021. The first chart shows the volumes for passenger cars while the second shows the volumes for trucks.

Car Volumes

Truck Volumes
Border Crossing Delays

The following graphs show the peak delay during each month of 2021 at the Peace Bridge, Lewiston-Queenston Bridge, and Rainbow Bridge in the U.S. and Canada bound directions for both cars and trucks.

Note: COVID-19 border restrictions were partially lifted for travel into Canada in August 2021 and for travel into the U.S. in November 2021.

**Car Delays to the U.S. - Peak Delay in Minutes**

![Graph showing car delays to the U.S.]

**Car Delays to Canada - Peak Delay in Minutes**

![Graph showing car delays to Canada]

---

**Legend:**
- Peace Bridge
- Lewiston-Queenston Bridge
- Rainbow Bridge

**Note:**
- COVID-19 border restrictions were partially lifted for travel into Canada in August 2021 and for travel into the U.S. in November 2021.
Simultaneous Delays

The graphs below show the percentage of time during 2021 when there was simultaneous delays (crossing times greater than 10 minutes) into Canada and into the U.S.

For cars, the graphs show how often there were delays at one or two bridges or all three bridges at the same time. For trucks, the graphs show how often there were delays at one bridge or both bridges, as the Rainbow Bridge does not service commercial vehicle traffic.

**Simultaneous Car Delay to Canada**

- 0: 69.3%
- 1 & 2: 29.5%
- 3: 1.2%

**Simultaneous Car Delay to the U.S.**

- 0: 92.3%
- 1 & 2: 7.6%
- 3: 0.1%

**Simultaneous Truck Delay to Canada**

- 0: 79.5%
- 1: 18.8%
- 2: 1.7%

**Simultaneous Truck Delay to the U.S.**

- 0: 85.8%
- 1: 12.0%
- 2: 2.2%
2021 Hours of Delay - Cars

Delay by Month

Delay by Day

Delay by Time of Day
**2021 Hours of Delay - Trucks**

**Delay by Month**

- January: 200
- February: 200
- March: 300
- April: 300
- May: 300
- June: 300
- July: 300
- August: 300
- September: 300
- October: 300
- November: 300
- December: 300

**Delay by Day**

- Sunday: 300
- Monday: 300
- Tuesday: 700
- Wednesday: 700
- Thursday: 700
- Friday: 700
- Saturday: 700

**Delay by Time of Day**

- 12 AM: 50
- 1 AM: 50
- 2 AM: 50
- 3 AM: 50
- 4 AM: 50
- 5 AM: 50
- 6 AM: 50
- 7 AM: 50
- 8 AM: 50
- 9 AM: 50
- 10 AM: 50
- 11 AM: 50
- 12 PM: 50
- 1 PM: 50
- 2 PM: 50
- 3 PM: 50
- 4 PM: 50
- 5 PM: 50
- 6 PM: 50
- 7 PM: 50
- 8 PM: 50
- 9 PM: 50
- 10 PM: 50
- 11 PM: 50

Total Hours of Delay - Trucks: 53
SYSTEMS RELIABILITY

ITS Systems and Equipment

Crossroads: NITTEC’s advanced traffic management system
Website: www.nitteca.org and www.nitteca.ca
CCTV: Traffic cameras in the region
DMS: All overhead and permanent roadside message signs in the region
TRANSMIT: All travel speed readers in the region
Flashing Signs: All static signs with flashing beacons
Reliability: Measure of the uptime of an equipment type or system

Equipment Inventory

The table below shows the total number of ITS elements tracked for system reliability. These elements are owned by a variety of organizations, including the New York State Department of Transportation (NYSDOT), New York State Thruway Authority (NYSTA), Niagara Falls Bridge Commission (NFBC), and Buffalo and Fort Erie Public Bridge Authority (PBA). The PBA and NFBC have additional ITS elements, but only those tracked by NITTEC are listed here.

<table>
<thead>
<tr>
<th>Organization</th>
<th>CCTV</th>
<th>DMS</th>
<th>TRANSMIT</th>
<th>Flashing Signs</th>
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Equipment Activity

![Bar chart showing monthly issues for 2019, 2020, and 2021](chart_url)
### NITTEC Systems Uptime

#### Crossroads

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Goal: 99%
Field Equipment Uptime

**CCTV**

![CCTV Uptime Chart]

**DMS**

![DMS Uptime Chart]

**TRANSMIT**

![TRANSMIT Uptime Chart]

Legend:
- Green: 2019
- Orange: 2020
- Blue: 2021