Niagara International Transportation Technology Coalition

2020

- Annual Report -

Celebrating 25 Years

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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.

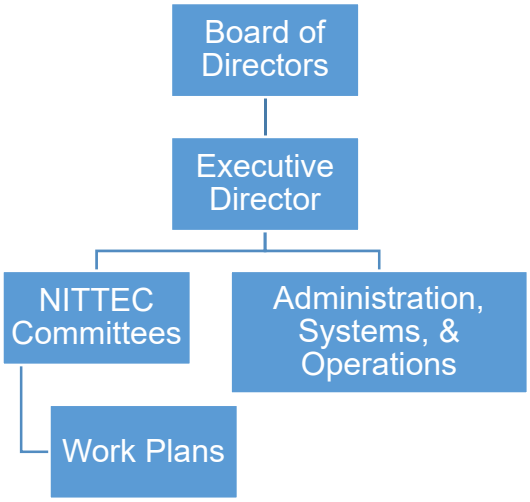
Management Objectives

- Maintain Corporate Culture as a Service Organization.
- Maintain Diverse Professional Staff of Service Providers.
- Build and Maintain Leadership Role for Implementing Technology in the Evolving Transportation Operations and Intelligent Transportation Systems (ITS) Environment.
- 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

Timothy McGovern, P.E.
Engineering Manager

Andrew Bartlett, PhD
Transportation Engineer

William Conway
Operations Technician

Robert Eberhardt
Systems Administrator

Steven Eiss
Operations Technician

Cheryl Hagen
Operations Technician

Dee Idzior
Operations Technician

John LaFalce
Operations Technician

William Lobuzzetta
TOC Supervisor

Gordon Scherer
Operations Technician

Stephen Schnepf
Operations Technician

Jordan Sullivan
Operations Technician

John Thompson
Operations Technician

Matthew Vazquez
Junior Systems Administrator

Lisa Walgate
Administrative Assistant

NITTEC Member Agencies

Policy Members

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

General Members

- Niagara Falls Bridge Commission
- Buffalo & Fort Erie Public Bridge Authority
- City of Buffalo, NY
- Town of Fort Erie, ON
- City of Niagara Falls, ON
- Niagara County
- Niagara Region
- Niagara Parks Commission
- City of Niagara Falls, NY

Affiliate Members

- New York State Police
- Ontario Provincial Police
- Greater Buffalo-Niagara Regional Transportation Council
- Federal Highway Administration
- Town of Amherst, NY
- Town of Tonawanda, NY
- Niagara-on-the-Lake, ON
- New York State Department of Environmental Conservation
- U.S. Customs and Border Protection
- American Medical Response
- John's Towing
- University at Buffalo
- Rusiniak's Towing
- City of St. Catherines, ON
- Montgomery Services
- Canadian Border Services Agency
- Chautauqua County
- Cattaraugus County
- Town of Hamburg, NY
- Town of West Seneca, NY
- Town of Cheektowaga, NY
- Town of Orchard Park, NY
- Town of Evans, NY
- City of Lackawanna, NY
- Seneca Nation
- LTR Rigging and Hauling
- AAA WNY
- Twin City Ambulance

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 and meets 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 Participation

The table below shows the participation in NITTEC's eight Committees by member agencies. Fully shaded circles indicate full participation while half-shaded circles represent partial participation.

● Full Participation

◐ Partial Participation

	Board Of Directors	Border Crossing	Construction Coordination	Incident Management WNY & Ontario	Regional Traffic Signal	Strategic Planning	Traffic Operations Center	Technology and Systems
Policy Members								
Erie County	●		●	◐	●	◐		
Ministry of Transportation - Ontario	●	●	◐	●		◐	●	●
New York State DOT	●	●	●	●	●	●	●	●
New York State Thruway Authority	●	●	●	●		●	●	●
Niagara Frontier Transportation Authority	●	◐		◐	◐	●	◐	
General Members								
Buffalo and Fort Erie Public Bridge Authority		●						◐
City of Buffalo, NY		◐		◐	●	●		
City of Niagara Falls, NY								
City of Niagara Falls, Ontario								
Niagara County			◐	◐			◐	
Niagara Falls Bridge Commission		●		◐				
Niagara Parks Commission								
Niagara Region		◐		●				
Town of Fort Erie, ON				◐				
Affiliate Members								
Number of Affiliate Participants	1	7	0	19	4	2	1	1

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.

2020 Highlights

- Reviewed communication protocols and commercial vehicle staging plans when border crossing issues and commercial vehicle restrictions occur.
- Completed automation of border crossing delay information on regional Dynamic Message Signs (DMS).

Initiatives

- Provide input on deployment of border travel time signage.
- Support the development of the MTO Niagara Region Border Incident Management Plan.
- 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 to maintain delivery of common information to all users, as well as 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.
- Develop new and evolve existing border related transportation strategies in support of the Committee mandate.
- Re-engage Coalition member participation in the Committee.
- Promote Nexus Program to increase use by travelers at the border crossings.
- Continue to evaluate the “Border Planner” for international motor coach coordinated arrivals scheduling and traffic notification procedures.
- Evaluate a “green lanes” program at the border crossings to improve freight traffic.
- Support the recommendations of the Integrated Corridor Management Project.

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.

2020 Highlights

- Provided project updates and summary of regional construction to stakeholders.
- Installed iCone arrow boards on agency equipment to provide motorist information within work zones.

Initiatives

- Identify and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
- Develop an implementation plan for construction planning / coordination software amongst Coalition members. Collect and integrate information, coordinate and assist member agencies with their planned construction activities.
- Evaluate traffic data to improve work zone efficiency.
- Re-engage Coalition member participation in the Committee.

Scheduled

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

Ongoing

- Coordinate with other Coalition Committees on construction coordination related issues.
- 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 as necessary.
- Identify project locations to use temporary technology (iCone equipment, portable variable message signs, CCTV, etc.) to gather delay information.

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.

2020 Highlights

- Discussed implementation of safety improvements for first responders on the Garden City Skyway.
- Held a virtual Highway Safety Awareness Training class for first responders.
- Reviewed upcoming construction activities and the possible effects on incident response.

Initiatives

- Support the development of the MTO Niagara Region Border Incident Management Plan.
- 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.

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.

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.
- Ensure installation of Emergency Detour Route signage for Highway 406 when all construction of Highway 406 has been completed.
- Develop Traffic Management Plans for Special Events.
- Enhance the incident and secondary crash performance measures reporting and disseminate to all first responders.
- Develop incident data and video sharing procedures among all responding agencies.
- 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.

2020 Highlights

- Met with stakeholders the review and update expressway closure guidelines.
- Held a virtual Highway Safety Awareness Training class for first responders.
- Discussed and debriefed emergency response for alternative fuel vehicles.
- Held stakeholder meetings and discussed a system to reduce vehicle-wildlife collisions.

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.
- Identify opportunities to improve safety and coordination among 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.
- Conduct a yearly tabletop exercise.
- 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 on scene training program.

Ongoing

- Participate in event planning and traveler information activities.
- Enhance the incident and secondary crash performance measures which enumerate time to detection, response times from detection, and speed in achieving clearance; report and disseminate to all first responders.
- Effective communication and sharing of information between WNY Incident Management Committee and the other NITTEC Committees.
- Increase number of operational partners included in the NITTEC Memorandum of Understanding.
- Continue outreach program to engage local law enforcement and other first responders in the Incident Management Committee.
- Review and as necessary enhance 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.
- Promote and evaluate accident reporting areas at the I-90/I-290 interchange and expand to other locations.
- Deploy video sharing system among all responding agencies.

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.

2020 Highlights

- Held several vendor demonstrations for asset management software for traffic signal equipment.
- Ranked and set priorities for the Regional Traffic Signal Management Plan tasks.
- Reviewed performance measures from Miovision controlled intersections.

Initiatives

- Assess existing regional traffic system equipment and evaluate systems to enhance asset management inventory.
- Define a concept of desired operations and system requirements for desired functionality of signal systems in the region.
- Define opportunities for funding and training needs to develop skill sets, technologies, and processes.
- Evaluate current 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

- Maintain a Corridor Status Matrix and maintain an inventory 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 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.

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.

2020 Highlights

- Provided oversight for Phase 1 of the ATCMTD Grant.
- Oversaw the NITTEC business continuity efforts.
- Provided action items and set priorities for the NITTEC Strategic Plan.

Initiatives

- Initiate a focus of the Strategic Planning Committee to Strategic Planning Development and Implementation.
- Use performance measures to evaluate overall progress against strategic objectives.
- Evaluate the role of overall performance measures reports as a feedback and continuous improvement mechanism for NITTEC operations.
- Oversee the development and delivery of the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program.

Scheduled

- Assess NITTEC's performance in meeting the expectations of members and stakeholders.
- Review Committee work plans for consistency with Strategic Plan, Regional Concept for Transportation Operations (RCTO) and Integrated Corridor Management (ICM) to establish priorities and identify needs.

Ongoing

- Monitor progress of regional projects and initiatives, including Integrated Corridor Management (ICM) project.
- 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.
- Work with Coalition members to document regional communication needs and identify opportunities for collaboration.
- 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 implement NITTEC promotional opportunities.
- Continue to promote transit ridership and biking.
- Re-engage Coalition member participation in the Committee.
- Implement Strategic Plan recommendations / action items based on available funding.
- Monitor the Smart Corridor Initiative.

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.

2020 Highlights

- Identified technology issues with member agencies' ITS equipment under NITTEC control.
- Reviewed national cybersecurity policies and best practices.
- Reviewed disaster recovery efforts for co-location with NFTA.

Initiatives

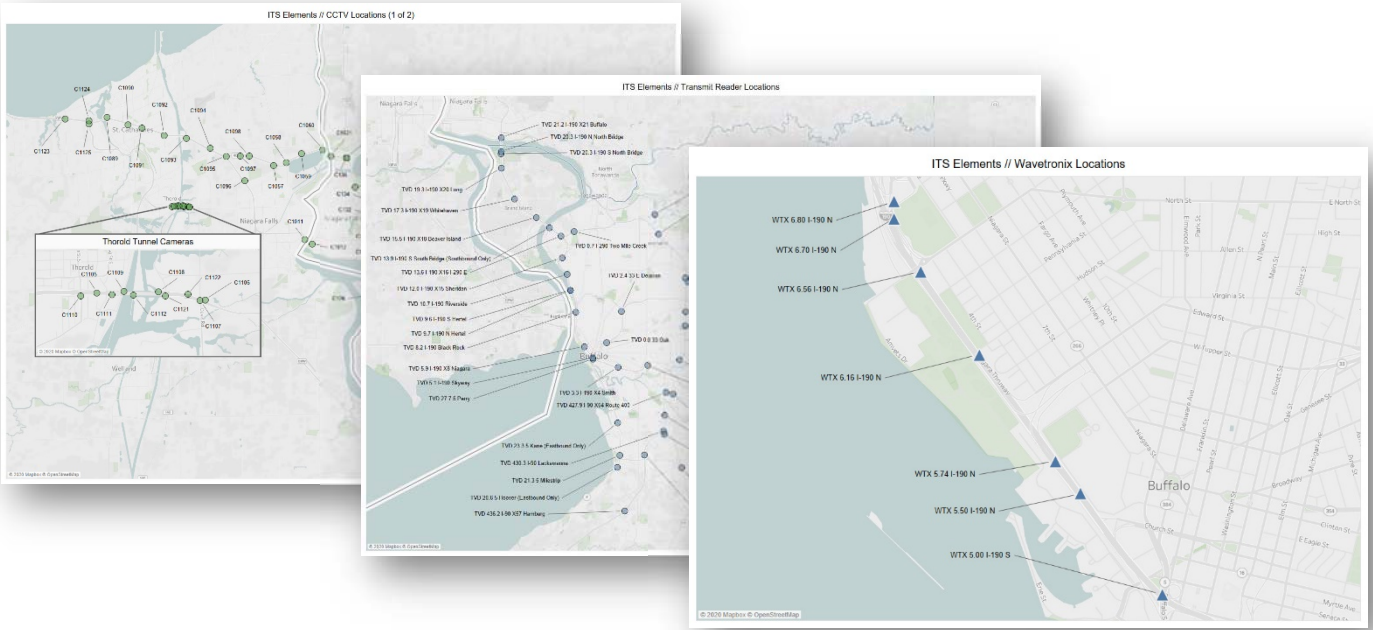
- Review and implement recommendations for Center-to-Center (C2C) integration for automated data exchanges.
- Identify technology requirements for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
- Develop technology standards process for ITS elements in the region; remaining consistent with member agency's standards. This includes helping member agencies identify new technology and components for testing.
- 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 a disaster recovery site.

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

- Continue communication with Member Agencies regarding Statewide / Province-wide TMC and software systems discussions and decision making processes.
- 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.
- Integrate, host and operate the Travel Time System and future expansions in the bi-national region including supporting cross border installation of travel time technology to provide travel times on both sides of the border and border wait times.
- Assist in monitoring travel time data and support maintaining system accuracy.
- Identify System Integration opportunities and compliance with standards.
- Monitor and maintain the Advanced Traveler Information System, including NITTEC website, Mobile Application, and personalized alert system.
- Support and enhance the central signal software system and support the Regional Traffic Signal Committee connectivity initiatives by evaluating technology and hardware requirements.
- Monitor the communication network including a backup system using a combination of leased line services and wireless network.
- Report and enhance system performance measures.
- Assist and maintain an inventory of publicly owned fiber optic communications on both sides of the border.
- Review technology aspects of any Revolving Loan Fund (RLF) and Grant Fund applications that are received.
- Re-engage less active Coalition members' participation in the Committee and continue to provide the opportunity for agencies to talk with each other, share knowledge and discuss issues.
- Support digital video dissemination systems.
- Support migration of TRANSMIT system to a new travel time system.



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.

2020 Highlights

- Discussed and implemented plans for cashless tolls and toll barrier removal.
- Reviewed the identified strategies from the Integrated Corridor Management Final Report.
- Reviewed the proposed Crossroads System enhancements.

Initiatives

- Identify and evaluate technology opportunities for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant.
- Review recommended strategies from ICM project.

Scheduled

- Coordinate periodic stakeholder meetings when transportation issues arise.
- Monitor current and develop proposed budgets.
- Review and analyze system 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.

Ongoing

- Review Regional Event Traffic Management Plans (TMP), expressway detour routes and signing plans that will be utilized during major events.
- Provide oversight of the gathering and verification of operational information and distribute to stakeholders using the existing Crossroads and public web systems.
- Continue TOC quality initiatives.
- Monitor and oversee the coordination with National Weather Service.
- Continue to evaluate and enhance communication protocols with Erie County Central Police Services Computer Aided Dispatch (CAD) System (CHARMS).
- Evaluate operational procedures, training programs and staffing levels to determine if they are adequate for implementation of new systems and initiatives.
- Continue management of regional DMS and PVMS signing strategy among member agencies. Conduct Crossroads messaging critiques and provide recommendations to improve the system.
- Re-engage Coalition member participation in the Committee and 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.
- Monitor, expand and integrate opportunities for collecting and reporting traveler information usage.
- Establish traffic management strategies using data driven performance outcomes to achieve optimal results.
- Support evaluation for Incident Detection and Travel Time Systems and promote within Member Agencies.

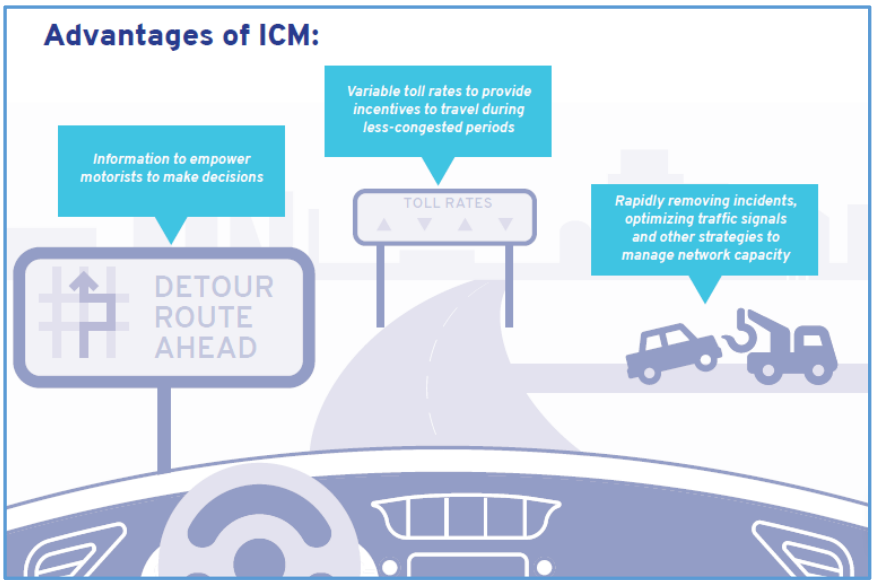
Regional Initiatives

I-190 Integrated Corridor Management

The I-190 Integrated Corridor Management (ICM) Project is a collaborative effort between NITTEC and GBNRTC with the objective of optimizing traffic operations by identifying effective traffic management strategies to mitigate congestion and the associated environmental impacts.

Specific ICM strategies were selected for consideration and inclusion in ICM response plans and were tested in a highly advanced hybrid simulation model. These strategies included Improved Dynamic Traveler Information, Freeway Incident Detection and Service Patrol, Ramp Metering, Variable Speed Limits and Queue Warnings, Variable Toll Pricing, and Signal Coordination.

The ICM strategies were evaluated for a typical weekday commute during AM and PM peak-period conditions, vehicle crash conditions, holiday demands, snow conditions, and game day conditions. Two packages (A and B) of ICM strategy deployments were developed to streamline the simulation and evaluation of the effectiveness of the ICM strategies during the different base conditions.



In 2020, the results of the project were delivered to the stakeholders, with the recommended Package B resulting in a favorable cost ratio with respect to reduced congestion and emissions, and improved safety.

The I-190 ICM project was selected by ITS New York as a recipient of the Outstanding ITS Project of the Year award for 2020.

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.

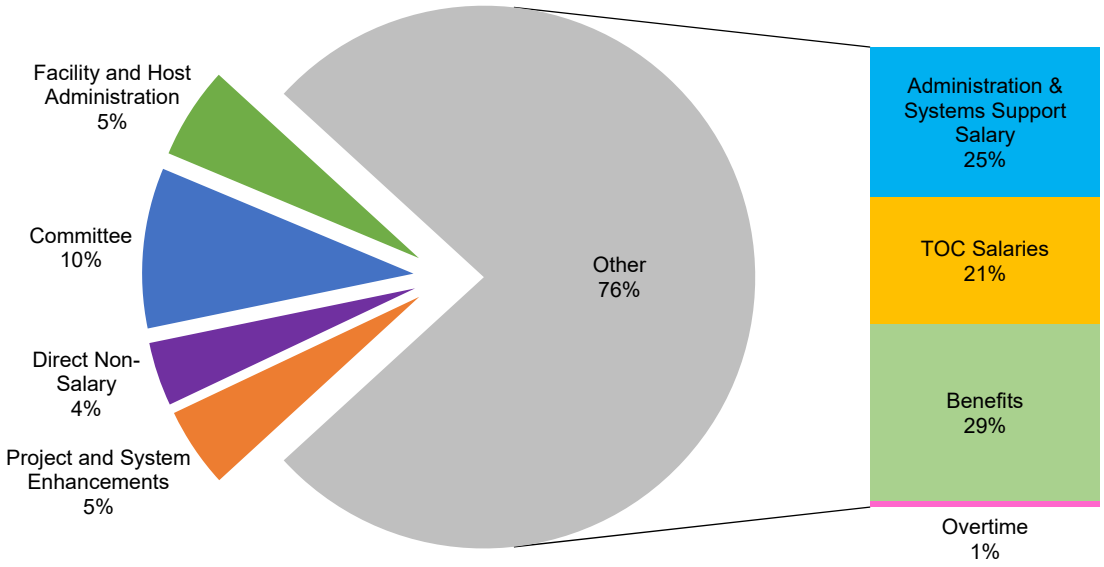
Since 2016, the decision was made to divide the project into two phases. Phase 1 focuses on planning tasks designed to provide a clear vision of the solutions to be developed and ensuing deployments. Phase 2 involves the actual development, testing, and implementation of new technology and systems.

2020 saw significant progress on Phase 1, with the majority of the project plans, concept of operations, and system requirements being completed. This Phase is on track to be completed by Spring of 2021, with Phase 2 planned to start later in the year. The overall project is scheduled to be finished by the end of 2023.

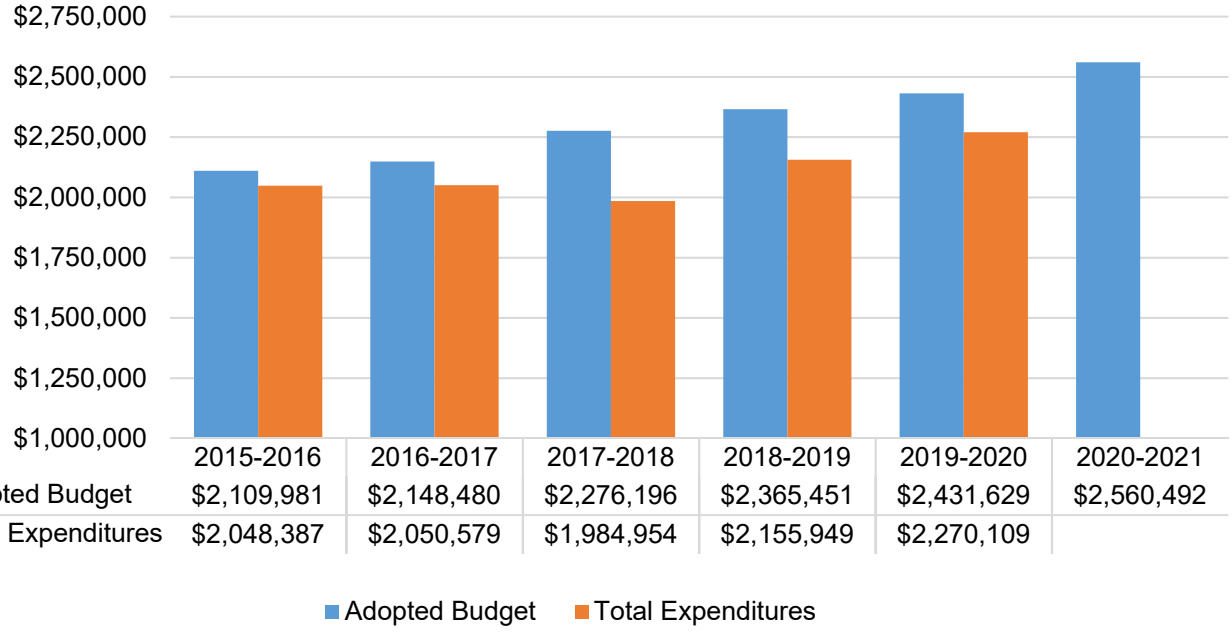
Financial Information

Budget Distribution

The adopted SFY 2020-2021 Operating Budget was $2,560,492, distributed as identified below.



Annual Budget Performance



	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Adopted Budget	$2,109,981	$2,148,480	$2,276,196	$2,365,451	$2,431,629	$2,560,492
Total Expenditures	$2,048,387	$2,050,579	$1,984,954	$2,155,949	$2,270,109	

Revolving Loan Fund and 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 $5,012,335 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, 2020 is presented here.

Total RLF Summary	Amount
RLF Principal	$5,000,000
Interest	$1,102,665
RLF Principal & Interest	$6,102,665
Grant Monies Paid	$422,592
Remaining Allocated Grant Monies	$423,000
Available Balance	$5,012,335

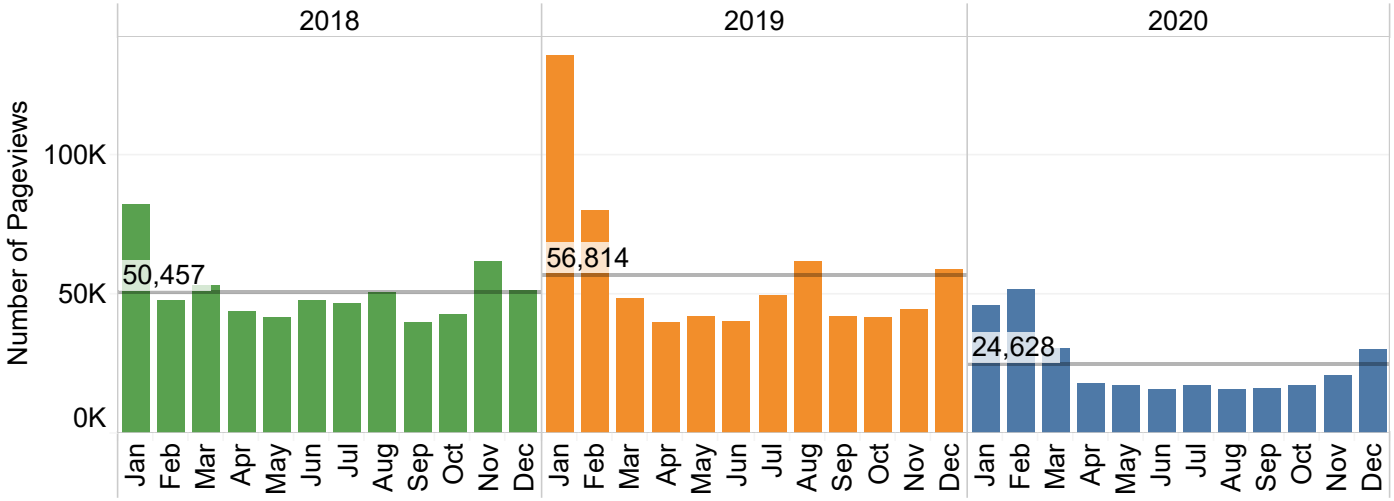
In addition, interest earned on the RLF has been distributed as grants to fund multiple ITS projects in the region.

Project	Details	Organization	Grant Amount	Amount Paid	Amount Remaining
Niagara Street Corridor Signal Controllers	Installation of 26 traffic signal controllers to implement transit signal prioritization along the corridor	City of Buffalo	$182,000	$182,000	$0
Border Crossing Traveler Information System	Installation of 9 hybrid message signs displaying border crossing information for the three international bridges	NITTEC Border Crossing Committee	$183,000	$0	$183,000
Smart Camera Technology	Installation of 5 smart cameras and 2 ATC controllers	Town of Tonawanda	$120,000	$120,000	$0
Fiber Optic Diagnostic Equipment	Purchase of Fiber Optic Diagnostic equipment, repair tools, and a specialized trailer	NYSTA	$75,000	$60,592	$0
Crossroads ATMS Enhancement	Improvements to NITTEC's Advanced Traffic Management System	NITTEC	$300,000	$60,000	$240,000
		Total	**$860,000**	**$422,592**	**$560,000**

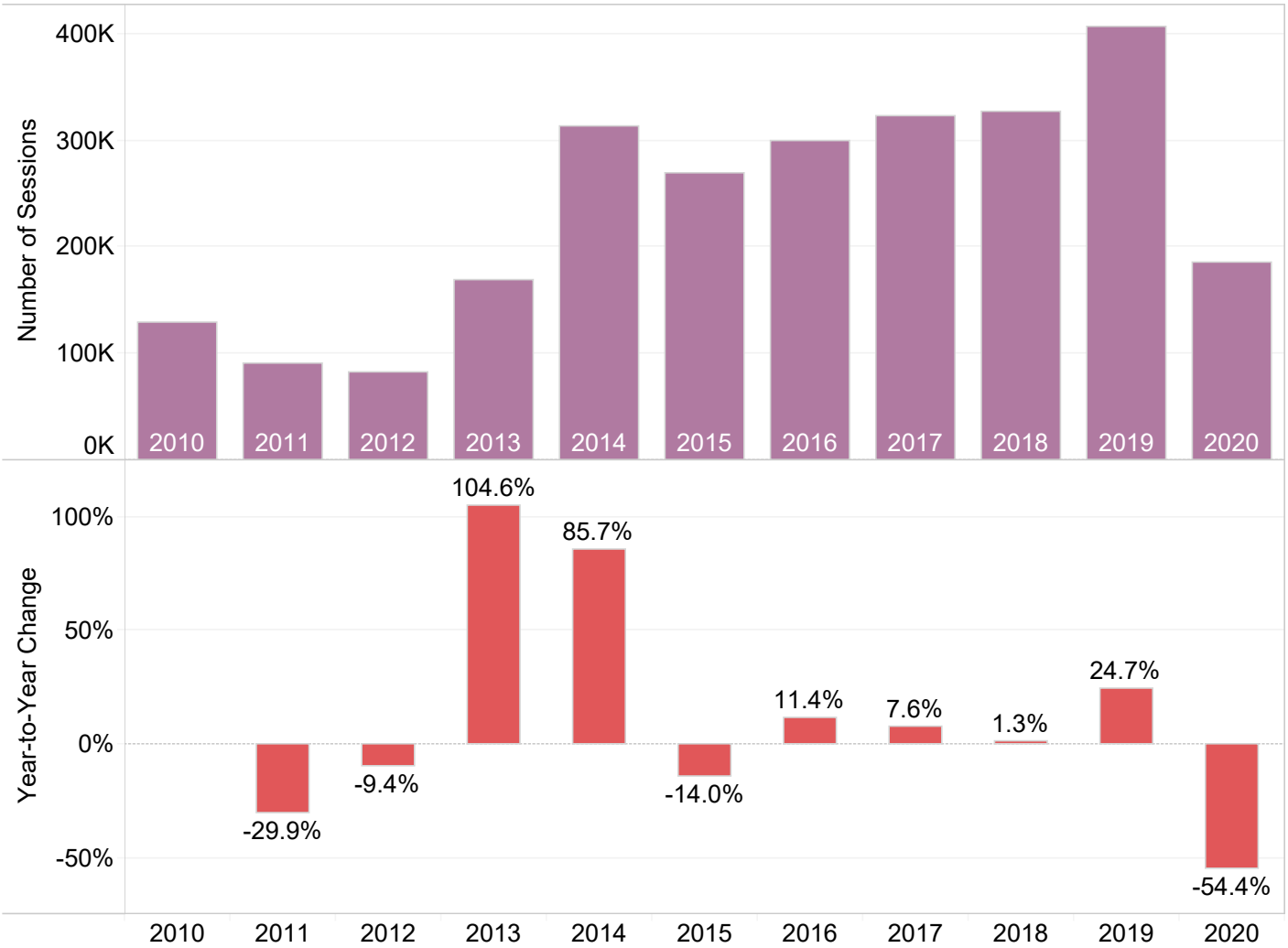
Website Statistics

Pageviews: The total number of pages visited across all visitors. The horizontal lines indicate the annual average.
Session: A session is the period of time a user is actively engaged with the website.

Monthly Pageviews



Annual Sessions

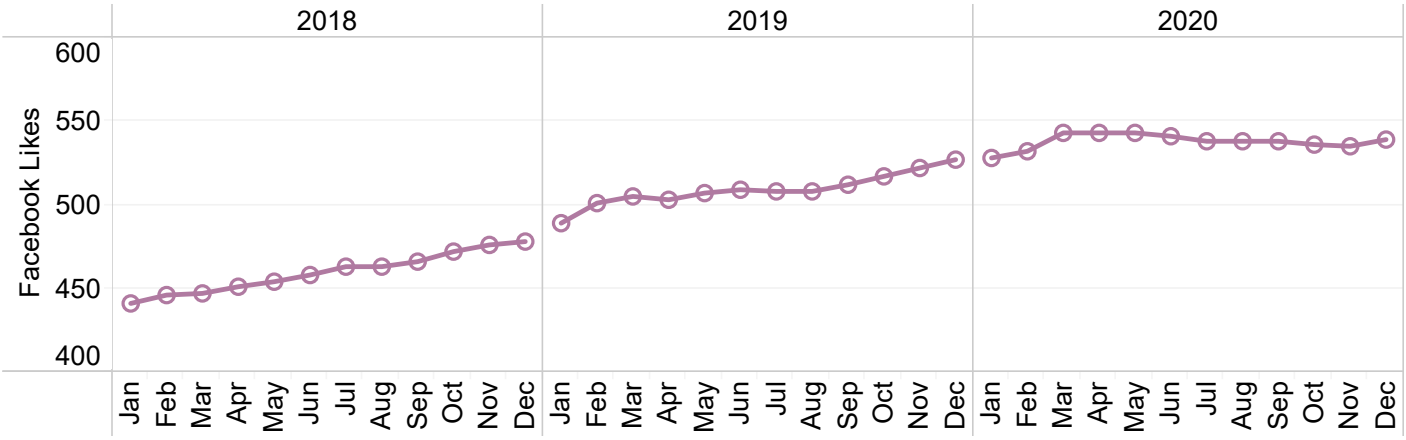


Social Media Statistics

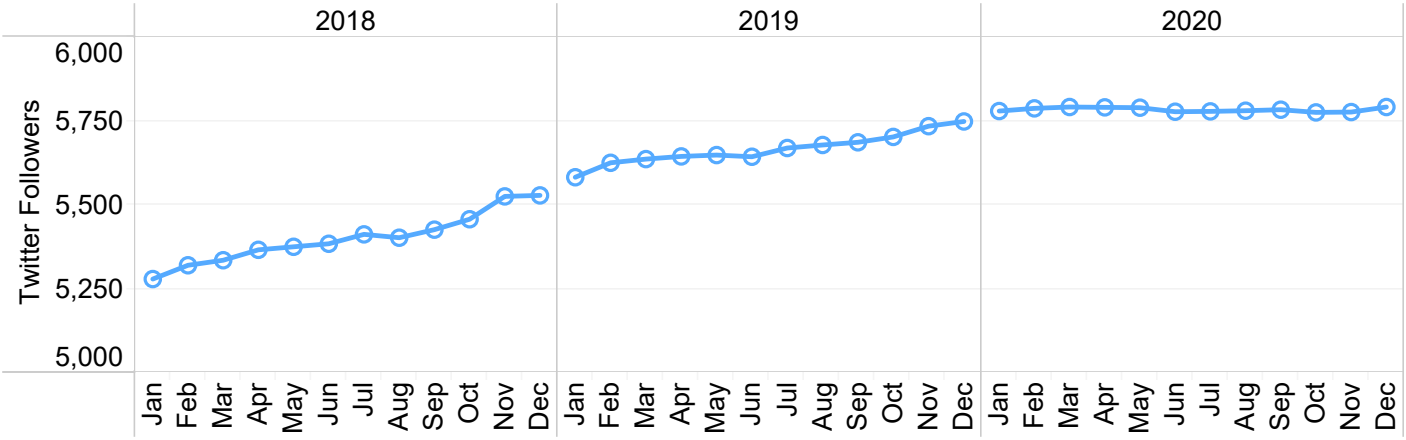
NITTEC uses social media outlets as a means of providing alerts and real-time travel information to the public. Facebook "likes" and Twitter "followers" refer to the number of individuals who subscribe to NITTEC messages on each service, respectively.

The NITTEC mobile app and MYNITTEC service each allow users to subscribe to individual routes during specified time periods and receive alerts about events through text message, email, or app notifications.

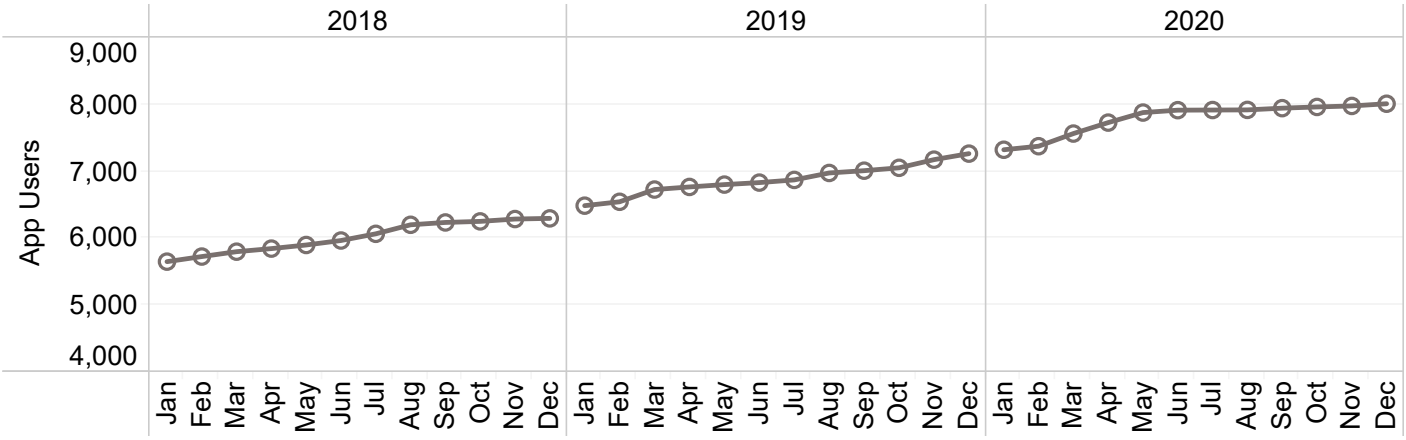
Facebook Likes



Twitter Followers



App Users



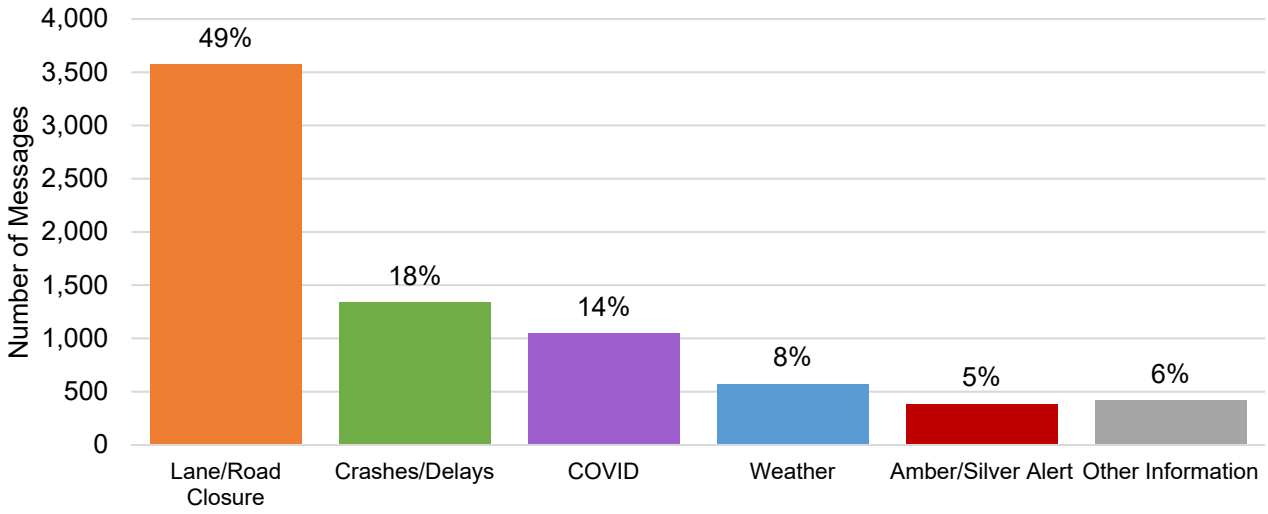
Regional Messaging Network

NITTEC operates the 31 Dynamic Message Signs (DMS) located above or adjacent to the region's roadways. The signs are used to provide travelers real-time information on traffic conditions, warnings and alerts, and other important messages. In 2020, the signs were used as part of New York State's effort to inform the public on the ongoing COVID-19 situation.

The table below shows the locations of Top 10 Signs utilized in the region in 2020, and the chart provides a breakdown of the message contents.

DMS Location	Number of Messages
Route 33 West before I-90 Interchange	479
I-290 East between Sheridan Dr. and Main St.	459
I-290 West before Colvin Blvd.	441
I-90 East between Ridge Rd. and Route 400	434
I-190 South before I-290 Interchange	415
Route 400 North between Transit Rd. and Union Rd.	378
I-190 North before Hamburg St.	357
I-190 South before Niagara St.	346
I-90 West before Route 33 Interchange	326
I-190 North before Ogden/Dingens St.	324

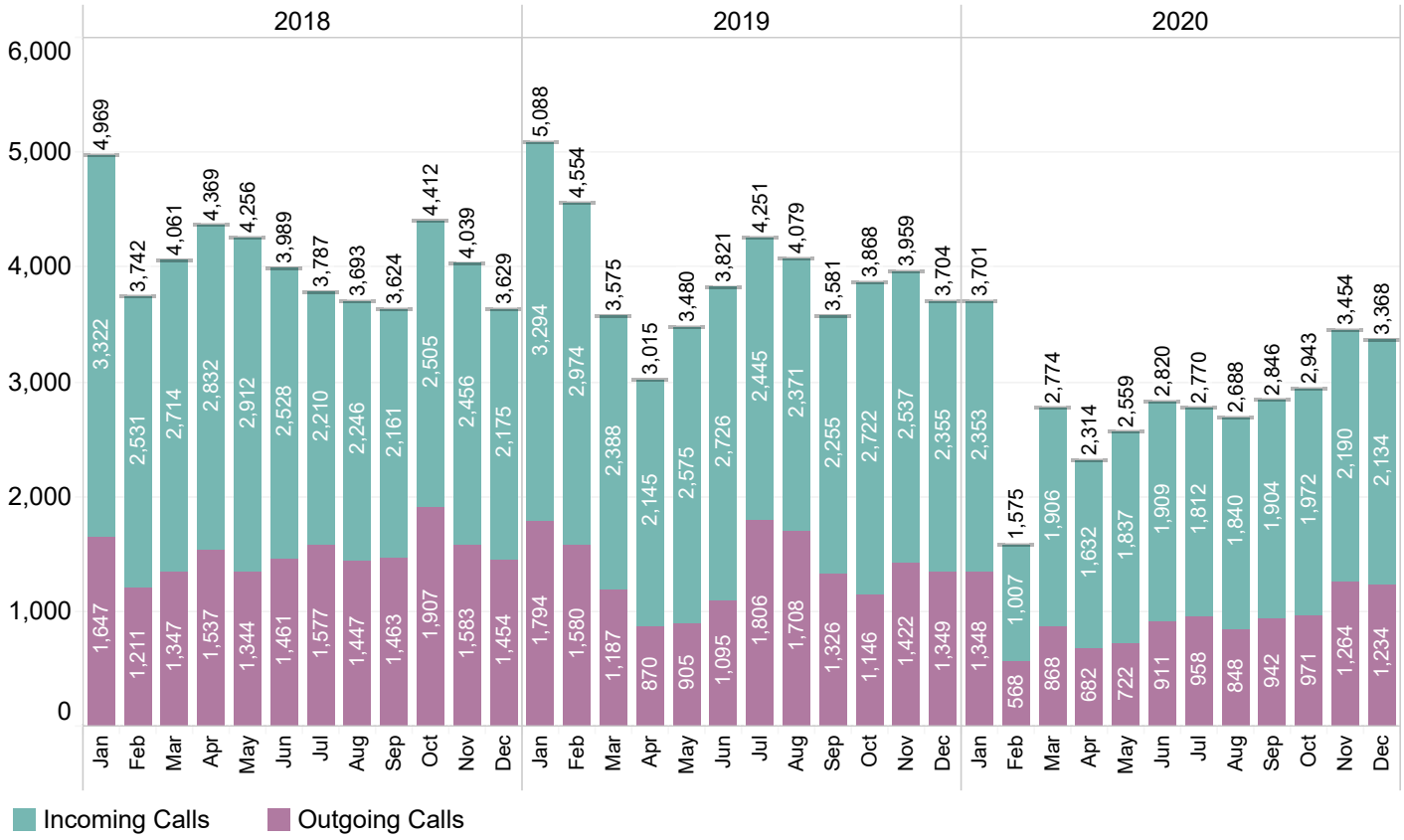
2020 Types of DMS Messages



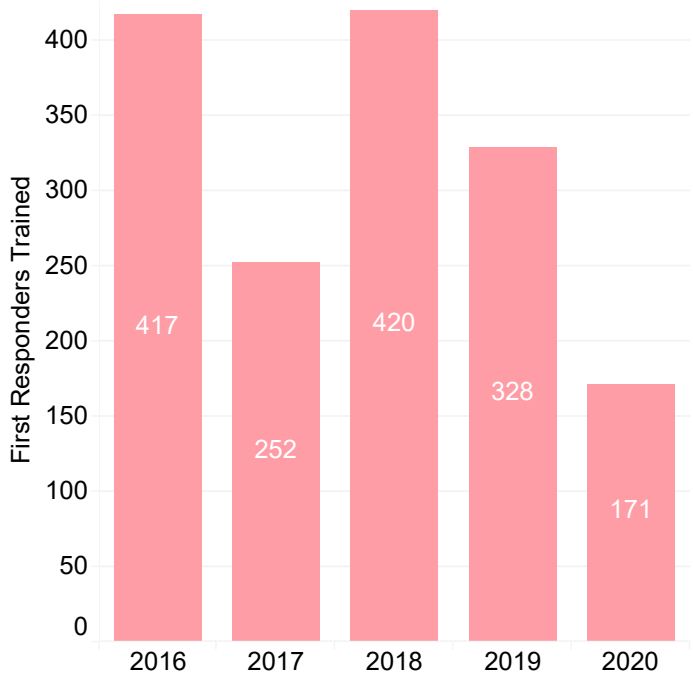
TOC Information

The chart below shows the number of incoming and outgoing calls to and from the TOC. The numbers above the bars show the combined total of incoming and outgoing calls.

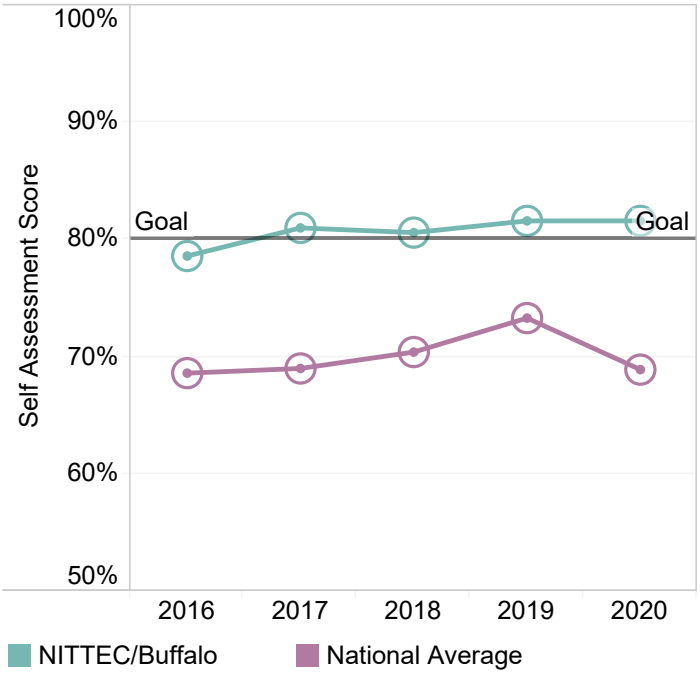
TOC Incoming/Outgoing Calls



Highway Safety Awareness Training



Traffic Incident Management Self Assessment



Monthly Incident Activity

• **Crashes:** Crash events are collisions involving at least one vehicle making contact with another vehicle or an object such as a guardrail or utility pole. These events often result in first responder action, lane closures, and delays.

• **Construction & Maintenance:** Construction and maintenance events are planned activities by roadway or utility owning agencies. These events are usually scheduled months in advance to allow for coordination amongst agencies.

• **Disabled Vehicles:** Disabled vehicle events refer to instances of single vehicles becoming unable to drive while on a major roadway. This is usually the result of vehicle malfunction or lack of fuel.

• **Debris:** Debris events can refer to any sizable, out of place object on or near a roadway. This includes animal remains, fallen tree branches, litter, etc.

• **Congestion:** Congestion events are logged for significant traffic congestion which may or may not have a single identifiable cause.

• **Snow & Ice:** Snow and Ice events indicate significant snowfall or winter conditions, in part or all of the region, which are likely to impact travel.

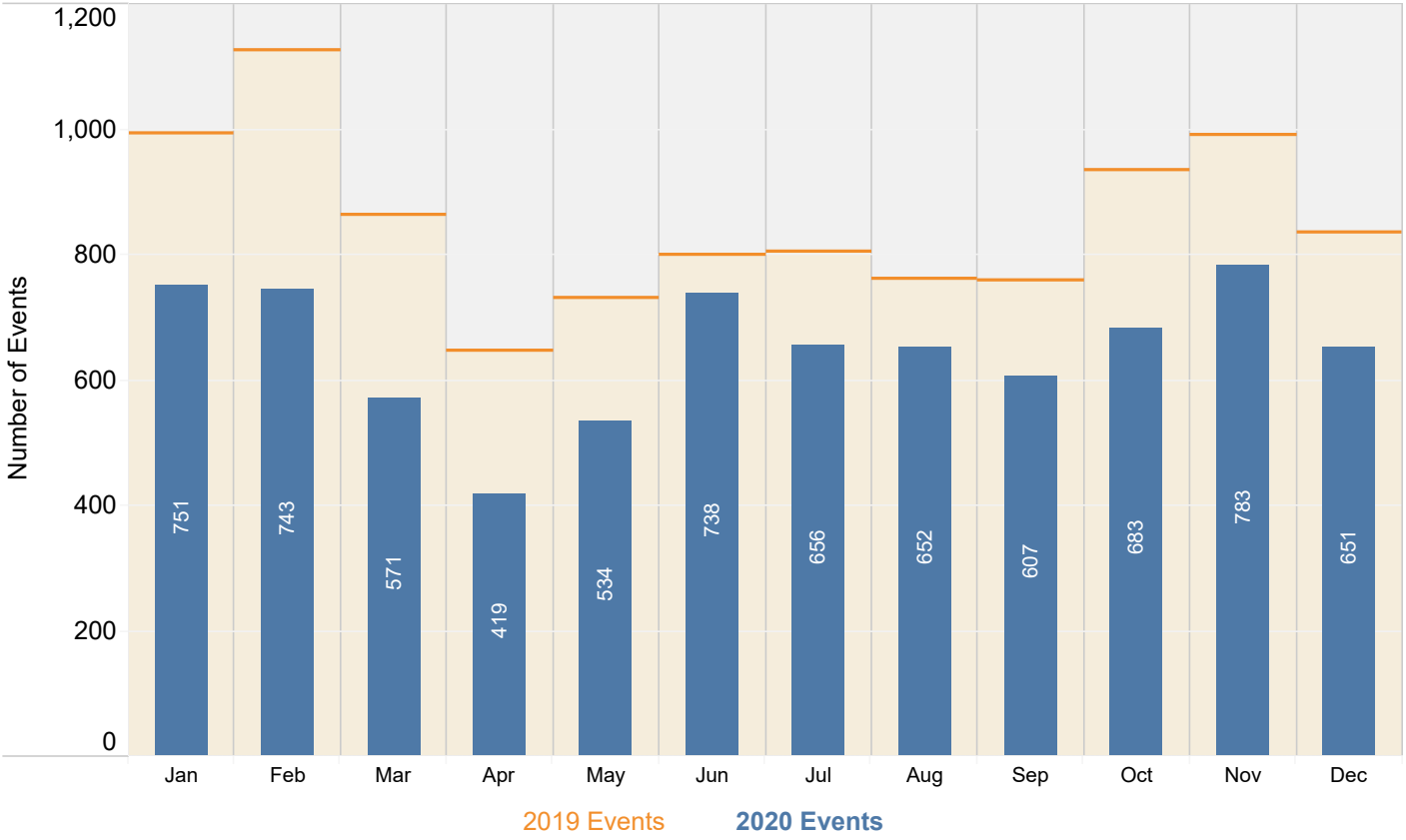
• **Signal Malfunction:** Signal malfunction events refer to instances of signals in the region which have either lost power or are operating improperly.

• **Border Crossing:** Border crossing events are logged when the delay at one or more bridges, in one or both directions, is greater than 30 minutes.

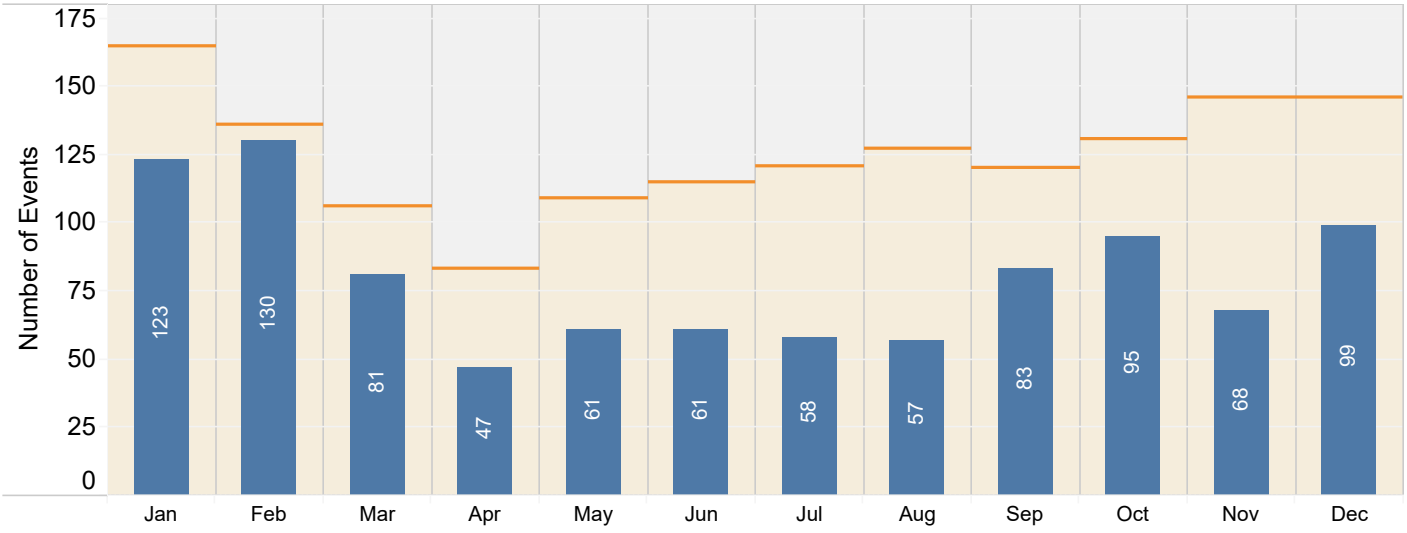
• **Other:** Events classified as Other encompass any incidents reported to NITTEC which do not relate to the other categories listed above.

The following graphs show the total number of events of each type that occurred in the region during 2020 by month. For comparison, the reference lines indicate the number of events that occurred in 2019 by month.

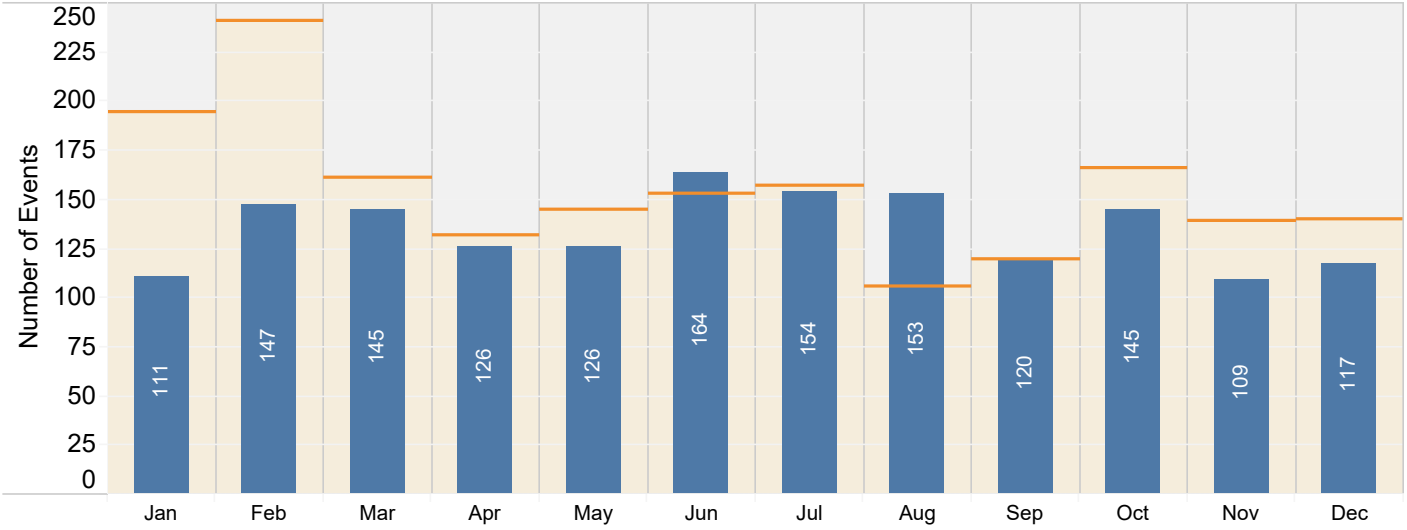
Total Activity



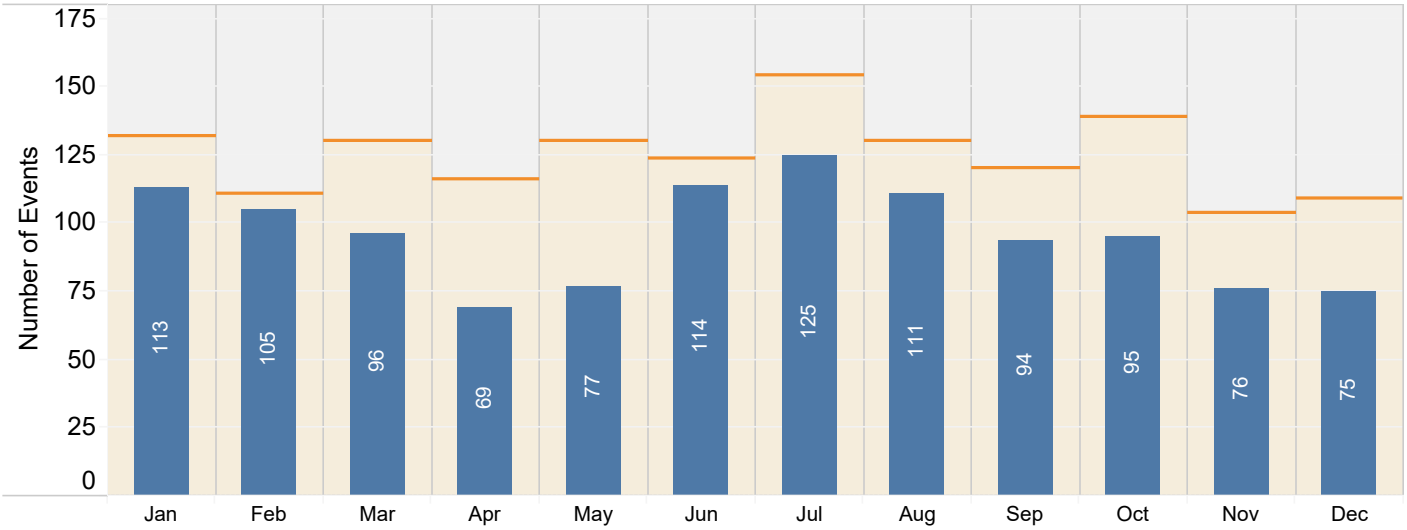
Crashes



Construction & Maintenance



Disabled Vehicles



2019 Events **2020 Events**

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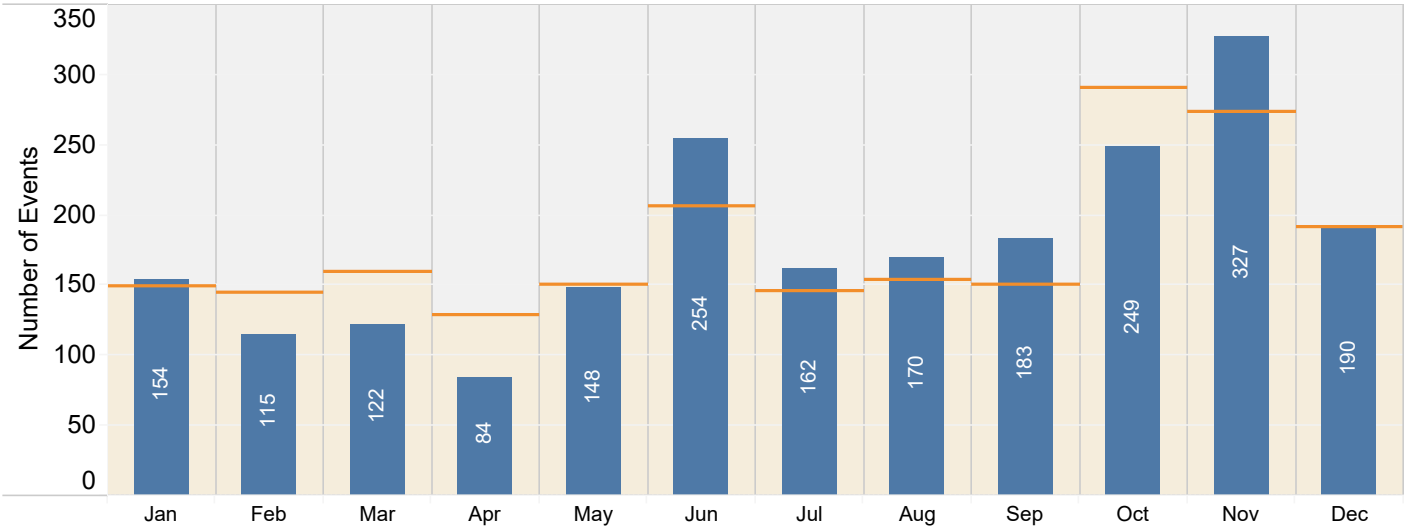
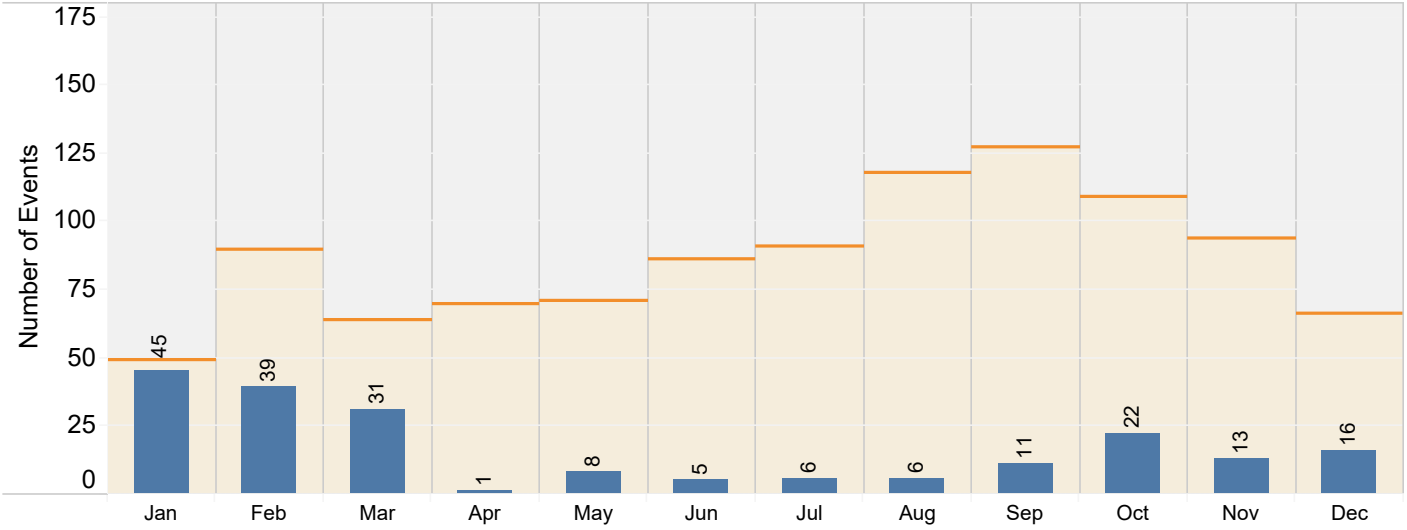
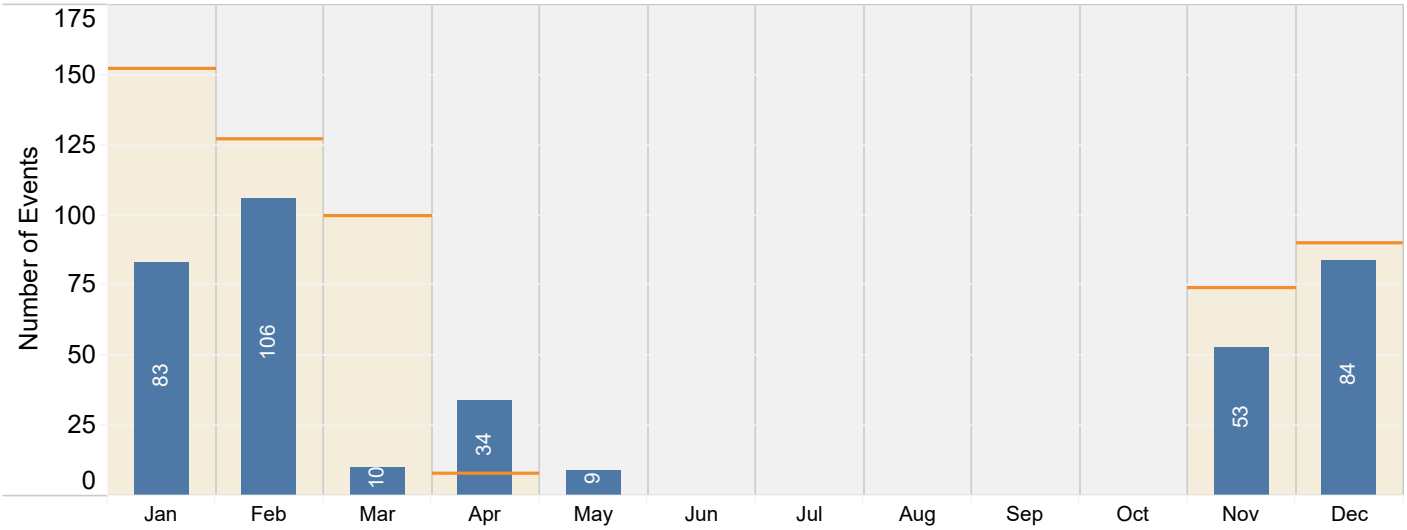
Debris



Congestion

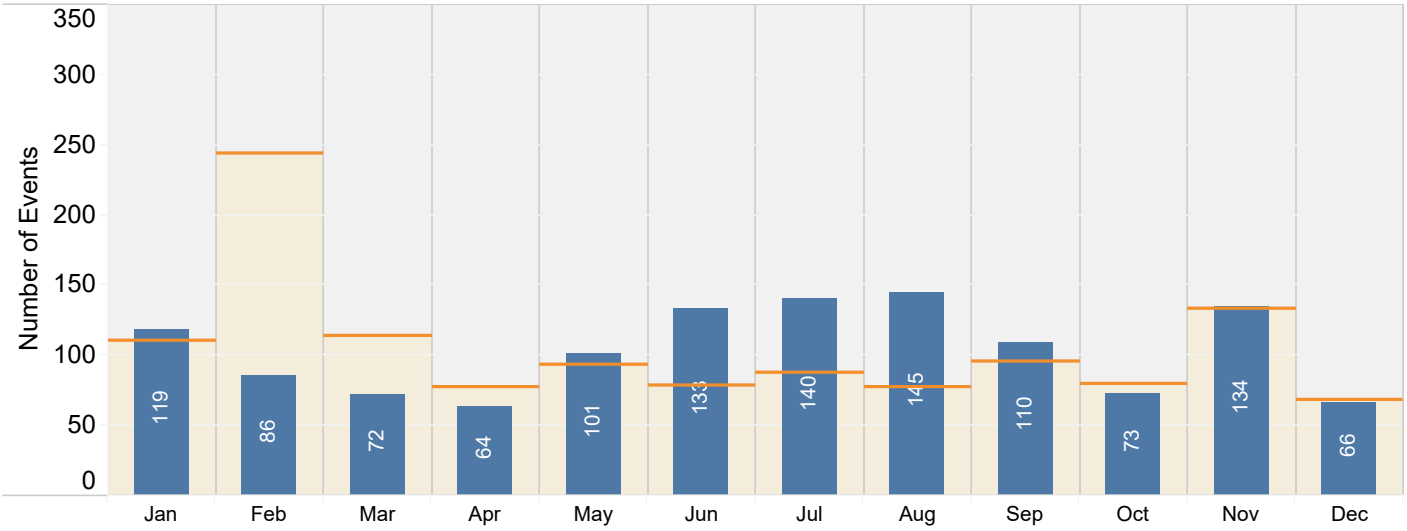


Snow & Ice

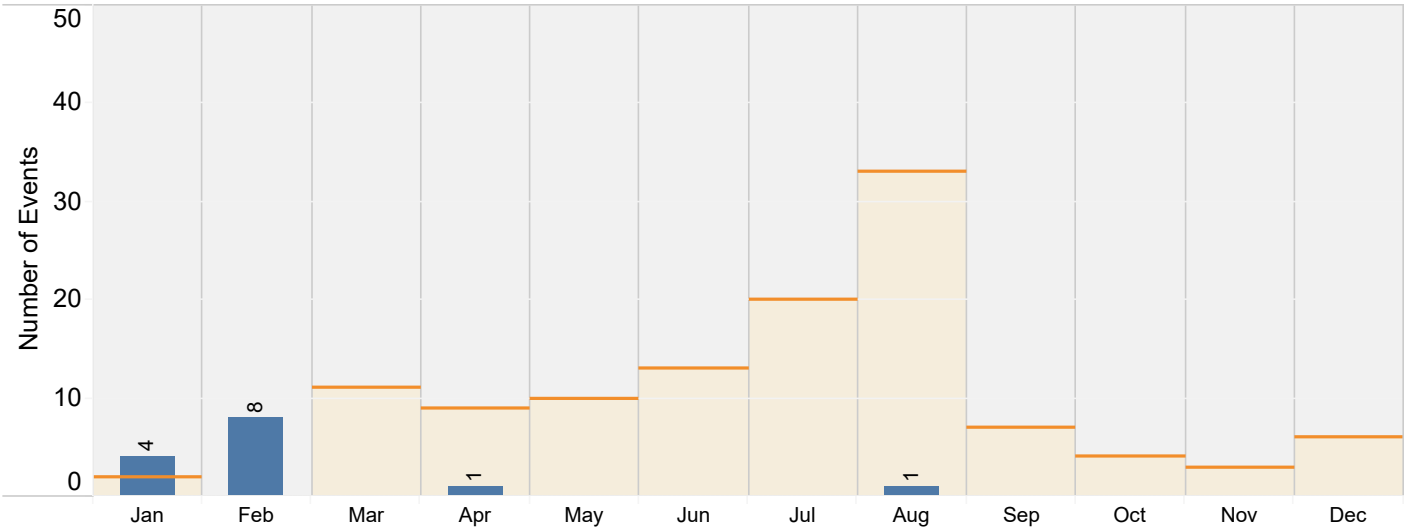


2019 Events **2020 Events**

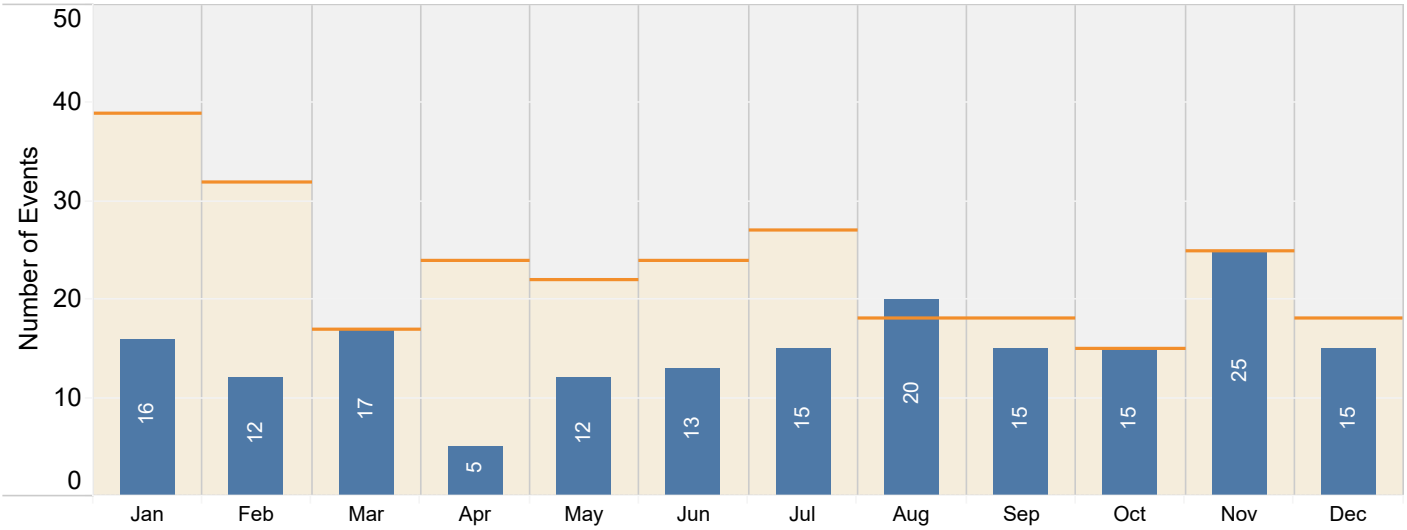
Signal Malfunction



Border Crossing



Other



2019 Events **2020 Events**

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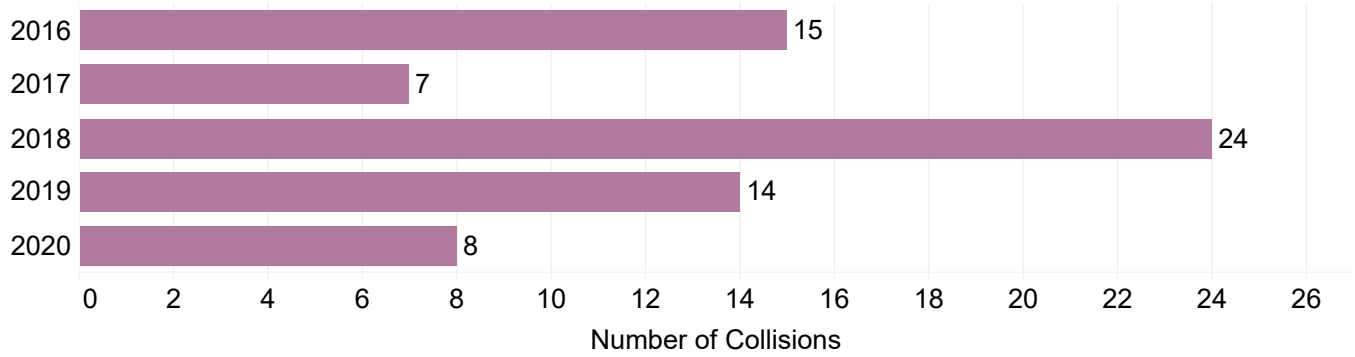
Incident Response

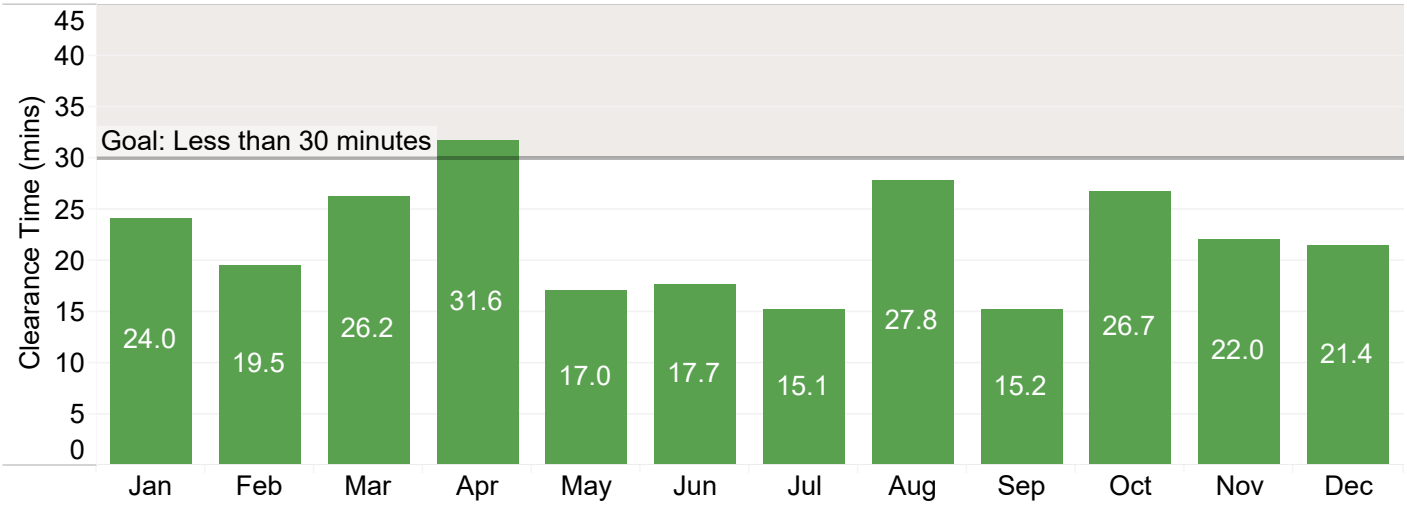
Secondary collisions refer to events which occur directly as a result of another, ongoing event. The primary source of secondary collisions is crashes which result from the impact of another crash or disabled vehicle. The graph below shows the annual number of secondary collisions over the past five years.

Secondary Collisions

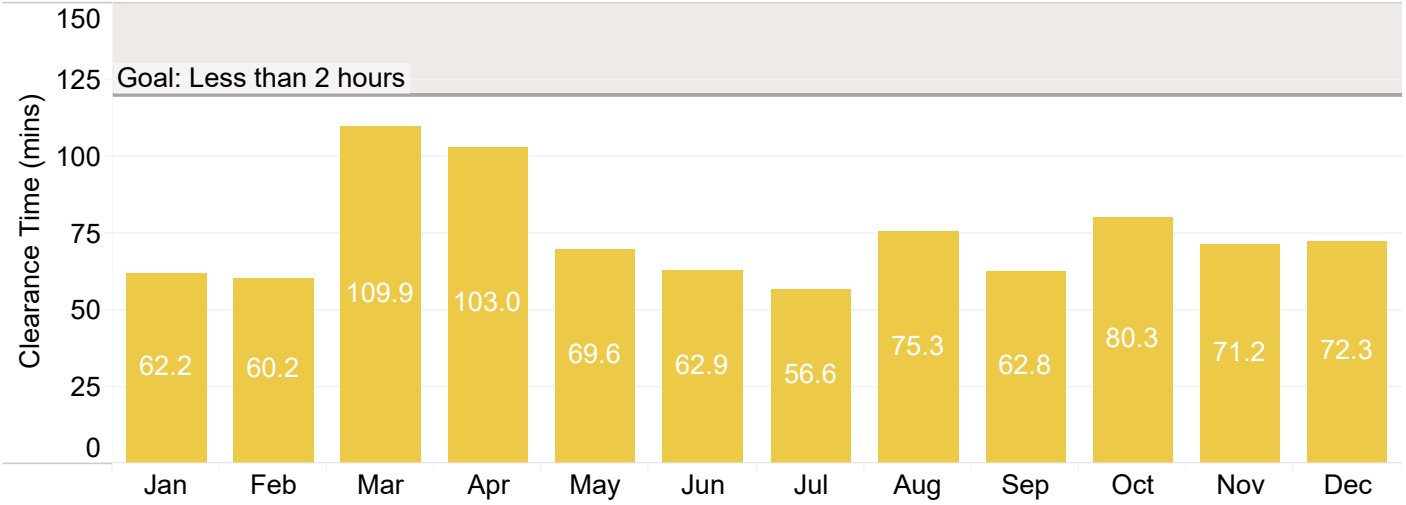


The following graphs show the average clearance times for minor and intermediate collisions in the region in 2020.

Average Clearance Time of Minor Collisions



Average Clearance Time of Intermediate Collisions



HELP Team Performance

The goal of the Highway Emergency Local Patrol (HELP) roadside assistance program is to reduce the time between the start of an incident and the time at which the last responder has left the scene (Incident Duration). HELP significantly decreases motorist delay and increases motorist safety by providing emergency roadside service to disabled vehicles, clearing roadways of debris and assisting first responders during collisions on high volume, limited access roadways. HELP patrols Route 33 and I-290 during the morning commute (6:00 AM – 10:00 AM) and afternoon commute (3:00 PM – 7:00 PM).

In 2020 HELP was first on scene (FoS) at 63% of the incidents in which they were involved.

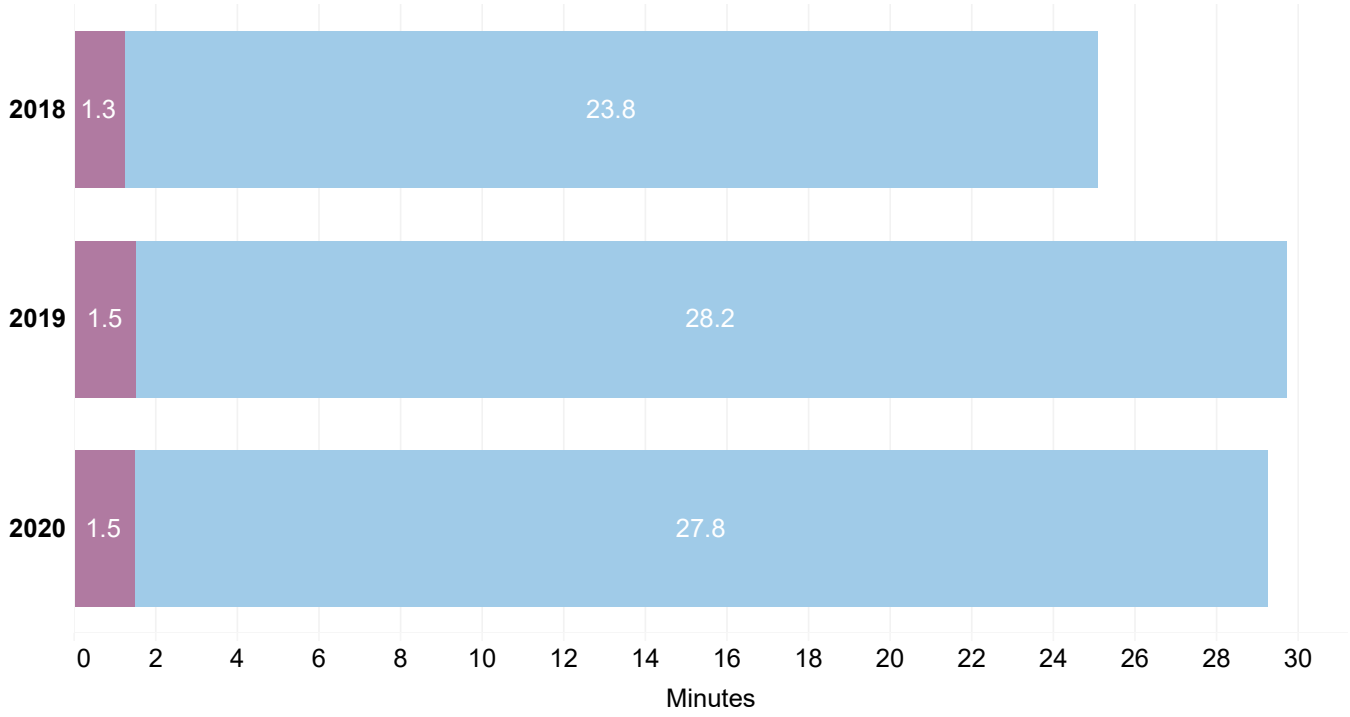
The table below shows the number of HELP assists and HELP FoS assists for each route in 2019 and 2020.

	2019		2020		Grand Total
	I - 290	Route 33	I - 290	Route 33	
Total HELP Assists	910	846	618	616	2,991
Total First on Scene	639	591	390	391	2,011
First on Scene %	70%	70%	63%	63%	67%

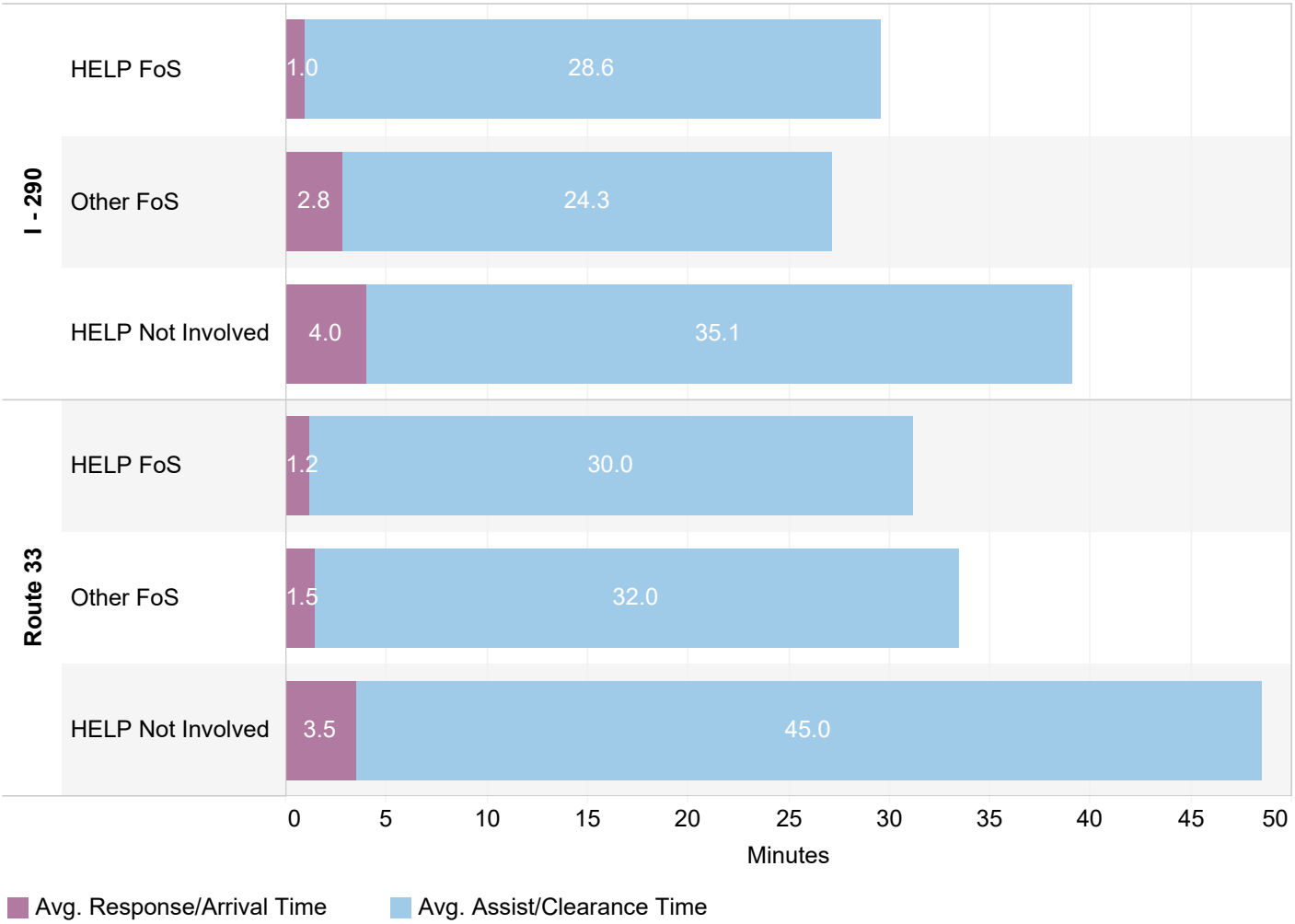
HELP Assist Types

	2019		2020	
Action	I - 290	Route 33	I - 290	Route 33
Assist Police	211	176	70	77
Call Towing Service	24	32	24	16
Change Tire	109	104	97	83
Fix-A-Flat	34	17	10	14
Jump Battery	4	9	2	15
Motorist Refused Assistance	2	1	2	1
No Action Taken	41	25	19	21
Other & Provide Cell Phone	293	259	188	159
Provide Directions	25	15	15	6
Provide Fuel	82	104	55	60
Provide Traffic Control	0	0	73	72
Provide Water/Coolant	16	17	11	10
Push-Off Highway	6	16	1	6
Remove Debris	6	5	27	28
Request Police/Ambulance	44	48	11	23
Tag Vehicle	13	18	13	25
Grand Total	**910**	**846**	**618**	**616**

Average HELP Incident Timeline



2020 HELP First-on-Scene Comparison



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Western New York Activities

The following pages provide travel time performance measures, route activity statistics, and crash severity and detection methods specific to the following routes in both directions of travel:

- I-90 between Exit 50 (I-290) and Exit 55 (Ridge Road)
- I-190 between Downtown (Skyway Overpass) and I-90
- I-190 between Downtown (Skyway Overpass) and I-290
- I-290 between I-90 Exit 50 and I-190 Exit 16
- Route 33 between Union Road and Oak Street

Travel Time Performance Measures

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. The following are shown for each roadway.

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.

NOTE: From March 2020 onward, the effects of COVID-19 related travel restrictions on regional travel times are evident, with the majority of roadways experiencing free flow conditions even during typical peak hours.

Route Crash Data

Each crash that occurred in 2020 is represented by a marker with the color indicating the severity of the crash and the shape showing how the crash was detected by NITTEC.

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

CHARMS: Incidents using the internal incident reporting system

HELP: Incidents detected by HELP trucks

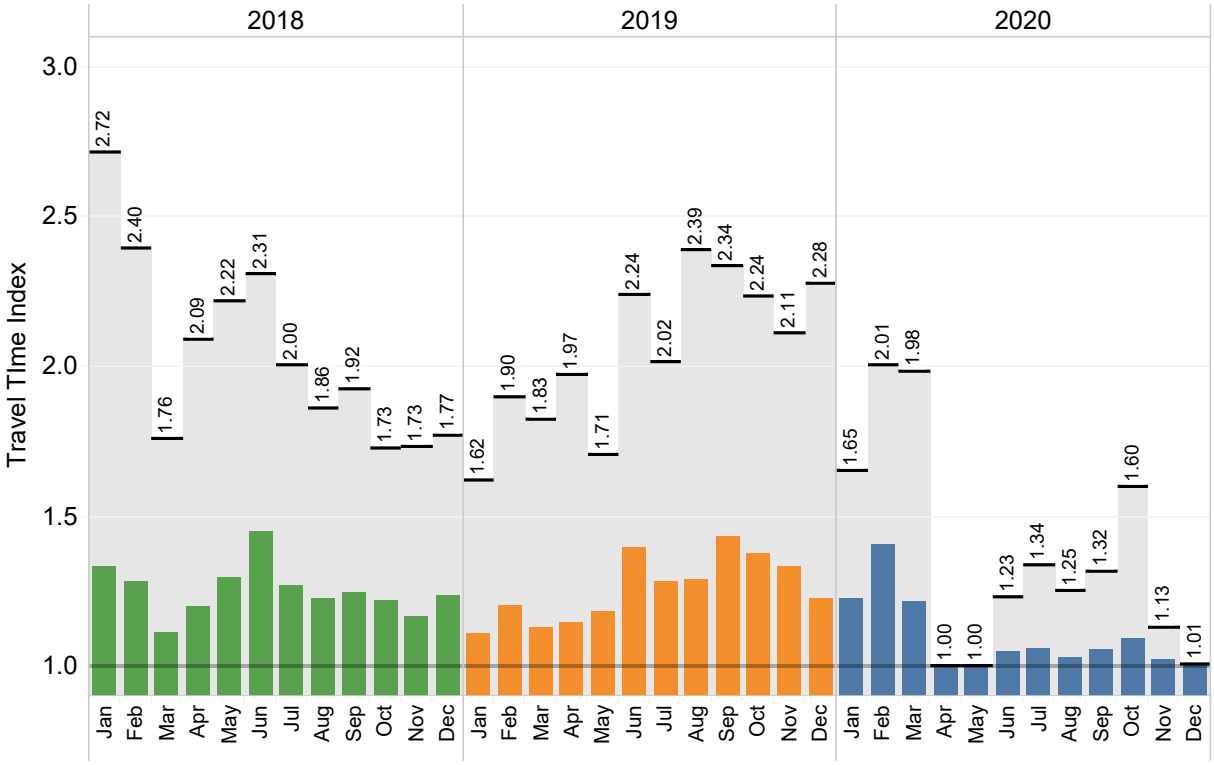
Phone: Incidents called in over the phone

Scanner: Incidents heard over the police scanner

I-90 Travel Time Report

Between Exit 50 and Exit 55

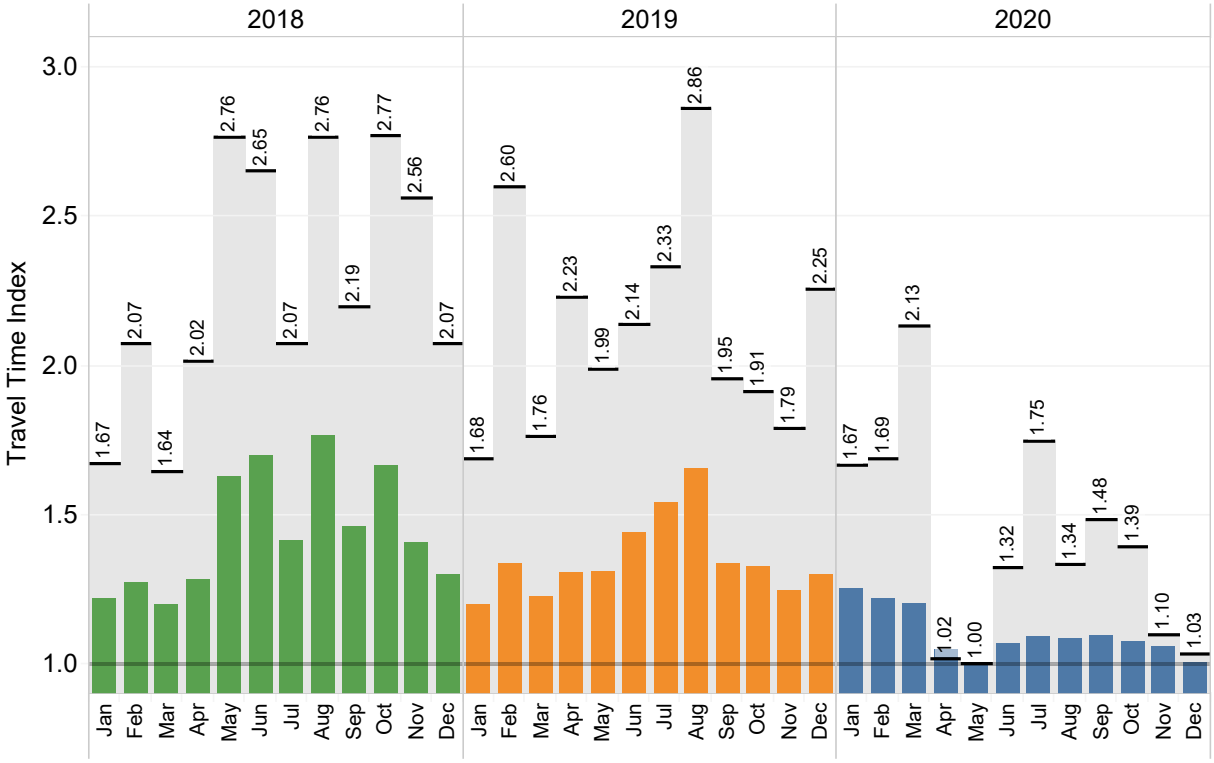
Eastbound



Busiest Time of Day in 2020:

7:50 AM

Westbound



Busiest Time of Day in 2020:

5:00 PM

Travel Time Index: 2018 2019 2020 **Planning Time Index:**

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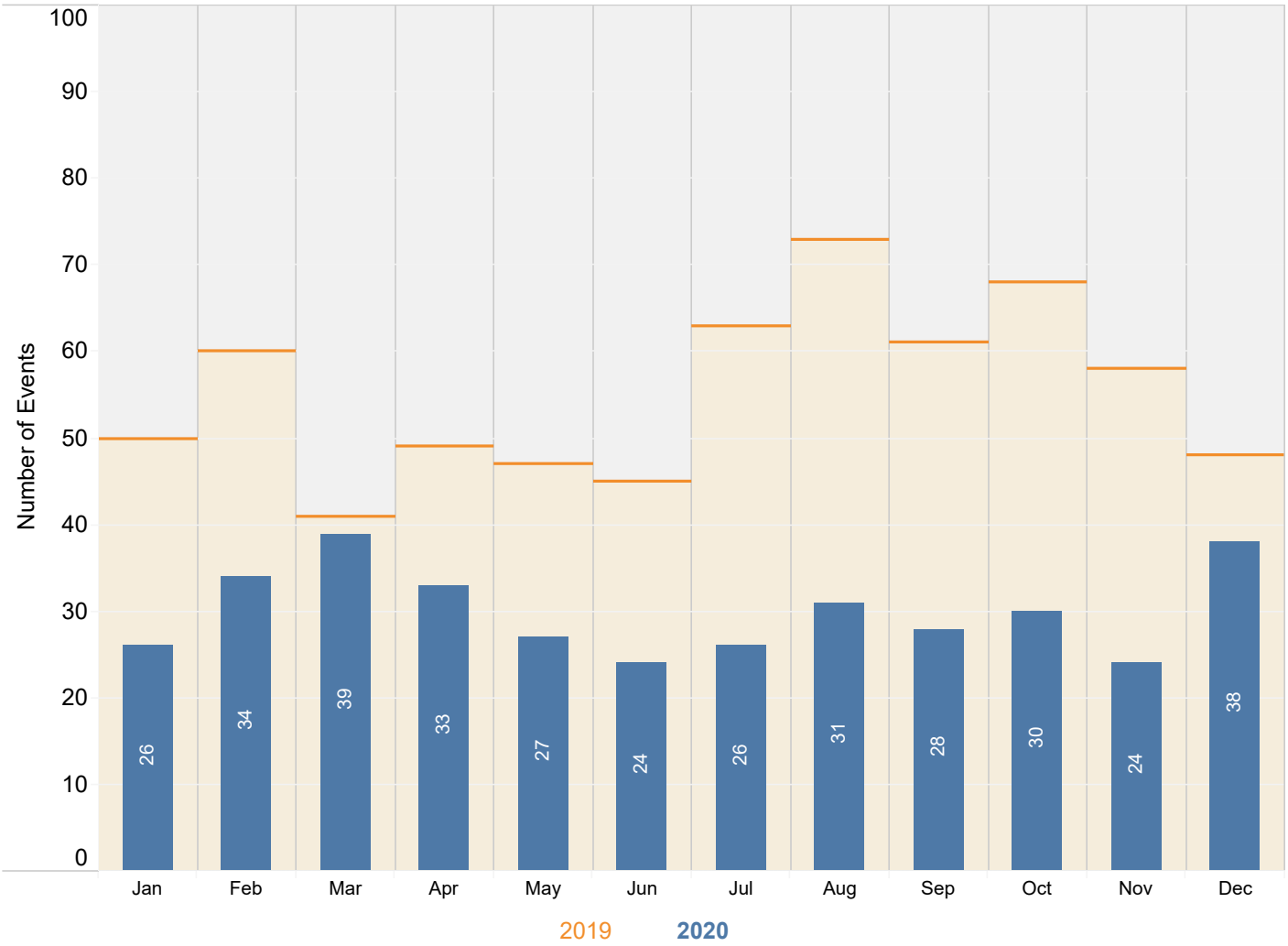
I-90 Incident Report

Between Exit 50 and Exit 55

Overall Route Activity



Crash Severity and Detection Method

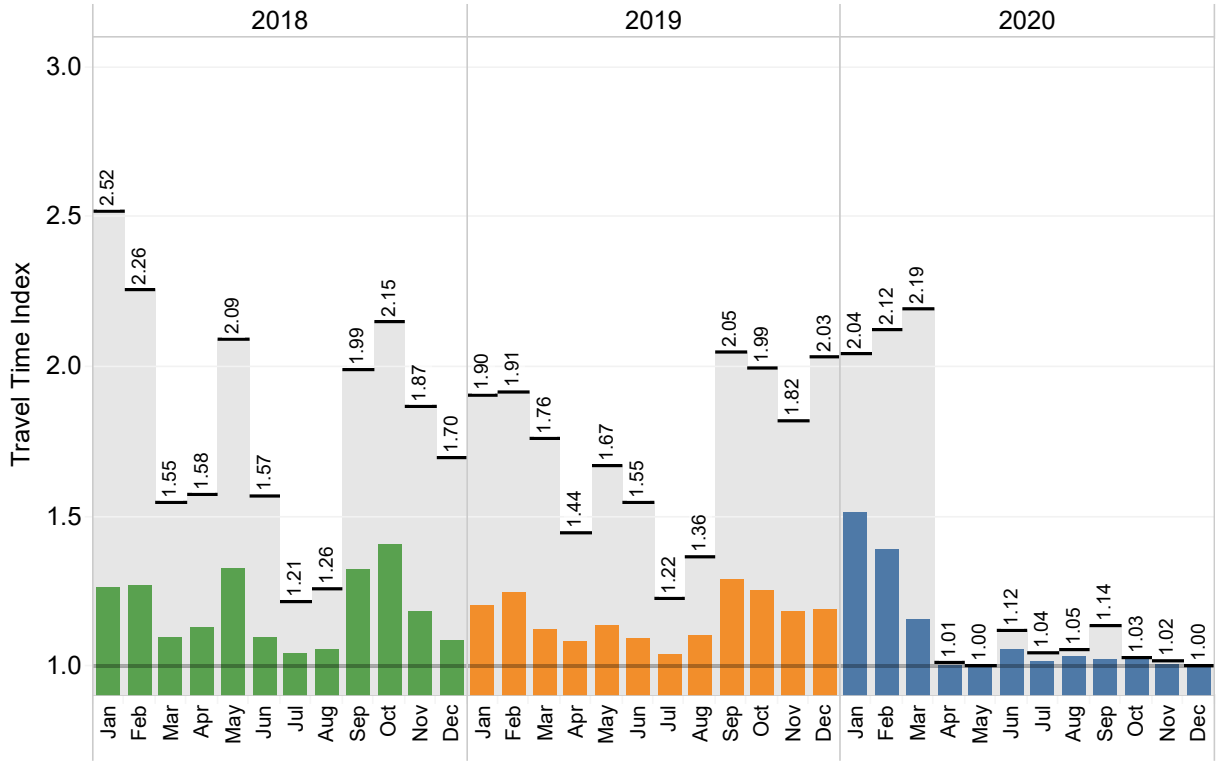
Detection Method ● Camera ■ CHARMS ✖ Phone Call ★ Scanner

Celebrating 25 Years

I-190 Travel Time Report

Between Downtown and I-90

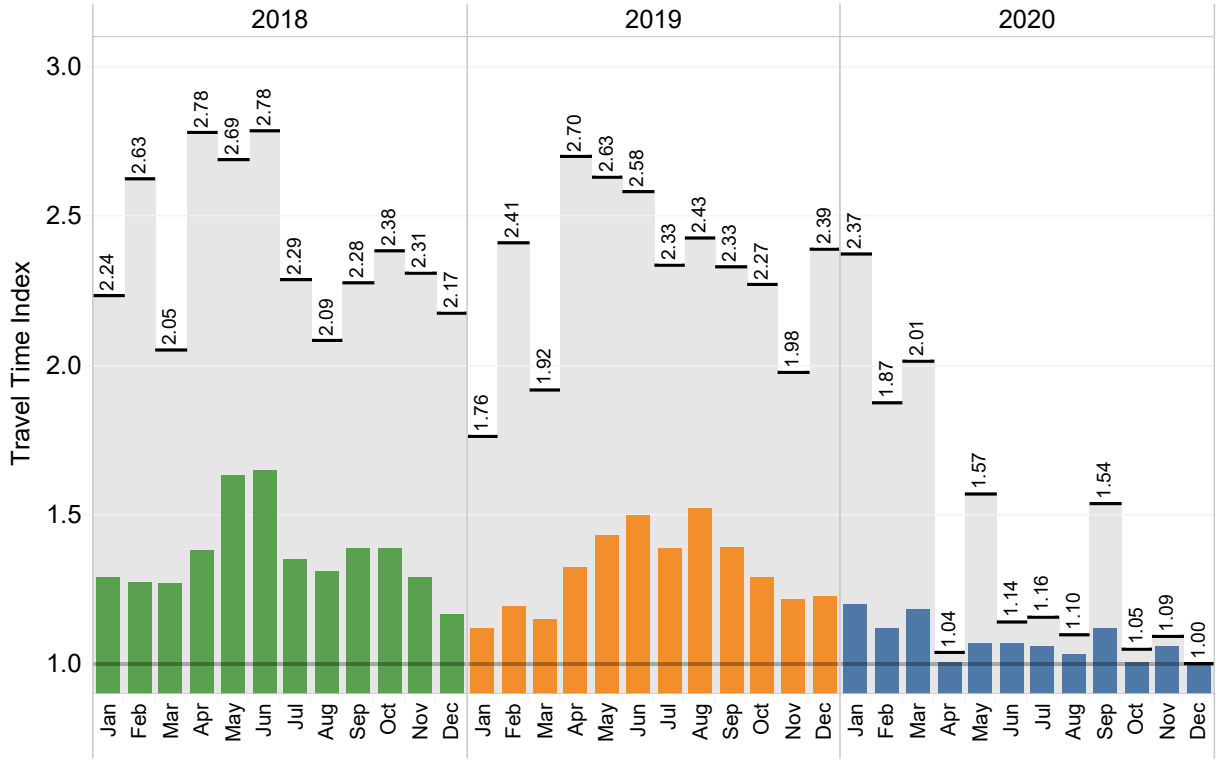
Northbound



Busiest Time of Day in 2020:

7:50 AM

Southbound



Busiest Time of Day in 2020:

5:30 PM

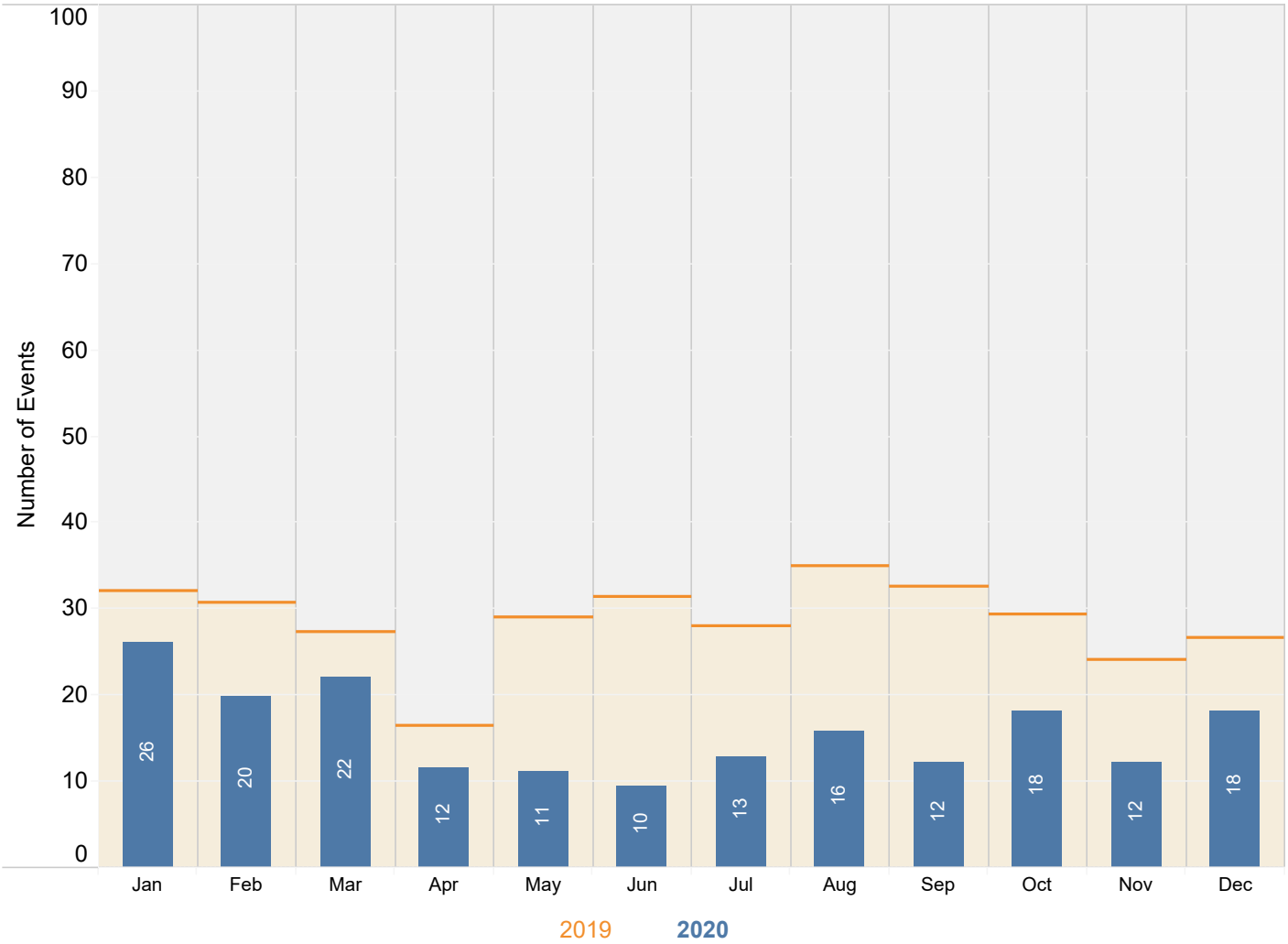
Travel Time Index: 2018 2019 2020 **Planning Time Index:**

Celebrating 25 Years

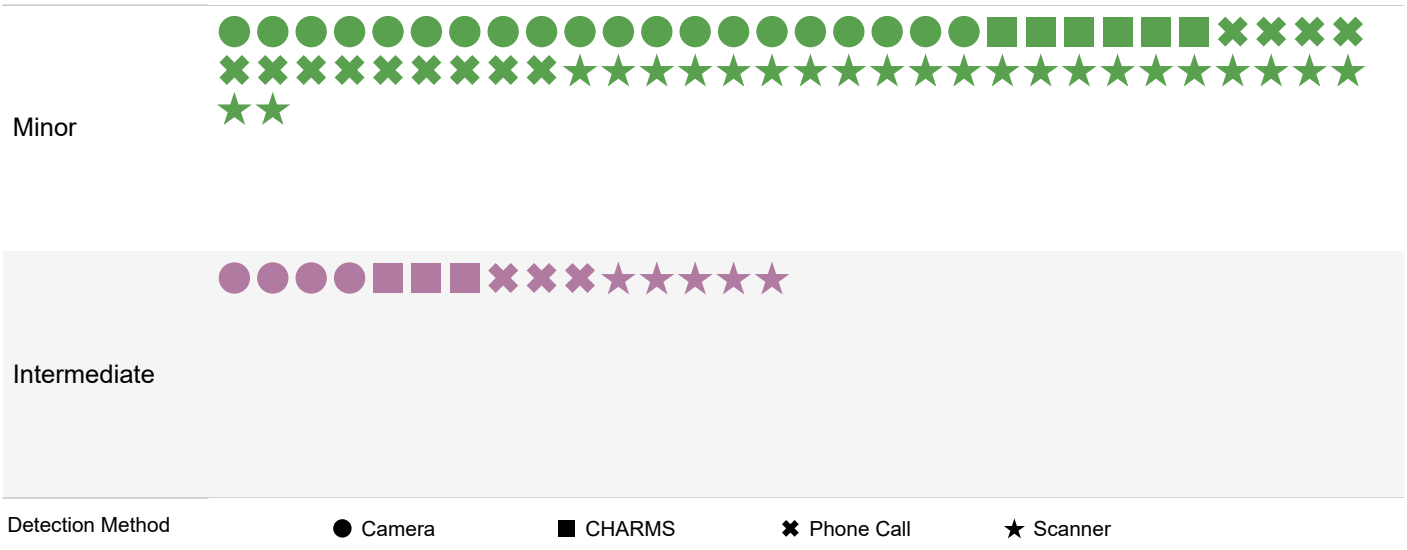
I-190 Incident Report

Between Downtown and I-90

Overall Route Activity



Crash Severity and Detection Method



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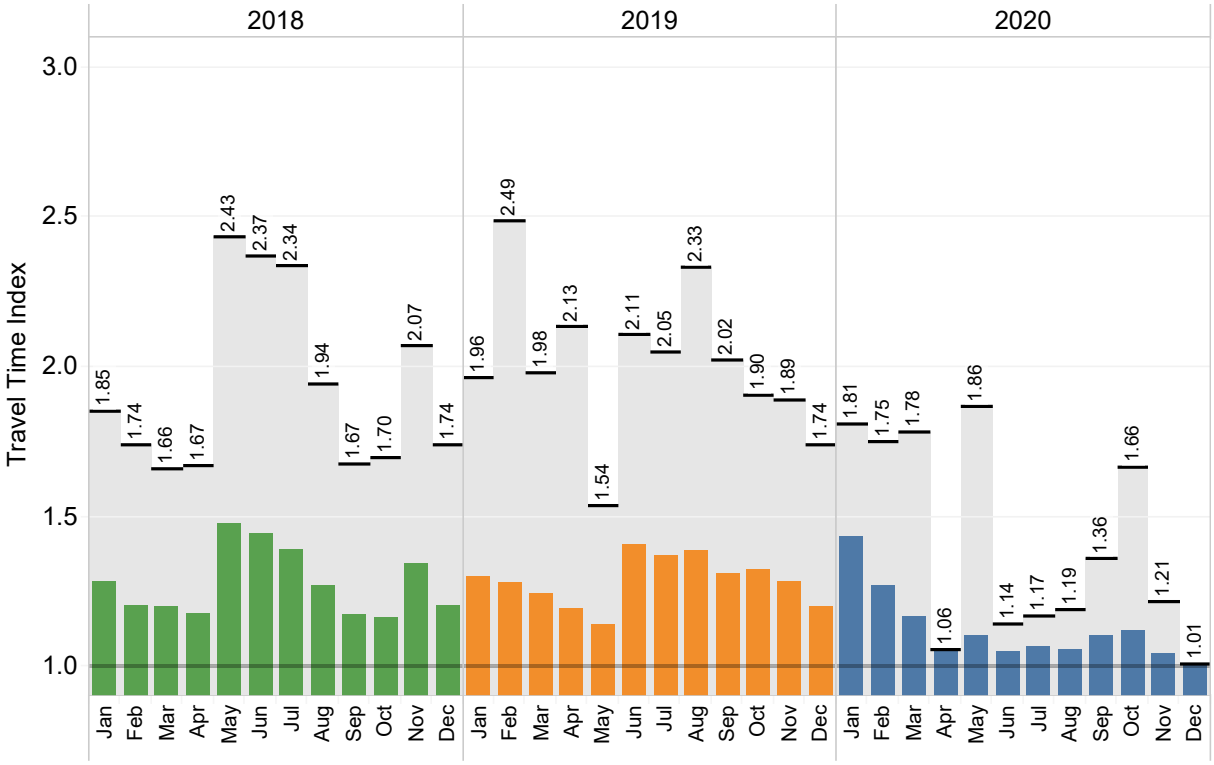
I-190 Travel Time Report

Between Downtown and I-290

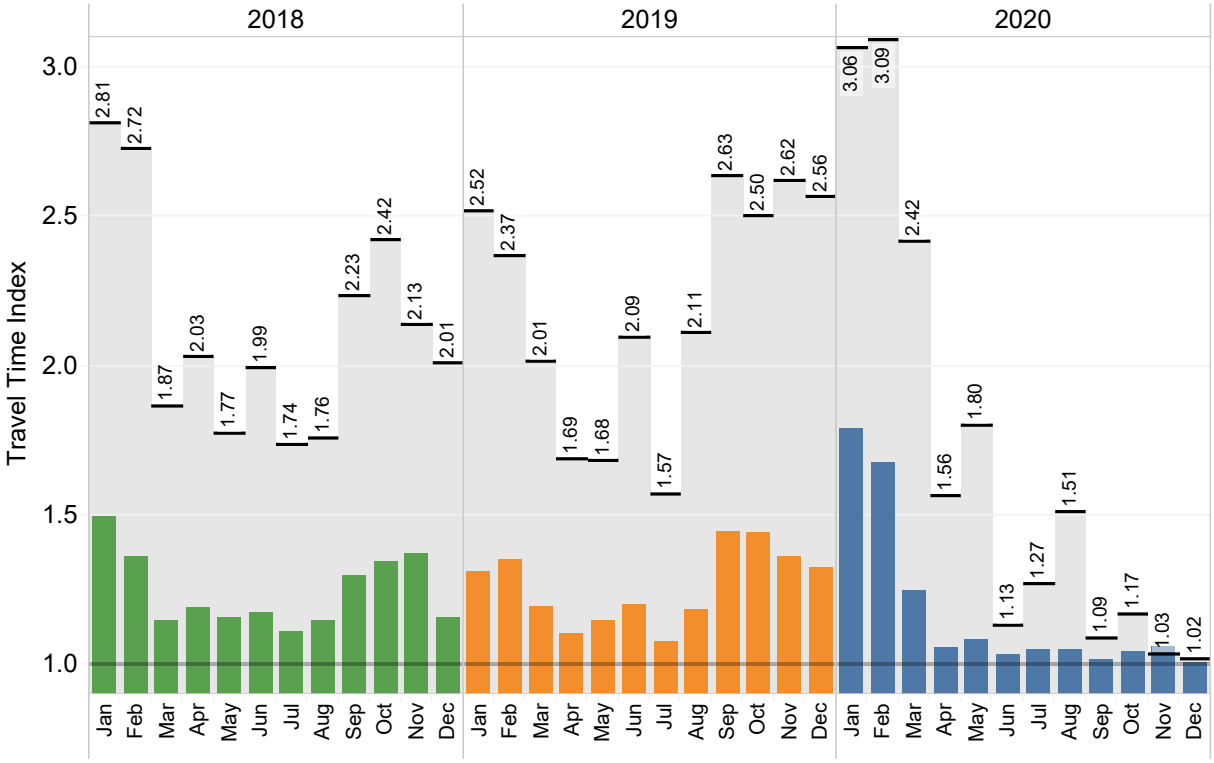
Northbound



Busiest Time of Day in 2020:

5:30 PM

Southbound



Busiest Time of Day in 2020:

7:50 AM

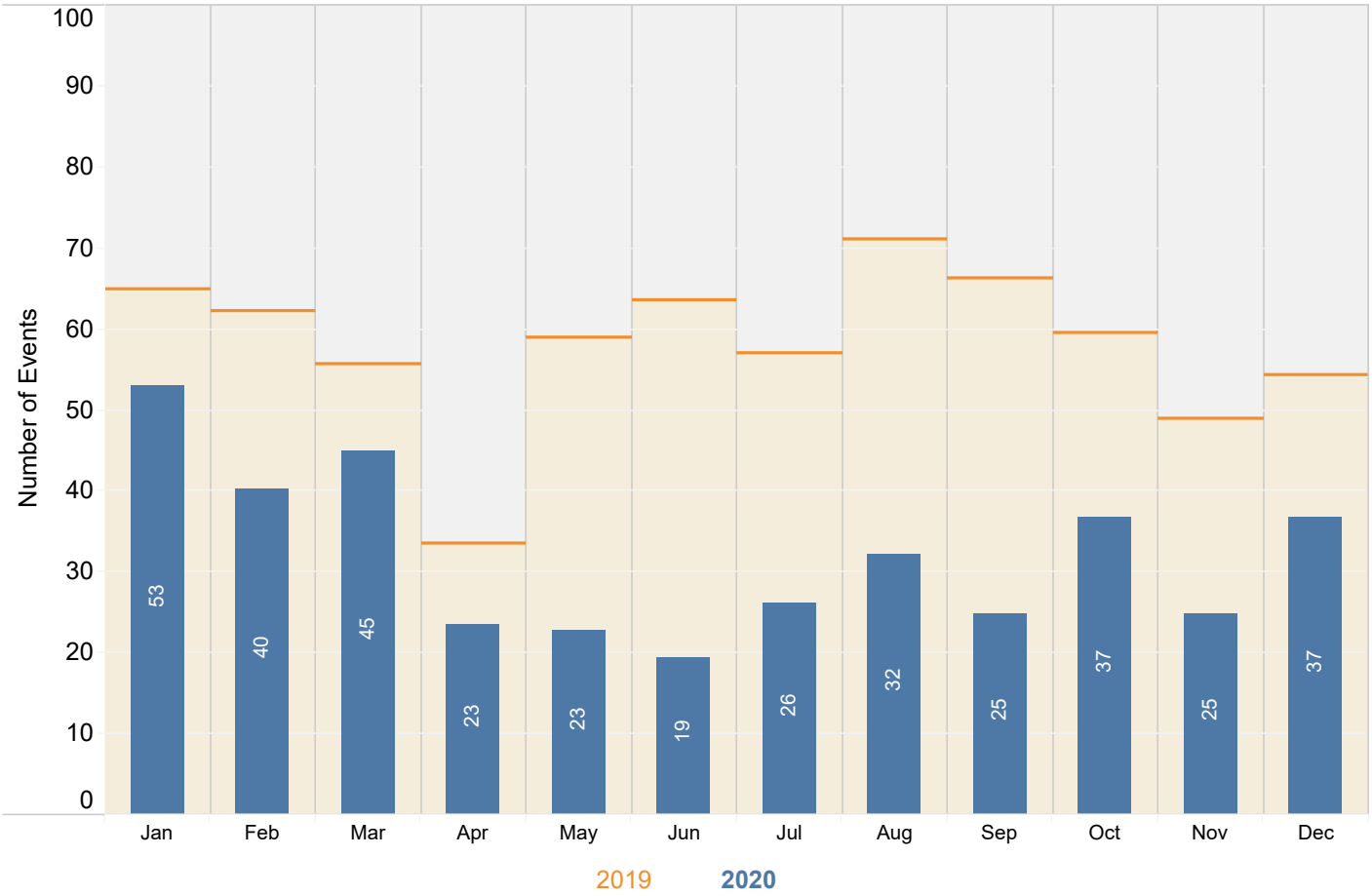
Travel Time Index: 2018 2019 2020 **Planning Time Index:**

Celebrating 25 Years

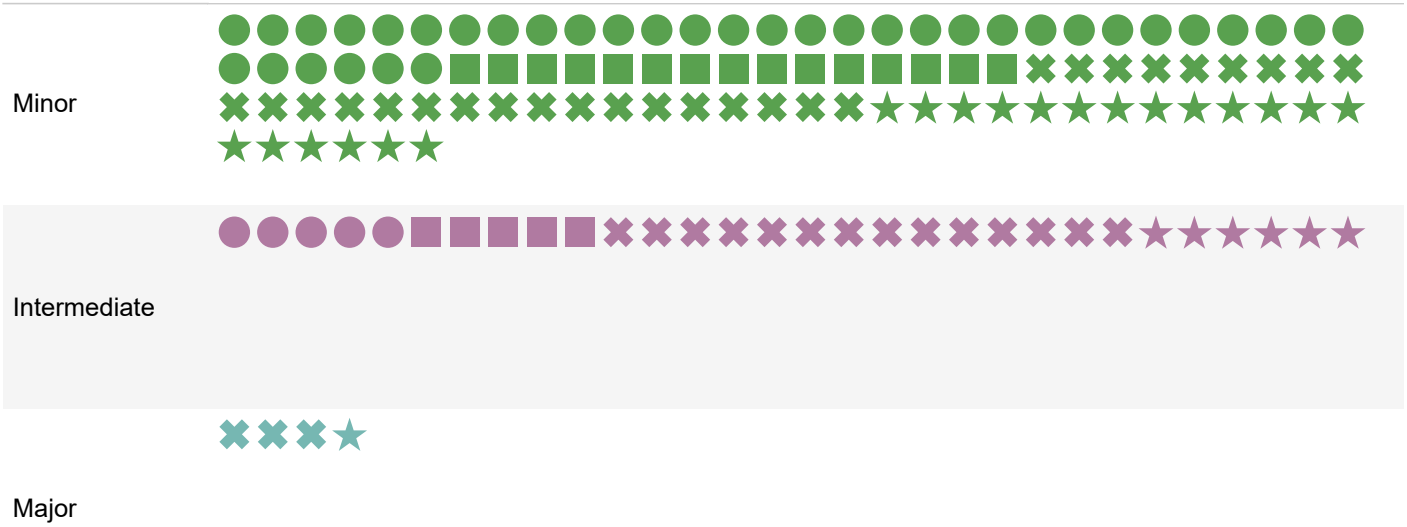
I-190 Incident Report

Between Downtown and I-290

Overall Route Activity



Crash Severity and Detection Method



Detection Method ● Camera ■ CHARMS ✖ Phone Call ★ Scanner

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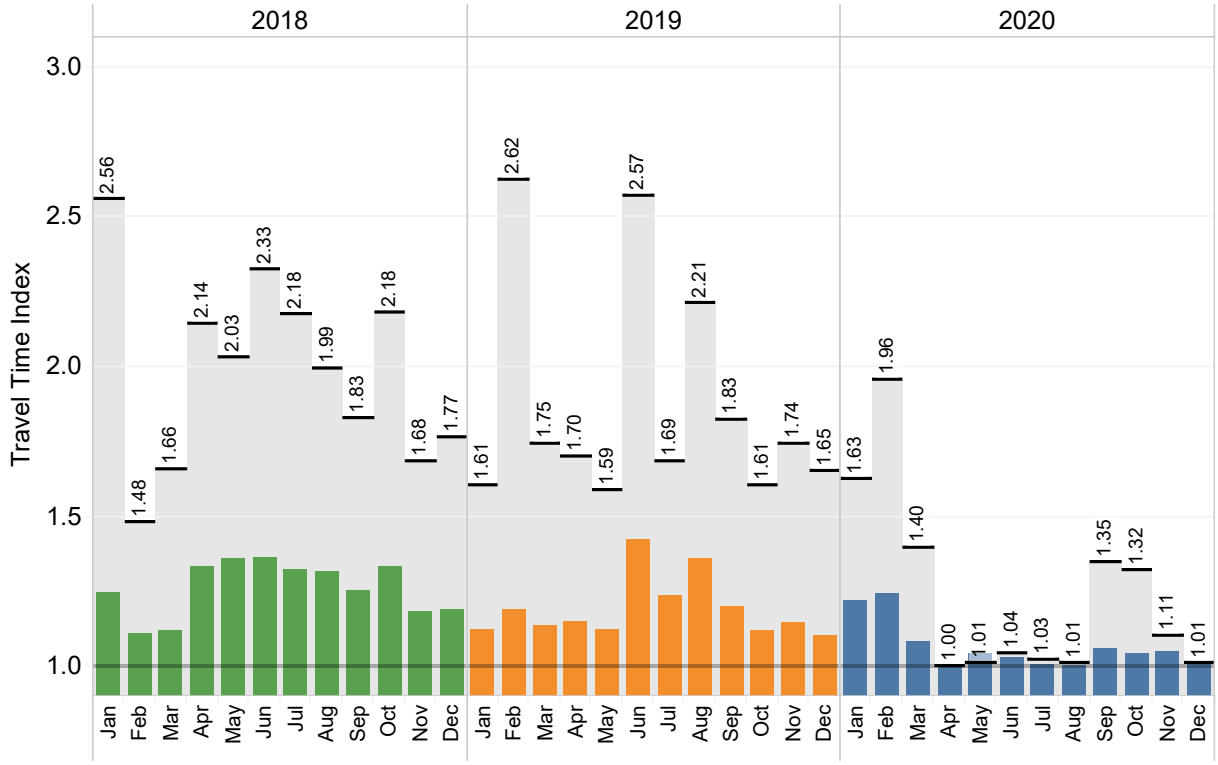
I-290 Travel Time Report

Between I-90 Exit 50 and I-190 Exit 16

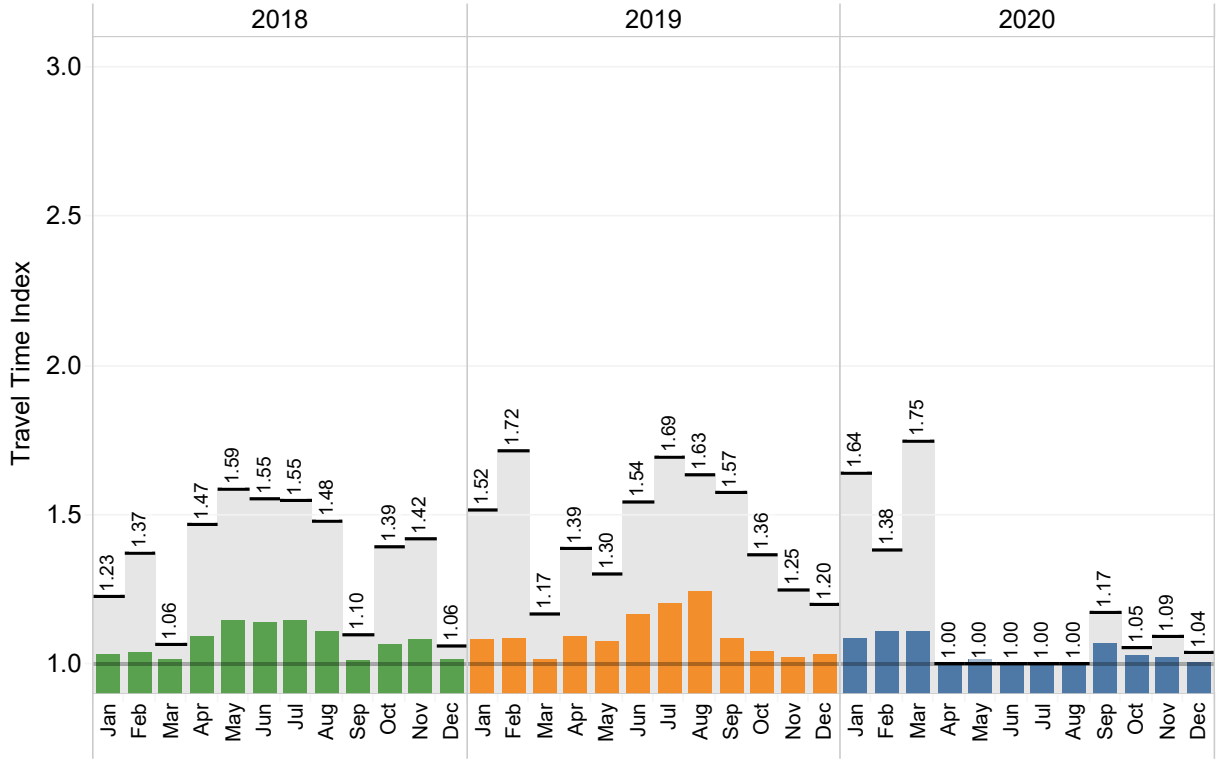
Eastbound



Busiest Time of Day in 2020:

7:50 AM

Westbound



Busiest Time of Day in 2020:

5:40 PM

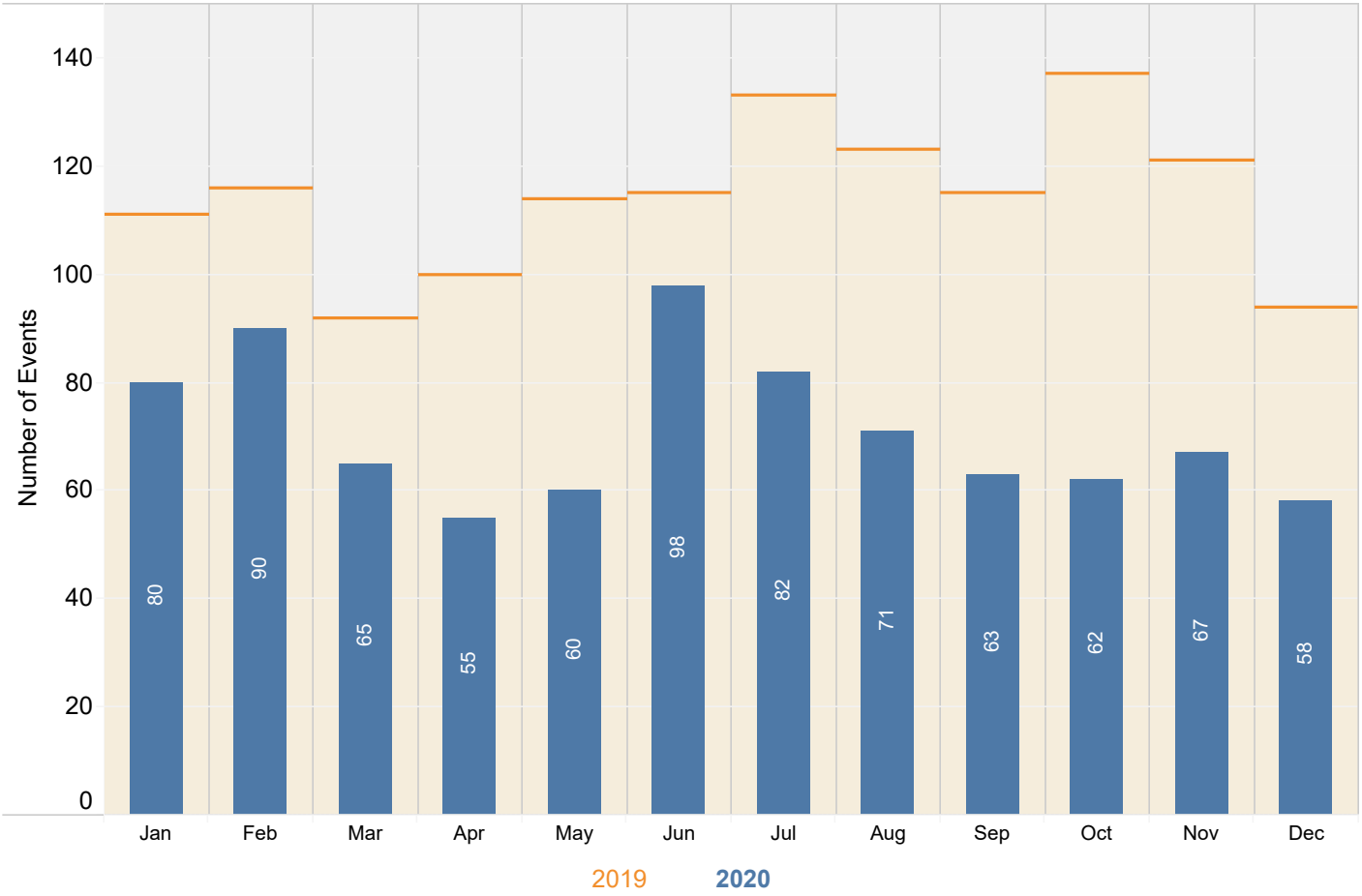
Travel Time Index: 2018 2019 2020 **Planning Time Index:**

Celebrating 25 Years

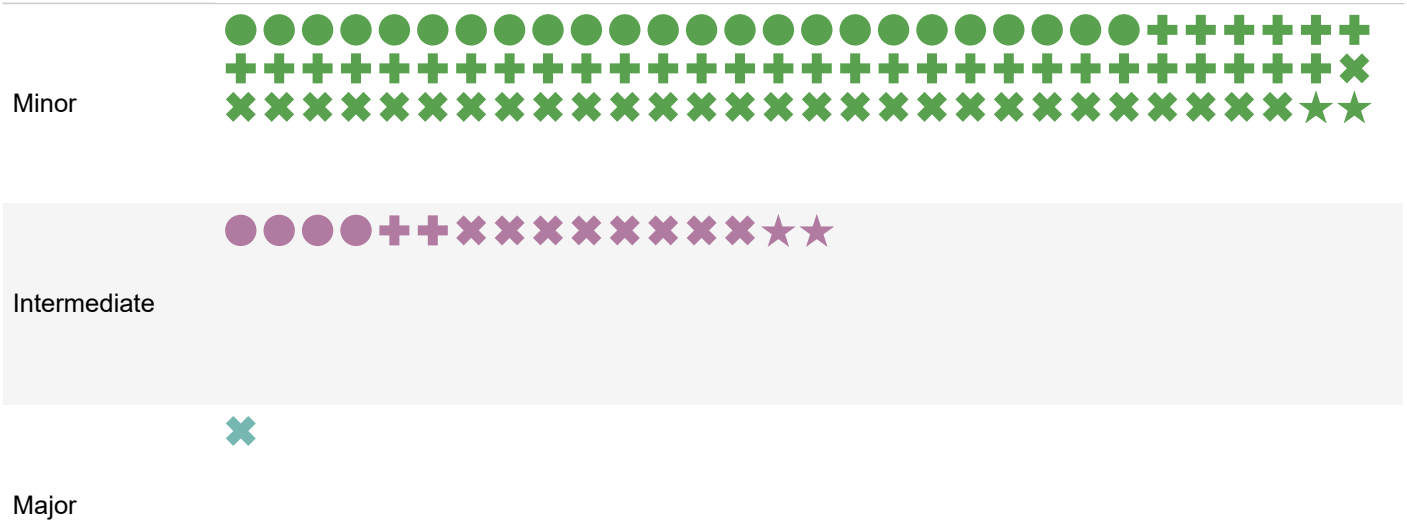
I-290 Incident Report

Between I-90 Exit 50 and I-190 Exit 16

Overall Route Activity



Crash Severity and Detection Method



Detection Method ● Camera ✚ Help Team ✖ Phone Call ★ Scanner

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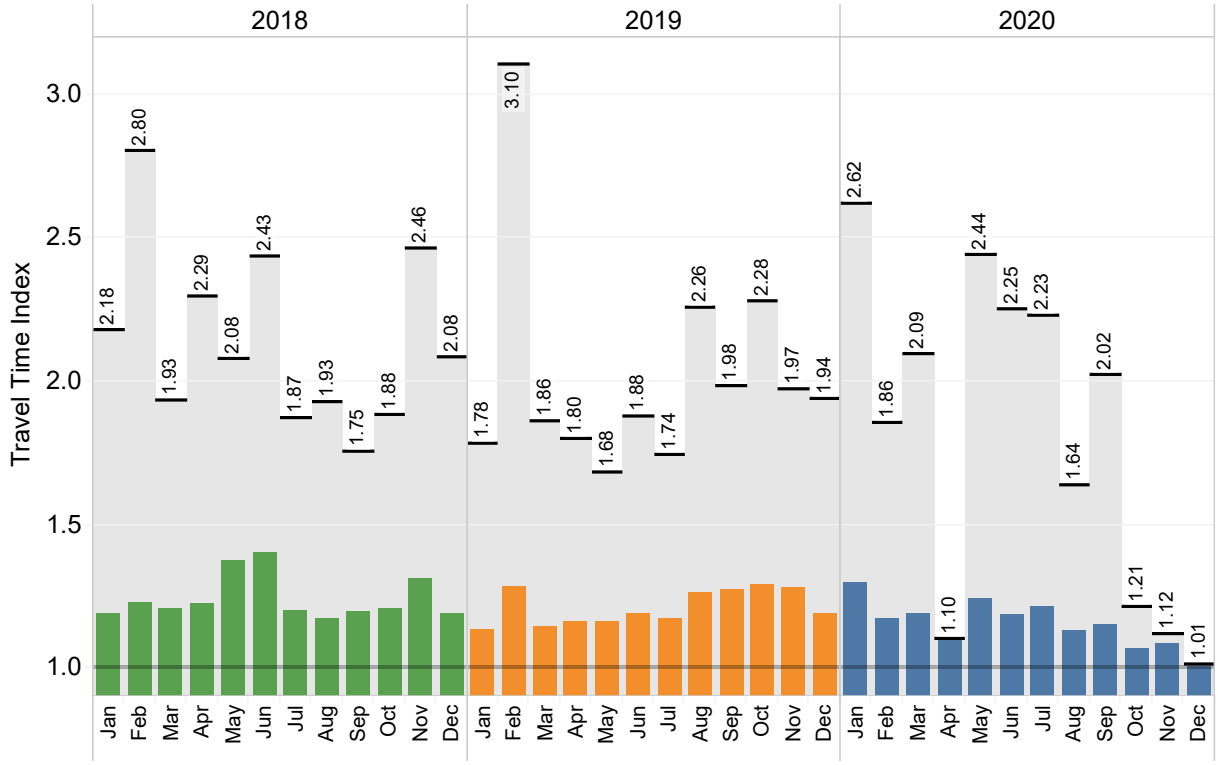
Route 33 Travel Time Report

Between Union Road and Oak Street

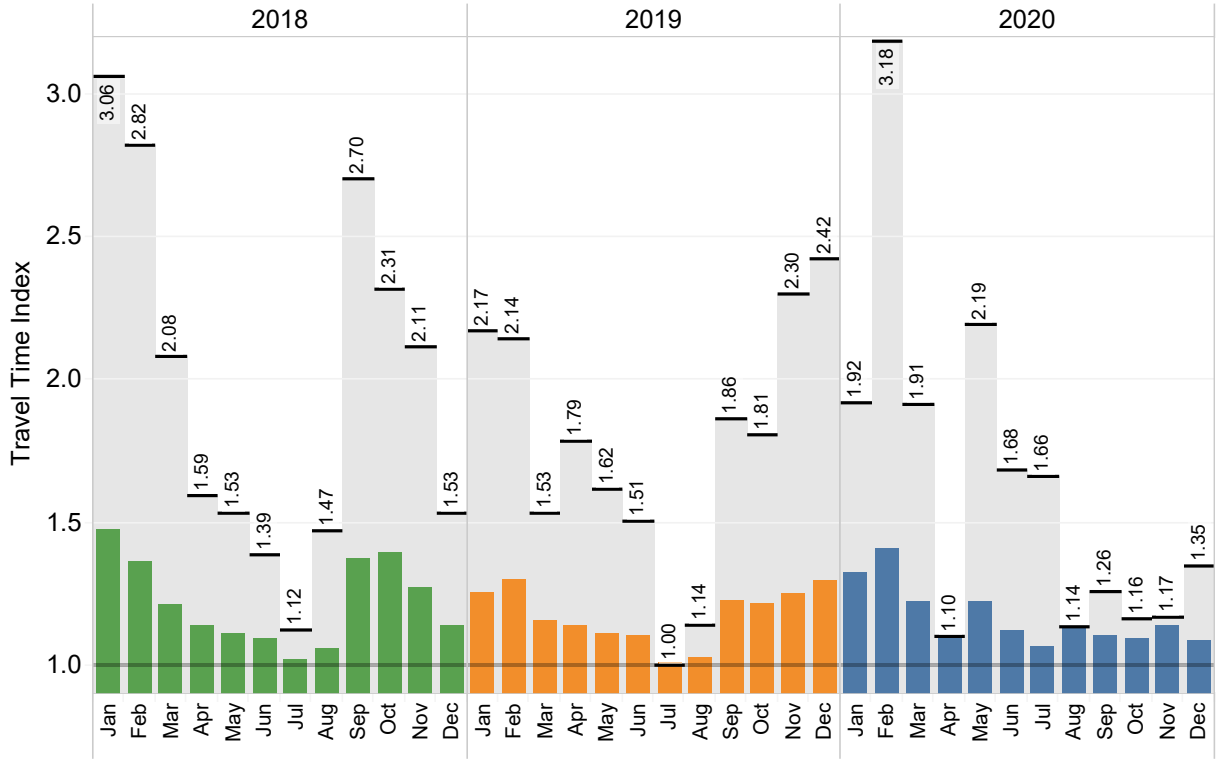
Eastbound



Busiest Time of Day in 2020:

5:30 PM

Westbound



Busiest Time of Day in 2020:

8:10 AM

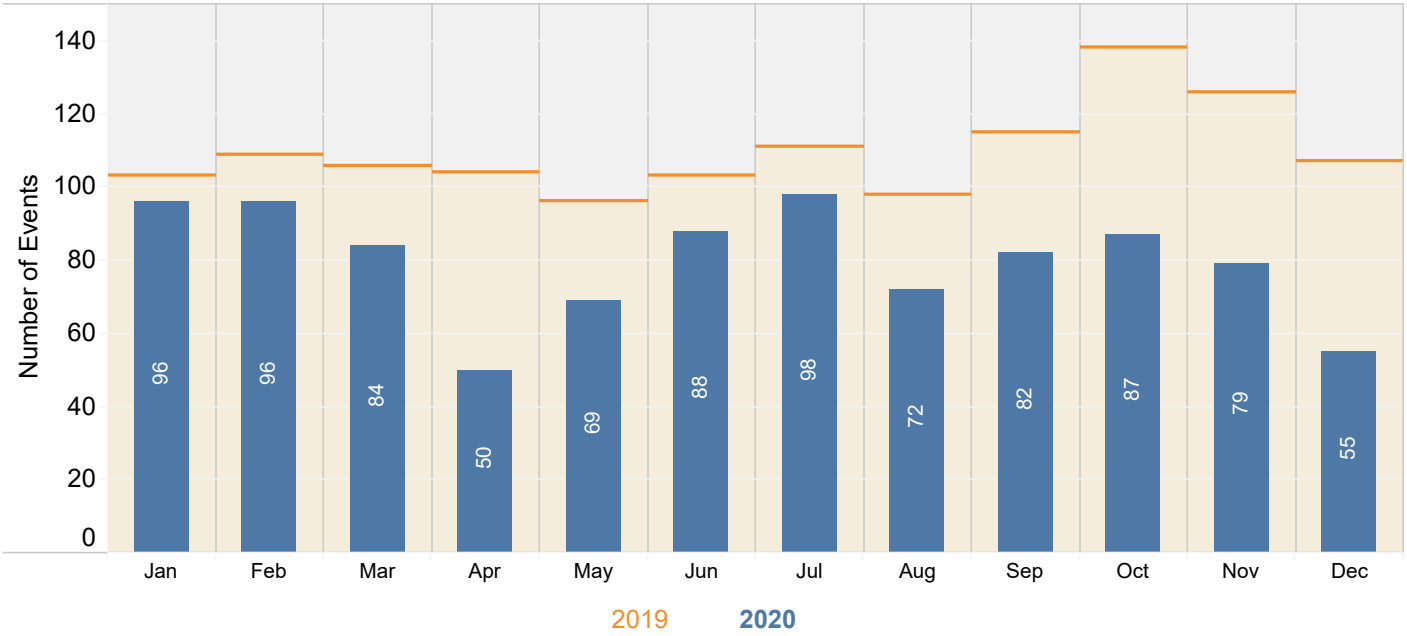
Travel Time Index: 2018 2019 2020 **Planning Time Index:**

Celebrating 25 Years

Route 33 Incident Report

Between Union Road and Oak Street

Overall Route Activity



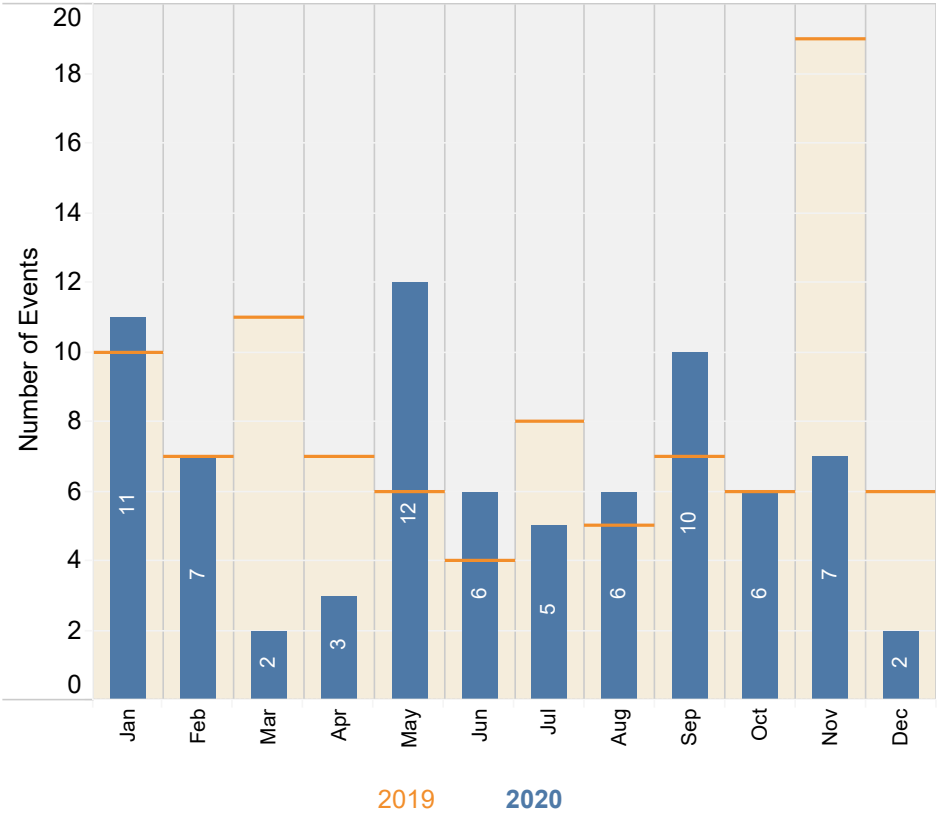
Crash Severity and Detection Method

Detection Method ● Camera ■ CHARMS ✚ Help Team ✖ Phone Call ★ Scanner

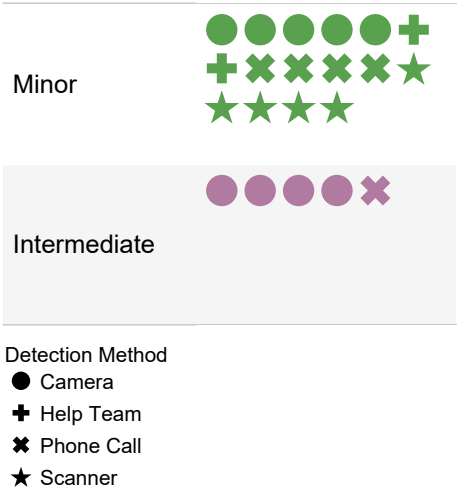
Celebrating 25 Years

Other Highway Incident Report

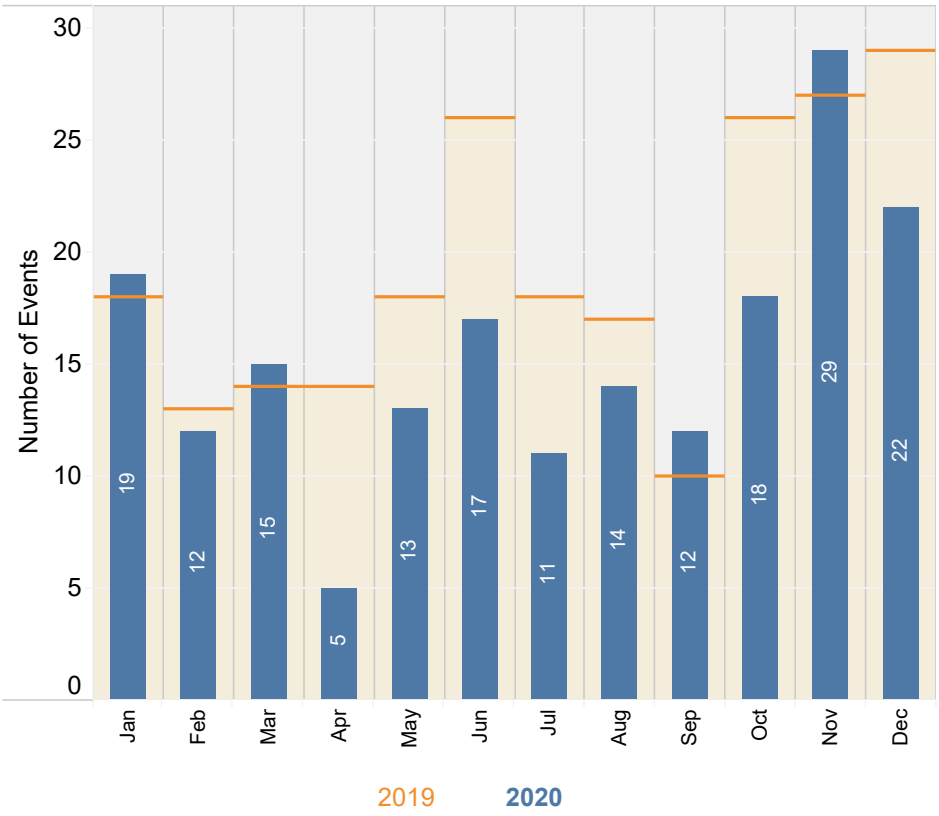
Route 198 Overall Route Activity



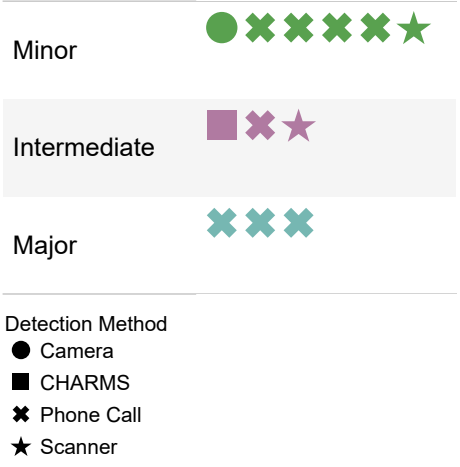
Route 198 Crash Severity and Detection Method



Route 219 Overall Route Activity



Route 219 Crash Severity and Detection Method



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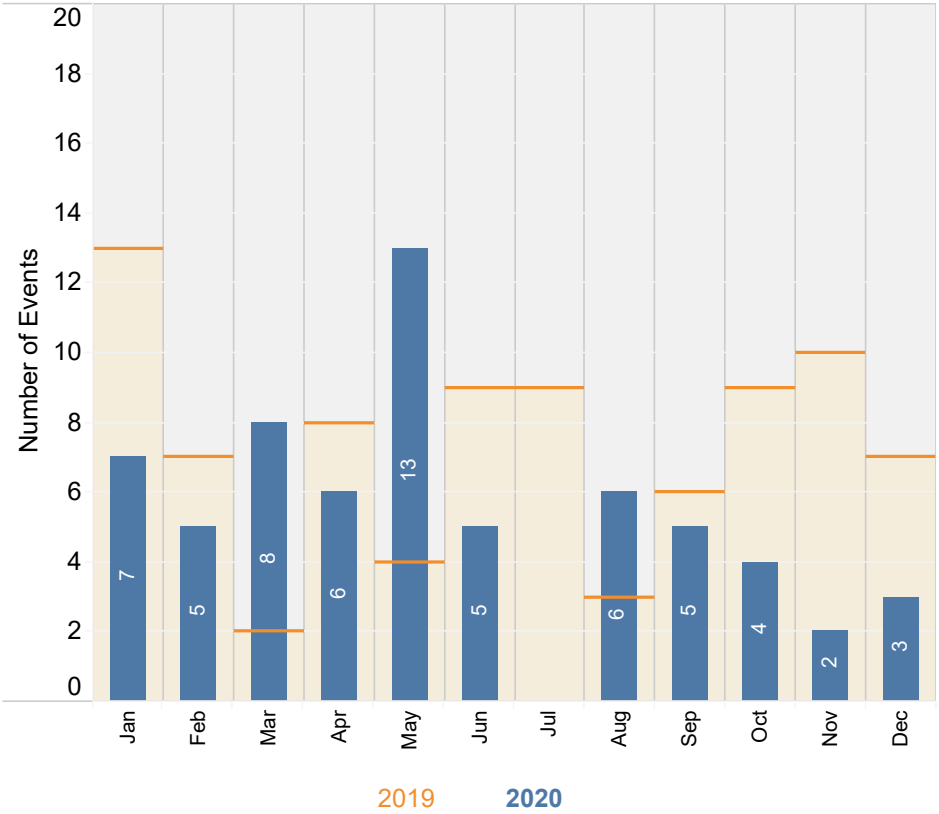
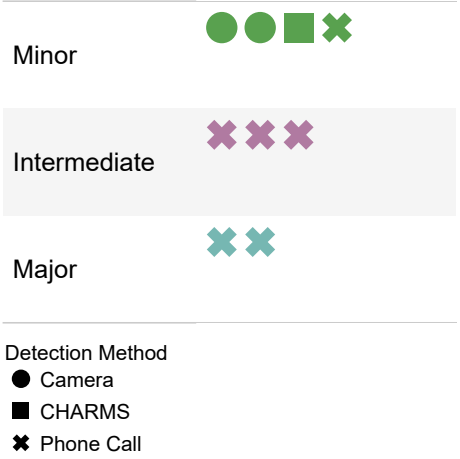
Other Highway Incident Report

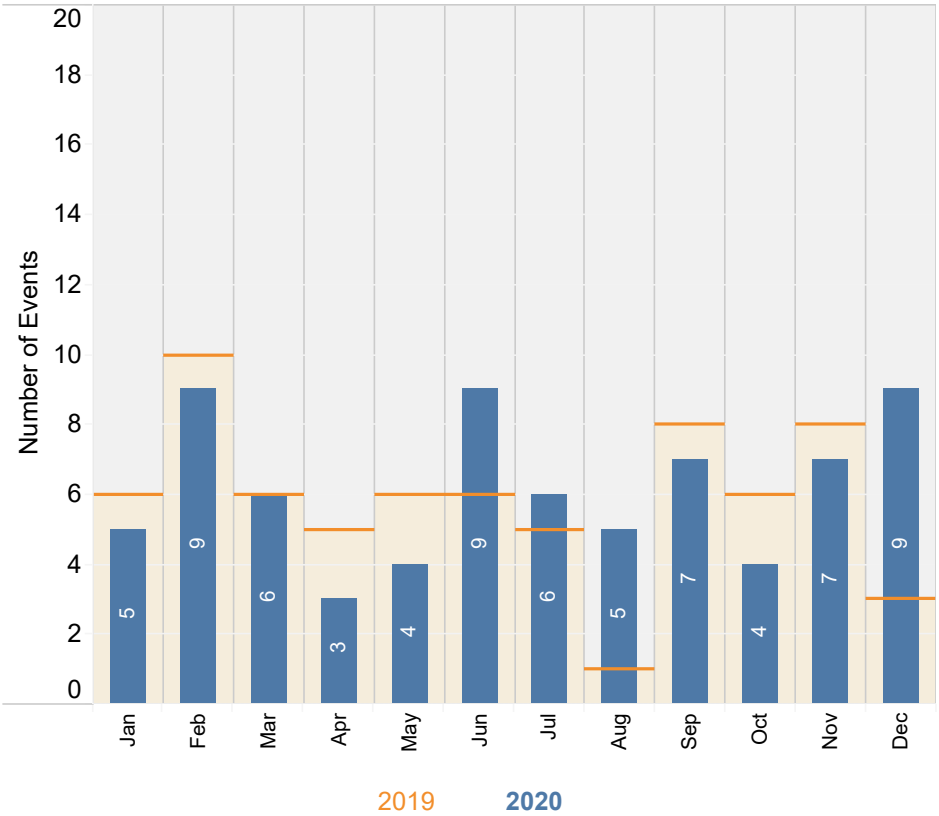
Route 400 Overall Route Activity



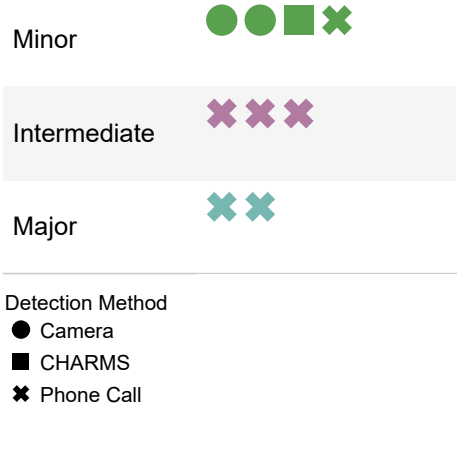
Route 400 Crash Severity and Detection Method



I-990 Overall Route Activity



I-990 Crash Severity and Detection Method



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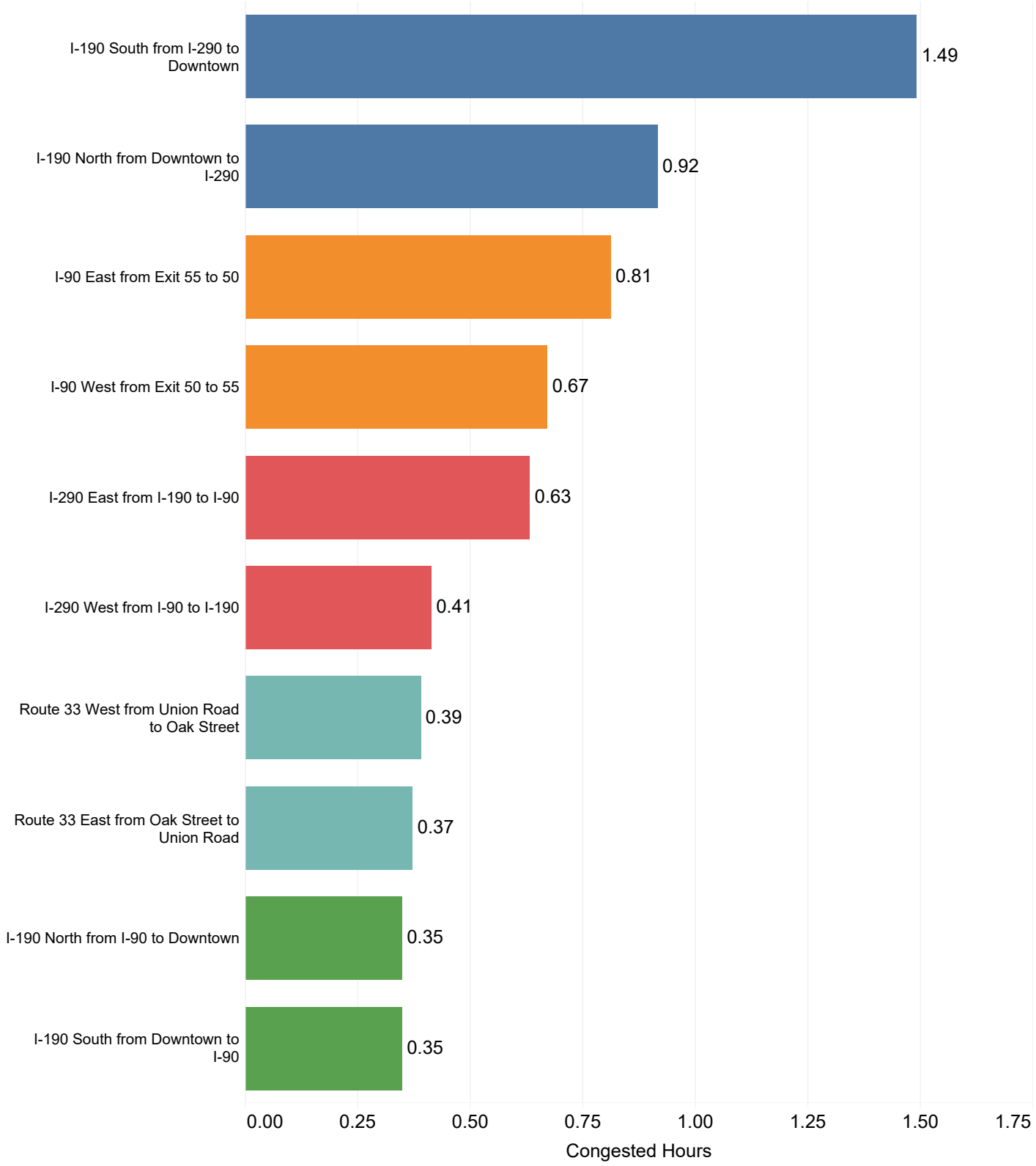
2020 Congested Hours Report

Below is a ranking of each roadway/direction based on the average number of **hours per day** that congestion occurred in 2020. Each color corresponds to a roadway and is the same for both directions.

Average Daily Congested Hours



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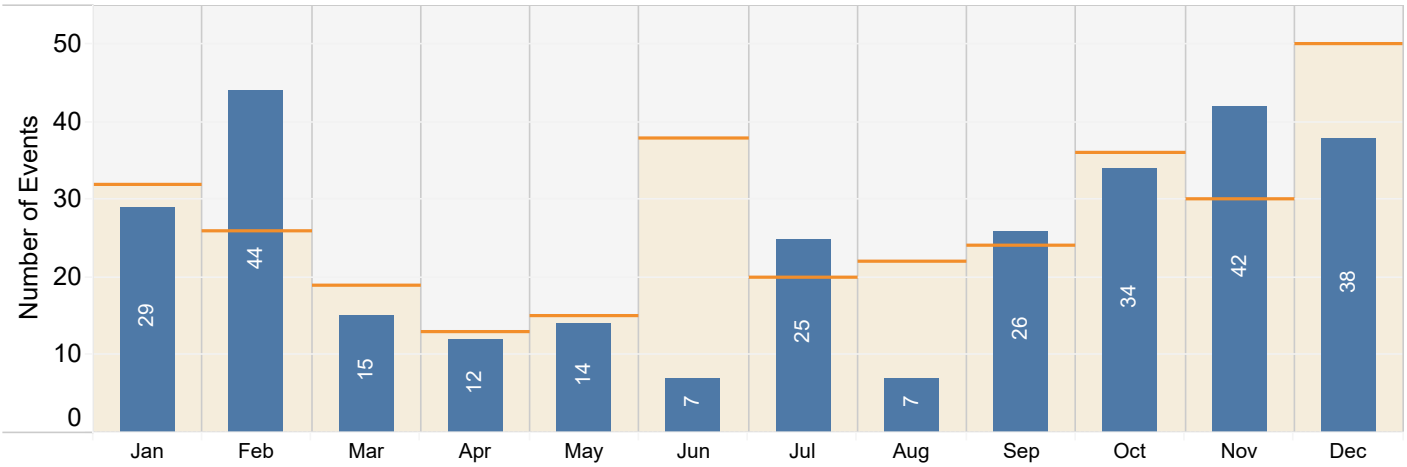
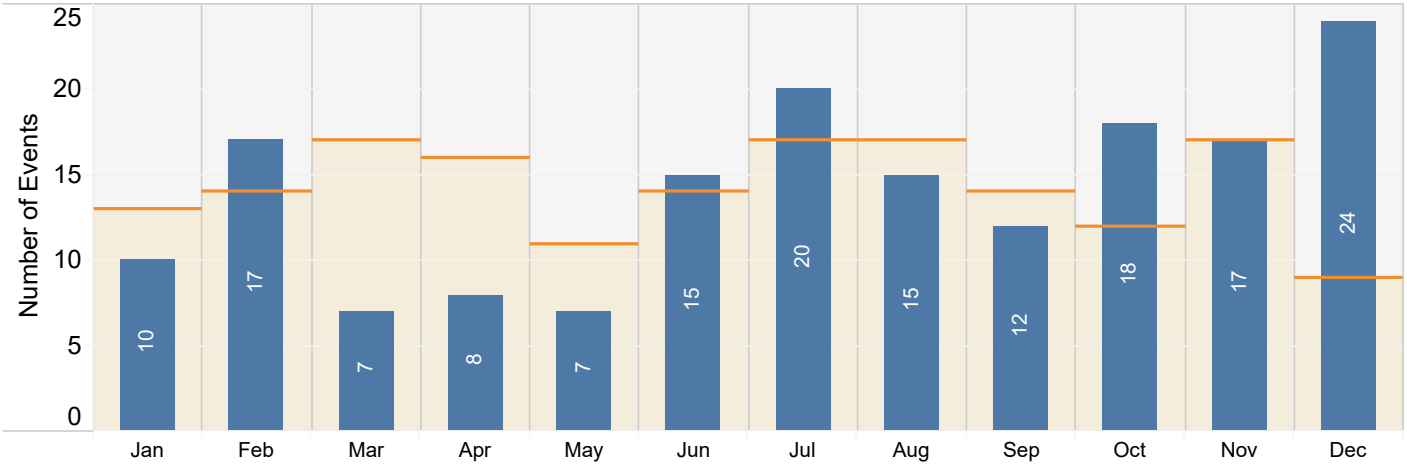
Southern Ontario Activities

The following graphs show the total number of events of each type that occurred in the region during 2020 by month. The reference lines indicate the activity in 2019.

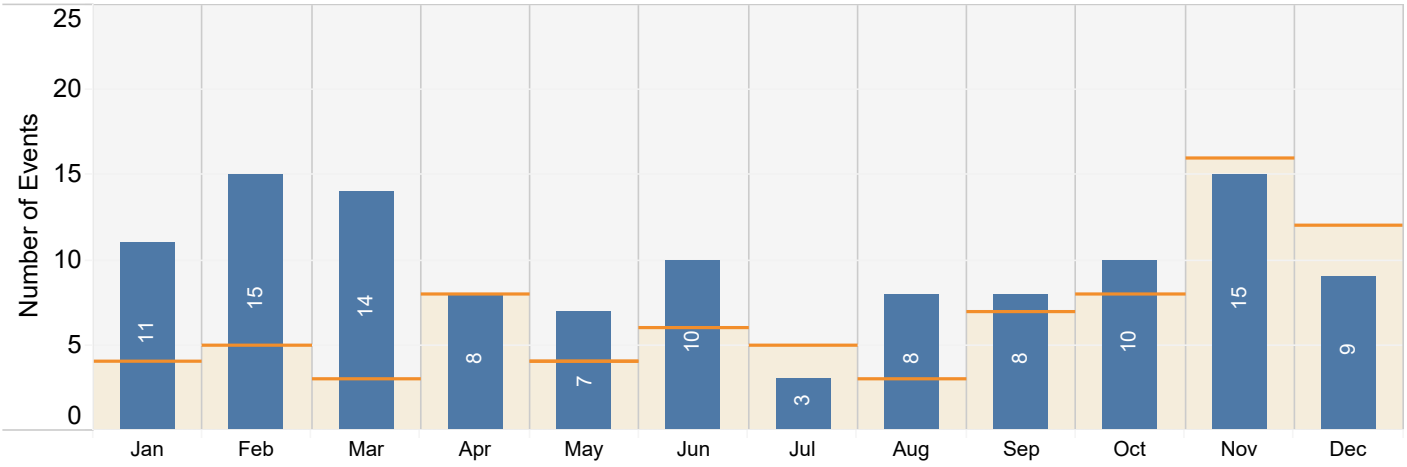
Crashes



Disabled Vehicles



Other



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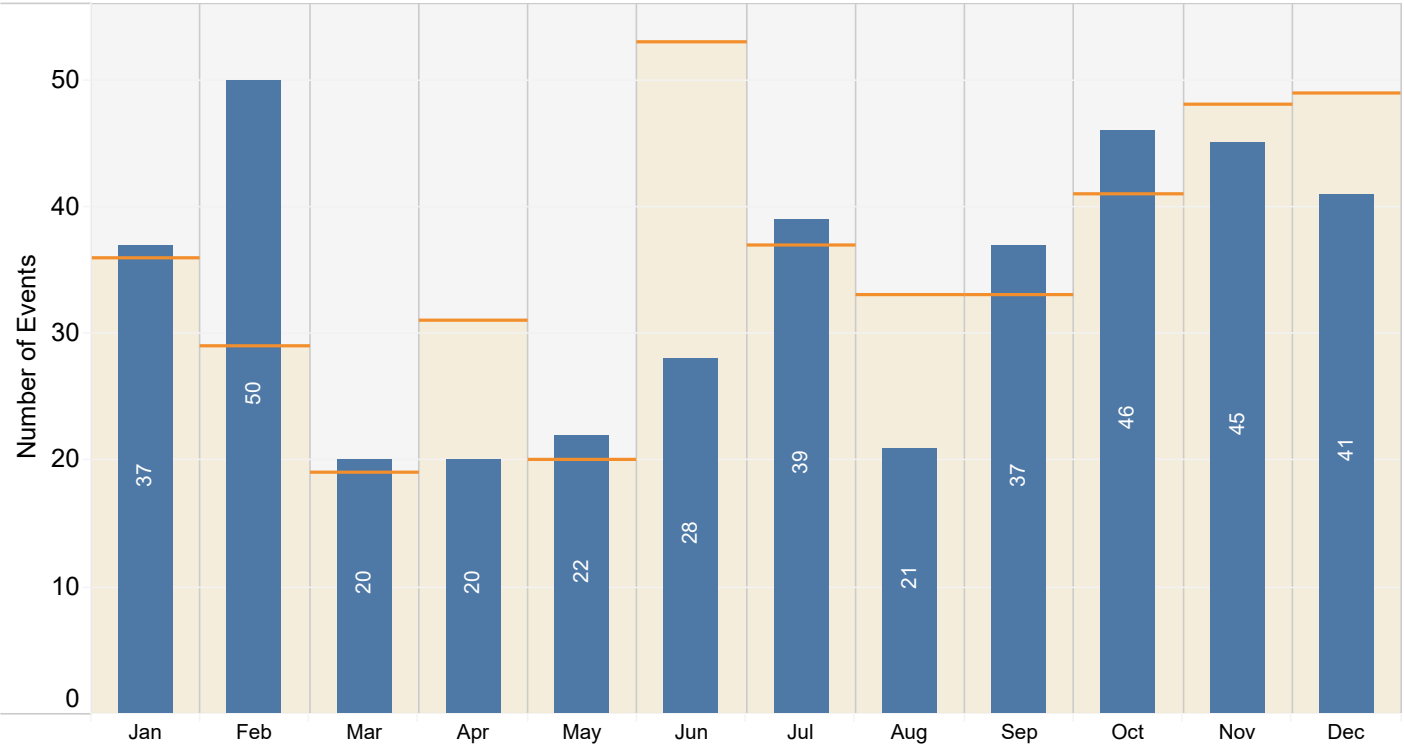
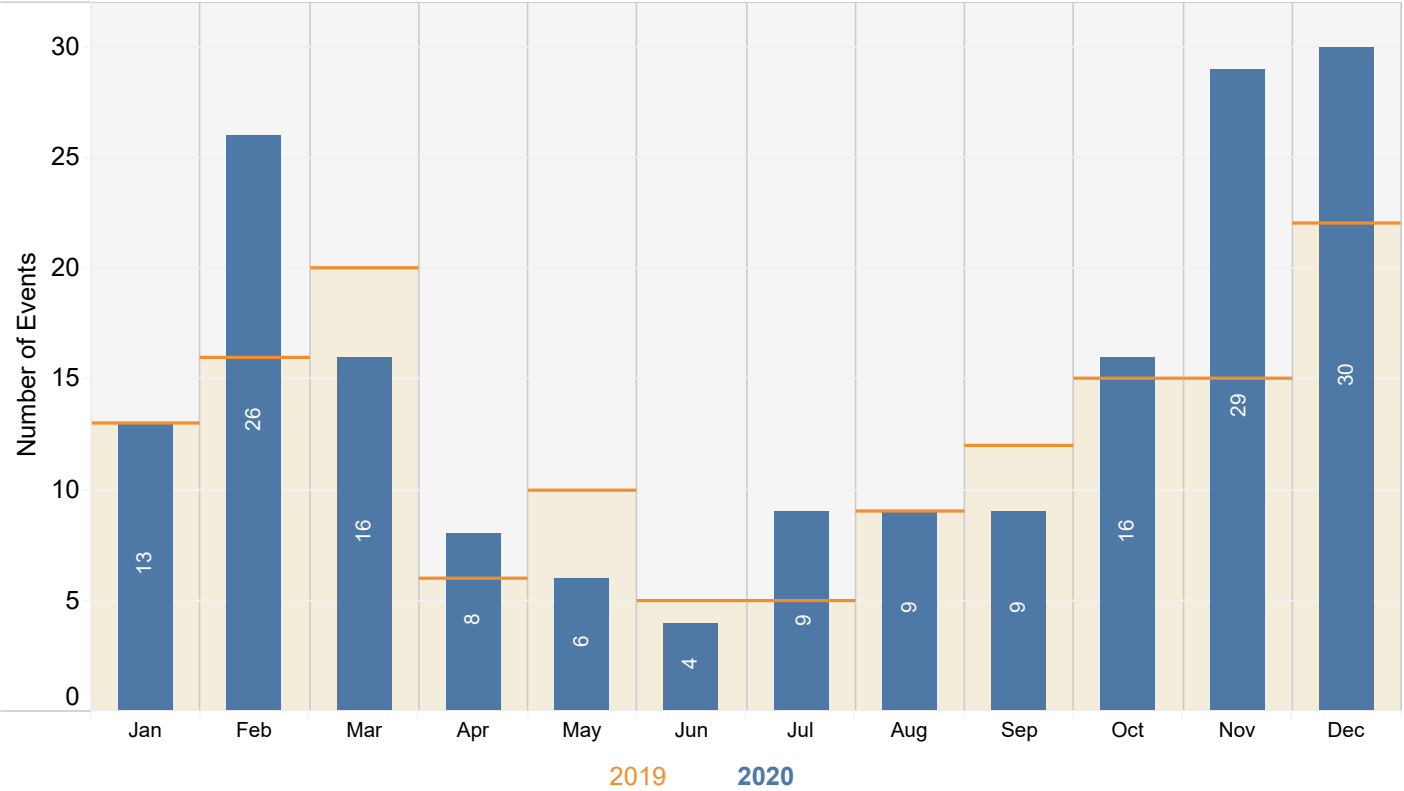
Route Activity

The following graphs display a monthly breakdown of activity for the major expressways in Southern Ontario. Route activity consists of crashes, disabled vehicles, and other various events occurring on each major highway. The graphs below show the total amount of route activity on each route that occurred in the region during each month in 2020. The reference lines indicate the activity in 2019.

QEW



HWY 405/406/420



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Border Crossing Statistics

As with the highways, the three major border crossings between Western New York and Southern Ontario in both directions of travel experience fluctuations in travel time. The key performance metric used in border crossing is delay, or the amount of extra time needed to cross the border.

- Peace Bridge
- Lewiston-Queenston Bridge
- Rainbow Bridge (passenger vehicles only)

The statistics for the border crossings are also broken down by the following transportation modes:

- Passenger vehicles (cars)
- Commercial vehicles (trucks)

Border Crossing Counts

The graphs on the following pages show the monthly counts of passenger and commercial vehicle traffic across the three bridges from 2018 to 2020. The reference lines indicate the annual average.

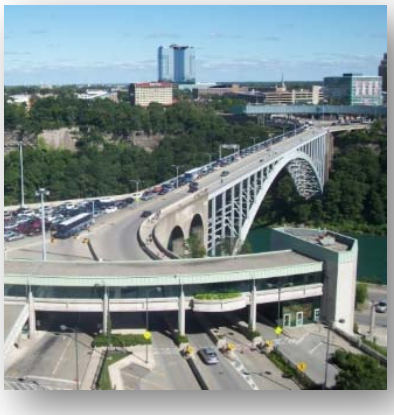
NOTE: From March 20, 2020 onward, all border crossings between the U.S. and Canada were restricted to essential traffic only in response to the ongoing COVID-19 pandemic.

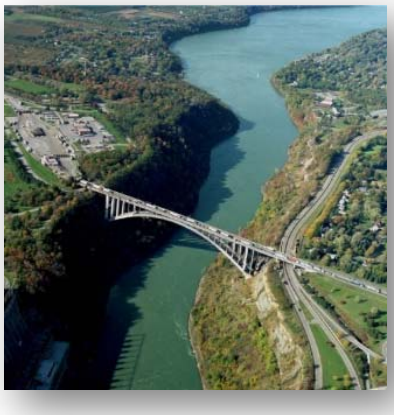
Border Crossing Delays

The set of graphs on page 49 show the percentage of time during 2020 when there was **simultaneous delays** (crossing times greater than 10 minutes) into Canada and into the U.S.

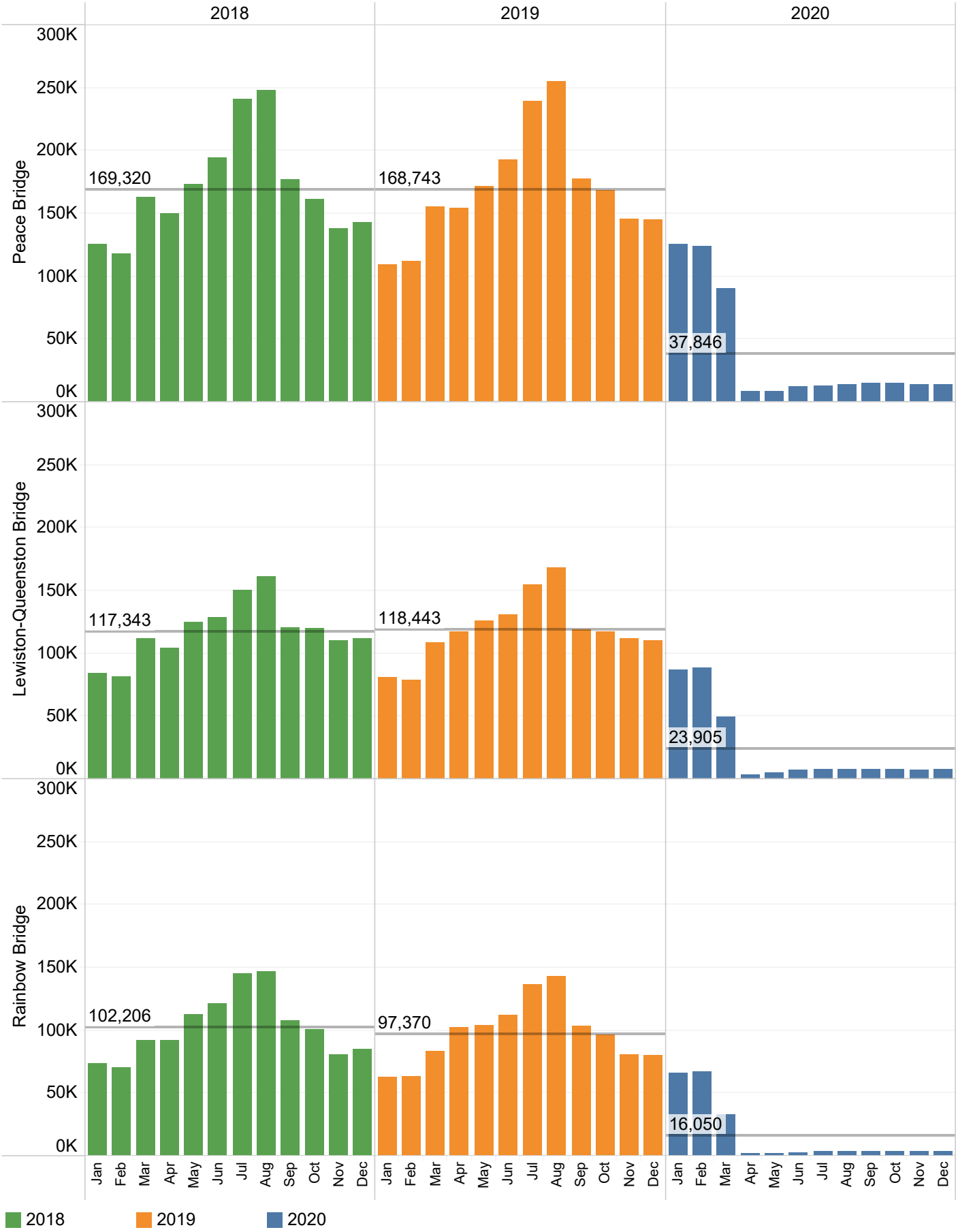
- For cars, the graphs show how often there were delays at one or two bridges or all three bridges at the same time.
- For trucks, the graphs show how often there were delays at one bridge or both bridges, as the Rainbow Bridge does not service commercial vehicle traffic.

The latter set of graphs on page 50 show the distribution of car and truck delays at all crossings into the U.S. and Canada during 2020 by month, day of the week, and time of day.

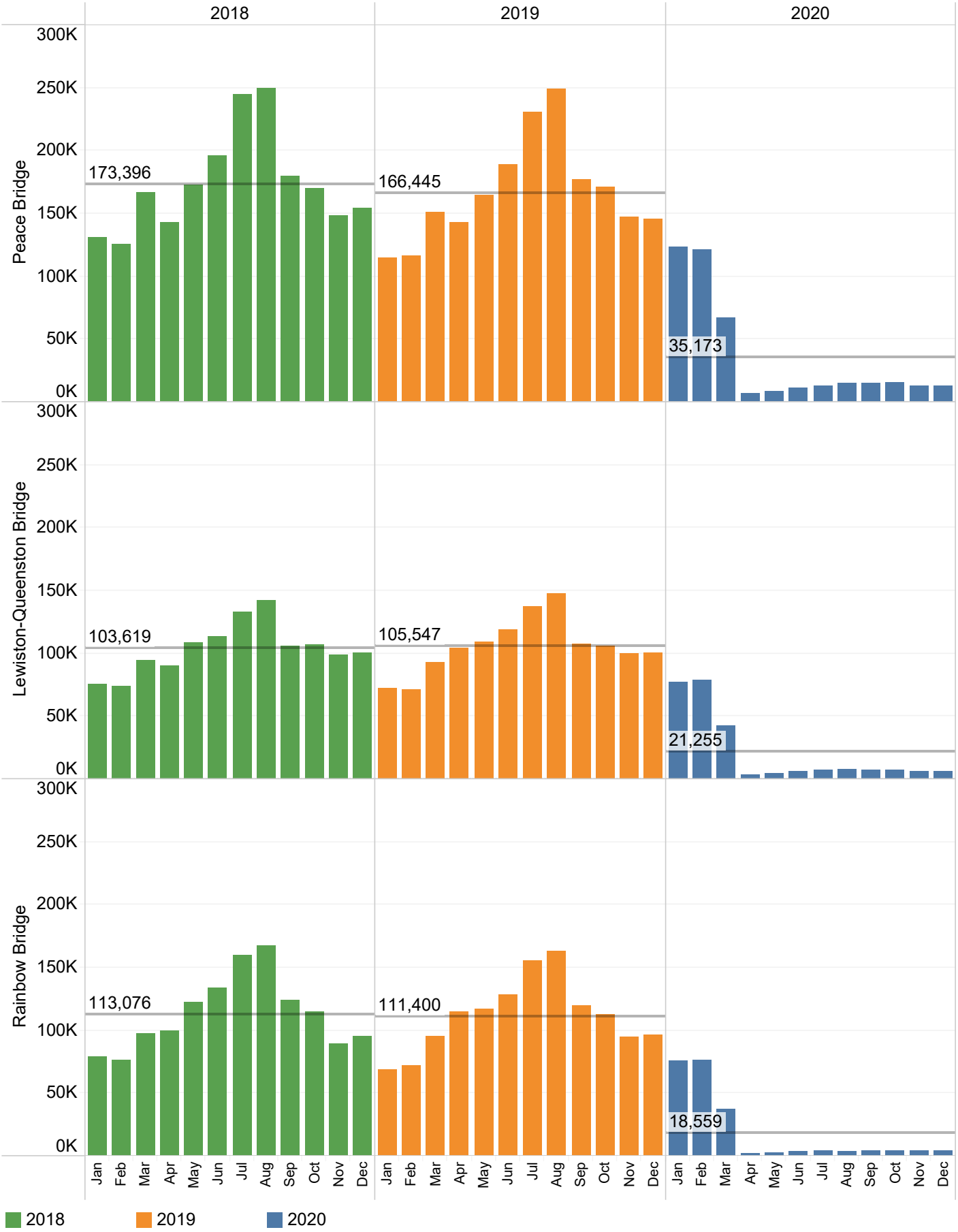




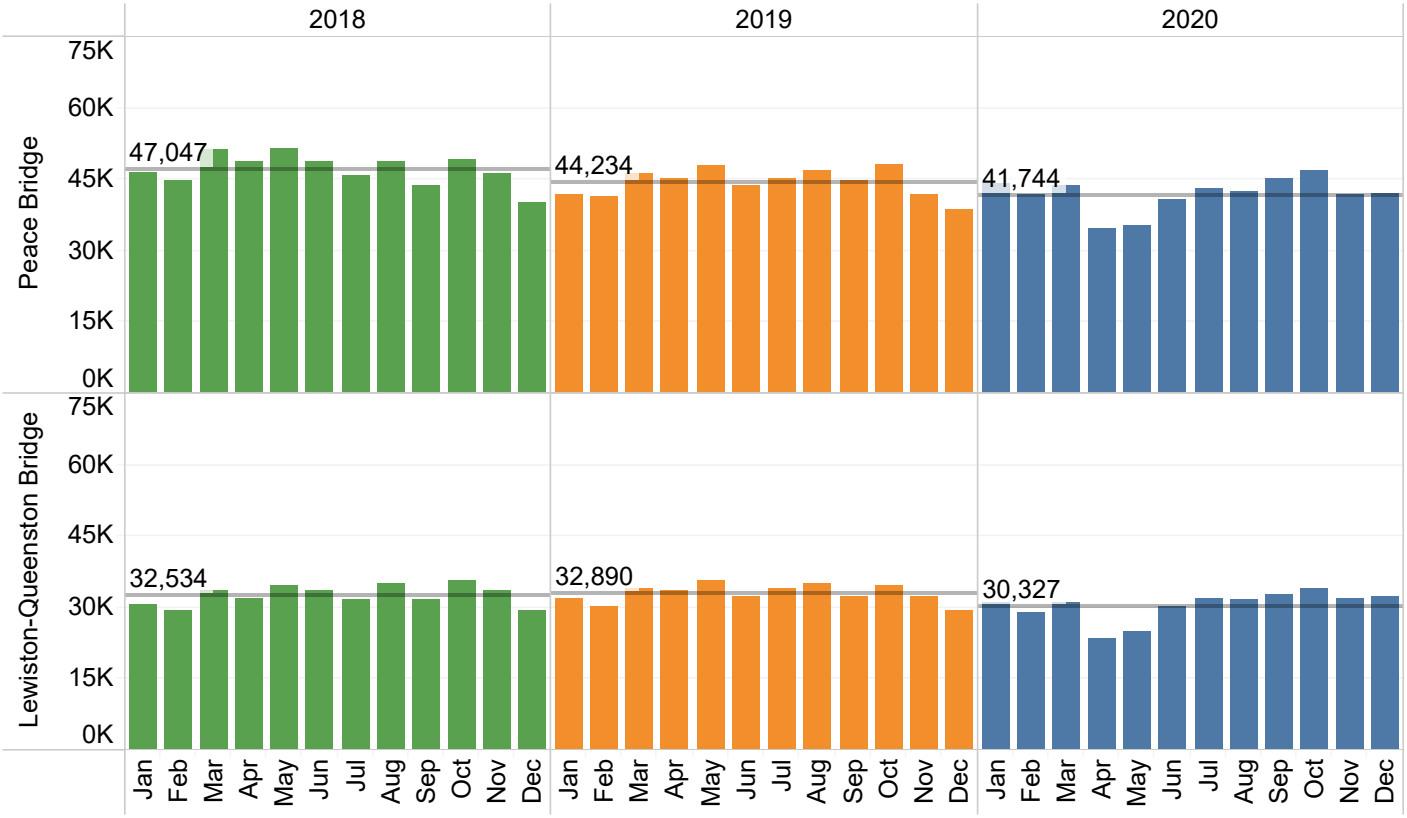
Border Crossing Car Volumes to Canada



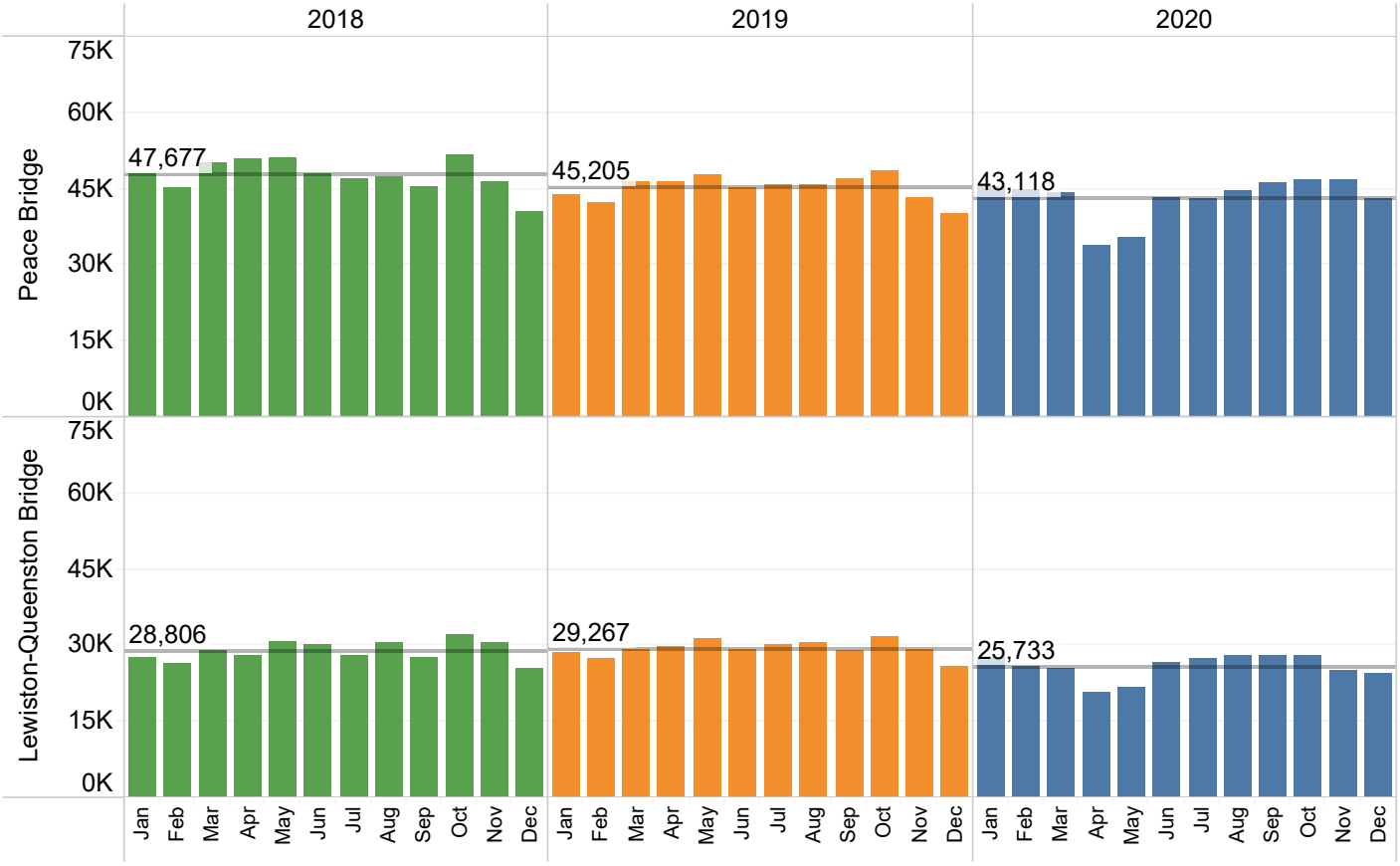
Border Crossing Car Volumes to U.S.



Border Crossing Truck Volumes to Canada



Border Crossing Truck Volumes to U.S.



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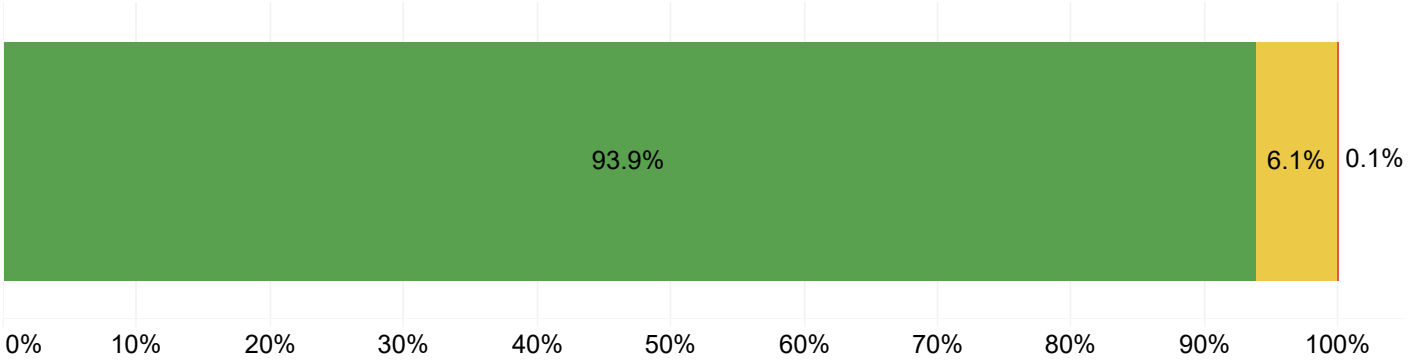
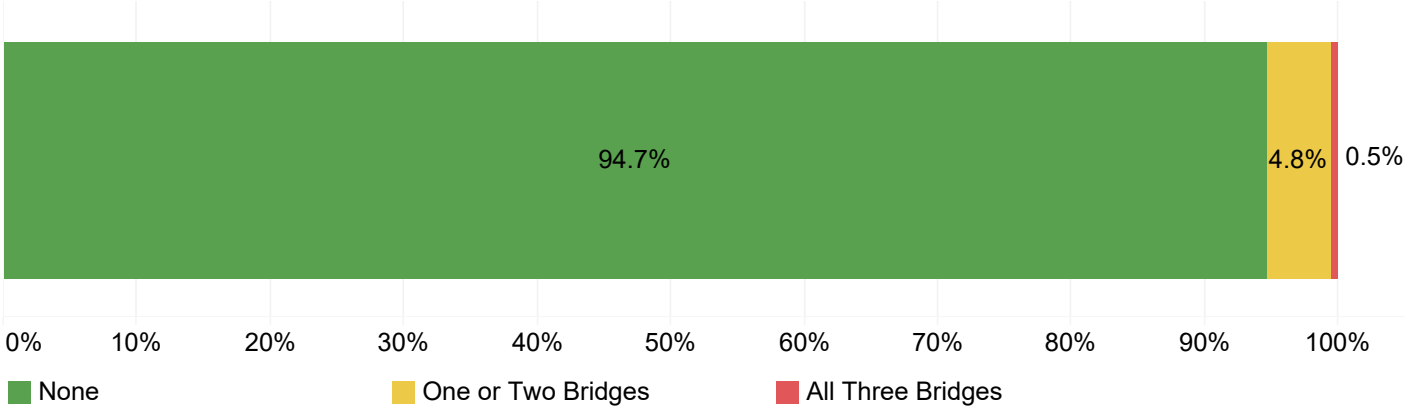
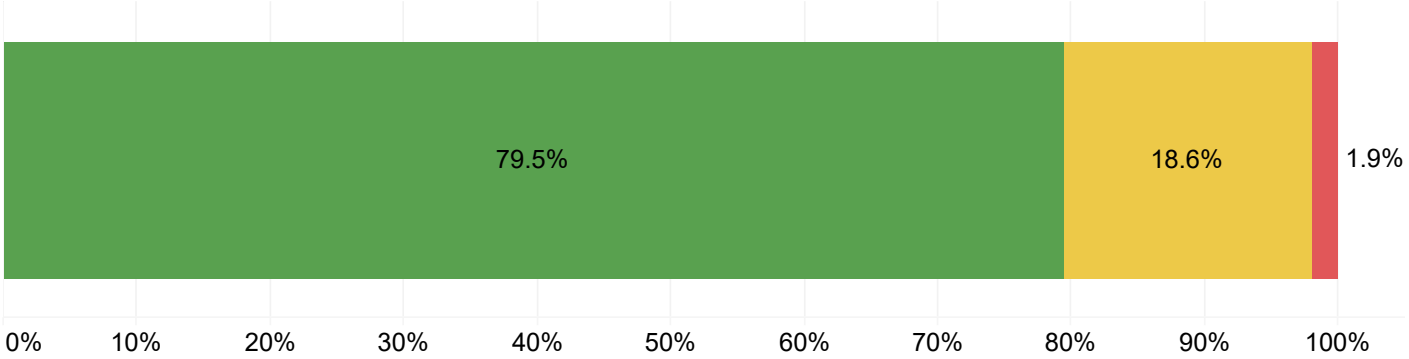
Simultaneous Delay to Canada (Cars)



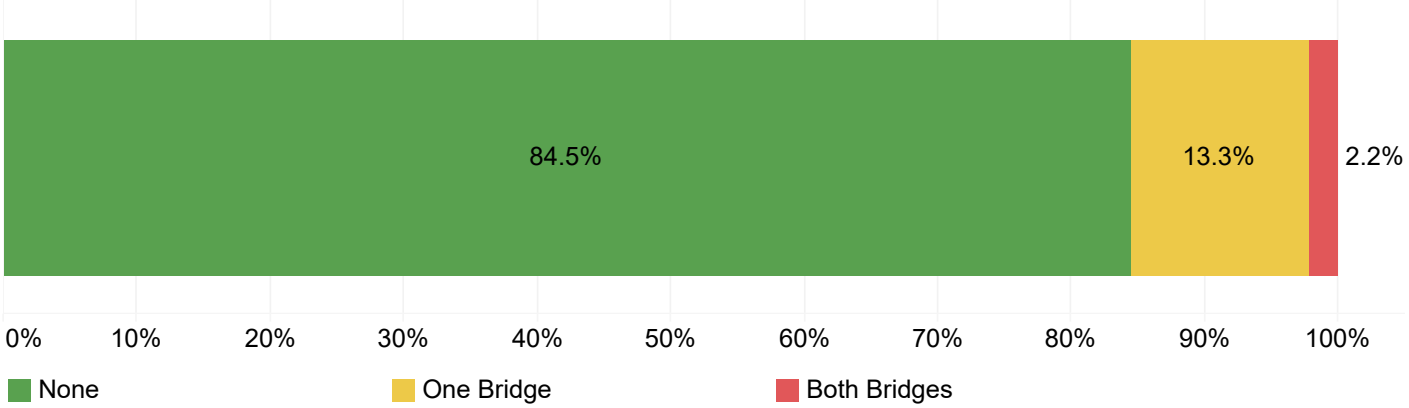
Simultaneous Delay to U.S. (Cars)



Simultaneous Delay to Canada (Trucks)



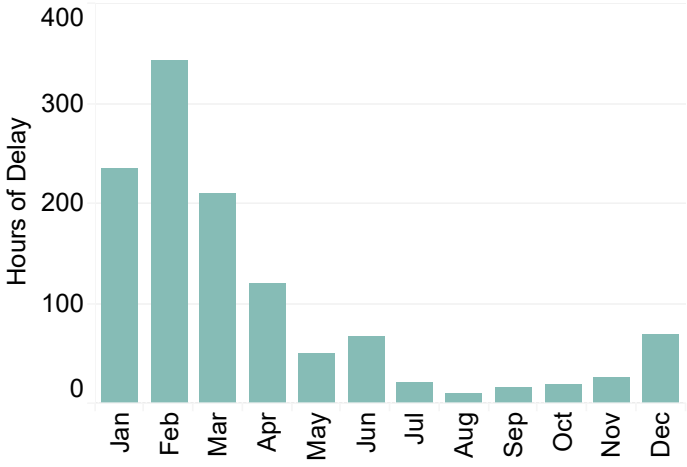
Simultaneous Delay to U.S. (Trucks)



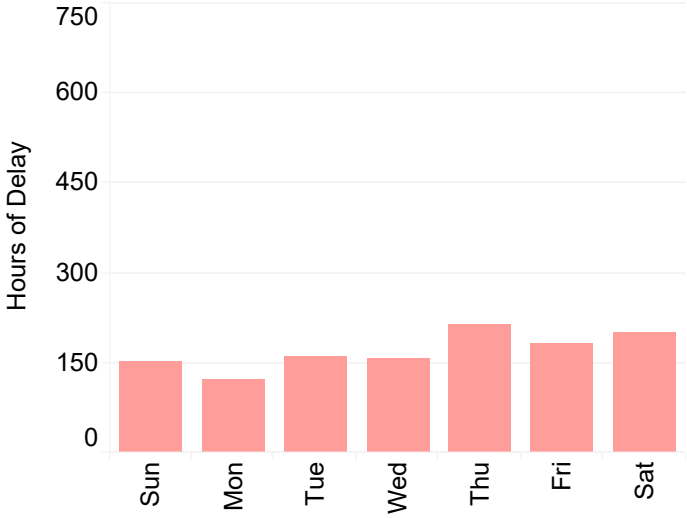
2020 Hours of Delay

Cars

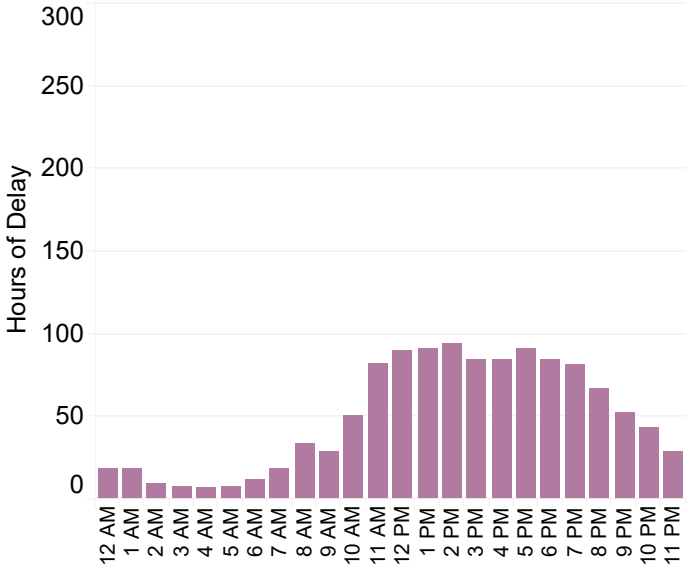
Delay by Month



Delay by Day

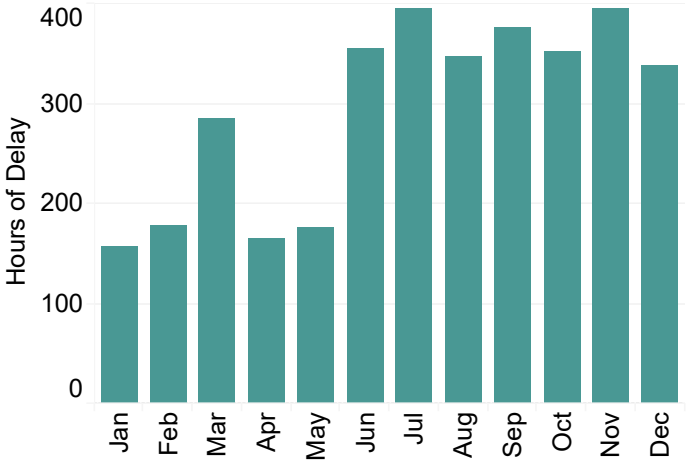


Delay by Hour

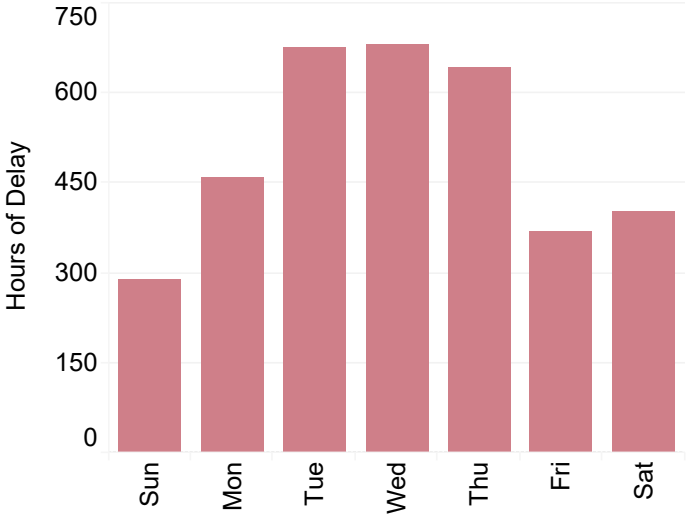


Trucks

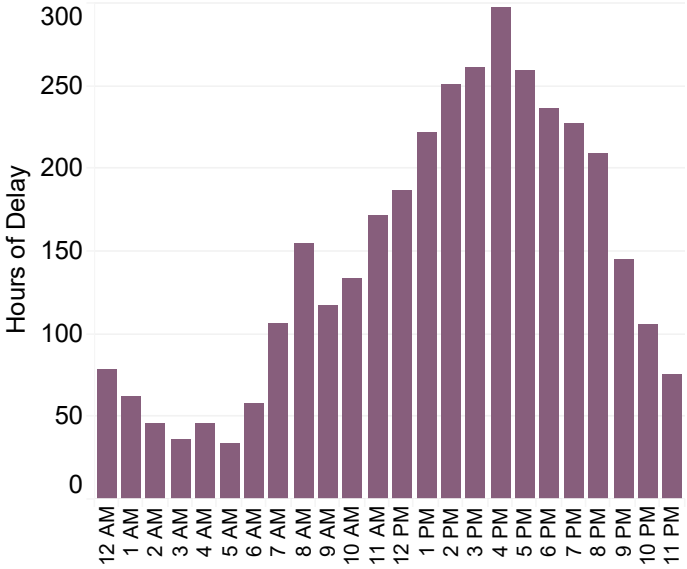
Delay by Month



Delay by Day



Delay by Hour



Systems Reliability

ITS Systems and Equipment

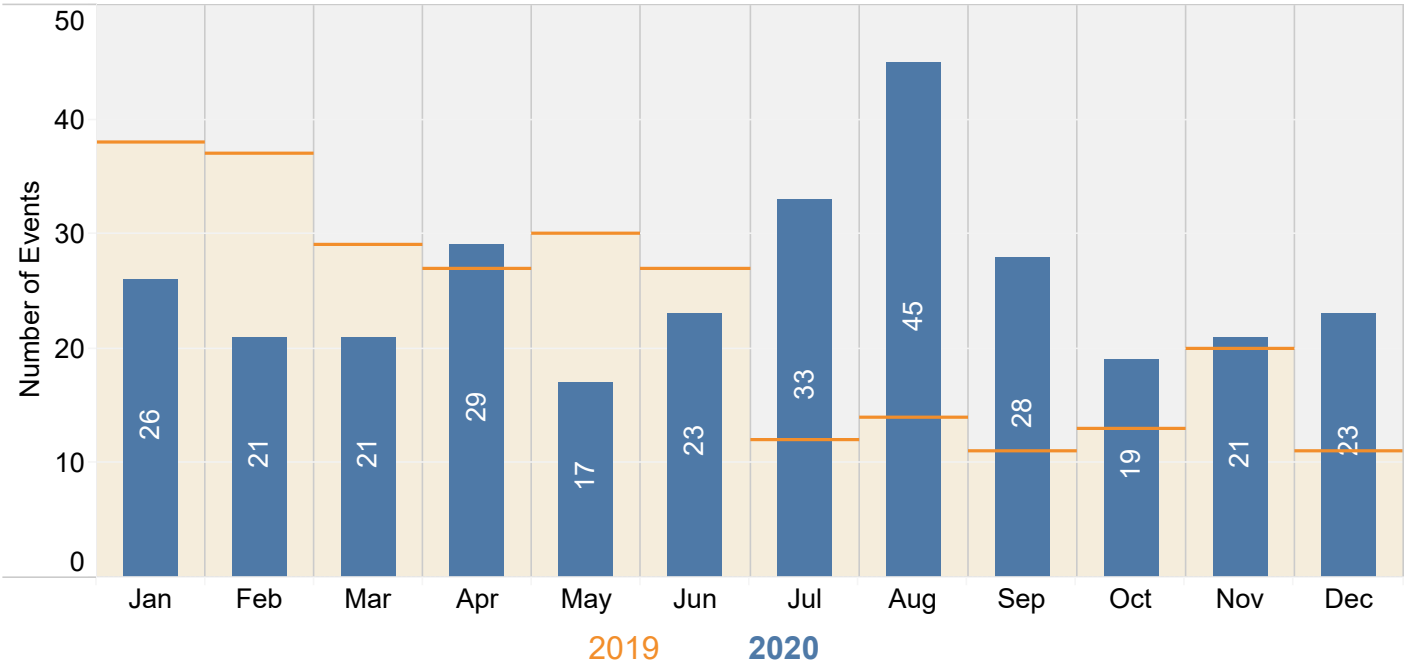
Crossroads: NITTEC's advanced traffic management system
Website: www.nittec.org and www.nittec.ca
CCTV: Traffic cameras in the region
DMS: All overhead and permanent roadside message signs in the region
TRANSMIT: All travel speed readers in the region
Flashing Signs: All static signs with flashing beacons
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.

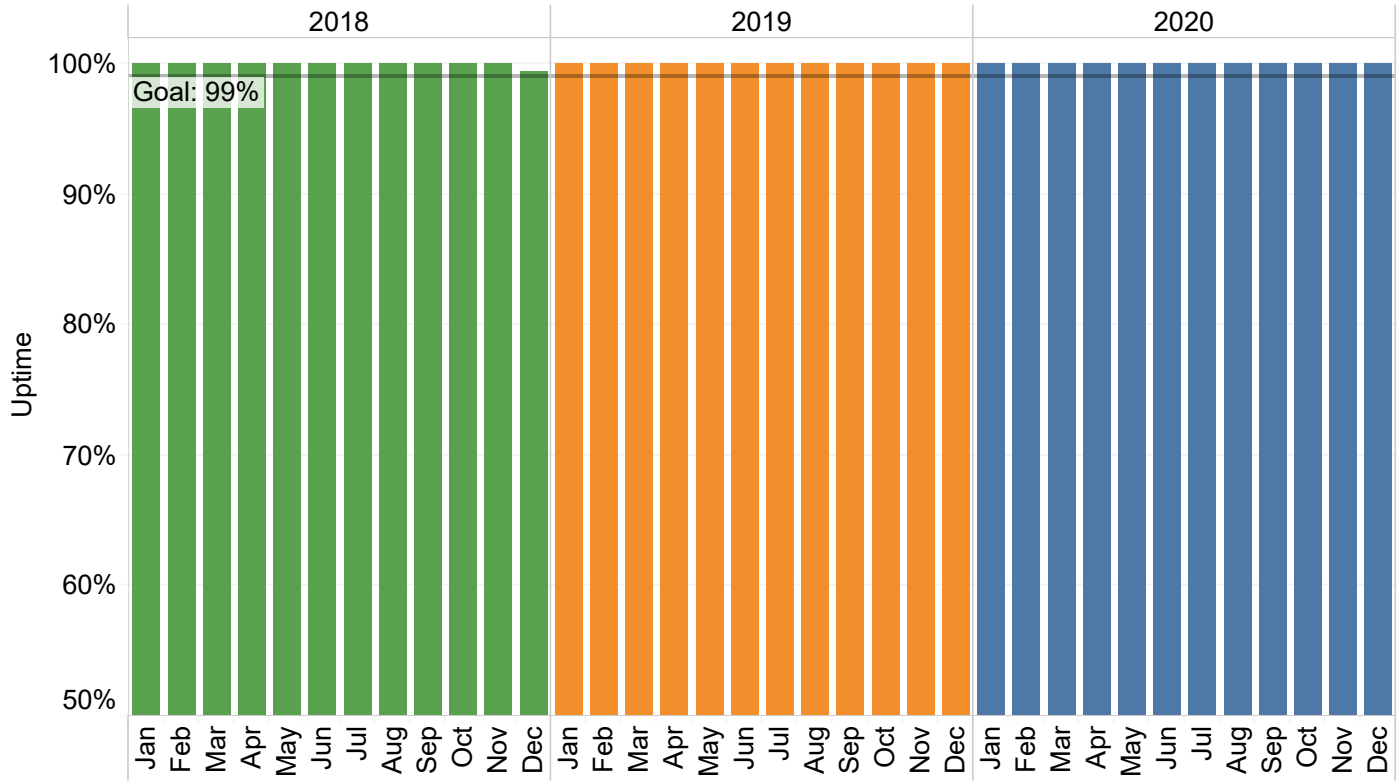
Organization	CCTV	DMS	TRANSMIT	Flashing Signs
NYSDOT	78	8	9	10
NYSTA	62	23	41	2
NFBC	4	0	0	0
PBA	4	0	0	0
Grand Total	**148**	**31**	**50**	**12**

Equipment Activity

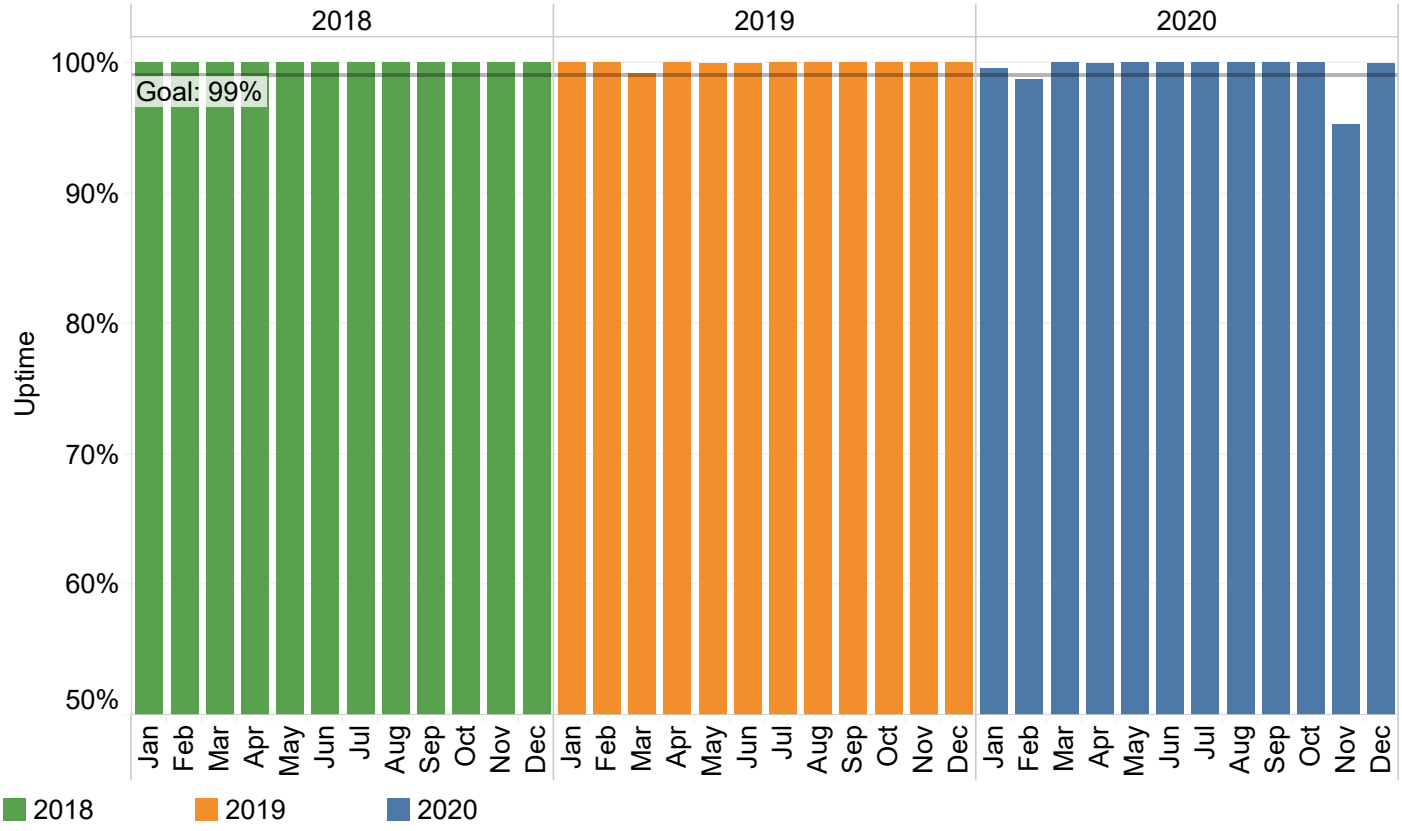


NITTEC System Uptime

Crossroads



Website



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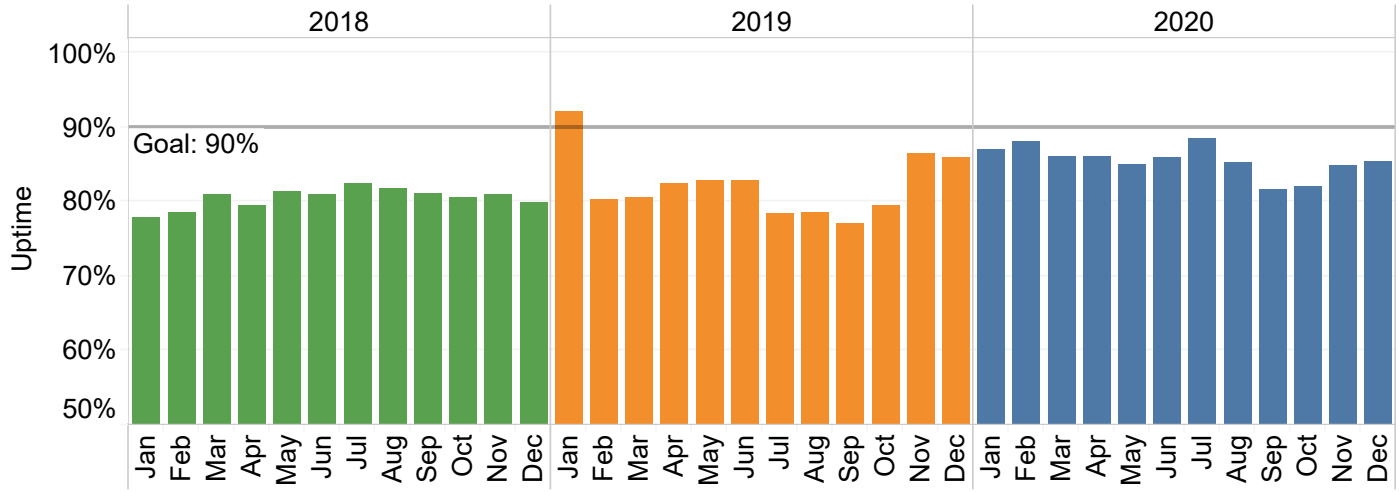
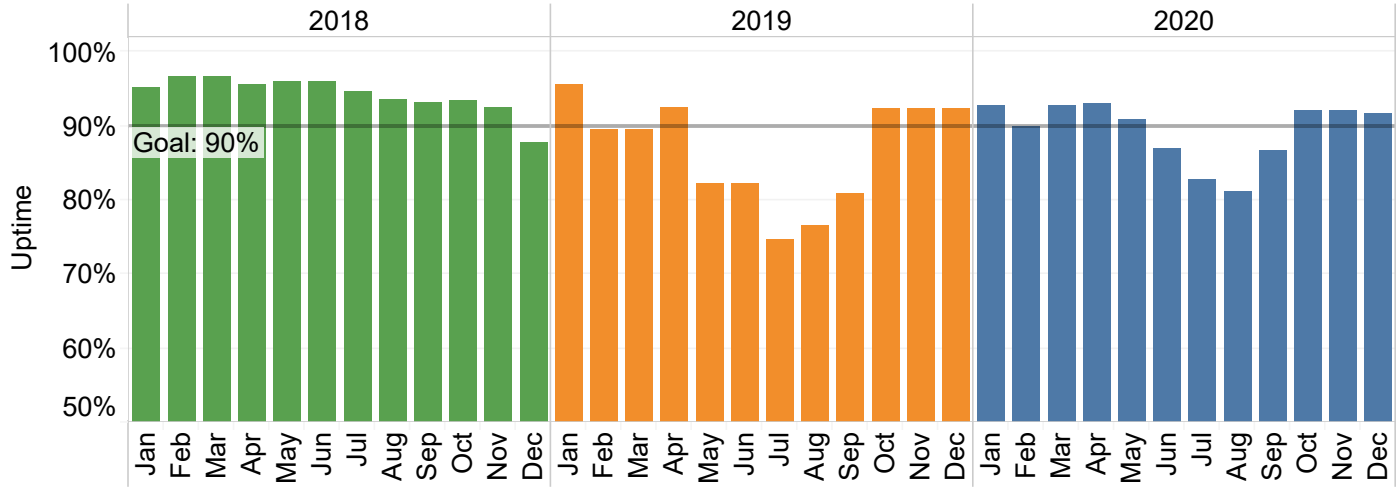
Field Equipment Uptime

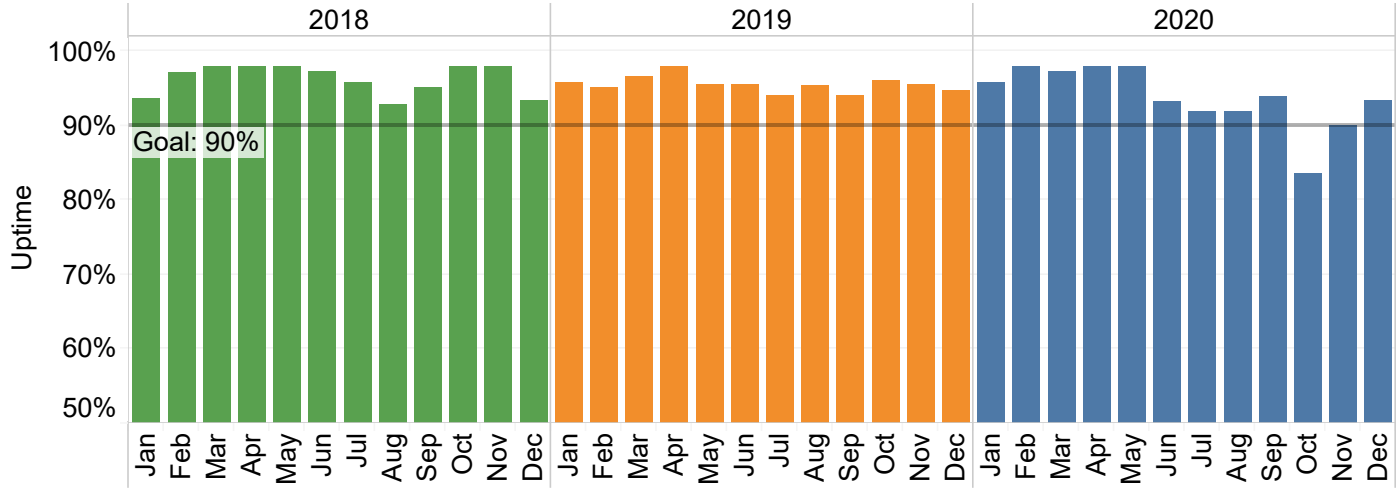
CCTV



DMS



TRANSMIT



2018 2019 2020

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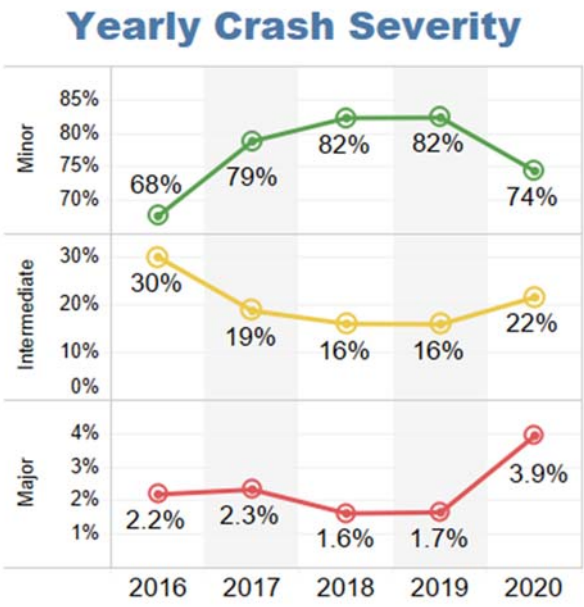
Buffalo Niagara Travel in 2020

Along with nearly every other aspect of daily life, 2020 was an unprecedented time for transportation in our region. The response to the ongoing COVID-19 pandemic including restrictions at the international borders, cancellation of all special events and public gatherings, and a large portion of the population transitioning to remote work.

As the performance measures found in this report show, these restrictions and precautions led to a significant reduction in personal vehicles on our regional roadway network for the majority of the year. However, this did not mean there was a lack of transportation-related events to manage in the region.

Presented below is a look at the total traffic (crashes, congestion, disables vehicles, and border crossing) and non-traffic (construction, debris, traffic signal malfunction, and snow and ice) related events annually. While there was a clear drop in traffic events during 2020, the number of non-traffic events remained about the same as previous years.

A notable trend was also observed in traffic safety in our region. While the overall number of crashes was lower than previous years, the average severity of those crashes saw a sharp increase. As seen in the following graph, the percentage of crashes classified as "intermediate" or "major" was significantly higher, with major crash frequency more than doubling.

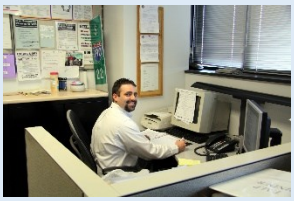


As the world moves into 2021, we will continue to monitor these trends and provide our stakeholders, as well as the traveling public, with the clearest and most accurate transportation data available.

New York COVID Timeline

- 3/7/20 – Governor Cuomo declares a state of emergency
- 3/16/20 – Schools/Colleges in Erie County close
- 3/17/20 – Region begins using DMS for COVID messaging
- 3/20/20 – Restrictions placed on U.S./Canada border
- 3/21/20 – Non-essential businesses in NY close
- 5/19/20 – WNY begins Phase 1 of reopening
- 11/23/20 – Color-coded zone restrictions put into place

THANK YOU FOR 25 GREAT YEARS



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