MEMBER HIGHLIGHT:
ITE VP CANDIDATES

TLC, TAC & ITE
UPDATES

SECTIONS ADAPTING
TO A VIRTUAL WORLD

ite
Canada's Community of
Transportation Professionals

transportation TALK

Quarterly Newsletter of the CANADIAN INSTITUTE OF TRANSPORTATION ENGINEERS
INSTITUT CANADIEN DES INGÉNIEURS EN TRANSPORTS
(a Canadian Non-Profit Corporation)

Affordable Housing & Transportation Professionals

Suzanne Swanton & Tim Welch offer insights on how transportation professionals can help address the affordable housing crisis

Gary Vlieg shares his experience with assessing parking needs for below market rental housing in Metro Vancouver

Driver Behaviour & Connected Vehicles

Iyad Sahnoon highlights his research on the effect of connected cruise control equipped vehicles on traffic operation and safety

News from CITE

Awards & Scholarships open

Conference invites sponsors & virtual tours

CITE Executive elections

VOLUME 42 : NUMBER 4 | WINTER 2020-2021

PHOTO CREDIT: KOLBY MILTON

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president's ponderings

Julia Salvini, P.Eng.
Canadian District President
president@cite7.org

This edition of *Transportation Talk* brings you updates from across the country, information about what's coming up, and some insight into the work that our members are doing. We also have a couple of articles focusing on affordable housing from the perspective of two planners who spend their time bringing affordable housing to communities across Ontario and from CTS who provide transportation services to clients wanting to develop affordable housing projects in BC.

There is an affordable housing crisis happening across our country. Every day, more individuals and families with severely limited incomes are in search of housing that meets their needs; in almost every community, there are not enough housing options for these people. Federal, provincial, and municipal governments are creating policies and funding to help support and accelerate affordable housing development and we as transportation professionals have an important role to play as well.

Projects geared towards people whose income does not allow them to buy or rent housing at average market rates have a wide variety of needs from a transportation perspective. Some of these projects serve families where disability constrains how and when they travel. Some are geared toward people of a defined age such as teens who need support outside of their family home or seniors whose travel patterns are different than typical working families. Still others are geared to different income levels, some at the lowest level where the people living in these buildings cannot own a car. Understanding who these projects serve and how our transportation networks serve them is an important way that we can contribute to the success of affordable housing in our communities.

The articles in this edition provide good information about what affordable housing means in Canada, how it is implemented, and some of the challenges and opportunities that these projects—and our work as transportation professionals—present. I encourage you to look into what affordable housing means in your community and what your role can be in addressing the crisis in our country.

Much of the information in this edition provides an update on the exciting things happening in the world of transportation in Canada. You will find information from our TAC appointees on the TAC Committee and Council work that is advancing in several different areas, from Nathan Carswell on the ITE Micromobility Design Guide, and from our Student Chapters and Sections across the country highlighting the events they have been holding and the awards they have been giving. Look for inspiration there as you plan for 2021!

We also look forward to what is coming up in the next six months. Both the ITE and CITE awards programs are up and running and there are some great opportunities to nominate the projects and the people that are making a difference around you. We look forward to celebrating that excellence at the CITE Virtual Conference in June. The CITE Training Committee will also be running virtual training sessions in the coming months; keep a watch for further information.

We've recently circulated through social media some information about a Parks Canada project. They are convening a panel of experts to advise the Agency on the development of a long-term framework for the sustainable movement of visitors in the Banff-Bow Valley. At this time, they are looking for both feedback on the terms of reference for the panel and applications to participate on the panel. They would like half of the panel to be comprised of people who are experts in various areas of transportation. This is a great opportunity to work with colleagues in complementary disciplines to guide the transportation decisions that are made for the area.

Finally, this is an election year for the CITE Executive Committee. There is further information in this edition about the elected positions and the election process. Feel free to reach out to any of the current executive members if you have any questions about the roles or would like to chat about the opportunities.

Julia Salvini, P.Eng.
Canadian District President

from the district director

JEN MALZER, M.Sc., P.Eng.
Canadian District Director
director@cite7.org

Dear members and welcome to 2021!

While not so changed, 2021 does seem like a version of 2020 where we are all more experienced and effective in this virtual world. Certainly, ITE is mastering what can be accomplished over wi-fi with so many new offerings being introduced and I'm happy to share some of these here.

ITE Student Chapters, including Canada's York University Chapter, are working together to host a fully online Student Leadership Summit (SLS). The two-day program starts on February 19 and is shaping up to be an exciting blend of positive leadership topics, transportation disruption ideas, and several opportunities to express thoughts and opinions. I encourage you to help get the word out to student members to participate in this exciting opportunity that's been entirely planned by students.

March 23 and 24 marks ITE's first winter technical conference with a theme of Innovative Intersections and Streets. ITE's Technical Councils have been heavily involved in contributing speaker and project ideas, meaning this conference is building up to be a real success, both in strengthening the role of the Councils and Committees and in extending best practice topics to members. The ITE Virtual Annual Meeting and Exhibition is still being planned to take place in Portland between July 18 and 20; a final decision will be made in March as to whether this event will also be held virtually due to COVID-19 restrictions.

For the second year in a row, ITE is hosting a Sandbox Competition and the theme this year is Vision Zero. Submissions are due April 15 and involve examining data and developing creative—and proactive—approaches to making change. Asking members to look at safety data in a new way helps unveil ideas and bring them into the profession faster and I hope to see Canadian submissions represented. Students from Ryerson University took the win last year; perhaps one of our Section members can successfully represent the Canadian district this year?

Speaking of celebrating, it is the time of year to submit nominations to the ITE International Awards for technical and professional excellence. Please review the deadlines and qualifications and take the time to put forward the names of the stars around you. Also, note that there is a new award for younger members this year in addition to the Rising Stars Awards: ITE Young Leaders to Follow. Please consider nominating someone you consider deserving.

Over the last several years, ITE has started hosting listening sessions on emerging topics as part of District Conferences. This year, I have the opportunity to help organize the listening sessions and we will be focusing on equity. Equity is in everything we do from building timing plans to selecting communities for traffic calming so I'm very interested to hear our members' thoughts. Stay tuned for details on how to participate in a Canadian District virtual event.

Elections are coming both to ITE and CITE. You can read about the nominees for ITE Vice President, Gene Chartier and Rosana Correa, in this edition of *Transportation Talk* and see their professional information online. Voting will start February 10; please take a moment to cast a ballot in this exciting and important decision for our organization.

CITE's election is calling candidates to serve on the Executive Committee starting January 2022. The current Executive Committee will be hosting our first-ever Information Town Hall for interested candidates on March 5 at 1 p.m. EST. The deadline for candidates to submit their election materials is March 15. Please be in touch with any questions and best of luck to our candidates!

Lastly, let me share a thank you on behalf of CITE to Bruce Belmore whose term as ITE International Past President has just closed. As someone who has followed a few steps behind you, Bruce, I can attest to how CITE has benefitted from your calm, thoughtful, and inclusive leadership style. You are a great role model in today's times on how to push our profession forwards through kindness and enthusiasm. Good luck in your next adventures!

Stay warm and safe,

Jen Malzer, M.Sc., P.Eng.
Canadian District Director

Transportation & Road Safety Professional Certifications

CITE congratulates the following Canadian members who successfully passed certification exams in October 2020 and received their PTOE, PTP, or RSP1 professional designations:

Professional Traffic Operations Engineers

Bidoura Khondaker
Eric Zi Yue Tam
Anna Snook
Vikas Ravada
Mary Lee
Shiva Hashemi
James Kay
Donna Howes

Road Safety Professionals 1

Matthew Mulkern
Alon Weinberger
Gabriela Tassin
Michael Palomba
Kate Whitfield
Brian Patterson
Bradley Porter

Professional Transportation Planner

Heather Hector
Peter Scholz

Want to set yourself apart?
The Transportation Professional Certification Board (TPCB) is now accepting applications for the June 2021 certification exams.

APPLY BY APRIL 2, 2021 FOR THE JUNE 2021 EXAM PERIOD

For more information and applications, visit tpcb.org

Canada's Community of Transportation Professionals

CALL FOR CANDIDATES

Executive Committee Elections

The Canadian Institute of Transportation Engineers (CITE) is seeking candidates to serve on its Executive Committee. Open positions include **District President, District Vice-President, and District Secretary-Treasurer** for a two-year term from January 1, 2022 to December 31, 2023 and **District Director** for a three-year term from January 1, 2022 to December 31, 2024. Further information about the duties and responsibilities of these positions is available at cite7.org/elections. There will also be a virtual Information Town Hall on March 5, 2021 hosted by the current Executive Committee for interested individuals to learn more about this opportunity and ask questions. More information to come via email.

Individuals interested in serving for these volunteer positions must be ITE members in good standing and willing to commit the time necessary to carry out the duties of office. Reasonable travel expenses to attend meetings on CITE business are reimbursed.

The written nomination submitted in support of the candidate shall include a description of the nominee, their qualifications for the position, and signatures supporting the nomination from the individual and two other ITE members in good standing. **The deadline for nominations is March 15, 2021 at midnight PDT.** Nominations shall be submitted by email to:

Jen Malzer, M.Sc., P.Eng.
Canadian District Director and
Nominating and Elections Committee Chair
Email: director@cite7.org
Phone: 1.403.880.9786

Nominees will be informed of their acceptance and provided further information regarding the election process prior to March 19, 2021. Election results will be announced in the Spring edition of *Transportation Talk* prior to being affirmed at the virtual CITE Annual General Meeting scheduled for June 2, 2021.

PREPARATION AND DISTRIBUTION OF BALLOTS

Once notified of acceptance, each nominee shall prepare a statement of up to 500 words setting forth their aspirations, ideas, and proposal as to the office nominated, and provide a headshot. If supplied by the specified due date, the statement and photo will be distributed with the ballots and made available on the CITE website.

When ballots are prepared for officer election, the name of each nominee will be listed in alphabetical order. Each eligible Canadian District member shall receive the electronic ballot notification with instructions to vote online between March 29 and April 12, 2021. This notification will be distributed by email.

CAMPAIGN RULES

Candidates for the District Executive Committee election shall abide by the following campaign rules:

- Any expenses incurred during the campaign are not eligible for reimbursement by CITE.
- Communication efforts will be limited to the candidate information that is distributed with the ballots and published on the CITE website. There will be no separate mail-outs or individual email campaign notices to members.
- Any current CITE Executive Committee member who is a candidate shall not take advantage of their position during the campaign.

Any breach of these rules may result in the Nominating and Elections Committee revoking the nomination of that individual for office.

Canada's Community of Transportation Professionals
La communauté des professionels du transport au Canada

CITE 2021

EXCELLENCE IN TRANSPORTATION AWARDS

CALL FOR NOMINATIONS

Visit **cite7.org/awards** for full details.
Submissions **due March 1**.

Member & Technical Achievement Awards

Each year, CITE sponsors an awards program to honour outstanding achievement in the transportation profession, technical excellence, and service to CITE. **Nominate by March 1, 2021 at cite7.org/awards.**

Recognition of Service to CITE

H. Robert Burton Distinguished Service Award

CITE's most prestigious award honours an individual with a notable career in the field and a record of service with CITE

Outstanding Voluntary Contribution Award

Celebrates a member who has made exceptional voluntary contributions to CITE or its programs and projects

Practitioner Awards

CITE Rising Star Award

Identifying members under the age of 35 who have made an impact on the profession, demonstrated the ability to lead the next generation, and implemented innovative techniques to solve transportation problems

David Tam Memorial Award

Proudly presented by Bunt & Associates, this award recognizes young professionals early in their careers who have been involved in providing transportation solutions to improve network operations

Technical Achievement

Stan Teply Outstanding Technical Project Award

This award showcases high quality projects in Canada that have shown significant and proven technical achievement in transportation planning/engineering

ITE International Transportation Achievement Awards

CITE will select Canadian nominees for these ITE International Awards recognizing excellence in the advancement of transportation to meet human needs

Section & Chapter Awards

These awards acknowledge the tremendous work done at the local level of CITE. Submissions must be made by March 1, 2021. Click the award names below for more information.

Outstanding Section/Student Chapter Awards recognize the overall quality of Section/Student Chapter activities, either technical or non-technical in nature

Section/Student Chapter Momentum Awards recognize improvement from years past with respect to Section/Student Chapter activities

Canada's Community of Transportation Professionals

STUDENT SCHOLARSHIPS & AWARDS

APPLY BY
MAR 1, 2021
at cite7.org

Scholarships and awards are offered annually by CITE for students at accredited Canadian universities and colleges. Winners receive free registration to and recognition at the CITE Annual Conference taking place virtually this year June 8–10, 2021.

Dr. Michel Van Aerde Memorial Scholarship
$3,000

For full time students in a transportation doctorate-level program at a Canadian university.

John Vardon Memorial Scholarship
$3,000

For full time students in a transportation master's-level program at a Canadian university.

CITE Undergraduate Scholarship
$3,000

Scholarship for an undergraduate student in planning, geography, or engineering.

Student Presentation Competition

Participate in your local CITE section competition and you could be chosen to present at the CITE Annual Conference.

CITE WATT Consulting Group "Transportation in a Sustainable World" Student Award $1,000

Awarded based on the quality of writing and demonstrated appreciation of inter-disciplinary collaboration in a 1,000+ word paper.

Sponsored by: WATT Consulting Group

Student Paper Competition
$1,000

For students in accredited transportation programs, awarded based on the quality of a paper addressing a transportation engineering subject.

Sponsored by: Stantec

Canadian Capacity Guide Competition
$1000 (Second: $300, Third: $200)

An undergraduate student competition based on the Canadian Capacity Guide for Signalized Intersections (CCG) using PTV Vistro 2020.

Sponsored by: *Jim Gough* PTV GROUP BA Group

Apply at **cite7.org/awards**

2021ite

June 8–10 • Virtual Conference

INVITING **SPONSORS** TO CITE 2021

CITE invites corporate and industry partners to join us for the **CITE 2021 Virtual Annual Conference**. The three-day event, happening **June 8–10, 2021**, will be an opportunity to connect your company to leading decision-makers in Canada's community of transportation professionals. With no travel costs and a very accessible registration fee, this conference offers more visibility to our sponsors than ever!

Check out the sponsorship prospectus to find an opportunity that meets your business goals and join the growing list of leading companies supporting #CITEconf 2021.

Thank you to these industry leaders and all of our sponsors!

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Click to find your sponsorship opportunity

CALL FOR **VIRTUAL TECHNICAL TOURS**

The CITE 2021 Virtual Conference Committee is seeking ideas and suggestions for Virtual Technical Tours to showcase new and innovative projects from across Canada. Virtual Tours should primarily give the viewer an "on the ground" or "street-level" tour of the project. This is typically done using a pre-recorded video of the project with a voice over (live or pre-recorded) description. Virtual tours can be supplemented by additional information, but we would like to avoid "slideshow" type presentations in order to differentiate the tours from our technical program. We would expect a Q&A session to accompany each tour.

An example of a virtual technical tour from a recent National Capital Section Event can be viewed here and is described in a short article on page 33.

Topics

We are generally looking for tours of transportation projects, infrastructure, or facilities that:

- are recently completed (in the last 2-3 years),
- innovative in their design and/or construction,
- highlight active transportation, transit, or new mobility, and/or
- incorporate new technologies.

Submission Details & Dates

Technical tour ideas should be submitted via email to conference@cite7.org **by Wednesday, February 10, 2021** with the following details:

- Project name and location
- Status or completion date
- A brief description of the unique/innovative features to be highlighted
- Presenter contact information

Introducing your newest TLC Member

With a background in land development and specializing in transportation planning and engineering, **Niki Burkinshaw, P.Eng.** is passionate about planning, designing, and building great neighbourhoods and transportation networks. She has a diversity of experience in transportation planning, capacity and operational analysis, and transportation planning for land development. Her experience in both private and public sector positions gives a well informed and balanced approach as she strives to find solutions for whatever challenges lie before her.

As the Alberta Regional Lead for Transportation at WATT Consulting Group, Niki's role spans the technical, management, and business development spectrum of a mid-sized consulting office.

Welcome, Niki, to CITE's Technical Liaison Committee!

ITE Micromobility Design Guide Project Update

As part of its coordination role with ITE, the TLC shares an update from Nathan Carswell, P.Eng.*, member of and contributor to the ITE Mobility as a Service/Mobility on Demand (MaaS/MoD) Technical Working Group and Regional Lead for WATT Consulting Group's Okanagan office.*

Micromobility has exploded globally, attracting investments and customers two to three times faster than other mobility services such as car-sharing and ride-hailing. The commercialization and growth of micromobility seem to spring from the increasing density of cities and the resulting need to move more citizens through existing transportation networks. While transit is undoubtedly the backbone of transportation for most citizens for commuting or other trip purposes, micromobility has found its niche in the first and last kilometre transportation. Adding micromobility vehicles to the mix of other existing street users such as pedestrians, drivers, and cyclists can add to the already complex challenge of designing for multiple modes in a limited right-of-way.

Several organizations have addressed planning and policy considerations for micromobility vehicles, but design guidance for micromobility vehicles remains somewhat limited. In response, ITE launched a working group of individuals interested in the micromobility space to undertake the development of a Micromobility Design Guide. The Guide's main goal is to give professionals and practitioners some additional context when faced with decisions on how to accommodate micromobility vehicles. It also provides insight into other micromobility design resources. The Guide provides an easy-to-use standardized classification system for micromobility vehicles as it relates to their size, weight, top speed, and power source. The Society of Automotive Engineers (SAE) International Taxonomy and Classification of Powered Micromobility Vehicles – J3194 is the basis of that classification system, which aims to provide a commonality of terms and definitions. This classification can then be used to identify specific design challenges that specific types of micromobility vehicles might encounter. The guide takes a closer look at these design challenges and focuses on some practical options to mitigate those challenges, along with providing real-world examples of those potential solutions in action. The ITE Micromobility Design Guide is expected to be published in the spring of 2021.

CREDIT: NATHAN CARSWELL

Riders in powered non-self balancing boards in Kelowna, BC.

CITE has a strong partnership with the Transportation Association of Canada (TAC). One of our key contributions to TAC's technical projects is participation on a number of TAC councils and committees through CITE appointees. In this edition of TAC Tidbits, our appointees share updates about their committees from the Fall 2020 TAC Technical Meetings held virtually.

Chief Engineers Panel

Julia Salvini, P.Eng.
President, Salvini Consulting & President, CITE

The revised Chief Engineers Panel (formerly the Chief Engineers Council) allows for representatives from provinces and large municipalities across the country along with external agencies like ourselves to connect and discuss matters of national interest related to transportation at TAC. We had updates from the various Councils of TAC about ongoing projects and activities along with other external agencies and member agencies.

Broadly, it seems that the transition to the new Council structure has been completed and they, along with their subcommittees, are up and running smoothly. Updates from our appointees to those Councils and Committees are provided in this feature.

Other external agencies are proceeding much as we are at CITE with virtual events and ongoing connections to members. Provincial agencies and municipalities are continuing to navigate challenges related to COVID-19 and general maintenance and upgrade of facilities.

Workforce Development Council

Maureen Van Ravens, C.E.T.
Director of Transportation, Town of Halton Hills, Ontario

The Workforce Development Council (formerly the Education and Human Resources Development Council) 2020 Fall meeting met virtually on November 4 and focussed on the recent changes happening in the workplace due to COVID-19. Working from home or remotely was discussed in detail and the pros and cons of the change in environment. The Council hosted a panel discussion about the impacts of working/learning remotely. The panellists represented private, public, and academic sectors and were asked to share their organizational and/or sector perspectives on working/learning remotely.

The Workforce Council is also establishing three sub-committees with a term of reference for each that will report back to the Council.

The Sub-Committees are as follows:

- Education of future transportation sector employees
- Professional development for TAC member employees
- Human resources management in TAC member organization

The Workforce Development is finalizing sessions for the 2021 Conference. There are 4 proposed sessions anticipated.:

- Teaching Geometric Design in Post-Secondary Institutions (Panel)
- Diversity and Inclusion in the Workplace (Panel)
- Organizational Aspects Working Remotely (Panel)
- Transitioning Professional Development to the On-Line Universe (Presentation)

Over the next few months, the organizers will be searching for appropriate presenters to participate in the various sessions.

Mobility Council

Kate Whitfield, P.Eng., MCIP, RPP
Senior Associate Engineer/Planner, Alta Planning + Design - Canada, Inc.

The Mobility Council (formerly the Urban Transportation Council) continues to be a gathering of representatives focussed on discussions affecting urban centres. At this technical meeting, Tony Vi from Translink presented on Transportation Equity. He cited *TCRP Research Report 214: Equity Analysis in Regional Transportation Planning Processes* as a helpful resource. The release of new TAC reports was also highlighted including two volunteer projects: (1) Predicting Cycling Demand; and (2) Regulatory Approaches to Enabling Implementation of Bicycle Treatments: Survey of Canadian Jurisdictions.

Active Transportation Integrated Committee

Marian Mithani, P.Eng.
Client Consultant, EcoCounter

Introducing the Active Transportation Integrated Committee (ATIC)! Transformed from the Joint Active Transportation Subcommittee (JATSC) to ATIC this year, its broad goals are to raise awareness of the importance of AT, share information and collaborate across TAC, and identify emerging issues. The change has brought an increase in ATIC membership and new capabilities to lead projects and conference sessions.

In the Spring, ATIC launched tools to better track issues and to liaise with its 10 partner committees. It also initiated the development of its first project proposal for a national AT report card. Among the 36 issues documented, half relate to design guidance. Recent meeting discussion topics include vision zero, equity, and pedestrian-cyclist detours at construction sites. In the Fall, ATIC set 3 priorities: AT state of practice, national trends, and indicators (volunteer project), and the currency of TAC design guidance for AT (new working group). Conference sessions for 2021 include AT during COVID-19, winter maintenance, beyond the design guidance, and equity planning for AT.

Mobility Management Committee

Justin Bak
Senior Project Manager, Vision Zero Projects, City of Toronto

The Mobility Management Committee (MMC) is a newly formed committee replacing the Sustainable Transportation Standing Committee (STSC) and reports to the Mobility Council. The committee is a national forum for information exchange and problem-solving related to the delivery of multimodal mobility services. The broad goals are to improve the quality, availability, and integration of travel options; encourage efficient use of motor vehicles; and support effective and equitable strategies for promoting, pricing, delivering, and coordinating different modes. The MMC identified 6 priority topics of interest from the committee membership. The priority topics areas are curbside management, shared mobility services, mobility data, transportation demand management, multimodal service pricing, and goods movement. The committee will be replacing the former Sustainable Urban Transportation Award with a new Sustainable Mobility Award focusing on the committee's objectives. The committee also approved the volunteer project on Regulatory Approaches to Enabling the Implementation of Bicycle Treatments.

Connected and Automated Vehicles Task Force

Steven Kemp, P.Eng.
Manager of Traffic Engineering and Operations, Regional Municipality of Durham

The TAC CAV Task Force continues to have strong coast-to-coast representation holding its Fall 2020 meeting virtually as part of the TAC Annual General Meeting in early November. Volunteer members of the Task Force have developed a growing Inventory of Canadian CAV Initiatives, a CAV Municipal Primer for Municipalities and a shared lexicon of CAV terms and definitions that are all now available through the TAC website. Many municipalities participating on the committee are reporting plans to deploy automated shuttle projects in the year ahead. In 2021, the Task Force hopes to continue to deliver a series of webinars on technical topics related to CAV readiness and deployment.

Geometric Design Committee

Marcia Eng, P.Eng.
Senior Transportation Engineer, Urban Systems Ltd.

The Geometric Design Committee (GDC) met virtually mid-November following the Annual TAC Conference this year. The virtual conference spanned three weeks, and was well received and well attended. The Geometric Design Committee hosted the following four sessions:

- Complete Streets: How to Design Safely for all Modes
- Designing Interchanges and Major Facilities to Improve Safety
- Incorporating Geometric Design Exceptions While Maintaining Safety
- Advances in the Safe Design/Operation of Roundabouts

The committee is currently exploring topics for next fall's conference. It has not yet been determined whether it will be possible to hold it in person.

The technical meeting included updates from the five working groups reviewing chapters from the 2017 TAC Geometric Design Guide, as well as looking at climate change and over-dimensional vehicles. Chapter 4 Cross Section recently completed a detailed review and online survey to better understand what additional information can be included in a future update. Chapter 8 Access is currently pool funding a project to complete a synthesis of practice. Chapter 10 Interchange completed a first draft update and will be submitted to the Revisions and Addition committee for review. Climate change lead, Zane Sloan, is looking for PIEVC protocol participants for a potential pilot workshop at the Fall 2021 TAC conference.

The meeting also included two featured presentations on high tension cable barriers on Highway 50 in Quebec and the new Managed Lane chapter from MTO's new version of the design guide. Roundtable discussions included inquiry on accessibility standards and varying considerations between greenfield and brownfield sites. The City of Ottawa also recently completed a review of best practices for accessibility in relation to bicycle facilities.

Road Safety Committee

Pedram Izadpanah, Ph.D., P.Eng.
Partner & Vice President, TES and Secretrary-Treasurer, CITE

The Road Safety Committee (RSC) meeting was virtually held on November 12, 2020. Approximately 63 people attended the meeting, one of the highest attendances among TAC committees. The discussions were around four pillars of sharing member experience, administrative items of the RSC, and technical presentations.

The members shared their initiatives, particularly during the COVID-19 pandemic, to accommodate social distancing walking. One common observation among the members was the increase in operating speed as a result of a decrease in volumes due to COVID-19 restrictions.

The RSC strategic plan is executed by the members of four active subcommittees: Annual Conference Subcommittee, Road Safety Workforce Subcommittee, Canadian Road Safety Guide and Project Idea Subcommittee, and Vision Zero and Safe Systems Subcommittee.

Two proposals were presented and approved by the RSC: *The Development of the Road Safety Guide for Canada* and *Synthesis of Canadian Practice in Vision Zero and Safe System*.

Building Better Communities

Associated Engineering provides customized, strategic transportation planning and traffic engineering services. Complementing our technical expertise, our specialist team brings strong project management skills. Our approach is to work with the community and stakeholders to develop sustainable and resilient transportation solutions. Our services include:

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· Traffic Operations Analysis
· Safety Reviews & Audits
· Business Case Development
· Complete Streets
· Intelligent Transportation Systems
· Policy Studies & Development
· Modelling & Model Interpretation
· Transportation Master Plans
· Traffic Impact Assessments
· Preliminary Design Studies
· Intersection & Network Analysis
· Sustainable Transportation
· Pedestrian & Bicycle Safety
· Signs & Pavement Markings
· Traffic Accommodation Plans
· Traffic Signal Design
· Neighbourhood Street Plans
· Standard Reviews
· Neighbourhood Traffic Management

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The Road Safety Guide for Canada will be built on the scoping study which was completed and approved by the RSC in Spring 2020. The RSC and the TAC Secretariates are seeking approval from the TAC board to use an alternative funding mechanism to develop the Road Safety Guide for Canada. This guide will serve the TAC community as the third foundational document similar to the Geometric Design Guide for Canada and the Manual of Uniform Traffic Control Devices for Canada. The Synthesis of Canadian Practice in Vision Zero and Safe System project will be completed as a volunteer effort.

As part of the strategic planning exercise completed in 2019, the TAC RSC members expressed that they would like to see more technical discussions and presentations during the Spring and Fall meetings. The following four topics were discussed and presented during the TAC RSC meeting:

- The Importance of Health Data in Road Safety
- Update on the Road Safety Professional Certification
- Vision Zero and Safe System Definitions and Principles
- COVID-19 Traffic Impacts and Response in the City of Winnipeg

Traffic Operations and Management Committee

James Donnelly, P.Eng., PTOE
Transportation Engineer / Principal,
Urban Systems

Luis Escobar, P.Eng., PTOE
Senior Associate & Discipline Lead,
Stantec

Jim Mallett, M.A.Sc., P.Eng., PTOE
President & CEO, Paradigm
Transportation Solutions Limited

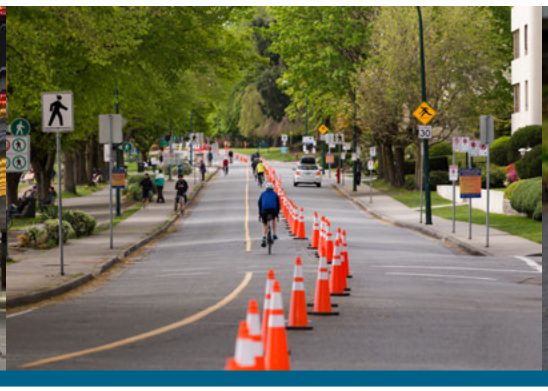
Jeannette Montufar, Ph.D., P.Eng., PTOE, RSP
Founding Partner & CEO,
MORR Transportation Consulting

Greg O'Brien, P.Eng.
Atlantic Practice Manager, Traffic Engineering and
Transportation Planning, WSP Canada Inc.

COVID-19 has undoubtedly impacted transportation across Canada. Many municipalities were tasked with altering their infrastructure and services to address the impacts.

- In Vancouver, they implemented a "Making Streets for People" program that included, slow streets, lane closures, pop-up plazas, and a "Temporary Expedited Patio" program.
- Calgary implemented an "Adaptive Roadway" program that involved closing lanes or roads (19 locations totalling 14 km), a Temporary Patio Program (120 approved), and deactivating pedestrian push buttons at over 50 signalized intersections.
- Saskatoon also deactivated 59 pedestrian call buttons at high-use intersections and implemented temporary bridge closures to maintain physical distancing.
- In Winnipeg, their "Open Streets" program to limit car traffic between 8 a.m.–8 p.m. on one block to assist in physical distancing and active transportation. They also implemented a "Temporary Patio" program and closed school streets to traffic between 8:30 a.m.–4:00 p.m. In Toronto, the "Active TO" program included a "Quiet Streets" program on local roads and major road closures on weekends.
- In Hamilton, temporary patios were implemented through the establishment of "Outdoor Dining Districts" Montreal implemented "Safe Active Transportation Circuits" that cover 112 km of roads and 88 km of redeveloped streets.
- Halifax implemented 16 km of "Slow Streets", reduced traffic signal cycle lengths to reduce pedestrian wait times, and added patio space to Spring Garden Road via a widened sidewalk.

A Community of Transportation Professionals


Letter from ITE's Executive Director

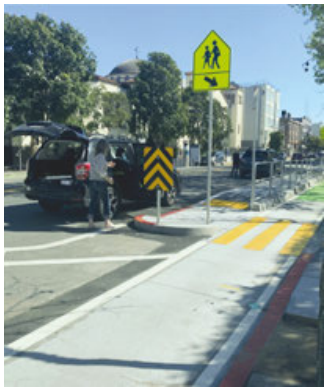
Dear ITE Member,

None of us will ever forget 2020, and this year will leave a lasting mark on society and our industry. We are in the midst of dealing with COVID-19 and its effects on people and movements. Parts of the transportation industry have been dramatically impacted, people are out of work and seeking employment, businesses are struggling, and public agencies are having to respond on many fronts. At the same time, communities and nations are wrestling with long-standing issues of social justice and equity.

With all of these challenges confronting us, it is gratifying to see how our members, volunteers, and ITE staff have responded. Our community of transportation professionals have shown that we are nimble and resilient, employing our leadership abilities and technical skills with understanding and empathy, helping to support our colleagues and our communities.

Our members have kept public transit systems operating, allowing essential workers to get to hospitals, grocery stores, and manufacturing and shipping facilities. Public spaces and streets have been reimagined to safely accommodate more pedestrians, bicyclists, and restaurants operating outside. Operational plans have been modified to support new travel patterns and modes.

ITE has stepped forward during these challenging times, helping connect people who are facing the same challenges to share their experiences. We brought you new solutions, such as how to manage traffic counts in a pandemic. We took a stand on social justice and equality and ITE provided new resources to help our members learn about these issues.



Working virtually, ITE staff quickly adapted to this new reality to ensure our members could stay connected to the ideas, people, and resources needed to help your businesses, cities, counties, and states adapt to a new world, overnight. ITE reimagined how we can bring our members together. We deployed new benefits and brought you the latest information on key issues in transportation. We've highlighted all of these new benefits and resources in the following pages.

It's been a year of unprecedented challenge and change. While we don't know exactly what the future looks like, we do know that 2020 has left an indelible mark on who we are, how we work, and how ITE will support your technical and professional growth—even in a virtual world. I look forward to your continued membership with ITE so that we can help you through this pandemic, during the transition to a "new normal," and toward a prosperous future.

Sincerely,

Jeffrey F. Paniati, P.E. (F)
Executive Director and Chief Executive Officer

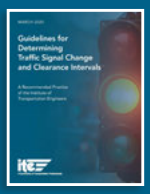
Providing Value to Members

Timely solutions and resources that were **NEW in 2020**.

What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic

Innovative Traffic Management & Control Equipment Procurement

Trip Generation, 10th Edition Supplement



Guidelines for Determining Traffic Signal Change and Clearance Intervals

Sustainable Traffic Signal Development

ITE's 2020 Virtual Annual Meeting and Exhibition, a first for ITE, was a reimagined meeting, with significantly lowered pricing and over 30+ technical sessions, and a full state of exhibitors, delivered to nearly 1,800 people. Sessions were led by experts providing content on topics our members need including:

- Increasing the Use of Multimodal Performance Measures in Decision-Making
- Multilane Mythbusting for Roundabout Mavericks
- COVID-19 Impacts on Transportation Demand, Performance, Services,, and Organizations
- Alternative Intersection Treatments
- Innovative Signal Timing and Signal Data Strategies

Our COVID-19 Resources page offers members a wealth of information highlighting real time Transportation Resources and Impacts. Visit **www.ite.org/about-ite/covid-19-resources/** for all of the details.**

ite Learning HUB

We significantly improved the value and number of professional development opportunities. In addition, we provided members a deep discount and a number of free webinars.

- The NEW Traffic Impact Analysis Training Program (TIA)
- Open streets for pedestrians and bicyclists webinar**
- ATSPM without added infrastructure webinar **
- Counts and studies during a pandemic webinar**
- Truck trip generation webinar**
- Courses in support of the PTOE, PTP, and Road Safety Professional Certifications
- The Smart Columbus program series
- Blended learning courses in partnership with the Consortium for Innovative Transportation Education at the University of Maryland (CITE)

ITE's Virtual Drop-In's are smaller, topic driven, unstructured sessions set up for members to engage on a specific topic. ITE has hosted 40+ of these sessions. Some of the most popular topics include: **

- Decorative Sidewalks
- Touchless Pedestrian Push Buttons
- Proposed Changes by the National Committee on Uniform Traffic Devices for Setting Speed Limits
- Cybersecurity and Traffic Signals

ONEite

Support for our Districts, Sections, and Chapters allowed us to be able to provide their meetings to over 2000 transportation professionals. **

GENE CHARTIER P.Eng., FITE

City of Residence: Oshawa, Ontario

Current Employment

Paradigm Transportation Solutions Limited,
Vice President and Chief Development Officer

Education

- University of Waterloo, Master of Applied Science in Civil Engineering (M.A.Sc.), 1992
- University of Waterloo, Bachelor of Applied Science in Civil Engineering (B.A.Sc.), 1991

First job in transportation

Transportation Engineer, former Borough of East York (now City of Toronto)

What positions have you taken on as a member of ITE?

Elected Leadership Positions:

- International Board of Direction (2016-18)
- Canadian District (CITE) (2005-13) (President 2009-11)
- Toronto Section (1994-99) (President 1998)
- University of Waterloo Student Chapter (1990-92) (President 1991-92)

Plus too many volunteer roles served at both the Canadian & International levels to list! See more of his contributions in Gene's ITE Vice President Candidate brochure on the ITE website.

Family: Spouse: Karen; Children: Katherine (24) and Creighton (22 & a recent graduate of the transportation engineering technology program at Mohawk College where he was the Student Chapter President); Grandchildren: Aaliyah and another on the way!

Hobbies: Coaching community and high school football, playing hockey, cycling, and traveling (when we're not in lockdown!)

CITE INVOLVEMENT

When did you first attend a CITE event?

The first CITE event I remember attending was a Hamilton Section luncheon in the summer of 1989 at the Tyandaga Golf Course in Burlington. I was a co-op student at Dillon Consulting and my manager at the time, who was the Section's Secretary-Treasurer, invited me to attend. I enjoyed the opportunity to meet and mingle with others in the profession.

A more vivid early memory was my first CITE Annual Conference in 1990 at the original SkyDome Hotel. I still remember learning about the many interesting transportation projects happening across the country, thinking what a great profession I had chosen. I also recall negotiating a discounted registration fee of $50 to attend the meeting because student participation in CITE events was unheard of at the time.

What is your ITE involvement (past and present)?

ITE has been my organization of choice for over 30 years. Since joining as a student member, I have had the opportunity to serve the organization in a range of elected and volunteer roles at the student chapter, section, district, and international levels. Of my many ITE experiences, three particularly resonate with me:

- Helping lead the development of the first *TAC/CITE Canadian Guide to Neighbourhood Traffic Calming* in 1997 and 1998 was a career highlight. With traffic calming new to Canada and the US at the time, the project drew considerable interest and acclaim from across the profession and both sides of the border, helping to raise CITE's profile and relevance.
- Serving on the CITE Executive Committee from 2005 to 2013 and 2016 to 2018 was immensely rewarding (and at times challenging). Having the opportunity to help guide the organization over

this period of considerable growth, both in membership and sophistication, taught me invaluable lessons about leadership and service.

- Chairing the Local Arrangements Committee for the Joint ITE/CITE 2017 Annual Meeting and Exhibit in Toronto was arguably my most gratifying ITE experience. I took immense pride and pleasure in helping to deliver a successful event in my home country and city, as well as establishing a model for cooperation between ITE and its districts.

What do you value most about ITE membership?

The friendships and acquaintances I have made. ITE offers a kinship unlike any organization I know.

GETTING TO KNOW YOU

What attracted you to the transportation profession?

Coming out of high school, I applied for electrical engineering but my preferred school, the University of Waterloo, offered acceptance into their civil program instead. During the second semester, we took a "Civil Engineering Concepts" course. I had always had a fascination with anything related to mobility and travel, so the "transportation" material immediately resonated with me. I was hooked. I never again contemplated transferring to electrical engineering.

What is your favourite mode of transportation?

I have always been captivated by trains and prefer to travel by rail if I have the choice. Over the past year, because of the pandemic, I have renewed my childhood passion for cycling. Becoming a more avid cyclist has also helped me as a transportation practitioner because I better understand the nuances and challenges of planning and designing for active travel.

PROFESSIONAL ACHIEVEMENTS & PERSPECTIVES

What is one aspect of your work that you particularly enjoy?

Mentoring students and young professionals in hopes the next generation can learn and grow from my lived experiences (and missteps). I especially enjoy the unique opportunity I have right now to share these life lessons with my son, who is just entering the profession.

Who has had the greatest influence on your career?

Early in my career, I had the good fortune to work for two individuals who profoundly influenced me. The first is Jim Horton, who introduced me to the transportation engineering field when I was a student. Jim taught me invaluable lessons about being a professional and instilled in me the confidence and incentive to pursue a career in transportation, for which I will always be grateful. The second is John McGill. A respected member of our professional community and past recipient of CITE's H. Robert Burton Distinguished Service Award, John gave me my first job out of university and then provided innumerable opportunities to grow and mature as a young engineer. To this day, Jim and John remain trusted and valued mentors, advisors, and most importantly, good friends.

Projecting yourself into the future, what will you hope to have accomplished at the end of your career?

I would like to think I helped the world become a better place by making it safer and easier for people and goods to move. The events of the past year have also helped me realize I still have more to give back to our profession before my career concludes, which is part of the reason why I put my name forward as a candidate for 2022 ITE International Vice President.

If you could change one thing about the transportation practice, what would it be?

I would like to see the profession become more diverse and inclusive. We need to encourage participation from traditionally underrepresented groups to pursue careers in transportation and become members as well as leaders in ITE. Fostering diversity and inclusion will be critical to building a strong, resilient workforce of individuals with higher skill levels, a more varied base of disciplinary perspectives, and adaptability in the future. It will also help us better tackle the issues of transportation equity and justice to ensure our mobility systems truly serve the diverse needs of different communities and our actions as practitioners do not disproportionately burden or harm disadvantaged populations.

ROSANA CORREA PE, PTOE

Hobbies: Working out (high interval training), outdoors (running and hiking), travel, and going to sporting events

City of Residence: Tampa, Florida

Current Employment

Jacobs, Project Manager/Senior Transportation Engineer

Education

- MS, Civil Engineering, University of Puerto Rico, 2000
- BS, Civil Engineering, University of Puerto Rico, 1996

First job in transportation

Tren Urbano Office in San Juan, Puerto Rico

What positions have you taken on as a member of ITE?

- University of Puerto Rico at Mayaguez ITE Student Chapter (1997 President)
- Tampa Bay Chapter Board 2004–2007 (2006 President)
- Florida Section Board 2009–2012 (2011 President)
- ITE International Board of Directors (2014–2016)
- 2015 ITE Annual Meeting Chair

Learn more in Rosana's ITE Vice President Candidate brochure on the ITE website

ITE INVOLVEMENT

When did you first attend an ITE event?

Besides the ITE student chapter events, my first big ITE event was the 2001 ITE Annual Meeting in Chicago.

What is your ITE involvement (past and present)?

I have been involved in ITE for over 20 years starting with the Student Chapter at the University of Puerto Rico at Mayaguez. When I moved to Tampa in 2002, I became active in the Tampa Bay Chapter, Florida Section/District 10 and was part of the ITE International Board of Directors from 2014-2016. One of my proudest moments was helping in the reactivation of the ITE Puerto Rico in 2010 when I was part of the Florida Section Board.

What do you value most about your CITE membership?

Besides the technical knowledge and the leadership and growth opportunities, I value the friendships I have made along the way.

GETTING TO KNOW YOU

What attracted you to the transportation profession?

Taking the transportation course in undergrad, they showed a video of a traffic management center and all the things the staff do and the possibilities of things that can be done, and I knew then that Traffic Operations was what I wanted to do. Also, we did field trips to understand the operations of traffic signal and operations of corridors.

What is the most daring thing you've done in your lifetime (that you're willing to see in print)?

Moving from Puerto Rico to Tampa in 2002 after I accepted an engineer in training position. I did not know anyone in Tampa or the being in Tampa Bay area before. I stayed in a hotel for two weeks until I found a place to live and rented a car until I was able to buy one.

What is the last book that you read?

Lean In by Sheryl Sandberg

What is your favourite mode of transportation?

Train

PROFESSIONAL ACHIEVEMENTS & PERSPECTIVES

How would you describe your job to someone you just met at a party?

I help my clients identify solutions that can be implementable to improve operations and safety of a corridor, intersection or interchange.

What are one or two projects that you're most proud to have worked on?

The first one was Parking and Traffic Management for a Regatta event in San Juan in May 2000. The second one is the FDOT SIS Contract that I am currently managing because we have seen the concepts of around 13 different improvements developed during the planning/feasibility phase being moved all the way to the construction phase.

Have you pursued any professional designations through ITE?

I have the PTOE certification since 2006. The PTOE certification has become a very important credential to have for employment and clients value the certification.

Projecting yourself into the future, from an end-of-career perspective, what will you hope to have accomplished?

Inspire and mentor young transportation professionals

What is the greatest opportunity you see for the field?

With the pandemic and the events that happened this year, communities are looking on way to improve access, mobility options, and equity for all. We, as transportation professionals, have the opportunity to help reshape our communities ensuring equity for all users through thoughtful context sensitive planning and designs, establishing partnerships, and most importantly engaging the communities we serve.

ITE International Elections

In this special edition of CITE's Member Highlight, we shine a light on the two candidates running for the 2022 office of ITE International Vice President, presented in alphabetical order:

Eugene (Gene) G. Chartier, P.Eng.
Canadian District

Rosana Correa, P.E., PTOE
Florida Puerto Rico District

More information on each candidate, including full summaries of their ITE contributions, is available in their brochures on ITE's website. The election ballot will open on February 10, 2021 at 12:00 noon ET and will close at 12:00 noon ET on March 12, 2021. Keep an eye on your inbox for more information from ITE about the election.

A Primer on Affordable Housing

The Role of Transportation Professionals

Cornerstone Community Association
Durham Inc., Barry Bryan Associates
Oshawa, Ontario

CREDIT: BARRY BRYAN ASSOCIATES

BY SUZANNE SWANTON AND TIM WELCH
TIM WELCH CONSULTING INC (TWC)

While communities across Canada rally to build affordable rental housing to respond to the housing and homelessness crisis, it is important to understand how affordable housing is defined in practice, the barriers to creating affordable housing, and how transportation engineers and planners, along with other municipal staff, can assist in its development. This article focuses on legislation and policy in Ontario but has applications for transportation professionals across Canada.

What do we mean by affordable rental housing?

The guiding definition for affordable rental and ownership housing in Ontario can be found in the *Provincial Policy Statement (PPS) 2020*, which sets the rules for land use planning in the province. The *PPS 2020* defines affordable rental housing as:

- A unit for which the rent does not exceed 30% of gross annual household income for *low and moderate income households*; or
- a unit for which the rent is at or below the average market rent of a unit in the *regional market area*.

The *PPS 2020* defines low and moderate income households as households with incomes in the lowest 60 percent of the income distribution for renter households in the regional market area.

Typically, most new affordable housing constructed by not-for-profit organizations charge rents below Canada Mortgage and Housing Corporation (CMHC) average market rents.

Who is building affordable rental housing and for whom?

For those community organizations on the front lines, the housing and homelessness crisis is not new. Non-profit housing providers (including non-profit co-operatives) have traditionally built rental housing for low and moderate income households. Starting in the 1990s, two decades of austerity

measures from senior levels of government saw a lack of investment in the non-profit and co-op housing sectors in Ontario.

In May 2019, the Ontario government released the *More Homes, More Choice Housing Supply Action Plan* to provide government strategies for meeting the affordable housing needs of low and moderate income households such as reducing red tape and expediting planning approvals. The federal government, meanwhile, announced the *National Housing Strategy* in November 2017—a 10-year, $55+ billion plan to address a number of housing and affordability issues.

With renewed investment from governments in recent years, non-profit housing providers—including non-profit and private partners—find it very difficult to secure land and funding/financing, achieve planning approvals, and build the units at a pace fast enough to meet the demand. The national vacancy rate for purpose-built rental apartments for all-bedroom types declined to 2.2% for a third consecutive year in 2019, as strong rental demand continued to outpace growth in supply. In addition, given the significant increase in rents over the past decade, more households are in need of an affordable unit and/or a rent subsidy.

Non-profit housing providers dedicate a portion, if not all, of the proposed units for low-income households such as those receiving social assistance. Ontario's social assistance rates (as of July 2020) illustrate the severe housing need these households are in. For example, if you are a household with one parent and one child receiving Ontario Works (OW), your **monthly income is $1,123.75**. Ontario Works is divided into a maximum shelter benefit of $642, a basic needs portion of $360 and a maximum Ontario child benefit of $121.75. For a single parent and one child receiving the Ontario Disability Support Plan (ODSP), **monthly income is $1,717.75** of which the maximum shelter portion is $781 per month, $815 for basic needs and maximum Ontario Child Benefit of $121.75 monthly. The maximum shelter portion $642 (OW) and $781 (ODSP) falls significantly short of the average rent of $1,339 for a two-bedroom unit in Ontario.[1] In fact, for a family receiving OW, their entire monthly household income is less than the cost of the average two-bedroom apartment. This same family receiving ODSP would spend 78% of their monthly income for rent.

While lack of a sufficient income to meet housing needs is a significant contributor to the housing and homelessness crisis, the low supply of affordable rental housing is also a critical factor. Non-profit housing providers planning to build affordable housing will typically apply for capital investment through a competitive process to senior levels of government. This will be either to CMHC directly or through the Consolidated Municipal Service Manager (City or Region/County) that administers housing programs. This government investment will be a combination of forgivable loan and long-term financing. Non-profits and co-ops creating rental housing today commit to below market rents (for example, 80% of average market rent) for the duration of the contribution agreement set out by the funder, typically a long period of 20 to 50 years.

The challenge for non-profit housing providers is to offer lower rents needed by the households they are mandated to provide housing for while, at the same time, generating sufficient revenue to cover operating and mortgage costs. In order for projects to be viable and also ensure rents do not exceed 30% of gross annual household income, affordable housing built within the current funding context must use other measures such as rent subsidies to make newly created rental housing truly affordable.

What are the barriers to building affordable rental housing?

Organizations taking on a development project must have resources, such as land and/or cash, to move their project forward to the point where government funding and financing is an option. They must have a viable business plan and the resources to undertake a number of pre-development activities. Most often, government funders require that a development is shovel ready and, if approved, capital funding from federal and provincial sources flows once a building permit is issued. This creates a significant barrier for many

Continued on page 25...

[1] Canada Mortgage and Housing Corporation (CMHC). *Rental Market Report - Fall 2019*

projects: securing the necessary capital to complete due diligence and planning approval activities. If a group has an offer on a property, or even if they own property, they will be completing a survey, geotechnical report, and Phase 1 Environmental Site Assessment, to name a few of the necessary reports and plans. Fortunately, Canada Mortgage and Housing Corporation (CMHC) provides some modest seed funding for this purpose but, as expected, the costs mount quickly.

Most land today that could be attainable for the development of affordable housing will require a rezoning, possible Official Plan amendment, and/or environmental clean-up, all expensive processes for non-profit developers to undertake. Through the development application process, many affordable housing projects experience NIMBY (not-in-my-backyard) challenges which can result in costly and time consuming appeals.

The role of transportation professionals in affordable rental housing

Non-profit housing and co-operative proponents will specify in their development application the level of affordability they are targeting and the income levels of future tenants. This is an important consideration for transportation professionals evaluating the planning approvals required for a proposed affordable housing development. It is important to ask the question: are studies such as a parking justification and transportation impact study actually necessary? Traffic and parking studies, which can add an additional $10,000 in soft costs, create additional pressure on already tight budgets.

As previously noted, affordable housing developments are providing housing to households that don't typically have the income to afford rent and basic needs. These are generally households without a personal vehicle; therefore, parking demand is considerably lower than what would be required for a market rental building. Based on TWC's experience with development of over 40 affordable housing buildings in southern Ontario, parking for tenants, visitors, and staff can be achieved with parking ratios in the range of 1.0 space per unit in smaller towns and, in larger towns and smaller cities, ratios of 0.5 to 0.75 would be adequate. In larger cities like Toronto and Ottawa, parking ratios can be less than 0.5 depending on proximity to high order transit and, in many cases, drop to zero for supportive and transitional housing.

One example of such a project is the Cornerstone Community Association Durham's new 21 unit supportive housing building in Oshawa, Ontario (population: 160,000) pictured on the first page of this article. Construction is nearing completion with 6 parking spaces specified. Based on the organization's current housing portfolio, no tenants of this building are expected to require parking. In fact, the project redevelops the underused parking lot adjacent to the organization's existing three storey housing project. The project architects, Barry Bryan Associates, explain, "The project places the

Housing Cambridge/Home Concept Property Management, Martin Simmons Architects, Cambridge, Ontario

CREDIT: TIM WELCH CONSULTING INC.

need for public space over the need for parking, minimizing parking in order to gain valuable public amenities at the rear of the site."

Another example is the 23 unit, three storey apartment building with 11 parking spaces built for Indigenous households by Sacajawea Non-profit Housing Inc. in December 2019. Located adjacent to a major transit corridor in the City of Hamilton (population: 519,949), the reduced 0.47 parking supply ratio is sufficient for visitors and the five current tenant households that have a vehicle (representing a 0.22 parking demand ratio).

Finally, we consider a 34 unit apartment building with 19 parking spaces completed in 2018 by Housing Cambridge, the municipal non-profit housing organization in the city of Cambridge, Ontario (population: 130,000). The reduced parking supply ratio of 0.56 has proven sufficient to provide parking to the 11 tenants who currently have vehicles (a 0.32 parking demand ratio).

These examples demonstrate the value of thoughtful consideration from transportation professionals on all sides of a project about the stakeholders' needs. Recommendations that are appropriately scaled can help reduce barriers in the funding and development process. Once land is secured by a non-profit organization, there is an understanding that a non-market asset has been created that will benefit the community for decades to come.

Sacajawea Non-profit Housing Inc., Two Row Architect
Hamilton, Ontario

Concluding Remarks

Transportation professionals play an important role in supporting individual affordable housing projects. They can also influence the systems and structures in place that make it challenging for these projects to get off the ground. For example, a recently proposed 12 unit supportive housing project located in a subdivision in a small Ontario municipality requested a 0.5 parking ratio. While there was municipal staff support for this development, the local policy did not align and a parking justification and traffic impact report were asked for in this case. It is important that municipal staff ensure that policies in their Official plan and zoning by-laws do not create unnecessary barriers to achieving local and provincial affordable housing objectives.

In terms of traffic impact, many affordable housing developments are projects of 50 units or less and, therefore, the traffic impacts will be minimal, especially considering the relatively low vehicle ownership rates of tenants. In these cases, a letter describing the project, along with a description of the future residents, income levels, and the likely transportation characteristics of the project is appropriate and more useful than a full traffic impact study.

Given the policy environment encouraging the development of affordable housing, transportation professionals and other municipal staff associated with planning approvals play an important role in its creation. Some studies are necessary to assess a development application; however, it is important for planners to request, and transportation professionals to provide, information that is relevant and fits the scale of the affordable development being proposed. Minimizing costs and studies helps bring these developments to fruition and provide much needed affordable housing to communities across Canada.

Tim Welch Consulting Inc. (TWC) is a full-service housing research, planning and development firm that has helped clients achieve their affordable housing goals since 2003. As a recognized expert in policy, advocacy and the creation of affordable housing, TWC's creative solutions are in demand by community-based housing organizations, private sector developers, municipalities and other groups interested in innovative, affordable housing options.

"Affordable" Housing in Metro Vancouver

Assessing parking needs for below market rental housing

BY GARY VLIEG, *CTS*

The term "affordable" housing has many meanings for different people and it is highly dependent on where you live and what your income is. A more generic definition that allows for variations in income and regional housing costs looks at two elements: average cost of housing and average household income for that region. There is an implied assumption that average income is related to regional cost of living, i.e., if you live in an expensive region, your household income will reflect the increased costs. The Canada Mortgage and Housing Corporation (CMHC) offers the following definition: "In Canada, housing is considered "affordable" if it costs less than 30% of a household's before-tax income." The economic variation across the country must not be forgotten, however; "affordable" housing in Metro Vancouver would be considered "unaffordable" in most parts of Canada, with Toronto being the lone exception. Other terms used in the discussion around affordable housing are "below market rental" or "non-market rental".

PHOTO CREDIT: ADITYA CHINCHURE | UNSPLASH

Within the broader context of British Columbia, there has been extensive debate regarding the housing affordability crisis both in Metro Vancouver and Greater Victoria. Various levels of government have been involved either through the direct provision of housing (BC Housing, Metro Vancouver Housing) or through the provision of financial incentives (e.g., federal subsidies or municipal zoning relaxations). One of the key financial incentives that directly impacts the transportation component of a project is the provision of parking.

As anyone associated with the development industry will tell you, the key element in making a project profitable (or in this case, ensuring affordability) is to keep construction costs down. In Metro Vancouver, underground parking construction costs start at $50,000 per stall and can easily reach $70,000 per stall depending on geotechnical considerations. Therefore, determining an appropriate parking rate is key to a sustainable financial model. This is particularly relevant for below market rental housing where tenants are less likely to own a car because of their income and the appropriate rate may be less than what is contemplated in the zoning bylaw. While it is important to keep soft costs down, if the parking requirements in your municipality do not specifically allow for reduced parking for affordable housing, undertaking a parking variance study could be very cost effective as the cost of the study is typically less than the cost of a single underground parking stall.

Figure 1. Project study site in the District of West Vancouver

This article focuses on a specific project in the Metro Vancouver region during the planning phase. CTS has been involved in a project with the District of West Vancouver (DWV) to provide transportation engineering advice to support a primarily residential development that consists of two tenures: below market rental and market condominium. The intent is that the market condominium units would assist with the cash flow requirements needed to provide the below market rentals. The project is located immediately adjacent to a major recreation centre (offering an ice rink, swimming pool, and tennis courts) and an elementary school and is located less than 400 metres from a significant east/west transit corridor. See Figure 1.

To provide some context, the DWV undertook an economic analysis of housing costs and income for the DWV specifically. It should be noted (before your eyes pop out of your head) that this area is one of the most expensive in BC.

West Vancouver median housing price		Down payment at 20%
Single Family	$2,786,551	$557,301
Low Rise Apartment	$850,399	$170,079
High Rise Apartment	$752,189	$150,438

The average annual household income in DWV is approximately $90,000. The cost of housing ranges from 8.36 to 30.96 times the average annual household income.

Continued on page 29...

To contextualise this, during the 1960's and 1970's and even during the 1980's, the typical multiplier from average annual income to buy a single family dwelling was 10. Using the CMHC guideline of 30% and the average annual household income of $90,000 equates to $27,000 per year or $2,250 per month spent on housing. If we imagined a household could live for free, it would take six years to save the down payment and then the monthly mortgage payments would exceed the $2,250 guideline by more than 25% for the lowest cost option in the table above.

For the DWV project, our analysis started with the ITE Parking Generation Manual, 5th Ed., where the proximity to transit translates into a 15% decrease in parking demand (1.12 stalls per dwelling unit versus 1.31). Comparing typical multi-family housing and affordable housing with income limits is 1.31 stalls versus 0.99 stalls per dwelling unit, respectively. The net result being that there is a demonstrated reduction in parking demand for affordable housing and proximity to transit. When other Metro Vancouver jurisdictions were surveyed, the rates ranged from 0.90 to 1.2 stalls per unit including visitor parking at either 0.1 or 0.2 stalls per unit.

In 2018, Translink (the transportation authority in the region) and the Metro Vancouver regional government undertook a Regional Parking Study and found, generally, that there was an oversupply of parking for apartment style multi-family development in the order of 35%. The study found a direct correlation between parking demand and unit size (smaller unit = lower demand) as well as parking demand and proximity to transit (closer to transit = lower demand). The survey also specifically looked at "non-market" rental buildings (with a very small sample size) and found, based on a single Parking Facility Survey described as non-market rental, that the parking supply was 0.33 stalls per dwelling unit and the parking demand was 0.14 stalls per dwelling unit. Based on household surveys of the same tenure, with a sample size of 28, the parking supply was 0.90 stalls per dwelling unit and the parking demand was 0.43 stalls per dwelling unit.

Based on our research and analysis and the specific site considerations, the recommended parking rates were for the subject site:

- Strata: 1.0 stalls per unit (0.9 stalls per unit plus 0.1 visitor stalls per unit)
- Below Market Rental: 0.9 stalls per unit (0.8 stalls per unit plus 0.1 visitor stalls per unit)

These recommendations were based not only on the quantitative analysis but a qualitative assessment of travel behaviour in the DWV. Currently, automobiles comprise an 80% modal share and, even with aggressive alternate mode marketing and assuming a 100% increase in the pedestrian, cycling and transit modes, 60% of

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FURTHER READING ON PARKING & AFFORDABLE HOUSING

Parking Requirement Impacts on Housing Affordability

Todd Litman, Victoria Transport Policy Institute

This report provides extensive analysis of parking requirements, demand, development costs, and alternative parking management strategies that can increase housing affordability.

Local Housing Solutions

This US-based housing policy platform offers resources and guidance to help cities develop housing strategies, including an overview of factors to address for jurisdictions considering reduced parking requirements.

City of Victoria Parking Reduction for Affordable Housing

The City of Victoria zoning bylaw reduces the requirement for parking spaces for affordable dwelling units through a legal agreement

trips will be made with the automobile. There is also the consideration of what the community would be willing to accept. Given that there are no below market housing projects within the DWV that could be used for a proxy survey, it was deemed prudent to be conservative until such time that more data became available; area residents were not keen on having residents from the new development parking on "their" streets.

During the public open houses that were undertaken for the project, a number of people expressed concerns about traffic and parking as there are existing parking problems in the area due to the popularity of the recreation centre. When it was pointed out that below market rental housing residents are more inclined to have one or fewer cars per household, that the site has good proximity to frequent transit service, and that the site is immediately adjacent to the recreation centre and to the elementary school, people were more understanding of the recommendation for a lower parking rate.

Anecdotally, when speaking to a person directly involved in the provision of below market rental housing, they noted that the surplus parking found in a number of buildings is being repurposed. The re-purposing includes additional storage for residents, storage for third parties and, in some instances, data warehousing.

Regardless of what community your project is located in, here are a few "tips" that I would offer to those assessing parking needs in below market rental housing projects:

- Work with staff to consider the unique circumstances of the project
- Check the project specific details for proximity to services (including transit)
- Investigate the economics – income versus housing costs
- Research other communities and check for applicability to your situation

Reducing the quantity of parking being provided can be very effective in reducing project costs, particularly when land or construction costs are high. However, the degree to which the parking supply can be reduced is dependent on finding balance between the competing factors and priorities for all project stakeholders.

I would like to thank Mark Chan, Vanessa Garrett, and Ingrid Matthews of the District of West Vancouver for having CTS as part of their team and Dominique Guevarra for his technical assistance on the DWV project.

Gary Vlieg, P. Eng. is a registered Professional Engineer (P.Eng.) in British Columbia, Alberta, and the Yukon, with over 33 years' experience in the field of traffic engineering, traffic operations, transport planning and project management throughout Western Canada and New Zealand. He is the Branch Manager for the CTS Okanagan office, based in Summerland. Gary and Laurel live in Naramata within easy walking distance of Lake Okanagan and many vineyards, wineries, and distilleries.

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Driver Behaviour in Connected Vehicles

Effect of Connected Cruise Control Equipped Vehicles on Traffic Operation and Safety

BY IYAD SAHNOON
UNIVERSITY OF CALGARY

Background

Existing road transport systems both in Canada and worldwide face operational, safety, and environmental challenges. Congestion reduces the quality of life for Canadians and has a high environmental and economic cost to governments and society. With increasing urban sprawl, traffic flow can be improved by increasing road capacity to accommodate more vehicles through the building of new highways and/or additional lanes. However, providing more unmanaged road capacity does not guarantee the dissolution of the problems. More sustainable and smart approaches are needed to alleviate these problems by utilizing available technology to propose more efficient treatments.

Connected vehicles (CV) are emerging as the next wave of technology in our transportation system to further support drivers' decisions with in-advance information. CV technology has many promising applications that can improve road operation and safety levels. In fact, we need to continuously understand motorists' driving interactions with CV, as they will share the road with human-driven vehicles.

CV supplemented with advanced driver support systems could keep the motorists aware of surrounding road conditions as well as support part of their driving tasks. Adaptive cruise control (ACC) has been proposed as a solution to maintain a safe distance from the vehicle in front. However, ACC has not been found to be largely effective in mitigating speed fluctuations propagating upstream in the traffic flow as it only responds to its immediate predecessor (Barber et al., 2009). Thus, Cooperative Adaptive Cruise Control (CACC) was developed to overcome this limitation and provide some automation in the driving. Research has shown that CACC benefits will be more obvious if all vehicles in a platoon are equipped and that the process depends on the platoon's leader. Connected cruise control (CCC) was then found to be a cooperative technology to fill this gap. CCC is an advanced CACC, which receives information from vehicles that are beyond our direct line of sight (Shladover et al., 2015). It can be used as a driver assistance system to warn drivers about different road information to proactively act and prevent undesired events. Moreover, CCC does not require a fixed communication structure or a designated leader.

Problem

Research has proven CV technology benefits different aspects of road operation and safety. While a solid base to analyze the effectiveness of this technology on the transportation system has been established, many questions about the interactions between human-driven and CCC-equipped vehicles as well as their impact on roadway throughput and safety levels are still unanswered.

Research Objective

This research investigates driver behaviour in a connected environment using a driving simulator, pictured below and to the left. Participants are asked to run a virtual simulation and drive behind a CCC-equipped vehicle within a vehicle platoon supplemented with an advisory message feature. Messages about a downstream hazard with different delivery types are communicated to the participants to observe which type is more effective on their perception and compliance. Also, different connectivity configurations between the simulator and the platoon vehicles are examined to study how they influence behavioural reactions.

Besides the influence of this emerging vehicle technology on road safety, different social and behavioural characteristics will be studied to explore their relationships with CV acceptance. It is important to mention that drivers' cooperation and compliance are keys to taking full advantage of the benefits of CV.

Initial Results

Currently, the study is at the data collection stage where participants are recruited to run the driving simulator. As part of the simulation experiment, participants have to fill out a questionnaire, which has questions about their demographics, driving behaviour, and their participation feedback. Below is a selected representation of the responses collected so far with findings from one simulation scenario.

- 70% of the participants said that the visual warning/advisory message delivery type about a downstream hazard was either "very effective" or "somewhat effective"
- 100% of the participants agreed that the auditory message delivery type is either "very effective" or "somewhat effective"
- Only 20% of the participants said that receiving messages in both types (i.e., visual and auditory) is more effective
- All the participants slowed down after the message was delivered to them. However, 30% of them thought that the message delivery time was improper.

Other simulation scenarios will be tested. More participants are planned to be included and the results will be updated. Statistical relationships between driving behaviour and participants' demographics will be investigated at a later stage.

Once completed, this study will provide a better understanding of driver behaviour with CV technology to support improved policy, infrastructure, and industry development.

ALL PHOTOS CREDIT: IYAD SAHNOON

Iyad Sahnoon is the 2020 winner of the CITE Dr. Michel Van Aerde scholarship. He received his B.Sc. and M.Sc. degrees in Civil Engineering from the University of Sharjah, UAE. Currently, he is a Ph.D. candidate in Transportation Engineering at the University of Calgary, Canada. His research interests are road safety, driver behaviour, and connected and autonomous vehicles.

About this Research

This work is supported by the Natural Sciences and Engineering Research Council of Canada (NSERC), Alberta Innovates, Alberta Motor Association, Canadian Institute of Transportation Engineers (CITE), WSP Canada Inc., and Transportation Association of Canada (TAC) Foundation.

Where There's a Will, There's a (Virtual) Way

A Reflection on Organizing Virtual Events in Unprecedented Times

BY MARIAM BELLO
DILLON CONSULTING & CITE NATIONAL CAPITAL SECTION PRESIDENT

The transformation of the historic Elgin Street in downtown Ottawa into a multimodal main street has generated a lot of local buzz over the last few years. Running from Confederation Square near Parliament Hill to the Queensway (a provincial highway running through urban Ottawa), Elgin Street is a bustling corridor filled with various restaurants, stores, and services in close proximity to the famed Rideau Canal.

In anticipation of the project's completion in 2020, the National Capital Section (NCS) had planned to organize a springtime technical tour of the transformed corridor—possibly with stops along the way to sample a few bites at local restaurants—inspired by a walking/eating tour of the 17 Avenue SE BRT corridor in Calgary organized by the Southern Alberta Section in 2019. However, like almost all other well-intentioned plans in 2020, the plans for the tour were impacted by the COVID-19 pandemic.

The NCS Executive was still determined to hold the event in a virtual format but we encountered new challenges. The team first had to figure out the mechanics of putting on a virtual tour. We also had to find willing speakers comfortable enough to present on a project of this prominence and magnitude. Coincidentally, the search for speakers came at a time when many professionals were overwhelmed with just figuring out how to cope with the "new normal" of daily life and were starting to experience "Zoom fatigue" from the significant influx of new online content.

The final solution for the tour mechanics was borrowed from our ever-innovative peers at Mobycon who organized a virtual cycling tour of a city in the Netherlands by gathering footage using a camera with 360-degree capabilities attached to the back of a bicycle on a tall pole accessory. Fortunately, Eric Stewart (the outgoing Past-President of NCS) and I had access to a 360-degree camera and an extendable "selfie stick" through our employer. We gathered footage of Elgin Street in early September, a task that also gave us the opportunity to engage in everyone's favourite pandemic summertime activity—a socially distanced leisurely walk. The timing of the footage was perfect as the streetscaping along the street was mostly complete, the new public art was installed, the street was free of snow piles, and the City of Ottawa's e-scooter pilot was still ongoing, allowing us to capture a variety of modes travelling along this new complete street.

NCS's virtual tour of Elgin Street took place in early December to an audience of nearly 60 professionals from across the country, thanks in no small part to the dedicated work of our great events team consisting of Nii Noi Akuetteh and Jordan Papazoglou. The tour was "led" by Vanessa Black, the City of Ottawa's project manager for the functional design phase of the Elgin Street Renewal project, and Ron Clarke of Parsons who was the consultant project manager of both the functional and detailed design stages of the project. Vanessa and Ron were able to play the footage for the audience via screen share, pause as

The Elgin Street virtual tour 360° video highlighted multimodal improvements on the main street and showed the City of Ottawa's e-scooter pilot in action

needed, and orient their view to focus on different aspects of the street. Vanessa and Ron also provided commentary about various aspects of the project as the group "walked" along the transformed Elgin Street. The event was well received and generated a very active Q&A session at the end of the presentation.

Looking Forward to a Mostly Virtual 2021

It's sometimes easy to forget that almost all of the technology that we now use daily to virtually connect and complete our work existed long before the first case of COVID-19 was confirmed anywhere in the world. We just never had the incentive that we do now to realize the full potential of this technology. I'll be the first to admit that virtual events aren't perfect; they are often clunky and plagued by technical difficulties and user errors. They also can't fully replace the experience and sense of community that comes with in-person events. But over the last year, we've all witnessed the potential of virtual events and technologies. The NCS virtual webinars have attracted people from across the country, which is a feat that I don't think can be said for our in-person events of the past. Our virtual audiences are bigger than they typically were in-person and having CITE recordings of our events on YouTube makes the knowledge shared at our events accessible to more people than ever before. And this applies to events outside of CITE too. In my work, I am noticing that the use of virtual tools like online panel sessions or presentations (which are recorded and made available to anyone who may have missed them), collaborative virtual whiteboards, interactive mapping, and more are enabling a greater number of people to proactively engage with the transportation projects that affect their local communities.

Though the technology is out there, it takes some creativity to put on a successful online event and extra creativity (or extra anything) can be a difficult ask at a time when everything in our lives has been turned upside down. So in this virtual reality, I am grateful to have the opportunity to learn from the experiences of our peers in other Sections and in the industry, and to use their innovative ideas to organize NCS events. These events enable us to share knowledge about best practices in transportation planning and engineering with professionals from across the country. Here at the National Capital Section, we look forward to a new year of programming that continues to use virtual technologies in innovative ways to contribute to the growth and development of our local transportation community.

Mariam Bello, P.Eng. is a Transportation Planner with Dillon Consulting, specializing in multimodal strategic planning and transportation policy development. She is passionate about making transportation systems more equitable and including more voices in the decision-making process. Mariam also currently serves as the President of the National Capital Section of ITE.

Greater Vancouver Section

In December 2020, the Section presented the annual section awards virtually to the following recipients:

Bill Curtis Award (Transportation Project of the Year)

Alex Fraser Bridge Improvements

- BC Ministry of Transportation & Infrastructure
- R.F Binnie & Associates Ltd.

Mavis Johnson Award (Road Safety Project of the Year)

City of Richmond Road Safety Improvement Program: Top 20 Collision-Prone Locations

- City of Richmond
- ISL Engineering and Land Services
- G. Ho Engineering Consultants

Young Professional Award

Alvin Tse, P.Eng.

Please join us in congratulating these individuals and project teams on their outstanding contributions to the local transportation engineering industry and communities.

Looking forward to 2021, we are pleased to welcome Breanna Jackson as our new treasurer. The returning members of the executive team include Cameron Perkin as President, Jael Lumba as Vice-President, Khelen Upadhyay as Secretary. We would like to thank Amy Do for her hard work and dedication to the GVITE Section as she leaves her executive position in 2020.

The UBC Student Industry Night will be held on February 11, 2021 and will be an opportunity for students and industry professionals to interact. This is the first time this event is held online due to Public Health Orders in British Columbia.

Northern Alberta Section

For the first time ever, the Northern Alberta Section held annual awards to recognize the outstanding transportation professionals that lead our community and the great work that happens in Northern Alberta. We handed out three awards in 2020 including two "Project of the Year" awards because we received so many great nominations, we couldn't choose just one:

NextGen Star (<35)

Dr. Suliman Gargoum

Chief Research Officer of Nektar 3D Consulting Inc, focusing on the applications of sensor data in highway design and transportation infrastructure management and has over 30 peer-reviewed journal and conference papers over the past few years. This award recognizes Suliman's significant contributions made to the transportation engineering and planning industry at the University of Alberta, in Edmonton, and beyond.

Project of the Year

Safe Mobility Strategy

The Safe Mobility Strategy explicitly ties traffic safety to the vision and goals of the City of Edmonton; and it builds upon the traditional disciplines of the 5 Es by integrating equity and empathy principles in its development. This project includes development of 'High Injury Network', gender-based analysis plus (City first) and equity analysis to ensure lived experiences of all residents are considered.

Project of the Year

Shared Streets and Lane Closures

City of Edmonton Traffic Operations, along with numerous internal partners, worked to implement over 28 kilometres of lane closures and shared streets to safely accommodate people walking and biking as people adjusted to the realities of the pandemic. This initiative was rapidly developed and implemented over a period of just two months.

Southern Alberta Section

The Southern Alberta Section (ITE SA) held an interesting luncheon webinar in November 2020 to wrap- up the 2020 monthly luncheon webinars. ISL Engineering presented on the Highway 3 Functional Planning Study for the twining of the highway through the Crowsnest Pass. This study developed a design for the realignment that balances the needs of local and regional stakeholders. Key constraints in this section included steep and rocky terrain, major high-pressure pipelines, the CP Rail tracks, the Crowsnest River, significant wetland and Frank Slide debris field. This presentation focused on the unique constraints and discussed the design decisions that coalesced to form the recommended plan.

In December, ITE SA held a virtual 2020 Year-End Gala, themed "Together We Are Stronger". This included a panel discussion with four torch bearers (Jen Malzer – City of Calgary, Harold Horsefall – City of Calgary, Jillian Jack – Tetra Tech, and Mia Talavera – Stantec) who are leading diversity and inclusion initiatives in their workplace. The panelists brought tremendous insight and knowledge of how their respective organizations are reaching out to their staff to provide avenues of awareness and promote dedication towards diversity and inclusiveness. We also held a project poster presentation where HDR Inc. was awarded the Best 2020 Project Poster for their Ontario Line project. Lastly, we wrapped up the event with a collage of video hugs from the ITE and industry members.

We conducted our annual elections and are happy to announce that all incumbent nominees moved on to their new roles with Anne Cataford taking over the role of President from Zoran Carkic, who transitions to Past President. Madhuri Seera is the new Vice President while Lou Mak becomes the new Secretary. Josh Workman maintains his role as Treasurer for another year and Annie Wang (pictured) joins the executive as the new Publicity Coordinator.

We kicked off 2021 with our AGM and a presentation from Troy Mcleod, Director of Roads at the City of Calgary (pictured). Troy has worked in several areas within the City of Calgary Transportation Department including traffic operations, traffic signals, transportation planning, and transportation data; and has held the positions of Manager of Traffic and General Manager of Calgary Parking Authority prior to becoming the Director of Roads in 2014. Troy has published several papers with ITE, CITE, and TAC and serves on the Chief Engineer's Council with TAC.

Our virtual events, including the Year-End Gala with virtual hug collage, can be viewed on this Southern Alberta Webinars playlist on the CITE YouTube channel.

Saskatchewan Section

In November, the Saskatchewan Section hosted their first virtual Annual General Meeting and Fall Session. The event had 49 registrants with a mix of government, consultant, and student representatives who tuned in from across the province. The session included engaging presentations and the virtual environment allowed the session to host a presenter from Manitoba.

The Fall Session featured several presenters showcasing some highlights of recent projects:

- Ellen McLaughlin, Associated Engineering - Active Transportation on Bridge Audit for Saskatoon
- Ian Cantello and Hari Patel, City of Regina - Park Street Bike Lanes in Regina
- Craig Milligan, Micro Traffic - Rapid Before/ After Safety Assessment
- Kristen Faber, WSP - Alternative Modes at the University of Regina
- Emanuele Sacchi, University of Saskatchewan - Speed Prediction Model Development and Investigation of the Relationship between Speed Variation and Crash Frequency in Saskatoon

We would like to thank all the presenters for making the session a success.

The Saskatchewan Section is in the midst of planning activities for the 2021 season. If you are interested in presenting your project at one of our sessions, please contact us at programsdirector@saskatchewan.cite7.org. Watch your emails for details about upcoming events and activities.

Follow us on Facebook: @ITEsaskatchewan

Manitoba Section

The Manitoba Section met virtually in December for our Annual Business Meeting and a technical presentation. The meeting was well attended. Stephen Chapman, with MORR Transportation Consulting, presented a proof of concept study completed for Transport Canada that employed technology to efficiently study pedestrian and cyclist activity at blocked railway crossings in Winnipeg and Vancouver. The presentation covered the development of the monitoring system, calibration, data collection, observed characteristics at the crossings, performance results, and future considerations.

The Annual Business Meeting included a summary of our activities in 2020, which were limited compared to previous years due to the pandemic. We also covered our budget for 2021, discussed the potential for a future bid to host the CITE conference, and held our Executive Committee election. Jennifer Chapman moved into the role of Past President, while Steven Florko, Rebecca Peterniak, and Steve Wood were acclaimed to the positions of President, Vice President, and Secretary, respectively. Mark Hearson was elected as the new Treasurer for ITE Manitoba. Mark is a Transportation Engineer with Stantec and is a former, two-term, president of the University of Manitoba ITE Student Chapter. He will be a great addition to our Executive Committee. Welcome, Mark!

After 10 years of service on the ITE Manitoba Executive Committee, David Wiebe ended his final term as Past President. We would like to extend our appreciation to David for his commitment and leadership to ITE Manitoba, and for his humour and friendship during these years. We look forward to having Dave at many ITE Manitoba events in the future!

The Executive Committee will be meeting early in 2021 to continue planning for the year ahead. We are planning to continue virtual meetings and webinars in 2021, and look forward to meeting in-person once the pandemic subsides and regulations allow.

Southwestern Ontario Section

On December 17, the Southwest Ontario section held its first online event, which was an update on featured areas within the section – Doug MacRae for the City of London, Darryl Spencer for the Region of Waterloo, and some notes from Georgiana Vani of our new Student Chapter at the University of Windsor. Our presenters gave updates on which transportation projects have been getting attention this year in London and Waterloo, and on the work and members of the University of Windsor Student Chapter.

National Capital Section

Like everyone else, the National Capital Section (NCS) encountered and ultimately overcame many unexpected challenges in 2020. In March, just weeks before Ontario went into lockdown for the first time, NCS hosted a special luncheon where the Section awarded its inaugural CITE NCS Lifetime Achievement Award to Dr. Ata Khan of Carleton University. Dr. Khan has been a professor of transportation engineering at Carleton University for over 50 years and has inspired thousands of students since he started teaching there in 1969. Many of his past undergraduate and graduate students are members of NCS's local community today. To Dr. Khan's surprise, NCS also renamed the award in his honour, to become the Professor A. M. Khan Lifetime Achievement Award. This new annual award is intended to honour a member of the NCS community who has made a significant impact on the transportation industry over their career.

Following the presentation of the award, Kornel Mucsi from the City of Ottawa, a former student of Dr. Khan's, presented on the experiences and lessons learned through the City's implementation of the Chapman Mills Drive Transit Priority and Active Transportation Corridor in Ottawa's suburb of Barrhaven.

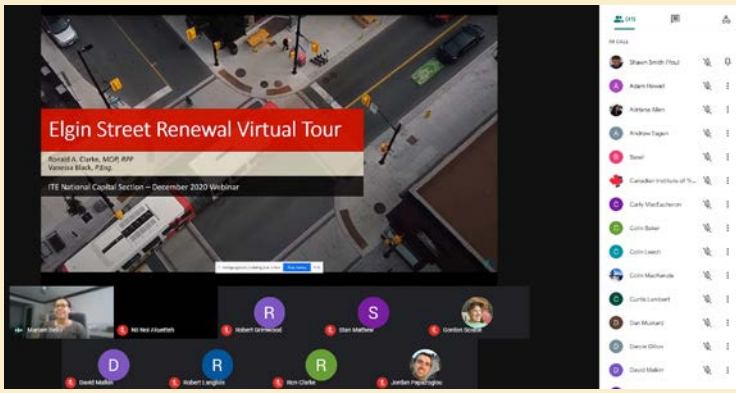
NCS's plans for 2020 were significantly impacted by COVID-19 following the March event. In the uncertain period that followed the first wave of lockdowns, the NCS team worked hard to find alternative ways of staying connected with the local transportation community. In July, NCS's outgoing Secretary, Shawn Smith,

Sean Rathwell of Dillon Consulting presenting Dr. Ata Khan with the inaugural CITE NCS Lifetime Achievement Award

hosted a casual Virtual Meet-Up to check-in and connect with NCS members in lieu of in-person events. In September, NCS helped the Carleton Student Chapter identify volunteers for the Chapter's "Ask Me Anything" event with transportation professionals and the Fall Student Mentorship Program. Members of the NCS Executive also participated in both of these Carleton Student Chapter initiatives.

Chris Schafer of Bird Canada presents at the NCS virtual webinar on the CIty of Ottawa's e-scooter program

Technical programming resumed in October, with a virtual presentation on the City of Ottawa's first summer of e-scooter operations by Kathleen Wilker from the City of Ottawa and Chris Schafer from Bird Canada. Virtual attendance of the October event nearly maxed out Google Meet's participant limit. In December, NCS also held a virtual technical tour of Elgin Street, a downtown corridor recently transformed into a complete street, "led" by Vanessa Black from the City of Ottawa and Ron Clarke from Parsons. Read more about this event in our article on page 35.



Attendees participate in the NCS Elgin Street Renewal Virtual Tour

Organizing events was not the only activity for the NCS Executive in 2020. Over the course of the year, NCS designed a personalized logo for the Section (a big thank you to NCS's outgoing Treasurer, John Kingsley), established a LinkedIn account (follow NCS here), and stayed connected with members via a number of e-newsletters. The e-newsletters contained insights on the latest news and best practices in the industry. The e-newsletters also profiled members of the Executive throughout the year.

Presenters re-orient the 360° virtual tour video to show new public space integrated into the Elgin Street Renewal

Despite the challenges of 2020, NCS looks forward to continuing to innovate ways to provide quality professional, technical, and social content to the Section's community in 2021. And with some successful virtual event experiences under their belts, NCS expects to ramp up its activity over this year. Additionally, in 2021, the NCS Executive will implement Year 1 of their newly established Three-Year Plan to grow membership, increase participation, and ensure sustainable growth for the Section.

Atlantic Provinces Section

As COVID-19 continues to dominate how we gather and interact in the Atlantic Provinces, we have continued to adjust to keep members informed and bring members together.

We hosted our second Virtual Lunch & Learn on November 30, 2020 with the help of CITE's Steven Garner. This virtual session was well attended from members across the Atlantic region who had the opportunity to listen to two presentations including 'Bus on Shoulder' operation by WSP's Dave McCusker and an overview of 'HaliFACT', Halifax's new climate change strategy presented by Taylor Owen, Climate Change Specialist with the Halifax Regional Municipality. You can check out the session on YouTube here. We're looking forward to getting back to in-person events, but expect to continue holding virtual sessions for the foreseeable future.

Our section elected a new Secretary / Treasurer, Adam Lanigan, P.Eng., Senior Transportation Planner and Associate with Dillon Consulting Limited in Halifax Nova Scotia. The new executive was sworn in at our AGM in November (see screenshot). We want to thank Roddy MacIntyre, whose time on our executive has come to an end, for his significant contribution to the Atlantic Provinces during his time on the executive.

With the support of both the Atlantic Provinces Section and the Canadian District, Tanya Davis, P. Eng., PTOE was selected to participate in the *LeadershipITE* program. *LeadershipITE* is a program to identify, develop, and engage leaders to ensure that ITE and its members are positioned to participate and shape the future of transportation.

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February 19-20, 2021

International Virtual Student LEADERSHIP SUMMIT

ITE student leaders from 15 universities are putting together a first of its kind student transportation experience. Session topics will cover leadership, career advice, transportation technology, sustainability, equity, and more.

Session descriptions and registration information is available online at **www.ite.org/virtualsls.**

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UC-Transportation ITE students chapter of University of Canterbury

ite

KU ite Student Chapter

ite

Cal Poly ite San Luis Obispo, CA

ite

FIU ite Florida International University Institute of Transportation Engineers Student Chapter

UMASS ite

UTSA ite INSTITUTE OF TRANSPORTATION ENGINEERS

Early Bird Deadline is February 5th. Registration is $10 for students, $25 for professionals, and $50 for non-members. All registration fees collected will be used to support the ITE Diversity Scholars Program.

University of Alberta

The new ITE executive members at the University of Alberta Student Chapter have been elected virtually through an online meeting on October 9th, 2020. The new team is very cooperative and seeks to hold new events that encourage undergraduate and graduate students to engage with transportation engineers in different virtual ways. Due to the pandemic, it may not be possible to arrange in-person events and meetups anytime soon. However, the team will do their best to arrange some exciting events, mentorship programs, competitions online and engage more students. The members are:

- **President**: David Mason
- **Vice-President**: Davesh Sharma
- **Treasurer**: Samaa Agina
- **Secretary**: Sabrina Rashid Sheonty
- **Marketing Specialist**: Tasnia Nowrin
- **Event Co-ordinator**: Terrance Tao

Talk to Your Alumni Event

Our first online event was held on Dec. 17th, 2020. We invited our alumni **Gabrielle Paquin** and **Meghana Valupadas** to share their industry experiences with current students and answer questions about job-search, in-demand skills, challenges, and opportunities from the audience. To thank their participation, door prizes were issued for the speakers and three randomly chosen participants. This event will be held frequently during the winter, spring and summer time.

Social Drop-in and Online Game Event

The pandemic has greatly impacted the social life of all UofA students and limited the opportunity to connect with other fellow transportation students. This event brought the opportunity to interact with other members of ITEUA. On January 15th, 2021, we had a great social drop-in event where the attendees felt grateful to see and talk again with their colleagues. This is going to be a frequent event where the students can get back together to connect and have warm chat and some fun. We anticipate evolving this into an online game event for students to interact with prizes for the various winners as well.

Presentation Competition

Attendees and participants at the U of A Student Chapter's virtual Talk to Your Alumni event

Our first major event of the season is the presentation competition. This is a time for the undergraduate and graduate students to show their presentation skills for various interesting transportation topics. The ITEUA issued cash prizes ($700) for graduate and undergraduate students thanks to our event sponsor, NACITE. Many students were interested and submitted their abstracts, from which we chose the most interesting ten topics to be in the competition. The cash prizes for the winners were mailed to their home.

Undergraduate Representative

In order to engage more undergraduate students in our events, we have selected a motivated undergraduate representative. The main duties of the representative are to promote events, gather ideas and suggestions from undergraduate students and generally increase the inclusion of this demographic.

York University

The ITE York University Student Chapter has been active throughout the Fall academic term of 2020, hosting seminars and events on our online platforms. We hope everyone had a safe and enjoyable holiday, and wish everyone a happy 2021!

Special Recognitions

We would like to congratulate Chapter Founder Erik Nevland for being awarded the President's Award from the ITE Toronto Section at their AGM in early December. Also congratulations to past-president Tanvir Chowdhury for his Honourable Mention at the same event!

Events

Our third and final seminar for 2020 covered the topic of Autonomous Vehicles. The seminar was held on November 19th, and was hosted live on Zoom and Youtube Live following the success of our previous sessions. In this seminar, we were joined by Medhi Nourinejad from York University to give insight into academic modelling of autonomous vehicles for last-mile freight logistics, Shagithya Deivendran from the City of Toronto to discuss Toronto's municipal planning and policies for the introduction of Autonomous Vehicles, and Abby Morgan from Kittelson & Associates to share her experiences and how autonomous vehicles are having an impact in the world of consulting engineering. This seminar was an eye-opener into the potential future that autonomous vehicles may bring. It was also very interesting to see the different perspectives and expertise from academia, policy, and consultancy. This was our most successful seminar yet with over 50 attendees across the two platforms.

All three of our seminar sessions have been archived and uploaded for public viewing on the ITE YorkU Student Chapter Youtube page, allowing interested students and viewers to watch the seminar even if they missed it. We would like to thank all of the speakers for their excellent presentations and look forward to hosting more in 2021!

Autonomous Vehicles Seminar Presenters (Clockwise from bottom right) Medhi Nourinejad, Abby Morgan, and Shagithya Deivendran

Climbing the Rocky Mountains of BC on the TransCanada Highway during the ITE Virtual Road Trip

In collaboration with the York University Geomatics Club, we hosted GIS Day @ YORKU on November 18th, which was a grand success. Key presentations were given by ESRI Canada, Waterlix, Mapsted, winners of the ESRI Canada App Challenge, and graduate students. This event garnered much support from the combined community, with well over 100 attendees. We thank all the presenters and look forward to working with the YorkU Geomatics Club on more events in the future.

As exam season kicked off, we held an informal game night playing Among Us. Attendees had a lot of fun and were able to relax - even if just for a moment!

To kick off the new year, we participated in a University Club Fair to attract more members. As part of this event, we ran a Virtual Road Trip, livestreaming a drive through the rocky mountains of BC behind the wheel of a virtual truck in American Truck Simulator. This

was a fun, relaxing event which allowed participants to chat and enjoy the scenery, while also experiencing the potential challenges of maneuvering trucks and LCVs.

Upcoming Events

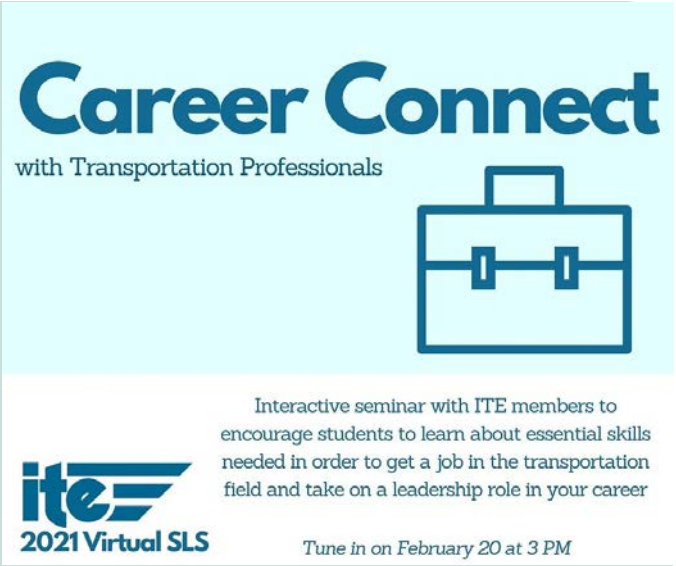
We have multiple future events planned for the upcoming winter season. We will be hosting three more seminars throughout the winter semester on a variety of potential topics such as freight and logistics, rail transportation, and micromobility. Our AGM will be held on February 2nd, as we review the year that was 2020.

We will be representing the Canadian District at the ITE International Virtual Student Leadership Summit on February 19th and 20th with our session Career Connect with Professionals. Kate Whitfield will join us to host a live version of her Career Connect Series featuring other guest speakers and professionals. Learn more and register for the event at itestudentleaders.org

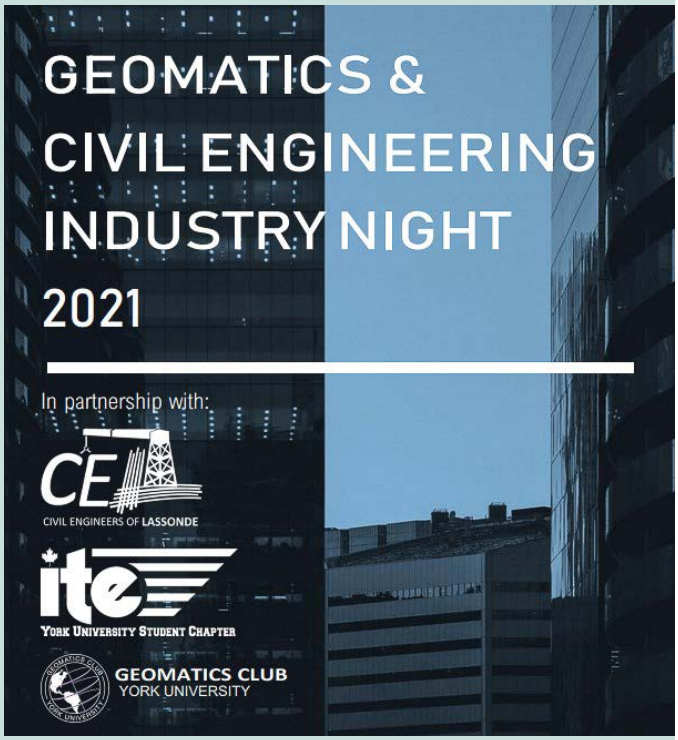
We also look forward to hosting our annual Industry Night on March 29th, hosted virtually this year in cooperation with YorkU Geomatics and Civil Engineers Lassonde. We welcome interested companies to contact us and join this opportunity to showcase their expertise and opportunities with students preparing to graduate and enter the workforce.

More Information

For information about our student chapter or to view our latest annual report, visit our website at www.ite.club.yorku.ca. Please let us know if you would be interested in speaking at one of our seminars/events, if you are interested in sponsoring us, or if you would like to attend our Industry Night event. You can email us at ite@yorku.ca or visit one of our social media pages. We also encourage you to watch our new informational video on YouTube.



Poster for our future Career Connect session as part of ITE's Student Leadership Summit



Lassonde Industry Night Poster

Québec Student Chapter

Presenting a paper in PTV student session

The chapter member and the advisor participated in a poster presentation to use microsimulation in North America by PTV America. The poster evaluated traffic and safety performance in the transition to Automated Vehicles on urban arterial roadways. The poster session was presented in a webinar form and free to the public. The analysis results are used to investigate AVs' impact in different traffic flow and reveal the influence of the autonomy level for safe driving. This session's outcome contributes to researchers and policymakers to enhance traffic performance in the urban area by enabling the best type of AVs.

Publishing a research paper in Association québécoise des transports (AQTr):

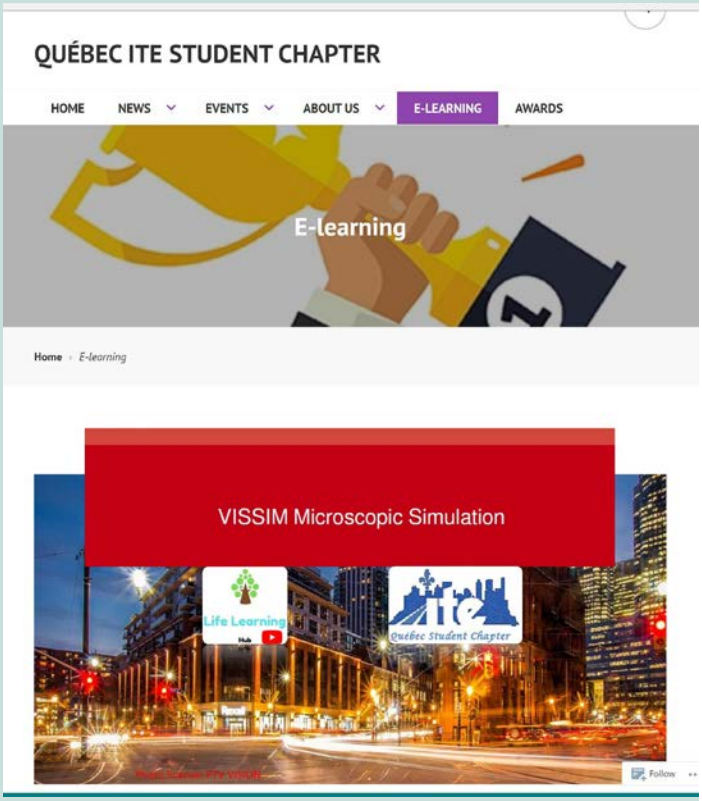
The chapter members and the advisor researched Impacts on the Safety and Environment of Autonomous Vehicles in Quebec: Challenges and Opportunities. This paper was published in the "routes et transports" journal in spring 2020. In this research, safety issues, the number of current accidents, and the costs of current and future transportation network were analyzed. Also, current trips number and projected trips in 2031 were discussed. Besides, environmental issues, like energy usage, were considered. Based on the available data, the pros and cons of Autonomous vehicles were discussed.

E-learning activities

The chapter launched its E-learning channel, which is available at itesqc.ca/elearning.Transportation-related courses, like designing a signalized intersection timing, calculating LOS, public transit, working with VISUM, and working with IHSDM software, are covered. This channel will be updated regularly. The students and people interested can subscribe to the youtube's channel and follow the covered materials.

Participate in the next-generation cities institute research about sustainability

The advisor of the chapter has been invited to participate in the research related to sustainability. This research is being done under the Next-Generation Cities Institute. Based on the information provided on the institute website, "the university's Next-Generation Cities Institute leverages the combined strength of our cities' research capacity to enhance collaboration, communication, education, and interaction within our community. The institute brings together researchers from various disciplines, including engineering, economics, natural sciences, the arts, humanities, and the social sciences, to engage in an inclusive and universal sustainable urban development approach." Sofar, a chapter member, and the advisor proposed two topics to encourage sustainability in the next generation cities: Automated vehicles in the future and how to improve public transit efficiency in the next cities.



The Québec Student Chapter's E-Learning Channel with various transportation courses

congratulations & welcome

CITE extends a warm welcome to all new Canadian District ITE members who recently joined our community!

Saifuddin Ahmad, Concordia University, Montreal, QC
Peter Ayindongo Apasnore, Crozier Consulting Engineers, York, ON
Hima Areekal, University of Manitoba, Winnipeg, MB
Jennifer Armstrong, City of Ottawa, Ottawa, ON
Emily Atwell, University of New Brunswick, Fredericton, NB
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